

**ALTO VENTURES LTD.  
2006 EXPLORATION PROGRAM  
EMPRESS PROJECT  
SYINE TOWNSHIP  
NORTHWESTERN ONTARIO  
NTS 42D/15**

Mike Koziol, P. Geo., P. Eng.

March 18, 2007

## SUMMARY

The Empress project is located approximately 100 kilometres west of Hemlo, and 15 kilometres northeast of Terrace Bay, in Syine Township, northwestern Ontario. The property consists of 13 contiguous unpatented mining claims (50 claim units) and one additional non-contiguous claim (1207882 - 4 units) in the Santoy Lake area.

The area was subject to several generation of gold exploration including the most recent work by Cameco Corporation between 1998 and 2001. The previous workers have identified a major gold-bearing shear zone, the "Empress Structure", and it warrants follow-up work. The 2006 Alto Ventures program was carried out during July and early August and included geological mapping, prospecting and sampling. The purpose of the program was to (1) examine key exposures along the previously trenched Empress Structure to find plunge directions and possible controls on mineralization, (2) search for additional mineralization along strike to the west of the former Empress Mine, (3) map and prospect claims 300228 and 300229, and (4) prospect the areas of previously located IP anomalies.

Structural measurements along the Empress Structure suggest that the quartz veins which host the gold mineralization tend to plunge generally east at shallow angles ( $<45^\circ$ ) but specific directions vary from  $80^\circ$  to  $125^\circ$ . The better mineralized zones appear to pinch and swell along the Empress Structure on a scale of one metre to tens of metres and similar pinch-swell features appear to occur within the dip plane. To date, the two best areas (thickest and most intensely sheared and altered) for hosting significant gold mineralization are located (1) between to former Empress Mine and L1+00E and (2) the area centered on Trench L6+00E

The Empress Structure extends west of the former mine for more than 1.5 km through the Zlatco showing and to the west. The exposures along this stretch are not as good as at the east side of the former mine and the intensity of shearing, alteration and mineralization is not as strong. However, a number of anomalous gold values were obtained from the west extensions along the Empress Structure.

The geological mapping and prospecting of claims 3008228 and 3008229 has located the Empress Structure in the east end of 3008228 but failed to locate significant zones of shearing, alteration or mineralization in claim 3008229.

The prospecting over historical IP anomalies has identified several of the sources for the anomalies but the gold values associated with these are low. To date, the best anomaly is still DD-4 and this anomaly is coincident with the Empress Structure that was already sampled on surface.

Based on the results of this program and previous work, approximately 600 m of diamond drilling is recommended in five holes near Trench L6+00E. Bulk till sampling to test for possible "hot spots" is recommended along the western extension of the Empress Structure.

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## **1.0 INTRODUCTION**

### **1.1 Location and Access**

The Empress project is located approximately 100 km west of Hemlo and 15 km east of Terrace Bay, north of Jackfish Lake, near the north shore of Lake Superior. The property lies in Syine Township and it is covered by NTS sheet 42D/15.

The Trans-Canada Highway number 17 passes through the south part of the property and old logging and mining roads which are now reduced to ATV trails provide further access to the claims.

### **1.2 Physiography**

Topographic relief on Empress is fairly accentuated, with elevations ranging from 240 m to over 470 m above mean sea level. Steep hills and ridges are commonly flanked by rock cliffs and deep ravines, often occupied by beaver ponds and swamps which predominantly extend in an east-west direction. Locally the Empress Hill rises 410 m above mean sea level and is a dominant feature visible from Highway 17.

Vegetation cover is moderate, dominated by spruce, white birch, balsam fir, and small amounts of trembling aspen. Undergrowth is moderate to thick, and consists of mountain maple and young conifers. Low-lying areas in the southwest portion of the property, from the foot of Empress Hill and east towards Christie Lake were clear-cut by logging operations and are now occupied by sparse white birch, young balsam fir, and thick moose maple making prospecting and mapping in these areas difficult and unpleasant.

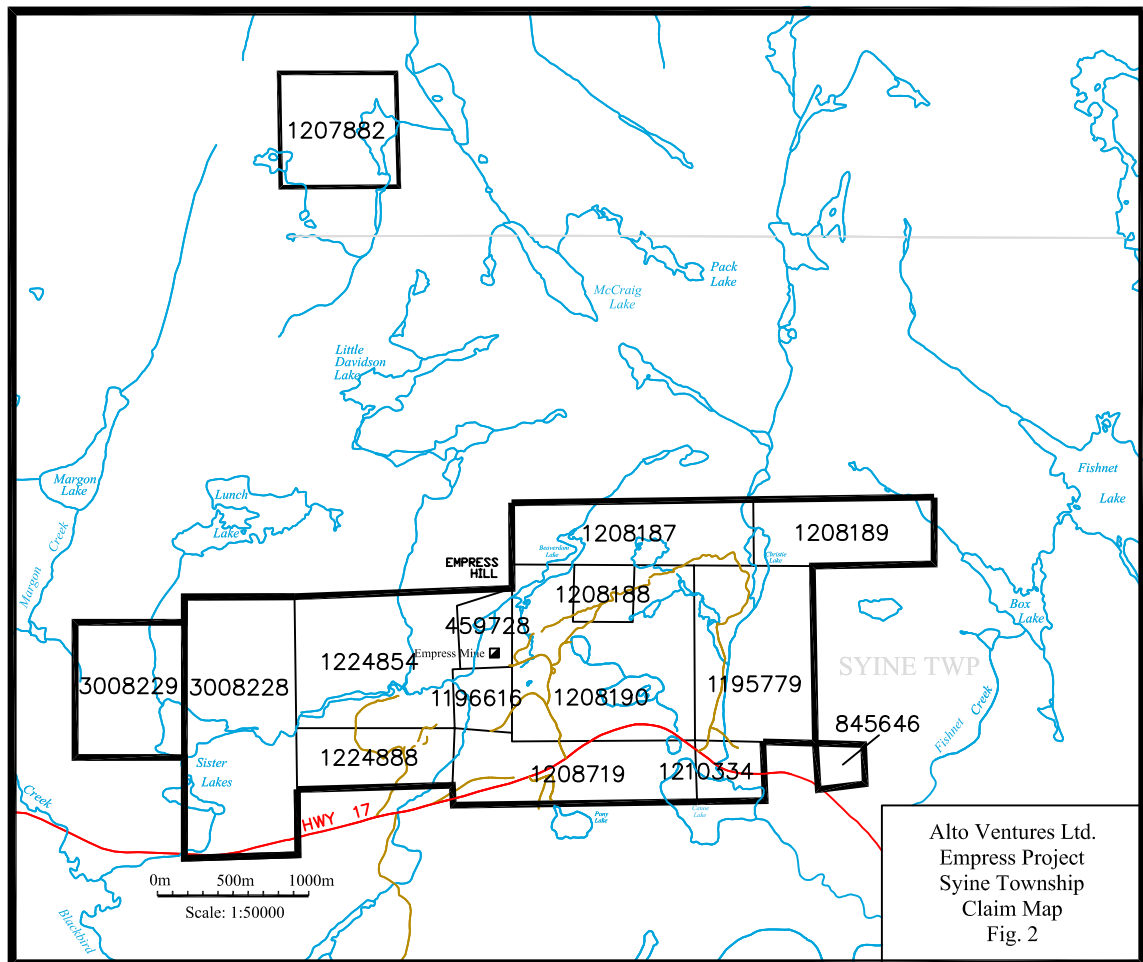
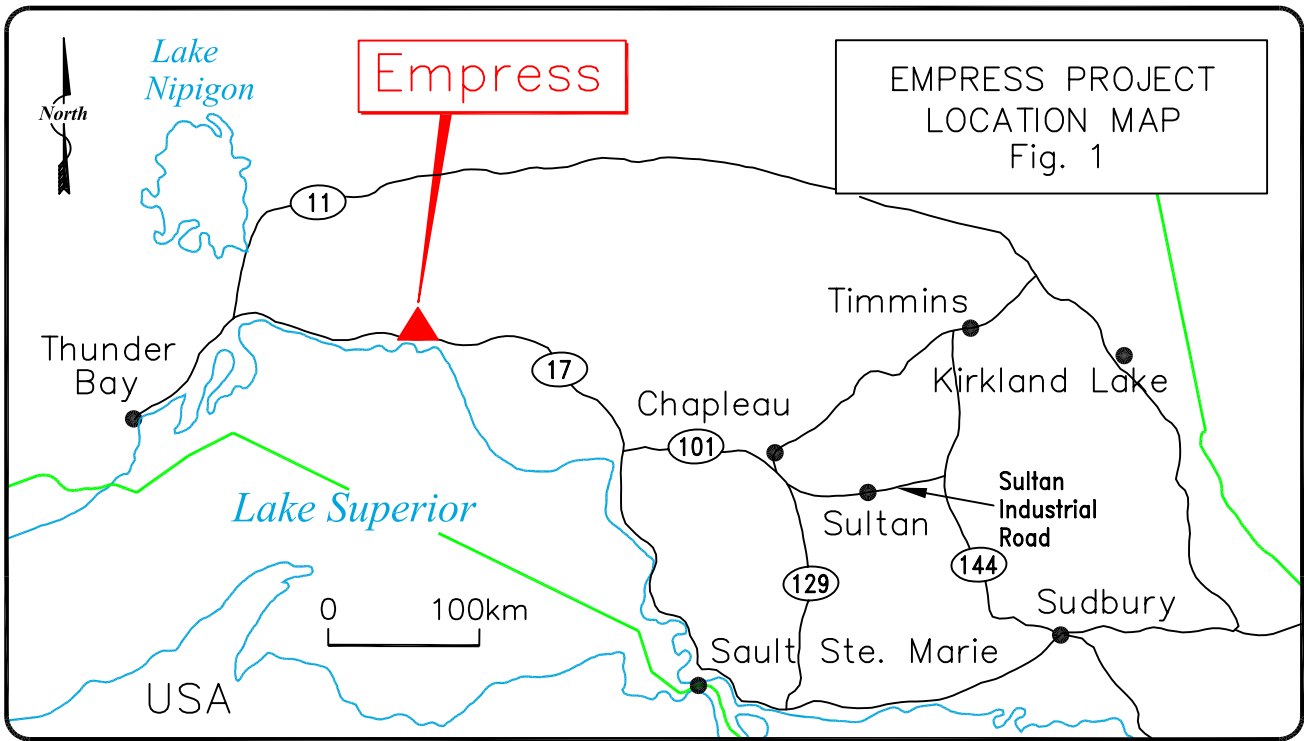
There is a moderate amount of outcrop on the property, but exposure is commonly masked by the undergrowth and by a cover of moss and detrital material.

### **1.3 Cultural Features**

Cultural features found on the property are mostly related to underground exploration at the Ursa Major Occurrence (claim 1207882) and to mining activity at the Empress Mine (claim 459728 – not part of the Empress Project) in the early 1900's. These features include old adits and shafts, rock dams and steel water lines, cement foundations, waste dumps, trenches, casings, pipes, and metal debris. More recent features include logging trails and roads and hunting cabins.

### **1.4 Property and Tenure**

The property consists of 13 contiguous unpatented mining claims and one additional non-contiguous claim (1207882 - 4 units), for a total of 54 units covering 864 hectares. The claim group lies within the Terrace Bay and Geraldton M.N.R. administrative districts and the Thunder Bay Mining Division, and is represented on claim maps G634 (Syine



Twp) and G612 (Santoy Lake area).

**Table 1: List of Claims - Empress Project**

Claim	Rec. Date	Units	Township
1207882	Jan 27/95	4	Santoy Lake
1208187	Feb 13/96	4	Syine
1208189	Feb 13/96	3	Syine
1195779	Jul 15/96	6	Syine
1208190	May 17/96	8	Syine
1208188	May 17/96	1	Syine
845646	Dec 27/85	1	Syine
1210334	Feb 12/97	1	Syine
1208719	Apr 16/96	4	Syine
1196616	Mar 28/96	1	Syine
1224854	May 21/96	6	Syine
1224888	Dec 11/96	3	Syine
3008228	Jul 11/05	8	Syine
3008229	Jul 29/05	4	Syine

## 1.5 Previous Work

### 1.5.1 Government Surveys

The government geoscientific studies of the area date as far back as the middle of the 19th century and consist mostly of short annual reports published by the Ontario Bureau of Mines. Prior to 1953, no detailed geological mapping of the area had been published, and maps produced by the ODM in 1967 at a scale of 1 inch to 1/2 mile (Walker 1967) still remain the most pertinent geological reference to the Jackfish Lake area. More recent mapping completed by the OGS (Carter 1988) does not extend beyond the west boundary of Syine Twp, and does not include the Empress property.

A regional magnetic and radiometric survey was also flown by the GSC in the 1960's (1:100,000), but the data only includes the western edge of the property.

A thorough compilation of all mineral occurrences in the Nipigon and Marathon area has been undertaken by the MNM in 1983 (Schnieders et al. 1996).

The Ontario Geological Survey (OGS) has been conducting a series of Quaternary mapping and sampling programs since 1993 in order to assess the diamond potential of the Kapuskasing Structural Zone and the Trans-Superior Tectonic Zone; as part of this ongoing program, stream sediments, till and rock samples collected from the Empress property and the surrounding area were analyzed for kimberlite and massive sulphide indicator minerals and for their gold content (Morris 1999). Of the eight samples collected by the OGS on the Empress East project, one till sample (488-Tm-99) and one

modern alluvium sample (483-Ma-99) returned highly anomalous results (1096 and 391 gold grains respectively). In both samples, over 99% of the gold grains are considered pristine, indicating a source within 150 metres up ice from the sample sites. The two samples were collected at Cameco's stripped area 10+75E (McCracken, 2000).

The OGS returned to the property in 2000 to follow up the results and take additional samples around area 10+75E (Morris, 2000).

In 2000, the OGS completed an airborne magnetic and electromagnetic survey flown in the Schreiber -Terrace Bay region as part of the Operation Treasure Hunt (OTH Schreiber Survey Map 1104).

### 1.5.2 Exploration History

Geological interest within the Schreiber-Hemlo District began in 1851 with the discovery of Canada's first molybdenite occurrence in the Terrace Bay area. This was soon followed by an exploration rush which persisted almost continuously until the 1930's, leading to several discoveries such as the Zenith zinc-copper-silver deposit in the Big Duck Lake area (1879-1884), the Empress gold mine in the Jackfish Lake area (1896-99), and the North Shore gold mine in Schreiber (discovered in 1898). The discovery of the Hemlo gold deposit in 1981 led to another flurry of exploration activity, which resulted in the discovery of the Winston Lake zinc-copper deposit in 1982. Over the past decade, exploration has been rather limited and mostly focused towards gold.

Gold exploration in the vicinity of the Empress project dates back to the development of the Empress Mine at the turn of the century. The following summary of previous work is extracted from McCracken (2000).

1895: In June of that year, an Indian brought a sample of gold ore to the attention of Donald and Peter McKellar of Fort William. Three mining claims were staked, two of which correlate with still active surface rights claim R.567 and R.569.

1895 - 1900: The Empress Gold Mining Company was incorporated, and various test shafts, adits and pits were sunk on a series of gold-bearing veins. A 10-stamp mill was erected, and 112 ounces of gold were produced from 1100 tons of ore (calculated aver. of 0.1 oz/t or 3.5 g/t Au). Operations were eventually shut down due to lack of funds.

1896 - 1901: The Ursa Major gold prospect, also referred to as the "Siville" property, was discovered in 1896, less than 4 km north of the Empress Mine. Some massive quartz veins up to 15 ft wide are reported and are said to carry high-grade gold values. The discovery was investigated by the Jackfish Bay Syndicate Mining Company Ltd., and at least three shafts were sunk, but work ceased in 1901. The corresponding claims were staked, cancelled, and restaked several times with nearly no work being done until 1983. The occurrence is now included within the Empress project, under claim 1207882.

1901 - 1921: The Czarina Gold Mines Co. of Ontario Ltd. was incorporated, and the



Empress Mine was re-examined by an American syndicate.

1936 - 1937: The Empress Consolidated Gold Mines Ltd. was incorporated and signed an option agreement with Czarina Gold Mines in order to extensively re-evaluate the Empress mine. Dozens of trenches now found on the Empress claim block can be attributed to this period of activity.

1938: The old mill and other structures relating to the Empress Mine were disassembled and the metal sold as scrap.

1967 - 1978: The mining location of the old Empress Mine became open, the property was restaked by W. Stachiw, and was later brought to lease (active claim TB 459728).

1982 - 1983: A large group of claims staked by J. Skalesky in 1981 and 1982, which included the Ursa Major property, were transferred to Micham Exploration Inc. The claim hosting the Empress Mine was also optioned. Ground and airborne EM and magnetometer surveys were conducted, followed by geological mapping, trenching, rock and soil sampling (B-horizon), and IP surveys over selected areas. The work was carried-out under the supervision of David R. Bell Geological Services Inc. "The results defined the Empress Structure, a series of moderate to strong IP anomalies and Au, Cu, Zn anomalies coincident with quartz veining in the area of the Empress Mine adit and extending east onto the present day Empress property" (Drost 1998).

1984 - 1987: Bell Geological Services conducted a diamond drilling program in 1984 consisting of 1557 m (5106 ft) in 12 holes, testing various anomalies detected in the vicinity of the Ursa Major occurrence (486 m in 4 holes), the Empress Mine (587 m in 4 holes), and along the Empress Structure (483 m in 4 holes). The most encouraging results included 44.23 g/t over 0.61 m (ddh 441-84-8), the presence of visible gold in ddh 441-84-1, and several sub economic intersections hosted by a "carbonatized sericitic shear" coincident with the Empress Structure. Another follow-up program further testing the Empress Structure was completed in 1987 (1674 m in 10 holes); The drill logs for this last program were submitted for assessment with the MNDM, but the corresponding report and assay results were never filed.

1988 - 1990: The property remained inactive for several years. Micham Exploration entered into financial difficulties, was renamed Micham Resources Inc. in December 1990, and the claims eventually became open.

1995 - 1997: The current Empress claim block was staked by prospectors George Daniels, and Audrey and Jon Ferguson.

1997 - 1998: The property was optioned by Landis Mining Corporation (LIS-ASE; 50%) and McArthur Minerals Inc. ( a private Ontario corp; 50%) in 1997. Following recommendations by M. Lavigne (Matawin Mineral Exploration) recognizing the gold potential of the property, approximately 20 km of linecutting, ground magnetics and VLF-EM surveys were completed in July of 1997, on portions of claims 1208187,

1208188 and 1208190. This was followed by a humus soil survey (347 samples), and by geological mapping and prospecting under the supervision of SDA Geological Services Ltd. The survey results indicated that the auriferous Empress Structure was approximately 800 m long, as a “splayed portion of a system of altered and weakly sulphide mineralized structures which traverses a portion of the Empress East Property for 1.7 km east of the Empress Mine lease.” (SDA 1998). A diamond drilling program comprising 700 m in 6 holes was recommended but never carried-out. The option agreement was dropped by Landis Mining and McArthur Minerals in March of 1998, due to various factors including market conditions.

1998-2005: Cameco Gold Inc. (a subsidiary of Cameco Corporation (Cameco) acquired the property in 1998 and started work in 1999. Cameco’s 1999 program involved an intensive review of the southern portion of the property. Sixteen kilometres of new grid was cut and a magnetic survey completed on the west grid (west of the Empress Mine). The west grid and south grid (old Landis grid) were used for 25 km of geological mapping and sampling, which included 130 grab samples. The mapping program resulted in the stripping of eight historical trenches distributed over a strike length of 1.4 km. The stripped areas were mapped and 308 channel samples were collected. To enhance the understanding of the Empress system, 8.8 km of dipole-dipole IP was conducted on selected grid lines on both the west and south grids. Twelve diamond drill holes totaling 1800 metres drill by Micham Resource in 1984 and 1987 were re-logged and re-sampled. A further 17.6 km of grid was cut and a ground magnetic survey conducted on the north grid (claim # 1217345) (Samson, 1999). In 2000, Cameco performed a geological survey and bulk till sampling program to follow-up previous year’s results and to further explore the property (McCracken, 2000). A brief mapping and prospecting program was completed in 2001 to focus on an electromagnetic anomaly detected by the 2000 Operation Treasure Hunt program at the north end of the property (Koziol, 2001). The property lay dormant since.

Alto Ventures Limited purchased the property from Cameco Corporation in 2005 and staked two additional claims (3008228 and 3008229).

## **1.6 Regional Economic Geology**

The following text on the regional economic geology of the Schreiber area is an excerpt from OGS Open File Report 5951 (from Schnieders et al. 1996, p. 13-14):

“Gold was reportedly first discovered in 1873 by Donald McKellar in the Jackfish and Victoria Cape areas. Prospector C. Robb reported that “a few specks of gold in quartz” were discovered in a vein of St. Ignace Island (Tanton 1931). No work has been done on these veins since 1882.

Early gold production (Table 3) came from the Empress Mine (1895-1900) and the North Shores Mine (1898-1900; 1935-1937). During the 1920's and the 1930's, gold exploration focused on the Schreiber area and a number of prospects and small producers. Properties such as the Harkness-Hays, Gold Range, Otisse, Jedder, Johnston-McKenna,

McKenna-McCann and Schreiber-Pyramid were developed. Along with the North Shores Mine, they collectively produced approximately 3000 ounces of gold.

Table 2. Past producers of gold, Schreiber area.

Mine/Property	Years	Gold Produced (oz)/Grade
North Shores Mine	1898-1900; 1923; 1932-1937; 1941	2441 / 0.64 ounce per ton Au
Empress Mine	1896-1897	112 / 0.10 ounce per ton Au
Gold Range	1921; 1936; 1941	36.35 / 0.91 ounce per ton Au
Harkness-Hays	1920; 1929; 1932; 1935-1936	200.84 / 2.58 ounce per ton Au
Schreiber-Pyramid	1937	76.57 / 0.51 ounce per ton Au

(n.b. minor, undocumented gold production has been reported at the Hays Lake (Jedder) and Little Bruin prospects)

Zinc, copper and lead deposits were also discovered in the late 19th century. The first producer was the Zenith Mine (1898-1901; 1966-1970). The Winston Lake copper-zinc deposit, currently being mined by Inmet Mining Corporation, was discovered in 1982 adjacent to the Zenith Mine. The Pick Lake deposit, discovered in 1984, is now being mined at the Winston Lake Division mine.

Dimension stone has been locally quarried since the 1880's for railway construction and architectural use. A variety of sandstones were quarried on the offshore islands of Nipigon Bay. Syenites of the Coldwell alkalic complex were extracted from sites in the vicinity of what is now Marathon. Marble was produced from a small quarry on the east side of the Nipigon River.”

## **2.0 THE 2006 ALTO EXPLORATION PROGRAM**

### **2.1 Objectives**

The objectives of the Alto 2006 program were to:

- (1) examine key exposures that were previously trenched along the Empress Structure to investigate if there are plunge trends that may control the distribution of the gold bearing quartz veins and determine if previous drilling by Micham Exploration (Samson, 1999) had tested the mineralization sufficiently.
- (2) investigate the Empress structural trend to the west of the former mine to determine if other occurrences could be discovered along this trend.
- (3) map claims 300228 and 300229 to determine if the geology, structures and alteration are favourable for hosting gold mineralization similar to that found at the Empress Structure to the east. Simultaneously, prospect these claims to locate new veins and mineralization as well as rediscover some of the historical showings and trenches reported in the assessment files.
- (4) prospect the areas of IP anomalies identified during the IP survey completed for Cameco in 1999 to identify and sample the sources of the IP anomalies.

### **2.2 Logistics**

The 2006 work by Alto focused on claims 3008228, 3008229, 1224854, 1208187, 1208188, 1210334 and 845646 and included geological mapping, prospecting, and sampling. The field program started on July 4 and lasted to August 2. Raymond Knowles, P.Geo., from Etobicoke, Ontario was the principal geologist on the project responsible for the geological mapping and the overall program in the field. James Pretchuk, a trained prospector contracted from Stares Contracting from Thunder Bay was the principal prospector assisting Mr. Knowles during the program. Derek Koziol, Geological Assistant worked on the property from July 4 to July 6. The program was supervised by Mike Koziol, P.Geo., P.Eng.

The crew was housed at Jackfish Lake Efficiency Cottages located 5 km from the property. Transportation of personnel from their points of origin and between camp and the property was by trucks rented from Enterprise Car Rentals in Sudbury and National Car and Truck Rental in Etobicoke. Maps and assessment reports required to carry out the field work were reproduced at Lakeview Sales and Service in Sudbury and all CAD work was completed by Derek Koziol.

Dr. Eva Schandl, from GeoConsult of Mississauga Ontario examined one thin section and provided a petrographic description (Appendix B).

## **3.0 GEOLOGY**

### **3.1 Regional Geology**

The Archean rocks of the Schreiber-Hemlo greenstone belt of the Wawa Subprovince extend along the north shore of Lake Superior, from Schreiber in the west to White River in the east. The Empress property lies within the Schreiber portion of the greenstone belt. It is comprised of tholeiitic and calc-alkalic mafic to felsic flows, interlayered with coarse to fine fragmental volcanic and minor sedimentary rocks. In the Jackfish Bay area, these rocks are folded into a series of tight isoclinal folds with subhorizontal to gently plunging east to east-southeasterly oriented fold axes (Walker 1967, Carter 1988). Large and small sill-like intrusions of gabbro, peridotite and minor quartz-feldspar porphyries have intruded the supracrustal sequences. The supracrustal and associated intrusive rocks are bounded to the northeast, north, west and south by the Black-Pic batholith, by rocks of the Quetico metasedimentary subprovince, the Crossman batholith and Terrace Bay pluton, respectively.

Metamorphic grade is generally upper greenschist but increases to upper amphibolite proximal to the granitoid plutons.

North to northeast-trending Proterozoic diabase dikes of the Marathon swarm were emplaced around 2.17 Ga and intrude all the rock types in the area (Osmani 1991).

### **3.2 Property Geology**

The area including the Empress property was mapped on a scale of 1 inch to one half mile in the 1960s by J. R. Walker (Walker, 1967). Walker's map shows that the property is predominantly underlain by mafic and intermediate to felsic volcanic rocks and their derived schists. These supracrustal rocks are intruded by intermediate to felsic hypabyssal intrusions and gabbroic sill-like bodies. Within the south portion of the property, these rocks are intruded by the late Archean composite Terrace Bay pluton (granodiorite, granite, monzonite to syenite).

Subsequent to Walker's work several portions of the property were mapped and prospected at various times by exploration companies including David Bell Geological Services for Micham Exploration Inc in 1983 and 1984 and by SDA Geological Services for Landis Mining Corporation in 1997. The most thorough work however was completed over the central part of the property by Cameco Corporation in 1999 (Samson, 1999) and 2000 (McCracken, 2000).

Geological mapping, prospecting and sampling during the 2006 program focused on the western claims since this area was not mapped recently. The 2006 program also focused on areas to the east and west of the former Empress Mines along the strike extent of the Empress Structure (see Map 1). A brief description of the various rock units on the property is provided below. The reader is referred to the work by Cameco (Samson,

1999 and McCracken, 2000) for more detailed descriptions of outcrop geology, petrographic studies and lithogeochemistry.

### 3.2.1 Mafic Metavolcanic Rocks (Map Unit 2)

Mafic volcanic rocks are the most predominant volcanic rock type underlying the central part of the property. They form a 500 m wide belt which extends northeasterly at about 075° across the central part of the mapped area and consists of massive to pillowed basalt (map units 2a and 2b). The rocks are fine-grained, weathered greenish-grey to grey, and are generally weakly chloritized and carbonatized, except within the Empress Structure, where silicification and sericitization become much more dominant.

### 3.2.2 The “Empress Structure” (Map Unit 3)

In previous work by Cameco (Samson, 1999 and McCracken, 2000), this unit was described as a mixture of two rock units, felsic metavolcanic rocks and clastic metasedimentary rocks (see Map 1).

The rocks in Map Unit 3 include quartz-sericite±carbonate schist which occurs in the core of the Empress Structure. The schist was exposed by trenching and stripping by Cameco from L0+00E to at least L11+00E (Samson, 1999) and it ranges in colour from yellow and beige to dark rusty brown. It is very fine-grained and the texture varies from strongly schistose to massive and very siliceous, with local “pseudolaminations” (1mm to <1cm wide) of uncertain origin defined by various shades of beige and grey. Locally the schist may contain up to 15% sulphides, and is strongly sheared and folded.

The schist is interbedded with chemical (cherty) laminated units and fine-grained clastic sedimentary rocks that are exposed discontinuously, as narrow lenses up to 30 m wide, at various locations along the Empress Structure. The clastic rocks include fine greywackes, siltstone, argillite and small clast conglomerate. The best example of the clastic sediments is at south portion of the Cameco stripped Trench 6 where the rocks are weathered brown to beige, and exhibit crude banding defined by the presence of minor dark grey siltstone laminations and beds, 1 to 10 cm thick, which can be followed laterally over several metres.

The width of Unit 3 is limited to a maximum of 100 metres, but generally is less than 25 metres and it is confined between two mafic flows. The rocks in this unit are intruded by various dykes and several generations of quartz stockwork.

A narrow lamprophyre dyke was observed within the Empress Structure at stripped area 1+00E. The dyke is less than 0.3 m wide, dark grey to black and strongly weathered, strongly sheared, deformed and dismembered into several lenses. The dyke is made up of biotite phenocrysts, contained within a fine groundmass of biotite, carbonate, and feldspars.

It is proposed that the Empress Structure (Map Unit 3) originated as a sequence of

interflow sediments mixed with possible felsic tuffs that have been subsequently sheared, mylonitized and altered and injected with gold bearing quartz veins.

### 3.2.3 Mafic to Intermediate Intrusive Rocks (Map Unit 8)

Mafic to intermediate intrusive rocks consist of gabbro to diorite and blue-quartz diorite. The gabbroic component of this unit (map unit 8b) weathers grey to greenish grey, is generally massive to weakly foliated and medium grained. The diorite, locally blue quartz diorite, (map unit 8c) is weathered grey to grayish-white, but often displays a distinctive pinkish-orange colour on the surfaces of joints. It varies from massive and non-foliated to weakly foliated locally. On fresh surfaces, the rocks are mostly fine-grained, dark grey and generally non-magnetic.

### 3.2.4 Late Archean Granitoid Rocks (Map Unit 11)

Late Archean granitoid rocks of the Terrace Bay batholith dominate the southern portion of the project area. The rocks are weathered white to grey, and generally occur as massive low-lying outcrops which are best exposed along the Trans-Canada Hwy 17. The granitoid rocks are comprised of medium-grained quartz, pinkish alkali-feldspars, white plagioclase, up to 10% hornblende and biotite, and various accessory minerals. A sharp contact between the granitoids and the country rock was rarely observed while mapping the property, but its proximity is usually inferred from a weak gneissosity sometimes noted in the intrusive and by rotating foliation angles observed within the surrounding mafic volcanic rocks.

### 3.2.5 Diabase Dykes (Map Unit 12)

Diabase dykes intrude all rock types, and are the youngest rocks on the property. They generally trend northerly, but are often locally emplaced along older structures oriented subparallel to stratigraphy. They are weathered grey to black and rusty brown, and range in width from <1 m up to 20 m. They are fine- to coarse-grained, sometimes chilled, are moderately magnetic, and commonly display 1-2mm plagioclase phenocrysts. A mappable outcrop of diabase identified in the 2006 program occurs in the southeast corner of the property (see Map 1).

## 3.3 Metamorphism

The rocks within the mapped area are transitional between the upper greenschist facies and the amphibolite facies due to contact metamorphism near the Jackfish Lake batholith to the south. Red garnets were not commonly observed while mapping, but are well represented within the mafic rocks intersected in historical diamond drilling (Samson, 1999). Walker (1967) extends an isograd around the Jackfish batholith, which stretches across the Empress property, separating an amphibolite facies to the south, from a “typical epidote-amphibolite assemblage” north of the Empress Mine.

### **3.4 Structural Geology**

On a regional scale, the supracrustal rocks are reported to have been subjected to at least one major episode of deformation, leading to the formation of several anticlines and synclines which generally trend to the southeast (Carter 1988). Locally, the rocks have been folded into tight isoclinal folds (Walker 1967), which were subsequently disrupted by the emplacement of the Jackfish Lake-Terrace Bay batholith. On the south portion of the Empress property, the penetrative fabric is essentially parallel to stratigraphy. It is oriented east to northeasterly and dips consistently to the south at various angles from subvertical to about 70 degrees; Examination of weakly deformed pillows on L15E and graded bedding from sediments in Trench L6E and in the vicinity of the Empress Mine suggest top direction are also to the south.

### **3.5 Mineralization and Alteration**

Gold mineralization has been recognized on the Empress property since the early 1900s with the discoveries of the Ursa Major occurrence and the Empress Mine. Three additional areas of gold were identified since including those along the Empress Structure, a major shear zone with several gold occurrences along it including those trenched by Cameco, as well as the Zlatco and Creek showings west of the former mine.

In 1999 Cameco trenched several gold occurrences along the Empress Structure extending eastward from their grid line L0 to at least L15+00E. Their assays ranged from geochemically anomalous (>5 ppb Au) to as high as 66.93 g/t Au (Samson, 1999). Visible gold apparently does occur in the vicinity of the Empress Mine but none was observed by Alto during the 2006 program. To date, the highest gold values were found associated with quartz-carbonate veins, however, anomalous gold (hundreds ppb) values were also obtained from pyritic sericite schist that hosts the veins.

The Creek showing is located within sheared mafic volcanics west of the former Empress Mine. Up to 300 ppb gold values were obtained previously from a gossanous and brecciated zone is approximately 1.5 m wide within mafic volcanics. The zone is highly silicified and carbonatized with quartz stockwork, 2-5% disseminated to patchy pyrite, traces chalcopyrite, and finely disseminated magnetite.

Two significant gold assays were obtained from grab samples in past work from the Zlatco showing (Samson, 1999), located approximately 900 m west of the Empress Mine. One sample containing 50% quartz stringers, and 2-4% disseminated to stringer pyrite with trace chalcopyrite, returned 6.7 g/t Au. Another sample taken from a schistose and weakly silicified mafic rock containing only 1% pyrite and trace chalcopyrite assayed 2.3 g/t Au.

The most common sulphide mineralization found on the property is pyrite, generally in small quantities occurring as fine disseminated crystals. Within the Empress Structure pyrite is accompanied by minor amounts of pyrrhotite, chalcopyrite, sphalerite, galena



and traces of molybdenite. The pyrite occurs as fractured anhedral to subhedral crystals disseminated along foliation parallel to the rock fabric, forming locally up to 15% of the rock. Pyrite also occurs within quartz-carbonate veins as fine disseminated crystals and hairline veinlets infilling micro fractures.

The alteration within the Empress Structure includes mainly silicification, sericitization, weak to moderate carbonatization, and to a much lesser extent biotitization, chloritization, and locally weak albitization. The silicification and sericitization are most intense in the sericite schist. The silicification is most obvious from the amount of quartz veining and stockwork, which occurs along the structure. The veins are semi-translucent and grayish, others are late bull white veins, some are cross-cutting, others are suparallel to the fabric, many are boudinaged, even dismembered and rotated, and they are found within all rock types, including late dykes.

#### **4.0 THE EMPRESS STRUCTURE**

The Empress structure is a zone of shearing and deformation that has been previously exposed by trenching and stripping at various locations (Samson, 1999). The stripped area extends for approximately 1.6 km from the eastern property boundary of the former Empress Mine (Cameco's LOE) and extending eastward to L15+00E. The most sheared portion of the structure varies from less than 15 to 25 m in width, and strikes slightly oblique to stratigraphy, at roughly 070° azimuth, dipping variably to the south at 90° to less than 50° but it is confined to an area between mafic flows (also see Section 3.2.2).

The sheared rocks within the structure include quartz-sericite schist and chemical sediments bordered in the north by a ±graphitic quartz-sericite schist which can be followed eastward past L15+00E and moderately deformed clastic metasediments found discontinuously along the southern edge of the quartz-sericite schist. A 15 to 25 cm wide lamprophyre dyke occupies the centre of the shear on L1+00E.

Structural work by Alto in Trench 1+00E indicates that there are only a few fold closures that are defined sufficiently for determining reliable plunge directions. In Trench 1+00E lineation rods along the shear dip plane varied from 105° to 115° in azimuth and dipping 43°. The strike of the shear zone varies from 70° to 95°.

The rocks in Trench 2+50E are similar to those in Trench 1+00E but the intensity of alteration and mineralization associated with the Empress structure is reduced at this location. The work by Alto has identified a fold with an axial plane striking 050° and dipping 43°. A number of lineation rods were measured down the dip plane showing an azimuth of 85° and a dip of 42°.

In Trench 6+00E, the Empress structure is over 25 metres wide and strongly silicified, sericitized, and injected with narrow quartz veins. The structure carries 1 to 5% sulphides and displays strong shearing and folding. Measurements by Alto indicate that the axial plane strikes 85° and dips 40°. Lineation rods trend down the dip plane at 125°

azimuth with 42° dips.

The rocks exposed in Trench 15+00E are similar to the other areas trenched but the deformation and alteration normally associated with the Empress structure is considerably diminished both in intensity and mineralization. No significant structural measurements were obtained in 2006 other than several sets of quartz micro-veins that strike at 82° and dip at 43° and other sets strike at 200° and dip at 70°.

General observations for along the Empress Structure include pinching and swelling on a scale of one metre to tens of metres in the individual stripped areas as well as in between the stripped areas. Similar observations were made for the quartz veins while walking past the Empress Mine where a vertical cross section in a trench shows a one metre wide quartz vein on surface pinching to 10 cm at a depth of two metres. To date, the two best exposures of the Empress Structure (including shearing, alteration, mineralization and width of zone) are (1) between the former mine and L1+00E and (2) the area of the trench on L6+00E. The best gold values obtained east of the former mine are from these two areas.

## **5.0 INVESTIGATION OF THE EMPRESS STRUCTURE WEST OF THE MINE**

Prospecting and mapping was carried out west of the former Empress Mine with the intention of following the Empress Structure westward. The chemical sediment horizon (Empress Structure) quickly diminishes in width and the veining west of the mine. The narrowed horizon was however followed to about 300 m west where it is offset by brittle north-northwest trending faults at a north trending creek. The horizon is located again west of the creek from where it strikes into the Zlatco Showing and trends westward into claims 3008228 and 3008229.

Sampling of various trenches from the area of the Zlatco showing returned anomalous gold from 300 to 1200 gold ppb. Samples collected from nearby boulders (in-situ or frost heaved?) also returned anomalous gold ranging from 12 ppb to 1092 ppb. The higher gold bearing samples contain white quartz veins, iron carbonate and pyrite.

## **6.0 CLAIMS 3008228 AND 3008229**

Claims 3008228 and 308229 were mapped on a scale of 1:5 000 to determine if the geology, alteration and mineralization on these claims are similar to that hosting the gold at the Empress Structure. Access to the claims is best gained by an ATV trail which starts at the Serendipity Gardens Restaurant advertisement sign on Highway 17. The trail crosses claim 3008229 through the centre and then it branches east and west just north of the claim.

The contact between the mafic volcanic rocks to the north and the granite to the south was delineated across the two claims. The contact is not sharp but widespread occurring

across a zone from 25 to 100 m wide made of granite dykes and mafic volcanics in various proportions. Sections of the contact area are well exposed along the south shore of Sister Lake (see Map 1) but there is no evidence of significant alteration or mineralization along the contact other than a few narrow bull white quartz veins which are barren of gold. Brecciated granite which could represent a late fault feature is exposed near the east boundary of claim 3008228 in a north-south outcrop along a creek. As at the volcanic-granite contact, there is no evidence of significant hydrothermal activity associated with this brecciation.

A large portion of claims 3008228 and 3008229 is occupied by gabbro-diorite which appears massive throughout the area. The gabbro-diorite interfingers with the mafic volcanic rocks near the eastern boundary of claim 3008228 and the contacts are very subtle with only minor changes in grain size. Both the north and south contacts are similar in texture and appearance and suggest a sub-volcanic affinity for the gabbro-diorite unit. No significant mineralization or alteration was found in the gabbro-diorite or near the contacts other than trace amounts of secondary pyrite found locally.

A historically discovered quartz vein located 100 m north of claim 3008229 is reported to carry up to 0.4 ounces per ton gold from grab samples. This vein is 10 to 15 cm wide and contains significant chalcopyrite and pyrite as inclusions and the wall rock immediately adjacent to the vein contains minor pyrite.

Limited exposures of interflow chemical and clastic sediments including chert, siltstone and argillite were observed near the centre of claim 3008228 approximately 200 m west of the claim's east boundary. The rocks strike at 070° and dip 70° south. Trace amounts of pyrite are associated with these rocks. Exposures to the west are lost in swamp but some float that is similar in appearance (including quartz veining, iron carbonate, pyrite and chalcopyrite) to the rocks at the Zlatco Showing was discovered 325 m west of Sister Lake. Sample 18317 was collected from the float material but assay results indicate only 61 ppb gold.

Two old trenches were found at the east boundary of claim 3008228 and they appear to be on strike with the above interflow sequence. The interflow rocks can be followed eastward into the Zlatco Showing some 250 m east of the claim boundary and a number of historical trenches were followed along strike up to the Zlatco showing and beyond to the east. This unit is interpreted as the western extension of the Empress Structure.

Traverses along the creek south of Sister Lake and around the shores of Lower Sister Lake were completed. In general, the rocks observed do not display significant alteration, mineralization or evidence of a major shear system passing through them. A narrow chloritic shear occurs along a creek between the Lower Sister Lake and Highway 17. The shear is host to several quartz veins, 3 to 10cm wide and contains up to 10% pyrite locally. Samples 18337, 18338 were collected from the veins and the pyrite-bearing shear and returned 14 and 7 ppb gold respectfully.

A black dyke, 5 to 10cm wide occurs in a road-cut outcrop on Highway 17 east of the

Sister Lake Creek. The dyke intrudes the granite and weathers recessively with respect to the granite. Some olivine was observed in the dyke and it was initially interpreted as an ultramafic lamprophyre but because diamond indicator minerals were found in the area by the OGS (Morris, 1999), a thin section was prepared and examined by Dr. Eva Schandl from the University of Toronto. The dyke turns out to be an ultramafic lamprophyre (see Appendix B)

While traversing the claims, it was also noted that very good till material exists across the claims. Based on the angularity of locally derived rock fragments in the till, a short distance of transport is proposed for the glacial materials. Therefore, should there be need for follow-up work on these claims, a till sampling program could be very effective in delineating targets along the trend of the Empress Structure.

## **7.0 FOLLOW-UP OF CAMECO IP RESULTS**

Prospecting was carried out to find the causes of several of the better geophysical anomalies detected by the IP/Resistivity survey completed for Cameco in 1999 (Berube, 1999). Most of the grid lines from 1998 were overgrown and difficult to follow, and therefore some of the interpreted locations of the anomalies were difficult to find.

Anomaly DD-4 is the most significant anomaly in the geophysical survey area and it coincides well with the stripped areas along the Empress Structure east of the former mine. The IP anomaly identified as DD-4 is due to disseminated sulphides and locally graphitic argillite and it was previously sampled at the various locations. It is important to note that the mafic volcanics on either side of the Empress Structure contain 2 to 5% finely disseminated pyrite locally giving the IP anomaly its broad appearance. Fine disseminated pyrite was also recognized in areas of anomaly DD-3. Anomaly DD-5 was looked for but was not explained due to poor exposure.

A strong anomaly (DD-9) is situated on line 15E over the trench area at Christie Lake. Only minor amounts of disseminated pyrite are exposed in the trench and the strongest polarity appears to be over pillowed volcanics which are not mineralized. Examination of the chemical sediment horizon along the shoreline of Christie Lake, 75m east and along strike of the anomaly revealed sections of strong pyrite mineralization with semi-massive bands locally. In projecting the chemical sediment sequence at Christie Lake up-dip, these mineralized rocks line up well with the chemical sediments exposed in the trench and confirm the local variations within these rock units. Based on these observations, it is interpreted that the IP survey is seeing the better sulphide mineralization down the dip. A sample was taken (18346) of the sulphide exposure at Christie Lake. But since no quartz veining or significant structural deformation or alteration was observed in these rocks, the gold values are low, returning 20 ppb. A small quartz vein 75m west of the IP anomaly in the volcanic rocks contained minor pyrite and was sampled (18345) returning 13 ppb gold.

Anomaly DD-1 was investigated and a 1 to 2 m wide pyritic, buff-coloured alteration

(silica, sericite, light-green chlorite) zone was discovered. The zone albeit poorly exposed was followed for over 50m along strike. The pyritic zone is lost in overburden on both ends. Samples 18321 – 18324 were taken and gold results are discouraging, the best being 20 ppb.

Anomaly DD-6 is a weak chargeability anomaly and lies within massive mafic volcanics. Locally, there are areas of weak shearing and sometimes these contain up to 2% fine pyrite.

## **8.0 CONCLUSIONS**

Alto Ventures Ltd has completed a program of geological mapping and prospecting to further evaluate the previously stripped and trenched Empress Structure and to explore for strike extensions of this structure to the west. Prospecting was also carried out over areas of previously delineated IP geophysical anomalies. Based on the results from the 2006 summer work, the following conclusions are drawn:

1. Structural measurements along the Empress Structure suggest that the quartz veins which host the gold mineralization tend to plunge generally east at shallow angles ( $<45^\circ$ ) but specific directions vary from  $80^\circ$  to  $125^\circ$ . The better mineralized zones appear to pinch and swell along the Empress Structure on a scale of one metre to tens of metres and similar pinch-swell features appear to occur within the dip plane. To date, the two best areas (thickest and most intensely sheared and altered) for hosting significant gold mineralization are located (1) between to former Empress Mine and L1+00E and (2) the area centered on Trench L6+00E;
2. The Empress Structure extends west of the former mine for more than 1.5 km through the Zlatco showing and continues westward. The exposures along this stretch are not as good as at the east side of the former mine and the intensity of shearing, alteration and mineralization is not as strong. However, a number of anomalous gold values were obtained from the west extensions along the Empress Structure.
3. The geological mapping and prospecting of claims 3008228 and 3008229 has located the Empress Structure in the east end of 3008228 but failed to locate significant zones of shearing, alteration or mineralization in claims 3008229.
4. The prospecting over historical IP anomalies has identified several of the sources for the anomalies but the gold values associated with these are low. To date, the best anomaly is still DD-4 and this anomaly is coincident with the Empress Structure that was already sampled on surface.

## **9.0 RECOMMENDATIONS**

Based on the results of this program and previous work, the following is recommended:

1. Diamond drilling in the area of Trench L6+00E to test the quartz veins reported by Cameco. The first-pass program should consist of a minimum of five holes totaling 600 m of drilling. One hole should undercut the trench and two other holes should be drilled on either side of the first hole spaced at 25 m. Once plunge is confirmed, two additional holes should be drilled to follow mineralization to depth.
2. Bulk-till sampling to test for possible “hot spots” along the western extension of the Empress Structure.

## **10.0 REFERENCES**

Berube, D. 1999: A Report on an Induced Polarization Survey carried out on the Empress East Project, Syine Township, Ontario, submitted to Cameco Gold Inc, November 1999, 99-N431

Carter, M.W. 1988: Geology of Schreiber-Terrace Bay area, District of Thunder Bay; Ontario Geological Survey, Open File Report 5692, 287p., 14 photos, 19 figures, 27 tables, 1 appendix, and 5 maps in back pocket.

Jackson, S.L., Beakhouse, G.P., and Davis, D.W. 1998: Regional Geology Setting of the Hemlo Gold Deposit; interim progress report; Ontario Geological Survey, Open File Report 5977.

Koziol, M. 2001: Cameco Gold Inc., 2001 Summer Exploration Program, Empress Project, Syine Township and Santoy Lake Area, Northwestern Ontario, NTS 42D/15. Unpublished Company Report.

McCracken, T. 2000: Cameco Gold Inc., 2000 Summer Exploration Program, Empress Project, Syine Township and Santoy Lake Area, Northwestern Ontario, NTS 42D/15. Unpublished Company Report.

Morris, T.F. 2000: Kimberlite, Base Metal, Gold and Carbonatite Exploration Targets; Derived from Overburden Heavy Mineral Data, Killala Lake Area, Northwestern Ontario; Ontario Geological Survey, Open File Report 6013.

Morris, T.F. 1999: Quaternary Geology Mapping and Surficial Sampling, Killala Lake-Coldwell Area, Northwestern Ontario; in Summary of Field Work and Other Activities 1999, Ontario Geological Survey, Open File Report 6000, p.38-1 to 38-7.

Osmani, I.A. 1991: Proterozoic mafic dike swarms in the Superior Province of Ontario; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p.661-681.

Sage, R.P. and Watkinson, D.H. 1995: Alkalic rocks of the midcontinent rift; in Proceedings Volume 41, part 2a, 41st Annual Meeting, Institute of Lake Superior

Geology, 75p.

Samson, J. 1999: Cameco Gold Inc. 1999 Exploration Program Empress Project, Syine Township and Santoy Lake Area, Northwestern Ontario, NTS-42D/15. Unpublished Company Report.

Schnieders, B.R., Smyk, M.C., Speed, A.A. and McKay, D.B. 1996: Mineral occurrences in the Nipigon-Marathon area, Volumes 1 and 2; Ontario Geological Survey, Open File Report 5951, 912p.

Walker, J.R. 1967: Geology of the Jackfish-Middleton Area, District of Thunder Bay; Ontario Department of Mines, Geological Report Number 50, 41p. Accompanied by Maps Numbers 2107, 2112, both at a scale of 1 inch to 1/2 mile.

## 11.0 CERTIFICATE OF AUTHOR

I, Marian (Mike) Koziol, P.Eng., P.Geo., resident at 26 Cognac Court, Sudbury, Ontario do hereby certify that:

1. I am currently employed as President, Exploration by Alto Ventures Ltd.
2. I graduated from McGill University, Montreal, Quebec with a B.Sc. degree in Geological Sciences in 1978.
3. I am a licensed member of the Professional Engineers of Ontario (No. 100026045) and a licensed member of the Association of Professional Geoscientists of Ontario (No. 1009). I am also a member of the Association of Professional Engineers and Geoscientists of Saskatchewan (No. 05638).
4. I have worked continuously as an exploration geologist since my graduation, exploring for gold and base metals deposits in the Canadian Shield including the Churchill Province of Saskatchewan and Manitoba and the Superior Province of Manitoba, Ontario and Quebec.
5. I have read the definition of "Qualified Person" as set out in National Instrument 43-101 and certify that I fulfill the requirements to be a Qualified Person for the purposes of NI43-101 by reason of my education, relevant past work experience and affiliation with professional association as defined in NI43-101.
6. I have personally supervised the work on the Empress property and described in this report.
8. As of the date of this certification, I am not aware of any material fact or change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9. I do not hold a direct interest in the Empress property but I do own shares of Alto Ventures Ltd and for the purposes of this report I am not an independent Qualified Person as defined by Section 1.5 of NI43-101.

Original Signed in Sudbury, Ontario on this 18<sup>th</sup> day of March, 2007



Marian (Mike) Koziol, P.Eng., P.Geo.



Appendix A:  
Sample Descriptions

Sample Number	Sample Location		Local Location Name	Claim Number	Sample Description
	Easting	Northing			
18301	97.8	124.5	trench 1E	1208188	high grade chip 40cm; strongly ser/sil, altered wallrock and 5cm vein; 2 - 10% fine to medium py; yellow-silver blades and diss; tr cpy and galena in qtz vein; tr - 1% py in vein as diss blebs; note: other 1 - 2cm qtz blue/grey
18302	97.8	124.3	trench 1E	1208188	1m S. of previous; chip 30cm; another 30% qtz vein/70% sheared clastic sediment; tr - 10% as before; fine and coarse; 10cm main vein
18303	97.8	124.1	trench 1E	1208188	1m further S.; high grade grab; sheared up vein and ser wallrock; abundant 1 - 5% py in veins, as concentrations and diss; 1 large bleb sphalerite; tr fine cpy
18304 - 18307			General description		very rusty gossan rotted rock zone that lines up with 18301 - 18303 area; not channel sampled but still exposed; same non-weathered py and non bull qtz veining with 1 - 10% diss and blebs py; tr cpy, sphal; some vein material could be Fe carb ??
18304	105.7	114.3	trench 1E	1208188	between 1244 and 1245; 10% fine to med py seen diss and bleb in fractured/fol qtz where fresh; some could be Fe carb; also rust and bleb of sphal when sulfides have been rotted out
18305	106.8	113	trench 1E	1208188	just S of 1244; very rotten gossanized rock with some preserved textures and 10 - 20% py still remaining
18306	108.5	111.2	trench 1E	1208188	2m east of 15305; gossan knob sticking out; similar to previous
18307	112.5	113.7	trench 1E	1208188	5m east and along strike with 1240; 10 - 20cm vein qtz in fracture parallel to foliation/bedding; with 5% diss py, blebs and along fractures; fine to medium grained; qtz is darker white/grey; wall rock sheared with 5 - 10% py
18308	500529	5411874	east of Zlatco	1224854	interflow sed?; poorly exposed on rock face at small blast pit; tr py; mm chert bands with carb bands and siltstone trends 265/75-80S; bounded to N by fine mafic vol with tr - 2% fine py diss as seen at main zone
18309	500525	5411857	east of Zlatco	1224854	small exposure; alt mafic vol, lighter swirls and weakly altered brecciation; tr py diss and with alt fractures; heavy, non-magnetic; proximal to geochem anomaly (Cu)

Sample Number	Location		Local Location Name	Claim Number	Sample Description
	Easting	Northing			
18310	500263	541183	zlavitz 44468	1224854	same location as 44468 (30 - 40cm to the west); qtz vein strung out, altered; tr - 2% py; tr cpy
18311	500267	541183	Zlatco	1224854	east of trench, 3 - 5m N of veins and/or projection; trench rubble or ejecta; qtz vein rich altered sed/vol; qtz as stringers; tr - 5%py assoc with qtz and alt carbonate??; material possibly from blasted hole
18312	500263	541188	Zlatco	1224854	from depression at mid-trench; some near in situ rock; qtz-carb (Fe) vein stringers; tr cpy; 1 - 3% py similar to previous grab sample
18317	488807	5411386	trail creek	3008229	several pieces of angular float; Fe-carb alt volcanic with 10-20% qtz stringers and tr - 3% py diss and along fractures; some coarse concentrations (no xls); tr bleb of cpy on fracture planes; alt bleaching about fractures filled with qtz; py associated
18318	116.2	106.5	trench 1E	1208188	area of sample 1262 broad gossan rich area 1.5 - 2m; cherty veining material; 1 - 10% local diss py; rotted
18319	499355	5412025	NW corner	3008228	fine grained 8c diorite with 1 - 3% py diss fine grained bounded by med grained gabbro diorite
18320	499802	5411707	W end zone?	3008228	fractured and hardened mafic volcanic; min altered fractures with tr - 1% py
18321	502035	5412581	north IP zone	1208187	strongly altered gabbro/diorite relic textures; strong sil, ser bleaching; tr fuchsite; tr - 10% py fine white to grey; tr cpy; no qtz veining visible here; no evidence of being worked in last 20 years; coincident with IP anomaly projection between lines; exposed across 1m strong and additional 2m to S
18322	502035	5412581	north IP zone	1208187	
18323	502005	5412582	north IP zone	1208187	similar to first sample
18324	502015	5412580	north IP zone	1208187	similar to first sample
18336	500112	5412163	NW corner	1224854	on side of slope; rusty angular float/talus; banded or foliated mafic vol/chem sed with tr - 2% py; tr cpy along fol planes and fractures; bldr very rusty
18337	499465	5410867	Sister Lk Ck	3008228	wallrock; possibly 10 - 20cm hanging wall from vein; 3 - 5% diss py in chlorite shear?
18338	499465	5410867	Sister Lk Ck	3008228	10cm qtz vein with pyritic wall rock; strongly altered; vein is fractured with light to mediumgreen chlorite inclusions; tr py; immediate wallrock up to 10% py in first 3 - 5cm

Sample Number	Location		Local Location Name	Claim Number	Sample Description
	Easting	Northing			
18339	500193	5411790	W of Zlatco	1224854	chemical sediment; foliated, banded, flakey, friable; 20% silica (qtz after chert?) with tr - 0.5% white py; rock similar to Zlatco zone host rocks and 25 - 50m west
18340	500282	5411793	next to Zlatco	1224854	10m W of Zlatco trench; strongly foliated, banded, flakey, altered chemical sediment; moderate Fe carb with 30% silica (recrystallized chert); tr - 1% fine py; calcite component darker grey portions
18341	500282	5411793	next to Zlatco	1224854	Fe-carb alteration with 3 - 5% diss py throughout; py fine grained
18342	500264	5411789	next to Zlatco	1224854	15 - 20m W of Zlatco; area of many bldrs of chem sed; 30% qtz veining and tr - 5% py; disseminations associated with qtz and fractures; Fe carb component; tr cpy?
18343	500260	5411807	next to Zlatco	1224854	bldr chemical sediment; altered with 40% qtz and carb vein; at top of Zlatco trench; several bldrs with qtz veins; fragments within vein and wallrock contain most of sulfides; tr - 3% py; tr cpy; some magnetite
18344	500790	5412190	cabin creek	1224854	sheared chloritic bldrs in creek on aest bank; float or near subcrop; strongly foliated with qtz and tr - 0.5% diss py
18345	502920	5412632	W shore of Christie Lake	1208187	10 - 15cm qtz vein in pillowed volcanics; vein trends 280 , is fractured, slightly brecciated with wallrock fragments; rusty; tr py observed with chlorite fragments and on wallrock fracture coatings; vein trends 070
18346	503037	5412699	W shore of Christie Lake	1208187	chemical sediment unit on shoreline; very rusty section 30 - 40% chert banded nature; moderately sheared out; tr - 3% white pyrite; fine diss
18347	501095	5412155	Empress extension	1224854	rusty chemical sediment sheared out with tr 3% py, with chert fragments; zone appears to be narrow but negative relief may hide a broader zone; no qtz vein for last 100m
18348	503712	5410915	road cut Vq		quartz vein material from strongly altered mafic volcanics at the contact with granite; the volcanics are chl-bio schist
18349	503763	5410926	road cut Vq		quartz stockwork in a fine grained granite with 1 - 10% disseminated throughout granite and concentrated along fractures and as crystal blebs at quartz edges, generally quartz is pyrite poor.

Sample Number	Sample Location		Local Location Name	Claim Number	Sample Description
	Easting	Northing			
18350	503761	5410929	road cut Vq		strongly altered volcanic chl-bio-qtz schist with up to 60% quartz veining (flat veins folded and pinched) with massive concentrations of pyrite crystals up to 2cm cubes but generally finer along foliation and along quartz veins sometimes in quartz fractures
18351	503752	5410933	road cut Vq		same o/c as befor but 5m NW, up to 0.75m wide flat vein folded and pinched in metamafic volcanic(bio-qtz-chl schist); grab of quartz vein with possibly trace copper with malachite staining in fractures; light chlorite in fractures and partings.
18352	503739	5410965	road cut Vq		main quartz vein exposed in the road cut within alt. mafic volcanic and 'dirty' granite;contains disseminated fine py; along one of the quartz veins a large actinolite fan was observed; along the edge of the quartz veins and volcanic caught up in the vein 10 - 20% py was observed as large crystals and concentrations up to 2cm; vein is complexly folded

Appendix B:  
Petrography Report  
by  
Dr. Eva Schandel

**Sample Number: EMP-01**

**Rock Type: Ultramafic Lamprophyre**

**Petrographic Description:**

A fine-grained, porphyritic ultramafic lamprophyre. The rock consists of euhedral / subhedral olivine phenocrysts (altered to serpentine + iddingsite), and unaltered clinopyroxene phenocrysts. The phenocrysts are set in a very fine-grained matrix consisting of granular clinopyroxene, needle-shaped ilmenite, and dark, amorphous clays. Olivine and clinopyroxene phenocrysts occur in aggregates and as single grains. The olivine were serpentinized prior to iddingsite (low temperature) alteration. Relict serpentine in the center of the grains is mesh lizardite, and the serpentinized olivine generally contains anhedral aggregates of fine-grained magnetite. Magnetite however, is absent or sparse where iddingsite replaced the serpentine. The colorless clinopyroxene phenocrysts are short, prismatic, or six-sided grains. A few small grains of porous pyrite occur within the matrix.

It is not possible to come to reasonable conclusions with respect to the diamond-bearing potential of the lamprophyre without further analytical work.

**Detailed mineralogy**

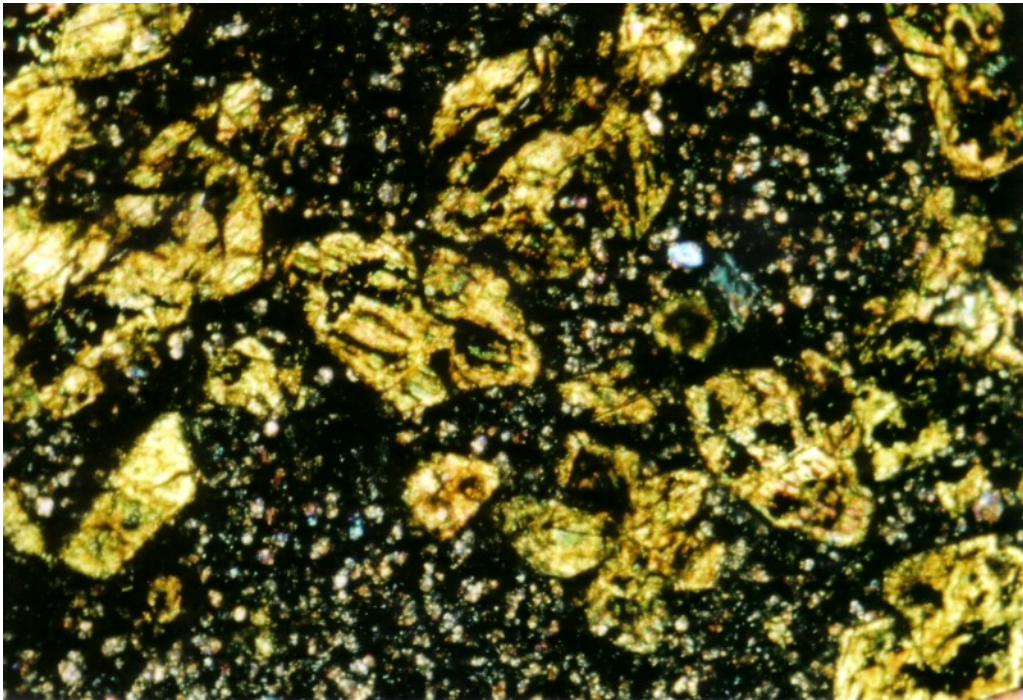
<b>Mineral</b>	<b>%</b>	<b>Grain size(mm)</b>	<b>Comments</b>
“Olivine” (serpentine + iddingsite)	40	<0.5-3.0	Olivine was originally replaced by mesh lizardite serpentine + magnetite, and subsequently by iddingsite. Relict serpentine occurs in the center of several grains. The euhedral / subhedral phenocrysts occur either in aggregates (glomerocrysts) or as single grains. Some are intergrown with the clinopyroxene phenocrysts.
Clinopyroxene matrix phenocrysts	25 5	microcrystalline <0.2-0.6	Euhedral / subhedral clinopyroxene (diopside) phenocrysts are stubby, prisms. They are unaltered, and occur as single grains or as glomerocrysts. The microcrystalline clinopyroxene that makes up part of the matrix are granular, equant grains.
Ilmenite / titanomagnetite	5	minute up to 0.5	Needle-shaped ilmenite or titanomagnetite are abundant and form grid-shaped patterns within the matrix.

Amorphous clays 25

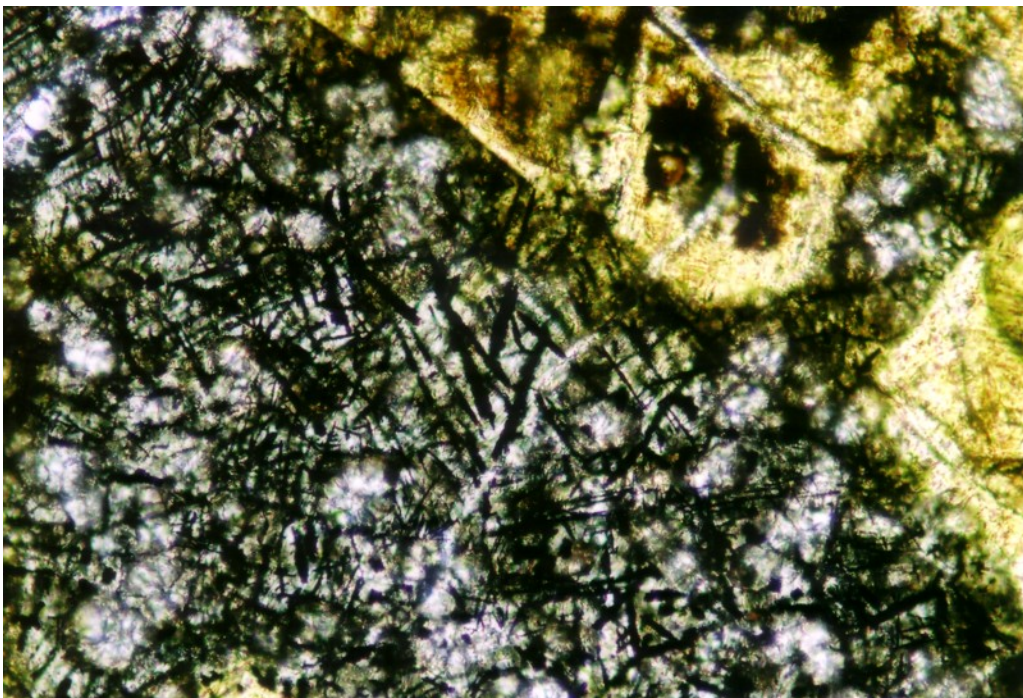
Dark, amorphous clays are interstitial to the matrix clinopyroxene and most commonly occur where ilmenite is abundant. The precursor mineral(s) to the clays are optically unrecognizable.

Accessory minerals: magnetite, hematite, pyrite

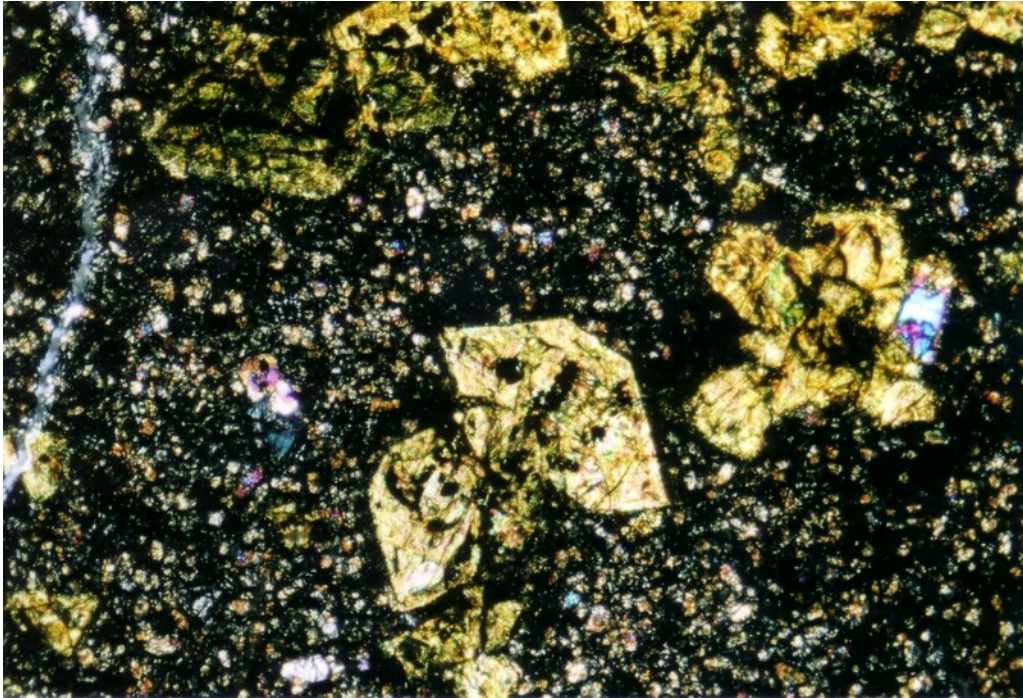




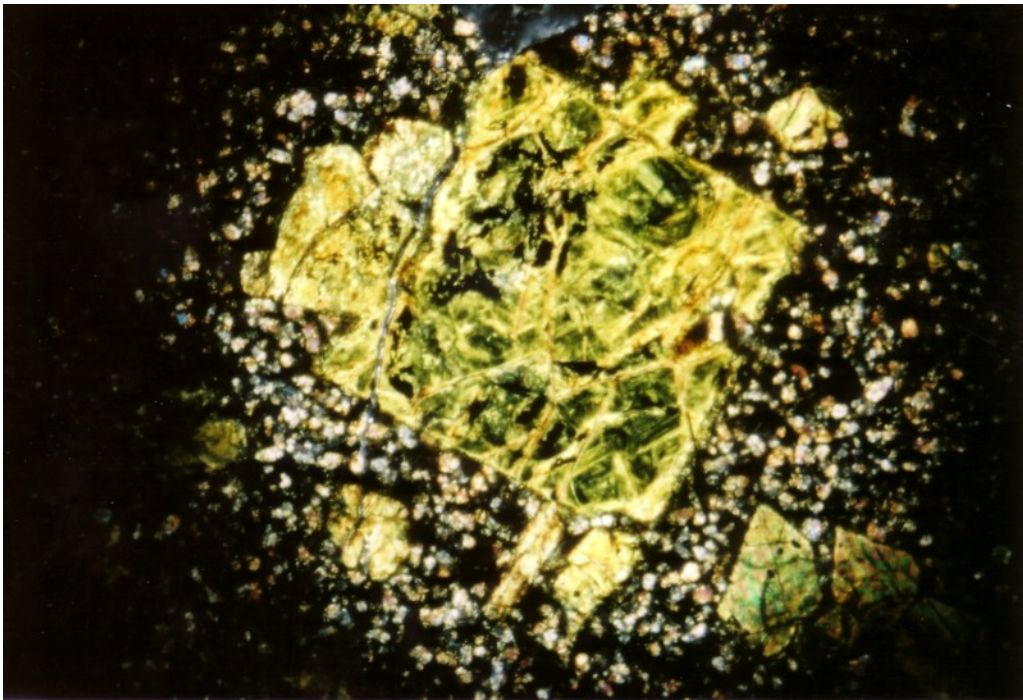
EMP-01a. Iddingsite-altered (yellow) olivine phenocrysts in fine-grained matrix.  
Width of photo: 2.3 mm. XN.



EMP-01b. Black ilmenite needles in grid-like pattern within the clinopyroxene-rich matrix  
of the lamprophyre. Width of photo: 0.45mm. Ppl.



EMP-01c. Iddingsite-altered euhedral / subhedral olivine phenocrysts and one diopside phenocryst (blue) in fine-grained matrix of clinopyroxene, ilmenite and amorphous clays. Width of photo: 2.3mm. XN.



EMP-01d. Mesh lizardite (serpentine)-altered center of olivine phenocryst. The rest is replaced by yellow iddingsite. Width of photo: 2.3mm. XN.

Appendix C:  
Gold Assays and ICP Certificates

## Certificate of Analysis

Thursday, August 10, 2006

Alto Ventures Ltd.  
 #3 - 1349 Kelly Lake Rd.  
 Sudbury, ON, CA  
 P3E5P5  
 Ph#: (705) 522-6372  
 Fax#: (705) 522-8856  
 Email exploration@altoventures.com

Date Received : 18-Jul-06  
 Date Completed : 27-Jul-06  
 Job # 200641213  
 Reference : Terrace Bay  
 Sample #: 19      Core

Accurassay #	Client Id	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ag ppm	Co ppm	Cu ppm	Fe ppm	Ni ppm	Pb ppm	Zn ppm
72938	18301	166										
72939	18302	50										
72940	18303	69										
72941	18304	2278										
72942	18305	440										
72943	18306	248										
72944	18307	1662										
72945	18308	14										
72946	18309	12										
72947	18310	924										
72948	Check 18310	746										
72949	18311	379										
72950	18312	1214										
72955	18317	61										
72956	18318	333										
72957	18319	17										

PROCEDURE CODES: AL4AU3, AL4ICPAR

**Certified By:**   
 Derek Demianiuk H.Bsc., Laboratory Manager

The results included on this report relate only to the items tested

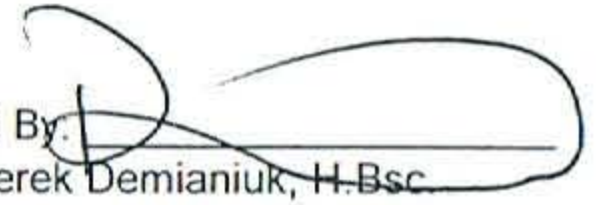
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Page 1 of 1

Alto Ventures Ltd.  
 Date Created: 06-08-02 08:54 AM  
 Job Number: 200641213  
 Date Recieved: 7/18/2006  
 Number of Samples: 19  
 Type of Sample: Core  
 Date Completed: 7/27/2006  
 Project ID: Terrace Bay

\* The results included on this report relate only to the items tested  
 \* This Certificate of Analysis should not be reproduced except in full, without the written approval of the laboratory.  
 \*The methods used for these analysis are not accredited under ISO/IEC 17025

Accur. #	Client Tag	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
72938	18301	<1	0.38	24	42	32	1	0.06	6	35	198	169	4.23	0.32	3	0.03	<100	15	0.02	34	362	88	<5	<5	0.02	<10	5	<100	1	7	<10	<1	359
72939	18302	<1	0.20	6	43	19	<1	0.01	<4	5	497	47	1.94	0.18	2	0.02	<100	10	0.03	24	135	15	<5	<5	0.02	<10	5	<100	<1	5	<10	<1	12
72940	18303	<1	0.18	21	45	12	<1	0.02	6	36	557	110	3.42	0.10	2	0.02	105	15	0.02	49	114	51	<5	<5	0.01	<10	<3	<100	4	8	<10	<1	142
72941	18304	<1	0.50	24	50	37	2	0.11	10	50	228	57	7.67	0.15	4	0.12	119	115	0.05	54	691	24	<5	<5	0.02	<10	13	163	1	48	<10	<1	41
72942	18305	<1	1.09	96	49	70	5	0.02	27	59	66	107	>10.00	0.24	5	0.11	157	108	0.02	61	695	93	<5	<5	0.02	<10	6	<100	4	69	<10	<1	281
72943	18306	<1	0.33	31	48	22	2	1.18	9	53	110	43	6.79	0.11	3	0.11	352	73	0.04	67	713	32	<5	<5	0.02	<10	27	<100	3	34	<10	3	128
72944	18307	<1	0.54	32	39	34	1	0.03	6	35	476	511	4.35	0.22	4	0.05	122	27	0.02	46	196	17	<5	<5	0.02	<10	4	<100	4	19	<10	<1	72
72945	18308	<1	4.55	15	54	121	2	6.50	13	54	107	111	>10.00	0.45	49	1.31	999	25	0.03	146	1066	17	<5	<5	0.02	<10	120	225	<1	164	<10	13	92
72946	18309	<1	3.29	11	59	20	2	4.41	12	65	171	101	9.81	0.06	22	1.21	787	22	0.06	146	1281	15	<5	<5	0.02	<10	48	5203	<1	327	<10	11	92
72947	18310	<1	1.29	10	57	105	2	1.47	10	39	340	11	7.91	0.77	6	0.76	998	26	0.03	76	576	18	<5	<5	0.01	<10	13	1220	<1	151	<10	4	43
72948	18310	<1	1.38	11	57	110	2	1.54	10	41	350	12	8.38	0.83	6	0.81	1041	27	0.03	82	620	22	<5	<5	0.01	<10	14	1230	1	157	<10	4	46
72949	18311	<1	2.37	13	52	274	2	7.50	11	58	145	19	8.13	0.31	20	1.63	1656	28	0.05	109	1020	16	<5	<5	0.02	<10	116	514	3	155	<10	8	66
72950	18312	<1	2.33	12	55	88	2	8.87	14	64	148	30	>10.00	0.50	17	2.08	2368	32	0.05	121	1042	22	<5	<5	0.02	<10	190	857	<1	170	<10	10	66
72955	18317	<1	2.69	11	75	473	3	5.28	14	42	164	80	>10.00	1.97	22	3.03	1237	49	0.08	94	1597	46	<5	<5	0.03	<10	425	2246	2	187	<10	7	167
72956	18318	<1	0.74	34	59	70	3	0.12	15	37	86	37	>10.00	0.40	4	0.18	134	238	0.04	40	573	40	<5	<5	0.02	<10	15	117	3	69	<10	1	52
72957	18319	<1	3.45	15	69	55	2	3.18	14	59	130	90	>10.00	0.11	26	2.46	803	40	0.05	83	471	22	<5	<5	0.02	<10	19	2277	<1	281	<10	6	89

Certified By   
 Derek Demianiuk, H.Bsc

*Empress - Wayne*



# Certificate of Analysis

Thursday, August 10, 2006

Alto Ventures Ltd.  
 #3 - 1349 Kelly Lake Rd.  
 Sudbury, ON, CA  
 P3E5P5  
 Ph#: (705) 522-6372  
 Fax#: (705) 522-8856  
 Email exploration@altoventures.com

Date Received : 24-Jul-06  
 Date Completed : 02-Aug-06  
 Job # 200641274  
 Reference : Terrace Bay  
 Sample #: 17 Core

Accurassay #	Client Id	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ag ppm	Co ppm	Cu ppm	Fe ppm	Ni ppm	Pb ppm	Zn ppm
76942	18320	18										
76943	18321	20										
76944	18322	20										
76945	18323	24										
76946	18324	21										

76959 18336 10

PROCEDURE CODES: AL4AU3, AL4ICPAR

Certified By:   
 Derek Demianiuk H.Bsc., Laboratory Manager


The results included on this report relate only to the items tested

The Certificate of Analysis should not be reproduced except in full, without the written approval of the laboratory

Alto Ventures Ltd.  
 Date Created: 06-08-04 11:34 PM  
 Job Number: 200641274  
 Date Received: 7/24/2006  
 Number of Samples: 17  
 Type of Sample: Core  
 Date Completed: 8/2/2006  
 Project ID: Terrace Bay

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 \* This Certificate of Analysis should not be reproduced except in full, without the written approval of the laboratory.  
 \*The methods used for these analysis are not accredited under ISO/IEC 17025

Accur. #	Client Tag	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
76942	18320	<1	2.91	15	33	26	3	0.15	17	13	315	490	>10.00	0.10	5	1.01	583	25	0.03	21	133	17	<5	<5	0.11	<10	<3	386	<1	14	<10	5	308
76943	18321	<1	0.94	5	27	57	<1	0.17	<4	11	240	41	1.76	0.29	7	0.25	142	21	0.05	21	778	11	<5	<5	0.02	<10	7	<100	<1	8	<10	9	34
76944	18322	1	1.73	5	33	32	1	0.27	6	27	306	177	3.96	0.24	16	0.65	419	19	0.06	39	929	11	<5	6	0.02	<10	7	343	<1	10	<10	13	101
76945	18323	1	1.57	8	25	32	<1	0.45	12	15	378	90	3.87	0.28	8	0.68	351	17	0.07	20	1048	17	<5	6	0.02	<10	8	469	<1	8	<10	18	348
76946	18324	1	1.14	3	28	37	<1	0.32	<4	13	407	107	2.73	0.31	6	0.40	249	14	0.05	22	924	9	<5	6	0.02	<10	7	706	<1	6	<10	15	29
76959	18336	2	4.82	14	29	32	4	3.47	23	50	191	515	>10.00	0.20	7	1.46	1180	35	0.23	102	1239	50	<5	<5	0.11	<10	22	3122	<1	227	<10	8	71

Certified By:   
 Derek Demianiuk, H.Bsc.

## Certificate of Analysis

Friday, August 11, 2006

Alto Ventures Ltd.  
#3 - 1349 Kelly Lake Rd.  
Sudbury, ON, CA  
P3E5P5  
Ph#: (705) 522-6372  
Fax#: (705) 522-8856  
Email exploration@altoventures.com

Date Received : 28-Jul-06  
Date Completed : 11-Aug-06  
Job # 200641305  
Reference : Terrace Bay  
Sample #: 11 Core

Accurassay #	Client Id	Au ppb	Au oz/t	Au g/t (ppm)
78561	18337	14	<0.001	0.014
78562	18338	7	<0.001	0.007
78563	18339	67	0.002	0.067
78564	18340	538	0.016	0.538
78565	18341	12	<0.001	0.012
78566	18342	427	0.012	0.427
78567	18343	1092	0.032	1.092
78568	18344	16	<0.001	0.016
78569	18345	13	<0.001	0.013
78570	18346	18	<0.001	0.018
78571 Check	18346	20	<0.001	0.020
78572	18347	11	<0.001	0.011

PROCEDURE CODES: AL4AU3, AL4ICPAR

Page 1 of 1

Certified By:

*[Signature]*  
Derek Demianiuk H.Bsc., Laboratory Manager

The results included on this report relate only to the items tested

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# Accurassay Laboratories

Mineral Assay Division of Assay Laboratory Services Inc.

1046 GORHAM STREET THUNDER BAY, ONTARIO P7B 5X5 PHONE: (807) 626-1630 FAX: (807) 623-6820 EMAIL: assay@accurassay.com WEB: www.accurassay.com

Alto Ventures Ltd.  
 Date Created: 06-08-17 01:31 PM  
 Job Number: 200641305  
 Date Received: 7/28/2006  
 Number of Samples: 11  
 Type of Sample: Core  
 Date Completed: 8/11/2006  
 Project ID: Terrace Bay

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 \* This Certificate of Analysis should not be reproduced except in full, without the written approval of the laboratory.  
 \*The methods used for these analysis are not accredited under ISO/IEC 17025

Accur. #	Client Tag	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
78561	18337	<1	3.12	<2	23	344	1	5.73	<4	48	93	169	7.23	1.71	61	3.45	1329	3	0.03	29	1510	<1	<5	<5	0.01	<10	302	1974	<1	141	<10	12	80
78562	18338	<1	1.61	<2	29	202	<1	2.10	<4	28	480	92	4.30	0.63	31	1.80	568	<1	0.03	19	1168	<1	<5	<5	0.02	<10	80	749	<1	76	<10	7	40
78563	18339	<1	1.56	<2	20	47	<1	7.64	<4	38	83	25	5.00	0.22	2	0.50	826	4	0.03	78	723	<1	<5	<5	<0.01	<10	29	350	<1	151	<10	10	44
78564	18340	<1	1.13	<2	25	86	<1	5.17	<4	22	313	12	4.80	0.26	<1	1.08	1128	3	0.04	57	458	<1	<5	<5	0.01	<10	65	459	<1	124	<10	6	32
78565	18341	<1	1.15	<2	21	500	<1	4.05	<4	13	67	24	3.95	0.26	<1	1.12	793	<1	0.05	2	790	<1	<5	<5	0.01	<10	47	<100	<1	65	<10	9	44
78566	18342	<1	0.83	<2	24	62	<1	4.90	<4	31	438	8	4.46	0.45	<1	1.06	1205	10	0.05	53	461	<1	<5	<5	0.01	<10	52	611	<1	94	<10	6	17
78567	18343	<1	0.78	<2	21	98	<1	4.74	<4	28	168	27	4.02	0.31	<1	1.23	1067	13	0.04	54	413	<1	<5	<5	<0.01	<10	82	443	<1	54	<10	4	19
78568	18344	<1	1.94	<2	24	66	<1	2.02	<4	9	514	60	5.21	0.16	<1	1.12	1095	4	0.01	18	264	<1	<5	<5	<0.01	<10	<3	<100	<1	55	<10	6	39
78569	18345	<1	1.22	<2	24	20	<1	0.95	<4	6	275	29	3.26	0.07	<1	0.75	379	<1	0.07	35	824	<1	<5	<5	0.02	<10	<3	830	<1	49	<10	3	29
78570	18346	<1	1.04	<2	25	112	<1	0.08	<4	<1	354	32	2.85	0.42	<1	0.62	248	5	0.05	5	143	<1	<5	<5	0.01	<10	<3	460	<1	10	<10	6	154
78571	18346	<1	1.10	<2	25	117	<1	0.08	<4	2	361	34	2.99	0.44	<1	0.66	259	6	0.05	7	146	<1	<5	<5	0.01	<10	<3	479	<1	11	<10	7	162
78572	18347	<1	2.59	<2	19	171	<1	1.76	<4	41	163	148	5.99	0.76	<1	1.26	702	2	0.10	92	772	<1	<5	<5	0.01	<10	<3	2549	<1	157	<10	3	65

Certified By:   
 Derek Demianiuk, H.Bsc.

# Certificate of Analysis

Thursday, August 10, 2006

Alto Ventures Ltd.  
 #3 - 1349 Kelly Lake Rd.  
 Sudbury, ON, CA  
 P3E5P5  
 Ph#: (705) 522-6372  
 Fax#: (705) 522-8856  
 Email exploration@altoventures.com

Date Received : 08-Aug-06  
 Date Completed : 16-Aug-06  
 Job # 200641429  
 Reference :

Sample #: 5                      Rock

Accurassay #	Client Id	Au ppb	Au oz/t	Au g/t (ppm)
86068	18348	<5	<0.001	<0.005
86069	18349	<5	<0.001	<0.005
86070	18350	<5	<0.001	<0.005
86071	18351	<5	<0.001	<0.005
86072	18352	8	<0.001	0.008
86073 Check	18352	<5	<0.001	<0.005

PROCEDURE CODES: AL4AU3, AL4ICPAR

Certified By:   
 Derek Demianiuk H.Bsc., Laboratory Manager

The results included on this report relate only to the items tested  
 The Certificate of Analysis should not be reproduced except in full, without the written approval of the laboratory


**Accurassay**  
**Laboratories** Mineral Assay Division of Assay Laboratory Services Inc.

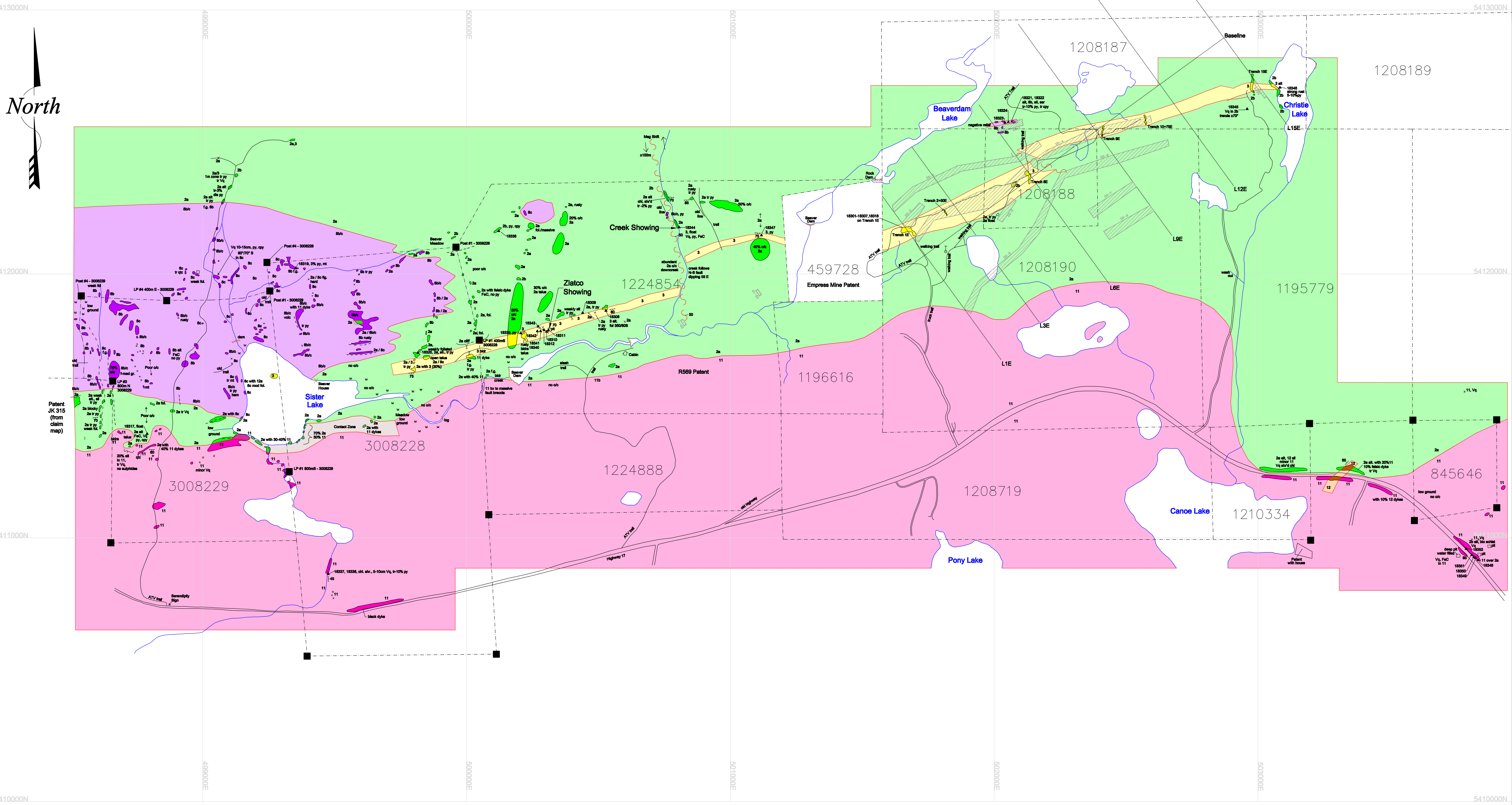
1046 GORHAM STREET THUNDER BAY, ONTARIO P7B 5X5 PHONE: (807) 626-1630 FAX: (807) 623-6820 EMAIL: assay@accurassay.com WEB: www.accurassay.com

Alto Ventures Ltd.  
 Date Created: 06-08-21 07:39 AM  
 Job Number: 200641429  
 Date Received: 8/8/2006  
 Number of Samples: 5  
 Type of Sample: Rock  
 Date Completed: 8/16/2006  
 Project ID:

\* The results included on this report relate only to the items tested  
 \* This Certificate of Analysis should not be reproduced except in full, without the written approval of the laboratory.  
 \*The methods used for these analysis are not accredited under ISO/IEC 17025

Accur. #	Client Tag	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
86068	18348	<1	0.23	<2	43	34	<1	0.87	<4	3	707	17	0.98	0.13	8	0.39	269	<1	0.02	16	139	3	<5	<5	0.01	<10	32	133	<1	11	<10	10	37
86069	18349	<1	0.62	<2	40	221	<1	1.76	<4	10	302	28	2.12	0.09	7	0.86	357	4	0.07	7	670	2	<5	<5	0.02	<10	77	156	<1	28	<10	7	37
86070	18350	<1	1.26	<2	39	399	2	4.47	<4	14	741	43	3.14	0.68	24	2.80	751	16	0.02	160	443	34	<5	<5	0.02	<10	186	860	<1	61	<10	18	82
86071	18351	<1	0.16	<2	38	1890	<1	2.11	<4	4	699	8	0.91	0.07	1	0.43	360	12	0.02	35	1111	3	<5	<5	0.01	<10	140	<100	<1	10	<10	18	37
86072	18352	<1	1.35	<2	39	275	3	1.56	<4	19	453	19	4.50	1.24	44	2.41	651	24	0.06	31	444	238	<5	<5	0.04	<10	67	1234	<1	58	<10	20	162
86073	18352	<1	1.40	<2	40	249	3	1.64	<4	19	484	18	4.72	1.27	45	2.52	688	29	0.06	32	465	241	<5	<5	0.04	<10	73	1279	<1	62	<10	21	166

Certified By:   
 Derek Demianiuk, H.Bsc.



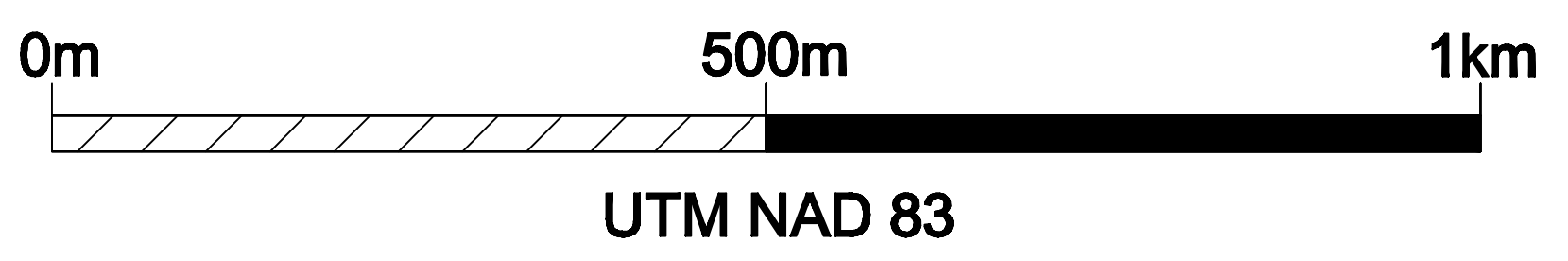
- Legend**
- DDH
  - Swamp
  - Outcrop
  - Outcrop, small
  - Foliation (dip unknown, inclined, vertical)
  - Sample location
  - Topographic slope
  - Creek/stream
  - Trench
  - Geological boundary
  - Claim line
  - Shear
  - Claim post (line, corner)
  - IP Anomaly (Cameco 1999 work)

- Abbreviations**
- Alt Altered
  - bd Boulders
  - CD Carbonized
  - Cpy Chalcopyrite
  - Dis Disseminated
  - Fol Foliation
  - Fc Iron-carbonized
  - Fg Fine-grained
  - Hem Hematite
  - Mt Magnetite/magnetic
  - oc Outcrop
  - Py Pyrite
  - qz Quartz
  - Ser Sericitized
  - Sh Shale
  - Sil Sill
  - T Trach
  - Vq Quartz vein

- Geology**
- PROTEROZOIC**
    - 12 Mafic Intrusive Rocks
    - 12a Diabase dyke
    - 12b Mafic dyke
    - 12f Feldspar-phryic
  - ARCHEAN**
    - 11 Late Archean Granitoid Rocks
    - 11a Granite
    - 11b Granodiorite
    - 11c Mafic to Intermediate Intrusive Rocks
    - 8b Gabbro
    - 8c Diorite
    - 8 Quartz
    - 2 Mafic Metavolcanic Rocks
    - 2a Massive flow, fine-to medium-grained
    - 2b Pillowed flow/pillow breccia

**Assay Values**

Sample #	Au (g/t)	Sample #	Au (g/t)
18301	0.166	18324	0.021
18302	0.050	18336	0.010
18303	0.069	18337	0.014
18304	2.278	18338	0.007
18305	0.440	18339	0.067
18306	0.248	18340	0.538
18307	1.662	18341	0.012
18308	0.014	18342	0.427
18309	0.012	18343	1.092
18310	0.924	18344	0.016
18311	0.379	18345	0.013
18312	1.214	18346	0.018
18317	0.061	18347	0.011
18318	0.333	18348	0.005
18319	0.017	18349	0.005
18320	0.018	18350	0.005
18321	0.020	18351	0.005
18322	0.020	18352	0.008
18323	0.024	18352	0.005



**Alto Ventures Ltd.**  
**Empress Project**  
**Syine Twp.**  
**Geology and Sample Locations**

Map 1	Mapped By: Ray Knowles	
Date: August/2006	Drafted By: D.K.	
	Scale: 1:5000m	