We are committed to providing accessible customer service.
If you need accessible formats or communications supports, please contact us.

Nous tenons à améliorer l’accessibilité des services à la clientèle.
Si vous avez besoin de formats accessibles ou d’aide à la communication, veuillez nous contacter.

ALTO VENTURES LTD.

MINER LAKE AND GREENOAKS PROPERTIES

REPORT ON THE 2016 FALL BEDROCK GRAB SAMPLING AND SURFACE GLACIAL TILL GEOCHEMISTRY PROGRAM

PIFHER AND ELMHIRST TOWNSHIPS

THUNDER BAY MINING DISTRICT

ONTARIO

NTS 42E/13

Sudbury, Ontario
June 5, 2017

Mike Koziol, P. Geo.

SUMMARY

A program consisting of bedrock grab sampling and surface glacial till geochemistry was completed on the Alto Ventures Miner Lake and Greenoaks properties in September and October, 2016. Both properties are located approximately 45km northeast of Beardmore, Ontario and are easily accessible by gravel road and ATV trails. The Miner Lake Property consists of 26 contiguous staked mineral claims (208 units) that cover approximately 3,328 ha. The Greenoaks Property is made up of 15 patented mineral claims and licenses of occupation that cover 408.8 ha. The two properties are contiguous.

In total, 35 grab samples were collected and assayed for gold plus 30 other elements at Accurassay Laboratories in Thunder Bay. In aggregate, 38 glacial till samples were processed at Overburden Drilling Management in Ottawa. Fourteen of these were new samples collected during the current program and were processed for both gold-grain counts and Kimberlite Indicator Minerals (KIMs). Another 24 samples that were collected previously during the June, 20016 program were processed for KIMs only. Electron Probe Microanalysis (EPMA) was performed on 96 KIM grains recovered from 17 of the June 2016 till samples to confirm if the KIMs are derived from kimberlite sources.

Gold assay results from the bedrock grab samples ranged from below detection levels of <0.005 g/t to 1.633 g/t Au. Regionally, the higher gold values align along a dominant northeast trend that persists through the Miner Lake property. This trend is also evident in the gold-in-till train trends evident in the data from the current program as well as previous programs completed in 2015 and 2016.

Gold grains were recovered from 13of the 14 glacial till samples processed from the 2016 fall program, ranging in counts from 1 gold grain to a maximum of 57 gold grains, when normalized to 10 kg table feed, including 10 samples containing one or more gold grains classified as "Pristine". The results continue to support a dominant northeast trend to the gold-in-till trains that was suggested from the 2015 and 2016 till surveys. This trend was explored previously only in the immediate Miner Lake area and remains untested along strike to the southwest and northeast. Three other gold-in-till anomalies occur to the east of the dominant trend and will require additional mapping, prospecting and detailed sampling.

Possible KIMs (visually identified by ODM) were recovered from 25 of the 38 till samples processed and EPMA analyses were performed on 17 of the samples. The EPMA data was reviewed by Dr. Harrison Cookenboo, P. Geo., a geologist experienced in diamond exploration. Dr. Cookenboo concluded that the KIMs at Miner Lake are suggestive of a kimberlite source with low diamond potential, when considered as a single data set. There are good indicators of kimberlite origin (KIM) among the dataset, but no indicators associated with diamond (no DIM), suggesting that if all the indicators were derived from a single kimberlite they would point to low diamond potential. Dr. Cookenboo recommends exploring the possibility of multiple separate kimberlite origin by integrating the microprobe analysis herein with a study of map locations of individual samples

Based on the encouraging results from this program, prospecting is recommended along the northeast trend of the gold-in-till trains down ice from the currently known gold occurrences. Detailed till sampling is recommended along the southwest trend and in areas at the east end of the property where high gold-grain-in-till anomalies were located previously.

TABLE OF CONTENTS

List of Figures

List of Tables

List of Appendices

List of Maps (at end of report)

1.0 INTRODUCTION

This report describes the 2016 fall bedrock grab sampling and surface glacial till geochemistry program completed by Alto Ventures Ltd. on its 100% owned Miner Lake and Greenoaks properties. The sample collection was carried out in the period between September 27 and October 3, 2016.

1.1 Property

The Miner Lake property includes 26 contiguous staked mining claims (208 units) that cover 3,328 ha. These claims are located in the Pifher Township, in the Thunder Bay Mining District, and are covered by NTS map sheet 42E/13, UTM NAD83 Zone 16 (see in Figure 1). The Greenoaks property consists of 15 contiguous patented mineral claims and licences of occupation covering 408.8 ha. It adjoins the Miner Lake property to the east and lies in the Pifher and Elmhirst townships. The claims making up the two properties are listed in Table 1 and illustrated in Figure 2.

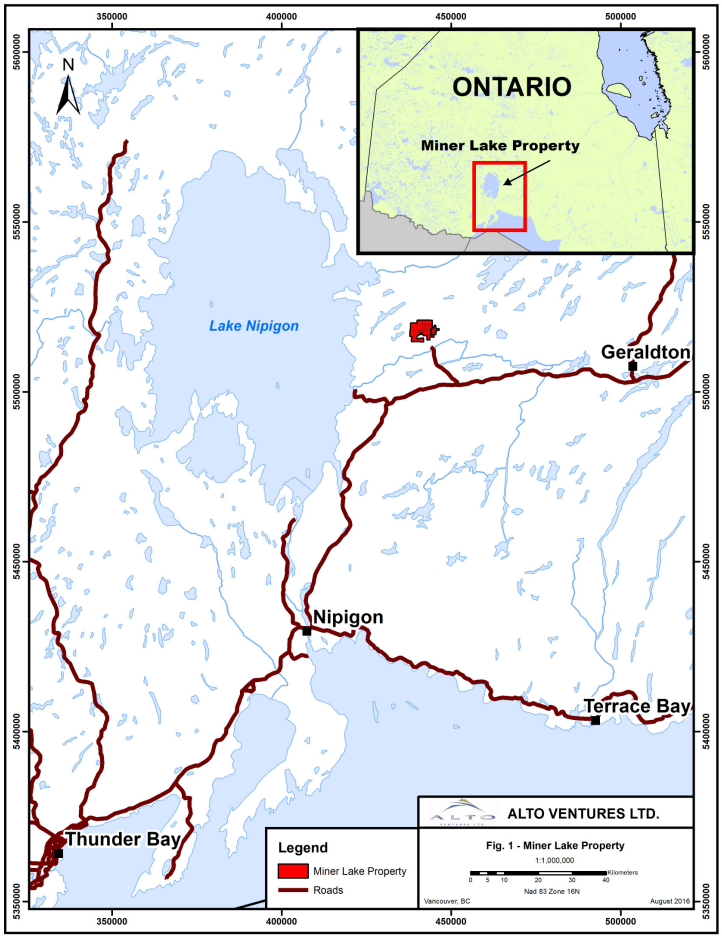


Figure 1 Miner Lake and Greenoaks Properties Location Map

Table 1: List of claims in the Miner Lake and Greenoaks properties

Claim	Township	Size (units)	Record Date	Property
1195654	Pifher	6	1994-09-12	Miner Lake
1215778	Pifher	3	1998-03-18	Miner Lake
1215779	Pifher	3	1998-03-18	Miner Lake
1215780	Pifher	9	1998-03-18	Miner Lake
1224927	Pifher	4	1996-11-27	Miner Lake
1224928	Pifher	2	1996-11-27	Miner Lake
4211615	Pifher	15	2006-09-27	Miner Lake
4222476	Pifher	6	2011-08-10	Miner Lake
4222479	Pifher	12	2010-10-01	Miner Lake
4222480	Pifher	10	2011-08-10	Miner Lake
4222543	Pifher	12	2011-06-15	Miner Lake
4222544	Pifher	4	2011-06-15	Miner Lake
4225204	Pifher	15	2011-08-10	Miner Lake
4265761	Pifher	9	2011-09-12	Miner Lake
4265762	Pifher	5	2011-09-12	Miner Lake
4265763	Pifher	9	2011-09-12	Miner Lake
4265765	Pifher	16	2012-06-13	Miner Lake
4271510	Pifher	9	2012-04-27	Miner Lake
4271511	Pifher	8	2012-04-27	Miner Lake
4271513	Pifher	4	2016-06-30	Miner Lake
4271514	Pifher	8	2016-06-30	Miner Lake
4271515	Pifher	6	2016-06-30	Miner Lake
4271516	Pifher	8	2016-06-30	Miner Lake
4271517	Pifher	15	2016-07-13	Miner Lake
4278845	Pifher	10	2016-07-13	Miner Lake
TB34818	Pifher	25.0 ha		Greenoaks
TB34819	Pifher	17.9 ha		Greenoaks
TB34820	Pifher	28.2 ha		Greenoaks
TB35563	Pifher	35.9 ha		Greenoaks
TB35564	Pifher	29.6 ha		Greenoaks
TB35565	Pifher	24.7 ha		Greenoaks
TB35566	Pifher	24.1 ha		Greenoaks
TB35567	Pifher	27.9 ha		Greenoaks
TB35568	Elmhirst	26.3 ha		Greenoaks
TB35571	Elmhirst	22.9 ha		Greenoaks
TB35572	Elmhirst	23.1 ha		Greenoaks
TB35573	Elmhirst	31.7 ha		Greenoaks
TB35574	Elmhirst	18.1 ha		Greenoaks

TB38746	Elmhirst	42.5 ha		Greenoaks
TB38747	Elmhirst	30.9 ha		Greenoaks

The work described in this report was completed on claims 1195654, 1215779, 4211615, 4222480, 4222543, 4222544, 4225204, 4265763, 4265765, 4271510, 4271511, TB34818, and TB35563.

1.2 Location, Access, Infrastructure and Topography

The properties are located approximately 45 km northeast from the town of Beardmore, around and including Miner Lake. Access to the Miner Lake claims is by the Trans-Canada Highway Number 11 to Nezah then by the former Ontario Tertiary Highway 801 approximately twenty-two kilometres east from Beardmore. The property is easily accessed by following Highway 801 for approximately twenty-three kilometres northwest. Highway 801 also passes through the southwest corner of the Greenoaks property.

Old forestry roads provide good access to most of the property and several can be driven by 4-wheel drive truck or ATV vehicles, although some brush clearing is required.

Infrastructure in the Beardmore-Geraldton-Longlac area includes general and skilled labour, heavy equipment, local accommodations, paved roads and easy access to the electrical grid. More specialized services can be obtained from the larger communities of Thunder Bay, Timmins and Sault Ste. Marie.

The topography in the area is characterized by a series of northeast trending bedrock ridges up to twenty-five metres high that are separated by lakes and creeks, swamps, ponds and muskeg-filled valleys. Large areas of the Miner Lake property are covered by sand-dominated overburden ranging from less than one metre to a few tens of metres. Parts of the current work areas were clear-cut logged in the past ten years. Forestry operations including clear cut logging have resumed in June 2016 over parts of the property with matures tree stands. Bedrock exposure is limited to outcrop knobs and ridges and ranges between locally abundant to areas where bedrock is accessible only through trenching.

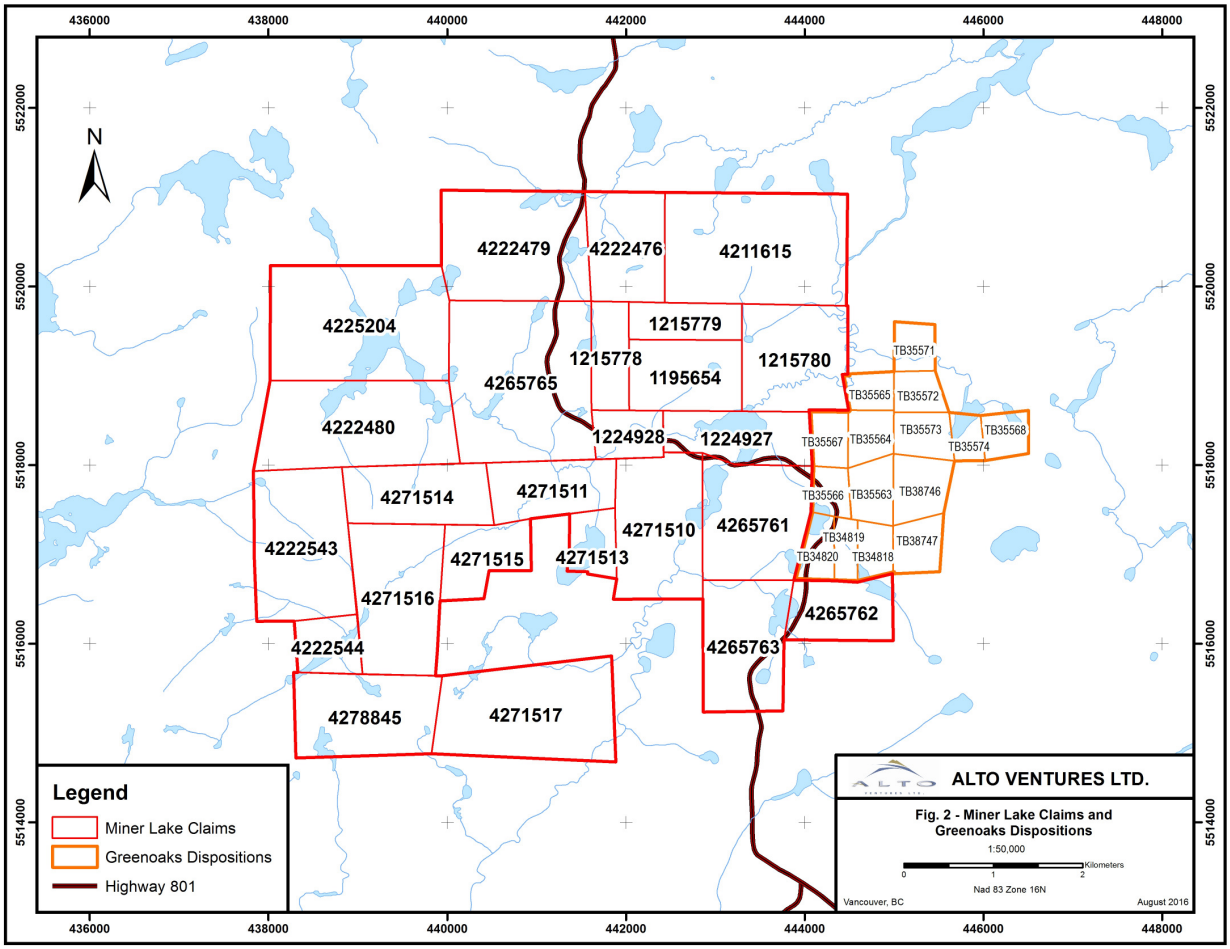


Figure 2 Miner Lake and Greenoaks Claim Map

2.0 GEOLOGY

The geology of the Miner Lake property and surrounding area has been described in detail as part of the extensive exploration program completed by Alto Ventures in 2011. The following is an expert from the report completed by Desjardins et al, 2012:

"The property lies east of Lake Nipigon within the Pifher Township. It is located within the Eastern Wabigoon Subprovince of the Superior Province (Blackburn et al., 1991), within the Elmhirst-Castlewood-Koltz greenstone belt (ECKGB) north of the Beardmore-Geraldton greenstone belt. Previously, this greenstone belt has been referred to as the Tashota-Onaman metavolcanic belt (Kresz and Zayachivsky, 1989). Geochemically and structurally, the ECKGB is segregated from the Beardmore-Geraldton gold belt by the Paint Lake Fault (Kresz and Zayachivsky, 1989; Blackburn et al., 1991). The pronounced lithologic asymmetry and change in structural style on either side of the Paint Lake Fault suggests the Beardmore-Geraldton greenstone belt and the ECKGB have different structural histories. The Beardmore-Geraldton belt is structurally dominated by east-trending ductile-brittle shear zones, occurring at the boundaries of north-facing lithostratigraphic units; while the ECKGB is characterized

by large monoclinal folds intruded by granitic rocks and are south-facing in its southern part (Kresz and Zayachivsky, 1989).

The ECKGB has not been subdivided stratigraphically and is dominated by proximal felsic to intermediate volcanic rocks, mafic volcanic rocks and related gabbro intrusions. These rocks are intruded by pre-tectonic granitic rocks of felsic to intermediate composition. Overall, the supracrustal rocks have undergone prograde metamorphism of low-grade greenschist type (Kresz and Zayachivsky, 1989). Structurally, large-scale tonalite to granodiorite plutons intruded the metavolcanic assemblage during the main tectonic event producing large folds and a pronounced syntectonic strain and metamorphic aureole (Kresz and Zayachivsky, 1989).

The rock-types observed on the Miner Lake properties are mainly mafic to intermediate (with minor felsic) intrusive rocks, occurring as differing phases of diorite, quartz diorite, tonalite to possibly granodiorite, and feldspar porphyry, a distinctive hydrothermal breccia and minor intermediate to felsic volcanic rocks. The intrusive rocks occur mainly as an ovoid body located in the centre of the Miner Lake property intruding the felsic pyroclastic to fragmental volcanic rocks occurring along the margins of the intrusive body. The hydrothermal breccia overprints the different phases of the intrusion with the exception of the feldspar porphyry. Later pyroxenite and diabase dykes cut across the intrusion."

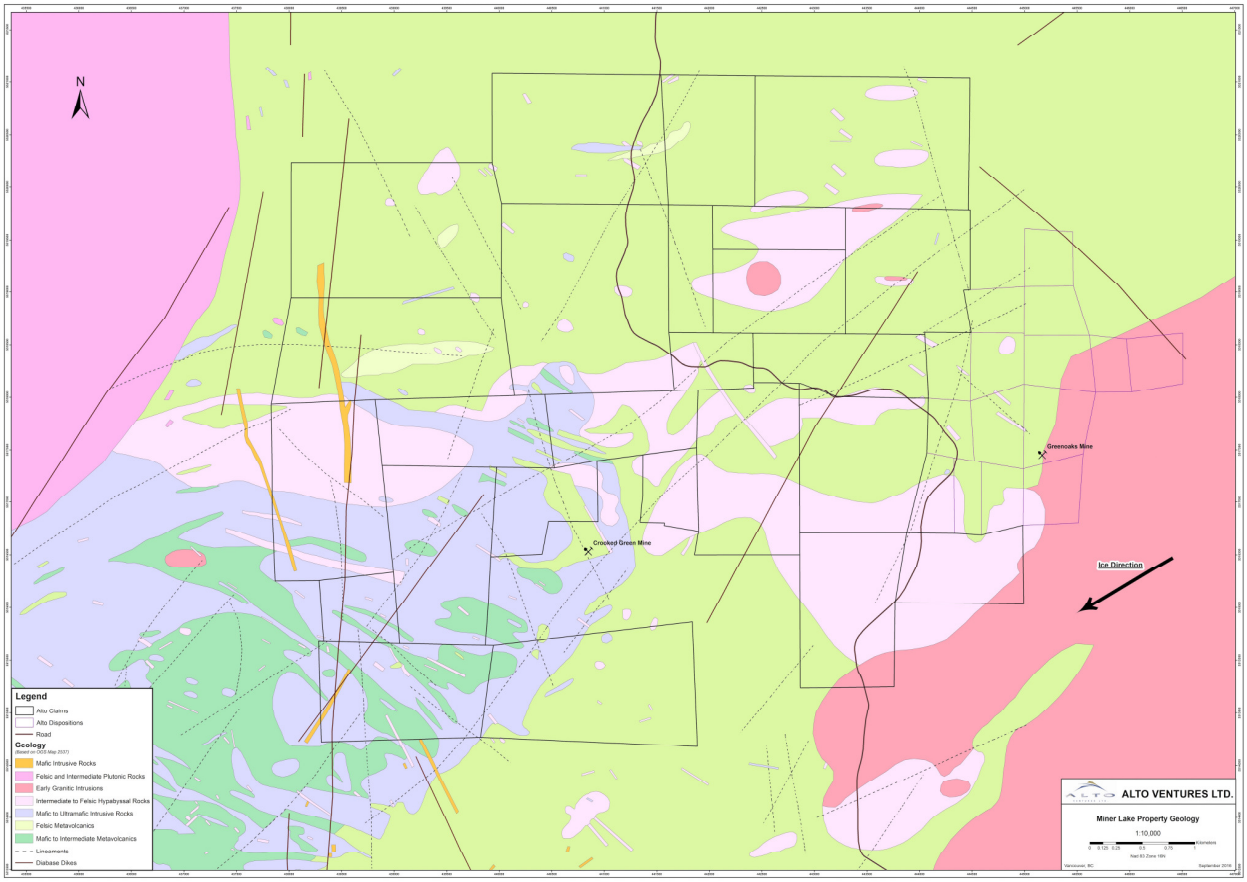


Figure 3 Alto Ventures Miner Lake and Greenoaks properties overlain on area geology modified after the Ontario Geological Survey Map 2537 of the Pifher Township (Kresz et al., 1989).

3.0 PREVIOUS WORK

Exploration for gold in the Pifher Township dates back to the 1930's and included prospecting, trenching, airborne and ground geophysics, limited geological mapping and diamond drilling. A detailed history of exploration work completed in the Pifher Township and on the Miner Lake property has been written up by Desjardins et al (2012), in the report describing the work completed by Alto Ventures Ltd in 2011.

The most comprehensive work to date on the Miner Lake property has targeted gold and was completed by Alto Ventures in 2010 and 2011 on claims 1195654, 1215778, 1215779 and 1215780. Figure 4 illustrates the diamond drill hole locations and main gold occurrences in the core of the Miner Lake Property.

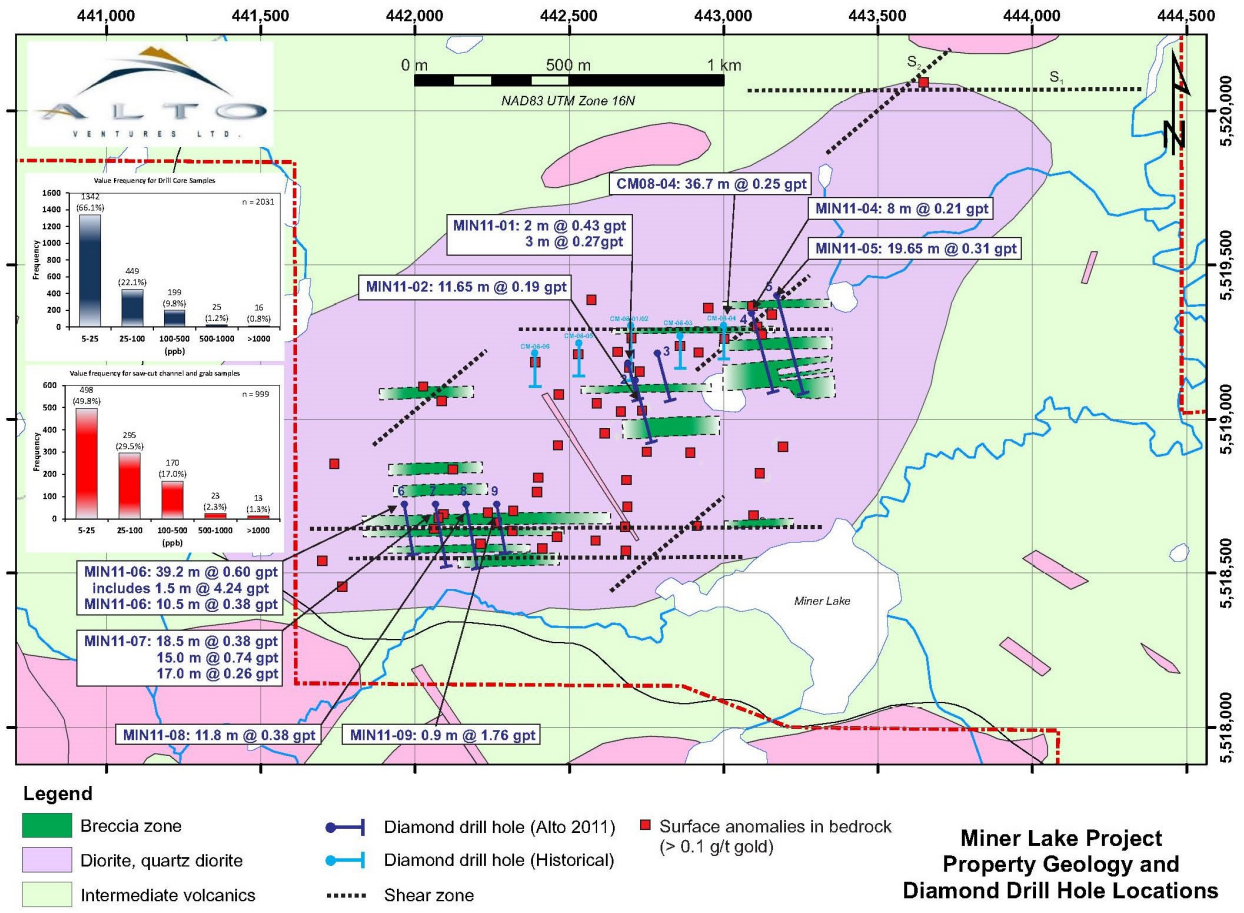


Figure 4 Miner Lake property geology and diamond drill hole locations; figure also highlights areas of Au>0.1 g/t in bedrock grab samples

In 2012 Alto has completed a prospecting program over the western parts of the Miner Lake property focused on areas mapped as mafic intrusive rocks by Kresz et al., (1989). During the program, Alto analysed 70 grab rock samples for standard Au+ICP package. In addition, the 70 samples were analysed for Pt. and Pd. Results from this initial program produced several weak anomalies (two to three times above detection levels) in gabbro and diorite (Koziol, 2013).

In 2015 Alto has completed a glacial till sampling program to determine if glacial till sampling is an effective exploration tool to locate gold anomalies and help to hone in on possible bedrock sources of the gold-in-till anomalies. A total of 38 till samples were processed and several gold-in-till anomalies were detected (Koziol, 2015). In June and July of 2016, Alto Ventures completed another surface glacial till sampling program collecting another 34 till samples (Koziol, 2016)

Previous work at Greenoaks dates back to the 1940's when four gold bearing quartz veins were discovered over 400 m strike length. In 1982, 1,224 tons of ore was mined from the No 1 Zone and of this, 1,171 tons were milled at the Pan-Empire Mill in Beardmore returning an average grade of 0.18 oz/ton (6.1 g/t) gold. Northern Concentrators milled the remaining 53 tons in Thunder Bay and returned an average grade of 0.50 oz/ton (17.1 g/t) gold.

Alto Ventures acquired the Greenoaks Property in 2004 and in 2007 drilled 331 m in five holes, intersecting 12.5 g/t Au across 0.4 m in hole GRN07-01 and 7.08 g/t Au across 0.8 m in GRN07-04. In 2008 Alto completed surface stripping, mapping and sampling programs exposing narrow quartz-pyrite veins with anomalous gold including 34.16 g/t Au across 1.0 m wide saw-cut channel sample (Tremblay et al., 2009)

4.0 MINERALIZATION

Kresz and Zayachivsky (1989) identified four types of gold mineralization in the Pifher Township, all associated with ductile shear zones and brittle fractures. The four types of mineralization include: 1) quartz veins in shear zones; 2) quartz veins in tension gashes; 3) shear zones with disseminated sulphide mineralization; and 4) shear zones with massive sulphide lenses and veins. However, within the Miner Lake property, gold also occurs with hydrothermal breccia zones formed in the quartz diorite intrusive as well as mineralized shear zones near the edges of the intrusive (Desjardins et al., 2012).

Gold at Miner Lake is usually associated with local sulphide minerals including pyrite, pyrrhotite, chalcopyrite, and sphalerite. Locally, the occurrences of pyrite and pyrrhotite vary from disseminated blebs to semi-massive to massive veins associated with strong shearing. Chalcopyrite mainly occurs as disseminated blebs and discontinuous stringers/veins with malachite staining along fractures. Sphalerite is limited to only a few locations and occurs as disseminated blebs and wisps within the sheared rocks. The presence of sulphides is the main indicator of favourable settings for gold on the property but it does not necessarily imply that anomalous gold values will always be obtained. Some of the “gold-bearing breccia” within the quartz diorite contain only trace amounts of sulphide minerals but are anomalous (>100 ppb) in gold.

There are several quartz veins that contain pyrite, chalcopyrite and pyrrhotite and these carry spotty gold and are not considered to be the main targets at Miner Lake. On the adjacent Greenoaks property, approximately three kilometres to the south-east, the past-producing Greenoaks Mine produced a total of 2,395 tons with an average grade of 0.182 oz/t Au (*5.66 g/t*), 0.13 oz/t Ag (*4.04 g/t*) and 0.254% Cu. The gold mineralization in the Greenoaks Mine occurred in quartz veins hosted in metavolcanics. The

Crooked Green Creek Mine, approximately 6 km to the south of Miner Lake produced a total of 1,455 tons averaging 0.323 oz/t Au (*10.05 g/t*), also from quartz veins.

Copper-nickel sulphide mineralization was discovered to the northeast of Miner Lake. The Jacobus deposit has reported historical resources of 938,803 tons containing 0.43% Cu and 0.40% Ni. The mineralization is hosted within a differentiated, layered gabbro sill intruding massive, porphyritic flows of dacite to rhyodacite composition. The mineralization consists of disseminated sulphides of pyrrhotite, chalcopyrite and pentlandite forming 4% to 6% of the gabbro (Baker et al., 1996).

5.0 ALTO'S 2016 FALL BEDROCK GRAB SAMPLING AND SURFACE GLACIAL TILL GEOCHEMISTRY PROGRAM

A bedrock grab sampling and surface glacial till geochemistry program was carried out by geologist Mike Koziol, P. Geo., and prospector Richard Cote from September 27 to October 3, 2016. The purpose of the 2016 fall program was to (1) sample new bedrock exposed by logging operations that were carried out over several claims during the 2016 summer and (2) to confirm gold-in-till anomalies identified during the 2015 and summer 2016 glacial till sampling programs by resampling some of the previously anomalous sites.

The surficial geology in the Miner Lake area was mapped by Kristjansson et al., (1990) as Bedrock-Drift Complex with minor to moderate bedrock exposures occurring as bedrock knobs. The dominant ice flow direction in this area is 240° to 260° and the most abundant glacial deposits are sand and sandy gravel of glacio-fluvial origin. Till is present but is localized close to outcrop areas and the till cover is generally thin except in areas filling topographic lows. In many locations the till is covered by thin layers of sand. During the 2016 program, many of the sample pits had to be dug to below the sand cover to reach the underlying till, generally several tens of centimetres up to a maximum of one metre.

5.1 Logistics and Sampling Procedures

During the fall 2016 program, Alto Ventures Ltd. collected a total of 35 grab bedrock samples and 14 glacial till samples. The rock samples were assayed for gold plus 30 other element by multi-acid ICP methods. The 14 glacial till samples were processed for gold-in till grain counts as well as for Kimberlite Indicator Minerals (KIMs). In addition, 24 till samples selected from the previous June, 2016 survey were processed for KIMs.

The sampling was done with the support of a four wheel drive truck near roads, all-terrain vehicles and on-foot hikes into the bush for sites further away from the roads and trails. Sampling sites were selected to provide a cross section across the centre of the property down-ice from the currently known gold showings at Miner Lake and Greenoaks properties. Bedrock sample locations from the current program are plotted on Map 1 and tabulated in Appendix A. Locations of samples processed for gold grains and KIMs from the current program as well as those processed for KIMs from previously collected samples are illustrated in Map 4.

Bedrock sampling was completed by traversing along new skidder trails and newly clear- cut areas. Samples of gossaned and altered rocks were collected and sent for analysis.

Gold assays for rock samples were performed at Accurassay Laboratories in Thunder Bay, Ontario. The samples are first entered into Accurassay Laboratories' Laboratory Information Management System (LIMS) upon reception and the samples are unpacked and dried, if necessary. Rock samples are then jaw crushed to 85% <10 mesh and a 500 to 1000 gram sub-sample is normally taken for analysis. The size of the sub-sample depends on the requested analytical scope. The sub-sample was pulverized to 85% <200 mesh. Either silica or a non-silica based sand is used to clean out the pulverizing dishes between each sample to prevent cross contamination.

The samples go to the fire assay laboratory or the wet chemistry laboratory depending on the analysis required. The gold assaying method uses a standard Fire Assay with AA finish technique on a 30 gram sub-sample taken from a 500 gram split from the submitted sample. Commercially prepared standards were inserted by Alto to ensure precision of the results. The laboratory ran internal check assays every 10 samples to ensure lab quality control. The samples were also tested for 30 other elements using ICP scan methods.

In total, 35 rock samples (plus one standard) were analyzed for gold and 30 other elements at Accurassay Laboratories. Brief descriptions of the grab samples, Gold Assay certificates and ICP multi-element scan certificates are included in Appendix B.

Till sampling was completed by a two person team consisting of a geologist based out of Cedar Shores Lodge in Nezah and a helper/prospector from Beardmore. Potential sample sites were predetermined from maps and scouted in the field for suitable material for sampling. Once a site with suitable till was found, the crew removed the organic layer and dug out material by hand shovel. The till was then shaken through a 6 mm square mesh screen at each site into a 5 gallon bucket to remove coarse pebbles and organic debris. The objective was to collect a nominal 10 kg field sample from each site but individual sample weights ranged from minimum 8.8 kg to maximum 12.4 kg. The screened samples were then transferred into numbered plastic sample bags. Depths of sample pits ranged from 0.3 m to 1.5 m (along road cut). In several samples, the pits were dug through 0.2 m to 0.8 m of sand before a till was uncovered and sampled.

A flag with the sample number was left tied to a nearby bush to mark the sample location as the deeper pits were backfilled. The sample was described on a paper sheet with a GPS waypoint recorded for each site. During the screening process, a number, ranging from 15 to 50 of random pebbles were collect from each sample site. These were washed in camp and examined later to gather information on the pebble lithologies, shapes (roundness and angularity) and intensity of clay coatings of the pebbles. This information is useful to help determine if the till is sampling material from local or distal sources.

The screened till samples were shipped for processing to Overburden Drilling Management Ltd (ODM) in Ottawa by Manitoulin Transport. The samples were processed for gold grains and KIMs as described in the flow charts included in Appendix C to determine the number of gold grains in each till sample and classify the grains (pristine, modified, reshaped) as to their relative distance of transport. Results of the gold grain counts for 14 samples from the current program are illustrated in Map 3.

A total of 38 samples, 14 from the current program and another 24 samples selected from the previous program were processed for KIMs and results for the 38 samples visual picks of KIMs are illustrated in Map 4. Of the 24 samples from the June 2016 survey, 17 contained visually identified KIMs and these were submitted to the Saskatchewan Research Council in Saskatoon for Electron Probe Micro Analysis (EPMA). A total of 96 KIM grains were analyses by EPMA. Results from the ODM KIM processing and the EPMA are included in Appendix E. An interpretation report discussing the results of the EPMA results titled "Miner Lake Microprobe Analyses of Kimberlite Indicator Minerals" by Harrison Cookenboo, Ph. D., P. Geo. is included in Appendix D.

5.2 Results

Grab Samples

Thirty five grab samples of bedrock were collected in 2016, mainly within the felsic intrusive where minor sulphide mineralization, gossan, fracturing or shearing was observed (Map 1). Results from the samples ranged from below detection levels of <0.005 g/t to 1.633 g/t Au and regionally, the higher gold values align along a dominant northeast trend (Map 2). This trend is also evident in the gold-in-till grain trends reported below and in 2015 and 2016 (Koziol, 2016). Additional mapping, prospecting and sampling is required along the northeast-southwest trend.

Gold-grains in tills

Gold grains were recovered from 13of the 14 samples processed from the 2016 fall program, ranging in counts from 1 gold grain to a maximum of 57 gold grains, when normalized to 10 kg table feed, including 10 samples containing one or more gold grains classified as "Pristine". Table 2 provides a summary of the gold grains in each till sample processed from the Fall 2016 Miner Lake. The results continue to support a dominant northeast trend to the gold-in-till trains that was suggested from the 2015 and 2016 till surveys (Koziol, 2016) located west of Miner Lake (see Map 3). This trend was explored previously only in the Miner Lake area and remains untested along trend to the southwest and northeast. Three other gold-in-till anomalies occur to the east of the dominant trend and will require additional mapping, prospecting and detailed sampling. Table 2 lists the total gold grains recovered from till samples collected during the Fall 2016 program.

Table 2 Summary of gold grains in processed till samples from the Fall 2016 Miner Lake and Greenoaks programs, raw count and normalized to 10 kg table feed

Fall 2016 Samples

Sample #	Table Feed (kg)	Gold Grains (Raw count)	Gold Grains (Normalized to 10 kg)
ML073	11.7	19	16
ML074	11.2	0	0
ML075	8.5	1	1
ML076	10.8	3	3
ML077	9.6	13	13
ML078	9.9	3	3
ML079	10.8	2	2
ML080	10.7	6	6
ML081	9.7	32	32
ML082	11.4	30	26
ML083	10.5	26	25
ML084	11.8	20	17
ML085	12.1	69	57
ML086	11.9	23	19

KIMs in tills

Possible KIMs (visually picked by ODM) were recovered from 25 of the 38 till samples processed (Table 3). EPMA analyses were performed on 17 samples to confirm if the KIMs are derived from kimberlite sources.

Results from the EPMA were review by Harrison Cookenboo, Ph. D., P. Geo, an expert in kimberlite indicator mineral geochemistry. Dr. Cookenboo concludes: "The Miner Lake KIM results are suggestive of a kimberlite source with low diamond potential, when considered as a single data set. There are good indicators of kimberlite origin (KIM) among the dataset, but no indicators associated with diamond (no DIM), suggesting that if all the indicators were derived from a single kimberlite they would point to low diamond potential. The possibility of multiple separate kimberlite origin should be considered by integrating the microprobe analysis herein with study of map locations of individual samples."

The complete text of Dr. Cookenboo's review is presented in Appendix D.

Table 3 Miner Lake and Greenoaks till samples containing visually-picked possible KIMs (*star indicates sample was analysed for major oxides by EPMA - see Appendix D and E).

Sample Number	Total KIM grains	Purple/red Garnet	Orange Garnet	Chrome Diopside	Mg Ilmenite	Chromite	Forsterite
ML-039*	8					8	
ML-040*	2					2	
ML-041	0						
ML-042	0						
ML-043*	1		1				
ML-045	0						
ML-046	0						
ML-047*	7	1			3	3	
ML-054	0						
ML-055*	8	1			4	3	
ML-056*	5				2	2	1
ML-057*	3	1			1		1
ML-058*	3	1				2	
ML-059*	5	1			4		
ML-060*	4	1			2	1	
ML-061*	5		1		3	1	
ML-062*	8	1			3	4	
ML-063*	17	3	1		7	6	
ML-064*	5	1		1	1	2	
ML-065*	2					2	
ML-066	0						
ML-067*	7	2			4	1	
ML-069	0						
ML-071*	7				2	5	
ML-073	1					1	
ML-074	0						
ML-075	13	2		1	6	4	
ML-076	9	1		1	5	2	
ML-077	0						
ML-078	1						1
ML-079	0						
ML-080	0						
ML-081	4				2	2	
ML-082	0						
ML-083	1				1		
ML-084	3	1			1	1	
ML-085	0						
ML-086	1					1	

6.0 CONCLUSIONS AND RECOMMENDATIONS

A program of bedrock grab sampling and surface glacial till sampling was completed on parts of the Miner Lake and Greenoaks properties in September and October, 2016. A total 35 grab samples of bedrock were collected, mainly within the felsic intrusive where minor sulphide mineralization, gossan, fracturing or shearing was observed. Results from the samples ranged from below detection levels of <0.005 g/t to 1.633 g/t Au. Regionally, the higher gold values align along a dominant northeast trend that persists through the Miner Lake property. This trend is also evident in the gold-in-till train trends evident in the data from the current program as well as previous programs completed in 2015 and 2016.

Fourteen glacial till samples were collected during this program and then processed for gold-in-till grain counts and for KIMs. Another 24 samples that were collected previously during the June, 2016 program were also processed for KIMs as part of the current program.

Gold grains were recovered from 13of the 14 samples processed from the 2016 fall program, ranging in counts from 1 gold grain to a maximum of 57 gold grains, when normalized to 10 kg Table Feed, including 10 samples containing one or more gold grains classified as "Pristine". The results continue to support a dominant northeast trend to the gold-in-till trains that was suggested from the 2015 and 2016 till surveys. This trend was explored previously only in the Miner Lake area and remains untested along trend to the southwest and northeast. Three other gold-in-till anomalies occur to the east of the dominant trend and will require additional mapping, prospecting and detailed sampling.

Possible KIMs (visually identified by ODM) were recovered from 25 of the 38 till samples processed. EPMA analyses were performed on 17 of the samples with visually identified KIMs to confirm if the KIMs are derived from kimberlite sources. The EPMA data was reviewed by Dr. Harrison Cookenboo, P. Geo., a geologist experienced in diamond exploration. Dr. Cookenboo concluded that the KIMs at Miner Lake are suggestive of a kimberlite source with low diamond potential, when considered as a single data set. There are good indicators of kimberlite origin (KIM) among the dataset, but no indicators associated with diamond (no DIM), suggesting that if all the indicators were derived from a single kimberlite they would point to low diamond potential. Dr. Cookenboo recommends exploring the possibility of multiple separate kimberlite origin by integrating the microprobe analysis herein with a study of map locations of individual samples

Based on the encouraging results from this program, prospecting is recommended along the northeast trend of the gold-in-till trains down ice from the currently known gold occurrences. Detailed till sampling is recommended along the southwest trend and in areas at the east end of the property where high gold-grain-in-till anomalies were located previously.

7.0 REFERENCES

Baker C. L., Fyon D. G., Laderoute J. W., Newsome H., 1996. Report of Activities 1995 Resident Geologists, Ontario Ministry of Northern Development and Mines, Ontario Geological Survey, Open File Report 5943, p18.

Desjardins T., 2010. Alto Ventures Ltd. Miner Lake Property; Report on the Fall 2009 and Summer 2010 Exploration Programs. Internal Company Report filed for assessment

Desjardins, T. and Pilote, J.L., 2012. Alto Ventures Ltd., Miner Lake Property, Report on the 2011 Summer Field Exploration and Diamond Drilling Programs, Pifher Township, Thunder Bay Mining District, NTS 43E/13, Internal Company Report filed for assessment

Koziol, M., 2013. Alto Ventures Ltd. Miner Lake Property, Report on the 2012 Summer Prospecting Program, Pifher Township, Thunder Bay Mining District, Ontario, NTS 42E/13, Internal Company Report filed for assessment

Koziol, M., 2015. Alto Ventures Ltd. Miner Lake and Greenoaks Properties, Report on the 2015Surface Glacial Till Sampling Program, Pifher Township, Thunder Bay Mining District, Ontario, NTS 42E/13, Internal Company Report filed for assessment

Koziol, M., 2016. Alto Ventures Ltd. Miner Lake and Greenoaks Properties, Report on the 2016 Surface Glacial Till Sampling Program, Pifher Township, Thunder Bay Mining District, Ontario, NTS 42E/13, Internal Company Report filed for assessment

Kresz, D.U. and Zayachivsky, B., 1989. Precambrian Geology, Barbara, Meader and Pifher Townships; Ontario Geological Survey, Report 270. 91 p.

Kristjansson, F.S., Thorleifson, L.H., and Warman, T.A., 1990. Quaternary Geology, Beardmore-North Wind Lake Area, Ontario Geological Survey Preliminary Map P3162, scale 1:50 000

Tremblay, R. J. and Koziol, M., 2009, Alto Ventures Ltd. Report on Greenoaks Project 2007-2008 Programs Including Diamond Drilling, Geological Mapping and Sampling, Elmhirst and Pifher Townships, Thunder Bay Mining District, Ontario, NTS 42E/13, Internal Company Report Filed for Assessment

8.0 STATEMENT OF QUALIFICATION

I, Marian (Mike) Koziol, P. Geo., P. Eng., resident at 26 Cognac Court, Sudbury, Ontario, P3E 6L4 do hereby certify that:

1. I am currently employed as President and Director of 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 worked on the Miner Lake and Greenoaks properties and supervised the programs 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 properties but I do own shares of Alto Ventures Ltd and am an Officer and Director of the Company 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 5th day of June, 2017

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

APPENDIX A

MINER LAKE SEPTEMBER 2016 GRAB ROCK AND TILL SAMPLE LOCATIONS

Miner Lake Sept 27 to October 3, 2016 work

Rock Grab Samples

		Sample #	Easting	Northing	
1	Sep 29	1137746	442689	5519254	Rick's sample
2	Sep 28	1138372	443692	5515680	
3	Sep 28	1138373	442338	5518867	
4	Sep28	1138374	442345	5518872	
5	Sep28	1138375	442345	5518871	second sample at 374 site
6	Sep28	1138376	442350	5518879	
7	Sep28	1138377	442377	5518894	
8	Sep28	1138378	442348	5519023	
9	Sep28	1138379	442500	5519101	
10	Sep 28	1138380	442946	5519366	
11	Sep 29	1138381	442598	5519197	
12	Sep 29	1138382	442855	5519338	
13	Sep 29	1138383	442856	5519354	
14	Sep 29	1138384	442860	5519354	
15	Sep 29	1138385	442783	5519283	
16	Sep 29	1138386	442809	5519430	
17	Sep 29	1138387	442804	5519423	
18	Sep 29	1138388	442793	5519437	
19	Sep 29	1138389	442726	5519479	
20	Sep 29	1138390	442606	5519618	
21	Sep 29	1138391	442589	5519629	
22	Sep 29	1138392	442610	5519795	
23	Sep 29	1138393	442635	5519802	
24	Sep 29	1138394	442153	5518721	
25	Sep 29	1138395	standard	GSP4A	0.438 g/t Au +/-0.032 g/t
26	Sep 30	1138396	437267	5516601	
27	Oct 1	1138397	443181	5519452	
28	Oct 1	1138398	443181	5519453	
29	Oct 1	1138399	443182	5519463	
30	Oct 1	1138400	443165	5519498	
31	Oct 2	688941	443047	5519409	
32	Oct 2	688942	442995	5519471	
33	Oct 2	688943	442953	5519395	
34	Oct 2	688944	442530	5519199	
35	Oct 2	688945	442550	5519155	
36	Oct 2	688946	442550	5519155	
37	Oct 2	688947	442522	5519130	

Till Samples

Sep 28	ML073	443666	5515532	1.2	
Sep 29	ML074	442854	5519614	1	
Sep 30	ML075	438256	5518025	0.3	RESAMPLE 063
Sep 30	ML076	436257	5518025	0.3	0.7m West of 063
Sep 30	ML077	438580	5515900	0.6	
Sep 30	ML078	438488	5516048	0.3	RESAMPLE 065
Sep 30	ML079	438488	5516049	0.3	1m NW from 078
Sep 30	ML080	438162	5516265	0.4	1m W of 066
Sep 30	ML081	442132	5516592	0.5	RESAMPLE 067
Sep 30	ML082	442133	5516592	0.5	1m E of 062
Sep 30	ML083	443388	5515736	0.5	1M E of 015
Oct 1	ML084	442837	5519332	1.5	road cut
	ML085	442507	5519110	1.1	road cut
	ML086	442214	5518782	0.6	

APPENDIX B

ROCK GRAB SAMPLE DESCRIPTIONS AND ASSAY CERIFICATES

Miner Lake 2016 Rock Grab Sample Results and Descriptions

Sample #	Easting*	Northing*	Au (ppm)	Description
1137746	442689	5519254	.01	Qtz diorite, fine grained, grey massive cut by narrow fractures containing pyrite veinlets, also contains 1% very fine disseminated pyrite throughout
1138372	443692	5515680	<.005	Qtz vein, 20 cm wide, coarse grained white, strikes at 010° within chloritized hornblende diorite, near edge of clear cut near road
1138373	442338	5518867	.011	Qtz porphyry-diorite, locally sheared , dark grey fine grained matrix, chloritized and silicified, contains 2% fine disseminated pyrite
1139374	442345	5518872	.322	Qtz porphyry-diorite, weakly sheared locally, contains 1% fine disseminated white pyrite and up to 3% pyrrhotite along fractures, 0.5% Cp
1138375	442345	5518872	.391	Qtz porphyry, massive, contains 2% disseminated pyrrhotite, 0.5% Cp, texture appears to be breccia but subtle, outcrop also is locally brecciated with chlorite veinlets between diorite pieces
1138376	442350	5518879	.789	Qtz porphyry breccia, 2% disseminated pyrite, 0.5% Cp, outcrop surface weakly gossaned
1138377	442377	5518894	.014	Qtz porphyry diorite, massive, 1% fine disseminated pyrrhotite, locally appears brecciated, few chlorite veinlets
1138378	442348	5519023	.057	Fine grained to aphanitic dark grey on fresh surface, contains 1% very fine pyrrhotite, rock cut by few veinlets of chlorite
1138379	442500	5519101	.005	Qtz diorite, sheared, chloritized, contains 1% fine disseminated pyrrhotite, 0.1% Cp
1138380	442946	5519366	<.005	Breccia, bleached white weathered qtz diorite, no sulphides observed, white surface weathering similar to Rainbow Trench
1138381	442598	5519197	.014	Qtz granodiorite locally silicified, medium grained subhedral with rounded qtz eyes up to 2 mm form 15% of rock, fine to very fine disseminated pyrrhotite forms 2% and 0.1% Cp, rock is solid but locally fractured
1138382	442855	5519338	.005	At junction of logging roads, angular float/subcrop, qtz diorite breccia similar to Trench 6, contains clots of chlorite or chloritized fragments with 3% disseminated pyrite and narrow veinlets of semimassive pyrite
1138383	442856	5519354	<.005	Qtz diorite porphyry, dark grey with 10%qtz and feldspar phenocrysts, fine grained massive, contains 1% fine to very fine disseminated pyrite
1138384	442860	5519354	.022	Qtz diorite, sheared, contains 3% pyrite along shear surfaces, 2% pyrrhotite, outcrop is buried so shear direction not determined
1138385	442783	5519283	.011	Felsic breccia, silicified, bleached white

				weathered surface, 0.5% sulphides similar to sample 380 (see photos), some breccia pieces are chloritized
1138386	442809	5519430	.013	Shear zone within qtz diorite, strike 270°, vertical, contains 5% pyrite (marcasite?-check for crystals, 1-2% very fine disseminated pyrite- photos of chlorite breccia
1138387	442804	5519423	<.005	On outcrop ridge of qtz diorite with chlorite-vein breccia, sample is weakly sheared and contains 3% fine pyrite
1138388	442793	5519437	<.005	On qtz-diorite ridge in chlorite breccia, rock is fractured, silicified, contains minor disseminated pyrrhotite fine pyrite and chalcopyrite along frcatures - sample has been high-graded and contain 3% py, 1% po and 1% cp
1138389	442726	5519479	.164	Qtz diorite with only few chlorite veinlets, dark grey, fine grained, massive, contains 1% very fine grained disseminated pyrrhotite
1138390	442606	5519618	.008	Feldspar porphyry, grey massive locally microfractured with weak sericite-chlorite coatings on fractures, disseminated fine py and po also occur along the fractures, total sulphides 1%
1138391	442589	5519629	.115	Qtz diorite, chlorite veining not strong in this area but strong to south, sample 390 of F porphyry is encapsulated within the quartz diorite, maybe a different phase or dyke?, sample is weakly silicified and micro frcatures contains 3% pyrite
1138392	442609	5519795	.012	300° striking fracture/shear set in diorite, contains 3% pyrite along foliation/shear surfaces
1138393	442635	5519802	.009	Host rock is fine grained diorite or massive intermediate volcanic, chlorite clots stretched out parallel foliation at 280°, sulphides along fracture sets as well as blotches of pyrite, total sulphides 5% in sample
1138394	442154	5518722	.045	Core from MIN11-08 collar, mafic fragmental, chloritized fragments/veins, rock similar to footwall in Trench 37
1138395			0.457	Standard GSP4A 0.438 g/t Au +/-0.032 g/t
1138396	437267	5516601	.008	Small outcrop of pyrrhotite bearing diorite, po forms 2% and lies aligned along a weak foliation -check for PT-Pd?
1138397	443181	5519452	.009	Brecciated silicified feldspar porphyry, chlorite veins separate breccia pieces, 1% fine disseminated po along fractures, bleached white on weathered surface
1138398	443181	5519453	<.005	Breccia similar to 398
1138399	443182	5519463	<.005	Feldspar porphyry, silicified, brecciated, a dominant fracture set trends 300°, rusted along fracture surfaces, contains 1% fine disseminated pyrrhotite + pyrite, bleached white on weathered surface

1138400	4431365	5519498	<.005	Qtz diorite, clear sloping outcrop, appears brecciated, quartz eyes up to 0.4cm, contains 1%disseminated pyrrhotite along fractures, slight magnetic pull of magnet
688941	443047	5519409	.311	Breccia-qtz diorite/porphyry, contains chloritized clasts, photo, 1% disseminated pyrrhotite along some chlorite vein edges, 0.5% chalcopyrite within the chloritic clasts, near road edge
688942	442995	5519471	.015	Qtz diorite with subtle shear fabric at 300°, weak chlorite along shear surfaces, contain 0.2% very fine pyrrhotite, outcrop is on top of hill flat and easy to wash
688943	442953	5519395	.006	Breccia in qtz diorite, silicified microfractured with chlorite along fractures, cut by veinlets of quartz and silica, no sulphides observed
688944	442530	5519199	.006	Small outcrop on top of hill, sample from broken offset frost heave, fine grained silicified granodiorite (looks a bit like dacite but massive), fractured with 1% fine pyrrhotite along fractures, minor very fine grained magnetite
688945	442550	5519155	<.005	Granodiorite, silicified blue-quartz-eye fine grained massive but locally fractured, contains 1%disseminated pyrite
688946	442550	5519156	1.633	Same silicified dacite/granodiorite but contains fine disseminated chalcopyrite along fractures, sample high graded to contain 4% pyrite, 1% chalcopyrite
688947	442522	5519130	.013	Granodiorite, fine grained silicified massive, contains 1% fine to very fine disseminated pyrrhotite, minor pyrite along few microfractures

*Note: UTM NAD 83 Zone 16

ACCURASSAY LABORATORIES
1046 Gorham Street
Thunder Bay, ON
Canada P7B 5x5
Tel: (807) 626-1630
Fax: (807) 622-7571
www.accurassay.com
assay@accurassay.com

Thursday, October 13, 2016

Final Certificate

Alto Ventures Ltd.
Unit #7, 1351D Kelly Lake Rd.
Sudbury, ON, CAN
P3E5P5
Ph#: (705) 522-6372
Fax#: (705) 522-8856
Email: koziol@altoventures.com

Date Received: 10/06/2016
Date Completed: 10/13/2016
Job #: 201642068
Reference:
Sample #: 37

Acc #	Client ID	Au g/t (ppm)
219076	1137746	0.010
219077	1138372	<0.005
219078	1138373	0.011
219079	1138374	0.322
219080	1138375	0.391
219081	1138376	0.789
219082	1138377	0.014
219083	1138378	0.057
219084	1138379	0.005
219085	1138380	<0.005
219086	1138380 Dup	<0.005
219087	1138381	0.014
219088	1138382	0.005
219089	1138383	<0.005
219090	1138384	0.022
219091	1138385	0.011
219092	1138386	0.013
219093	1138387	<0.005
219094	1138388	<0.005
219095	1138389	0.164
219096	1138390	0.008
219097	1138390 Dup	0.009
219098	1138391	0.115
219099	1138392	0.012
219100	1138393	0.009

APPLIED SCOPES: ALP1, ALFA1, ALMA1

Validated By:
Jason Moore, VP Operations, Assayer

Certified By:
Jason Moore, VP Operations, Assayer

Authorized By:
Derek Demianiuk, VP Quality

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
1046 Gorham Street
Thunder Bay, ON
Canada P7B 5x5
Tel: (807) 626-1630
Fax: (807) 622-7571
www.accurassay.com
assay@accurassay.com

Thursday, October 13, 2016

Final Certificate

Alto Ventures Ltd.
Unit #7, 1351D Kelly Lake Rd.
Sudbury, ON, CAN
P3E5P5
Ph#: (705) 522-6372
Fax#: (705) 522-8856
Email: koziol@altoventures.com

Date Received: 10/06/2016
Date Completed: 10/13/2016
Job #: 201642068
Reference:
Sample #: 37

Acc #	Client ID	Au g/t (ppm)
219101	1138394	0.045
219102	1138395	0.457
219103	1138396	0.008
219104	1138397	0.009
219105	1138398	<0.005
219106	1138399	<0.005
219107	1138400	<0.005
219108	688941	0.311
219109	688942	0.015
219110	688943	0.006
219111	688944	0.006
219112	688945	<0.005
219113	688946	1.633
219114	688947	0.013

APPLIED SCOPES: ALP1, ALFA1, ALMA1

Validated By:
Jason Moore, VP Operations, Assayer

Certified By:
Jason Moore, VP Operations, Assayer

Authorized By:
Derek Demianiuk, VP Quality

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
1046 Gorham Street
Thunder Bay, ON
Canada P7B 5x5
Tel: (807) 626-1630
Fax: (807) 622-7571
www.accurassay.com
assay@accurassay.com

Thursday, October 13, 2016

Final Certificate

Alto Ventures Ltd.
Unit #7, 1351D Kelly Lake Rd.
Sudbury, ON, CAN
P3E5P5
Ph#: (705) 522-6372
Fax#: (705) 522-8856
Email: koziol@altoventures.com

Date Received: 10/06/2016
Date Completed: 10/13/2016
Job #: 201642068
Reference:
Sample #: 37

Control Standards

QC Type	Element	QC Performance (ppm)	Mean (ppm)	Std Dev (ppm
WW06	Au	0.996	1.100	0.060
WW06	Au	1.036	1.100	0.060

APPLIED SCOPES: ALP1, ALFA1, ALMA1

Validated By:
Jason Moore, VP Operations, Assayer

Certified By:
Jason Moore, VP Operations, Assayer

Authorized By:
Derek Demianiuk, VP Quality

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
1046 Gorham Street
Thunder Bay, ON
Canada P7B 5X5
Tel: (807) 626-1630
Fax: (807) 622-7571
www.accurassay.com
assay@accurassay.com

Monday, October 24, 2016

Final Certificate

Alto Ventures Ltd.
Unit #7, 1351D Kelly Lake Rd.
Sudbury, ON, CAN
P3E5P5
Ph#: (705) 522-6372
Fax#: (705) 522-8856
Email: koziol@altoventures.com

Date Received: 10/06/2016
Date Completed: 10/13/2016
Job #: 201642068
Reference:
Sample #: 37

Acc #	Client ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
219076	1137746	<1	4.63	12	109	<2	<1	2.82	<4	9	43	61	3.03	0.04	<10	1.00	281	1	21	493	2	<5	<1	<10	255	2678	<2	72	<10	7	22
219077	1138372	<1	0.63	5	<1	<2	<1	<0.01	<4	<1	52	13	0.49	<0.01	<10	0.03	<100	10	2	<100	<1	<5	1	<10	3	<100	<2	4	<10	<2	3
219078	1138373	<1	4.92	5	173	<2	<1	1.32	<4	16	42	91	4.95	0.05	25	1.03	627	3	13	369	<1	<5	<1	<10	105	2495	<2	69	<10	5	37
219079	1138374	<1	4.90	4	103	<2	<1	2.51	<4	27	58	387	6.43	<0.01	26	1.26	882	3	19	347	<1	<5	<1	<10	177	2789	<2	83	<10	6	59
219080	1138375	2	4.25	10	194	<2	<1	1.63	<4	16	33	1105	3.90	0.11	19	0.72	546	13	17	<100	<1	<5	11	<10	138	2494	<2	87	<10	2	52
219081	1138376	<1	2.92	7	31	<2	14	2.82	<4	61	34	385	7.02	<0.01	14	1.82	902	2	13	<100	3	<5	5	<10	109	1688	<2	66	<10	8	71
219082	1138377	<1	4.31	8	81	<2	<1	2.38	<4	10	40	105	2.74	0.08	<10	0.69	283	4	13	332	<1	<5	<1	<10	213	2140	<2	57	<10	4	25
219083	1138378	<1	5.12	9	246	<2	<1	0.31	<4	4	43	36	3.36	0.02	19	0.62	315	5	6	389	2	<5	6	<10	29	2115	<2	50	<10	3	34
219084	1138379	<1	5.27	18	283	<2	<1	0.62	<4	15	36	161	6.31	<0.01	31	1.09	670	3	22	470	<1	<5	3	<10	50	2953	<2	82	<10	3	89
219085	1138380	<1	5.61	3	38	<2	<1	0.74	<4	3	8	<1	0.95	0.02	<10	0.42	169	<1	4	649	<1	<5	8	<10	95	1985	<2	14	<10	9	11
219086D	1138380	<1	4.44	8	29	<2	<1	0.64	<4	<1	7	<1	0.89	0.08	<10	0.36	158	2	3	620	<1	<5	1	<10	88	1868	<2	13	<10	8	14
219087	1138381	<1	4.06	6	123	<2	4	1.37	<4	12	17	103	2.48	0.02	11	0.45	148	5	10	267	4	<5	10	<10	160	1546	<2	33	<10	2	23
219088	1138382	<1	4.38	8	125	<2	<1	2.07	<4	17	28	98	3.51	0.05	21	0.69	246	2	19	686	33	<5	3	<10	147	2743	<2	70	<10	7	39
219089	1138383	<1	5.65	12	121	<2	<1	2.58	<4	14	28	44	3.96	<0.01	19	1.00	471	<1	19	714	<1	<5	11	<10	235	3503	<2	77	<10	10	38
219090	1138384	<1	4.35	17	236	<2	<1	0.18	<4	111	27	654	5.17	0.10	55	0.99	252	2	8	537	2	<5	3	<10	29	1865	<2	68	<10	5	28
219091	1138385	<1	4.74	7	43	<2	<1	1.62	<4	6	11	29	1.50	0.05	<10	0.37	203	1	2	690	<1	<5	<1	<10	150	2058	<2	15	<10	9	11
219092	1138386	<1	4.41	4	270	<2	<1	0.83	4	18	65	420	5.94	0.12	21	0.83	453	1	21	313	4	<5	6	10	64	2192	2	64	<10	3	410
219093	1138387	<1	4.37	8	104	<2	<1	2.01	<4	3	67	83	5.42	<0.01	11	0.88	410	2	11	430	9	<5	10	<10	198	2427	<2	80	<10	3	59
219094	1138388	<1	4.89	8	186	<2	<1	1.43	<4	5	75	771	4.13	<0.01	24	1.09	656	2	21	406	<1	<5	<1	<10	147	2322	<2	79	<10	5	354
219095	1138389	<1	4.09	2	88	<2	<1	1.58	<4	11	67	150	3.45	0.17	11	1.02	336	2	29	355	2	<5	<1	<10	169	2128	<2	75	<10	5	35

PROCEDURE CODES: ALP1, ALFA1, ALMA1

Certified By: Jason Moore, VP Operations, Assayer

-0519-10/24/2016 4:03 PM

ACCURASSAY LABORATORIES
1046 Gorham Street
Thunder Bay, ON
Canada P7B 5X5
Tel: (807) 626-1630
Fax: (807) 622-7571
www.accurassay.com
assay@accurassay.com

Monday, October 24, 2016

Final Certificate

Alto Ventures Ltd.
Unit #7, 1351D Kelly Lake Rd.
Sudbury, ON, CAN
P3E5P5
Ph#: (705) 522-6372
Fax#: (705) 522-8856
Email: koziol@altoventures.com

Date Received: 10/06/2016
Date Completed: 10/13/2016
Job #: 201642068
Reference:
Sample #: 37

Acc #	Client ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
219096	1138390	<1	4.80	30	173	<2	<1	2.03	<4	13	15	111	3.48	0.10	22	0.89	569	1	11	703	5	<5	3	<10	145	2569	<2	65	<10	5	409
219097D	1138390	<1	4.75	2	178	<2	<1	2.11	<4	13	15	112	3.39	0.04	23	0.90	598	2	11	739	4	<5	1	<10	152	2759	<2	66	<10	5	431
219098	1138391	2	4.60	14	143	<2	<1	2.13	<4	23	37	1527	4.88	<0.01	24	1.68	379	7	29	352	6	<5	<1	<10	171	2244	<2	66	<10	3	53
219099	1138392	<1	4.36	6	168	<2	<1	1.95	<4	18	65	40	5.51	<0.01	21	1.07	685	2	30	365	3	<5	2	<10	186	2137	<2	62	<10	5	63
219100	1138393	<1	4.06	3	172	<2	5	1.96	<4	12	61	22	5.47	0.07	23	1.16	928	1	14	331	17	<5	<1	<10	156	2110	<2	68	<10	4	59
219101	1138394	<1	3.75	11	65	<2	<1	2.57	<4	13	89	10	3.58	0.02	11	1.17	253	<1	35	381	<1	<5	<1	<10	187	2229	<2	73	<10	5	22
219102	1138395	<1	<0.01	35	229	<2	<1	0.91	<4	3	21	24	1.90	0.37	<10	0.31	285	5	17	391	<1	<5	<1	<10	114	1103	<2	57	<10	5	34
219103	1138396	<1	3.27	7	3	<2	<1	4.22	<4	35	55	147	9.20	0.10	<10	1.61	1284	<1	19	376	<1	<5	2	<10	97	7364	<2	295	<10	23	112
219104	1138397	<1	4.53	10	23	<2	<1	3.44	<4	6	51	34	2.85	0.06	<10	0.90	422	<1	21	354	3	<5	2	<10	176	2154	<2	70	<10	6	29
219105	1138398	<1	4.45	3	186	<2	<1	1.73	<4	12	58	6	3.01	0.02	24	1.31	497	1	32	364	<1	<5	4	<10	154	2197	<2	68	<10	5	53
219106	1138399	<1	4.31	6	286	<2	<1	0.67	<4	7	15	37	2.90	<0.01	20	0.94	486	2	7	333	7	<5	1	<10	78	1998	<2	56	<10	3	208
219107	1138400	<1	4.62	7	92	<2	<1	2.24	<4	2	34	25	3.28	<0.01	24	1.36	526	5	8	146	3	<5	<1	<10	151	2311	<2	56	<10	4	131
219108	688941	<1	4.56	15	116	<2	<1	1.92	<4	13	14	513	3.55	<0.01	12	0.76	180	4	4	453	<1	5	<1	<10	217	2013	<2	26	<10	5	14
219109	688942	<1	3.91	8	243	<2	<1	1.08	<4	8	21	46	3.72	<0.01	26	0.98	641	<1	12	581	7	<5	5	<10	88	2851	<2	64	<10	5	80
219110	688943	<1	5.26	<2	98	<2	<1	2.84	<4	12	89	<1	3.29	<0.01	19	1.17	453	2	51	1373	<1	<5	<1	<10	147	4479	<2	100	<10	10	34
219111	688944	<1	3.95	4	107	<2	<1	1.68	<4	4	13	33	2.16	<0.01	<10	0.32	257	4	1	384	<1	<5	2	<10	155	1727	<2	27	<10	5	9
219112	688945	<1	5.27	<2	166	<2	<1	1.91	<4	7	20	84	2.47	<0.01	19	0.57	193	16	5	297	<1	<5	6	<10	185	1949	<2	40	<10	5	25
219113	688946	<1	2.73	5	88	<2	<1	0.91	<4	38	15	345	4.23	<0.01	<10	0.38	145	3	21	151	<1	<5	6	<10	102	1035	<2	25	<10	3	21
219114	688947	<1	5.03	4	154	<2	<1	2.51	<4	12	20	67	3.45	<0.01	16	0.75	331	2	8	746	<1	<5	<1	<10	275	2805	<2	65	<10	7	41

PROCEDURE CODES: ALP1, ALFA1, ALMA1

Certified By: Jason Moore, VP Operations, Assayer

-0519-10/24/2016 4:03 PM

APPENDIX C

GOLD GRAINS AND KIMBERLITE INDICATOR MINERALS TILL RESULTS FROM SEPTEMBER 2016 SAMPLES

Overburden Drilling Management Limited
Unit 107, 15 Capella Court
Nepean, Ontario, Canada, K2E 7X1
Tel: (613) 226-1771 Fax: (613) 226-8753
odm@storm.ca www.odm.ca

Exploring Heavy Minerals

Laboratory Data Report

Client Information

Alto Ventures Ltd
Unit 7 - 1351 C Kelly Lake Road
Sudbury, On
P3E 5P5

koziol@altoventures.com

Attention: Mr. M. Koziol

Data-File Information

Date:	April 18, 2017
Project name:	
ODM batch number:	7439
Sample numbers:	ML073 to ML086
Data file:	20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Number of samples in this report:	14
Number of samples processed to date:	14
Total number of samples in project:	14

Preliminary data:	[ ]	
Final data:	[X]	Now includes KIM data.
Revised data:	[ ]	

Sample Processing Specifications

1. Submitted by client: Glacial till samples prescreened to -4.0 mm in the field.
2. One ±300 g archival split taken from each sample.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. Heavy liquid separation specific gravity: 3.20.
5. 0.25-2.0 mm nonferromagnetic heavy mineral fraction picked for indicator minerals.

Notes

Remy Huneault, P.Geo.
President

Primary Sample Processing Weights and Descriptions

Client: Alto Ventures Ltd
File Name: 20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Total Number of Samples in this Report: 14
ODM Batch Number(s): 7439

	Weight (kg wet)					Screening and Shaking Table Sample Descriptions												
						Clasts (+2.0 mm)*					Matrix (-2.0 mm)							
							Percentage				Distribution					Colour		
Sample Number	Bulk Rec'd	Archived Split	Table Split	+2.0 mm Clasts*	Table Feed	Size	V/S	GR	LS	OT	S/U	SD	ST	CY	ORG	SD	CY	Class
ML073	12.0	0.3	11.7	1.3	10.4	P	40	60	0	0	U	+	Y	-	N	OC	OC	TILL
ML074	11.5	0.3	11.2	1.4	9.8	G	40	60	0	0	U	+	Y	-	N	OC	OC	TILL
ML075	8.8	0.3	8.5	1.3	7.2	G	50	50	0	0	U	+	Y	-	N	OC	OC	TILL
ML076	11.1	0.3	10.8	2.4	8.4	G	50	50	0	0	U	+	+	-	N	OC	OC	TILL
ML077	9.9	0.3	9.6	0.3	9.3	G	40	60	0	0	U	Y	+	-	N	OC	OC	TILL
ML078	10.2	0.3	9.9	0.7	9.2	G	40	60	0	0	U	+	Y	-	N	OC	OC	TILL
ML079	11.1	0.3	10.8	1.0	9.8	G	60	40	0	0	U	+	Y	-	N	OC	OC	TILL
ML080	11.0	0.3	10.7	1.1	9.6	G	50	50	0	0	U	+	Y	-	N	OC	OC	TILL
ML081	10.0	0.3	9.7	0.9	8.8	G	50	50	0	0	U	+	Y	-	N	OC	OC	TILL
ML082	11.7	0.3	11.4	1.6	9.8	G	40	60	0	0	U	+	Y	-	N	OC	OC	TILL
ML083	10.8	0.3	10.5	0.7	9.8	G	40	60	0	0	U	+	Y	-	N	OC	OC	TILL
ML084	12.1	0.3	11.8	1.2	10.6	G	40	60	0	0	U	+	Y	-	N	OC	OC	TILL
ML085	12.4	0.3	12.1	0.3	11.8	P	40	60	0	0	U	Y	+	-	N	OC	OC	TILL
ML086	12.2	0.3	11.9	1.4	10.5	P	40	60	0	0	U	+	Y	-	N	OC	OC	TILL

*Samples prescreend to -4.0 mm in the field.

Gold Grain Summary

Client: Alto Ventures Ltd
File Name: 20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Total Number of Samples in this Report: 14
ODM Batch Number(s): 7439

	Number of Visible Gold Grains				Nonmag HMC Weight (g)*	Calculated PPB Visible Gold in HMC			
Sample Number	Total	Reshaped	Modified	Pristine		Total	Reshaped	Modified	Pristine
ML073	19	4	8	7	41.6	17	12	4	1
ML074	0	0	0	0	39.2	0	0	0	0
ML075	1	1	0	0	28.8	96	96	0	0
ML076	3	3	0	0	33.6	10	10	0	0
ML077	13	1	3	9	37.2	45	1	3	41
ML078	3	2	0	1	36.8	166	166	0	1
ML079	2	1	1	0	39.2	2	1	2	0
ML080	6	4	1	1	38.4	4	1	1	2
ML081	32	7	9	16	35.2	69	18	5	46
ML082	30	7	12	11	39.2	140	84	43	13
ML083	26	6	10	10	39.2	33	9	11	13
ML084	20	7	4	9	42.4	33	9	3	21
ML085	69	13	23	33	47.2	55	12	16	27
ML086	23	5	4	14	42.0	35	13	2	20

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

Detailed Gold Grain Data

Client: Alto Ventures Ltd
File Name: 20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Total Number of Samples in this Report: 14
ODM Batch Number(s): 7439

Sample Number	Dimensions (µm)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
ML073	3 C	15	15		4	6	10		1	No sulphides.
	5 C	25	25	1	3	1	5		3	
	8 C	25	50	1	1		2		3	
	10 C	50	50	2			2		9	
							19	41.6	17	
ML074	No Visible Gold									No sulphides.
ML075	25 C	100	150	1			1		96	No sulphides.
							1	28.8	96	
ML076	8 C	25	50	2			2		4	No sulphides.
	10 C	50	50	1			1		6	
							3	33.6	10	
ML077	3 C	15	15		1	2	3		<1	No sulphides.
	5 C	25	25	1	1	1	3		2	
	8 C	25	50		1	3	4		8	
	13 C	50	75			2	2		19	
	15 C	50	100			1	1		15	
							13	37.2	45	
ML078	5 C	25	25			1	1		1	No sulphides.
	10 C	50	50	1			1		5	
	31 C	125	200	1			1		160	
							3	36.8	166	
ML079	5 C	25	25	1			1		1	No sulphides.
	8 C	25	50		1		1		2	
							2	39.2	2	
ML080	3 C	15	15	3			3		<1	No sulphides.
	5 C	25	25	1	1		2		1	
	8 C	25	50			1	1		2	
							6	38.4	4	
ML081	3 C	15	15	1	4	11	16		2	No sulphides.
	5 C	25	25	1	4	3	8		6	
	8 C	25	50	3	1	1	5		10	
	10 C	50	50	2			2		11	
	20 C	75	125			1	1		40	
							32	35.2	69	
ML082	3 C	15	15	1	3	7	11		1	No sulphides.
	5 C	25	25	3	3	2	8		5	
	8 C	25	50	1	4	1	6		11	
	10 C	50	50		1		1		5	
	13 C	50	75	1		1	2		18	
	20 C	50	150		1		1		29	
	25 C	100	150	1			1		71	
							30	39.2	140	
ML083	3 C	15	15	2	5	6	13		2	No sulphides.
	5 C	25	25	1	2	2	5		3	
	8 C	25	50	2	2	1	5		9	
	10 C	50	50	1	1		2		10	
	13 C	50	75			1	1		9	
							26	39.2	33	

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

Detailed Gold Grain Data

Client: Alto Ventures Ltd
File Name: 20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Total Number of Samples in this Report: 14
ODM Batch Number(s): 7439

Sample Number	Dimensions (µm) Thickness		Width	Length	Number of Visible Gold Grains Reshaped	Modified	Pristine	Total	Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
ML084	3	C	15	15	3	1	3	7		1	No sulphides.
	5	C	25	25	1	2	3	6		3	
	8	C	25	50	2	1	1	4		7	
	10	C	50	50	1			1		5	
	13	C	50	75			2	2		17	
								20	42.4	33	
ML085	3	C	15	15	3	10	18	31		3	No sulphides.
	5	C	25	25	6	9	8	23		12	
	8	C	25	50	3	2	4	9		14	
	10	C	25	75		1	1	2		6	
	10	C	50	50	1	1	1	3		12	
	13	C	50	75			1	1		8	
								69	47.2	55	
ML086	3	C	15	15		3	3	6		1	No sulphides.
	5	C	25	25	2		6	8		5	
	8	C	25	50	2	1	2	5		9	
	10	C	25	75			1	1		3	
	10	C	50	50			2	2		9	
	13	C	50	75	1			1		9	
								23	42.0	35	

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

PLATINUM GROUP MINERALS SUMMARY

Client: Alto Ventures Ltd
File Name: 20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Total Number of Samples in this Report: 14
ODM Batch Number(s): 7439

Sample Number	Observed PGMs		Total Grains
	Mineral	Number of Grains	
ML073	None Observed	0	0
ML074	None Observed	0	0
ML075	None Observed	0	0
ML076	None Observed	0	0
ML077	None Observed	0	0
ML078	None Observed	0	0
ML079	None Observed	0	0
ML080	None Observed	0	0
ML081	None Observed	0	0
ML082	None Observed	0	0
ML083	None Observed	0	0
ML084	None Observed	0	0
ML085	None Observed	0	0
ML086	None Observed	0	0

*All samples are oxidized; therefore only native PGE minerals and the most resistant PGE arsenide and antimonide grains (no PGE sulphides or tellurides) are likely to be preserved.

Laboratory Processing Weights

Client: Alto Ventures Ltd
File Name: 20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Total Number of Samples in this Report: 14
ODM Batch Number(s): 7439

	Weight of -2.0 mm Table Concentrate (g)												
			0.25 to 2.0 mm Heavy Liquid Separation S.G. 3.20										
					HMC S.G.>3.20								
								Nonferromagnetic HMC					
									Processed Split				
									Total				
Sample Number	Total	-0.25 mm	Total	Lights S.G. <3.2	Total	-0.25 mm (wash)	Mag	Total	%	Weight	0.25 to 0.5 mm	0.5 to 1.0 mm	1.0 to 2.0 mm
ML073	855.1	659.1	196.0	186.7	9.3	0.8	2.2	6.3	100	6.3	4.2	1.7	0.4
ML074	919.1	676.1	243.0	231.5	11.5	1.1	3.3	7.1	100	7.1	4.4	2.0	0.7
ML075	712.6	358.8	353.8	328.4	25.4	3.1	9.3	13.0	100	13.0	9.6	2.7	0.7
ML076	1133.1	592.7	540.4	495.3	45.1	7.0	15.7	22.4	100	22.4	16.1	4.9	1.4
ML077	703.1	477.2	225.9	223.8	2.1	0.6	0.2	1.3	100	1.3	1.0	0.2	0.1
ML078	959.6	607.6	352.0	346.3	5.7	0.9	1.1	3.7	100	3.7	2.4	0.9	0.4
ML079	826.3	611.6	214.7	210.1	4.6	1.3	0.7	2.6	100	2.6	1.9	0.6	0.1
ML080	669.9	508.5	161.4	154.1	7.3	1.8	1.3	4.2	100	4.2	3.2	0.8	0.2
ML081	807.7	618.0	189.7	184.2	5.5	1.3	1.1	3.1	100	3.1	2.2	0.7	0.2
ML082	963.5	709.3	254.2	247.0	7.2	1.9	2.1	3.2	100	3.2	2.3	0.8	0.1
ML083	619.4	468.0	151.4	147.9	3.5	0.7	0.8	2.0	100	2.0	1.5	0.4	0.1
ML084	1034.0	794.9	239.1	229.0	10.1	1.6	1.8	6.7	100	6.7	5.0	1.4	0.3
ML085	829.9	699.9	130.0	126.4	3.6	1.1	0.4	2.1	100	2.1	1.6	0.4	0.1
ML086	935.3	710.6	224.7	220.6	4.1	0.8	0.8	2.5	100	2.5	1.8	0.6	0.1

Kimberlite Indicator Mineral Counts

Client: Alto Ventures Ltd
File Name: 20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Total Number of Samples in this Report: 14
ODM Batch Number(s): 7439

Number of Grains — Selected MMSIMs

Sample Number	1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm					
	Low-Cr diopside		Cpy		Gh		Low-Cr diopside		Cpy		Gh		Low-Cr diopside		Cpy		Gh	
	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P
ML073	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML074	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0
ML075	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
ML076	0	0	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0
ML077	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML078	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML079	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
ML080	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML081	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
ML082	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML083	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML084	0	0	0	0	0	0	0	0	7	7	0	0	4	4	21	21	0	0
ML085	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0
ML086	0	0	0	0	0	0	0	0	4	4	0	0	1	1	5	5	0	0

Number of Grains — KIMs (1.0 to 2.0 mm and 0.5 to 1.0 mm)

Sample Number	1.0 to 2.0 mm												0.5 to 1.0 mm											
	GP		GO		DC		IM		CR		FO		GP		GO		DC		IM		CR		FO	
	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P
ML073	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML074	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML075	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML076	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML077	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML078	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML079	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML080	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML081	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML082	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML083	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML084	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML085	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML086	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Number of Grains — KIMs (0.25 to 0.5 mm) and Total

Sample Number	0.25 to 0.5 mm												Total (KIMs)	
	GP		GO		DC		IM		CR		FO			
	T	P	T	P	T	P	T	P	T	P	T	P	T	P
ML073	0	0	0	0	0	0	0	0	1	1	0	0	1	1
ML074	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML075	2	2	0	0	1	1	5	5	4	4	0	0	13	13
ML076	1	1	0	0	1	1	5	5	2	2	0	0	9	9
ML077	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML078	0	0	0	0	0	0	0	0	0	0	1	1	1	1
ML079	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML080	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML081	0	0	0	0	0	0	2	2	1	1	0	0	4	4
ML082	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML083	0	0	0	0	0	0	1	1	0	0	0	0	1	1
ML084	1	1	0	0	0	0	1	1	1	1	0	0	3	3
ML085	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML086	0	0	0	0	0	0	0	0	1	1	0	0	1	1

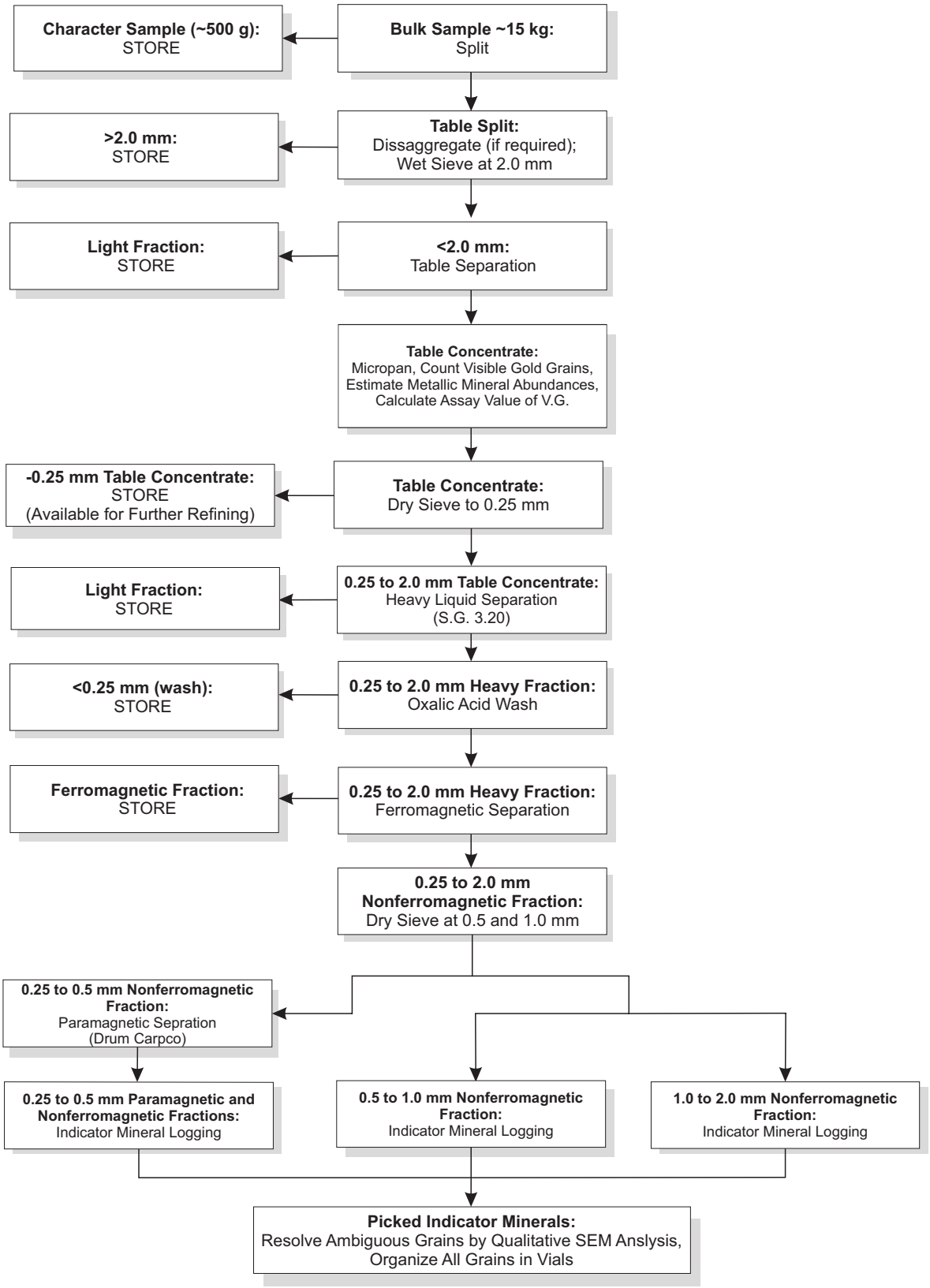
T = Total number of grains in sample. Total is estimated if number is greater than number of picked grains.
P = Number of picked grains in sample.

Kimberlite Indicator Mineral Remarks

Client: Alto Ventures Ltd
File Name: 20177428 - Alto Ventures - Koziol - (ML) - 14 for KIMs - March 2017
Total Number of Samples in this Report: 14
ODM Batch Number(s): 7439

Sample Number	Remarks
ML073	Hornblende-augite/epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 IM versus crustal ilmenite candidate = 1 crustal ilmenite.
ML074	Hornblende-almandine/epidote assemblage.
ML075	Almandine-hornblende-hematite/epidote assemblage. SEM check from 0.5-1.0 mm fraction: 1 IM versus crustal ilmenite candidate = 1 IM. SEM checks from 0.25-0.5 mm fraction: 2 GO versus grossular candidates = 2 grossular; 7 IM versus crustal ilmenite candidates = 5 IM, 1 CR and 1 crustal ilmenite; 3 CR candidates = 3 CR; and 1 FO versus diopside candidate = 1 corundum.
ML076	Almandine-hornblende-hematite/epidote assemblage. SEM checks from 0.5-1.0 mm fraction: 1 GP versus almandine candidate = 1 almandine; and 1 GO versus grossular candidate = 1 grossular. SEM checks from 0.25-0.5 mm fraction: 2 GO versus grossular candidates = 2 grossular; 5 IM versus crustal ilmenite candidates = 4 IM and 1 crustal ilmenite; and 2 CR candidates = 1 IM and 1 crustal ilmenite.
ML077	Almandine-hornblende-hematite/epidote-diopside assemblage.
ML078	Almandine-hornblende-hematite/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 GP versus almandine candidate = 1 almandine; 1 CR versus crustal ilmenite candidate = 1 crustal ilmenite; and 1 FO versus diopside candidate = 1 FO.
ML079	Almandine-hornblende-hematite/epidote assemblage.
ML080	Hornblende-almandine/epidote assemblage.
ML081	Almandine-hornblende/epidote assemblage. SEM check from 0.5-1.0 mm fraction: 1 IM versus crustal ilmenite candidate = 1 IM. SEM checks from 0.25-0.5 mm fraction: 4 CR versus crustal ilmenite candidates = 1 CR, 1 crustal ilmenite and 2 IM.
ML082	Almandine-hornblende/epidote assemblage.
ML083	Hornblende-almandine/epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 IM versus crustal ilmenite candidate = 1 IM.
ML084	Hornblende-almandine/epidote-diopside assemblage.
ML085	Hornblende-almandine-augite/epidote assemblage.
ML086	Almandine-hornblende-augite/epidote-diopside assemblage.

Overburden Drilling Management Limited



Processing flow sheet for gold grains + indicator minerals.

APPENDIX D

MINER LAKE MICROPROBE ANALYSES OF KIMBERLITE INDICATOR MINERALS

REPORT BY

HARRISON COOKENBOO, Ph. D., P. Geo.

FEBRUARY 20, 2017

Miner Lake microprobe analyses of kimberlite indicator minerals

Harrison Cookenboo, Ph.D., P.Geo

February 20, 2017

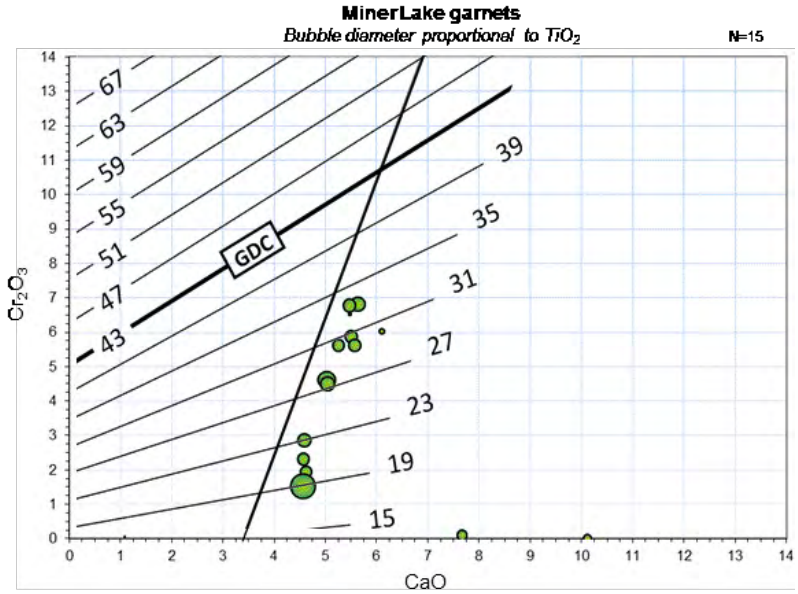
Introduction: A suite of 96 electron microprobe analyses of heavy minerals from Miner Lake were provided to the author for review of kimberlite and diamond potential. The analyses include Cr-pyrope, eclogitic garnet, chrome diopside, chromite, forsterite olivine and Mg-ilmenite with potential kimberlite indicator mineral (KIM) compositions, but no grains of diamond indicator composition (DIM).

The heavy minerals were picked by ODM Laboratory in Neppean Ontario as potential kimberlite indicator minerals, and then analyzed by electron microprobe at SRC Geoanalytical Laboratory in Saskatoon Saskatchewan. The electron microprobe results were provided for the author's review without individual sample locations, although from 17 different sample numbers. The review below considers the probe results as a single suite of potential indicator grains. Methods applied to the review are summarized in Cookenboo and Grütter (2010).

Cr-pyrope garnet

A total of 16 garnets were analyzed from the Miner Lake samples. Thirteen of those garnets are Cr-pyropes, with between 1.53% and 6.88% Cr_2O_3, and plot on the lherzolite trend on the Cr_2O_3-CaO graph. Applying the Cr-saturation array method (Grütter and Menzies, 2006; either graphically or by formulas) yields minimum pressure of formation for the Cr-pyropes of up to 33.3 Kbar at a geotherm of 40mW/m^2, which is well below pressures associated with the diamond stability field (the diamond stability field requires above 42 to 50 Kbar, depending on geotherm). The lherzolite trend is shifted somewhat to the CaO enriched side of the Cr_2O_3-CaO graph consistent with an off-craton origin. Average MnO content is 0.39%, suggesting a temperature within the graphite stability field (Grütter et al., 2004).

Figure 1: Cr-pyropes plot on the lherzolite trend, with a highest minimum pressure of 33 Kbar.

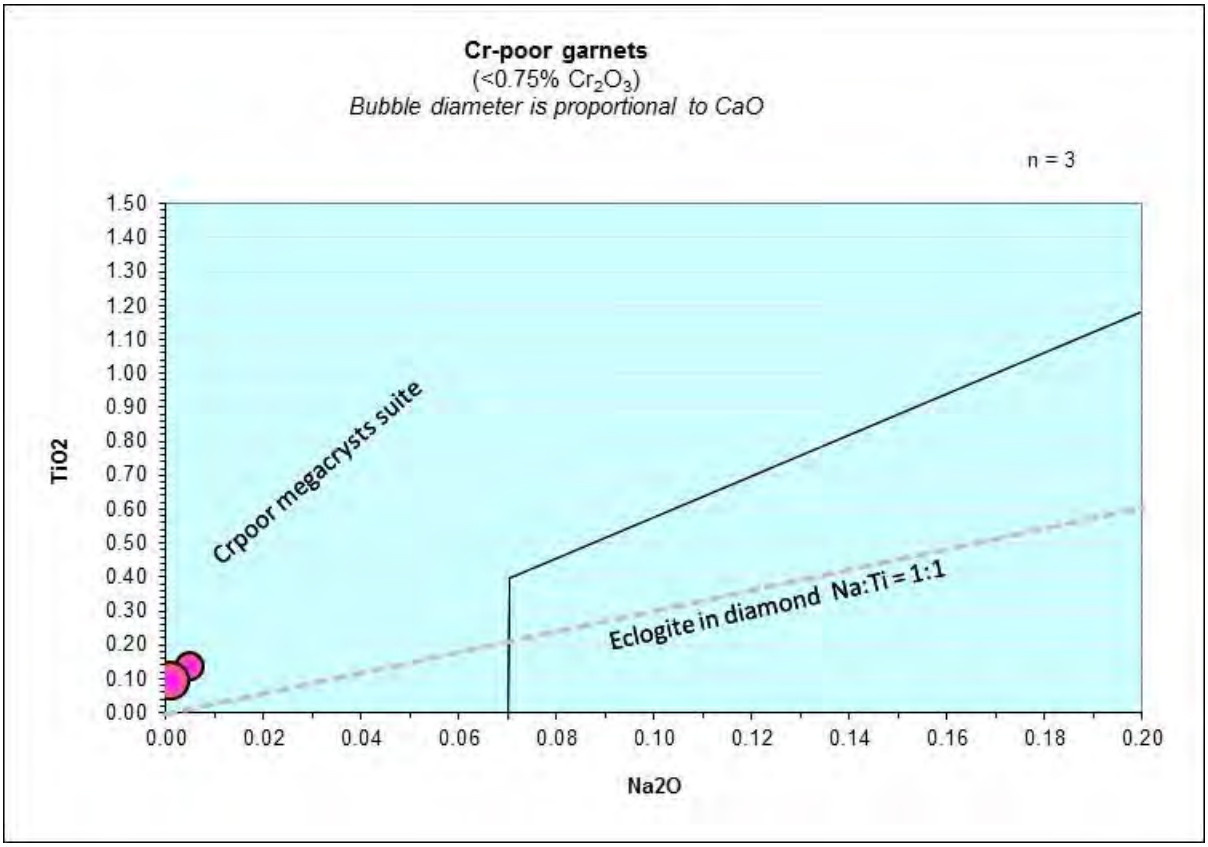


Min P_{40}Kbar	Mn T °C
32	1009
33	1087
32	929
29	1100
30	1004
29	1006
30	1026
27	1089
27	1015
22	1074
21	1158
20	1052
18	958

Eclogitic garnets

Three of the sixteen garnets are Cr-poor ranging from below detection limit to a high value of just 0.10% Cr_2O_3. These low Cr garnets are also Ti-poor and Ca-enriched, consistent with eclogitic origin, but lack Na_2O which typifies eclogite garnets associated with the mantle or diamond stability field (Fig. 2).

Figure 2: Cr=poor garnets.



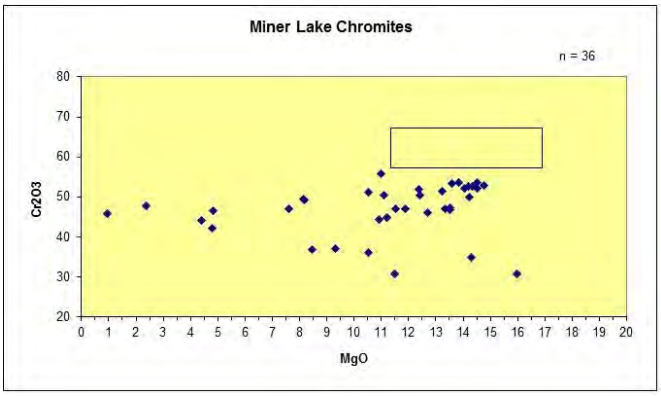
Chromite

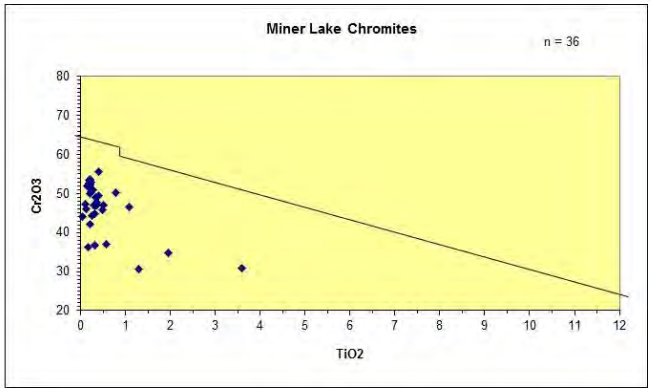
A total of 37 chromites were analyzed from the Miner Lake samples. The chromites range from 30.69% to a maximum of 55.67% Cr_2O_3, which is well below chromium contents associated with diamond inclusions (Fig. 3). Some chromites are Mg-rich, which is consistent with many chromites from kimberlite, but there is no discernable trend of increasing TiO_2 which characterizes many evolving chromite composition in many kimberlites (Fig. 4). The most Cr-rich chromite is rated as a "Kimberlitic" ("K") indicator and the remainder are probably kimberlite ("PK") or probably not kimberlitic ("PNK") indicators, reflecting the fact that compositionally chromites from kimberlite commonly overlap compositions form other ultramafic sources, with only the most Cr-rich being strong indicators of kimberlite.

Zinc in chromite inversely proportional to temperature of origin, with most diamond inclusion chromites carrying between 250 to 750 ppm Zn (Table 2). Zinc temperatures from the Miner Lake chromites form a broad range from relatively low (4 formed at less than 700ºC), to very high (18 formed at in excess of 1450ºC) including some at unrealistically high Zn temperatures in excess of 2000°C (which may be a function of either poor precision at very low Zn concentrations, or poor calibration of the Zn thermometer at such low concentrations).

Figure 3: Chromites from the Miner Lake suite plot below the diamond inclusion field (rectangle on the Cr_2O_3-MgO plot).

Average Zn Temperature = 1370ºC, not including 8 grains with less than 100 ppm Zn that yield unrealistic calculated temperatures in excess of 2000°C.



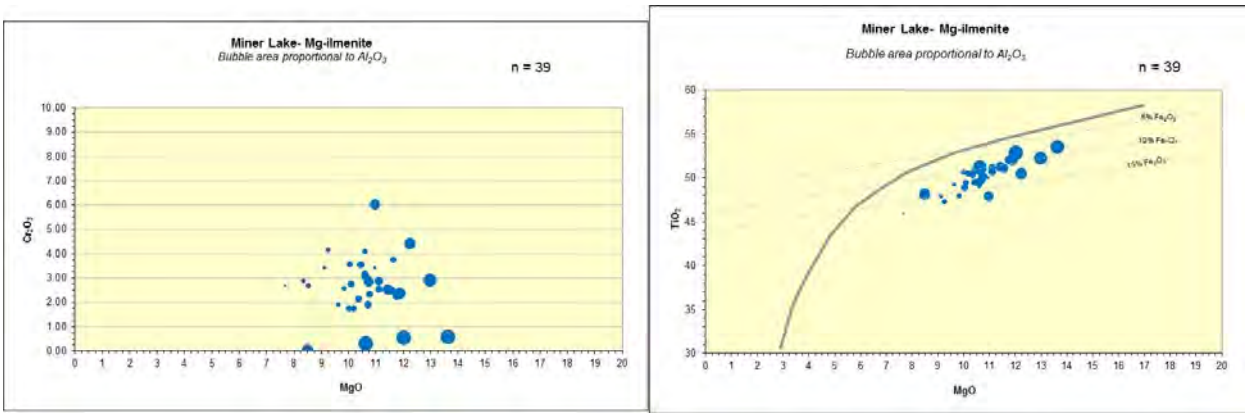


Zn T °C	Zn ppm
1629	225
BDL = +6000C	*<50*
5984	*56*
2821	*104*
BDL = +6000C	*<50*
BDL = +6000C	*<50*
4854	*64*
BDL = +6000C	*<50*
3664	*80*
2372	*129*
BDL = +6000C	*<50*
1292	345
1057	530
1036	554
1340	321
1891	177
1950	169
1358	313
1837	185
1837	185
1277	353
1891	177
2372	129
557	2948
1702	209
410	7857
1167	426
1178	418
557	2948
851	892
1103	482
880	819
1200	402
1023	570
1307	337
1460	273
664	1751

Mg-ilmenite (picroilmenite)

Thirty-seven Mg-ilmenites were classified as kimberlite indicators. These grains re somewhat scattered across the Cr_2O_3-MgO plot in a manner possibly suggestive of multiple sources (Fig. 4). Based on the Cr_2O_3-TiO_2 plot, the mg ilmenites are suggestive of crystallization in relatively oxidized kimberlite magma.

Figure 4: Mg-ilmenite from the Miner Lake suite are KIMs



Forsterite Olivine

A single forsterite olivine was analyzed with a kimberlite indicator composition and Mg# of 92.6, consistent with origin in the mantle. The measured Ni content of 5485 ppm is significantly higher than the assumed relatively constant values of about 3000 ppm for mantle olivine.

Mg#		Ni ppm
92.6	Megacryst	5485

Chrome diopside

A single chrome diopside with 1.03% Cr_2O_3 and 3.83% Na_2O is classified herein as a kimberlite indicator mineral. Applying the Nimis and Taylor (2000) single grain thermobarometer for chrome diopside yields a pressure of 26 Kbar and temperature of 953°C, suggestive of a geotherm of 40 mW/m^2 or higher.

Conclusions:

The Miner Lake KIM results are suggestive of a kimberlite source with low diamond potential, when considered as a single data set. There are good indicators of kimberlite origin (KIM) among the dataset, but no indicators associated with diamond (no DIM), suggesting that if all the indicators were derived from a single kimberlite they would point to low diamond potential. The possibility of multiple separate kimberlite origin should be considered by integrating the microprobe analysis herein with study of map locations of individual samples.

References:

Cookenboo, H.O., Grütter, Herman S., 2010. Mantle-derived indicator mineral compositions as applied to diamond exploration. Geochemistry: Exploration, Environment, Analysis. v. 10, p. 81-95.

Grütter, H., Latti, D. and Menzies, A., 2006. Cr-saturation arrays in concentrate garnet compositions from kimberlite and their use in mantle barometry. J. Petrol. 47: 801-820.

Grütter, H. S., Gurney, J.J., Menzies, A.H. and Winter, T., 2004. An updated classification scheme for mantle-derived garnet, for use by diamond explorers. Lithos, v. 77, p. 841-857.

Nimis, P. and Taylor, W.R. 2000. Single clinopyroxene thermo-barometry for garnet peridotites. Part 1. Calibration and testing of a Cr-in-cpx barometer and enstatite-in-cpx thermometer. Contributions to Mineralogy and Petrology, v. 139, p. 541–554.

Miner Lake KIM classification table Harrison Cookenboo

Sample ID	Size Fractic	Grain No.	Mineral	SiO2	TiO2	Al2O3	Cr2O3	V2O3	FeO	MnO	NiO	ZnO	MgO	CaO	Na2O	K2O	Nb2O5	Total		Classificatio
GOR128		1	Standard	46.07	0.29	9.97	0.34	0.02	9.79	0.18	0.14	<0.006	26.11	6.26	0.59	0.03	0.01	99.79	Standard	
GOR128		2	Standard	45.98	0.29	9.92	0.34	0.03	9.88	0.18	0.13	<0.006	25.94	6.28	0.58	0.03	0.03	99.61	Standard	
GOR128		3	Standard	45.82	0.29	9.89	0.34	0.02	9.85	0.18	0.14	<0.006	25.90	6.27	0.57	0.04	<0.008	99.30	Standard	
GOR128		4	Standard	46.01	0.29	9.92	0.34	0.02	9.82	0.17	0.13	<0.006	25.91	6.26	0.59	0.03	<0.008	99.49	Standard	
GOR128		5	Standard	45.92	0.29	9.92	0.33	0.03	9.87	0.18	0.14	<0.006	25.99	6.29	0.56	0.04	<0.008	99.54	Standard	
ML-040 CR		2	ilmenite	<0.003	48.71	<0.003	<0.002	0.10	48.62	1.18	<0.006	<0.007	0.08	<0.001	0.02	<0.001	<0.009	98.70	Fe-Ilm	NK
ML-063 IM	0.25-0.5	1	ilmenite	<0.003	48.90	<0.003	<0.002	0.11	44.70	4.25	<0.006	<0.007	0.22	<0.001	0.02	<0.001	0.07	98.28	Fe-Ilm	NK
ML-067 IM	0.25-0.5	2	ilmenite	<0.003	53.54	0.50	0.58	0.33	29.54	0.27	0.10	<0.006	13.63	0.01	0.02	<0.001	0.14	98.66	Mg-Ilm	K
ML-067 IM	0.25-0.5	1	ilmenite	<0.003	52.25	0.39	2.91	0.22	29.29	0.29	0.18	<0.006	12.98	0.00	0.04	<0.001	0.04	98.58	Mg-Ilm	K
ML-059 IM		2	ilmenite	<0.003	50.46	0.33	4.42	0.29	29.94	0.27	0.17	<0.007	12.24	0.00	0.03	<0.001	0.09	98.24	Mg-Ilm	K
ML-063 IM	0.5-1.0	3	ilmenite	<0.003	52.83	0.54	0.54	0.33	31.92	0.25	0.09	<0.007	12.02	0.01	0.03	<0.001	0.13	98.68	Mg-Ilm	K
ML-061 IM		3	ilmenite	<0.003	52.01	0.31	2.38	0.31	31.29	0.27	0.11	<0.007	11.87	0.00	0.04	<0.001	0.04	98.61	Mg-Ilm	K
ML-067 IM	0.5-1.0	2	ilmenite	<0.003	52.07	0.15	2.29	0.23	32.08	0.30	0.09	<0.007	11.75	0.01	0.05	<0.001	0.04	99.04	Mg-Ilm	K
ML-062 IM		3	ilmenite	<0.003	51.13	0.07	3.76	0.26	31.13	0.35	0.15	<0.007	11.63	0.00	0.04	<0.001	0.11	98.62	Mg-Ilm	K
ML-057 IM		1	ilmenite	<0.003	51.09	0.16	2.49	0.30	32.30	0.32	0.12	<0.007	11.57	0.01	0.03	<0.001	0.07	98.45	Mg-Ilm	K
ML-071 IM		2	ilmenite	<0.003	51.26	0.24	2.53	0.31	32.42	0.28	0.11	<0.007	11.42	0.01	0.03	<0.001	0.06	98.66	Mg-Ilm	K
ML-056 IM	0.5-1.0	1	ilmenite	<0.003	51.16	0.12	2.53	0.24	32.67	0.33	0.14	<0.007	11.10	0.00	0.03	<0.001	0.08	98.40	Mg-Ilm	K
ML-047 IM	0.25-0.50	2	ilmenite	<0.003	50.70	0.15	2.88	0.33	33.11	0.30	0.12	<0.007	11.10	0.01	0.03	<0.001	0.08	98.83	Mg-Ilm	K
ML-064 IM	1.0-2.0	1	ilmenite	<0.003	47.88	0.25	6.03	0.32	32.00	0.27	0.17	<0.007	10.97	0.00	0.02	<0.001	0.09	98.00	Mg-Ilm	K
ML-067 IM	0.5-1.0	1	ilmenite	<0.003	49.99	0.02	3.43	0.29	32.86	0.41	0.15	<0.007	10.94	0.00	0.02	<0.001	0.27	98.37	Mg-Ilm	K
ML-056 IM	0.25-0.50	1	ilmenite	<0.003	51.00	0.10	2.33	0.26	33.59	0.36	0.10	<0.007	10.77	0.00	0.03	<0.001	0.08	98.62	Mg-Ilm	K
ML-055 IM		1	ilmenite	<0.003	50.15	0.22	2.85	0.36	33.32	0.33	0.15	<0.007	10.74	0.00	0.03	<0.001	0.06	98.21	Mg-Ilm	K
ML-065 SEM	IM	2	ilmenite	<0.003	51.07	0.11	1.90	0.29	33.58	0.32	0.06	<0.007	10.71	0.00	0.03	<0.001	0.08	98.18	Mg-Ilm	K
ML-063 SEI	0.25-0.5	3	ilmenite	<0.003	49.70	0.11	2.98	0.32	33.87	0.33	0.11	<0.007	10.69	0.00	0.03	<0.001	0.08	98.23	Mg-Ilm	K
ML-063 IM	0.5-1.0	2	ilmenite	<0.003	51.16	0.53	0.31	0.34	34.91	0.25	0.05	<0.007	10.62	0.01	0.03	<0.001	0.19	98.39	Mg-Ilm	K
ML-059 IM		3	ilmenite	<0.003	49.15	0.06	4.10	0.35	33.59	0.35	0.13	<0.007	10.60	<0.001	0.03	<0.001	0.14	98.50	Mg-Ilm	K
ML-059 IM		1	ilmenite	<0.003	49.53	0.13	3.06	0.33	33.60	0.30	0.13	<0.007	10.60	0.00	0.03	<0.001	0.10	97.81	Mg-Ilm	K
ML-065 SEM	IM	1	ilmenite	<0.003	49.51	0.10	3.16	0.38	33.73	0.34	0.14	<0.007	10.59	<0.001	0.03	<0.001	0.08	98.05	Mg-Ilm	K
ML-071 IM		1	ilmenite	<0.003	49.51	0.11	3.55	0.32	34.01	0.32	0.11	<0.007	10.44	<0.001	0.02	<0.001	0.09	98.47	Mg-Ilm	K
ML-063 IM	0.5-1.0	1	ilmenite	<0.003	50.73	0.08	2.15	0.25	34.43	0.33	0.09	<0.007	10.37	0.00	0.03	<0.001	0.07	98.53	Mg-Ilm	K
ML-063 SEI	0.25-0.5	2	ilmenite	<0.003	50.29	0.07	2.11	0.27	34.67	0.32	0.07	<0.007	10.35	<0.001	0.03	<0.001	0.11	98.30	Mg-Ilm	K
ML-059 IM		4	ilmenite	<0.003	50.38	0.06	2.12	0.30	34.56	0.34	0.07	<0.007	10.33	<0.001	0.03	<0.001	0.09	98.28	Mg-Ilm	K
ML-055 SEM	IM	1	ilmenite	<0.003	50.51	0.07	1.74	0.31	35.00	0.33	0.02	<0.007	10.17	0.00	0.03	<0.001	0.10	98.29	Mg-Ilm	K
ML-060 SEM	IM	1	ilmenite	<0.003	49.45	0.09	2.76	0.26	32.70	0.36	0.11	<0.007	10.08	0.00	0.13	0.00	0.11	96.05	Mg-Ilm	K
ML-061 IM		2	ilmenite	<0.003	48.87	0.09	3.56	0.35	34.97	0.32	0.11	<0.007	10.04	0.00	0.03	<0.001	0.13	98.46	Mg-Ilm	K
ML-062 IM		2	ilmenite	<0.003	50.63	0.07	1.74	0.30	35.31	0.35	0.03	<0.007	10.01	0.00	0.03	<0.001	0.10	98.57	Mg-Ilm	K
ML-062 IM		1	ilmenite	<0.003	47.97	0.05	2.58	0.38	36.54	0.30	0.08	<0.007	9.83	0.00	0.03	<0.001	0.14	97.89	Mg-Ilm	K
ML-047 IM	0.25-0.50	1	ilmenite	<0.003	49.24	0.04	1.91	0.31	36.65	0.32	0.06	<0.007	9.63	0.00	0.03	<0.001	0.11	98.29	Mg-Ilm	K

ML-060 IM	1	ilmenite	<0.003	47.31	0.05	4.16	0.36	36.01	0.34	0.10	<0.007	9.25	<0.001	0.02	<0.001	0.16	97.75	Mg-Ilm	K
ML-061 IM	1	ilmenite	<0.003	47.94	0.03	3.42	0.31	36.35	0.45	0.05	<0.007	9.12	0.00	0.03	<0.001	0.23	97.93	Mg-Ilm	K
ML-055 SEM IM	2	ilmenite	<0.003	47.88	0.05	2.69	0.35	38.68	0.35	0.03	<0.007	8.52	<0.001	0.02	<0.001	0.16	98.73	Mg-Ilm	K
ML-063 SEI	0.25-0.5	1	ilmenite	<0.003	48.19	0.30	0.05	0.16	40.02	0.36	<0.006	<0.007	8.49	0.03	0.02	<0.001	0.02	97.64	Mg-Ilm	K
ML-055 SEM IM	3	ilmenite	<0.003	47.96	0.03	2.90	0.32	37.97	0.39	0.06	<0.007	8.34	<0.001	0.02	<0.001	0.26	98.24	Mg-Ilm	K
ML-047 IM 0.5-1.0	1	ilmenite	<0.003	45.84	0.01	2.68	0.36	40.59	0.36	0.05	<0.007	7.66	<0.001	0.02	<0.001	0.22	97.79	Mg-Ilm	K
ML-064 DC	1	cpx	54.95	0.11	5.08	1.03	0.04	4.33	0.08	0.05	<0.006	15.77	14.65	3.83	0.02	<0.008	99.95	CD	K
ML-056 FO	1	olivine	41.27	<0.002	<0.003	<0.002	<0.004	7.30	0.11	0.43	<0.005	50.92	0.01	0.00	<0.001	0.01	100.05	Olv	K
ML-063 GP 1.0-2.0	1	garnet	41.03	0.26	18.44	6.82	0.05	7.66	0.41	<0.005	<0.006	20.15	5.63	0.04	<0.001	<0.008	100.49	Cr Py	K
ML-067 GP	2	garnet	41.13	0.22	18.56	6.77	0.04	7.27	0.36	<0.005	<0.006	20.57	5.47	0.05	<0.001	<0.008	100.43	Cr Py	K
ML-064 GP	1	garnet	41.05	0.02	18.90	6.52	0.03	8.06	0.47	<0.005	<0.006	20.00	5.48	0.02	<0.001	<0.008	100.54	Cr Py	K
ML-063 GP 0.25-0.50	1	garnet	41.11	0.05	19.30	6.03	0.05	7.75	0.36	<0.005	<0.006	19.83	6.10	0.02	<0.001	<0.008	100.59	Cr Py	K
ML-057 GP	1	garnet	41.20	0.20	19.26	5.88	0.04	7.89	0.41	<0.005	<0.006	20.28	5.51	0.03	<0.001	<0.008	100.69	Cr Py	K
ML-067 GP	1	garnet	41.07	0.20	19.34	5.62	0.05	8.39	0.41	<0.005	<0.006	19.76	5.57	0.04	<0.001	<0.008	100.45	Cr Py	K
ML-058 GP	1	garnet	41.27	0.18	19.70	5.62	0.04	7.55	0.40	<0.005	<0.006	20.68	5.26	0.03	<0.001	<0.008	100.72	Cr Py	K
ML-055 GP	1	garnet	41.42	0.34	19.91	4.61	0.04	8.01	0.36	<0.005	<0.006	20.84	5.03	0.05	<0.001	<0.008	100.61	Cr Py	K
ML-059 GP	1	garnet	41.09	0.25	20.18	4.51	0.03	7.80	0.41	<0.005	<0.006	20.73	5.05	0.04	<0.001	<0.008	100.08	Cr Py	K
ML-063 GP 0.25-0.50	2	garnet	41.77	0.23	21.50	2.86	0.03	7.93	0.37	<0.005	<0.006	21.23	4.59	0.04	0.00	<0.008	100.55	Cr Py	K
ML-060 GP	1	garnet	41.69	0.18	21.96	2.31	0.03	8.31	0.33	<0.005	<0.006	21.08	4.57	0.02	<0.001	<0.008	100.49	Cr Py	K
ML-047 GP	1	garnet	41.35	0.17	22.37	1.95	0.03	8.33	0.38	<0.005	<0.006	21.15	4.63	0.03	<0.001	0.02	100.42	Cr Py	K
ML-043 SEM GO	1	garnet	41.28	0.69	21.81	1.53	0.03	9.35	0.45	<0.005	<0.006	20.62	4.56	0.15	<0.001	<0.008	100.48	Cr Py	K
ML-061 GO	1	garnet	39.26	0.14	22.23	0.10	0.01	18.91	0.42	<0.005	<0.006	11.55	7.67	0.01	<0.001	<0.008	100.29	EG	K
ML-062 GP	1	garnet	38.49	0.01	22.31	0.06	0.02	26.52	0.45	<0.005	0.01	11.28	1.09	0.00	<0.001	<0.008	100.23	EG	K
ML-063 GO	1	garnet	40.08	0.10	22.94	<0.002	0.01	13.98	0.21	<0.005	<0.006	13.11	10.11	<0.002	<0.001	<0.008	100.52	EG	K
ML-039 CR	4	tourmaline	34.34	0.30	32.35	<0.002	<0.004	15.53	0.34	<0.005	0.22	0.54	0.05	1.89	0.04	<0.008	85.59		
ML-071 CR	1	hematite	1.35	<0.002	0.03	<0.001	<0.004	86.02	0.01	<0.006	<0.007	<0.004	0.03	0.02	<0.001	<0.009	87.46	Fe min	
ML-071 CR	2	chromite	0.07	0.40	9.04	55.67	0.10	21.53	0.30	0.13	0.03	11.01	<0.001	0.01	<0.001	<0.009	98.28	Cr	K
ML-039 SEM CR	2	chromite	<0.003	0.20	16.28	53.56	0.11	13.97	0.18	0.12	<0.006	14.52	<0.001	0.01	<0.001	<0.008	98.95	Chr	PK
ML-061 CR	1	chromite	<0.003	0.18	15.67	53.48	0.11	15.29	0.17	0.07	0.01	13.85	<0.001	<0.002	<0.001	<0.008	98.84	Chr	PK
ML-058 CR	1	chromite	<0.003	0.20	15.38	53.33	0.12	15.62	0.19	0.13	0.01	13.59	<0.001	<0.002	<0.001	<0.008	98.57	Chr	PK
ML-067 CR	1	chromite	<0.003	0.22	16.79	52.93	0.13	13.74	0.16	0.11	<0.006	14.76	<0.001	<0.002	<0.001	<0.008	98.84	Chr	PK

ML-063 CR	4	chromite	<0.003	0.19	16.67	52.59	0.13	14.73	0.15	0.11	<0.006	14.20	<0.001	0.01	<0.001	<0.008	98.78	Chr	PK
ML-063 CR	2	chromite	<0.003	0.21	16.09	52.52	0.12	15.31	0.18	0.02	0.01	14.35	<0.001	0.01	<0.001	<0.008	98.80	Chr	PK
ML-064 CR	2	chromite	<0.003	0.17	17.52	52.18	0.12	14.52	0.17	0.15	<0.006	14.52	<0.001	0.01	<0.001	<0.008	99.35	Chr	PK
ML-062 CR	1	chromite	<0.003	0.21	16.98	52.13	0.14	14.95	0.17	0.11	0.01	14.06	<0.001	<0.002	<0.001	<0.008	98.76	Chr	PK
ML-060 CR	1	chromite	<0.003	0.13	16.64	51.91	0.09	17.05	0.26	0.17	0.02	12.38	<0.001	0.00	0.00	<0.008	98.67	Chr	PK
ML-071 CR	4	chromite	<0.003	0.21	16.99	51.49	0.13	16.19	0.21	0.08	<0.006	13.25	<0.001	0.00	<0.001	<0.008	98.54	Chr	PK
ML-062 CR	3	chromite	0.01	0.28	14.22	51.06	0.17	21.77	0.25	0.06	0.04	10.52	<0.001	0.01	<0.001	<0.008	98.39	Chr	PK
ML-071 CR	5	chromite	<0.003	0.22	15.85	50.43	0.11	19.01	0.30	0.10	0.07	12.42	<0.001	<0.002	<0.001	<0.008	98.50	Chr	PK
ML-062 CR	2	chromite	<0.003	0.77	13.52	50.30	0.20	22.14	0.24	0.12	0.07	11.11	<0.001	0.01	<0.001	<0.008	98.48	Chr	PK
ML-040 CR	1	chromite	<0.003	0.21	18.02	50.00	0.12	15.84	0.21	0.10	0.04	14.24	<0.001	0.00	<0.001	<0.008	98.78	Chr	PK
ML-039 CR	1	chromite	<0.003	0.39	14.18	49.56	0.15	25.22	0.39	0.09	0.02	8.16	<0.001	0.00	<0.001	<0.009	98.15	Chr	PK
ML-055 CR	1	chromite	0.01	0.33	11.66	49.09	0.12	28.02	0.33	0.05	0.02	8.19	<0.001	0.01	<0.001	<0.009	97.83	Chr	PK
ML-063 CR	1	chromite	<0.003	0.10	20.52	47.35	0.17	16.84	0.22	0.10	0.04	13.51	<0.001	<0.002	<0.001	<0.008	98.84	Chr	PK
ML-039 CR	3	chromite	0.06	0.30	16.13	47.08	0.12	22.42	0.16	0.13	0.02	11.89	<0.001	0.01	<0.001	<0.008	98.32	Chr	PK
ML-039 SEM CR	1	chromite	0.07	0.31	16.78	47.02	0.12	20.27	0.17	0.14	0.02	13.35	<0.001	0.00	<0.001	<0.008	98.25	Chr	PK
ML-055 CR	2	chromite	<0.003	0.51	15.05	47.01	0.18	27.49	0.35	0.07	0.04	7.59	<0.001	0.01	<0.001	<0.009	98.29	Chr	PK
ML-071 CR	3	chromite	<0.003	0.35	18.05	46.98	0.17	21.02	0.44	0.12	0.02	11.51	<0.001	0.00	<0.001	<0.008	98.65	Chr	PK
ML-039 CR	6	chromite	0.05	0.30	16.87	46.78	0.11	20.35	0.15	0.15	0.02	13.51	<0.001	0.00	<0.001	<0.008	98.29	Chr	PK
ML-064 CR	1	chromite	0.01	1.07	11.83	46.49	0.28	32.62	0.42	0.06	0.37	4.83	<0.001	0.00	<0.001	<0.009	97.97	Chr	PK
ML-055 SEM CR	1	chromite	<0.003	0.12	20.43	46.01	0.17	18.66	0.37	0.14	0.03	12.71	0.02	<0.002	<0.001	<0.008	98.64	Chr	PK
ML-056 CR 0.5-1.0	1	chromite	<0.003	0.49	9.76	45.82	0.10	38.74	0.70	0.01	0.98	0.94	<0.001	<0.003	<0.001	<0.009	97.53	Chr	PK
ML-063 SEM CR	1	chromite	0.06	0.31	17.61	44.84	0.12	23.66	0.29	0.14	0.05	11.22	<0.001	<0.002	<0.001	<0.008	98.30	Chr	PNK
ML-039 CR	2	chromite	<0.003	0.25	18.11	44.24	0.16	24.36	0.31	0.20	0.05	10.91	<0.001	0.01	<0.001	<0.008	98.61	Chr	PNK
ML-062 CR	4	chromite	<0.003	0.03	16.02	44.09	0.13	32.42	0.69	0.02	0.37	4.41	<0.001	<0.002	<0.001	<0.009	98.17	Chr	PNK
ML-047 CR	2	chromite	<0.003	0.21	8.97	42.15	0.08	39.86	0.41	0.15	0.11	4.79	<0.001	0.01	<0.001	<0.009	96.74	Chr	PNK
ML-047 CR	1	chromite	0.03	0.57	21.99	37.00	0.19	28.81	0.23	0.06	0.06	9.31	<0.001	0.00	<0.001	<0.009	98.25	Chr	PNK
ML-039 CR	5	chromite	<0.003	0.32	21.49	36.68	0.14	30.47	0.26	0.13	0.10	8.46	<0.001	<0.002	<0.001	<0.009	98.05	Chr	PNK
ML-063 CR	3	chromite	<0.003	0.17	25.60	36.18	0.15	25.17	0.31	0.12	0.05	10.51	<0.001	<0.002	<0.001	<0.008	98.25	Chr	PNK
ML-047 SEM CR	1	chromite	0.05	1.96	24.98	34.89	0.17	21.68	0.17	0.19	0.07	14.29	<0.001	<0.002	<0.001	<0.008	98.44	Chr	PNK
ML-063 SEM CR	2	chromite	0.04	3.59	17.80	30.83	0.21	32.91	0.23	0.16	0.04	11.49	<0.001	<0.002	<0.001	<0.009	97.29	Chr	PNK
ML-058 SEI 0.25-0.5	1	chromite	0.06	1.28	30.79	30.69	0.11	19.75	0.15	0.23	0.03	15.97	<0.001	0.00	<0.001	<0.008	99.07	Chr	PNK
ML-056 CR 0.25-0.5	1	chromite	0.08	0.35	12.19	47.72	0.11	33.96	1.09	0.12	0.22	2.36	<0.001	<0.002	<0.001	<0.009	98.17	Chr	PNK

Classification Legend

K=kimberlite Indicator

PK=possible kimberlite indicator

PNK=probabbly not kimberlite indicator

NK=not kimberlite indicator

APPENDIX E

KIM AND EPMA TILL RESULTS FROM JUNE, 2016 SAMPLING

Overburden Drilling Management Limited
Unit 107, 15 Capella Court
Nepean, Ontario, Canada, K2E 7X1
Tel: (613) 226-1771 Fax: (613) 226-8753
odm@storm.ca www.odm.ca

Exploring Heavy Minerals

Laboratory Data Report

Client Information

Alto Ventures Ltd.
Unit 7 - 1351 C Kelly Lake Road
Sudbury, ON
P3E 5P5

kozoil@altoventures.com

Attention: Mr. M. Koziol

Data-File Information

Date:	September 7, 2016
Project name:	Miner Lake
ODM batch number:	7242
Sample numbers:	ML-039 to 058
Data file:	20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Number of samples in this report:	34
Number of samples processed to date:	34
Total number of samples in project:	34

Preliminary data:	
Final data:	X
Revised data:	

Sample Processing Specifications

1. Submitted by client: 12.5 to 20.9 kg till samples.
2. One ±300 g archival split taken from each sample.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. Heavy liquid separation specific gravity: 3.20.
5. 0.25-2.0 mm nonferromagnetic heavy mineral fraction from 24 selected samples picked for KIMs.

Notes

Final data including KIM counts of selected 24 samples.

Remy Huneault, P.Geo.
President

Primary Processing Sample Weights and Descriptions

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

	Weight (kg wet)					Screening and Shaking Table Sample Descriptions													
						Clasts (+2.0 mm)					Matrix (-2.0 mm)								
							Percentage				Distribution					Colour			
Sample Number	Bulk Rec'd	Archived Split	Table Split	+2.0 mm Clasts	Table Feed	Size	V/S	GR	LS	OT	S/U	SD	ST	CY	ORG	SD	CY		Class
ML-039	17.6	0.3	17.3	0.7	16.6	G	40	60	0	0	U	Y	+	-	N	LOC	LOC		TILL
ML-040	20.9	0.3	20.6	3.0	17.6	G	60	40	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-041	14.2	0.3	13.9	0.8	13.1	G	90	10	0	0	U	Y	Y	-	N	OC	OC		TILL
ML-042	15.1	0.3	14.8	0.6	14.2	G	90	10	0	0	U	+	Y	-	N	OC	OC		TILL
ML-043	15.1	0.3	14.8	1.1	13.7	G	80	20	0	0	U	Y	+	-	N	OC	OC		TILL
ML-044	15.0	0.3	14.7	1.1	13.6	G	80	20	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-045	12.8	0.3	12.5	0.3	12.2	G	30	70	0	0	U	Y	+	-	N	LOC	LOC		TILL
ML-046	17.5	0.3	17.2	0.9	16.3	G	40	60	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-047	14.3	0.3	14.0	1.1	12.9	G	60	40	0	0	U	+	Y	-	N	OC	OC		TILL
ML-048	12.5	0.3	12.2	0.7	11.5	G	50	50	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-049	13.3	0.3	13.0	0.8	12.2	G	60	40	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-050	12.7	0.3	12.4	0.5	11.9	G	70	30	0	0	U	+	Y	-	N	OC	OC		TILL
ML-051	13.9	0.3	13.6	0.6	13.0	G	60	40	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-052	15.6	0.3	15.3	1.5	13.8	G	70	30	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-053	12.8	0.3	12.5	0.5	12.0	G	60	40	0	0	U	Y	+	-	N	LOC	LOC		TILL
ML-054	12.9	0.3	12.6	0.5	12.1	G	60	40	0	0	U	Y	+	-	N	LOC	LOC		TILL
ML-055	14.1	0.3	13.8	0.7	13.1	G	70	30	0	0	U	Y	+	-	Y	OC	OC		TILL
ML-056	15.7	0.3	15.4	1.0	14.4	G	60	40	0	0	U	Y	+	-	Y	LOC	LOC		TILL
ML-057	16.0	0.3	15.7	1.4	14.3	G	70	30	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-058	16.2	0.3	15.9	1.4	14.5	G	70	30	0	0	U	+	Y	-	N	OC	OC		TILL
ML-059	12.8	0.3	12.5	0.3	12.2	G	60	40	0	0	U	Y	+	-	N	OC	OC		TILL
ML-060	12.7	0.3	12.4	0.5	11.9	G	70	30	0	0	U	Y	+	-	N	OC	OC		TILL
ML-061	12.9	0.3	12.6	0.8	11.8	G	60	40	0	0	U	+	Y	-	Y	LOC	LOC		TILL
ML-062	16.4	0.3	16.1	1.8	14.3	G	80	20	0	0	U	+	Y	-	N	BE	BE		TILL
ML-063	13.6	0.3	13.3	1.1	12.2	G	60	40	0	0	U	Y	+	-	N	OC	OC		TILL
ML-064	16.7	0.3	16.4	1.1	15.3	G	60	40	0	0	U	+	Y	-	N	LOC	LOC		TILL
ML-065	14.3	0.3	14.0	0.6	13.4	G	70	30	0	0	U	Y	+	-	Y	OC	OC		TILL
ML-066	14.9	0.3	14.6	1.1	13.5	G	80	20	0	0	U	Y	+	-	Y	OC	OC		TILL
ML-067	14.1	0.3	13.8	1.0	12.8	G	80	20	0	0	U	Y	+	-	Y	OC	OC		TILL
ML-068	12.5	0.3	12.2	0.9	11.3	G	70	30	0	0	U	Y	+	-	Y	OC	OC		TILL
ML-069	17.6	0.3	17.3	0.1	17.2	G	70	30	0	0	U	Y	+	-	Y	OC	OC		TILL
ML-070	13.8	0.3	13.5	0.5	13.0	G	60	40	0	0	U	Y	+	-	Y	OC	OC	•	TILL
ML-071	17.7	0.3	17.4	1.3	16.1	G	60	40	0	0	U	+	Y	-	Y	OC	OC		TILL
ML-072	16.2	0.3	15.9	1.3	14.6	G	70	30	0	0	U	+	Y	-	N	LOC	LOC		TILL

Gold Grain Summary

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

	Number of Visible Gold Grains				Nonmag HMC Weight (g)*	Calculated PPB Visible Gold		
Sample Number	Total	Reshaped	Modified	Pristine		Total	Reshaped	Modified
ML-039	3	2	0	1	66.4	<1	<1	0
ML-040	4	3	0	1	70.4	2	2	0
ML-041	4	1	3	0	52.4	2	1	1
ML-042	0	0	0	0	56.8	0	0	0
ML-043	6	5	1	0	54.8	15	15	<1
ML-044	24	17	4	3	54.4	74	53	22
ML-045	27	13	5	9	48.8	26	22	3
ML-046	20	14	2	4	65.2	68	67	<1
ML-047	32	19	4	9	51.6	102	74	26
ML-048	124	7	36	81	46.0	118	7	50
ML-049	4	4	0	0	48.8	10	10	0
ML-050	8	5	2	1	47.6	5	3	1
ML-051	1	1	0	0	52.0	4	4	0
ML-052	34	22	10	2	55.2	223	217	5
ML-053	14	12	0	2	48.0	45	45	0
ML-054	2	1	1	0	48.4	2	1	1
ML-055	11	9	2	0	52.4	14	12	1
ML-056	9	2	3	4	57.6	61	50	10
ML-057	57	39	5	13	57.2	88	56	11
ML-058	3	3	0	0	58.0	4	4	0
ML-059	11	4	4	3	48.8	6	1	5
ML-060	9	5	2	2	47.6	10	8	2
ML-061	11	3	1	7	47.2	9	2	2
ML-062	11	8	1	2	57.2	11	6	3
ML-063	12	11	0	1	48.8	11	11	0
ML-064	24	23	0	1	61.2	8	8	0
ML-065	24	14	3	7	53.6	17	10	5
ML-066	19	15	2	2	54.0	9	7	1
ML-067	61	17	13	31	51.2	41	10	11
ML-068	11	3	3	5	45.2	4	1	2
ML-069	6	5	1	0	68.8	4	4	<1
ML-070	8	5	0	3	52.0	1734	1734	0
ML-071	12	8	0	4	64.4	11	6	0
ML-072	44	24	9	11	58.4	33	26	5

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

Detailed Gold Grain Data

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

Sample Number	Dimensions (µm)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
ML-039	3 C	15	15	1		1	2		<1	No sulphides
	5 C	25	25	1			1		<1	SEM checks: 3 copper candidates =
							3	66.4	1	3 copper (15-25µm; contamination).
ML-040	3 C	15	15	1		1	2		<1	5 grains pyrite (50-100µm).
	8 C	25	50	2			2		2	
							4	70.4	2	
ML-041	3 C	15	15		2		2		<1	No sulphides
	5 C	25	25		1		1		<1	
	8 C	25	50	1			1		1	
							4	52.4	2	
ML-042	No Visible Gold									No sulphides
ML-043	3 C	15	15	3	1		4		<1	No sulphides
	10 C	50	50	1			1		4	
	15 C	75	75	1			1		12	
							6	54.8	16	
ML-044	3 C	15	15	2	2	3	7		1	No sulphides
	5 C	25	25	6			6		3	
	8 C	25	50	3			3		4	
	10 C	25	75	1			1		3	
	10 C	50	50	3	1		4		14	
	13 C	50	75	1			1		7	
	18 C	75	100		1		1		18	
	20 C	75	125	1			1		26	
							24	54.4	75	
ML-045	3 C	15	15	4	2	7	13		1	No sulphides
	5 C	25	25	5	2	2	9		4	
	8 C	25	50	2	1		3		4	
	10 C	50	50	1			1		4	
	15 C	50	100	1			1		12	
							27	48.8	26	
ML-046	3 C	15	15	4	2	2	8		1	No sulphides
	5 C	25	25	4		2	6		2	
	8 C	25	50	2			2		2	
	10 C	50	50	1			1		3	
	18 C	75	100	1			1		15	
	20 C	75	125	1			1		22	
	20 C	100	100	1			1		23	
							20	65.2	68	

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

Detailed Gold Grain Data

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

Sample Number	Dimensions (µm)				Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness		Width	Length	Reshaped	Modified	Pristine	Total			
ML-047	3	C	15	15	2		7	9		1	No sulphides
	5	C	25	25	10		1	11		5	
	8	C	25	50	4	2	1	7		10	
	10	C	50	50	2	1		3		11	
	18	C	75	100		1		1		19	
	25	C	125	125	1			1		56	
								32	51.6	102	
ML-048	3	C	15	15	2	4	28	34		4	No sulphides
	5	C	25	25	4	19	37	60		32	
	8	C	25	50		7	10	17		27	
	10	C	25	75			2	2		6	
	15	C	25	125		1		1		8	
	10	C	50	50	1	5	4	10		42	
								124	46.0	118	
ML-049	5	C	25	25	1			1		<1	No sulphides
	8	C	25	50	1			1		1	
	10	C	50	50	2			2		8	
								4	48.8	10	
ML-050	5	C	25	25	5	2		7		4	No sulphides
	8	C	25	50			1	1		2	
								8	47.6	5	
ML-051	10	C	50	50	1			1		4	No sulphides
								1	52.0	4	
ML-052	3	C	15	15	5	3	1	9		1	No sulphides
	5	C	25	25	9	5	1	15		7	
	8	C	25	50	4	2		6		8	
	10	C	50	50	1			1		3	
	13	C	50	75	2			2		13	
	25	M	150	375	1			1		191	
								34	55.2	223	
ML-053	3	C	15	15	4		2	6		1	No sulphides
	5	C	25	25	5			5		3	
	8	C	25	50	2			2		3	
	22	C	75	150	1			1		39	
								14	48.0	46	
ML-054	5	C	25	25	1			1		1	No sulphides
	8	C	25	50		1		1		1	
								2	48.4	2	
ML-055	3	C	15	15	3	1		4		<1	No sulphides
	5	C	25	25	2			2		1	
	8	C	25	50	3	1		4		6	
	13	C	50	75	1			1		7	
								11	52.4	14	
ML-056	3	C	15	15	1		2	3		<1	No sulphides
	5	C	25	25		1	2	3		1	
	10	C	50	50		1		1		3	
	13	C	50	75		1		1		6	
	25	C	125	125	1			1		50	
								9	57.6	61	

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

Detailed Gold Grain Data

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

Sample Number	Dimensions (µm)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
ML-057	3 C	15	15	16		3	19		2	No sulphides
	5 C	25	25	11	3	7	21		9	
	8 C	25	50	6			6		8	
	10 C	50	50	4	1	2	7		24	
	13 C	50	75		1		1		6	
	15 C	75	75	1		1	2		22	
	18 C	75	100	1			1		17	
							57	57.2	88	
ML-058	5 C	25	25	2			2		1	No sulphides
	10 C	50	50	1			1		3	1 grain scheelite (250µm).
							3	58.0	4	
ML-059	3 C	15	15	2	2	3	7		1	No sulphides
	5 C	25	25	2	1		3		1	
	10 C	50	50		1		1		4	
							11	48.8	6	
ML-060	3 C	15	15	3		2	5		1	No sulphides
	5 C	25	25	1	1		2		1	
	8 C	25	50		1		1		2	
	13 C	50	75	1			1		8	
							9	47.6	11	
ML-061	3 C	15	15			3	3		<1	No sulphides
	5 C	25	25	3		2	5		3	
	8 C	25	50		1	1	2		3	
	10 C	25	75			1	1		3	
							11	47.2	9	
ML-062	3 C	15	15	3		1	4		<1	No sulphides
	5 C	25	25	3			3		1	
	8 C	25	50	1		1	2		3	
	10 C	50	50	1	1		2		7	
							11	57.2	11	
ML-063	3 C	15	15	1		1	2		<1	No sulphides
	5 C	25	25	6			6		3	
	8 C	25	50	3			3		4	
	10 C	50	50	1			1		4	
							12	48.8	12	
ML-064	3 C	15	15	10		1	11		1	No sulphides
	5 C	25	25	11			11		4	SEM check: 1 PGM candidate = 1
	8 C	25	50	2			2		2	native osmium (25µm; Os,Ru).
							24	61.2	8	
ML-065	3 C	15	15	7		6	13		1	No sulphides
	5 C	25	25	3	1	1	5		2	
	8 C	25	50	2	1		3		4	
	10 C	25	75	2			2		5	
	10 C	50	50		1		1		4	
							24	53.6	17	
ML-066	3 C	15	15	7		1	8		1	No sulphides
	5 C	25	25	6	2	1	9		4	
	8 C	25	50	1			1		1	
	10 C	25	75	1			1		3	
							19	54.0	9	

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

Detailed Gold Grain Data

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

Sample Number	Dimensions (µm)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
ML-067	3 C	15	15	5	6	26	37		4	No sulphides
	5 C	25	25	10	5	2	17		8	
	8 C	25	50	1	1	1	3		4	
	10 C	50	50	1			1		4	
	13 C	50	75		1	2	3		21	
							61	51.2	41	
ML-068	3 C	15	15	2	1	5	8		1	No sulphides
	5 C	25	25	1	1		2		1	
	8 C	25	50		1		1		2	
							11	45.2	4	
ML-069	3 C	15	15	2			2		<1	No sulphides
	5 C	25	25	1	1		2		1	
	8 C	25	50	1			1		1	
	10 C	50	50	1			1		3	
							6	68.8	5	
ML-070	3 C	15	15	1		3	4		<1	No sulphides
	5 C	25	25	1			1		<1	
	8 C	25	50	2			2		3	
	100 M	300	400	1			1		1731	
							8	52.0	1734	
ML-071	3 C	15	15	3		1	4		<1	No sulphides
	5 C	25	25	2		1	3		1	
	8 C	25	50	2		1	3		3	
	10 C	50	50	1		1	2		6	
							12	64.4	11	
ML-072	3 C	15	15	10	6	8	24		2	No sulphides
	5 C	25	25	7	2	3	12		5	
	8 C	25	50	4			4		5	
	10 C	50	50	2	1		3		10	
	15 C	75	75	1			1		11	
							44	58.4	33	

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

PLATINUM GROUP MINERALS SUMMARY

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

Sample Number	Observed PGMs		Total Grains
	Mineral*	Number of Grains	
ML-039	None Observed	0	0
ML-040	None Observed	0	0
ML-041	None Observed	0	0
ML-042	None Observed	0	0
ML-043	None Observed	0	0
ML-044	None Observed	0	0
ML-045	None Observed	0	0
ML-046	None Observed	0	0
ML-047	None Observed	0	0
ML-048	None Observed	0	0
ML-049	None Observed	0	0
ML-050	None Observed	0	0
ML-051	None Observed	0	0
ML-052	None Observed	0	0
ML-053	None Observed	0	0
ML-054	None Observed	0	0
ML-055	None Observed	0	0
ML-056	None Observed	0	0
ML-057	None Observed	0	0
ML-058	None Observed	0	0
ML-059	None Observed	0	0
ML-060	None Observed	0	0
ML-061	None Observed	0	0
ML-062	None Observed	0	0
ML-063	None Observed	0	0
ML-064	Sperrylite	1	1
ML-065	None Observed	0	0
ML-066	None Observed	0	0
ML-067	None Observed	0	0
ML-068	None Observed	0	0
ML-069	None Observed	0	0
ML-070	None Observed	0	0
ML-071	None Observed	0	0
ML-072	None Observed	0	0

*All samples are oxidized; therefore only native PGE minerals and the most resistant PGE arsenide and antimonide grains (no PGE sulphides or tellurides) are likely to be preserved.

Laboratory Processing Weights

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

	Weight of -2.0 mm Table Concentrate (g)												
			0.25 to 2.0 mm Heavy Liquid Separation S.G. 3.20										
					HMC S.G.>3.2								
								Nonferromagnetic HMC					
									Processed Split				
									Total				
Sample Number	Total	-0.25 mm	Total	Lights S.G. <3.2	Total	-0.25 mm (wash)	Mag	Total	%	Weight	0.25 to 0.5 mm	0.5 to 1.0 mm	1.0 to 2.0 mm*
ML-039	808.9	395.5	413.4	407.7	5.7	1.4	0.6	3.7	100.0	3.7	2.8	0.6	0.30
ML-040	1436.1	758.3	677.8	646.2	31.6	4.7	0.7	26.2	100.0	26.2	18.9	4.8	2.50
ML-041	931.7	469.8	461.9	453.3	8.6	1.5	1.4	5.7	100.0	5.7	2.9	1.6	1.20
ML-042	1047.9	633.6	414.3	410.9	3.4	0.7	0.5	2.2	100.0	2.2	1.6	0.5	0.10
ML-043	1234.0	587.4	646.6	638.6	8.0	1.3	1.9	4.8	100.0	4.8	3.1	1.1	0.60
ML-045	815.8	504.3	311.5	308.8	2.7	0.6	0.2	1.9	100.0	1.9	1.4	0.4	0.10
ML-046	1145.5	663.5	482.0	468.3	13.7	1.5	2.3	9.9	100.0	9.9	7.2	2.0	0.70
ML-047	1336.9	788.3	548.6	539.3	9.3	1.1	2.1	6.1	100.0	6.1	4.1	1.4	0.60
ML-054	1115.9	748.8	367.1	359.5	7.6	1.5	0.6	5.5	100.0	5.5	4.4	0.9	0.20
ML-055	1304.9	903.5	401.4	388.6	12.8	1.9	2.4	8.5	100.0	8.5	6.5	1.7	0.30
ML-056	1010.3	612.1	398.2	378.8	19.4	2.0	2.4	15.0	100.0	15.0	10.7	3.5	0.80
ML-057	1457.5	1026.5	431.0	417.5	13.5	1.7	2.3	9.5	100.0	9.5	7.0	2.0	0.50
ML-058	1636.1	1022.0	614.1	602.2	11.9	2.0	2.9	7.0	100.0	7.0	5.0	1.6	0.40
ML-059	975.6	591.0	384.6	381.9	2.7	0.4	0.5	1.8	100.0	1.8	1.3	0.4	0.10
ML-060	1209.0	790.9	418.1	412.6	5.5	1.4	1.2	2.9	100.0	2.9	2.1	0.6	0.20
ML-061	1287.0	885.6	401.4	383.0	18.4	3.6	1.2	13.6	100.0	13.6	11.3	1.8	0.50
ML-062	1186.8	745.9	440.9	418.7	22.2	2.9	4.9	14.4	100.0	14.4	10.5	3.0	0.90
ML-063	1005.4	528.1	477.3	438.9	38.4	6.9	11.9	19.6	100.0	19.6	14.9	4.0	0.70
ML-064	1396.3	977.6	418.7	402.8	15.9	2.0	2.6	11.3	100.0	11.3	8.0	2.4	0.90
ML-065	1136.0	769.7	366.3	359.3	7.0	1.6	0.9	4.5	100.0	4.5	3.2	0.9	0.40
ML-066	1294.3	993.6	300.7	294.1	6.6	1.3	1.3	4.0	100.0	4.0	3.1	0.7	0.20
ML-067	901.1	607.4	293.7	285.9	7.8	1.0	1.3	5.5	100.0	5.5	4.0	1.2	0.30
ML-069	1103.9	843.0	260.9	259.5	1.4	0.2	0.2	1.0	100.0	1.0	0.7	0.2	0.06
ML-071	1722.8	1282.0	440.8	429.2	11.6	1.2	1.6	8.8	100.0	8.8	6.6	1.5	0.70

*Values greater than 0.1 g were weighted only to one decimal place; the zero was added in the second decimal position to facilitate column alignment.

Kimberlite Indicator Mineral Counts

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

Number of Grains — Selected MMSIMs

Sample Number	1.0 to 2.0 mm Low-Cr diopside T	P	Cpy T	P	Gh T	P	0.5 to 1.0 mm Low-Cr diopside T	P	Cpy T	P	Gh T	P	0.25 to 0.5 mm Low-Cr diopside T	P	Cpy T	P	Gh T	P
ML-039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-040	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
ML-041	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
ML-042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-045	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML-046	0	0	0	0	0	0	1	1	0	0	0	0	2	2	0	0	0	0
ML-047	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0
ML-054	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-055	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	0	0
ML-056	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-057	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0
ML-058	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
ML-059	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML-060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-061	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0
ML-062	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-063	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0
ML-064	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	0	0	0
ML-065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-066	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-067	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
ML-069	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-071	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0

Number of Grains — KIMs

Sample Number	1.0 to 2.0 mm GP T	P	GO T	P	DC T	P	IM T	P	CR T	P	FO T	P	0.5 to 1.0 mm GP T	P	GO T	P	DC T	P	IM T	P	CR T	P	FO T	P
ML-039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-040	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-041	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-046	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-047	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
ML-054	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-056	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
ML-057	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-058	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-059	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-060	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
ML-061	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-062	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-063	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0
ML-064	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-066	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-067	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
ML-069	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-071	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0

Sample Number	0.25 to 0.5 mm GP T	P	GO T	P	DC T	P	IM T	P	CR T	P	FO T	P	Total (KIMs) T	P
ML-039	0	0	0	0	0	0	0	0	8	8	0	0	8	8
ML-040	0	0	0	0	0	0	0	0	2	2	0	0	2	2
ML-041	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-042	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-043	0	0	1	1	0	0	0	0	0	0	0	0	1	1
ML-045	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-046	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-047	1	1	0	0	0	0	2	2	3	3	0	0	7	7
ML-054	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-055	1	1	0	0	0	0	4	4	3	3	0	0	8	8
ML-056	0	0	0	0	0	0	1	1	1	1	0	0	5	5
ML-057	1	1	0	0	0	0	1	1	0	0	1	1	3	3
ML-058	1	1	0	0	0	0	0	0	2	2	0	0	3	3
ML-059	1	1	0	0	0	0	4	4	0	0	0	0	5	5
ML-060	0	0	0	0	0	0	2	2	1	1	0	0	4	4
ML-061	0	0	1	1	0	0	3	3	1	1	0	0	5	5
ML-062	1	1	0	0	0	0	3	3	4	4	0	0	8	8
ML-063	2	2	1	1	0	0	4	4	6	6	0	0	17	17
ML-064	1	1	0	0	1	1	0	0	2	2	0	0	5	5
ML-065	0	0	0	0	0	0	2	2	0	0	0	0	2	2
ML-066	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-067	2	2	0	0	0	0	2	2	1	1	0	0	7	7
ML-069	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ML-071	0	0	0	0	0	0	0	0	5	5	0	0	7	7

T = Total number of grains in sample. Total is estimated if number is greater than number of picked grains.
P = Number of picked grains in sample.

Kimberlite Indicator Mineral Remarks

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

Sample Number	Remarks
ML-039	Hornblende-almandine/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 2 CR candidates = 2 CR; and 2 blue-green gahnite versus spinel candidates = 1 spinel and 1 sapphirine.
ML-040	Augite/epidote assemblage.
ML-041	Hornblende-almandine-fayalite/epidote assemblage.
ML-042	Hornblende-almandine/epidote assemblage.
ML-043	Hornblende-almandine/epidote-diopside assemblage. SEM check from 0.25-0.5 mm fraction: 1 GO versus almandine candidate = 1 GO (Cr-poor pyrope).
ML-045	Hornblende-almandine/epidote assemblage.
ML-046	Hornblende-almandine/epidote-diopside assemblage.
ML-047	Hornblende-hematite/epidote-diopside assemblage. SEM check from 0.5-1.0 mm fraction: 1 IM versus crustal ilmenite candidate = 1 IM. SEM checks from 0.25-0.5 mm fraction: 1 GP versus almandine candidate = 1 GP; 2 GO versus grossular candidates = 2 grossular; 4 IM versus crustal ilmenite candidates = 2 IM and 2 crustal ilmenite; and 1 CR versus tourmaline candidate = 1 CR.
ML-054	Hornblende/epidote assemblage.
ML-055	Hornblende-almandine/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 2 GP versus almandine candidates = 1 GP and 1 spinel; 3 GO versus grossular candidates = 3 grossular; 6 IM versus crustal ilmenite candidates = 3 IM and 3 crustal ilmenite; and 1 CR versus hercynite candidate = 1 CR.
ML-056	Hornblende-almandine/epidote assemblage. SEM checks from 0.5-1.0 mm fraction: 2 IM versus crustal ilmenite candidates = 1 IM and 1 CR; and 1 FO versus apatite candidate = 1 FO. SEM checks from 0.25-0.5 mm fraction: 4 IM versus crustal ilmenite candiates = 1 IM, 2 crustal ilmenite and 1 CR.
ML-057	Hornblende/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 IM versus crustal ilmenite candidate = 1 IM; and 1 FO versus apatite candidate = 1 FO.
ML-058	Hornblende-almandine/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 3 IM versus crustal ilmenite candidates = 3 crustal ilmenite; and 1 CR versus tourmaline candidate = 1 CR.
ML-059	Hornblende-almandine/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 4 IM versus crustal ilmenite candidates = 4 IM.
ML-060	Hornblende-almandine-hematite/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 5 IM versus crustal ilmenite candidates = 1 IM, 3 crustal ilmenite and 1 CR.
ML-061	Hornblende-almandine/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 4 GO versus grossular candidates = 1 GO (Cr-poor pyrope) and 3 grossular; and 7 IM versus crustal ilmenite candidates = 3 IM, 3 crustal ilmenite and 1 CR.
ML-062	Hornblende/diopside-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 9 IM versus crustal ilmenite candidates = 3 IM, 2 crustal ilmenite and 4 CR.
ML-063	Almandine-hornblende-hematite/epidote-diopside-pyrite assemblage. SEM checks from 0.5-1.0 mm fraction: 4 IM versus crustal ilmenite candidates = 3 IM and 1 hercynite. SEM checks from 0.25-0.5 mm fraction: 1 GO versus grossular candidate = 1 GO (Cr-poor pyrope); 8 IM versus crustal ilmenite candidates = 3 IM, 3 crustal ilmenite and 2 CR; and 1 green gahnite versus spinel candidate = 1 gahnite.
ML-064	Hornblende-almandine/epidote-diopside assemblage. SEM check from 1.0-2.0 mm fraction: 1 IM versus crustal ilmenite candidate = 1 IM. SEM checks from 0.25-0.5 mm fraction: 3 GO versus grossular candidates = 1 grossular and 2 staurolite; and 4 IM versus crustal ilmenite candidates = 4 crustal ilmenite.

Kimberlite Indicator Mineral Remarks

Client: Alto Ventures Ltd.
File Name: 20167242 - AltoVentures - Koziol - Gold and Selected KIMs - July 2016
Total Number of Samples in this Report: 34
ODM Batch Number(s): 7242

Sample Number	Remarks
ML-065	Hornblende-almandine/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 second-cycle GP versus zircon candidate = 1 zircon; and 5 IM versus crustal ilmenite candidates = 2 IM and 3 crustal ilmenite.
ML-066	Hornblende-almandine/epidote-diopside assemblage.
ML-067	Hornblende/epidote-diopside assemblage. SEM checks from 0.5-1.0 mm fraction: 2 IM versus crustal ilmenite candidates = 2 IM. SEM checks from 0.25-0.5 mm fraction: 1 GP versus ruby corundum candidate = 1 ruby corundum; 2 GO versus almandine candidates = 2 almandine; and 6 IM versus crustal ilmenite candidates = 2 IM, 3 crustal ilmenite and 1 CR.
ML-069	Hornblende-almandine/epidote-diopside assemblage.
ML-071	Hornblende/epidote-diopside assemblage. SEM checks from 0.5-1.0 mm fraction: 4 IM versus crustal ilmenite candidates = 2 IM and 2 crustal ilmenite. SEM checks from 0.25-0.5 mm fraction: 3 IM versus crustal ilmenite candidates = 3 crustal ilmenite.

Alto Ventures Ltd.
Mike Koziol
Samples: 96

SRC Advanced Microanalysis Centre
125 - 15 Innovation Blvd, Saskatoon, SK, S7N 2X8
Tel: 306.933.7893 Fax: 306.933.5656 Email: microlab@src.sk.ca

Group No.: AMC2016-151

Date of Report: Oct. 06, 2016

Electron Probe Microanalysis

Samples	Size Fraction	Grain No.	Mineral	SiO_2 wt%	TiO_2 wt%	Al_2O_3 wt%	Cr_2O_3 wt%	V_2O_3 wt%	FeO wt%	MnO wt%	NiO wt%	ZnO wt%	MgO wt%	CaO wt%	Na_2O wt%	K_2O wt%	Nb_2O_5 wt%	Total
GOR128		1		46.072	0.287	9.969	0.340	0.024	9.788	0.176	0.135	<0.006	26.110	6.261	0.586	0.033	0.010	99.790
GOR128		2		45.976	0.288	9.922	0.337	0.033	9.880	0.175	0.132	<0.006	25.939	6.284	0.583	0.034	0.026	99.608
GOR128		3		45.823	0.287	9.887	0.343	0.016	9.847	0.177	0.139	<0.006	25.899	6.268	0.571	0.037	<0.008	99.295
GOR128		4		46.012	0.286	9.920	0.343	0.021	9.822	0.172	0.131	<0.006	25.908	6.256	0.586	0.034	<0.008	99.492
GOR128		5		45.921	0.287	9.915	0.332	0.026	9.867	0.175	0.136	<0.006	25.986	6.291	0.563	0.036	<0.008	99.536
ML-039 CR		1	chromite	<0.003	0.392	14.177	49.558	0.151	25.215	0.385	0.089	0.022	8.155	<0.001	0.003	<0.001	<0.009	98.147
ML-039 CR		2	chromite	<0.003	0.254	18.110	44.237	0.164	24.360	0.311	0.202	0.052	10.910	<0.001	0.007	<0.001	<0.008	98.608
ML-039 CR		3	chromite	0.058	0.300	16.125	47.077	0.124	22.419	0.162	0.130	0.023	11.893	<0.001	0.010	<0.001	<0.008	98.318
ML-039 CR		4	tourmaline	34.342	0.304	32.348	<0.002	<0.004	15.526	0.339	<0.005	0.216	0.540	0.045	1.887	0.041	<0.008	85.587
ML-039 CR		5	chromite	<0.003	0.316	21.491	36.676	0.139	30.474	0.262	0.130	0.102	8.458	<0.001	<0.002	<0.001	<0.009	98.048
ML-039 CR		6	chromite	0.054	0.302	16.873	46.776	0.105	20.353	0.153	0.149	0.016	13.505	<0.001	0.004	<0.001	<0.008	98.291
ML-039 SEM CR		1	chromite	0.068	0.305	16.783	47.022	0.122	20.272	0.167	0.140	0.023	13.348	<0.001	0.004	<0.001	<0.008	98.254
ML-039 SEM CR		2	chromite	<0.003	0.204	16.275	53.556	0.110	13.968	0.181	0.122	<0.006	14.523	<0.001	0.012	<0.001	<0.008	98.950
ML-040 CR		1	chromite	<0.003	0.212	18.022	49.999	0.118	15.842	0.206	0.098	0.040	14.242	<0.001	0.003	<0.001	<0.008	98.781
ML-040 CR		2	ilmenite	<0.003	48.705	<0.003	<0.002	0.097	48.624	1.176	<0.006	<0.007	0.079	<0.001	0.018	<0.001	<0.009	98.698
ML-043 SEM GO		1	garnet	41.281	0.689	21.813	1.529	0.033	9.353	0.446	<0.005	<0.006	20.623	4.564	0.151	<0.001	<0.008	100.481
ML-047 GP		1	garnet	41.354	0.170	22.365	1.954	0.029	8.328	0.382	<0.005	<0.006	21.154	4.629	0.031	<0.001	0.020	100.416
ML-047 IM	0.5-1.0	1	ilmenite	<0.003	45.840	0.006	2.676	0.356	40.594	0.360	0.051	<0.007	7.662	<0.001	0.023	<0.001	0.223	97.790
ML-047 IM	0.25-0.50	1	ilmenite	<0.003	49.235	0.038	1.910	0.314	36.649	0.323	0.059	<0.007	9.628	0.002	0.025	<0.001	0.106	98.291
ML-047 IM	0.25-0.50	2	ilmenite	<0.003	50.703	0.153	2.883	0.331	33.108	0.303	0.122	<0.007	11.102	0.006	0.028	<0.001	0.084	98.825
ML-047 CR		1	chromite	0.032	0.565	21.991	36.995	0.187	28.808	0.233	0.064	0.060	9.306	<0.001	0.004	<0.001	<0.009	98.246
ML-047 CR		2	chromite	<0.003	0.212	8.973	42.149	0.076	39.858	0.414	0.149	0.111	4.789	<0.001	0.010	<0.001	<0.009	96.740
ML-047 SEM CR		1	chromite	0.052	1.958	24.978	34.887	0.169	21.677	0.169	0.186	0.071	14.288	<0.001	<0.002	<0.001	<0.008	98.435
ML-055 GP		1	garnet	41.418	0.343	19.914	4.611	0.041	8.012	0.362	<0.005	<0.006	20.838	5.026	0.050	<0.001	<0.008	100.614
ML-055 IM		1	ilmenite	<0.003	50.146	0.218	2.848	0.361	33.320	0.331	0.147	<0.007	10.744	0.002	0.028	<0.001	0.060	98.205
ML-055 SEM IM		1	ilmenite	<0.003	50.510	0.071	1.736	0.311	35.001	0.333	0.019	<0.007	10.174	0.003	0.031	<0.001	0.102	98.292
ML-055 SEM IM		2	ilmenite	<0.003	47.876	0.050	2.688	0.346	38.682	0.349	0.034	<0.007	8.515	<0.001	0.023	<0.001	0.161	98.725
ML-055 SEM IM		3	ilmenite	<0.003	47.962	0.028	2.896	0.321	37.965	0.392	0.057	<0.007	8.339	<0.001	0.015	<0.001	0.261	98.235
ML-055 CR		1	chromite	0.005	0.334	11.664	49.085	0.117	28.024	0.325	0.052	0.021	8.192	<0.001	0.006	<0.001	<0.009	97.826
ML-055 CR		2	chromite	<0.003	0.508	15.054	47.007	0.176	27.488	0.345	0.065	0.044	7.594	<0.001	0.010	<0.001	<0.009	98.290
ML-055 SEM CR		1	chromite	<0.003	0.118	20.427	46.008	0.167	18.658	0.369	0.140	0.026	12.712	0.016	<0.002	<0.001	<0.008	98.640
ML-056 IM	0.5-1.0	1	ilmenite	<0.003	51.155	0.121	2.534	0.236	32.673	0.327	0.135	<0.007	11.103	0.004	0.032	<0.001	0.075	98.395
ML-056 IM	0.25-0.50	1	ilmenite	<0.003	51.001	0.099	2.326	0.259	33.588	0.359	0.104	<0.007	10.772	0.001	0.033	<0.001	0.081	98.623
ML-056 CR	0.5-1.0	1	chromite	<0.003	0.485	9.758	45.816	0.102	38.743	0.699	0.008	0.978	0.943	<0.001	<0.003	<0.001	<0.009	97.532

Samples	Size Fraction	Grain No.	Mineral	SiO_2 wt%	TiO_2 wt%	Al_2O_3 wt%	Cr_2O_3 wt%	V_2O_3 wt%	FeO wt%	MnO wt%	NiO wt%	ZnO wt%	MgO wt%	CaO wt%	Na_2O wt%	K_2O wt%	Nb_2O_5 wt%	Total
ML-056 CR	0.25-0.5	1	chromite	0.076	0.345	12.192	47.719	0.105	33.957	1.085	0.116	0.218	2.360	<0.001	<0.002	<0.001	<0.009	98.173
ML-056 FO		1	olivine	41.267	<0.002	<0.003	<0.002	<0.004	7.298	0.114	0.431	<0.005	50.917	0.006	0.003	<0.001	0.011	100.047
ML-057 GP		1	garnet	41.197	0.198	19.256	5.883	0.036	7.893	0.412	<0.005	<0.006	20.275	5.506	0.031	<0.001	<0.008	100.686
ML-057 IM		1	ilmenite	<0.003	51.094	0.161	2.490	0.303	32.297	0.320	0.116	<0.007	11.566	0.007	0.026	<0.001	0.069	98.448
ML-058 GP		1	garnet	41.274	0.179	19.701	5.617	0.040	7.546	0.398	<0.005	<0.006	20.676	5.259	0.033	<0.001	<0.008	100.722
ML-058 SEM CR	0.25-0.5	1	chromite	0.058	1.282	30.786	30.690	0.111	19.751	0.153	0.232	0.034	15.973	<0.001	0.003	<0.001	<0.008	99.072
ML-058 CR		1	chromite	<0.003	0.198	15.375	53.332	0.117	15.615	0.194	0.134	0.013	13.587	<0.001	<0.002	<0.001	<0.008	98.566
ML-059 GP		1	garnet	41.094	0.246	20.176	4.510	0.030	7.797	0.405	<0.005	<0.006	20.732	5.050	0.041	<0.001	<0.008	100.081
ML-059 IM		1	ilmenite	<0.003	49.532	0.128	3.064	0.326	33.598	0.297	0.134	<0.007	10.598	0.004	0.030	<0.001	0.101	97.812
ML-059 IM		2	ilmenite	<0.003	50.458	0.333	4.419	0.286	29.939	0.272	0.174	<0.007	12.239	0.002	0.025	<0.001	0.094	98.242
ML-059 IM		3	ilmenite	<0.003	49.149	0.062	4.100	0.352	33.594	0.346	0.133	<0.007	10.600	<0.001	0.027	<0.001	0.136	98.499
ML-059 IM		4	ilmenite	<0.003	50.384	0.063	2.120	0.301	34.562	0.335	0.068	<0.007	10.330	<0.001	0.030	<0.001	0.087	98.280
ML-060 GP		1	garnet	41.692	0.184	21.962	2.314	0.028	8.307	0.329	<0.005	<0.006	21.079	4.572	0.024	<0.001	<0.008	100.490
ML-060 IM		1	ilmenite	<0.003	47.308	0.052	4.159	0.356	36.014	0.337	0.102	<0.007	9.245	<0.001	0.020	<0.001	0.161	97.754
ML-060 SEM IM		1	ilmenite	<0.003	49.446	0.092	2.756	0.256	32.699	0.358	0.113	<0.007	10.078	0.002	0.133	0.004	0.109	96.045
ML-060 CR		1	chromite	<0.003	0.133	16.644	51.912	0.090	17.052	0.261	0.170	0.016	12.382	<0.001	0.004	0.001	<0.008	98.665
ML-061 GO		1	garnet	39.261	0.139	22.228	0.100	0.011	18.907	0.418	<0.005	<0.006	11.552	7.669	0.005	<0.001	<0.008	100.290
ML-061 IM		1	ilmenite	<0.003	47.938	0.028	3.416	0.312	36.353	0.453	0.054	<0.007	9.117	0.001	0.032	<0.001	0.226	97.930
ML-061 IM		2	ilmenite	<0.003	48.869	0.089	3.564	0.345	34.968	0.318	0.111	<0.007	10.036	0.003	0.027	<0.001	0.125	98.455
ML-061 IM		3	ilmenite	<0.003	52.006	0.308	2.376	0.309	31.285	0.265	0.110	<0.007	11.870	0.003	0.040	<0.001	0.039	98.613
ML-061 CR		1	chromite	<0.003	0.184	15.673	53.478	0.112	15.294	0.167	0.073	0.007	13.848	<0.001	<0.002	<0.001	<0.008	98.837
ML-062 GP		1	garnet	38.488	0.009	22.307	0.059	0.022	26.516	0.446	<0.005	0.008	11.284	1.085	0.002	<0.001	<0.008	100.228
ML-062 IM		1	ilmenite	<0.003	47.968	0.049	2.583	0.378	36.536	0.302	0.084	<0.007	9.828	0.003	0.027	<0.001	0.135	97.894
ML-062 IM		2	ilmenite	<0.003	50.627	0.069	1.738	0.302	35.314	0.349	0.029	<0.007	10.006	0.003	0.034	<0.001	0.103	98.574
ML-062 IM		3	ilmenite	<0.003	51.133	0.074	3.760	0.257	31.125	0.346	0.148	<0.007	11.626	0.002	0.036	<0.001	0.112	98.619
ML-062 CR		1	chromite	<0.003	0.209	16.976	52.131	0.144	14.945	0.169	0.109	0.010	14.064	<0.001	<0.002	<0.001	<0.008	98.757
ML-062 CR		2	chromite	<0.003	0.769	13.521	50.299	0.196	22.139	0.244	0.123	0.069	11.114	<0.001	0.011	<0.001	<0.008	98.484
ML-062 CR		3	chromite	0.010	0.279	14.216	51.064	0.170	21.767	0.254	0.064	0.043	10.517	<0.001	0.008	<0.001	<0.008	98.390
ML-062 CR		4	chromite	<0.003	0.025	16.024	44.086	0.127	32.417	0.688	0.022	0.367	4.411	<0.001	<0.002	<0.001	<0.009	98.166
ML-063 GP	1.0-2.0	1	garnet	41.034	0.260	18.441	6.818	0.045	7.659	0.409	<0.005	<0.006	20.153	5.632	0.043	<0.001	<0.008	100.493
ML-063 GP	0.25-0.50	1	garnet	41.109	0.049	19.295	6.026	0.053	7.752	0.356	<0.005	<0.006	19.827	6.103	0.017	<0.001	<0.008	100.586
ML-063 GP	0.25-0.50	2	garnet	41.773	0.225	21.495	2.861	0.029	7.930	0.370	<0.005	<0.006	21.227	4.589	0.042	0.004	<0.008	100.545
ML-063 GO		1	garnet	40.083	0.096	22.935	<0.002	0.006	13.975	0.209	<0.005	<0.006	13.111	10.107	<0.002	<0.001	<0.008	100.521
ML-063 IM	0.5-1.0	1	ilmenite	<0.003	50.731	0.082	2.148	0.254	34.425	0.327	0.090	<0.007	10.366	0.002	0.030	<0.001	0.071	98.525
ML-063 IM	0.5-1.0	2	ilmenite	<0.003	51.157	0.526	0.305	0.340	34.907	0.254	0.050	<0.007	10.619	0.013	0.028	<0.001	0.189	98.387
ML-063 IM	0.5-1.0	3	ilmenite	<0.003	52.831	0.541	0.544	0.329	31.916	0.250	0.091	<0.007	12.015	0.011	0.031	<0.001	0.125	98.684
ML-063 SEM IM	0.25-0.5	1	ilmenite	<0.003	48.188	0.300	0.051	0.160	40.020	0.356	<0.006	<0.007	8.490	0.033	0.016	<0.001	0.022	97.635
ML-063 SEM IM	0.25-0.5	2	ilmenite	<0.003	50.287	0.072	2.112	0.268	34.666	0.323	0.072	<0.007	10.354	<0.001	0.031	<0.001	0.109	98.295
ML-063 SEM IM	0.25-0.5	3	ilmenite	<0.003	49.702	0.112	2.976	0.319	33.867	0.334	0.111	<0.007	10.692	0.003	0.031	<0.001	0.080	98.227
ML-063 IM	0.25-0.5	1	ilmenite	<0.003	48.901	<0.003	<0.002	0.113	44.704	4.253	<0.006	<0.007	0.221	<0.001	0.016	<0.001	0.073	98.281
ML-063 CR		1	chromite	<0.003	0.103	20.516	47.349	0.170	16.843	0.215	0.103	0.039	13.505	<0.001	<0.002	<0.001	<0.008	98.843

Samples	Size Fraction	Grain No.	Mineral	SiO_2 wt%	TiO_2 wt%	Al_2O_3 wt%	Cr_2O_3 wt%	V_2O_3 wt%	FeO wt%	MnO wt%	NiO wt%	ZnO wt%	MgO wt%	CaO wt%	Na_2O wt%	K_2O wt%	Nb_2O_5 wt%	Total
ML-063 CR		2	chromite	<0.003	0.205	16.092	52.523	0.116	15.305	0.182	0.015	0.008	14.351	<0.001	0.006	<0.001	<0.008	98.803
ML-063 CR		3	chromite	<0.003	0.169	25.596	36.176	0.147	25.170	0.305	0.121	0.050	10.514	<0.001	<0.002	<0.001	<0.008	98.248
ML-063 CR		4	chromite	<0.003	0.192	16.671	52.587	0.128	14.729	0.154	0.114	<0.006	14.201	<0.001	0.006	<0.001	<0.008	98.783
ML-063 SEM CR		1	chromite	0.055	0.314	17.608	44.842	0.121	23.657	0.287	0.142	0.053	11.217	<0.001	<0.002	<0.001	<0.008	98.296
ML-063 SEM CR		2	chromite	0.036	3.590	17.800	30.827	0.214	32.907	0.231	0.160	0.042	11.485	<0.001	<0.002	<0.001	<0.009	97.293
ML-064 GP		1	garnet	41.049	0.018	18.900	6.523	0.026	8.064	0.470	<0.005	<0.006	19.995	5.476	0.019	<0.001	<0.008	100.541
ML-064 DC		1	cpx	54.949	0.108	5.082	1.032	0.037	4.333	0.084	0.048	<0.006	15.771	14.653	3.833	0.020	<0.008	99.948
ML-064 IM	1.0-2.0	1	ilmenite	<0.003	47.876	0.250	6.031	0.322	32.004	0.273	0.170	<0.007	10.965	0.002	0.023	<0.001	0.085	98.001
ML-064 CR		1	chromite	0.005	1.070	11.825	46.491	0.277	32.623	0.416	0.064	0.367	4.826	<0.001	0.003	<0.001	<0.009	97.966
ML-064 CR		2	chromite	<0.003	0.165	17.520	52.176	0.116	14.524	0.174	0.147	<0.006	14.522	<0.001	0.006	<0.001	<0.008	99.350
ML-065 SEM IM		1	ilmenite	<0.003	49.509	0.101	3.158	0.376	33.730	0.337	0.140	<0.007	10.592	<0.001	0.025	<0.001	0.079	98.047
ML-065 SEM IM		2	ilmenite	<0.003	51.072	0.112	1.904	0.294	33.584	0.322	0.062	<0.007	10.714	0.003	0.033	<0.001	0.077	98.176
ML-067 GP		1	garnet	41.066	0.198	19.340	5.623	0.046	8.394	0.411	<0.005	<0.006	19.764	5.565	0.043	<0.001	<0.008	100.449
ML-067 GP		2	garnet	41.131	0.220	18.562	6.765	0.038	7.266	0.363	<0.005	<0.006	20.566	5.470	0.047	<0.001	<0.008	100.429
ML-067 IM	0.5-1.0	1	ilmenite	<0.003	49.987	0.017	3.428	0.290	32.855	0.405	0.147	<0.007	10.940	0.004	0.020	<0.001	0.272	98.366
ML-067 IM	0.5-1.0	2	ilmenite	<0.003	52.066	0.146	2.285	0.230	32.081	0.302	0.086	<0.007	11.745	0.005	0.045	<0.001	0.043	99.035
ML-067 IM	0.25-0.5	1	ilmenite	<0.003	52.251	0.386	2.906	0.221	29.289	0.287	0.176	<0.006	12.983	0.004	0.043	<0.001	0.037	98.583
ML-067 IM	0.25-0.5	2	ilmenite	<0.003	53.540	0.500	0.581	0.330	29.535	0.272	0.100	<0.006	13.627	0.009	0.024	<0.001	0.138	98.655
ML-067 CR		1	chromite	<0.003	0.219	16.788	52.934	0.127	13.742	0.158	0.108	<0.006	14.758	<0.001	<0.002	<0.001	<0.008	98.835
ML-071 IM		1	ilmenite	<0.003	49.509	0.106	3.547	0.323	34.007	0.315	0.107	<0.007	10.438	<0.001	0.023	<0.001	0.091	98.465
ML-071 IM		2	ilmenite	<0.003	51.256	0.242	2.533	0.311	32.415	0.276	0.109	<0.007	11.418	0.008	0.028	<0.001	0.062	98.658
ML-071 CR		1	hematite	1.349	<0.002	0.032	<0.001	<0.004	86.017	0.012	<0.006	<0.007	<0.004	0.031	0.023	<0.001	<0.009	87.463
ML-071 CR		2	chromite	0.072	0.397	9.036	55.668	0.100	21.530	0.304	0.134	0.028	11.005	<0.001	0.010	<0.001	<0.009	98.284
ML-071 CR		3	chromite	<0.003	0.345	18.049	46.979	0.171	21.015	0.435	0.120	0.022	11.511	<0.001	0.003	<0.001	<0.008	98.649
ML-071 CR		4	chromite	<0.003	0.205	16.994	51.485	0.128	16.190	0.210	0.076	<0.006	13.248	<0.001	0.004	<0.001	<0.008	98.541
ML-071 CR		5	chromite	<0.003	0.223	15.848	50.430	0.111	19.010	0.295	0.098	0.066	12.416	<0.001	<0.002	<0.001	<0.008	98.496

Alto Ventures Ltd.
Mike Koziol
GOR128 Glass

SRC Advanced Microanalysis Centre
125 - 15 Innovation Blvd, Saskatoon, SK, S7N 2X8
Tel: 306.933.7893 Fax: 306.933.5656 Email: microlab@src.sk.ca

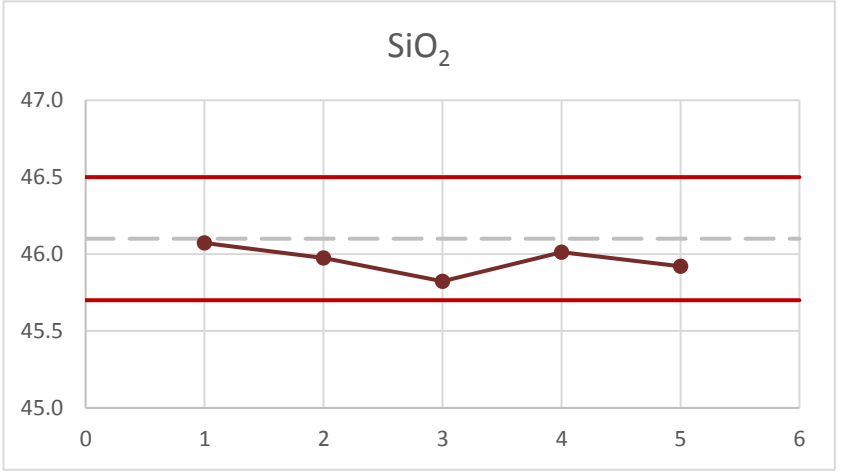
Group No.: AMC2016-151

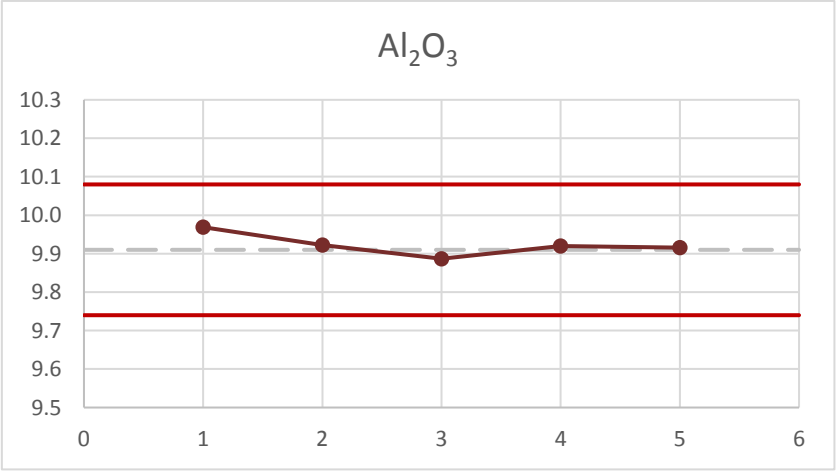
Date of Report: Oct. 06, 2016

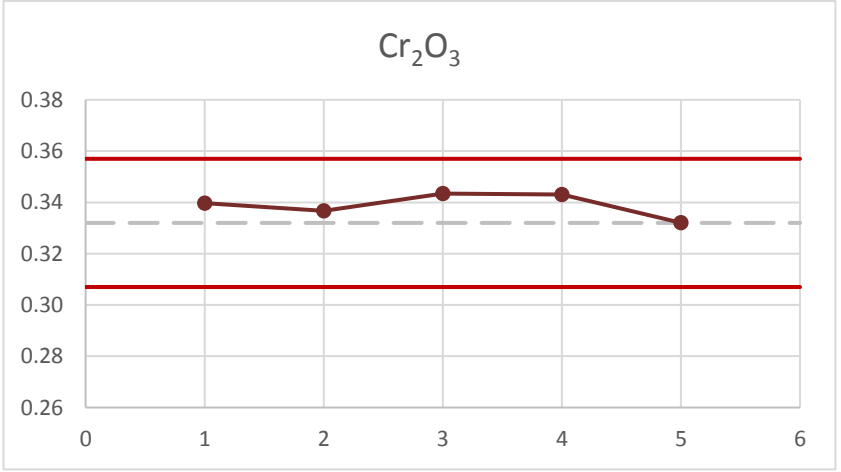
Electron Probe Microanalysis - QC Report

The GOR128 glass is one of eight silicate glasses that were prepared by directly fusing 50-100 of rock powder. The GOR128 was prepared from a komatiite for the purpose of providing a reference material for *in-situ* microanalytical work. The glasses were analysed by a variety of bulk and microanalytical methods in a number of laboratories (Jochum et al. 2006).

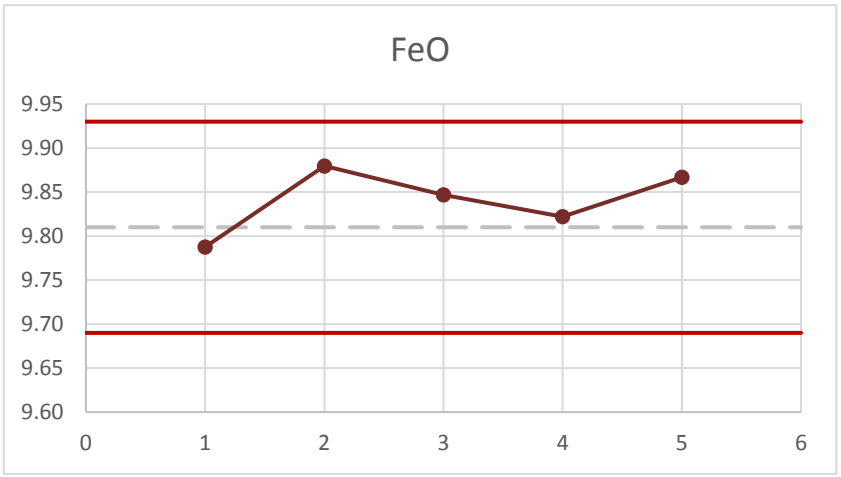
The following plots show the accepted values (dotted line) and the 95% confidence uncertainities (solid lines) with the results of the GOR128 glass analyzed as part of this group of analyses (filled circles).

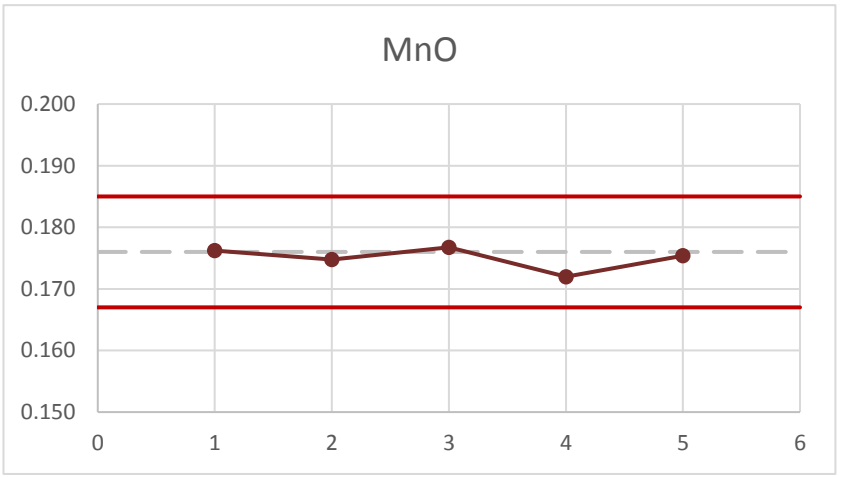


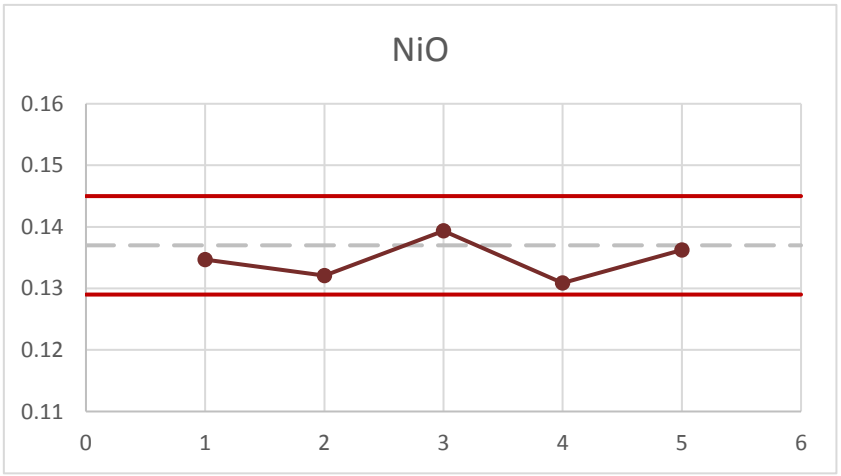


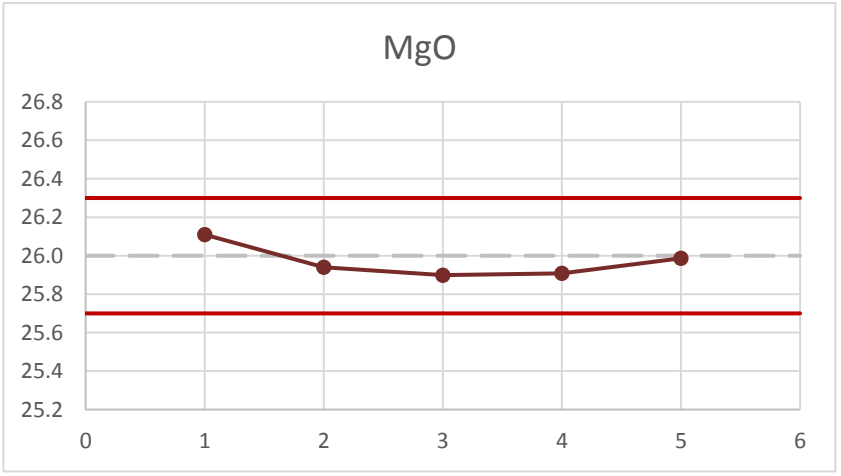


Electron Probe Microanalysis - QC Report

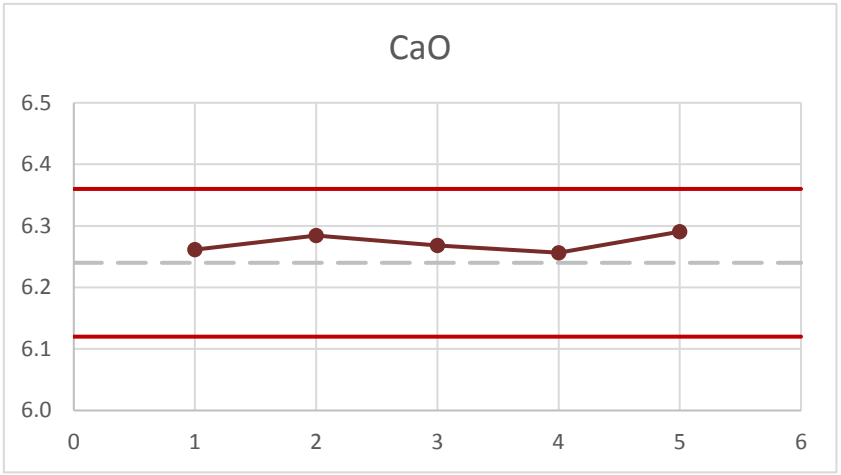


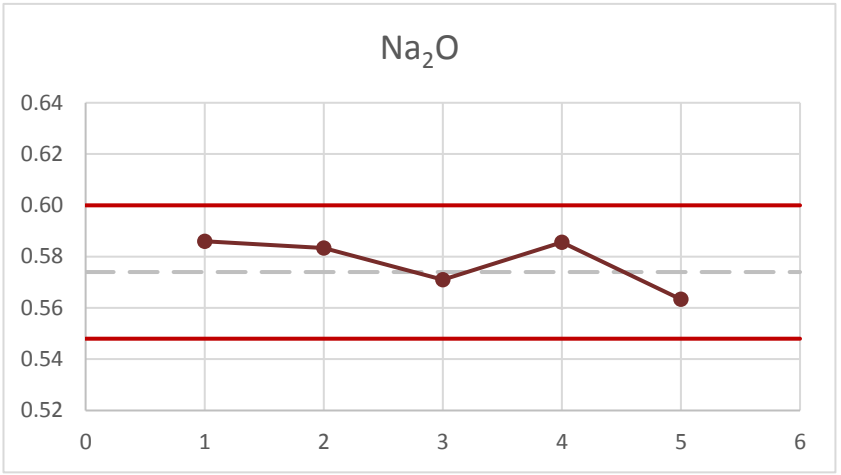


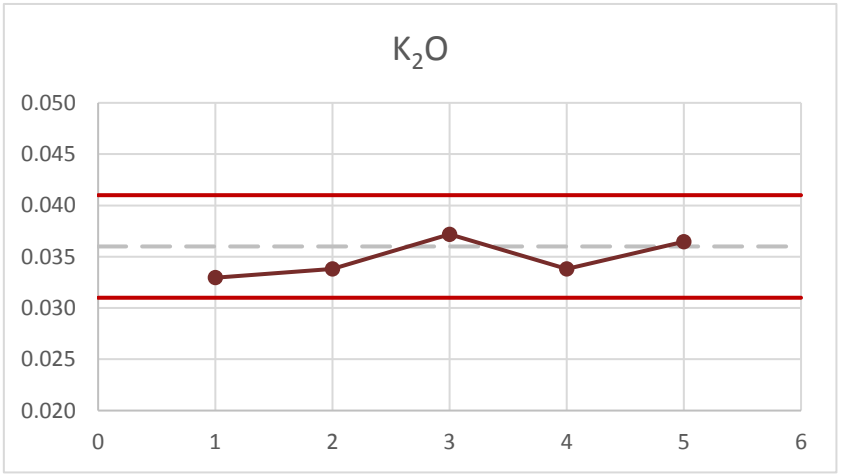


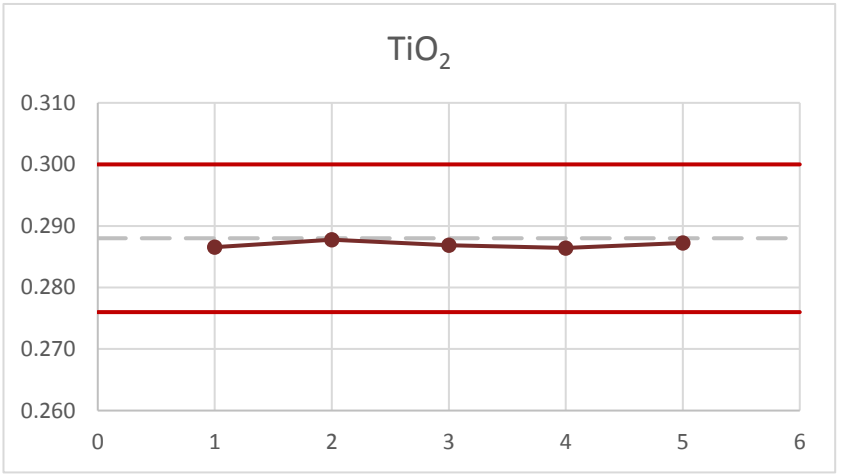


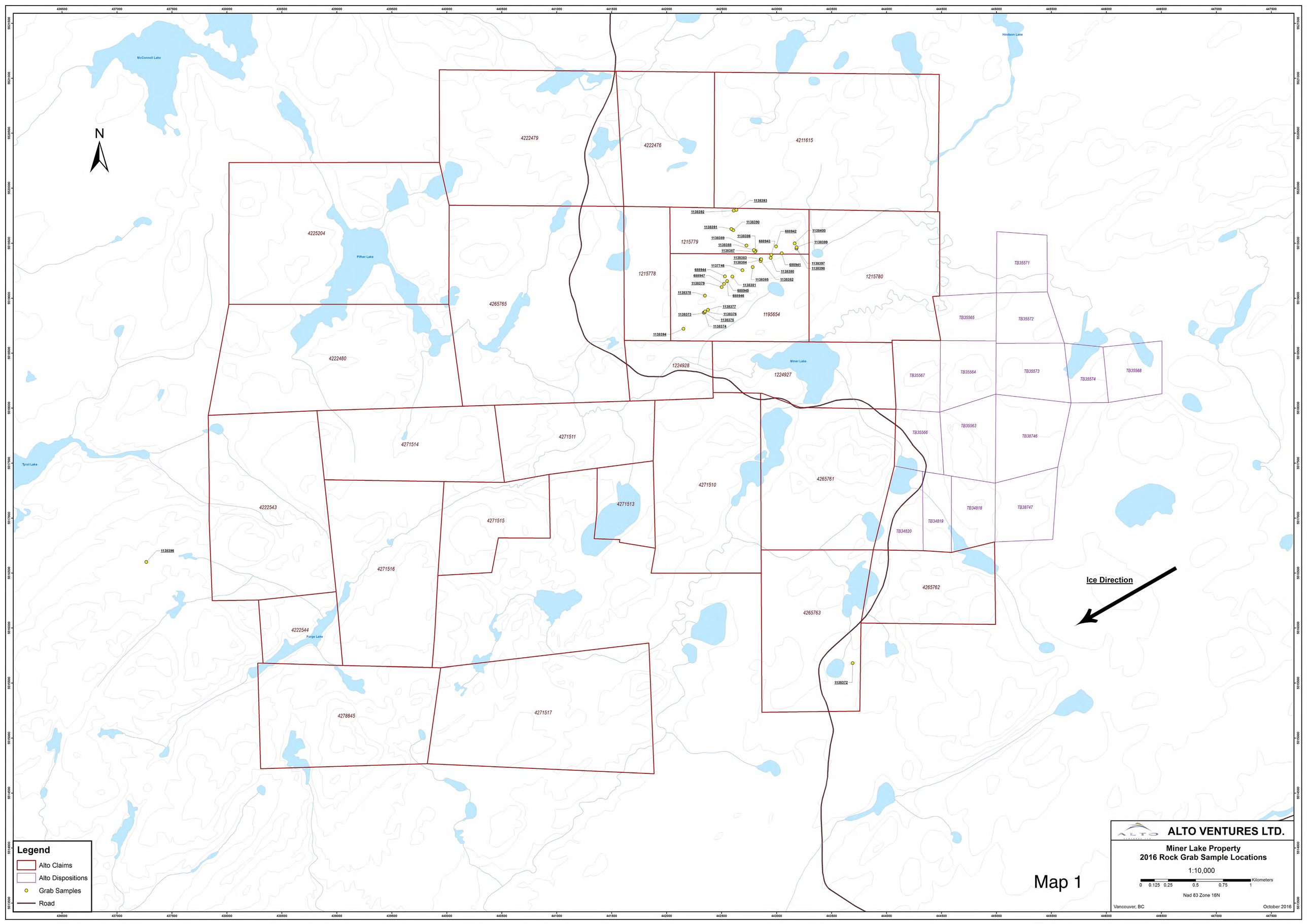
Electron Probe Microanalysis - QC Report

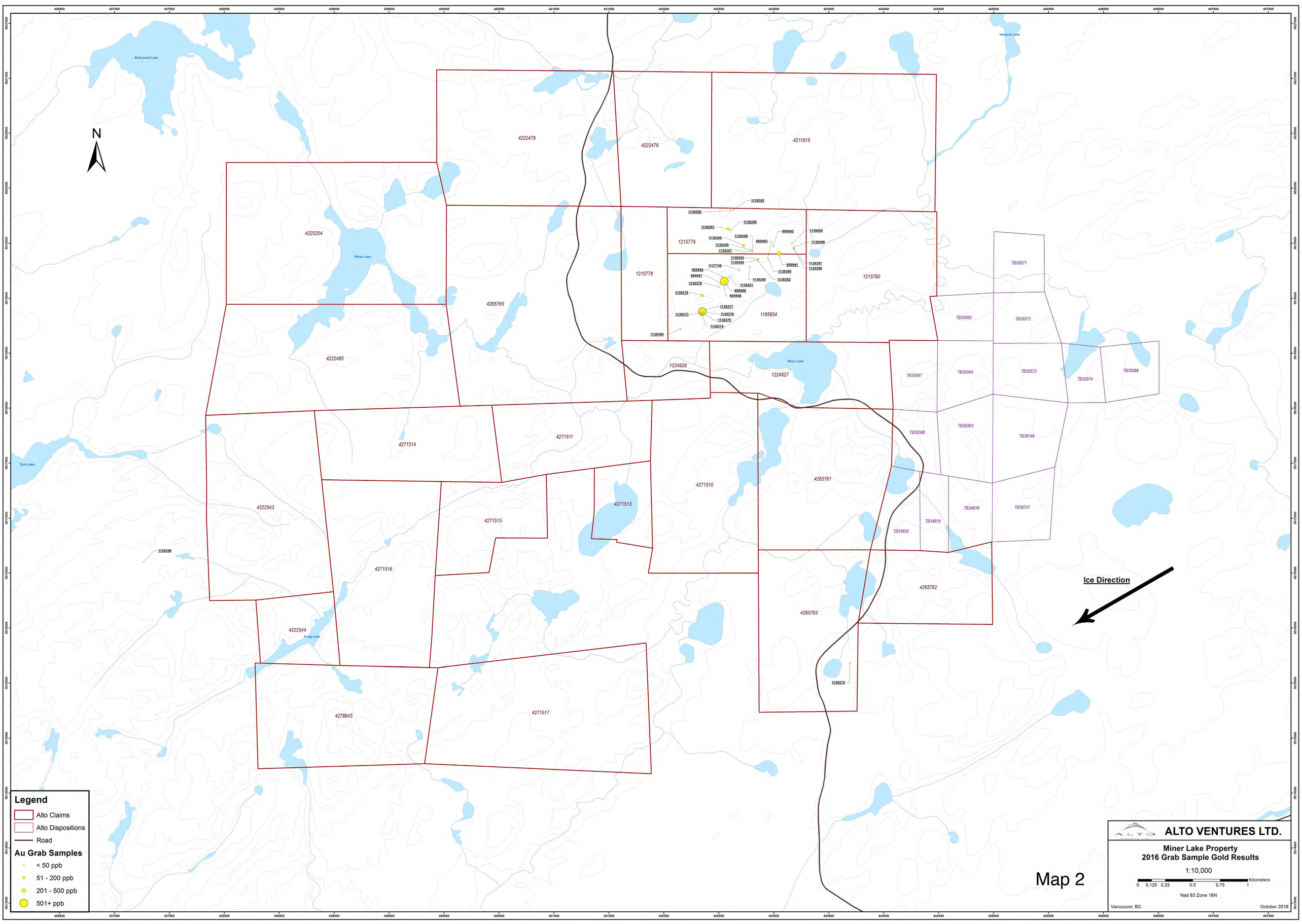









N
McConnell Lake
Hindson Lake
Pither Lake
Tyrol Lake
Purge Lake
Miner Lake
4222479
4222476
4211615
4225204
1215779
1215778
1215780
4265765
1195654
4222480
1224928
1224927
4271514
4271511
4222543
4271513
4271510
4271515
4271516
4265761
4222544
4265762
4265763
4278845
4271517
TB35571
TB35565
TB35572
TB35567
TB35564
TB35573
TB35574
TB35568
TB35566
TB35563
TB38746
TB34818
TB38747
TB34819
TB34820
1138393
1138392
1138391
1138390
1138389
1138386
1138388
1138387
1138383
1138384
1137746
1138385
1138382
1138379
1138381
1138378
1138377
1138376
1138373
1138375
1138374
1138394
688942
1138400
688943
1138399
688941
1138397
1138398
1138380
688944
688947
688945
688946
1138396
1138372
Ice Direction
Legend
Alto Claims
Alto Dispositions
Grab Samples
Road
ALTO VENTURES LTD.
Miner Lake Property
2016 Rock Grab Sample Locations
1:10,000
0 0.125 0.25 0.5 0.75 1 Kilometers
Nad 83 Zone 16N
Vancouver, BC
October 2016
Map 1


N
McConnell Lake
Hindson Lake
Pither Lake
Tyrol Lake
Purge Lake
Miner Lake
4222479
4222476
4211615
4225204
4265765
4222480
4271514
4271511
4222543
4271515
4271513
4271510
4271516
4222544
4278845
4271517
4265761
4265762
4265763
1215779
1215778
1215780
1195654
1224928
1224927
1138392
1138393
1138391
1138390
1138389
1138386
1138388
1138387
688942
688943
1138400
1138399
1138383
1138384
1137746
688944
688947
1138379
1138378
1138381
688945
688946
1138385
1138382
688941
1138397
1138398
1138380
1138377
1138376
1138375
1138374
1138373
1138394
1138396
1138372
TB35571
TB35565
TB35572
TB35567
TB35564
TB35573
TB35574
TB35568
TB35566
TB35563
TB38746
TB34818
TB38747
TB34819
TB34820
Ice Direction
Legend
Alto Claims
Alto Dispositions
Road
Au Grab Samples
< 50 ppb
51 - 200 ppb
201 - 500 ppb
501+ ppb
ALTO VENTURES LTD.
Miner Lake Property
2016 Grab Sample Gold Results
1:10,000
0 0.125 0.25 0.5 0.75 1 Kilometers
Nad 83 Zone 16N
Vancouver, BC
October 2016
Map 2

N

McConnell Lake

Hindson Lake

Pither Lake

Miner Lake

Tyrol Lake

Forge Lake

4222479

4222476

4211615

4225204

1215779

ML074

ML084

ML085

1215778

1215780

1195654

ML086

4265765

TB35571

TB35565

TB35572

4222480

1224928

1224927

TB35567

TB35564

TB35573

TB35574

TB35568

ML075 / ML076

4271514

4271511

TB35566

TB35563

TB38746

4265761

4271510

4222543

4271513

TB34818

TB38747

TB34819

TB34820

4271515

4271516

ML081 / ML082

Ice Direction

4265762

4265763

ML080

ML078 / ML079

4222544

ML077

ML083

ML073

4278845

4271517

Legend

Gold Grains
(Normalized to 10kg sample weight)

- 50+
- 10 to 49
- < 10

- Pristine
- Modified
- Reshaped

- Alto Claims
- Alto Dispositions
- Road

Map 3

ALTO VENTURES LTD.

Miner Lake Till Sampling 2016
Normalized Total Gold Grain Results

1:10,000

0 0.125 0.25 0.5 0.75 1 Kilometers

Nad 83 Zone 16N

Vancouver, BC

April 2017

436500 437000 437500 438000 438500 439000 439500 440000 440500 441000 441500 442000 442500 443000 443500 444000 444500 445000 445500 446000 446500 447000 447500

5521500 5521000 5520500 5520000 5519500 5519000 5518500 5518000 5517500 5517000 5516500 5516000 5515500 5515000 5514500 5514000

N

McConnell Lake

Pither Lake

Tyrol Lake

Forge Lake

Miner Lake

4222479
4222476
4211615
4225204
4222480
4222543
4222544
4271514
4271511
4271515
4271513
4271516
4271510
4265761
4265762
4265763
4278845
4271517
1215779
1215778
1215780
1224928
1224927
4265765
1195654
TB35571
TB35565
TB35572
TB35567
TB35564
TB35573
TB35574
TB35568
TB35566
TB35563
TB38746
TB34818
TB38747
TB34819
TB34820

ML039
ML040
ML041
ML042
ML043
ML045
ML046
ML047
ML074
ML084
ML058
ML085
ML057
ML059
ML086
ML075
ML063
ML076
ML071
ML069
ML061
ML060
ML062
ML081
ML067
ML082
ML064
ML066
ML080
ML078
ML065
ML079
ML077
ML083
ML054
ML073
ML056
ML055

Ice Direction

Legend

Kimberlite Indicator Minerals (Visual Picking)

11+ grains
6-10 grains
1-5 grains

- Pyrope Garnet
- Eclogite Garnet
- Chrome Diopside
- Ilmenite
- Chromite
- Olivine

- Alto Claims
- Road
- Barren Till Samples

Map 4

ALTO VENTURES LTD.

Miner Lake Property
KIM Results

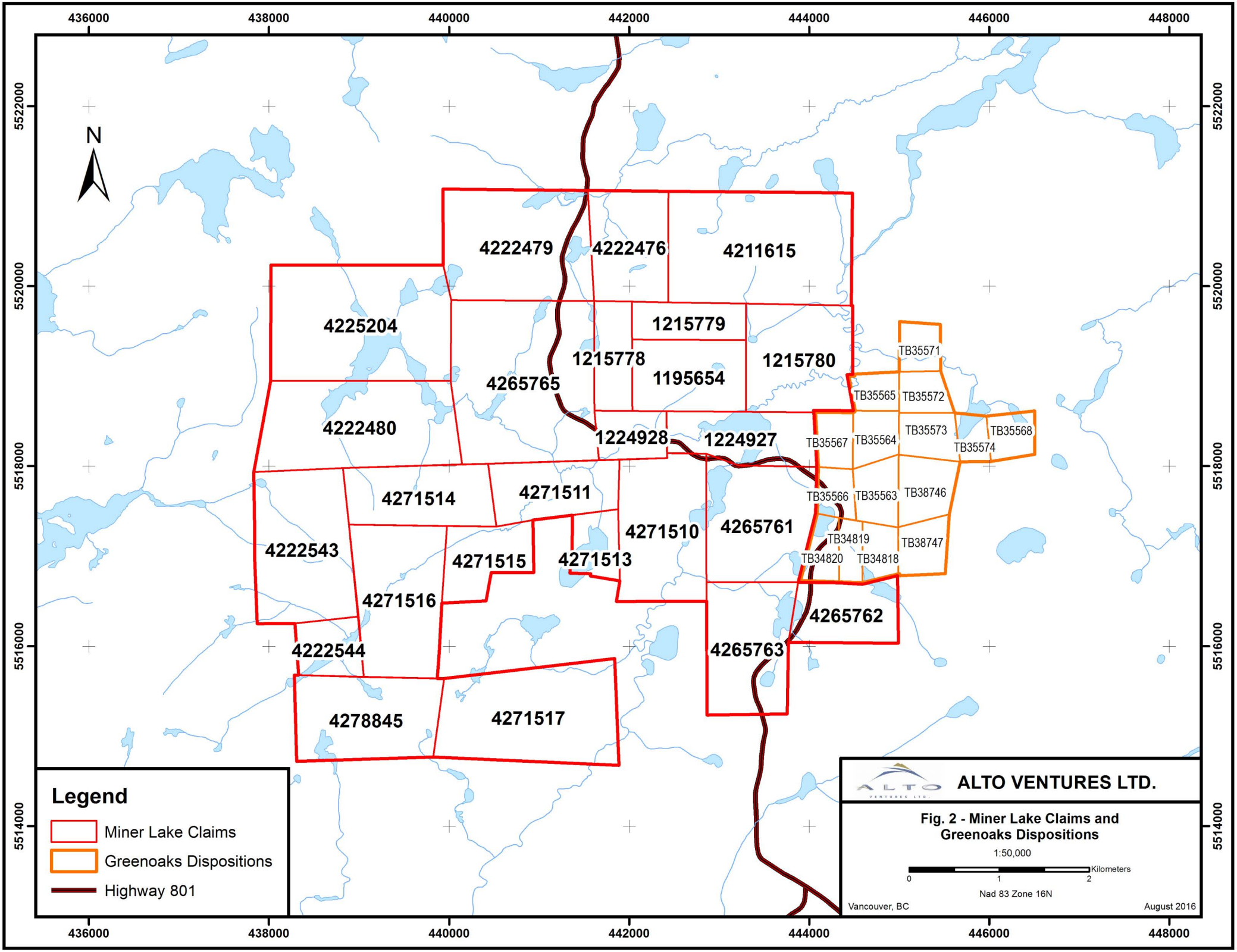
1:10,000

0 0.125 0.25 0.5 0.75 1 Kilometers

Nad 83 Zone 16N

Vancouver, BC

May 2017


436000
438000
440000
442000
444000
446000
448000
5522000
5520000
5518000
5516000
5514000
N
4222479
4222476
4211615
4225204
1215779
1215778
1215780
4265765
1195654
4222480
1224928
1224927
4271514
4271511
4271510
4265761
4222543
4271515
4271513
4271516
4265762
4222544
4265763
4278845
4271517
TB35571
TB35565
TB35572
TB35573
TB35568
TB35567
TB35564
TB35574
TB35566
TB35563
TB38746
TB34819
TB38747
TB34820
TB34818
Legend
Miner Lake Claims
Greenoaks Dispositions
Highway 801
ALTO VENTURES LTD.
Fig. 2 - Miner Lake Claims and Greenoaks Dispositions
1:50,000
0
1
2
Kilometers
Nad 83 Zone 16N
Vancouver, BC
August 2016