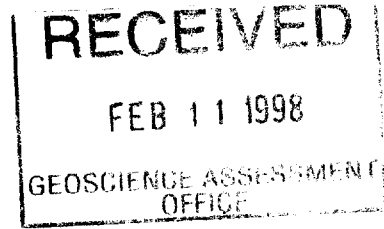




42A05NW2001 2.17924 WHITESIDES

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**LOGISTICAL REPORT**

**MAGNETOMETER SURVEY**

**UNION MINE GRID**

**WHITESIDES TWP, ONTARIO**

**FOR**

**PROSPECTORS ALLIANCE CORPORATION**

**JVX Ltd.**

2.17924

# LOGISTICAL REPORT

## MAGNETOMETER SURVEY

### UNION MINE GRID WHITESIDES TWP., ONTARIO

For:

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JVX Ref: 9810  
February 1998

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Scale 1:5000
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Scale 1:5000
-

## 1. INTRODUCTION

JVX Ltd. prepared this Logistical Report on the Total Field Magnetometer Survey carried out on the Union Mine Grid for Prospectors Alliance Corporation. The Field work was conducted by Hussey Geophysics Ltd. in the spring of 1997. The property is located southwest of Timmins, Ontario (Figure 1) in Whitesides Township (NTS 42 A/5) on the following claims (Figure 2, Grid/Claim Map):

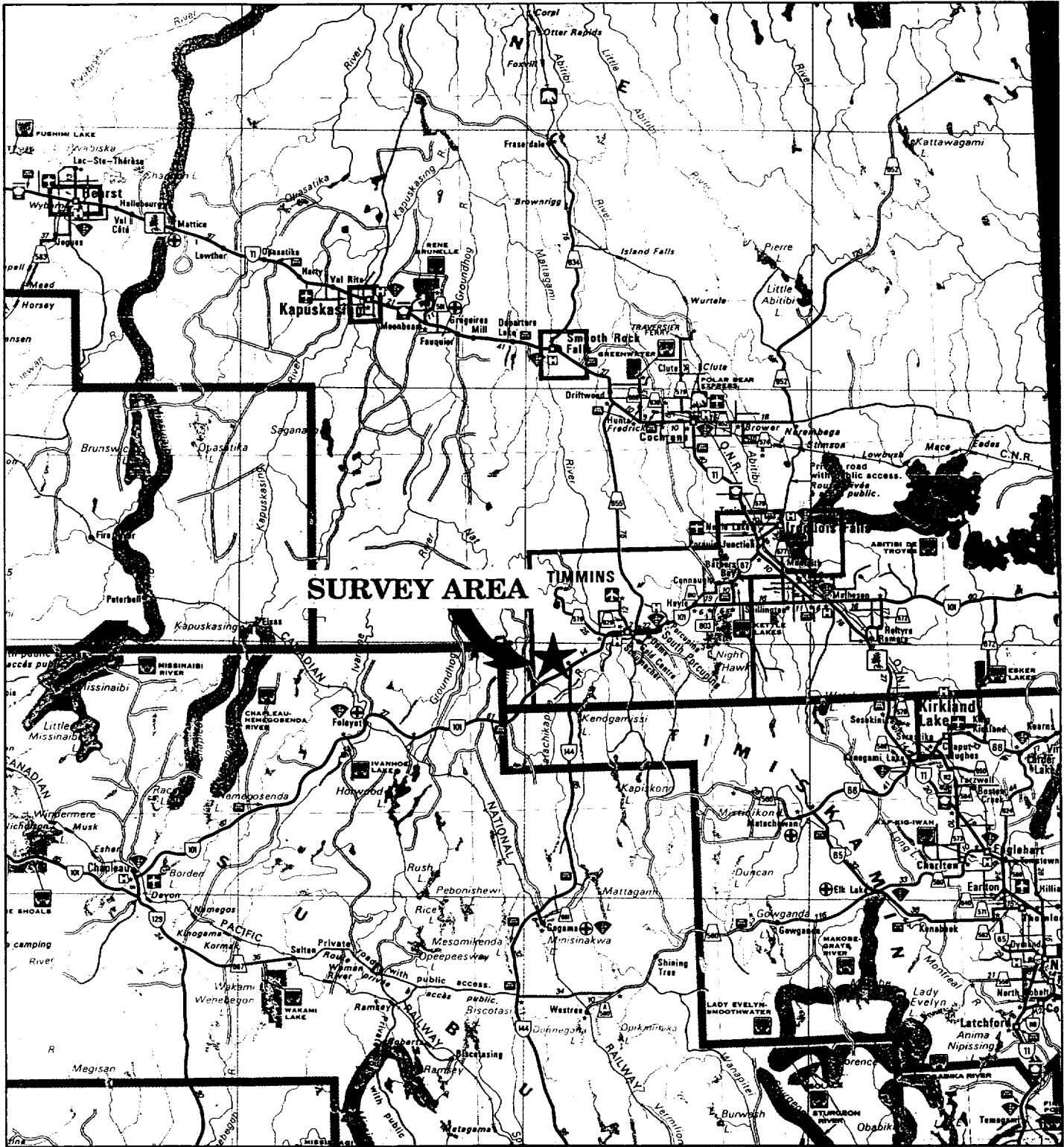
1193774 (4 unit); 1193771 (6 units); 1193772 (4units); 1193773 (6 units)  
1193700 (4 units); 1193769 (4 units)

The grid was accessed by road.

## 2. SURVEY SPECIFICATIONS and PRODUCTION SUMMARY

<b>Total Magnetic Field</b>	
Instrument	GSM-19
Sensor Type	Proton Precession
Station Spacing	10 m
Number of Lines Surveyed	33
Survey Coverage	44600 m

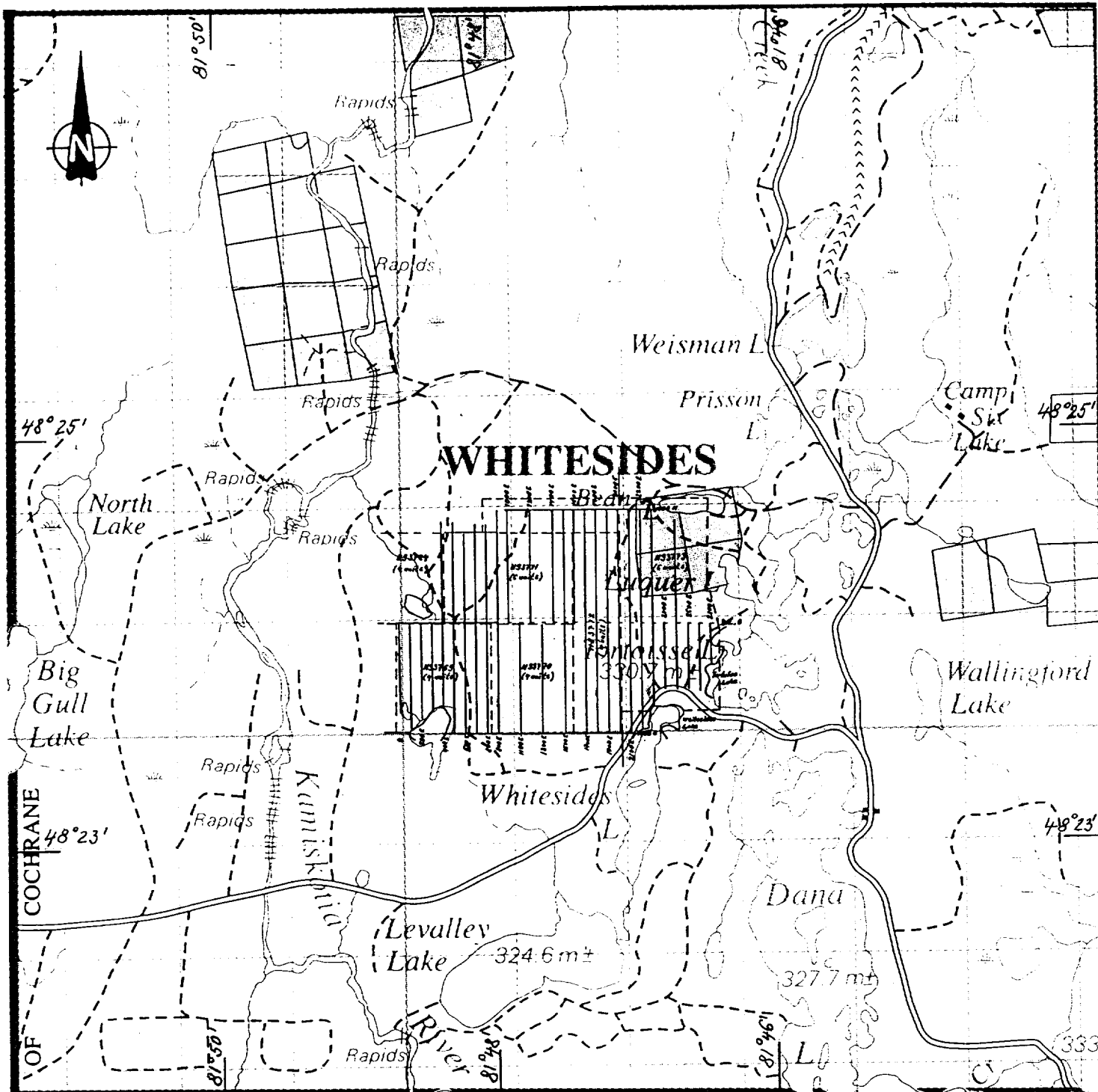
**Table 1: Specifications for the Magnetometer Survey**



**LOCATION MAP**  
**PROSPECTORS ALLIANCE INC.**  
**UNION MINE EXTENSION**  
 Whitesides Twp., Ontario  
 N.T.S. 42 A/5  
**GROUND GEOPHYSICAL SURVEY**  
 Scale : 1 : 1,725,000

Surveyed by Hussey Geophysics Ltd.  
 Data Processing by JVX Ltd.  
 Spring 1997

Figure 1



**GRID / CLAIM MAP**  
**PROSPECTORS ALLIANCE INC.**  
**UNION MINE EXTENSION**  
 Whitesides Twp., Ontario  
 N.T.S. 42 A/5  
**GROUND GEOPHYSICAL SURVEY**  
 Scale : 1 : 50,000

Surveyed by Hussey Geophysics Ltd.  
 Data Processing by JVX Ltd.  
 Spring 1997

Figure 2



<b>Line</b>	<b>From Station</b>	<b>To Station</b>	<b>Distance (m)</b>
0E	810S	0N	810
100E	960S	0N	960
200E	860S	0N	860
300E	780S	0N	780
400E	760S	890N	1650
500E	1000S	890N	1890
600E	1000S	800N	1800
700E	1000S	870N	1870
800E	1000S	870N	1870
900E	1000S	1000N	2000
1000E	0N	1000N	1000
1100E	1000S	0N	1000
1200E	0N	1000N	1000
1300E	1000S	0N	1000
1400E	0N	1010N	1010
1500E	1000S	1010N	2010
1600E	10S	1010N	1020
1700E	1000S	1020N	2020
1800E	1000S	1020N	2020
1900E	1010S	1020N	2030
2000E	1000S	1020N	2020
2100E	1000S	1020N	2020
2200E	960S	1020N	1980
2300E	750S	1020N	1770
2400E	600S	10N	610
2500E	600S	920N	1520
2600E	600S	0N	600
2700E	600S	0N	600
2800E	370S	0N	370
1000S	420E	2140E	1720
0N	0E	900E	900
800N	420E	900E	480
1000N	900E	2310E	1410
<b>Total</b>			<b>44600</b>

**Table 2: Production Summary**

### 3. PERSONNEL

John Hussey

Mr. Hussey carried out the Total Field Magnetometer Survey in the field and was responsible for data quality.

The Logistical report was prepared by JVX Ltd.

Aleksandra Savic (Geophysicist):

Ms. Savic processed and plotted the data, prepared this report and is responsible for data storage.

Dagmar Piska (Draftsperson):

Ms. Piska carried out the drafting on the figures/plates and assembled this report.

Blaine Webster (President, JVX Ltd.):

Mr. Webster provided overall supervision of the report.

### 4. FIELD INSTRUMENTATION

The **GSM-19 Proton Magnetometer System** was used to measure the Total Magnetic Field over the grid. A separate base-station magnetometer was used to correct for both diurnal variations and reference field values.

### 5. DATA PROCESSING

The profiles and contours of the magnetic data were generated in the JVX Ltd. office using the **GEOSOFT Processing** packages. A sample interval of 10 meters was used for posting values with profiles. Base field intensity of 57000 nT was used as a base value and removed before posting the magnetic data.

### 6. SUMMARY

JVX Ltd. prepared a logistical report on the Total Field Magnetic Survey of the Union Mine Grid on behalf of Prospectors Alliance Corporation. For the total grid coverage of 44.6 km, profile and contour maps are presented with claim and topography map overlay in Appendix B. The topography map was prepared by Geomatics International Ltd.

The Total Field Magnetic field shows moderate changes within the range of  $-500$  nT to  $+1500$  nT relative to the base field intensity of  $57000$  nT. Several high, narrow, magnetic zones are outlined on Plate 3. The longest structure is running approximately north south in the east portion of the grid, and is marked as *MH-1*. Two magnetic high zones appear in the northwest part of the grid. In the center of the grid two weak, broad magnetic zones ( $+200$ nT) are located, possibly indicating thickening of overburden in that portion of the grid. In the northeast corner of the grid an eastwest magnetic high zone appears.

If there are questions with regard to this logistical report, please contact the undersigned.

Respectfully submitted,

**JVX Ltd.**



Aleksandra Savic, M.Sc.  
Geophysicist



Blaine Webster, B.Sc.  
President

## **APPENDIX A**



**GSM-19 PROTON MAGNETOMETER/VLF**

*Proton Magnetometer/VLF System*

**Features:**

- Omnidirectional Magnetometer with VLF.
- Remote control for observatory and airborne base station applications.
- Streamlined grid coordinate system with "end of line" quick change capability.
- 128kb basic memory, expandable to 2MB.
- Programmable RS-232 high-speed data transfer to 19.2kb.
- 50 and 60Hz filter, user selectable.
- Automatic tuning and base station synchronization.

**General**

The GSM-19 is a state-of-the-art magnetometer/VLF system that delivers quality data and the extensive capabilities required to perform a broad spectrum of applications. Whether the application calls for detailed ground surveys, or remotely controlled magnetic observatory measurements, you can count on the GSM-19 system to meet your goals.

The proton magnetometer can be equipped with gradiometer or VLF options, and is upgradable to an Overhauser Magnetometer.

**Simultaneous Gradiometer**

Many mining, environmental, and archaeological applications call for high-sensitivity gradiometer surveys. The GSM-19 meets these needs in several ways. For example, simultaneous measurement of the magnetic field at both sensors eliminates diurnal magnetic effects.

**"Walking" Magnetometer/Gradiometer**

The "Walking" option enables acquisition of nearly continuous data on survey lines. Data is recorded at discrete time intervals (up to 2 readings-per-second) as the instrument travels along the line.

**Omnidirectional VLF**

With the omnidirectional VLF option, up to three stations of VLF data can be acquired without orienting. Moreover, the operator can record both magnetic and VLF data with a single stroke on the keypad.

**Remote Control Operation**

When used during observatory, marine, and airborne base station applications, this option allows users to set parameters and initiate measurements from a computer terminal using standard RS-232 commands. A real-time transmission capability is provided to allow data quality monitoring while marine or vehicle borne surveys are in progress.

**Automatic Tuning**

Tuning is automatic in all modes of operation with initial preset. An override option is also provided for manual and remote modes. Tuning steps are 1,000 gammas wide.

**Adaptability to High Gradients**

In standard instruments, a gradient in the magnetic field across the sensor volume can shorten the decay time of the proton precession signal. However, the GSM-19 monitors the signal decay, and calculates the optimal time interval for measurement. Warning messages appear on the display when the measuring interval becomes too short.

**GSM-19**

*Proton Magnetometer/VLF System*

**Specifications**

**Performance**

- Resolution: 0.01nT
- Relative Sensitivity: 0.2nT
- Absolute Accuracy: 1nT
- Range: 20,000 to 120,000nT
- Gradient Tolerance: Over 7,000nT/m
- Operating Temperature: -40°C to +60°C

**Operating Modes**

- Manual: Coordinates, time, date and reading stored automatically at min. 3 second interval.
- Base Station: Time, date and reading stored at 3 to 60 second intervals.
- Mobile: Time, date and reading stored at coordinates of fiducial.
- Remote Control: Optional remote control using RS-232 interface.
- Input/Output: RS-232 or analog (optional) output using 6-pin weatherproof connector.

**Storage Capacity**

- Manual Operation: 8,000 readings standard. 131,000 optional.
- Base Station: 43,000 readings standard, 700,000 optional.
- Gradiometer: 6,800 readings standard, 110,000 optional.

**Dimensions and Weights**

- Dimensions: Console: 223 x 69 x 240mm. Sensor: 170 x 71mm diameter cylinder.
- Weight: Console: 2.1kg. Sensor and Staff Assembly: 2.2kg

**Standard Components**

GSM-19 console, batteries, harness, charger, case, sensor with cable, connector, staff, and instruction manual.

**Ordering Information**

Description	Order Number
GSM-19 Proton Mag	350-170-0039
Gradiometer Option	350-170-0042
VLF Option	350-170-0069
Memory Upgrade, 128kb	350-170-0063
Analog Output	350-170-0040
Remote Option	350-170-0043

## **APPENDIX B**



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SUMMARY

The Union Mine project area was first explored early this century for gold. A shaft was sunk and some lateral work was done on two levels, but no details regarding the operation are presently known, except that the project was abandoned in the early twenties. Later several operators explored a series of geophysical anomalies in the vicinity of the Kamiscotia complex, aimed to locate deposits of copper and nickel.

Prospectors Alliance acquired the claims from L. Bonhomme and the Timmins Syndicate in 1996, and initiated an exploration program during the fall of the same year.

A line grid of approx. 43 km. was cut covering both, the alteration zones of adjacent to the Union Mine and the geophysical anomalies as well. The geological mapping program and the magnetic survey was completed by the end of August, while the Induced Potential survey covering selected prioritized lines was done during August and September of 1996.

Several anomalous conditions were observed and eight of those were selected for follow up diamond drilling, representing a total of 900 metres of proposed drilling, which is expected to be commencing early next year, and was estimated to require \$.85,000 of funding.

INTRODUCTION

Prospectors Alliance Corp. a Toronto based resource company acquired a major package of mining claims at the west side of the Timmins mining camp. The Union Mine project area represents the west side of the claim group. After a review of the information it was suggested that the area shows good potential for enrichment of both precious and base metals and therefore it was decided to conduct an exploration program consisting of geological mapping and sampling, as well as advanced geophysical surveys. A field program was designed and executed during the late part of the summer and fall of 1996 the present report was compiled to present the results of the work, and to recommend a program of diamond drilling for follow up. The line grid was cut by J. Hussey of Timmins who also conducted a magnetic survey. The geological mapping was done by Mr Julius Begauskas of Toronto, with the assistance by the writer of this report, the Spectral IP was completed by JVX of Richmond Hill under the supervision of Mr. B. Webster.

LOCATION AND ACCESS

The project area is located west of Timmins in Whitesides Township in the Porcupine Mining District and Cochrane administrative district, Ontario. Access to the property is, for the most part, very good. A well-maintained gravel surface road, the Dana-Jowsey Lake road, leads northward from Highway 101, some 32 km west of Timmins. A series of cottage roads lead to the south-eastern periphery of the property, while narrower truck trails provide access as close as four hundred metres of the Union Shaft. The line grid is visible on these roads and the markings are expected to remain legible for several years.

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DESCRIPTION OF THE PROJECT AREA

The project covers about 88% of the Pyke Union Mine Property and a minor portion of the Boudreau, Bean Lake Property 5%, as well as approximately 6% of a claim staked for Prospectors Alliance.

The work covers the area of the following claims;

Pyke, Union Mine Property:

- P 1193769
- P 1193770
- P 1193771
- P 1193772

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P 1193773

P 1207588

P 1207589

Boudreau, Bean Lake Property: P 1193491

Prospectors Alliance, Boundary Prop.: P 1201465

## TOPOGRAPHY, VEGETATION AND DRAINAGE

The surface is gently rolling with slight differences in elevations, represented by predominantly glacial features, eskers, boulder trains. Relatively lower elevations (330 m) are found around the perimeter of the slightly elevated project area (350 m). Several ponds of various sizes lakes and swampy areas present some difficulties in access. Vegetation varies from cedar, spruce/peat or alder cover in lower ground; to balsam/birch and to poplar/birch. Locally some, hardwood stands remain.

## PREVIOUS WORK

The Union Property, in the western half of the project area began as a 75-foot prospecting shaft in 1913. In 1920-22 the Union Mining Corporation Limited deepened this shaft to 260 feet; crosscut 230 feet, drifted 100 feet on the 150-foot level; and crosscut 130 feet on the 250-foot level (Sutherland et al., 1921, 1922). Graham (1931) reports that alteration and mineralization of Keewatin basalt was due to the intrusion of a large granite dyke which was encountered at depth in the shaft.

Hollinger Consolidated Gold Mines Ltd. (1951) blasted and sampled old trenches south of Bean Lake located about 1.5 km northeast of the shaft. Low copper (0.5%) and nickel (0.1%) values were obtained. A flat-lying quartz vein west of Luquer Lake did not contain any significant gold values.

Diamond drilling by Hollinger (1955-1956, 10 holes, Scott and Michie) between Bean Lake and Luquer Lake intersected (in various narrow sections) low nickel (0.16%, in gabbro-hosted, blue quartz vein), low copper (0.2%, in gabbro-, gabbro-anorthosite) and low zinc (0.25% in mafic metavolcanic and in massive pyrrhotite) and insignificant gold values (0.01 oz/ton in schistose mafic metavolcanic) in wider (20-60 foot) sections of sulphide stringers, disseminated and semi-massive sulphides. Hole W-6 intersected close to 40 feet of massive pyrrhotite and pyrite in a wider mineralized zone of 84 feet, but available samples indicate maximum values of 0.1% copper and 0.065% nickel. Mapping in the Pirsson, Bean and Luquer Lake area identified sulphide-bearing gabbro in the southern portion of the map area and andesite/rhyolite cut by gabbro west of Pirsson Lake and in the northern portion of the mapped area.

Broulan Reef Mines Limited (1955) conducted a reconnaissance VLF-EM survey in the eastern portion of the project area. One conductor was identified in the vicinity of known mineralization and coincidentally, in the vicinity of a suspected cultural response (lumber camp).

Four holes, south and southwest of Bean Lake collared by Broulan Reef Mines Limited (1956) intersected massive, semi-massive, disseminated and (quartz) vein pyrrhotite-chalcopyrite within diorite (intrusive and dykes) and altered volcanics (andesite; includes xenoliths, inclusions). Where clearly distinguished, veined mineralization or mineralization over narrow widths are found in andesite. Quartz is present in veins or as zones of silicification in both rock types. Cherty quartz is reported. Magnetite was also found in diorite (?) with pyrrhotite and pyrite. Carbonate was present with quartz in some sections. Pyrite is notably associated with quartz veining, silicification or quartz-carbonate veining. Assays are not reported.



Rowan Consolidated Mines (1964) drilled 13 holes (total 4700 feet) in the area of Bean Lake and intersected chalcopyrite and nickel-bearing pyrrhotite mineralization with values of up to 0.1% copper and 0.07% nickel over (different) intervals of five feet. Garnet and magnetite were notable accessories.

Lucky Strike Explorations Limited (1964) conducted magnetometer and broadside vertical loop-EM surveys east of Bean Lake and located one strong (and magnetic) conductor on strike from Rowan Consolidated's mineralized zone to the west. A gabbroic-dyke with coarse hornblende crystals and sulphides was correlated with the response.

Nickel Rim Mines Limited (1964) ran magnetic and VLF-EM surveys over claim 1193770, but did not identify anomalies for either survey.

Claw Lake Molybdenum Mines (1968) conducted an IP survey on north-south lines in Bean Lake area and identified a 1600 foot anomalous zone. One hole was drilled into the anomaly, but a report was not filed.

Geoex (1978) conducted MAXMIN II horizontal loop-EM, vertical loop-EM and geological surveys on a single claim north of Bean Lake.

Peter T. George (1978) mapped the Smith-Morrison Property in the vicinity of Bean Lake. Three mafic volcanic units were identified- flows, tuffs and one outcrop of breccia. Iron formation was found, a poorly developed combination of banded chert, pyrite, pyrrhotite and magnetite in mafic volcanic tuff. Gabbro contains up to 50% pyrrhotite with small amounts of chalcopyrite. This unit is interpreted as a conformable (east-west) sill in some portions of the property, but likely drag-folded in other parts since a north-south volcanic-intrusive contact was found and evidence of fault-related deformation was not. Mineralization was notably associated with iron formation in the volcanic rocks and within gabbro elsewhere. Grab samples from six trenches in the Bean Lake area reported 0.1% Cu and 0.18% Ni in rock containing 50% pyrrhotite and 0.65% Cu and 0.25% Ni in gabbro with disseminated pyrrhotite and chalcopyrite. George concludes that the sulphides segregated during crystallization of the gabbroic magma. Magnetic and EM surveys over Bean Lake recorded anomalous zones (two magnetic diabase responses and one EM conductive-sulphide zone, respectively).

Teck Explorations (1979) ran vertical loop, shootback, pulse-EM and magnetometer surveys in the vicinity of Bean Lake. In 1981 Teck conducted VLF-EM, magnetometer and geological checks again in the Bean Lake area. A magnetic conductive horizon coincided with a mafic intrusive-mafic volcanic contact with sulphide mineralization- but with low copper and nickel values. Samples from old trenches and newly stripped zones in the vicinity of the Claw Lake IP anomaly returned a maximum of 0.15% Ni and 0.15% Cu. Gold potential was likewise tested by Teck- but sampling of the Union Shaft zone only reported a maximum of 50 ppb gold.

Trenching work (1980) by W.F. Morrison is reported southeast of Bean Lake, although sampling and assaying is not on file.

Mechanical stripping (1980) by A. Janiuk was performed within current claims 1193769 and 1193771, but no assays are reported.

Overburden drilling (17 holes, 1985) is reported by Robert G. Smith in the Bean Lake, Luquer Lake area. No logs or analyses are filed.

Airborne magnetic and EM surveys by the Ontario Geological Survey (1988) over Whitesides Township identified an EM conductor(s) largely in the northern portion of the project area.

Timmins Nickel Inc. (1989) completed VLF-EM and magnetic surveys on a single claim covering the eastern shore of Bean Lake. A magnetic low-magnetic high feature was indicated in the vicinity of one

1193774

relatively strong VLF-EM conductor. A follow-up, multi-frequency, horizontal loop (MAX-MIN) and total field magnetic survey was recommended to expand coverage.

Norwin Geological Ltd./ Glen J. Prior (1988) grab sampled the Union Shaft Zone. The program obtained five assays with 1000 ppb or higher gold content which included values of 3.8 ppm (from the mine dump) and 3.9 ppm gold (some 60 metres to the east of the rock dump).

Pyke and Cunnison (1995) stripped the Union Shaft zone, mapped and sampled the zone in detail and mapped the vicinity at a scale of 1:5000. Assays from a central quartz-tourmaline vein system at the Shaft Zone returned 1.1 to 2 grams of gold per tonne in grab samples. Two other easterly-trending vein systems reported a maximum of only 170 ppb gold.

## REGIONAL GEOLOGY

In the Timmins area, Archean metavolcanics and felsic to intermediate intrusives dominate the early lithology (Pyke, 1982). Metavolcanics are divided into the Deloro and Tisdale Groups- which are structurally separated by the regionally significant Porcupine Distor Fault. The Deloro group mainly consists of lower andesitic and basaltic flows; of dacitic flows; of dacitic and rhyolitic pyroclastic rocks; and iron formation near the top of the Group. The basal portion of the Tisdale Group is dominated by ultramafic volcanic rocks and basaltic komatiites. Tholeiitic basalts and calc-alkaline (dacite) volcanics complete the volcanic supracrustal sequence.

Metasedimentary wackes, siltstones and minor conglomerates form a turbidite sequence- the Porcupine Group- which is contemporaneous with the Tisdale Group and the upper part of the Deloro Group.

Archean intrusive rocks include porphyritic monzonite, porphyritic granodiorite, diorite (hornblende- and quartz-diorites); trondhjemite; small stocks and dykes of felsic composition, and quartz-feldspar porphyry dykes. Quartz-feldspar porphyry dykes are notably associated by some (eg. Karvinen, 1977) to carbonatization and gold mineralization. Archean volcanics and sediments are regionally metamorphosed to the lower or middle greenschist facies. Smaller sill-like bodies of dunite and lherzolite are nearly exclusively found within the Deloro Group. Some of these may show some differentiation to gabbro and pyroxenite near the sill roof. Gabbro, quartz gabbro and pegmatoidal gabbro may also be found in the Timmins area. Northeast-trending diabase dykes, quartz diabase and olivine diabase dykes span the ages from Early to Late Precambrian.

Overlying the Archean rocks are minor Middle Precambrian rocks of the Gowganda Formation, Cobalt Group, Huronian Supergroup (arkose, wacke, argillite, and conglomerate).

The west Timmins area includes much of the volcano-sedimentary belt extending west from the main Timmins gold camp into Bristol, Carscallen, Whitesides, Denton Townships- and parts of Keefer and Thorneloe Townships (Pyke, in prep.)

In the Kamiskotia-Whitesides area the large Kamiskotia mafic complex intrudes older, tightly folded, Archean mafic to felsic flows, agglomerates, tuffs and welded tuffs (Wolfe, 1971). These are most generally of greenschist-facies metamorphism. Contacts are generally obscured by hybrid gabbro-norite and granitic intrusions (quartz porphyry, trondhjemites, quartz monzonites in the Kamiskotia River area). Wolfe distinguished the hybrid rock as a separate unit of uncertain origin (Unit 3), while Leahy (1968) compiled and distinguished a diorite intrusive unit in the Bean Lake area- a probable contact zone hybrid (?).

Mafic intrusive rock includes norite, clinopyroxene norite, anorthositic norite, leucocratic gabbro, orthopyroxene gabbro, hornblende gabbro, hornblendite and minor serpentized peridotite. Irregular

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pegmatitic segregations of hornblende-plagioclase-magnetite (/pyrrhotite) appear to correlate with some airborne magnetic anomalies. Otherwise, magnetic intensity may be affected by secondary alteration and metasomatism to a point which may make contacts with metavolcanics and granitic rock difficult to discern. Large parts of the mafic intrusion are regionally metamorphosed to greenschist facies assemblages of albite-epidote-actinolite-chlorite; metasomatized to epidote-tremolite-calcite-quartz, epidote-chlorite-quartz assemblages; or serpentinized- dependent on original composition and on later alteration/metasomatic episodes.

All lithologies are cut by northerly-trending, medium-grained, equigranular-to-porphyrific diabase dykes.

## SUMMARY TABLE OF FORMATIONS

### PLEISTOCENE AND RECENT

Clay, sand, gravel, till

### PRECAMBRIAN

#### MIDDLE PRECAMBRIAN

##### MAFIC INTRUSIVE ROCKS

Diabase

----intrusive contact----

#### EARLY PRECAMBRIAN (ARCHEAN)

##### MAFIC INTRUSIVE ROCKS

----intrusive contact----

##### FELSIC INTRUSIVE ROCKS

----intrusive contact----

##### METAMORPHOSED MAFIC INTRUSIVE ROCKS

----intrusive and gradational contact----

##### METAMORPHOSED ULTRAMAFIC INTRUSIVE ROCKS

----intrusive contact----

#### METAVOLCANICS AND METASEDIMENTS

##### METASEDIMENTS

##### FELSIC METAVOLCANICS (CALC-ALKALIC)

##### INTERMEDIATE METAVOLCANICS (CALC-ALKALIC)

##### MAFIC METAVOLCANICS (THOLEIITIC)

## IRON FORMATION

### ECONOMIC GEOLOGY

The Timmins Gold Mining Camp represents the major gold mining area of the Canadian Shield, where gold was first discovered near the beginning of our century, where mines begun producing gold in the second decade of the twentieth century and continued to do so, right to the present days.

The last gold rush is still in full swing, with at least one of the many active prospects indicating a good chance for an other producer to be developed and gold production to continue into the twenty-first century.

Gold and base metals were discovered in the Timmins Camp in a variety of geological settings and conditions. A summary of the ore making geological controls are presented to the reader in a summary form.

Pyke (1982) has summarized regional economic geology for the Timmins area as follows:

1. Copper-zinc deposits- within felsic calc-alkalic volcanic rocks in the iron-rich tholeiitic sequence (at the upper interface or just below the top of the Lower Supergroup) eg. Kamiskotia, Kidd Creek deposits (iron formation appears to occupy the same stratigraphic position as Cu-Zn deposits north of the Porcupine-Destor Fault).
2. Nickel deposits- in peridotitic komatiites (base of the Upper Supergroup, Tisdale Group) eg. the former Langmuir Deposit in Langmuir Township.
3. Asbestos deposits- within ultramafic intrusions (within komatiitic rocks at the base of the Lower Group eg. the former Bowman Deposit in Deloro Township; magnesite and talc-magnesite deposits- in carbonatized dunitic intrusions (not flows) eg. the Canadian Magnesite property in Deloro Township.
4. Gold deposits- generally within 6 km of the Porcupine-Destor fault zone (in the base of the Upper Supergroup, Tisdale Group) or other major shear zones; possibly at the contact between the largely calc, calc-alkalic, iron-formation-bearing, Lower Supergroup and the komatiitic, iron-tholeiitic, calc-alkalic succession of the Upper Supergroup; in association with quartz-feldspar porphyry; in extensively altered (carbonatized, sericitized) host rock.

A summary of the characteristics of Porcupine camp gold deposits is provided by A. Fyon in the Field Trip Guidebook, 8th IAGOD Symposium. The major features listed include

- 1) a spatial relationship with crudely linear corridors (breaks) of ductile to brittle-ductile shearing and associated brittle-ductile "splays"- the latter generally recognized as more productive. An asymmetric distribution of deposits (locally either north or south of such structures, but not both) is noted, but not fully understood as yet. Within these zones a complex or progressional deformation/alteration pattern is believed to be favourable- including a recognizable succession of quartz veining and even late shearing in felsic intrusives.
- 2) a spatial relationship with late, felsic intrusives (porphyries)
- 3) carbonate alteration (high CO<sub>2</sub> density 0.7-1.0 g/cm<sup>3</sup>); alkali alteration; sulphide mineralization associated with deformation; salinity < 6 wt% NaCl equivalent in trapped fluids
- 4) fracture controlled chlorite and sericite alteration- in either sheared or unsheared rock

A.J. Macdonald (1984) examined the special role of banded iron formations (BIF) in the localization of gold concentrations in Ontario generally. He concludes that gold deposits hosted by BIF show a marked association with localized zones of deformation and hydrothermal alteration.

In 1996, much attention has been given by media to gold developments in Thornloe Township to the east. In winter/spring drilling Band-Ore identified higher-grade mineralization in pyritic-arsenopyritic, quartz-sericite schists and ankeritic alteration zones. Early drilling indicated a 6.5 metre intersection of greater than 4 g/t gold and another 18.3 metre intersection of 8.7 g/t. Further drilling 1.2 km west of the discovery zone (Golden River Zone) cut 3 metres with a grade of 8.2 g/t gold. The company was anticipating results from another hole with similar alteration and sulphide mineralization 1.2 km east of the discovery hole. Another zone was reported 1.2 km northwest of the early discovery. Grades from fill-in holes in the discovery zone area have been reported range of 3-12 g/t gold generally over intervals less than 6 m. More exceptional values and intervals have been cut. (Northern Miner- NM- May 6, 1996, p 14; June 10, 1996, p 1,14; June 17, 1996, p 1,2; Sept. 2, 1996, p1, 15).

Olivine-bearing cumulates appear to be of particular significance in Proterozoic rocks at Voisey's Bay, Labrador and in the Abitibi Belt, at the Langmuir deposit. Some deposits are situated in or near major structural sutures, for example, at geological province boundaries. Smaller-scale transgressive structures (eg. dykes, offsets, faults) can be associated with mineralization. More silicic rocks (eg. gneisses, granitoids, sediments) may be found at the margins of some mineralized intrusives, or as inclusions- in some cases even enriching the intrusive phases with quartz/silica. The Langmuir and related deposits are located at the base of the Tisdale Group- the footwall Deloro group notably consists of felsic pyroclastics, (sulphide) iron formation among other rock types. Ordinarily principal cumulate phases lack hydrous or accessory carbonate mineralogy- although some exceptions exist in portions of some mineralized intrusions.

Volcanic-associated massive sulphide deposits (VMS, Cu-Zn, Zn-Cu) are part of a larger group of concordant, massive or semi-massive sulphides (60% or more sulphides, ideally) with a lower discordant or stringer zone of vein sulphide minerals surrounded by hydrothermally-altered rock. The upper contact of upper sulphide lens usually has a distinct contact with the hanging wall, while the lower contact may be gradational into a stringer zone (Noranda-, Cu-Zn type) or indistinct (with no distinct lower stringer zone as in the case of Zn-Cu/Mattabi-type or Cu-Zn Kidd Creek deposits). In the Superior Province VMS deposits usually occur in bimodal (mafic-felsic) metavolcanic sequences- most particularly in the middle and upper stratigraphic, subaqueous units. Rhyolites have also been associated with such deposits, but as for the above criteria, the associations are not exclusive. Likewise the presence of subvolcanic intrusions of various compositions (eg. trondhjemite, gabbro) is notable but not exclusive.

Locally, the former Kam-Kotia, VMS deposit in Robb Township consists of massive and stringer zones of pyrite, sphalerite, chalcopyrite and minor pyrrhotite in a sheared basalt-andesite (flows, pyroclastics) and felsic pyroclastic sequence. Near the ore zone, chlorite is the dominant alteration indicator in mafic rocks while sericite replaces felsic rocks. Schistosity and stratigraphy coincide with the strike of mineralization, but the orebodies plunge westward.

## DESCRIPTION OF THE WORK PERFORMED

### LINE CUTTING

A line grid was cut beginning late in July and completed by the end of August over selected claims by Mr. John Hussey of Timmins who was also doing the magnetic survey on the project area. The base line was started about 500 m North and 300m west of the old Union Mine site. It is bearing East and extends over a distance of 2800m to the East. Cross lines were initially turned at 100 m centers with the exception of the area between 10+00E and 17+00 east where South of the base line were cut at 200m separation. The cross lines were chained and picketed at 25m stations.

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The work distribution on individual claims is as follows.

Pyke, Union Mine Property:	P 1193769	6,750m
	P 1193770	4,700m
	P 1193771	8,375m
	P 1193772	6,875m
	P 1193773	4,025m
	P 1207588	2,190m
	P 1207589	840m
Boudreau, Bean Lake Property:	P 1193491	2,000m
Prospectors Alliance, Boundary Prop.:	P 1201465	2,575m
Representing a total of		42,905m, or 43 km.

#### GENERAL REMARKS

The geological and magnetic surveys covered the entire grid area, while for the Induced Potential survey covered only selected lines. The choosing of lines was based on geological stipulations, previous geophysical information, such as the airborne geophysical survey, flown in the behalf of the Provincial Government in 1988, and specific interests, such as the area of the Union Mine. The outcrop of rocks was generally poor, with most outcrops concentrated on the north side of the grid. The south side was extremely poor with the exception of the immediate vicinity of the old mine. The south central part has also displayed featureless magnetics as well as poor IP. results.

#### GEOLOGICAL SURVEY

The Pyke (Union Shaft) project area is geologically complex- a feature generally true of the Kamiskotia-Whitesides area. The oldest rocks- massive mafic metavolcanics, lesser pillowed flows and tuffs- dominate the eastern and western portions of the project area. Generally chloritic (greenschists) and lightly foliated, these rocks may also become albitized in the vicinity of sodic intrusions (with albite crystals to 1 cm or more, with albite veinlets) or amphibolitized (with distinctive sheen on the fresh surface) in the vicinity of gabbroic intrusions. In some, cases both amphibolitization and sodic alteration is present. In zones of alteration, these varieties are replaced by sericitized or carbonatized, bleached-appearing rock. This is generally accompanied by the presence of quartz or carbonate veins with other accessories.

In mafic metavolcanics of the eastern part of the project area, the presence of iron formation is indicated by limited outcrop exposures and by distinctive horizons of relatively higher and lower magnetic intensity. These units are generally cherty (lean or less than 20% magnetite) with more sulphide content (pyrrhotite or pyrite) than magnetite. In one case sulphide is enriched to 60% over a narrow width in an otherwise chloritic matrix.

Gabbro- part of the Kamiskotia mafic complex is best exposed in the northwestern part of the property, but evidence of a wider sub-surface distribution can be found (eg. amphibolitized mafic metavolcanics). This unit usually medium to coarse-grained and equigranular, but locally can be pegmatoidal (eg. actinolite with 10 cm long axis). Where gabbro is medium and coarse-grained, 0.5 m scale layering can be distinguished. Where it is coarse to pegmatoidal, layering is difficult to distinguish at the scale of an individual outcrop. Alteration of mafic minerals to actinolite (/chlorite) is typical, while feldspars are probably variously altered to the albite-oligoclase range of plagioclase. Contact of gabbro with metavolcanic rock is obscure- as is the case generally in the Kamiskotia-Whitesides area, but amphibolitized xenoliths of the latter have been observed in gabbro. Within the project area, diorite or diorite-gabbro hybrid rock is found in such contact zones. More obscure is the presence of suspected ultramafic intrusive in the western part of the project

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area. Only indirect evidence exists for altered (serpentine-tremolite-actinolite/albite) leucocratic gabbro and troctolite units, but serpentinized peridotites are reported in the northeast corner of Whitesides Township.

Although it is not widely exposed diorite, its altered equivalent, hybrids and indications of sodic metasomatism have been a strong influence in the west to central portion of the project area. Outcrop is largely confined to gabbro-metavolcanic contact around the baseline, from L2E to L6E and south of tie-line 8N from L7E to L9E. Broader and indirect evidence suggests that the area from L6E to L17E may be underlain by such a diorite-hybrid contact zone- perhaps in a sill-like fashion. Hybrid zones are highly variable- a feature that distinguishes them from the more readily characterized gabbro and mafic metavolcanic units. Gabbroic-dioritic hybrid zones are variously suggested by xenoliths of gabbro and segregations of actinolite (and locally, magnetite), while metavolcanic-dioritic hybrid zones are indicated by xenoliths of volcanics, diorite dykes/veins, or chloritic segregations with or without albite porphyroblasts. Chloritic partings and actinolitic/chloritic segregations might be observed in gabbroic-volcanic-diorite hybrid zones since shearing is likely at an intrusive/volcanic contact, the presence of carbonate in such zones is notable. Where it is less altered, diorite has a salt and pepper appearance, with some replacement of amphibole by chlorite and with sausseritization of the plagioclase (60%) component.

Felsic phases of intrusion are variously indicated. Felsite with chloritic partings and limonitic staining and minor quartz veining was observed at L9E and 6+10N. Although the outcrop is next to a narrow diabase dyke, the features observed in the felsite are more likely indicative of an early felsic intrusive phase- the broadest indications of which are the developments of greenschist facies, quartz-veining and carbonate alteration in volcanics. The chloritization of the felsite itself, is most likely related to the succeeding gabbro intrusion. Quartz veins with chlorite veins or with fuchsite partings are suggestive of this possibility. Evidence exists for later felsic intrusives. The chloritization and sausseritization of diorite and its hybrids; is the broadest indication of this, while non-chloritized, felsic veins and dykes locally might be (equivocally) related. Granitic float (non-chloritized) was observed on the property. The table of formations aggregates these felsic intrusive units because of the limited amount of direct evidence.

Most of these rocks are observed to be or are likely cut by late, northerly-trending diabase dykes (Paleo-Proterozoic, Matachewan and Hearst swarms, Map 2543, OGS 1991). Linear magnetic highs provide indications of this where outcrop is not present. Characteristically, this rock has a moderate degree of attraction to a pocket magnet as well. Diabasic texture is locally modified by better developed phenocrysts of plagioclase (perhaps where these dykes cut more sodically altered or dioritic hosts).

Two anomalous but low-grade mineralization types appear in the project area-shear-quartz vein-hosted gold and diorite/hybrid hosted copper and nickel-bearing sulphides.

1. Shear, quartz-vein-hosted gold provided the early impetus for exploration in the area of the property. The Union Shaft Zone features carbonatized-chloritic/sericitic, easterly-westerly-trending shear zone (20-25 m wide) largely in a mafic tuff unit. A series of three quartz-carbonate-tourmaline veins follow the local foliation with a steep southward dip and host gold concentrations.

Prospectors Alliance Corp. initiated a detailed sampling program over an area stripped by the vendor few years earlier. To obtain continuous samples with sufficient volume blasting was used to provide fragmentation. A total of 66 continuous samples were collected and assayed. One chip sample of the present program reported nearly 1 g/t Au over 0.5 m (Sample 6459 from). Other values were lower (nil to 190 ppb). All the results are appended to this report. The sampling did not explain the interest in the property by the early explorers, neither the reported higher values found in the material of a smaller dump near the shaft.

East of the stripped, Union Shaft zone, sample 6478 reported 0.7 g/t over 0.5 m in white to smoky quartz with 5% chloritic partings and <1% fine pyrite.

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While foliations at the Shaft Zone are found at N80E, other indications away from the most intense deformation (and some nearby) suggest that broader deformation may be WNW. Sheared, quartz-calcite veined, pillowed volcanics in the vicinity of L1E, 2+00S have vein orientations toward the Union Shaft zone or have WNW shearing. Pyke and Cunnison (1995) have described the geology of the Union Shaft Zone in detail and the reader is referred directly to the report.

Two unusual features of the Shaft Zone were the presence of feldspar aggregates (glomerophytic or "golf ball" rock, Pyke and Cunnison) in a unit which becomes a crenulated schist and the presence of fuchsite (chrome-bearing mica). Evidence of possibly-related sodic alteration (unusually large, 1.5 cm albite crystals in float, near altered diorite float) was found to the WNW at L2E between 2+00S and 3+00S. Feldspar aggregation is also pronounced in an outcrop at 4+00S between L5E and L6E. With respect to chromian phyllosilicates, the presence of gabbroic drift some 200 m due west is also notable. The presence of granitic (dyke) rock at depth in the shaft; of quartz-feldspar porphyry and sericitic alteration together with these other features suggest that the deformation/alteration/mineralization history of the Union Shaft Zone is a prolonged and episodic one.

A variant of hydrothermally-altered mineralization- BIF-hosted gold- does not appear to be indicated from assays, only low gold values were reported.

## 2. Diorite-hybrid-hosted, Copper and Nickel Sulphides

The vicinity between L7+00E - L9+00E and 5+00N - 7+00N is notable for assays with low, but anomalous amounts of copper and nickel. Copper and nickel (maxima of 448 ppm and 108 ppm, respectively) were detected in a broader, gabbro-metavolcanic-diorite hybrid zone (including granular quartz, magnetite segregations; chloritized variants). Distinctively blue-tinged quartz can be found in concentrations up to 10%. Sulphides (mainly pyrrhotite, lesser pyrite and still lesser chalcopyrite) can locally be concentrated to the same amount in bands sometimes within granulated quartz, but more typically the amount is 2% or less- associated with quartz eyes. Given the amounts of quartz (including granular segregations), magnetite and sulphide- it is possible that a third lithological unit, iron formation, may have been part of this western hybrid zone. In this respect, it is significant that anomalous amounts of copper and nickel (up to 804 ppm and 1600 ppm respectively) are found in association with cherty to sulphidic (lean) iron formations to the east.

## GEOPHYSICAL SURVEYS

### INDUCED POTENTIAL (Spectral)

For a detailed account and interpretation the reader is referred to the geophysical report on the season's work. Over 20km of line were read between September and October. The work was performed by JVX Ltd 60 West Wilmot Street Richmond Hill ON, under the guidance of Mr. B. Webster.

The survey covered the following areas.

	From	to		total length	
3+00E	7+25S	7+25S	0+25S	700m	
4+00E	7+25S	7+25S	7+25N	1450m	
5+00E	9+75S	9+75S	8+25N	1800m	
6+00E		9+75S	8+00N	1775m	
7+00E	9+75S	9+75S	8+25N	1800m	
8+00E	9+75S	9+75S	7+25N	1700m	
10+00E	2+25S	2+25S	8+00N	1025m	
11+00E	9+75S	9+75S	0+50S	925m	
12+00E	0+25S	0+25S	9+00N	875m	
15+00E	0+25N	0+25N	9+00N	875m	
17+00E	0+25N	0+25N	9+25N	900m	
18+00E	9+75S	9+75S	9+25N	1900m	
20+00E	9+75S	9+75S	9+25N	1900m	
22+00E	9+25S	9+25S	9+50N	1875m	

Handwritten notes and signatures, including a date "2008" and a signature "B. Webster".



24+00E            9+75S            0+25S    "    "    550m

The survey was successful in locating all targeted airborne anomalies, and in addition to discover further possible sulphide mineralization where the airborne survey did not locate anomalous conditions.

In our discussion we are only dealing with anomalies targeted for further investigation, for more detail the reader is referred to the Geophysical Report where the discussion will be expanded to all anomalies.

Anomaly PAL 1, was located on line 4+00E, at 350-400m north of the base line, on 5+00E, 390-450m north, it is continues to the west, becoming weaker at the central portion of the property and gaining strength again at 17+00, pinching on line 23+00E With good magnetic correlation it is suggested to be a high priority target, and is expected to relate to sulphide mineralization. This feature was found approximately 600m north of the Union shaft, and believed to be poorly explored on the east side, and unexplored on the west side of the property.

Anomaly PAL 2, was located on line 5+00E between 420m and 460m south of the base line, and about the same position on line 4+00E, with very weak indications on line 3+00E. At line 6+00E it shifts to the south between 480 and 515m. It is about 150m south of the Union mine shaft about 200m south of the Union shaft. It has a correlating weak magnetic response and an also weak resistivity high and it was not explored previously. It has been suggested that it is due to disseminated sulphides associated with a shear and is possibly silicified. Based only on geophysical considerations it was deemed as a low priority target, but because the combination of the above factors, and because it is located near to known gold occurrence the priority rating should be increased to medium.

Anomaly PAL 3, continues from line 3+00E from 80-140m south of the base line striking north of east through to 8+00E, where it is 160m north of the base line, generally it is considered a weak response, with the exception on line 6+00E where it is suggested a medium priority target It has a correlating magnetic high of 100 Nanoteslas, and a coincident resistivity low, which continues from 8+00E to 5+00E, from which point increases to the west. The anomaly exceeds a 450m strike length. It was suggested that this anomaly is due to disseminated sulphides and was not located by the airborne survey flown in 1988 for the Provincial Government.

Anomaly PAL 4 was located on line 6+00E, at between 210 and 238m north of the base line. It continues northeast, parallel to An. 3 up to 9+00E, where it is found between 340 and 380m north of the base line. It also has a magnetic correlation as An. 3. This anomaly is also believed to be due to sulphide mineralization. It was not located or explored in the past.

Anomalies 1,3, and 4 strike northeast southwest, a direction not shown on any of the earlier maps, this strike direction resembles the strike of a major auriferous shear mapped in Bristol Township.

Anomalies 1, 3, 4, are in an area of "hybrid rocks, near to the contact of the volcanics and the basic intrusive.

Anomaly PAL 5, is on line 20+00E and 22+00E at 263m north. High chargeabilities combined with resistivity high make it a medium priority target. Flanking moderate mag. high with an immediate low to the south suggest a dipole, but not due to high concentrations of magnetite. This area can also be referred to as low exploration intensity regarding past exploration efforts.

Anomaly PAL 6, is at 590 to 640m to the south of the base line on line 20+00E and as far as line 24+00E, Striking virtually East West the target shows good magnetic correlation and was deemed as a medium priority target. It was identified on four lines, giving it a strike length in excess of 40m. It correlates with a small cluster of airborne anomalies, without any known exploration history.

Anomaly PAL 7, is located on three survey lines beginning at 17+00E, 600m to 670m south of the base line striking gently south of east, to 22+00E at 763 south. It shows adjacent magnetic correlation and a north flanking resistivity low. It was suggested as a high priority target with a 400m plus strike length.

Anomalies 5, 6, and 7, are all within an area underlain by mafic volcanics, with low frequency of exposure.

## MAGNETIC SURVEY

Most areas selected for IP survey show reasonable magnetic correlation of varied strength. There needs to be a note caution. The center area of the grid show very low magnetic relief, an almost featureless unfortunately large section of the map area had no exposure, and questionable penetration by IP. Interpreted as deep overburden in a area of otherwise favourable this area is not sufficiently explored and may require a more sophisticated approach.

## DISCUSSION AND INTERPRETATION AND CONCLUSIONS

The presence of anomalous concentrations of gold, copper and nickel in the vicinity of the Union Shaft, and higher, yet still uneconomic amounts of nickel and copper in the Bean Lake area is a somewhat unusual combination for one locale. This leads one to consider the genesis and additional potential of this part of the property.

The presence of a mafic volcanic shear zone with carbonate alteration, quartz-carbonate-fuchsite-tourmaline veining at the Union Shaft has merited further work- from an early shaft to the current evaluation program. Assays in the ppm range have been obtained even by recent operators.

From geological observations it is apparent that the shear zone has had a more complex development than that suggested generally for gold deposits in the section on economic geology. Episodes of (early?) felsic, gabbroic, dioritic and (late?) felsic intrusions are variously indicated in the vicinity around the Shaft Zone- each of which have left overprints. The occurrence of fuchsite in the mineralized zone- a potassic mica with chrome content- of chromian chlorites has posed questions for previous workers (Pyke and Cunnison, 1995). Whether such overprints would have been favourable or unfavourable to a postulated, earlier gold distribution is open to debate.

The sub-economic amounts of copper and nickel appear to be consistent with general observations in the Bean Lake area, despite sometimes massive sections of pyrrhotite. Stronger conductors along the EW limb appear mark out the outcropping of dioritic-gabbroic rock, while progressively weaker conductors trend southwesterly and into an area of metavolcanic cover.

The exploration program by PAL was successful in outlining a series of drill targets located by geophysical methods reviewed and scrutinized on the basis of geological considerations as well as the past exploration history of the subject areas.

## RECOMMENDATIONS

It is recommended that the 1997 program should incorporate both, the drill testing of the existing targets and to explore the central area of the grid using advanced geophysical technologies as well as some of the deep seated suspected targets on the southwest part of the grid area possibly concealed by deep and conductive overburden.

Drilling is suggested in the following locations;

5+00E	6+62N	South -45,	150m
3+90S	South -45,	100m	

6+00E	1+20N	South -45,	70m
	2+75N	South -45,	75m
	8+50N	South -45	70m
20+00E	5+70S	South -45	140m
	6+50S	South -45	150m
22+00E	3+00N	South -45	150m
Total			900m

#### COST ESTIMATE

Drilling, all inclusive \$ 65.00/m	900m	\$ 58.500	
Services geol., sampling, assays, \$20.00/m		18.000	
Contingencies 10%			7.650
Total 1997 exploration expenditures,		\$ 84.150	

Peter J Vamos P. Eng.



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## APPENDIX I- SAMPLE DESCRIPTIONS

### SAMPLE NO. DESCRIPTION

6021	Pillowed mafic metavolcanic; sericite-chlorite altered with calcite veinlets
6022	Pillowed mafic metavolcanic; amphibolitized schist with oligoclase(?) porphyroblasts; calcite, quartz veining in pillow interstices, some with <1% pyrite
6023	Mafic metavolcanic float; ankerite alteration; weakly foliated; dark brown coloured
6024	Mafic metavolcanic float; calcite-altered with barren-appearing quartz vein
6025	Quartz vein 3m with chlorite veins and seams
6026	Diorite, altered; chloritized hornblende (30%), with blue quartz (10%), chalcopyrite 1%
6027	Granulated quartz with magnetic pyrrhotite bands (10%) and minor chalcopyrite; trench sample; possibly deformed cherty iron formation
6028	Quartz vein; light smoky colour
6029	Trench sample; quartz vein with coarse grain of chalcopyrite
6030	Felsite with chloritic partings and limonitic staining; light grey, aphanitic; minor quartz veining, barren appearance
6031	Diorite, chloritized; pyrrhotite 2% with trace chalcopyrite
6032	Diorite float, altered, actinolitic, 1% pyrite 14E, 4+67N

6033-6055 Project change  
6056 Felsite float, disseminated, pyrite 2%  
6057 Cherty iron formation, finely layered <1cm/with chloritic,sericitic content, trace pyrite; moderately foliated; slightly rusty weathering  
6058 Sulphide iron formation, pyrrhotite 15%; chloritic  
6059 Sulphide iron formation, pyrrhotite 60%  
6060 Mafic metavolcanic; foliated; calcite veined with pyrrhotite (2% overall)  
6061-6316 Project change  
6317 Mafic metavolcanic with minor disseminated pyrite; quartz-calcite veining  
6318 Void  
6319 Mafic metavolcanic, minor disseminated pyrite; foliated; quartz-chlorite veinlets  
6320-6400 Project change, and unused tickets

UNION SHAFT ZONE- DETAILED GRID, GRAB AND CHIP SAMPLING

SAMPLE NO.	GRID E. GRID N. COORDINATE (END POINTS,m)	SAMPLE INTERVAL (m)	DESCRIPTION
6401	9.5W, 35.5S	CH 6401 0.0N-0.7N	Mafic tuff, with <2cm stretched feldspar crystals, some >5:1 aspect
6402		0.7N-1.5N	Felsic, sheared unit with smoky quartz vein (0.7N-0.84N); trace pyrite in wall
6403		1.5N-2.4N	Felsic sheared unit
6404	W,S	2.4N-2.9N	Mafic tuff, with 2, <2 cm quartz veinlets
6405	W,S	CH6405 0.0-1.0N	Mafic tuff, grey-olive, irreg. weathered, crenulated, with calcite seams
6406		1.0N-1.5N	as 6405, with minor quartz, calcite seams in crenulations
6407		1.5N-2.0N	Quartz vein with 10% tourmaline; trace chalcopyrite, fuchsite; N85oW/75oNE
6408		2.0N-2.4N	Mafic tuff, crenulated, with calcite seams
6409		2.4N-3.5N	Mafic tuff, crenulated, with calcite seams
6410		3.5N-4.2N	Mafic tuff, crenulated, with calcite seams
6411		4.2N-5.0N	Mafic tuff, crenulated, with calcite seams; <1% euhedral pyrite
6412		5.0N-5.5N	Quartz vein (80%) with minor <1cm tourmaline seams; mafic tuff, crenulated (20%)
6413		5.5N-6.0N	Quartz vein (80%); ankerite schist, rusty weathering (20%)
6414		6.0N-6.5N	Mafic tuff, foliated, ankerite-chlorite-alteration; rusty weathered surface; greyish green fresh surface with cream-coloured seams

6415	6.5N-7.0N	as 6414
6416	7.0N-7.5N	Quartz-tourmaline (10%) vein
6417	7.5N-8.0N	Quartz-tourmaline (10%)-chlorite vein (50%); mafic tuff, ankerite-chlorite schist with fine quartz-ankerite seams
6418	8.0N-8.5N	Quartz vein with tourmaline partings (5%) and grey-white seams of chlorite/dolomite
6419	8.5N-9.0N	Mafic tuff, crenulated; olive-weathering with grey green fresh surface; light calcite seams; euhedral-subhedral pyrite 2-3%
6420	9.0N-10.2N	Mafic tuff, crenulated, calcite-altered
6421	10.2N-11.2N	Laminated mafic tuff; olive-weathering, light grey-green fresh surface; calcite seams (5%) and calcitic matrix; 1% anhedral chalcopyrite
6422	11.2N-12.2N	Laminated mafic tuff; schistose; chlorite-calcite altered matrix with 10-20% calcite seams
6423	12.2N-13.2N	Laminated mafic tuff; schistose; grey-green fresh surface with white calcite seams to 10%; minor quartz seams
6424	13.2N-14.2N	Laminated mafic tuff; schistose, chloritic with <2% quartz-calcite veinlets
6425	14.2N-15.2N	Laminated mafic tuff; light grey-green fresh surface; chloritic schist with calcite-quartz seams <1cm (5%)
6426	15.2N-16.2	Contact; 15.2-15.8 laminated tuff 15.8-16.2 crenulated tuff with calcite seams (10%)
6427	16.2N-17.2N	Crenulated mafic tuff; olive-weathering light grey fresh surface; with <5% calcite seams
6428	17.2N-17.7N	as 6427
6429	17.7N-17.9N	Quartz vein, white, barren
6430	17.9N-18.4N	Crenulated-schistose mafic tuff, chloritic, accessory fuchsite; quartz veins (10%)
6431	18.4N-18.9N	Quartz vein, white, barren appearance
6432	18.9N-19.4N	Quartz vein, with 10% chlorite/fuchsite partings; N85oW/75oW
6433	19.4N-20.0N	Quartz vein, white, barren appearance
6434	20.0N-20.5N	Quartz vein, white, barren appearance
6435	20.5N-20.8N	Quartz vein (50%); mafic volcanic flow (50%),ankerite-chlorite schist with accessory fuchsite
6436	20.8N-21.8N	Mafic volcanic flow, ankerite-chlorite altered schist with accessory fuchsite
6437	21.8N-22.8N	as 6436
6438	22.8N-23.6N	Mafic volcanic flow; 20% quartz veins
6439	23.6N-24.3N	Quartz vein, with some wall rock partings

6440		24.3N-24.8N	Quartz vein (50%) with chloritic partings; mafic volcanic flow; schistose, chlorite-ankerite-altered
6441		24.8N-25.2N	Quartz vein (50%); mafic flow, schistose, chlorite-ankerite altered, rusty-weathering
6442		25.2N-25.7N	Quartz vein with 5% fine chloritic partings
6443		25.7N-26.3N	Mafic volcanic flow, chlorite-ankerite altered schist; rusty-weathering
6444	W,S	26.3N-26.8N	Quartz-feldspar porphyry, sheared, bleached with some chlorite-ankerite schist partings; with quartz seams (10%)
6445-6450			Void- end of book, end of chip sample
6451	W	CH6451 ----- 1.5N-2.0N	Ankerite-chlorite altered rock with accessory fuchsite; 5% quartz-calcite veining; 1-2% pyrite near veins
6452		2.0N-2.5N	Quartz vein with fuchsite rich-chlorite seams (2.1-2.14)
6453		2.5N-3.0N	Quartz vein; 5% fuchsitic partings
6454		3.0N-3.5N	Quartz vein; 5% fuchsitic partings
6455		3.5N-4.0N	Quartz vein; <1% rusty partings
6456		4.0N-4.5N	Quartz vein; white; <1% rusty partings
6457		4.5N-5.0N	Quartz vein; white; fuchsitic inclusion
6458		5.0N-5.5N	Quartz vein; 2% fuchsitic partings
6459		5.5N-6.0N	Quartz vein; fuchsite, tourmaline partings
6460		6.0N-6.5N	Quartz vein; fuchsite-lesser tourmaline partings (5%)
6461		6.5N-7.0N	Quartz vein; fuchsitic partings (30%), maximum 2 cm across, generally 0.5 cm; 1 vitreous quartz vein 3 cm across
6462	W	CH6462 ----- 6.0N-7.0N	Mafic flow, 1% fuchsitic seams; calcite-quartz veins 3-5%, <1cm; quartz veins, 20%
6463		7.0N-7.7N	Mafic flow, chloritic, schistose; quartz-ankerite seams throughout; quartz (calcite) veins, 5%
6464		7.7N-8.4N	Mafic flow; chlorite-carbonate altered; quartz ribbons with calcite margins, 10%
6465		8.4N-9.0N	Mafic flow (50%), chlorite-calcite alteration, lesser mylonite, pyrite 1%; quartz vein (50%)
6466		9.0N-9.5N	Mafic flow (30%); quartz vein (70%) with chlorite-calcite-wallrock inclusions (25%), tourmaline partings (5%), minor pyrite

2024



6467	5+00E	CH6467 -----	
		250S-250.5S	Quartz vein, white; 5% chloritic partings
6468		250.5S-251S	Quartz vein, white to smoky with 5% chloritic partings, <1% pyrite with chlorite
6469		251S-251.3S	Chlorite-calcite schist, strongly foliated N60oE/90o but variable
6470	5+28E	CH6470 -----	
		371.5S-372S	Quartz vein, 5% chloritic lenses, partings, 1% pyrite
6471		372S-372.5S	Quartz vein, white-smoky to vitreous; chloritic inclusions and minor partings
6472		372.5S-373S	Chlorite-calcite schist, powdery-grey-green weathering; 1% pyrite, dissemin.

APPENDIX II- CERTIFICATES OF ANALYSES

6W-4381-RG1  
6W-3295-RG1  
6W-3681-RG1

2020 24



# Swastika Laboratories

A Division of TSL/Assayers Inc.

Assaying - Consulting - Representation

Established 1928

Page 1 of 3

## Geochemical Analysis Certificate

6W-4381-RG1

Company: **PROSPECTOR'S ALLIANCE LTD**

Date: OCT-30-96

Project:

Attn: P. Vamos

We hereby certify the following Geochemical Analysis of 67 Chip samples submitted OCT-21-96 by .

*UNION SHIRT 105769 p1-3 all*

Sample Number	Au PPB	Au Check PPB
6401	Nil	-
6402	Nil	-
6403	Nil	-
6404	Nil	-
6405	Nil	-
6406	Nil	-
6407	29	-
6408	9	-
6409	Nil	-
6410	7	-
6411	7	-
6412	Nil	-
6413	9	-
6414	7	-
6415	60	-
6416	146	144
6417	117	-
6418	62	-
6419	34	-
6420	24	-
6421	Nil	-
6422	Nil	-
6423	Nil	-
6424	2	-
6425	Nil	-
6426	Nil	-
6427	5	-
6428	19	-
6429	Nil	2
6430	3	-

One assay ton portion used.

Certified by

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244

FAX (705) 642-3300



# Swastika Laboratories

A Division of TSL/Assayers Inc.

Assaying - Consulting - Representation

Page 2 of 3

Established 1928

## Geochemical Analysis Certificate

6W-4381-RG1

Company: **PROSPECTOR'S ALLIANCE LTD**

Date: OCT-30-96

Project:

Attn: P. Vamos


We hereby certify the following Geochemical Analysis of 67 Chip samples submitted OCT-21-96 by .

Sample Number	Au PPB	Au Check PPB
6431	3	Nil
6432	Nil	-
6433	Nil	-
6434	Nil	-
6435	Nil	-
6436	2	-
6437	Nil	-
6438	2	-
6439	Nil	-
6440	Nil	-
6441	5	-
6442	10	-
6443	3	-
6444	55	-
6451	7	Nil
6452	5	-
6453	Nil	-
6454	Nil	-
6455	Nil	-
6456	Nil	Nil
6457	3	-
6458	55	-
6459	984	-
6460	41	-
6461	29	-
6462	Nil	-
6463	Nil	-
6464	190	-
6465	19	22
6466	3	-

*UNION SHUTT CHIP, 183769 NE 200577*

**2-17824**

One assay ton portion used.

Certified by 



# Swastika Laboratories

A Division of TSL/Assayers Inc.

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Assaying - Consulting - Representation

Page 3 of 3

## Geochemical Analysis Certificate

6W-4381-RG1

Company: **PROSPECTOR'S ALLIANCE LTD**

Date: OCT-30-96

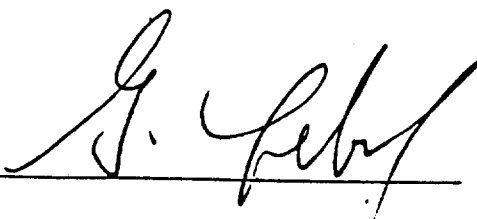
Project:

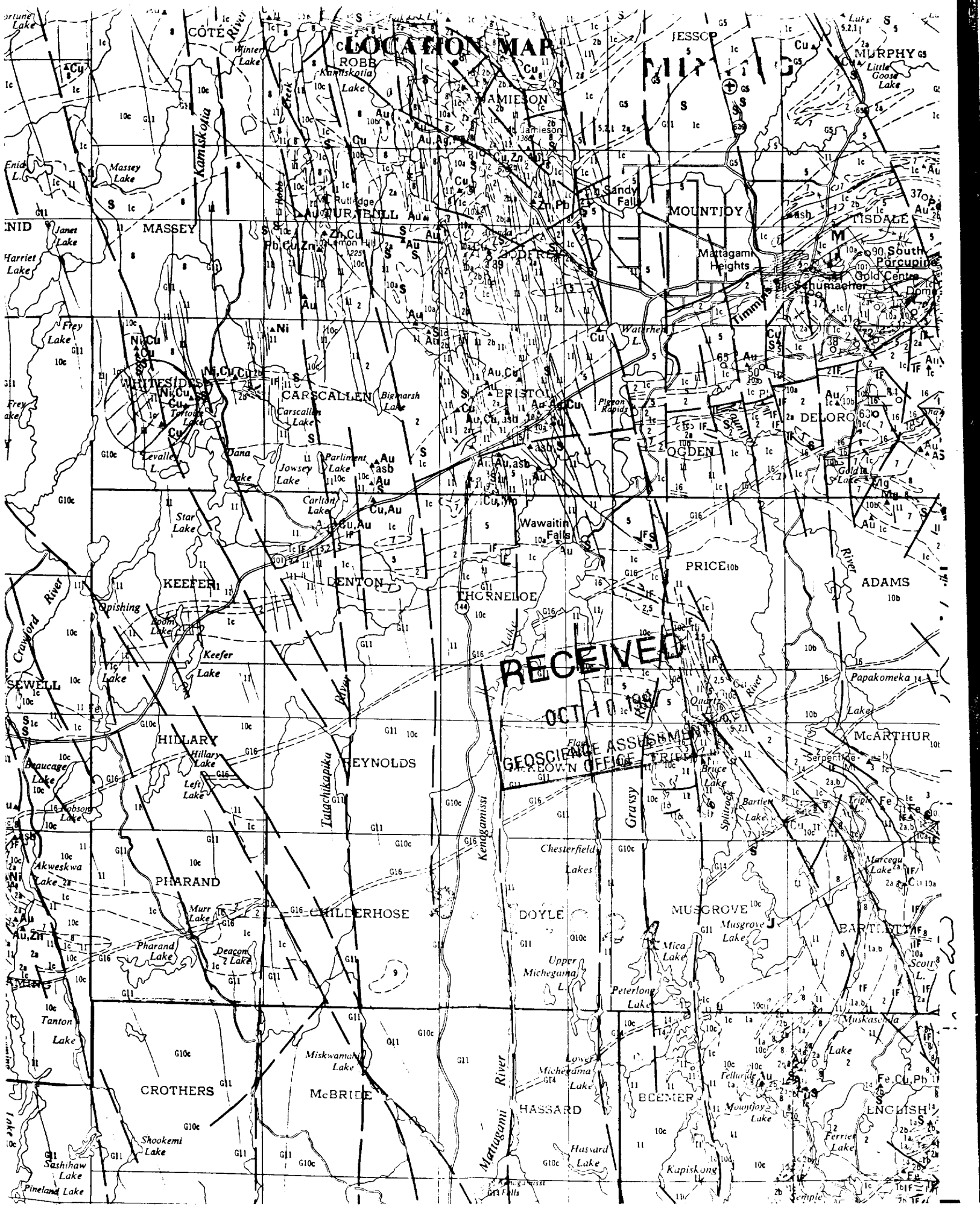
Attn: P. Vamos

We hereby certify the following Geochemical Analysis of 67 Chip samples submitted OCT-21-96 by .

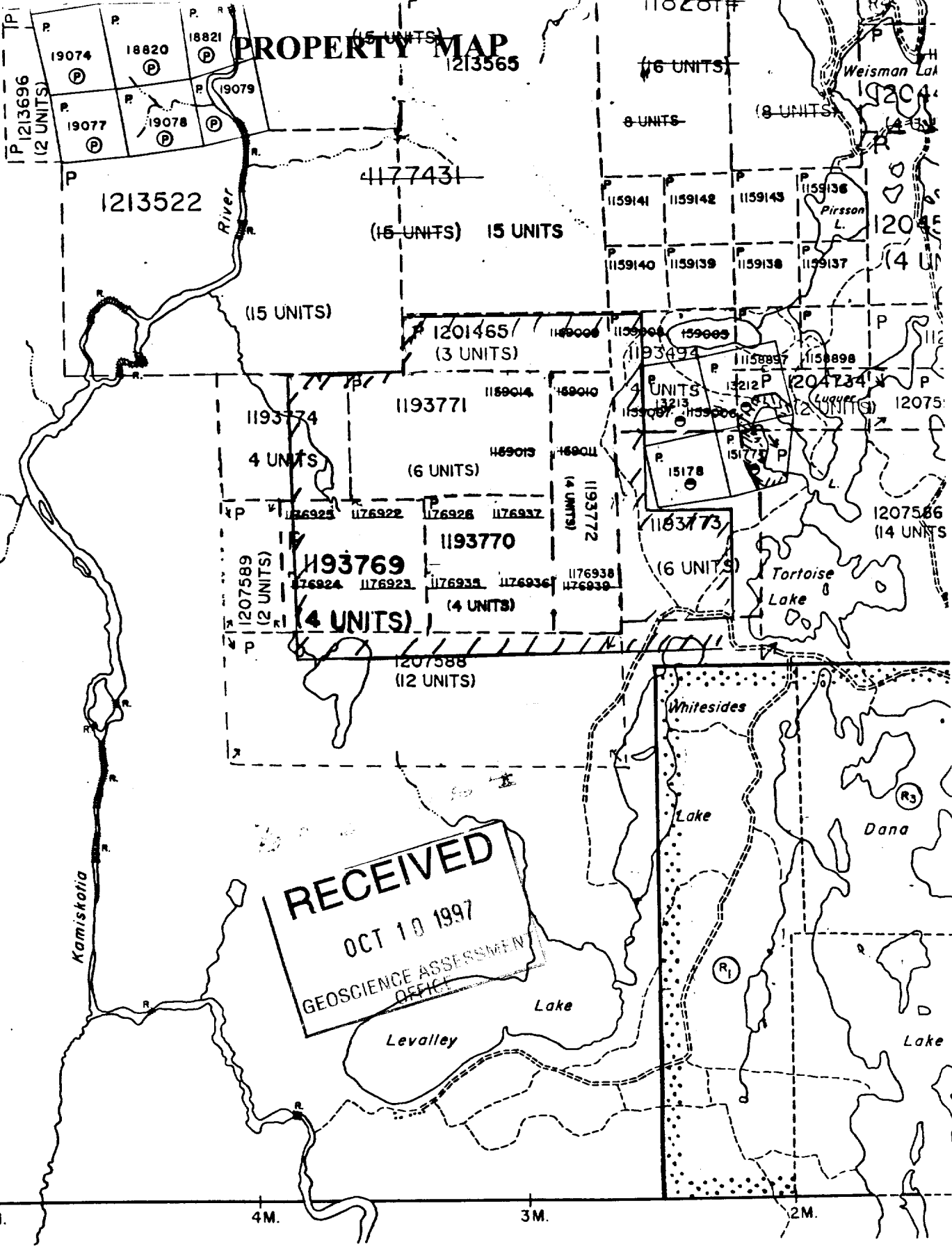
Sample Number	Au PPB	Au Check PPB	
6467	336	-	1193769 WHITESIDES SECTION 51.11 ↓ ?
6468	739	-	
6469	9	-	
6470	24	-	
6471	7	-	
6472	22	-	
NO TAG	Nil	-	

One assay ton portion used.

Certified by 



# PROPERTY MAP



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Keefe Twp.



Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 66(2) and 66(3), R.S.O. 1990

Transaction Number (office use) W99760-00496 Assessment Files Research Imaging

Personal information collected on this form is obtained under the authority of the Mining Act, the information is a public record. This information will be used for assessment purposes. Questions about this collection should be directed to the Chief Mining Officer, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.



42A05NW2001 2.17924 WHITESIDES

900

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240. - Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

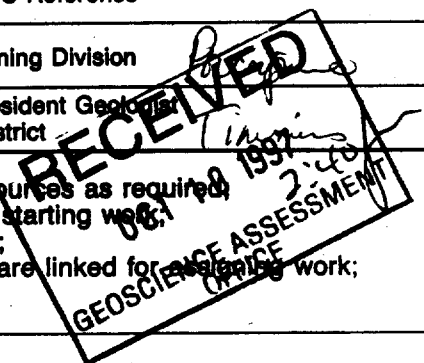
Form with fields for Name, Address, Client Number, Telephone Number, and Fax Number for two recorded holders.

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

Geotechnical: prospecting, surveys, assays and work under section 18 (regs) [checked] Physical: drilling, stripping, trenching and associated assays [unchecked] Rehabilitation [unchecked]

Form with fields for Work Type (Line cutting, Magnetic Survey, geological Mapping), Office Use, Commodity, Total \$ Value of Work Claimed (\$28,001), Dates Work Performed (1 Aug 1976 to 30 Sept 96), Township/Area (Whitesides), and Mining Division.

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required; - provide proper notice to surface rights holders before starting work; - complete and attach a Statement of Costs, form 0212; - provide a map showing contiguous mining lands that are linked for assessment work; - include two copies of your technical report.



3. Person or companies who prepared the technical report (Attach a list if necessary)

Form with fields for Name, Address, Telephone Number, and Fax Number for three individuals/companies: Peter J. Vamos PEug, Geomatics International, and JVK Limited.

4. Certification by Recorded Holder or Agent

I, Peter J. Vamos, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Form with fields for Signature of Recorded Holder or Agent, Date (7 Oct 97), Agent's Address, Telephone Number, and Fax Number.

Tr. 08/98

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

To am. replace distribution page of Submission W 97600046

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
eg TB 7827	16 ha	\$26,825	N/A	\$24,000	\$2,825
eg 1234567	12	0	\$24,000	0	0
eg 1234568	2	\$8,892	\$4,000	0	\$4,892
1 1193769	4	4,931	1600	186	3,145
2 1193770	4	3,434	1600		1,834
3 1193771	6	6,118	2,400	1,600	2,118
4 1193772	4	5,023	1,600	3,290	223
5 1193773	6	2,940	2,400		540
6 1193774	4	0	1,600		
7 1207588	12	1600	4,800		
8 1207589	2	614	800		
9					
10 1193494	4	1,461	1,461		-
11 1201465	3	1,881	1,200		681
12					
13					
14					
15					
<b>Column Totals</b>		28,002	19,461	4,986	8,541

I, Peter J. Vamos (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing: Peter J. Vamos Date: 13 Feb 98

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
Approved for Recording by Mining Recorder (Signature)		



Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of Work <small>Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.</small>	Cost Per Unit of work	Total Cost
Line cutting	43 km	278.05	11,956.05
Magnetic Survey	43 km	81.82	3,518.40
Geological Mapping	43 km	147.67	6,349.97
Reports Digitizing GIS Services			5,844.93
<b>Associated Costs (e.g. supplies, mobilization and demobilization).</b>			
\$ 2,002.4			
<b>Transportation Costs</b>			
<b>Food and Lodging Costs</b>			
			332.65
<b>Total Value of Assessment Work</b>			<b>28,002.00</b>

**RECEIVED**  
 OCT 10 1997  
 2:40  
 GEOSCIENCE ASSESSMENT  
 OFFICE

**Calculations of Filing Discounts:**

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK                      x 0.50 =                      Total \$ value of worked claimed.

**Note:**

- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

**Certification verifying costs:**

I, Peter Vamos (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as agent I am authorized (recorded holder, agent, or state/company position with signing authority) to make this certification.

Signature <u>Peter Vamos</u>	Date 8 Oct 97
---------------------------------	------------------



Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use) W9760.00534 Assessment Files Research Imaging

Personal information collected on this form is obtained under the authority of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240. - Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

Form with fields for Name, Address, Client Number, Telephone Number, and Fax Number. Includes handwritten entries for John Peter Huot and address Box 106, 36 Maple St S, Timmins Ont P4N 7H9. Client Number 146892, Telephone Number (705) 267-6464, Fax Number 264-3260. A second entry shows Name and Address fields with the handwritten number 2.17924.

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

Geotechnical: prospecting, surveys, assays and work under section 18 (regs) [ ] Physical: drilling, stripping, trenching and associated assays [x] Rehabilitation [ ]

Work Type: Trenching, sampling, mapping. Office Use section with fields for Commodity, Total \$ Value of Work Claimed (6,056), NTS Reference, Mining Division, and Resident Geologist District. Includes a 'RECEIVED' stamp dated OCT 10 1997 from the GEOLOGICAL ASSESSMENT OFFICE.

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required; - provide proper notice to surface rights holders before starting work; - complete and attach a Statement of Costs, form 0212; - provide a map showing contiguous mining lands that are linked for assigning work; - include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Form with fields for Name, Address, Telephone Number, and Fax Number. Includes handwritten entry for Peter J. Vamos P. Eng, 19 Berry Hill Waterdown Ont L0R 2H4, Telephone Number 905 689 6276, Fax Number 905 640-2175.

4. Certification by Recorded Holder or Agent

I, Peter J. Vamos, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent: Peter J. Vamos, Date: 8 Oct 97, Agent's Address: 19 Berry Hill Waterdown Ont, Telephone Number: (905) 689-6276, Fax Number: (905) 640-2175.

Jan. 08/98



March 13, 1998

JOHN PETER HUOT  
36 MAPLE STREET, SOUTH  
TIMMINS, ONTARIO  
P4N-7H9

Geoscience Assessment Office  
933 Ramsey Lake Road  
6th Floor  
Sudbury, Ontario  
P3E 6B5

Telephone: (888) 415-9846  
Fax: (705) 670-5881

Dear Sir or Madam:

**Submission Number: 2.17924**

	<b>Status</b>
<b>Subject: Transaction Number(s):</b>	W9760.00446 Approval After Notice
	W9760.00534 Approval After Notice

---

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. **WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.**

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Bruce Gates by e-mail at [gatesb2@epo.gov.on.ca](mailto:gatesb2@epo.gov.on.ca) or by telephone at (705) 670-5856.

Yours sincerely,



ORIGINAL SIGNED BY  
Blair Kite  
Supervisor, Geoscience Assessment Office  
Mining Lands Section

# Work Report Assessment Results

**Submission Number:** 2.17924

**Date Correspondence Sent:** March 13, 1998

**Assessor:** Bruce Gates

<b>Transaction Number</b>	<b>First Claim Number</b>	<b>Township(s) / Area(s)</b>	<b>Status</b>	<b>Approval Date</b>
W9760.00446	1193769	WHITESIDES	Approval After Notice	February 16, 1998

**Section:**

14 Geophysical MAG

12 Geological GEOL

The revisions outlined in the Notice dated January 2, 1998, have in part been corrected. Accordingly, assessment work credit has been approved as outlined on the Amended Declaration of Assessment Work Form accompanying this submission.

<b>Transaction Number</b>	<b>First Claim Number</b>	<b>Township(s) / Area(s)</b>	<b>Status</b>	<b>Approval Date</b>
W9760.00534	1193769	WHITESIDES	Approval After Notice	February 16, 1998

**Section:**

10 Physical PTRNCH

The revisions outlined in the Notice dated January 2, 1998, have in part been corrected. Accordingly, assessment work credit has been approved as outlined on the Declaration of Assessment Work Form accompanying this submission.

**Correspondence to:**

Resident Geologist  
South Porcupine, ON

**Recorded Holder(s) and/or Agent(s):**

Peter J. Vamos  
WATERDOWN, ON

Assessment Files Library  
Sudbury, ON

JOHN PETER HUOT  
TIMMINS, ONTARIO