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EXPLORATION BREX INC.

Clytic Bay Property

(Glass Township, Kenora District)

Results of a Gold Exploration and Diamond Drilling Program

March, 1990

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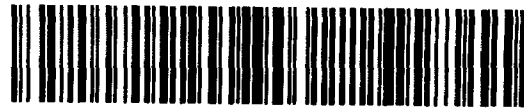
SUMMARY

This report describes the results of preliminary geological, geophysical and diamond drilling programs which were completed during the fall and winter of 1989/1990, on the Clytie Bay property, held 100% by Exploration Brex Inc. The property consists of forty-three (43) claims situated in the Shoal Lake and Echo Bay areas of Northwestern Ontario, located approximately 40 km west of Kenora Ontario.

Systematic exploration resulted with the discovery of structurally controlled gold mineralization in four different locations. Three of these occurrences occupy a portion of a major regional shear known as the Shoal Lake deformation zone (SLDZ). Grab samples range from 4.25g Au/ton to 14.95 g Au/ton on surface exposures.

Four diamond drill holes, totalling 513.44 m, tested two of the four known gold occurrences over a strike length of 50 meters. Polymetallic mineralization, containing significant values of gold, silver and copper, was intersected in a stockwork breccia zone in gabbro. This zone has a true width of approximately 35 m. The mineralization is erratically distributed, with values including 3.42 g Au/2.46 m, 3.36 g Au/1.05 m, 0.57% Cu over 3.12 m, and 0.29% Cu over 6.88 m. This zone remains open along strike and at depth.

A two phase winter exploration campaign is recommended for the winter of 1990/1991. The total cost for detailed geophysics and diamond drilling would be \$375,000. This program would allow several base metal targets and four gold occurrences to be drilled.



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1.0 INTRODUCTION

Exploration Brex Inc. completed a systematic gold exploration program on the Clytie Bay property, located in the Kenora District of Northwestern Ontario. Field work was completed by the author and Kateri Marchand from a base camp located 20 km east of the property, in Clearwater Bay. Approximately 50% of the property occupies a large portion of Clytie Bay, with the remaining claims occupying the mainland east of Clytie Bay.

Exploration Brex Inc. earned a 100% interest in the property by buying the property from Mr. Fred Greene, a local prospector.

2.0 PROPERTY LOCATION AND ACCESS

The Clytie Bay property consists of 43 continuous claims, located in the northeast quadrant of Glass Township, district of Kenora, in Northwestern Ontario. This claim block is situated 40 kilometers west of the village of Kenora, Ontario (Figure 1).

The property is accessible by driving west from Kenora, Ontario along the Trans-Canada highway for a distance of 38 kilometers to the Rush Bay road. The Rush Bay road is an all season road which is followed south for 23 km from the highway to the Clytie Bay government boat launch site, which is central to the property (Figure 2). The islands on the claim block may then be reached by boat or snowmobile by travelling south an additional kilometre. Canoe Lake and Echo Bay portions of the grid are accessible by a network of all-season roads and trails which are located immediately northeast of the Clytie Bay landing. Figure 3 is a claim map for the property. The claim list is presented in Appendix A.

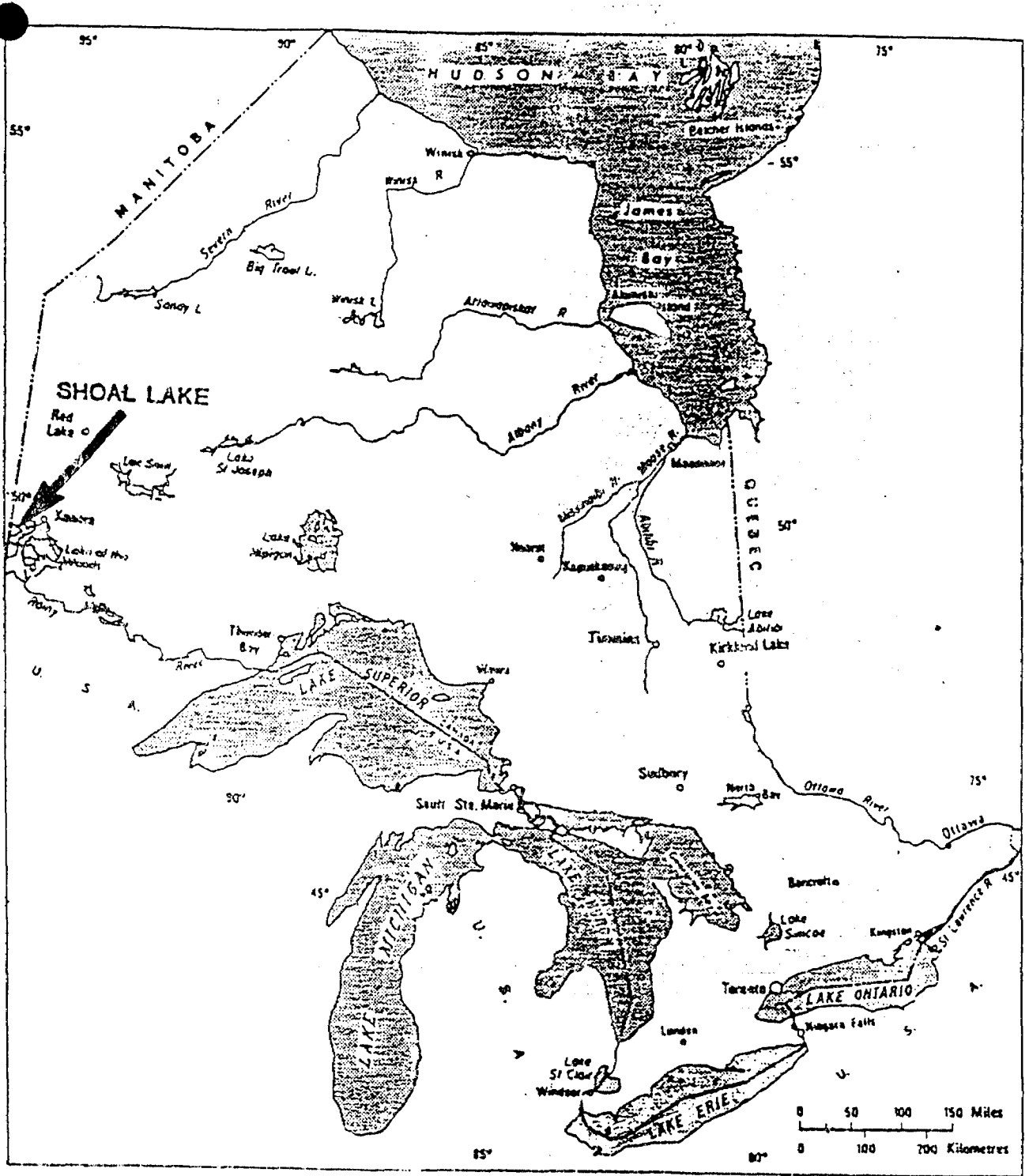
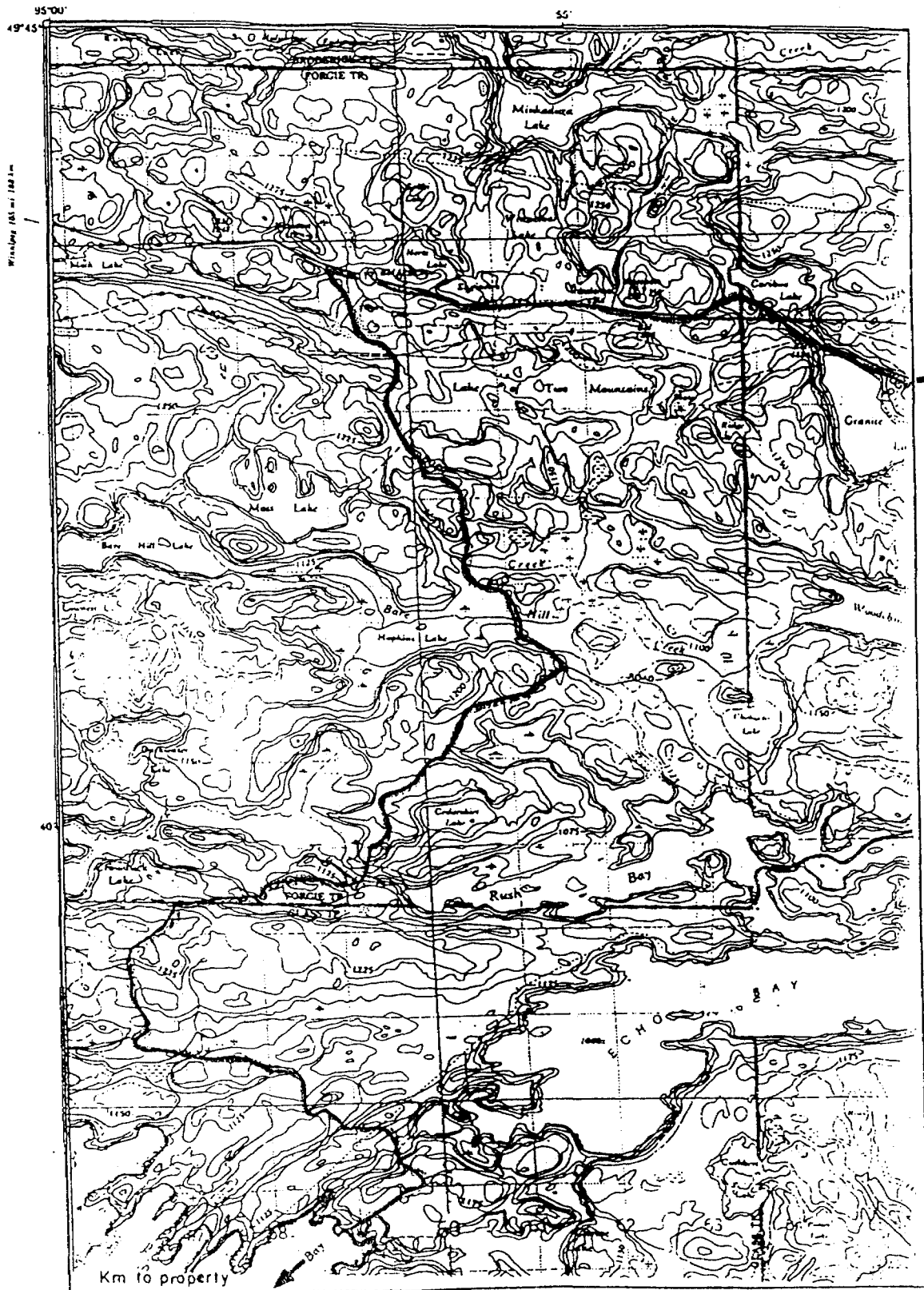


Figure 1. Map of Ontario indicating the location of the Shoal Lake Property.

Figure 2. Map showing access route West of Kenora, Ontario to the property



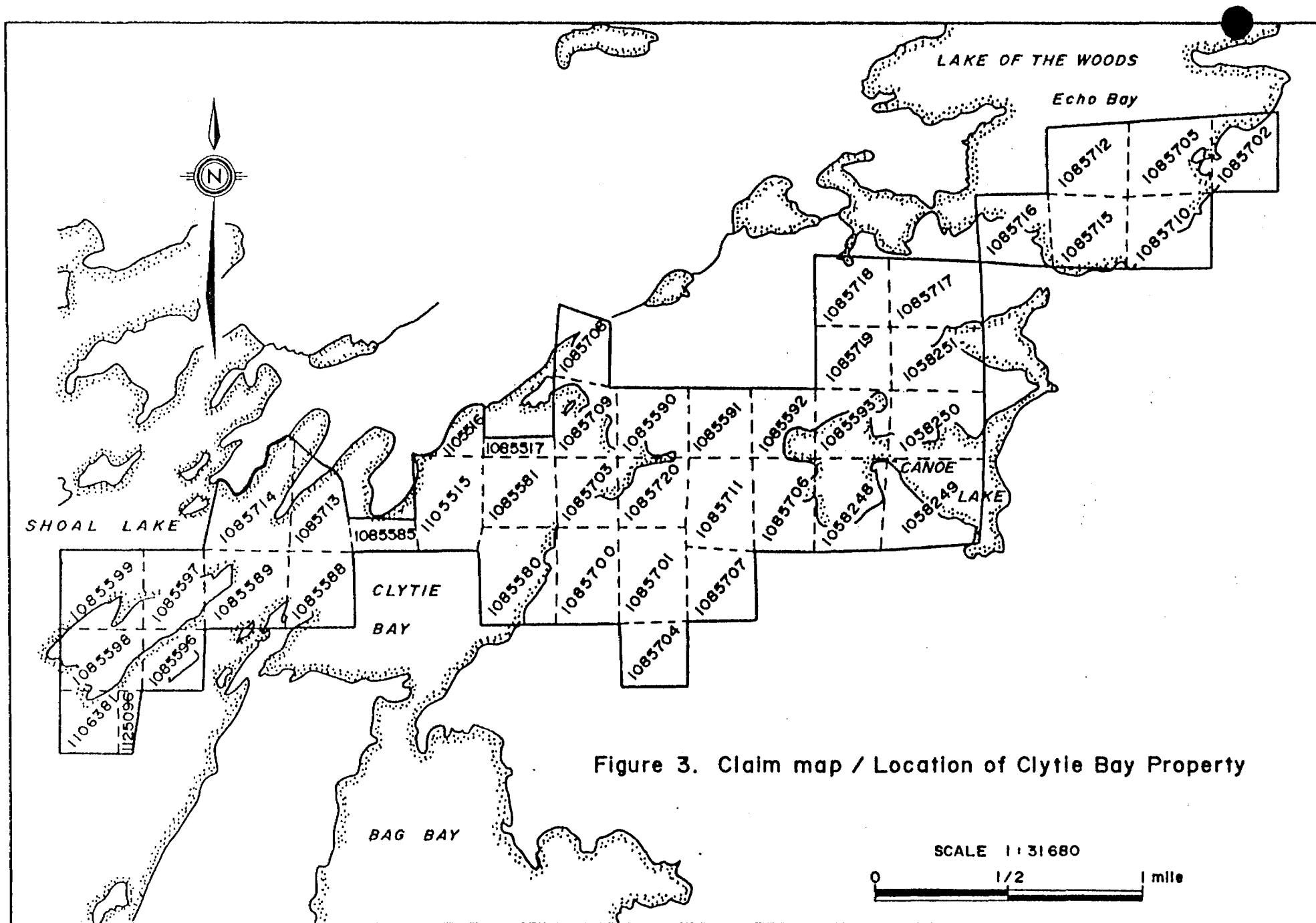
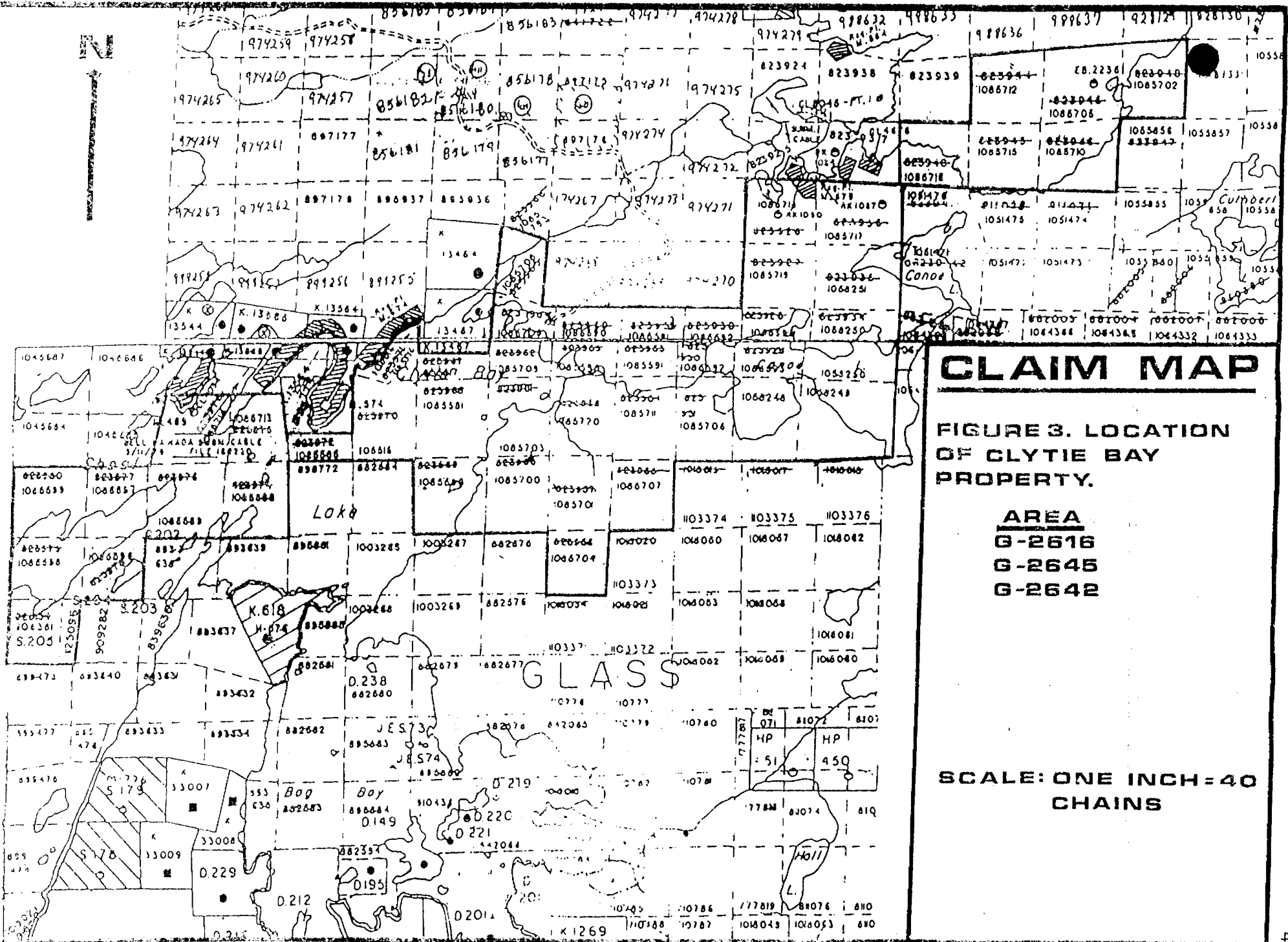


Figure 3. Claim map / Location of Clytie Bay Property



CLAIM MAP

FIGURE 3. LOCATION OF CLYTIE BAY PROPERTY.

- AREA**
G-2616
G-2646
G-2642

SCALE: ONE INCH = 40 CHAINS

3.0 PREVIOUS WORK

The first gold rush in the area occurred in 1893, when George Green, a native of the area, brought gold ore from the Mikado Mine to a Hudson Bay post located in Rat Portage. The area was actively explored by British and South African mining companies, with discovery and production including the Mikado (1893), Duport (1896), Cedar Island (1896) and Olympia (1899) mines, all located within a 6.0 kilometre distance from the property (Figure 4).

Government reports were initially completed by Bell (1892), Blue (1897), Bow (1898) and Miller (1903). A vast amount of data concerning all of the known procedures and showings, which summarizes most of the available historical data, is presented in Davies and Smith (1988) Open File Report 5695 and Davies (1978) Open File Report 5242.

Old workings located within the immediate vicinity of the property include the Crown Point Mine, Great Northwest Mining Co. Occurrence, Indian Joe prospect, Sirdar and Zeus Occurrences (Figure 4).

The abandoned Crown Point Mine is located immediately east of the narrows which separates Clytie Bay and Bag Bay. This abandoned gold mine is situated along an east trending tectonic breccia zone, with the Canoe Lake diorite located to the north, and northeast trending mafic metavolcanic flows and felsic fragmental units located to the south. Numerous trenches exposed narrow veins and fractures filled with pyrite. In 1899, three shafts were sunk to a maximum depth of 38.1 m, and 18.3 m of drifting was completed on the No. 1 shaft. A five-stamp mill was erected and 150 tons of ore were milled at a reported grade of 0.67 oz Au/ton (Davies and Smith, 1988). The operation was sold in 1904 to Black Cat Mining Co., and has since remained undeveloped. The eastern and western strike extents of this tectonic zone transects the southern portions of the Brex property.

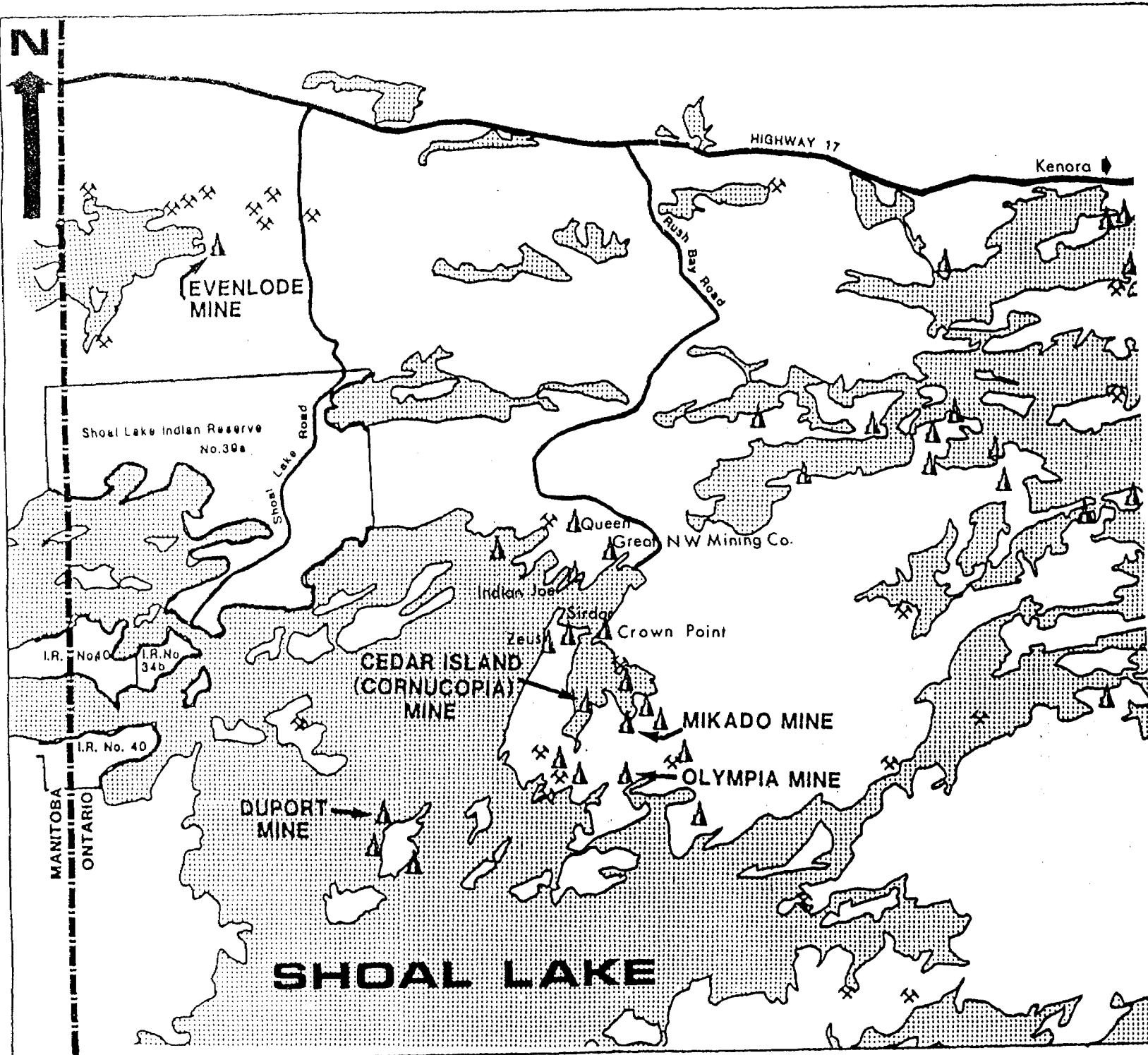
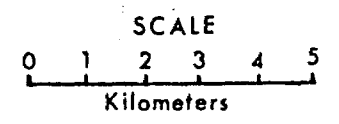


FIGURE 4
 Location of gold occurrences and past producers in the Shoal Lake area.

- ✕ Gold Occurrence
- ▲ Shaft



The Great Northwest Mining Co. Occurrence is a poorly documented gold occurrence located 600 meters northwest of Clytie Bay. This showing was discovered at the turn of the century. In 1903, a 3.0 m by 2.1 m and 10 m deep pit was sunk on a N55°E trending, vertically dipping brecciated feldspar porphyry dike. Quartz veinlets containing pyrite are present. No significant gold values have been reported. This occurrence is located 150 meters to the northwest of the Brex property. The southwest strike extent of this lineament is present on the Brex claims in Clytie Bay.

The Indian Joe occurrence is situated southwest of the Great Northwest Mining Co. test pit, along the same structure. In 1903, Great Northwest Co. sank three shafts on northeast trending quartz veins which dip 75° northwest. An open cut was also established. The main shaft reached a depth of 25.9 m. A total of 29 m of drifting and 22.3 m of crosscutting was completed on the 24.4 m level. No assays were documented from the workings (Davies, 1978). This occurrence is located less than 100 meters from the Brex property boundary.

The Sirdar Point occurrence is situated 200 m south of the entrance way channel to Bag Bay, near the northern limit of the Sirdar peninsula. In 1898, nine holes totalling 785 m intersected a mineralized zone at shallow depths. Three mineralized veins were developed with three shafts to a maximum depth of 32.6 m. The first shaft was established along an east-west tectonic breccia zone, while shafts two and three were located to the southwest. No gold values have been reported from these workings (Davies, 1978).

The Zeus occurrence is situated along the west shore of Sirdar Peninsula, immediately west of the Sirdar point occurrence. Three narrow veins containing erratic gold mineralization were worked in 1898. Several shafts and test pits were made, but very little information is available (Davies, 1978). This prospect was abandoned at the turn of the century, and has remained undeveloped since that time.

Exploration work on the Brex claim block commenced in 1898. The Great Granite Gold Mining and Development Company of Ontario Ltd. explored the Canoe Lake granitic complex south of Echo Bay and east of Clytie Bay (Davies, 1978). Four test pits and two shafts explored gold bearing quartz veins on the original property. The shaft, located immediately northeast of the Brex claims, reached a depth of 21.3 m. A second shaft was sunk on the Brex Property along the contact of the Canoe Lake stock, southwest of Canoe Lake. No information is available for this shaft, which was located during the 1989 mapping campaign. It is believed that the shaft was sunk around the turn of the century.

Ground situated immediately north of Clytie Bay was explored by the Great Northwest Mining Company Ltd. in 1902. A shaft was sunk to a depth of 10 m along an east-northeast trending felsic dike. Carter (1904) assayed pyritic material from the shaft site and obtained trace gold values. The Brex claim block remained relatively idle from 1904 until 1968.

In 1968, Olympia Gold Mines completed electromagnetic surveys, mapping and geological programs east of Clytie Bay. Six drill holes totalling 664 m tested barren pyrrhotite-chalcopyrite mineralization (See 1:5000 Map, Back Pocket). Two other electromagnetic anomalies identified during the survey were not drilled. These anomalies are discussed in the geophysics chapter in this report.

BP Selco (1983) completed Max-Min, VLF-EM-16 and magnetometer surveys, followed by 2,721 m of drilling. Drill holes BP-S-9 and S-10 tested volcanic stratigraphy located immediately east-southeast of the property. Results of the drilling campaign included the intersection of 21.9 m of cherty tuffs containing anomalous background gold values. These tuffs are considered to be present on the Brex property.

Homestake Minerals Development Company began a program of mineral exploration in the Kenora region in the fall of 1983. The Crow Duck-Rush Bay lineament was the principal target. A total of 20 claims were flown by Kenting Geophysics, and part of this survey included the Echo Bay and Canoe Lake portions of the grid.

Bond Gold Canada Inc. (1987) covered the entire Brex property with an airborne survey which included VLF-EM, total field and vertical gradient magnetic surveys. Noranda (1988) completed a preliminary mapping, ground VLF-EM-16 and magnetometer program, as well as soil and lithochemistry surveys. The Clytie Bay area was subsequently dropped in the spring of 1989. Brex obtained the property at that time through an option agreement with Mr. Fred Greene.

4.0 REGIONAL GEOLOGY

The Lake of the Woods - Shoal Lake area is situated within the western portion of the Wabigoon Subprovince, and is comprised of metamorphosed Archean volcanic and sedimentary rocks which have been intruded by granitoid rocks. Some of the granitic intrusions attain batholithic dimensions, causing segmentation of the volcanic and sedimentary rocks into individual belts (Smith, 1987). The Wabigoon Subprovince is bounded to the north by the English River Subprovince, a gneissic terrain, and to the south by the Quetico Subprovince (Figure 5). Blackburn et al. (1985) developed a tectonic model which basically identifies each of the Subprovinces as being accretionary wedges in an island arc setting, and remarkable similarities with the Abitibi Subprovince were noted.

The margins of the Subprovinces are generally east-west, and characteristically have major breaks or fault zones developed along them. Within the central portions of these belts, as in the Shoal Lake Area, high strain zones occur around margins and between the granitic complexes. These high strain zones

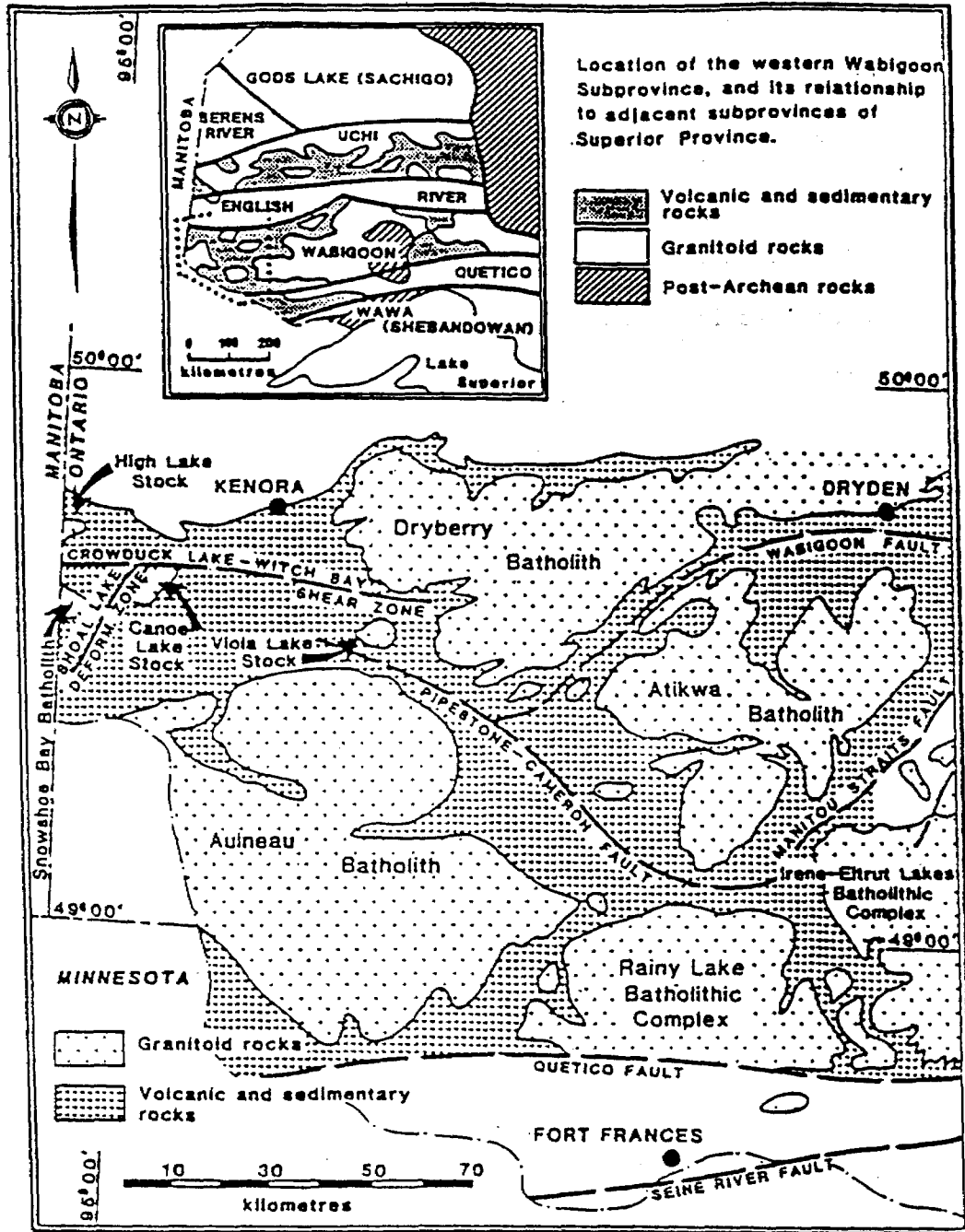


Figure 5. Simplified regional geology of northwestern Ontario (Modified from Blackburn et. al., 1985)

favourable structural sites for gold deposits. The property described in this report is transected by a major northeast trending high strain zone which is situated between the Canoe Lake and Snowshoe Bay granitic complexes. Numerous past and future gold mines are present within this regime.

The most recently ascribed stratigraphic nomenclature (Blackburn et al., 1985), (Ayers et al., 1988) is utilized in this report. Two supergroups are present in the region of interest. The older, Keewatin supergroup (Table 1), comprised of volcanics, volcanic derived metasediments and synvolcanic intrusions, is unconformably overlain by "Timiskaming-type" volcanic and metasedimentary rocks of the Electrum Lake supergroup. All of the rocks are metamorphosed to greenschist-facies, with local amphibolite facies within areas having steep geothermal gradients proximal to the larger granitic complexes.

TABLE 1 - STRATIGRAPHIC NOMENCLATURE FOR THE LAKE OF THE WOODS - SHOAL LAKE REGION

Electrum Lake supergroup (Timiskaming series)

Crowduck Lake group

White Partridge Bay group

-----unconformity-----

Keewatin supergroup (Keewatin series)

Indian Bay group

- Cash Island fm

Clearwater Bay group

- Silver Fox Island fm

- Martinique Island fm

Bigstone Bay group

- Cedar Island fm

5.0 PROPERTY GEOLOGY

All of the metavolcanic rocks exposed on the property belong to the Keewatin supergroup (Keewatin series). Portions of the Bigstone Bay and Clearwater Bay groups were mapped in detail on the property, at a scale of 1:5000 (See Maps in Back Pocket of this Report). Good outcrop exposure in the mapping area (30%) allowed a facies analysis of the volcanic stratigraphy to be completed. The Canoe Lake stock is a syn-to-post tectonic granitic stock which intruded both groups (Campbell, 1972).

5.10 BIGSTONE BAY GROUP (Cedar Island Formation)

The Bigstone Bay Group represents the base of the Keewatin supergroup. This lower komatiitic-tholeiitic series of northeast trending basalts and ultramafic rocks is encountered immediately west of the Canoe Lake stock. On the property, the upward facing direction of this group is towards the northwest. The lithologies encountered within this group are all part of the Cedar Island formation.

The Cedar Island formation is intruded by the following: 1) ultramafic sills and dikes 2) mafic to felsic dikes 3) Canoe Lake stock. The only exposed section of the Cedar Island Formation on the property is located east of Clytie Bay, between the entrance waterway channel to Bag Bay and a creek which flows west from Canoe Lake to Clytie Bay(See Map, Back Pocket).

5.1.1 Basalts

Aphyric basalts are common within the Cedar Island formation on the property. These units are generally dark green, fine to medium grained and massive. These flows are magnetic, iron-rich tholeiites which are commonly brecciated. These units grade into gabbroic sills. Minor, narrow (less than 30 cm) interflow chert bands are also present. The basalts are subophitic, consisting mainly of feathery interlocking clumps of amphibole, plagioclase and chlorite, with accessory epidote, magnetite and leucoxene. Petrographic studies were completed by Smith (1987).

5.1.2 Gabbroic Sills

Gabbroic sills within the Cedar Island formation are fine to coarse grained, dark green, and partially differentiated. They are generally concordant with the regional stratigraphy. Contacts between the aphyric basalts and gabbro may be sharp or gradational. This rock type is variable in composition, comprised mainly of amphiboles with interstitial plagioclase, clinozoisite, epidote, quartz and leucoxene. This synvolcanic unit was cogenetic with the aphyric basalts.

Both amphibole-rich and pyroxene-rich gabbroic phases were mapped in the field. The textural and compositional variation between these two rock types suggests that partial differentiation may have occurred. A pyrrhotite-rich layer was located near the basal portion of a pyroxene-rich gabbroic sill. This mineral occurrence was drilled by Olympia Gold Mines (1968).

It is possible that some of the narrow (less than 6 m), pyroxenite and amphibolite outcrops may actually be dikes. Limited outcrop exposures prevented this field-relationship from being clarified. Amphibolite and pyroxenite dikes are common to the south of the property, within the Cedar Island formation on the 162278 Canada Inc. claim block, optioned by Brex (Yeomans, 1989).

5.1.3 Transition Zone - (Cedar Island Formation)

The Transition Zone between the Cedar Island formation and the overlying Clearwater Bay group is present along the eastern shore of Clytie Bay. The transition zone is defined by narrow intercalated units of lavas and pyroclastic rocks which are intermediate to felsic in composition. These units are situated near the upper limits of the Cedar Island formation.

Andesitic lavas are green coloured, massive fine-grained flows which are composed mainly with interstitial plagioclase, chlorite, epidote, biotite and magnetite. These flows are more siliceous than the aphyric basalts. Flow breccia textures are well preserved, and fragments within the groundmass are sub-angular to sub-rounded. Individual flows are up to 200 m in thickness.

Intermediate to felsic units are much narrower, generally less than 25 m in thickness. Flow breccias contain sub-angular to sub-rounded clasts, and the matrix is slightly darker than the clasts. Sulfide-bearing, cherty, felsic tuffs were drilled by BP-Selco, in hole BP-S-10 (1983), located immediately southeast of the property. This horizon is important as it represents the first hiatus between the komatiitic-tholeiitic and calc-alkaline volcanic cycles. This favourable horizon strikes across the eastern portion of Clytie Bay, and contains enough sulfide mineralization to create an electromagnetic anomaly. It is not exposed on land. The transition zone at the upper limit of the Cedar Island formation has a thickness of approximately 500 meters.

5.1.4 Intrusive Mafic to Felsic Dikes

Mafic to felsic dikes occur in all of the previously described lithologic units. These dikes are syn-to-post tectonic and occupy major fractures which transect the volcanic stratigraphy at a high angle. The largest and most common dikes present on the property are quartz feldspar porphyrys. These dikes are medium to coarse grained, massive to schistose, grey coloured rocks which are nonmagnetic. They consist mainly of porphyritic, subhedral to euhedral feldspars up to 2 mm in size, quartz grains and interstitial chlorite, sericite, clinozoisite and carbonate. The groundmass consists of fine quartzofeldspathic grains. These dikes are up to 100 m in width. Sheared quartz feldspar porphyry dikes are commonly hematized and carbonatized. They are most common near the margins of the Canoe Lake stock.

One granodiorite dike was observed near the base of the Cedar Island formation, proximal to the contact of the Canoe Lake stock. This dike is medium grained, grey in colour, with 55% zoned feldspar, 25% quartz, 15% microcline and accessory minerals including biotite, hornblende, chlorite and epidote. Its spatial proximity to the Canoe Lake stock suggests that it is genetically related to the granite. All of the dikes were emplaced during a major orogenic event in which large scale east-west, northeast-southwest and northwest-southeast fractures were created. The dikes are syn-to-post tectonic relative to the emplacement of the Canoe Lake stock (Campbell, 1972).

5.2.0 CLEARWATER BAY GROUP (Silver Fox Island Formation)

The Clearwater Bay group is situated immediately above the transition zone of the Cedar Island formation. This group contains a thick sequence of calc-alkaline intermediate to felsic metavolcanic rocks. The most felsic rocks of this group are low in the section, and occupy most of the Clytie Bay area. The felsic metavolcanics attain a maximum thickness of 900 m immediately northeast of the Clytie Bay government landing (Davies, 1978).

The Silver Fox Island formation, which represents a portion of the Clearwater Bay group, occupies most of the volcanic stratigraphy within and west of Clytie Bay. The volcanic stratigraphy, exposed on a limited number of small islands southwest of Clytie Bay, indicates that the thickness of the lower felsic volcanic assemblage rapidly decreases towards the southwest from Clytie Bay.

The Silver Fox Island formation consists mainly of intermediate to felsic pyroclastic rocks, including tuff breccias, autoclastic breccias, flows, cherty tuffs and minor dacitic and basaltic units. The dacitic and basaltic units are common within the transition zone of the Cedar Island formation, which was previously described. These narrow mafic to intermediate flows are intercalated with felsic pyroclastic rocks. Immediately above the transition zone, the felsic pyroclastic units increase in thickness to a maximum thickness of 900 m, immediately northeast of the Clytie Bay landing.

5.2.1 Felsic Rocks

The basal portion of the Silver Fox Island formation contains a massive, fine grained, aphanitic rhyolitic unit which is yellow in colour. It contains quartz eyes and resembles the quartz-feldspar porphyry dikes. Thick sequences of autobreccia and tuffbreccia occur above this flow.

The felsic autobreccias are flow breccias occupying the flanks of a felsic dome which is centred immediately northeast of the Clytie Bay government boat launch site. Yellow-grey angular pyroclastic blocks up to 0.6 m in size are present in a darker grey groundmass. Pyroclastic breccias are intercalated with the autobreccias. Some of these units contain abundant breadcrust bombs which are subangular to subrounded, with dacitic cores and a slightly darker groundmass. These are well documented on the property along the north shore of Clytie Bay (Davies, 1978).

Felsic lapilli tuffs contain subangular to sub-rounded fragments. Locally, sulfide lapilli fragments up to 10 cm in length were observed in the vicinity of Indian Joe peninsula. Southwest from Clytie Bay, the size of the lapilli fragments decrease, indicating a more distal facies relative to the north shore of Clytie Bay. Dacitic units are intercalated with the rhyolite flows. These units are also fine grained, nonmagnetic, massive, and are commonly brecciated.

5.30 CANOE LAKE STOCK

The Canoe Lake stock is a massive, homogeneous single phase quartz diorite intrusion. It is medium grained, hypidiomorphic-granular with large quartz-eyes scattered throughout the rock. The colour is generally salt and pepper, grey-green to grey, with local red-staining indicating hematization. This rock is

composed of 45% to 70% plagioclase, 15% to 50% quartz, and 3% to 15% hornblende, with a maximum of 10% to 15% biotite. Accessory minerals include apatite, sphene, rutile, magnetite, hematite and ilmenite (Campbell, 1973).

Numerous younger felsic intrusions including quartz-feldspar porphyry, quartz porphyry and granodiorite dikes are present, and have been described in previous chapters. These dikes occupy fractures which developed within the Canoe Lake stock during its emplacement. Campbell (1973) analysed one hundred and fifty samples from the quartz diorite, and determined the paragenesis of the intrusion. All of the samples plotted on Bateman's (1961) quartz-plagioclase-microcline triangular diagram as quartz diorite.

Campbell (1973) determined that hydrothermal alteration within the intrusion is located predominantly along two sets of fracture systems, oriented northwest and northeast. These fractures acted as channel ways for the hydrothermal solutions. Alteration halos along these lineaments include carbonatization, sericitic, chloritic and epidote alteration, as well as minor hematization and silicification. This type of alteration is multi-phase, indicating that the fracture systems reactivated several times during the period of emplacement of the stock. Locally, sulfide occurrences are associated with these fractures.

Disseminated and hydrothermal vein sulfides, including chalcopyrite, sphalerite, molybdenite, and pyrite, as well as gold mineralization, occur in structurally favourable environments within the Canoe Lake stock. Porphyry-type copper mineralization pervades this stock, particularly in the vicinity of Squaw and Potter Lakes, located near the eastern margin of the intrusion. A complex zonal alteration pattern is centred near Squaw Lake, and includes potassic, phyllic and propylitic halos (Campbell, 1973).

The Canoe Lake stock is considered to be syntectonic. The high degree of fracturing and copper-molybdenum-zinc mineralization indicates epizonal emplacement. However, since this Archean intrusive is deeply eroded, any economic porphyry-copper type ore which may have been emplaced has now been removed. Within the claim group, gold mineralization in the Canoe Lake stock occupies a highly carbonatized and silicified east-northeast lineament along the north shore of Canoe Lake (Map 1, Back Pocket). Gold mineralization at this location occurs in sheared, carbonated and chloritized quartz-diorite containing 10% wine-stained pyrite. This showing is discussed in further detail in the Economic Geology section of this report.

At the present time, there is some question as to the genesis of a "volcanic conglomerate", which flanks the northwestern margin of the Canoe Lake stock on the Brex property. Initially mapped by Davies (1978), this unit has been reinterpreted by the author as a tectonic breccia produced by hydraulic ramming as the intrusive was emplaced into the volcanic terrain. Arguments in favour of this model are as follows:

- 1) The breccia ("volcanic conglomerate") is always in contact with the quartz diorite
- 2) The matrix appears to be a micro-crystalline magma of mafic composition which has been amphibolitized.
- 3) In many locations, angular fragments were observed, and they mainly consist of quartz diorite. Other sub-rounded to rounded intermediate to mafic fragments appeared to be partially assimilated.

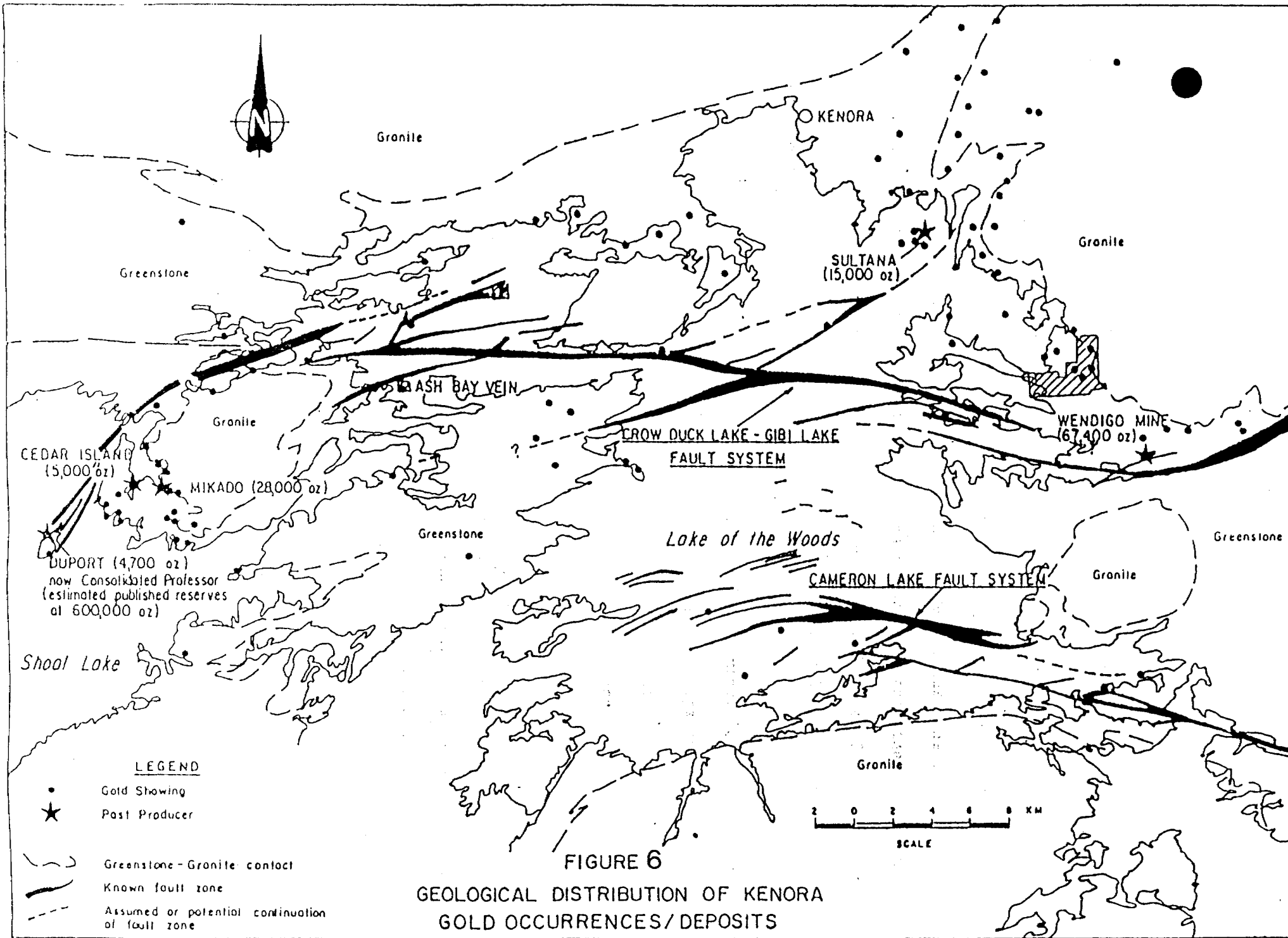
6.00 STRUCTURAL GEOLOGY

This chapter examines the regional structural setting of the Lake of the Wood - Shoal Lake area. This is followed by more detailed descriptions of the structural geology of the Duport mine, and finally, a discussion of the structures observed on the property. The Duport Mine is described because the Clytie Bay property is along strike from the deposit. Similar host rock lithologies are transected by the Shoal Lake deformation zone on both properties.

6.10 REGIONAL STRUCTURAL SETTING

The regional geology (Figure 5) demonstrates how the greenstone belts of the Wabigoon subprovince have been segmented by granitic intrusions which may attain batholithic dimensions. High strain zones occur between individual plutons and around their margins. Figure 6 indicates the regional structural pattern relative to the geological distribution of known gold occurrences and deposits. Two principal east-west trending fault systems are present in this portion of the Wabigoon subprovince, and are known as the Crowduck Lake-Witch Bay fault and the Cameron Lake fault systems.

Several second-order, north-east trending splays occur along the Crowduck Lake -Witch Bay and Cameron Lake fault systems. These second-order splays are important for hosting significant gold deposits. In Shoal Lake, a major north-east trending splay, known as the Shoal Lake deformation zone, hosts the Duport deposit, and several other abandoned mines where limited underground development took place.



6.20 DUPORT MINE - STRUCTURAL SETTING

The regional schistosity in the vicinity of the Duport Mine - Clytie Bay area is oriented N035°E to N055°E, with a subvertical dip. The Shoal Lake deformation zone is subparallel to the regional schistosity. Underground exploration at the Duport deposit allowed Smith (1987) to examine this deformation zone in three dimensions. In the vicinity of the mine site (Figure 7), the Shoal Lake deformation zone is comprised of three major fault structures which are subparallel and similar to each other. These include the Duport, Stevens Island and Sirdar deformation zones.

The Duport deformation zone (DDZ) hosts the Duport mine. The DDZ represents the western limit of the Shoal Lake deformation zone, and dips steeply to the west. Small scale structural features indicate reverse, near vertical movement (Smith, 1987). The Stevens Island and Sirdar deformation zones also contain similar large and small scale structural patterns. These structures are described in a report written by Yeomans (1989).

Two subparallel northeast trending mineralized systems (Figure 7) host the ore zones within the Duport deformation zone. The western zone is characterized by brittle deformation, with mariposite breccia constituting high-grade ore. The eastern zone, in contrast, occupies a more brittle-ductile environment, with more evidence of shearing and transposition, resulting with almond shaped ore lenses. Gold bearing quartz veins occur mainly as en-echelon, oblique shear veins which transect the stratigraphy at a low angle, and have a lensoidal shape (Smith, 1986).

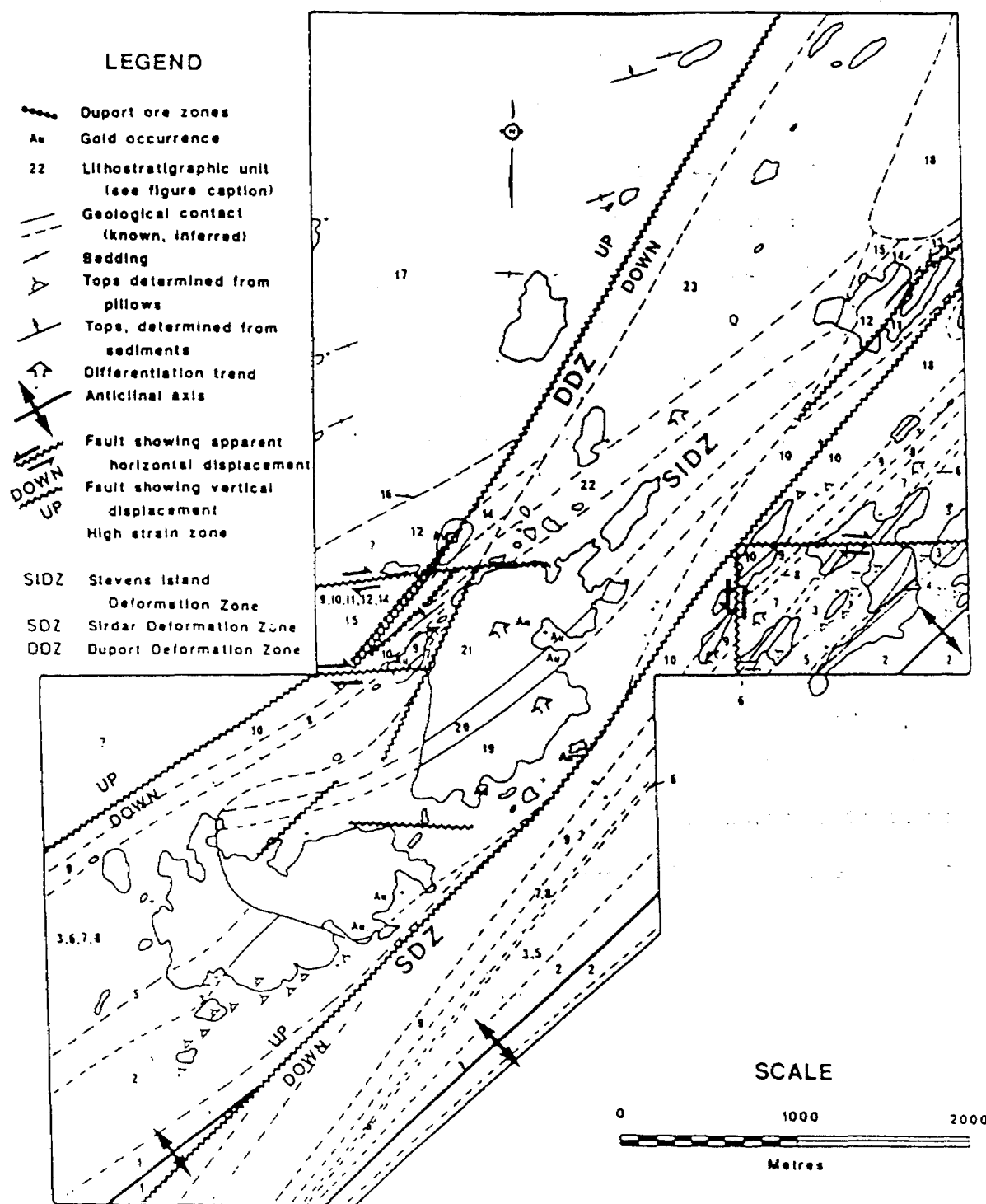


Figure 7. Detailed structural interpretation of the Shoal Lake Deformation Zone (From Smith, 1987)

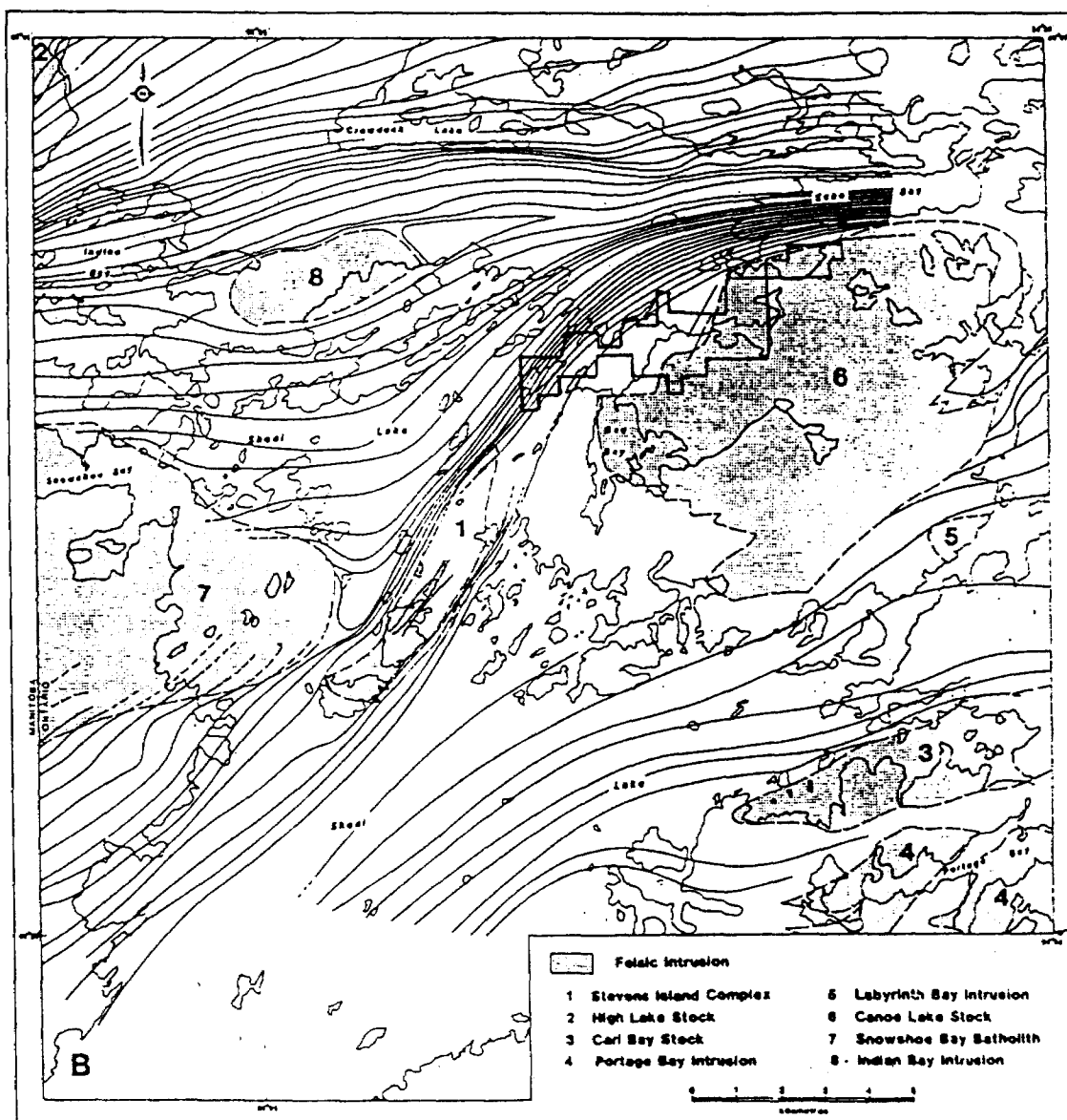
The reason for two differing structural styles of mineralization is a result of the geological setting of the deposit. The DDZ transects a transition zone between more ductile host lithologies of the Cedar Island formation, in the vicinity of the eastern ore zone, while more brittle host lithologies are present at the western ore zone. Immediately west of the deposit, a younger intermediate to felsic volcanic cycle is present. It is also important to note that several east-west faults cross-cut and locally offset the ore zones, (Figure 7).

The ore body has a strike length of 900 meters. East-west faults display dextral movement, and do not contain mineralization. The amount of displacement along these faults is reported to be less than 50 m at the Duport mine (Troop, 1986). The importance of these faults needs to be emphasized, since ore lenses begin and end in the vicinity of these cross-structures.

6.30 PROPERTY STRUCTURAL GEOLOGY

The property occurs at the junction between the principal Crowduck- Witch Bay fault zone, which is predominantly east-west, and the Shoal Lake deformation zone (SLDZ), which trends northeast. The regional schistosity is influenced by these two structures in the vicinity of the Canoe Lake stock. These two major features were affected by late fault and fracture systems which evolved during epizonal emplacement of the Canoe Lake quartz diorite. The fractures are predominantly oriented northeast and northwest, while other major faults are oriented east-west. Tectonic breccias zones are present along some of the east-west faults.

Figure 8 Foliation trajectory diagram of the Shoal Lake-High Lake area (from Smith, 1986a; after methodology of Hugon and Schwerdtner, 1985).



6.3.1 Crowduck-Witch Bay Fault Zone

Figure 8 is a foliation trajectory diagram for the Shoal Lake - High Lake area, with the property outlined. Smith (1986a) noted that the foliation north of the Crowduck lineament is deflected to the west, while that to the south is deflected eastward, indicating dextral movement along the principal fault. Small scale kinematic indicators proved that periods of subvertical displacement accompanied the dextral movement (Smith, 1986). In the vicinity of the junction between the Crowduck - Witch Bay fault zone and the Shoal Lake deformation zone, the two structures merge and no age relationships can be established. Smith and Thomas (1986) concluded that the Crowduck -Witch Bay fault and the Shoal Lake deformation zone are contemporaneous in age.

6.3.2 Shoal Lake Deformation Zone

The Shoal Lake deformation zone can be followed from the Duport deposit to the property, using foliation intensity as a criterion on outcrop exposures on islands in Shoal Lake. The SLDZ created a strong penetrative fabric all along the eastern margin of Burnt Island and Indian Joe peninsula. This structure has a minimum width of 175 m, with 75 m exposed along the eastern margin of Burnt Island, and an additional 100 m identified by drilling. Drill holes SL-90-01 through SL-90-04 (See Map, Back Pocket) intersected tectonized and altered volcanic lithologies and demonstrated that the widest portion of the Shoal Lake deformation zone is situated under water on the property.

Host rock lithologies in the vicinity of Indian Joe peninsula display strong evidence of intense shearing, with numerous transposed dikes indicating sinistral movement. Along the eastern shore of Burnt Island, the sheared rocks exhibit

ductile deformation, while a major tectonic breccia intersected by drill holes east of the island demonstrates that brittle deformation is also present. This is attributed to the lithologies which the SLDZ transects. The tectonic breccia zone is hosted in a more brittle medium grained gabbro, while the more ductile shearing observed along the eastern shore of Burnt Island occurs primarily in mafic to intermediate volcanic flows.

In summary, the Shoal Lake deformation zone does not change its location within the volcanic stratigraphy between the Duport Mine and Clytie Bay. This structure is favourably situated on the property within the upper transition zone of the Cedar Island formation.

6.3.3. Late Stage Faults and Fractures

Three sets of faults and fractures represent late stage tectonic readjustments related to epizonal emplacement of the Canoe Lake stock. These are oriented northeast, northwest and east-west. A major east-west fault displaying dextral movement, with 900 m of lateral displacement, is located immediately south of Burnt Island. It strikes east across the entrance-way channel to Bag Bay. Brittle deformation along this fault zone is defined by brecciation.

Several major northeast and northwest lineaments associated with the Canoe Lake stock are present on the property. All three systems have potential to be gold bearing. The Cedar Island deposit has a strike length of 1500 meters and occupies a southeast fracture oriented at N135°E. Fracture controlled mineralization at the abandoned Mikado mine is oriented northwest at N330°E, with a dip of 60° to 80° to the northeast. Both the Cedar Island and Mikado deposits are located proximal to the Canoe Lake stock in Bag Bay. The Olympia Mine, located south of the Mikado mine, near the northwest shore of Helldiver Bay, was developed along a N100°E fracture over a distance of 220 m. Minor development

work was focussed along the east-west tectonic breccia zones in the vicinity of the entrance-way channel to Bag Bay. However, gold bearing veins reported along this corridor indicate that some of the east-west structures are mineralized.

All three sets of late stage faults and fractures were syn-to-post tectonic with the mineralizing events that emplaced gold bearing quartz veins in the area of interest. More recent work suggests that south-east to east south-east fractures have better potential for tonnage than the other two sets of fractures.

7.00 ECONOMIC GEOLOGY

This chapter briefly describes the size of some of the past and future gold deposits in the immediate vicinity of the property. This is followed by a description of the gold occurrence which are present on the claims, and the results of the winter diamond drilling campaign.

7.10 SIGNIFICANT SHOAL LAKE GOLD DEPOSITS

During the period from 1893 to 1990, four underground exploration campaigns were completed and many surface showings were evaluated. Four significant gold deposits are located within a 6.0 kilometre radius of the property. These include the Mikado, Duport, Cedar Island and Olympia Mines. Statistics for these four deposits are presented in Table 2, while Figure 4 is a map which indicates their locations. Underground operations will proceed at the Duport and Cedar Island mines after full legal and environmental assessment hearings are completed.

TABLE 2 - HISTORY OF SHOAL LAKE GOLD PRODUCTION

DEPOSIT	PERIOD	PRODUCTION	PRESENT DAY RESERVES	STRUCTURAL CONTROLS
MIKADO	1896 - 1902 1910 - 1911 1931	57,813 tons avg. grade: 0.49 oz Au/t	30,977 tons avg. grade: 0.356 oz. Au/t	N330° fractures Qtz veins with polymetallic mineralization proximal to Canoe Lake stock
DUPORT	1897 - 1951	1,287 tons avg grade: 3.84 oz Au/t	2.0 million tons avg. grade 0.35 oz Au/t	Duport Deformation Zone Two mineralized zones trending N35° and N55°E, both dipping 60° to 80° to the west
CEDAR ISLAND	1896 - 1936	17,050 tons avg. grade: 0.29 oz Au/t	1.4 million tons avg. grade 0.25 oz Au/t	N135°E Fracture Qtz vein system, py Proximal to Canoe Lake stock
OLYMPIA MINE	1906 1911 - 1912 1915	1,958 tons avg. grade: 0.17 oz Au/t	Undeveloped	N100° Fracture (No. 1 Vein) Qtz vein system, po, py Other mineralized systems (weakly mineralized) N146° Fracture (No. 2 Vein) N146°E Fault (No. 1 Fault)

7.20 PROPERTY GOLD OCCURRENCES

Two gold showings were sampled during the field mapping campaign. The best showing is present along the eastern shore of Burnt Island, within the domain of the Shoal Lake deformation zone. This occurrence is limited in extent and is exposed only when lake levels drop significantly. A grab sample obtained from this zone returned polymetallic values as follows: 14.95 g Au/t, 139.g Au/t, 2.4% Cu Mineralization consists of chalcocite, chalcopyrite, pyrite and arsenopyrite, in a highly sheared chlorite-rich host rock over a width of 6" and a length of 2 feet. It trends N045°E and dips subvertically.

The second gold occurrence outcrops along the north shore of Canoe Lake. This mineralized zone is present along an east-northeast lineament which transects the Canoe Lake quartz diorite. A value of 4.25 g was obtained from a grab sample containing carbonatized and silicified diorite with 10% coarse crystalline, wine-stained pyrite. Again, the surface exposure is limited in size and can only be observed when lake levels are low. Several abandoned trenches from the late 1800's were located in the vicinity of the showing. Both gold occurrences are presented on the 1:5000 scale base maps.

7.30 SUMMARY OF DIAMOND DRILLING

During the period from January 15 to February 10, 1990, a total of 513.44 m of diamond drilling was completed in four holes. All of the holes were drilled from the ice. A base line oriented at N50°E was established and drill holes were sited relative to this line. Table 3 is a drill hole summary for the program, and the drill logs are presented in Appendix B. All of the holes tested the Shoal Lake deformation zone. The Canoe Lake lineament was not tested. These holes were surveyed by Ross Johnson, from Kenora, Ontario. A control line was established and the shore line of Burnt Island was mapped at a scale of 1:2500 (Appendix C).

TABLE 3 - SUMMARY OF DIAMOND DRILLING - CLYTIE BAY

HOLE	COORD.	EL.	AZ	DIP	DEPTH (m)	DEPTH (ft)	CASING L or R)	START	END
CB-90-01	6+00E -BLO	Shoal Lake Ice Level	N320°E	-45°	138.53	454.50	R (cemented)	Jan. 15/90	Jan. 20/90
CB-90-02	3+58E -0+40S	"	"	-45°	137.77	452.00	R (cemented)	Jan. 21/90	Jan. 24/90
CB-90-03	6+30E -0+19S	"	"	-45°	132.59	435.00	R (cemented)	Feb. 3/90	Feb. 7/90
CB-90-04	5+81E -0+15S	"	"	-55°	104.55	343.21	R (cemented)	Feb. 8/90	Feb. 10/90

7.40 RESULTS OF THE 1990 DIAMOND DRILLING

The preliminary diamond drilling campaign resulted with the discovery of polymetallic mineralization along the favourable SLDZ structure. The drilling revealed two zones of mineralization, and both zones have been drill tested over a strike length of 50 meters. Subeconomic gold, copper and silver values are associated with pyrite, chalcopyrite and arsenopyrite mineralization in both zones.

The first zone occurs within a brittle regime of the Shoal Lake deformation zone. Erratic gold mineralization is hosted in a tectonized, medium grained gabbro. This tectonic breccia is monolithic, with angular, relatively fresh gabbroic fragments in a matrix of quartz which makes up 40%-60% of the rock. The gabbroic fragments are chloritic and non-magnetic. The quartz is white to blue-gray in colour, with local vugs containing crystalline quartz. Pyrite, chalcopyrite and arsenopyrite occur as late-stage blebs and porphyroblasts which filled open spaces. These blebs and crystals range up to 3 cm in size.

Gold mineralization is associated with the sulfides, although the amount of gold is not proportional to the amount of sulfide mineralization. In general, the amount of chalcopyrite mineralization correlates with the amount of gold present. For example, a sample of breccia containing 3000 ppm Cu usually assays around 2.0 g Au/ton. Gold values ranging up to 7.34 g/0.78 m, with 14,000 ppm Cu were obtained. Most of the values range from 1.00 g to 4.00 g gold in the mineralized sections. Silver values are approximately four times higher than the gold values.

A second zone of mineralization occurs in a more ductile regime, situated stratigraphically immediately above the tectonic breccia zone. Disseminated chalcopyrite, pyrite and minor arsenopyrite mineralization occurs in a highly sheared and altered package of pillowed mafic to intermediate volcanic rocks. The volcanic units are highly silicified and locally have the appearance of felsic

TABLE 4 - OBJECTIVES AND RESULTS OF DIAMOND DRILLING (1990)

DIAMOND DRILL HOLE	OBJECTIVES	RESULTS			
CB-90-01	Test Noranda (1988) VLF anomaly off-shore from surface showing on Burnt Island	Tectonic Breccia Gold Values	Au Value g/t	From (m)	To (m)
			1.07g/1.44m	35.05m	36.49m
			2.21g/1.38m	43.00m	44.38m
			3.42g/2.46m	47.22	49.68m
			1.96g/1.37m	57.96m	59.33m
			1.67g/0.68m	61.2m	61.88m
			2.47g/0.98m	64.92m	65.90m
		Copper Zone: 0.35%/Cu/3.05m from 68.97 to 71.02m			
CB-90-02	Step-out 240m to test strongest portion of VLF anomaly.	Narrow copper zone 1.71% Cu/0.40m From 114.80m to 115.20m in quartz vein			
CB-90-03	Step out 30m NE along strike from CB-90-01 to test strike extent of Breccia zone.	Breccia zone absent. Copper Zone: 0.57% Cu/3.12m From 96.25m to 99.37m			
CB-90-04	Step out 20m SW along strike from CP-90-01 to test strike extent of Breccia zone.	Tectonic breccia Gold Values:	Au Value g/t	From (m)	To (m)
			3.13g/1.08m	45.55m	46.63m
			1.69g/4.47m	56.40m	60.87m
			3.36g/1.05m	68.97m	70.02m
		Copper Zone: 0.29%/cu/6.88m 96.67m 103.55m			

dikes, although pillow rims are preserved. The sulfide zone appears to be stratabound, and it was intersected in all three holes over a strike length of 50 m. Chalcopyrite-pyrite mineralization is hosted in a chlorite-altered mafic volcanic unit, with copper values up to 0.57% Cu over 3.12 m. Gold is erratically distributed within this horizon, with up to 2.30 g Au/0.98 m.

It was originally thought that the copper zone intersected in hole CB-90-01 was the down-dip extension of the surface showing. Upon completion of the drill hole survey by Ross Johnson and Associates, the exact location of the hole was plotted relative to the shoreline. It is probable that the drill hole did not intersect the surface showing. The surface showing appears on section to be a third zone of mineralization which remains untested by drilling at the present time. Table 4 is a summary of objectives and results of diamond drilling on the Shoal Lake deformation zone.

8.00 INTERPRETATION OF GEOPHYSICS SURVEYS

This chapter describes the result of twenty-six km of VLF-EM-16 and ground magnetic surveys which were completed for Brex during the fall of 1989. The survey covered a small portion of the property in the vicinity of Canoe Lake. This is followed by a summary description of Bond's aeromagnetic survey (1988), as well as other geophysics surveys completed on the property during the past 25 years.

8.10 SUMMARY OF 1989 SURVEYS

During the fall of 1989, ground magnetic and VLF-EM-16 surveys totalling 26 kilometers were executed by Mr. Fred Greene, of Shoal Lake Band 39, at the request of Exploration Brex Inc. All of the data was plotted on 1:5000 scale maps by Independent Exploration Services Ltd. of Winnipeg, Manitoba.

8.1.1 Total Field Magnetic Survey

The total field magnetic survey was measured at 25 m intervals, using a GEM systems GSM-8, with a CMG-MR20 base station. Data was compiled in "Geosoft" XYZ files and computer-contoured maps were plotted at a scale of 1:5000.

Northeast trending magnetic features outlined the regional trend of the geological units in the area surveyed. Magnetic high values ranged from 60,000 nt to 72,00 nt. These narrow magnetic rich units are up to 100 meters wide. The strongest magnetic high was drilled by Olympia Gold Mines (1968). They intersected subeconomic copper and nickel values associated with pyrrhotite, at the base of pyroxene-rich gabbroic intrusion.

8.1.2 VLF-EM-16 Survey

The VLF-EM-16 survey was completed using a Geonics EM-16 receiver, and Cutler, Maine (NAA, 24.0 khz) as the transmitting station. In phase and quadrature components of the secondary field were measured in percent at 25 meter intervals. Readings were taken normal to the transmitter, in a north facing direction. Information was plotted with the same data processing unit as previously described. The Fraser-filter method was applied to the in-phase data and plotted at a scale of 1:5000.

The VLF-EM-16 survey detected several zones of sulfide mineralization which have a bedrock source. In most cases, the sulfide mineralization was sampled during the mapping campaign and consisted of pyrite and pyrrhotite of volcanogenic origin. The Fraser filter contour map indicated that mineralization trends northeast within the confines of the Cedar Island formation, while east-west to east-southeast trending sulfide mineralization occurs in the younger felsic volcanics, in the vicinity of Clytie Bay landing.

Other major linear VLF-EM-16 quadrature responses delineated east-west oriented topographic features which have a relief exceeding 30 meters. The best example of this type of topographic feature is located along the creek between Canoe Lake and Clytie Bay. Other important ground VLF-EM-16 anomalies which were identified by Noranda (1987, 1988) are discussed in a subsequent section of this report.

8.20 AEROMAGNETIC SURVEY (1988)

Terraquest Ltd., of Toronto, Ontario, carried out an aeromagnetic and VLF electromagnetic survey for Bond Gold Canada Inc. during the fall of 1988. Wing-mounted detectors were placed on a Cessna 182 aircraft and the entire property was flown at a mean terrain clearance of 100m, with a line spacing of 100 m, oriented at N135°E. Semi-controlled air-photo mosaics were used for presentation, and the interpreted data was presented at a scale of 1:10,000 (Barrie, 1988).

8.2.1 Magnetometer Survey

The proton magnetometer used for the aeromagnetic survey was a Gem systems model GSM-9BA, which has an accuracy of 0.5 gammas. The total magnetic relief of the property is 2,150 gammas, and the overall structural pattern of the magnetic units correlates with the mapped lithologies.

Magnetically interpreted faults are oriented northeast, east-west and northwest. The major east-west tectonic breccia zone near the entrance-way channel to Bag Bay is well defined, and the offset of magnetic units indicates dextral movement. The amount of lateral displacement appears to be approximately 900 meters.

Intermediate to felsic metavolcanics correspond with moderately strong to weak magnetic responses. Magnetically active horizons within these units have increased concentrations of magnetite and (or) pyrrhotite (Barrie, 1988). Mafic to ultramafic lithologies have moderate to very strong magnetic responses, within the Cedar Island formation. The Canoe Lake stock correlates with relatively flat and low magnetic responses. Small magnetic anomalies along the margin of the stock may indicate the presence of roof pendants or magnetic dikes.

8.2.2 VLF-EM Survey

A Totem 2A VLF-EM system was also used for the airborne survey. The VLF data was taken simultaneously with the magnetometer readings, with Channel 1 (Line) being NAA Culter (24.0 kHz), and Channel 2 (Ortho) being NSS Annapolis (21.4 kHz). The Terraquest classification of VLF-EM conductor axis was used for plotting the anomalies on the base maps. This method of presentation distinguishes airborne magnetic and electromagnetic features from geophysics anomalies detected with the ground surveys. The Terraquest classification system for the interpreted data is presented on the base maps.

8.30 SUMMARY OF VARIOUS INSTRUMENT SURVEYS

Other ground instrument exploration programs completed on the property include VLF-EM-16 and magnetometer surveys by Noranda (1987, 1988), and a Max-Min survey by Olympia Gold Mines Ltd. (1968). The Noranda surveys covered the entire

TABLE 5 - GEOPHYSICALLY DEFINED DRILL TARGETS

NO. OF PROPOSED HOLE	SURVEY	TARGET	PRIORITY
1	<ul style="list-style-type: none"> - Max - Min anomaly "0" - 1968: Olympia Gold Mines Ltd. 	<ul style="list-style-type: none"> - strong response indicating massive sulfides - base metal target favourably located near contact of gabbro and felsic pyroclastics (possible gold/silver association). 	Very High
2.	<ul style="list-style-type: none"> - Max - Min anomaly - 1968: Olympia Gold Mines Ltd. 	<ul style="list-style-type: none"> - weak to moderate response indicating good - structural lineament within SLDZ immed. adjacent to mainland east of Indian Joe peninsula. Excellent gold target. 	Very High
3.	<ul style="list-style-type: none"> - VLF-EM-16 anomaly "c" - 1988: Noranda 	<ul style="list-style-type: none"> - quadrature response defining major lineament within SLDZ - tectonic breccia zone discovered in 1990 is located along this structure. 	Very High
4.	<ul style="list-style-type: none"> - VLF-EM-16 anomaly - 1987: Noranda 	<ul style="list-style-type: none"> - quadrature response defining ENE lineament in Canoe Lake stock along north shore of Canoe Lake. - associated gold values (4.25g Au/t) 	High
5.	<ul style="list-style-type: none"> - VLF-EM anomaly - 1988 Terraquest airborne survey 	<ul style="list-style-type: none"> - massive sulfides response - situated in cherty tuffs with dacitic and gabbroic units, minor narrow felsics. 	Medium

property, while Olympia's Max-Min surface coverage included the Cedar Island formation and all of Clytie Bay.

Several significant anomalies were identified by these surveys, and they compliment the Terraquest data. All of the surveys were valuable in defining the limits and the trend of the Shoal Lake deformation zone. Since the SLDZ has good potential for hosting an ore body on the property, each of the various anomalies identified on ground within this corridor deserve special attention. All of the anomalies within the corridor are plotted, and the significance and drilling priority rating is presented in a summary table (Table 5). Several of these targets are discussed in further detail in the final chapter of this report.

9.0 CONCLUSIONS, RECOMMENDATIONS AND BUDGET

9.10 GOLD POTENTIAL

The preliminary mapping, geophysics and diamond drilling campaigns have focussed on the economic potential of the Shoal Lake deformation zone. All of the surveys were valuable in outlining structural features which are present within the domain of this regional fault system.

Three separate zones of gold mineralization are known to occur within the SLDZ on the property. The highest assays occur within a brittle-ductile shear zone along the eastern shore of Burnt Island (14.95 g Au, 139.0 g Ag, 2.4% Cu). The other two zones occur off-shore, under Shoal Lake, and these two zones were discovered by diamond drilling.

The drilling campaign intersected widespread anomalous gold, silver and copper values over a true width of 35 meters. This polymetallic, lithogeochemical halo may indicate that an ore zone is near, either along strike or at depth. This zone of mineralization occurs within the brittle regime of the SLDZ, in an area

● anomalous high strain. Anomalous high strain occurs at this location due to the proximity of a major east-west tectonic breccia zone which crosscuts the SLDZ. Brecciation and quartz flooding occurred within a medium-grained gabbro. Sulfide mineralization is erratically distributed, with the highest gold and silver values occurring with chalcopyrite.

The San Antonio mine, located in the Rice Lake belt of central Manitoba, is an Archean gold deposit which is situated in a structural setting remarkably similar to the breccia zone within the SLDZ. This mine produced 1,199,878 ounces of gold from 4,474,921 tons of ore with an average head grade of 0.29 oz Au per ton, (Thorsteinsson, personal communication). This depleted deposit consisted mainly of steeply plunging stockwork breccia zones hosted in gabbro. Poulsen (1989) completed a structural analysis of the deposit and concluded that the breccia zones are located at the intersection of shears oriented parallel to the strike of the intrusive, with a second set of faults that crosscut the gabbro. Anomalous high strain caused brecciation at the intersections of the fault systems.

Several similar sites of anomalous high strain are present along the SLDZ on the property. A second major east-west lineament transects the SLDZ immediately south of Indian Joe peninsula, and geophysics anomalies in the vicinity of this junction suggest that favourable sulfide mineralization may be present. All of these sites are considered to be high priority drilling targets for gold mineralization.

9.20 BASE METAL POTENTIAL

All of the exploration criteria for an Archean massive sulfide deposit are met on the property. A facies analysis of the intermediate to felsic volcanic stratigraphy has indicated that a felsic dome is located immediately northeast of Clytie Bay landing.

The physical characteristics of this dome, which attains a maximum thickness of 900 meters, include an abundance of phreatic breccias, brecciated rhyolitic and dacitic flows, tuff breccias and a swarm of quartz-feldspar porphyry dikes. Most of the dikes appear to be structurally emplaced and these are usually oriented east-west to east-southeast. Since the regional stratigraphy is oriented northeast, these dike swarms demonstrate that good cross-stratigraphic permeability exists within the vent facies on the property. Pyrite mineralization was sampled in the vicinity of one of the feeder dikes. The western strike extent of this feeder dike has been defined for a minimum distance of 500 meters under Shoal Lake, with the use of old geophysical data (Noranda, 1988).

Massive sulfide horizons tend to be localized over the discharge vents of submarine hydrothermal systems which are situated in proximal and vent facies environments (Easton and Johns, 1986). The upper stratigraphic sequence overlying the dike system occurs in the vicinity of Indian Joe Peninsula. Max-min anomalies identified by Olympia Gold Mines Ltd. (1968), as well as other airborne and ground VLF-EM-16 conductors which are located in this favourable environment, are considered to be high priority base metal targets. Polymetallic mineralization is suspected to be present.

9.30 RECOMMENDATIONS AND BUDGET

In order to properly evaluate the known gold occurrences, as well as other favourable gold and base metal targets which exist on the property, a two phase exploration program is recommended for the winter of 1990-1991. The first phase would be completed as follows:

During December of 1990, when good ice conditions prevailed, several small grids would be established on land and ice. Surveyors from Kenora would be

Required to relocate the 1990 drill holes, and they would shoot the new base lines for future reference. This would be followed by a limited amount of Max-Min over known geophysical anomalies in order to accurately locate them. Some preliminary snow plowing and ice thickening might be required, depending on winter conditions at Shoal Lake. Phase 1 would require completion before the end of December, 1990.

The second phase of the exploration campaign would involve a minimum of 10,000 feet of diamond drilling. Sectional and detailed drilling in the vicinity of known gold occurrences would be followed by several reconnaissance exploration holes designed to test the property for its base metal potential.

Phase 1

Line cutting and ice-grid

20 km at \$200.00/km-----\$4,000.00

Surveying of 1990 drill holes and new base lines

1500.00 per day X two days-----\$3,000.00

Max-Min geophysics survey

20 km at 300.00/km-----\$6,000.00

Preliminary ice road and

drill site preparation-----\$2,000.00

Administration, logistics-----\$4,000.00

Total Phase 1 =-----\$19,000.00

Phase 2

Diamond drilling

10,000 ft at 24.00/foot-----\$240,000.00

Assaying 2000 samples X 16.00/sample-----\$32,000.00

Lodgings, transportation, food

2 persons X 50.00/day X 60 days-----\$60,000.00

Report, drafting, typing-----\$8,000.00

Administration, logistics-----\$16,000.00

Total Phase 2-----**\$356,000.00****Total Phase 1 and Phase 2 = \$375,000/00**

The total cost of the exploration campaign for the winter of 1990/1991 would be \$375,000.00

10.0 ACKNOWLEDGMENTS

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APPENDIX A

LIST OF CLAIMS

CLAIM NUMBER	DATE OF RECORDING	DATE OF EXPIRY	CLAIM NUMBER	DATE OF RECORDING	DATE OF EXPIRY
K1085702	May 3/89	May 3/91	K1085700	April 24/89	April 24/91
1085705	May 3/89	May 3/91	1085701	April 24/89	April 24/91
1085708	April 24/89	April 24/91	1085703	April 24/89	April 24/91
1085709	April 24/89	April 24/91	1085704	April 24/89	April 24/91
1085710	May 3/89	May 3/91	1085706	April 24/89	April 24/91
1085712	May 3/89	May 3/91	1085707	May 3/89	May 3/91
1085715	May 3/89	May 3/91	1085711	April 24/89	April 24/91
1085716	May 3/89	May 3/91	1085713	May 3/89	May 3/91
1085717	May 3/89	May 3/91	1085714	May 3/89	May 3/91
1085718	May 3/89	May 3/91	1085720	April 24/89	April 24/91
1085719	May 3/89	May 3/91			
			K1105515	May 3/89	May 3/91
K1085580	April 24/89	April 24/91	1105516	May 3/89	May 3/91
1085581	April 24/89	April 24/91	1105517	May 3/89	May 3/91
1085585	April 24/89	April 24/91			
1085588	April 24/89	April 24/91	K1106381	Oct. 16/89	Oct. 16/91
1085589	April 24/89	April 24/91			
1085590	April 24/89	April 24/91	K1125096	Jan. 25/90	Jan. 25/92
1085591	April 24/89	April 24/91			
1085592	April 24/89	April 24/91	K1058248	Sept. 6/88	Sept. 6/90
1085593	April 24/89	April 24/91	K1058249	Sept. 6/88	Sept. 6/90
1085596	April 24/89	April 24/91	K1058250	Sept. 6/88	Sept. 6/90
1085597	April 24/89	April 24/91	K1058251	Sept. 6/88	Sept. 6/90
1085598	April 24/89	April 24/91			
1085599	April 24/89	April 24/91			

TOTAL = 43 CLAIMS



Ontario



52E10SW8567 2.14243 SHOAL LAKE

900

Ministry of
Northern Development
and Mines

Mining Lands Branch
159 Cedar Street, 4th Floor
Sudbury, Ontario
P3E 6A5

Ministère du
Développement du Nord
et des Mines

Toll Free: 1-800-465-8330
Telephone: (705) 670-7264
Fax: (705) 670-7262

September 16, 1991

Our File: 2.14243
Transaction #: W. 9110. 5000

Mining Recorder
Ministry on Northern Development
and Mines
808 Robertson Street
P. O. Box 5200
Kenora, Ontario
P9N 3X9

Dear Sir/Madam:

SUBJECT: Approval of Assessment Work submitted on Mining
Claims K. 1085700 et al. in the Echo Bay and Shoal
Lake Areas.

The Assessment Work Credits for the Geological Survey
submitted under Section 12 of the Mining Act Regulations have
been approved as of the above date.

Please indicate on your records.

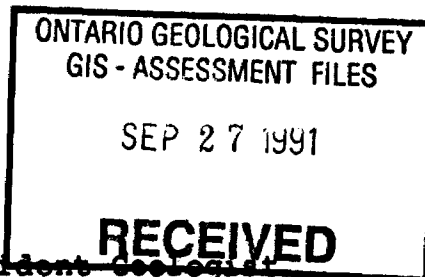
Yours sincerely,

Ron C. Gashinski
Senior Manager, Mining Lands Branch
Mines and Minerals Division

DM/jl
Enclosures:

cc: Exploration Brex Inc.
Val d'Or, Quebec

✓ Assessment Files Office
Toronto, Ontario



Resident Geologist
Kenora, Ontario

AMENDED

5



Ministère du Développement du Nord et des Mines

Rapport sur les travaux exécutés après l'enregistrement d'un claim

N° de transaction

W9110-5000

Loi sur les mines

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et servent à la correspondance. Adresser toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cad...

- Directives : - Dactylographier ou écrire en lettres mouluées. - Se reporter à la Loi sur les mines et aux règlements pour connaître les directives de dépôt des travaux d'évaluation ou consulter le registraire de claims. - Remplir une formule pour chaque groupe de travaux. - Joindre à la présente formule deux exemplaires des rapports techniques et des cartes. - Joindre à la présente formule une esquisse indiquant les claims ayant fait l'objet des travaux.

Titulaire(s) enregistré(s): EXPLORATION BREX INC.
N° de client prospecteur: T-5143
Adresse: 640, suite 101, 3e Avenue Val d'Or, Québec
N° de téléphone: 819-825-9065
Division des mines: KENORA
Canton/secieur: ECHO BAY 6-2616, SHORL LAKE 6-2642
N° de plan M ou G:
Dates d'exécution des travaux: du: 27 août 1989 au: 7 octobre 1989

Travaux exécutés (cocher un seul groupe de travaux)

Table with 2 columns: Groupe de travaux, Genre. Includes 'Levé géotechnique' and 'Levé géologique' with handwritten value '2.14243'. Includes 'RECEIVED JUL 30 1991' and 'MINING LANDS SECTION'.

Total des travaux d'évaluation réclamé sur le relevé des frais ci-annexé OK 17,647.00

Nota : Le ministre peut rejeter une partie ou la totalité des travaux d'évaluation présentés pour obtenir des crédits d'évaluation si le titulaire enregistré ne peut vérifier les dépenses réclamées sur le relevé des frais dans les trente jours suivant une demande de vérification.

Les personnes et la compagnie d'arpentage qui ont exécuté les travaux (donner le nom et l'adresse de l'auteur du rapport)

Table with 2 columns: Nom, Adresse. Includes 'William C. Yeomans' and 'GIMINEX INC.' with their respective addresses.

(Joindre une annexe au besoin)

Certification d'intérêt bénéficiaire * Voir la note n° 1 au verso

Je certifie qu'au moment où les travaux ont été exécutés, les claims dont il est question dans le présent rapport étaient enregistrés au nom de leur titulaire actuel ou détenus à titre bénéficiaire par l'actuel titulaire enregistré. Date: Juin 14/91 Titulaire enregistré ou représentant: P. Valiquette (représ.)

Certification du rapport sur les travaux exécutés

Je certifie que j'ai une connaissance directe des faits exposés dans le présent rapport, pour avoir exécuté les travaux ou en avoir constaté l'exécution avant ou après leur achèvement. Je certifie aussi que le rapport ci-annexé est exact.

Nom et adresse du certifieur: GILLES LAVERDIERE, 122 ALIX VAL-SENNEVILLE JOY 2P0
N° de téléphone: 819-825-9065
Date: 14 Juin 1991
Certifié par (signature): G. Laverdiere

Réservé au ministère

Table with 3 columns: Valeur totale des crédits enregistrés (17,647), Date d'enregistrement (June 24/91), Registraire de claims (Scott Rivett), Date d'approbation prévue (Sept. 22/91), Date d'approbation (Sept 12/91), and a stamp: KENORA JUN 24 1991.

W 9142-5801

Work Report Number for Applying Reserve	Claim Number (see Note 2)	Number of Claim Units
	K1085700	1
	1085701	1
	1085702	1
	1085703	1
	1085704	1
	1085705	1
	1085706	1
	1085707	1
	1085708	1
	1085709	1
	1085710	1
	1085711	1
	1085712	1
	1085713	1
	1085714	1
	1085715	1
	1085716	1
Total Number		

Value of Assessment Work Done on this Claim	Value Applied to this Claim
1,078.43	400 1,078.43
1,078.43	400 1,078.43
NIL	400 NIL
1,078.43	400 1,078.43
1,078.43	400 1,078.43
NIL	400 NIL
1,078.43	400 1,078.43
1,078.43	400 1,078.43
NIL	400 NIL
1,078.43	400 1,078.43
849.66	400 849.66
NIL	400 NIL
NIL	400 NIL
1,078.43	400 1,078.43
NIL	400 NIL
NIL	400 NIL
NIL	400 NIL
NIL	400 NIL
Total Value Work Done	Total Value Work Applied
8398.67	6880

Value Assigned from this Claim	Reserve: Work to be Claimed at a Future Date
678.43	
678.43	
678.43	
678.43	
678.43	
678.43	
316.38	133.28
678.43	
Total Assigned From	Total Reserve
5065.39	133.28

Credits you are claiming in this report may be cut back. In order to minimize the adverse effects of such deletions, please indicate from which claims you wish to prioritize the deletion of credits. Please mark (-) one of the following:

- Credits are to be cut back starting with the claim listed last, working backwards.
- Credits are to be cut back equally over all claims contained in this report of work.
- Credits are to be cut back as prioritized on the attached appendix.

In the event that you have not specified your choice of priority, option one will be implemented.

Note 1: Examples of beneficial interest are unrecorded transfers, option agreements, memorandum of agreements, etc., with respect to the mining claims.

Note 2: If work has been performed on patented or leased land, please complete the following:

I certify that the recorded holder had a beneficial interest in the patented or leased land at the time the work was performed.

Signature _____ Date _____

ECHO BAY and BOYS

95°00'

45°37'30"

LIGHTS
Plan File

64' mean

5' thereof
w/ship.

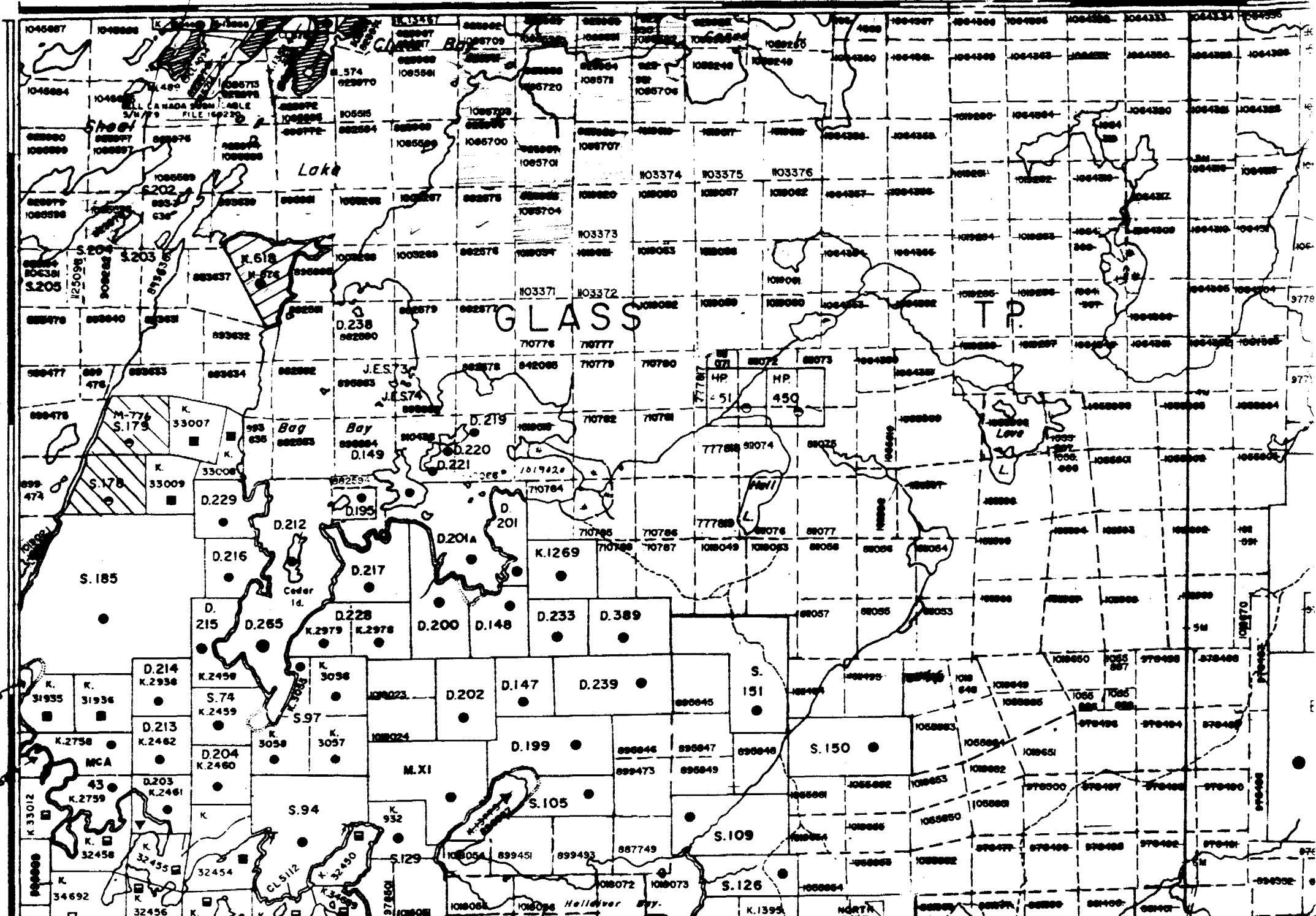
RECEIVED

JUL 23 1991

MINING LANDS

G-2645

G.2642





2.14243

Val d'Or, le 13 septembre 1989

Exploration Brex inc.
640, 3e Avenue, bureau 101
Val d'Or (Québec)
J9P 1S5

34

septembre

FACTURE

-54

Projet: Clytie Bay *Brexi 89*
Période: du 27 août au 9 septembre 1989

Services géologiques:

Géologie:

William C. Yeomans	3 jrs à 350.\$/jr	1,050.00 \$
Kateri Marchand	3.5 jrs à 350.\$/jr	1,225.00
		<u>2,275.00 \$</u>

#227

Supervision:	0.5 jr à 600.\$/jr	300.00 \$
--------------	--------------------	-----------

250

Total des services géologiques 2,575.00 \$

RECEIVED

Véhicules

1 camion	JUL 23 1991	3 jrs à 95.\$/jr	285.00 \$
----------	-------------	------------------	-----------

250

MINING LANDS SECTION

TOTAL DE LA FACTURE

2,860.00 \$

APPROUVE PAR <i>[Signature]</i>	VERIFIE PAR <i>[Signature]</i>	NO. CHEQUE
DATE:	DATE: 14.9.89	DATE: 15.9.89
		NO. TRANSACTION 5

Sept



IMINEX INC.

640, 3^e Avenue, Suite 101, VAL D'OR (Québec), J9P 1S5, Tél.: (519) 825-~~0523~~⁹⁰⁶⁵

Val d'Or, le 27 septembre 1989

Exploration Brex inc.
640, 3e Avenue, bureau 101
Val d'Or (Québec)
J9P 1S5

FACTURE

34 -54

Projet: Clytie Bay *pmx 89*
Période: 10 au 23 septembre 1989

Services géologiques:

Géologie:

William C. Yeomans	7 jrs à 350.\$/jr	2,450.00 \$
Kateri Marchand	7 jrs à 350.\$/jr	2,450.00

4,900.00 \$ 227

Supervision:	1.5 jr à 600.\$/jr	900.00 \$	250
--------------	--------------------	-----------	-----

Total services géologiques: 5,800.00 \$

Véhicule

1 camion	7 jrs à 95.\$/jr	665.00 \$	230
----------	------------------	-----------	-----

TOTAL DE LA FACTURE

6,465.00 \$

APPROUVÉ PAR	VÉRIFIÉ PAR	NO. CHEQUE
<i>[Signature]</i>	<i>[Signature]</i>	
DATE:	DATE:	NO. TRANSACTION
	3-10-89	16
		DATE: 7-10-89

Sept

Val d'Or, le 11 octobre 1989

Exploration Brex inc.
640, 3e Avenue, bureau 101
Val d'Or (Québec)
J9P 1S5

34

FACTURE

Projet: ^{phase 89} Clytie Bay -54
Période: 24 au 30 septembre 1989

Services géologiques:

Géologie:

Kateri Marchand	7 jrs à 350.\$/jr	2,450.00	
William C. Yeomans	7 jrs à 350.\$/jr	2,450.00	
		<hr/>	

4,900.00 *227*

Supervision:	1 jr à 600.\$/jr	600.00	
		<hr/>	

600.00 *250*

Total services géologiques **5,500.00**

Véhicules:

1 camion	7 jrs à 95.\$/jr	665.00	
		<hr/>	

665.00 *230*

TOTAL DE LA FACTURE

6,165.00 \$

APPROUVA PAR <i>[Signature]</i>	ÉCRIS PAR <i>[Signature]</i>	NO. CHECKE
DATE: <i>12-10-89</i>	DATE: <i>12-10-89</i>	DATE
	NID. TRANSACTION <i>27</i>	
	DATE: <i>12-10-89</i>	

27/1

Val d'Or, le 11 octobre 1989

Exploration Brex inc.
640, 3^e Avenue, bureau 101
Val d'Or (Québec)
J9P 1S5

34

FACTURE

Projet: *Prunté 89* Clytie Bay *-54*
Période: 01 au 07 octobre 1989

Services géologiques:

Géologie:

Kateri Marchand	2 jrs à 350.\$/jr	700.00	
William C. Yeomans	2 jrs à 350.\$/jr	700.00	
		<hr/>	

1,400.00 *227*

Supervision:	0.5 jr à 600.\$/jr	300.00	
		<hr/>	

300.00 *250*

Total services géologiques 1,700.00 \$

Véhicules:

1 camion	2 jrs à 95.\$/jr	190.00	
		<hr/>	

190.00 *230*

TOTAL DE LA FACTURE

1,890.00 \$

APPROUVE PAR <i>[Signature]</i>	VERIFIE PAR	NO. CHEQUE
DATE: <i>[Signature]</i>	DATE:	DATE:
	NO. TRANSACTION	
	DATE: <i>13/10/89</i>	DATE: <i>13/10/89</i>

oct

Val d'Or, le 24 novembre 1989

Exploration Brex
640, 3^e avenue
Val d'Or, Québec
J9P 1S5

(34)

CONTRAT DE SERVICE
Mois d'octobre 1989

	-54	-57
	Clytie Bay	Preston
Matériel et dessin	8.00\$	0.00\$
Communications	55.00	80.00
Secrétariat de géologie et informatique	67.00	96.00
Loyer, carothèque et location d'équipement	<u>137.00</u>	<u>198.00</u>
	267.00\$	374.00\$

TOTAL DE LA FACTURE ~~641.00\$~~

Gr- VAA 34-35
oct

REQUIREMENTS OF GEOTECHNICAL SUBMISSIONS FOR ASSESSMENT CREDIT

File No. *2.14243*
Report of Work No.

Type of Survey
Township or Area

Report

1. Typewritten, suitable for reproduction.
2. Table of Contents.
3. Identify mining claims and names and addresses of holders.
4. Location and means of access.
5. Key map showing claims in relation to topographic features, township boundaries, established survey lines.
6. Author's signature and date of completion. *Faxing this*
7. Name of person/s who supervised survey.
8. Dates during which survey work was performed.
9. Summary of exploration and development work performed on claims.
10. All assays and analyses with appropriate certificates.
11. Statement of qualifications.
12. Interpretation of anomalous values and recommendation for further exploration.
14. List of references or bibliography.

Maps

1. Scale between 1:10 and 1:5000 or in the case of a regional survey, between 1:500 and 1:250,000, utilizing a graphic or bar scale.
2. North arrow indicating whether bearing is astronomic or magnetic.
3. Shows lakes, rivers and other notable topographic features including railways, roads, trails, powerlines, and buildings.
4. Shows claim posts and boundary lines, township boundary lines, lot and concession lines, grid lines, traverse lines.
5. Survey stations and markers in relation to topographic features.
6. Claim numbers of all claims covered by the survey.
7. Printed name of author of accompanying report.

REQUIREMENTS OF GEOLOGICAL SURVEY REPORTS AND MAPS

File No. *2. 14243*
Report of Work No.
Township or Area

Reports

1. Contain a table of rock types, lithologies and formations with their descriptions and illustrated on any accompanying maps and illustrations.
2. Describe the regional geology.
3. Give descriptions of significant geological structures.
4. Identify the character, attitudes and dimensions of any veins, mineralization and alteration found during the survey.
5. Identify the sources of geological data contained in the report if obtained from sources other than the survey being reported.

Maps

1. Contain a table of rock types, lithologies and formations, with a descriptive list of the symbols used.
2. Show outcrops designated by a letter or number corresponding to the rock type, lithologies and formations.
3. Show the character of the overburden including boulder, clay, gravel or sand, and the distribution of swamp, muskeg and forest cover areas along all lines traversed, particularly where no outcrop is found and identified.
4. Show all observed and interpreted folds, schistosity, actual and indicated faults, attitudes of flows and stratified rocks, including strikes and dips, and the direction in which they face, locations and attitudes of actual and interpreted contacts and other structural features.
5. Show zones of shearing, alteration or mineralization and veins.
6. Show the location of trenches, test pits, shafts and adits.
7. Show the location, direction and dip of drill holes.

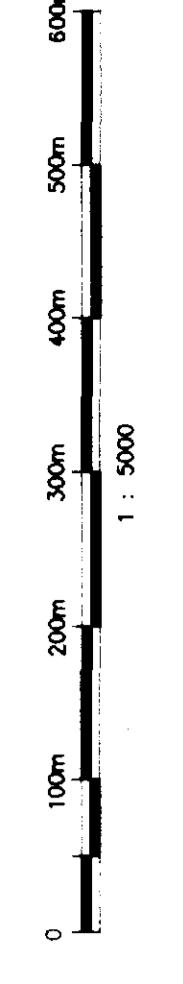
LAKE of THE WOODS

Echo Bay

Cuthbert

Lake

RECEIVED
JUL 23 1991
2.14243 MINING LANDS SECTION



EXPLORATION BREX INC.

GEOLOGY OF
THE CLYTIE BAY PROPERTY

Map 1
Approved by : J. St-Laurent
Date : October 1989



LEGEND

- MARLBOROUGH SUB-PROVINCE
- FP Feldspar Porphyry Dike
 - QFP Quartz Porphyry Dike
- CANOE LAKE GROUP
- 2T Quartz Diorite
 - 2T Silver Fox Island Formation
- CLYTIE BAY GROUP
- V2 Rhyolite
 - V9 Tuff
 - V10 Agglomerate
 - T1, T2 Tuffaceous zones
- BIRSEBONE BAY GROUP
- Basalt
 - Basaltic andesite (intrusive breccia)
- PHANOCRYSTALLINE ROCKS
- V7 Basalt
 - Basaltic andesite (intrusive breccia)
- ALUMINUM ROCKS
- 1D Gneiss
 - 2G Gabbro
 - 3G Granite
 - 4X Pyroxenite
 - 5P Amphibolite
 - 6M Magnetite
 - 7M Magnetite
 - 8M Magnetite
 - 9M Magnetite
 - 10M Magnetite
 - 11M Magnetite
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 - 100M Magnetite
- MISCELLANEOUS
- 2N Chert
 - 2S Siltstone
 - 2M Mudstone
 - 2P Sandstone
 - 2Q Sandstone
 - 2R Sandstone
 - 2T Sandstone
 - 2U Sandstone
 - 2V Sandstone
 - 2W Sandstone
 - 2X Sandstone
 - 2Y Sandstone
 - 2Z Sandstone
 - 2AA Sandstone
 - 2AB Sandstone
 - 2AC Sandstone
 - 2AD Sandstone
 - 2AE Sandstone
 - 2AF Sandstone
 - 2AG Sandstone
 - 2AH Sandstone
 - 2AI Sandstone
 - 2AJ Sandstone
 - 2AK Sandstone
 - 2AL Sandstone
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 - 2AN Sandstone
 - 2AO Sandstone
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