

**GLOBEX MINING ENTERPRISES INC.
DRINKARD METALOX INC.
WORLDWIDE MAGNESIUM CORPORATION**

**TECHNICAL REPORT ON THE
INITIAL MINERAL RESOURCE ESTIMATE
FOR THE TIMMINS TALC-MAGNESITE DEPOSIT,
ONTARIO, CANADA**

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1.0 SUMMARY

Introduction:

At the request of Mr. Jack Stoch, President and CEO of Globex Mining Enterprises Inc. (Globex), Micon International Limited (Micon) has been retained to complete an initial mineral resource estimate for the Timmins Talc-Magnesite deposit located immediately south of the town of Timmins, Ontario, Canada, and to prepare a Technical Report to support its release to the public. The Timmins Talc-Magnesite deposit is currently the subject of a joint venture agreement between Globex and Drinkard Metalox Incorporated (DMI), in which Globex retains a 75% interest and DMI retains a 25% interest (Globex, 2009).

Since its discovery in the early 1900's, no testwork to evaluate the economic viability of producing refractory grade magnesia from the Timmins Talc-Magnesite deposit was completed until the 1960's. Canadian Magnesite Mines Limited then conducted a series of testing programs that were successful in producing a saleable product by means of conventional processing technologies, but it was unable to secure sufficient funding to develop the project. Thereafter, interest in the potential economic viability of the talc component of the mineralization was investigated.

Magnesium Refractories Ltd. (MRL) acquired the mining and surface rights from Royal Oak Mines, Inc. (Royal Oak) in 1989. MRL proceeded to conduct extensive laboratory and pilot plant studies and concluded in a 1991 report that an initial plant should be designed to treat 360,000 tpa of feed to produce 65,000 tpa of caustic calcined MgO including a chlorine roasting step to remove the iron. A high grade 50,000 tpa dead-burned MgO product was envisaged with the remainder to be marketed as a caustic calcined MgO product. By-product talc production was forecast at 70,000 tpa. Efforts by MRL to finance the project were unsuccessful and the property was returned to Royal Oak.

Globex acquired the property in 2000 and has been conducting further exploration along with economic and engineering reviews.

Accessibility, Climate, Local Resources, Infrastructure and Physiography:

The claim holdings lie in south-central Deloro Township, approximately 11 kilometres southeast of Timmins, Ontario. The project consists of 19 unsurveyed, staked mining claims, totalling 24 claim units of (more or less) 16 hectares each, covering an approximate area of 384 hectares. As well, the project also consists of an approximately equally sized area of severed, 'surface-rights-only' mining patents. Globex signed a binding Letter of Intent with DMI pertaining to the mining rights only claims in October, 2008. Micon understands that according to terms of the agreement, Globex and DMI will form a joint venture company (Worldwide Magnesium Corporation) which is owned 75% by Globex and 25% DMI, subject to Globex retaining a 1% Gross Mineral Royalty and DMI retaining a 0.5% Gross Mineral Royalty on all metal, alloys, minerals or mineral compounds recovered or manufactured through processing of rock originating from the property.

Vehicular access to the claim group is provided by roads that begin with Pine Street South from the City of Timmins, then south for 12 kilometres to the McArthur Forestry Access road, east for 3 kilometres to the 'Wishbone' powerline and then northwards for 3 kilometres by a series of seasonal trails to the centre of the claims. The climate of the area is generally cold. The daily average mean temperature at the nearby Timmins Victor Power Airport for the period 1971-2000 is 1.3°C. The Timmins area has a long history of gold and base metals mining that dates back to the early 1900's. Given this long mining history, the Timmins area is a ready source of all resources necessary to permit and develop a mineral project and to commission and operate a mine and processing facility.

The Timmins Talc-Magnesite project is strategically located to take advantage of local infrastructure including major road networks, electrical power transmission lines and a commercial airport served by regularly scheduled flights. The claim group is of sufficient size to support the operation of an open pit mine, although the land holdings will likely need to be expanded to accommodate a processing plant and tailings storage facility. The topography of the property is rather flat and swampy in places, comprising an area of sandy glacial outwash. The relief of the area is generally low, on the order of 10 metres.

History:

Early diamond drilling, in the area of the current project, was carried out by Porcupine Southgate and focussed on precious metal exploration. A total of 29 bore holes, totalling 8,108.6m were completed. The property had been originally examined for refractory magnesite potential by Canadian Magnesite Mines during the 1960's, during which time 8 diamond drill holes for 1,209.8m were completed in 1962. Since then, additional diamond drilling was carried out by Pamourex in 1985 and Pentland Firth Ventures in 1999.

The combined sampling and drilling efforts of Canadian Magnesite Mines and Pamour resulted in ultimately outlining in the mid- 1980's of a reported (non-NI 43-101 compliant) proven reserve of 20 million tonnes of material containing 52% magnesite and 28% talc.

The project was optioned by Magnesium Refractories Ltd. during 1989-1994. Development efforts primarily consisted of completing additional mineral and metallurgical ore studies, which resulted in a positive feasibility study, but, the company was unable to raise funds for further work.

Diamond drilling campaigns were carried out by Globex in 2000, 2001 and 2008 with the purpose of confirming the results obtained by previous operators and to supply sample material for metallurgical testing.

In 2007, preliminary laboratory work by Drinkard Metalox indicated that the intersected magnesite mineralization could produce a high quality magnesite and magnesite by-products, using hydrometallurgical techniques. Additional bench testing and engineering is currently underway, in order to investigate the potential of using these processing methods.

Regional and Local Geology:

Given the high level of mineral endowment in the Timmins area, the geological setting of the region has been the subject of study for a period of time approaching 100 years. As such, details of the regional geology of the area have been updated over the years as additional geological information has become available and the level of understanding has increased. Consequently, a great body of work is available in regard to the various aspects of the regional and local geology of this area, the details of which are available from such publicly available sources as the Ontario Geological Survey, the Geological Survey of Canada, various technical publications and from academia.

In brief, the project area is located along the southeastern flank of a geological structure known as the Shaw Dome, which is interpreted to be a large anticlinal structure that plunges to the southeast. The core of the Shaw Dome is composed of an older sequence of rocks that are referred to as the Deloro Group while the peripheries of the Dome are composed of a younger sequence of rocks that are referred to as the Tisdale Group.

The detailed geology of the claim holdings is not well understood due to limited outcrop exposure, however the information available suggests that the overall trend of the stratigraphic units on the property seems to be generally in an east-west orientation, with the bulk of the claims being underlain by rocks of mafic and ultramafic composition. The presence of an east-west striking diabase dike is interpreted from its magnetic signature, outcrop exposure and from drill hole information.

Several occurrences of talc-magnesite are known to be present on the property, the largest of which is located to the south of the diabase dike and is referred to as the A Zone. This zone has been traced by surface trenching, mapping and drill hole information along a strike length of approximately 1,000 metres, to depths of approximately 100 to 150 metres and achieves widths of 200 metres at surface. The information available to date suggests that the A Zone has a near vertical dip in an overall sense, although the north and south contacts can be seen to locally dip steeply to either the north or south.

Deposit Types and Mineralization:

The deposit under consideration has long been viewed as a potential source of magnesite and talc. These minerals are found in a variety of deposit types throughout the world and have a variety of end uses. A brief description of the various deposit types of magnesite is provided in Duncan and McCracken (1994). A brief description of the various forms of talc deposits is provided by Harbin (2002).

A description of the mineralization found at the Timmins Talc-Magnesite deposit was prepared by Kretschmar and Kretschmar in 1986 who state that the very low CaO content in the magnesite-talc body makes the carbonate mineralization a potential source of refractory magnesia. However, iron substitution in the magnesite lattice means that the iron cannot be removed by standard physical methods. The iron, therefore, limits the grade of magnesia

concentrate or dead-burned refractory product. Extensive metallurgical testing by Canadian Magnesite Mines over a period of years has demonstrated that the best grade of magnesite obtained by flotation concentration produces a 92-94 percent dead-burned MgO product with 4-6 percent Fe₂O₃. A typical analysis of dead-burned MgO product is given as:

MgO	92.5 percent
Fe ₂ O ₃	6.0-6.5 percent
SiO ₂	1.0 percent
CaO	Less than 0.2 percent
Miscellaneous	Less than 0.5 percent
Boron	10 ppm
Bulk density is 3.45 to 3.47 at dead-burning temperature of 1,650°C	

By-product talc also produced by flotation is given as:

Total MgO	31.61 percent
SiO ₂	62.64 percent
Total Fe*	0.35 percent
LOI	5.27 percent
CaO	Nil
Al ₂ O ₃	Nil

*Total Fe as Fe₂O₃

Drilling:

A summary of the type of drilling procedures that were followed by Globex for the 2008 drilling campaign was prepared by Zalnieriunas (2009) who states that drill collars were established using the 1998 Royal Oak surface metric grid and hand held Garmin GPS instruments. Drilling was carried out by Timmins-based crews from Bradley Bro.'s Ltd.. A skid mounted, Longyear 17A drill rig was mobilized into the property. No drilling difficulties were experienced. Supervision and core logging was carried out by R.V. Zalnieriunas, P.Geo. with the geo-technical aid of Messrs. D. Vachon of Larder Lake and A. Sorochak of Matachewan, Ontario. Visual estimates of mineralization were completed as part of the logging process and are reported within the drill logs.

The core of the alteration zone is a massive, coarse grained, over-printed and re-crystallized magnesite and lesser talc unit showing no visible relic original textures. Within surface stripped zones the exposures show a well developed set of quartz-carbonate extensional veins and stockworks, with subvertical to steep south dipping linker veins that strike easterly and are sigmoidally curved, moderately dipping tension ladder structures. Drilling indicates that the "high-grade" magnesite zones are wider than that exposed on surface, and carry much less veining than anticipated.

The transition zone has been logged as a talc-carbonate-chlorite zone. It is physically similar to the above described core magnesite zone, other than it tends to be darker in tone (medium grey) due to the presence of aphanitic to fine grained black chlorite and tends overall to be more bladed to foliated

in texture. The zone may be richer in talc and has a strongly developed carbonate groundmass, but shows variable lesser amounts of magnesite in inverse proportion to developed ferro-dolomite.

Sampling Method and Approach:

The approach of Globex Mining Enterprises Inc. has been to mitigate the potential effects of weathering on surface rock exposures by solely relying on analysis of fresh rock samples obtained by diamond drill coring methods. To date, these samples have been subjected to standard methods of analysis to determine their “whole rock” cation composition and multi-element scans by reputable Canadian commercial laboratories. Additional soluble elemental determinations using a single acid digestion for Al, Ca, Cr, Cu, Fe, Mg (and MgO), Mn, Ni, Pb and Zn as well as mineral identification of all samples by QEMSCAN™ methods were also carried out.

Sampling was carried out along at a standard 3 metre core length spacing within individual geological units, with shorter lengths taken as dictated at visible lithological or alteration zone contacts. The length of the samples ranged from a minimum of 0.30 m to a maximum of 3.67 m.

The core was then transferred to the core technician who measured the specific gravity of all marked samples and also determined, at spot intervals of about every 10 metres, the specific gravity of the balance of the drill hole using the Archimedes principle. The technician then proceeded to separate the core into two halves by means of cutting the samples using an electrical core saw equipped with a diamond impregnated blade. One half of the core was placed into an 8-mil plastic bag and forwarded to the assay laboratory for the analytical determinations.

Sample Preparation, Analyses and Security:

All samples of cut drill core were delivered as batch shipments to the sample receiving facilities of Expert Laboratories, Inc., located at 127 Boulevard Industriel, Rouyn-Noranda, Québec. The laboratory conducted all aspects of the sample preparation. There, the samples were dried and crushed to pass a 10 mesh screen. A 300-gram subsample was taken for pulverization to a nominal -200 mesh. The pulps were sub-split, with one split consisting of a minimum 25 grams of pulp material forwarded to a sub-contracting laboratory for elemental analysis. From the remaining coarse reject material, a nominal 1,000 grams of material was also riffled out and set aside for forwarding to another laboratory for mineral identification, with the remaining crushed rejects being retained.

Lithogeochemical analysis was carried out by Activation Laboratories (ACTLABS) of 1428 Sandhill Drive, Ancaster, ON, L9G 4V5, and included elemental whole rock analysis by ICP (Code WRA-ICP 4B), gravimetric water (Code 4F), ferrous iron by titration (FeO, Code 4F), carbon dioxide by colourimetry (Code 4F), SO₄ by infrared (Code 4F), 35 multi-trace element scan by ICP/OES following aqua regia extraction (Code 1E2), and elemental leach for soluble magnesia (MgO) and soluble Ca including the following elements: Mg, Ni, Al, Ca, Fe, Mn, Cr, Pb, Cu and Zn. In addition to using its own blanks and standards, the

laboratory was also instructed to prepare and use the customer supplied standard PRS-062708 every 30th sample.

Mineralogical characterization using Explomin™ was carried out by SGS Minerals Services – Advanced Mineralogical Facility, at SGS Lakefield Research Limited, P.O. Box 4300, 185 Concession Street, Lakefield, Ontario. There, each sample was received as -10 mesh coarse reject material, was then riffled and a portion was further stage-crushed to 80% passing 212 microns to get homogeneous splits for preparation of polished sections. One graphite impregnated polished epoxy grain mount was prepared from each sample. However, for every ten samples a replicate polished section was prepared and analyzed to determine the reproducibility and replication of the data. The element concentrations determined by mineralogical characterization of the duplicated samples were reconciled with a Whole Rock Analysis (WRA) by X-Ray fluorescence (XRF). All polished sections were submitted for mineralogical analyses with QEMSCAN™ / Explomin™ Bulk Mineral Analysis (BMA) mode of measurement. This BMA is performed by the linear intercept method, in which the electron beam is rastered at a pre-defined point spacing (nominally 4 micrometres, but variable with particle size) along several lines per field. This measurement provides a robust data set for determination of the bulk mineralogy, the mineral identities and their proportions, along with grain size measurements. For each sample, approximately 40,000 – 60,000 data points are collected. In addition to the QEMSCAN™ analysis, selected samples were also submitted for Electron Microprobe Analysis (EMPA) to quantify the mineral chemistries of the magnesite varieties, talc, chlorites and dolomite. In addition the QEMSCAN™ calculated assays and the direct chemical assays from the WRA were compared as a quality control for each of the samples. The overall correlation coefficient was 0.97. Additional background information regarding the QEMSCAN™ method is provided in Appendix I.

A series of blank, standard reference materials and “quarter-core” duplicates were inserted by Globex with the samples delivered to Expert Laboratories. In respect of the blank samples, Globex inserted small pieces of cement blocks along with the sample stream in order to monitor for any contamination of magnesite and talc that may occur during the crushing, pulverizing, fusion and analytical stages.

While the use of cement blocks as material to be used as a blank sample may be appropriate as a monitor of talc contamination, Micon considers that this material is not appropriate for use to monitor for contamination of soluble Ca or soluble MgO as cement is a mixture of materials containing significant quantities of limestone and/or dolomite and may contain trace amounts of magnesite. Micon therefore recommends that Globex purchase certified blank material that is composed of pure quartz sand for use in monitoring for any contamination that may occur during the sample preparation stages.

The results of the blank control samples suggest that a low level of background talc and magnesite of up to 2% may be present in the sample preparation process. Micon recommends that the sample preparation protocols that are used to prepare the samples for determination of the talc and magnesite contents be reviewed to ensure that no cross-contamination is occurring.

Globex also undertook a duplicate assaying program, where quarter core duplicate samples were submitted to Activation Laboratories for re-assaying of the soluble MgO and soluble Ca contents of the sample material. As well, a program of duplicate assaying for soluble MgO and soluble Ca, where sample pulps were re-assayed by Activation Laboratories, was undertaken. Duplicate samples of coarse rejects were also submitted to SGS Lakefield for re-assaying of the magnesite and talc contents. It can be seen from the control charts that the duplicate sample results agree very well with the original sample results for soluble Ca, soluble MgO, total magnesite and talc.

Data Verification:

Micon began its data verification activities by conducting a site visit on July 24, 2009, where the field procedures for the drilling program were discussed, examples of the talc-magnesite mineralization were viewed in outcrop, a methodology for determining an appropriate cut-off grade was discussed, the product specifications relative to the proposed flowsheet were discussed and representative sections of drill core were inspected. Micon found that the field procedures that were being used to set up the diamond drill, recover the core, transport the core to the logging facilities and the logging and sampling procedures were all being carried out to the best practices currently in use by the Canadian mining industry.

Micon completed its own program of check assaying of the Timmins Talc-Magnesite deposit by means of selecting a small subset of 10 sample pulps that covered a range of soluble Ca values and re-submitting them to the two laboratories as re-numbered blind samples. It was seen that the check assay results for soluble MgO correlated very well with the original values, but that a distinct bias was observed in respect of the soluble Ca check assay results. Consequently, a second round of check assaying was undertaken for soluble MgO and soluble Ca wherein 20 sample pulps were selected, re-numbered and re-submitted on a blind basis to Activation Laboratories for re-assaying. This second batch of sample pulps comprised 10 new sample pulps and a repeat of the 10 original sample pulps. As a result, the results for the soluble MgO and soluble Ca values for the first batch of check samples were revised.

It can be seen that the check assay results for soluble MgO correlated very well for the sample pulps from drill hole TM-06, while a slight bias is observed for the sample pulps from drill hole TM-16. In Micon's opinion, this slight bias observed in the soluble MgO check assaying will not have an impact upon the results of the mineral resource estimate, as soluble MgO is not one of the constituent components of the contemplated flow sheet at the time of the preparation of this report. It can also be seen that a slight bias is present with respect of the soluble Ca check sample data. Micon believes that this slight bias will not have a significant impact upon the outcome of a mineral resource estimate.

In respect of the magnesite and talc check assay results, it was found that the magnesite check assays correlate very well with the original values, while the check assays for the talc exhibit a modest bias compared to the original assay value. While discussions with the

analytical laboratory were successful in attributing the source of the dispersion in the assay results to differential settling of individual mineral grains during sample preparation due to density and rheological characteristics, possible causes of the observed bias were not identified. Micon conducted an examination of the impact of such a magnitude bias upon the selection of cut-off grade and domain boundary determination and found that this level of bias, if consistent throughout the data set, would not have a material impact upon the mineral resource estimate.

In light of the fact that no standard reference materials have been included as part of the soluble MgO, soluble Ca, magnesite or talc assaying protocols in either the routine assaying program or as part of the check assaying program, it remains uncertain as to which set of data offers a higher degree of accuracy. Consequently, Micon recommends that a deposit-specific standard reference material be prepared and be inserted on a regular basis as part of any future assaying programs.

In addition, Micon recommends that Globex amend its Quality Assurance/Quality Control protocols by ensuring that a small proportion (5-10%) of the assays of any future samples be confirmed by check assaying at an independent, third-party laboratory. In light of the discrepancies observed from its check assaying, Micon recommends that check assaying at an independent, third-party laboratory also be carried out for samples in the existing drill hole database.

Mineral Processing and Metallurgical Testing:

Records indicate that the first round of metallurgical testing of samples from the Deloro talc-magnesite deposit took place in 1963 at Lakefield Research Centre on behalf of Canadian Magnesite Mining Ltd. (CMML) which had acquired the property in 1962. The initial emphasis of the testing program was on producing a magnesite concentrate that would be suitable as a feedstock for refractory manufacturers. CMML proceeded in 1964 to quarry some 2,000 tons of surface mineralization and undertook a series of pilot plant tests at a facility in North Bay. The 2 ton per day mineral processing pilot plant generated 500 tons of magnesite concentrate for testing of magnesia production. While refractory manufacturers showed willingness to enter into product take-off agreements, CMML was unable to obtain any expression of interest in financing the project development.

By 1973 a shortage of magnesite had developed as world steel production surged. CMML was approached by several refractory manufacturers which expressed renewed interest in the 92% MgO product. Testwork was also indicating that a superior-grade, asbestos-free talc concentrate could also be produced.

In 1989 Magnesium Refractories Ltd. (MRL) acquired the mining and surface rights from Royal Oak Mines, Inc. (Royal Oak), the successor company to Pamour. MRL conducted extensive laboratory and pilot plant studies and concluded in a 1991 report that an initial plant should be designed to treat 360,000 tpa of feed to produce 65,000 tpa of caustic calcined MgO including a chlorine roasting step to remove the iron. A high grade 50,000 tpa

dead-burned MgO product was envisaged with the remainder to be marketed as a caustic calcined MgO product. By-product talc production was forecast at 70,000 tpa.

A testwork program was initiated by Globex in June, 2009, at SGS Lakefield (Lakefield). Some 360 kg of split diamond drill core from Globex's 2008 exploration program representing 79 core samples of A Zone were composited and submitted. The talc testwork program was designed in two parts. The objective of the first part of the program was to recover commercial grade talc concentrates directly from the test sample. The second part of the program was designed to produce a concentrate from a residue after acid leaching of the ore to solubilize the magnesite content.

A total of 14 tests have been performed on direct head samples to the end of December, 2009. Test F3 was judged to be the best of the series and the metallurgical balance for the major elements of test F3 is summarized in Table 1.1.

The best metallurgical results from the leach residue was test F10 and produced somewhat lower recoveries, 70% versus 76% at 95% talc grade, than that were obtained directly from the test sample. The metallurgical balance for the major elements of test F10 is summarized in Table 1.2.

Table 1.1
Metallurgical Balance for Flotation Test F3

F3 Products	Wt. %	Assays (%)					Distribution (%)				
		SiO ₂	Fe ₂ O ₃	MgO	Magn- esite	Talc	SiO ₂	Fe ₂ O ₃	MgO	Magn- esite	Talc
Wilfley Table Conc	4.5	4.1	47.7	23.0	38.8	14.0	0.9	36.1	2.9	14.3	1.8
Hand Mag Conc	1.4	22.1	23.3	29.2	31.3	44.6	1.1	5.5	1.2	3.6	1.8
Talc Final Conc	26.7	61.1	1.04	30.9	0.00	96.9	57.1	4.6	23.3	0.0	72.5
3 rd Cl Conc	26.8	61.0	1.20	30.9	0.07	96.8	57.1	5.0	23.3	0.2	72.6
2 nd Cl Conc	28.1	60.5	1.37	31.0	0.89	95.8	59.3	5.6	24.5	2.0	75.3
1 st Cl. Conc.	30.1	59.0	2.29	31.2	3.19	93.1	62.1	6.9	26.5	7.8	78.5
Talc.Ro+Sc Conc.	45.7	48.4	2.37	32.9	19.60	73.9	77.3	18.1	42.5	72.7	94.6
Ro+Scav Tail	48.4	12.4	5.00	39.2	2.4	1.36	20.9	40.4	53.4	9.4	1.8
Head Calculated	100.0	28.6	5.99	35.5		35.7	100	100	100	100	100
Head Direct		29.0	5.65	35.3	51.2	33.8					

Table 1.2
Metallurgical Balance for Flotation Test F10

		Assays %					Distribution %				
F10 Products	Wt.%	SiO₂	Fe₂O₃	MgO	Magn- esite	Talc	SiO₂	Fe₂O₃	MgO	Magn- esite	Talc
Hand Mag Conc	2.8	23.5	63.2	10.4	0.0	32.6	1.1	25.0	1.2	0.0	1.2
Talc Final Conc	41.2	63.4	0.98	31.1	0.10	97.4	41.4	5.6	51.1	0.0	51.1
3rd Cl Conc	42.1	63.0	1.45	30.9	0.0	96.9	42.0	8.5	52.0	0.0	51.9
2nd Cl Conc	56.8	62.9	2.01	30.4	0.0	95.1	57.5	15.9	68.8	0.0	68.7
1st Cl. Conc.	67.4	62.9	2.58	29.6	0.0	92.9	67.1	24.2	79.7	0.0	79.7
Talc.Ro+Sc Conc.	80.2	63.3	3.52	28.2	0.0	88.5	80.4	39.3	90.2	0.0	90.2
Ro+Scav Tail	17.0	69.2	15.1	12.7	0.0	39.8	18.6	35.7	8.6	0.0	8.6
Head Calculated	100.0	63.2	7.18	25.1	0.04	78.6	100	100	100	0	100
Head Direct		62.6	6.83	25.1		77.8					

A joint venture partnership was signed in 2008 between Globex and Drinkard Metalox Inc. (DMI), a private U.S. hydrometallurgical research company. Over the past two years DMI has undertaken bench scale metallurgical research on Timmins Talc-Magnesite samples to demonstrate certain patented technologies that could produce high grade magnesia and other by-products. Aker Metals, a division of Aker Solutions Canada Inc., was contracted by Globex to review and help direct testwork to ensure that appropriate design criteria were collected prior to commencing an engineering study.

A brief description of the various steps of the DMI hydrometallurgical process is presented below:

- The preferred base case flowsheet involves the pre-concentration of the talc in the feed by a combination of magnetic separation and multiple flotation stages. Combined rougher and cleaner-scavenger tailing slurry would be dewatered and fed to a conventional acid leach circuit operated at atmospheric pressure and elevated temperature.
- The acid leaching stage results in the solubilization of magnesite in addition to minor amounts of other metals. The acid leach stage is followed by a solid-liquid separation stage where the leach residue is filtered, washed and disposed of to an impoundment area. The leaching process involves the evolution of carbon dioxide from magnesite and small quantities of other carbonates such as dolomite and calcite. The carbon dioxide generated could be captured and fixed in a variety of potential saleable products such as precipitated calcium carbonate for which substantial markets already

exist or alternatively the carbon dioxide could be compressed and shipped to customers in cryogenic form.

- The pregnant leach solution (PLS) is treated with a neutralizing agent to precipitate iron and manganese from the PLS under acidic conditions. The precipitate is recovered in a solid-liquid separation process and disposed of.
- A second stage of controlled neutralization follows in order to selectively precipitate nickel from solution. The nickel is recovered as by-product nickel hydroxide that could be upgraded for shipment to a third-party refiner.
- The purified PLS is processed to produce high grade magnesia and a concentrated acid for recycle to the leach process.
- The high grade magnesium oxide generated from the DMI process can be further upgraded to lower or remove calcium, the principal diluent.

It was concluded from the DMI test program that a white high grade magnesium oxide can be produced with >98% purity, the primary impurity being CaO.

Mineral Resource and Mineral Reserve Estimates:

A digital database was provided to Micon by Globex wherein such drill hole information as collar location, down hole survey, lithology, density measurements and assays was stored in comma delimited format. The cut off date for the drill hole database was October 6, 2009 and included all drill hole information up to and including hole TM-21.

Interpretation of the geological and mineralization features associated with the mineralization found at the Timmins Talc-Magnesite deposit was carried out according to the most current understanding and level of knowledge. As discussed above, the conceptual flowsheet that has been the subject of comprehensive bench-scale testing by Globex and DMI contemplates the production of a talc concentrate using conventional flotation technologies. Preliminary testing of the talc flotation concentrate reveals that a commercial grade product can be generated with no impurity issues. The tailings generated from the talc flotation stage will be subjected to a hydrometallurgical process which will produce a high-grade final product that is expected to contain a minimum of 98% MgO (M98). In this hydrometallurgical process, the iron content of the feedstock is put into solution and is subsequently removed as a ferruginous precipitate that will be stored in a suitable containment area. In this manner the background iron content of the deposit does not pose the same barrier to the production of a commercial grade refractory product as was experienced by previous owners of the property.

As is the case with the current product specifications for refractory grade magnesia, the hydrometallurgical flowsheet being contemplated by Globex includes a maximum specification for calcium in the feed. For the purposes of this initial mineral resource

estimate, this is expressed on an acid soluble calcium basis (sol Ca) and is set as a maximum of 1% soluble Ca in the feed.

Micon proceeded to construct a lithologic and domain model of the A Zone talc-magnesite deposit on cross-sections that were spaced nominally 100 metres apart and using viewing windows of +/- 50 metres. The limits of the mineralization were drawn using a minimum of 30% talc + magnesite cut-off grade. Upon completion of construction of the initial domain model of the talc-magnesite mineralization, examination of the distribution of the soluble Ca values revealed that a marked increase is commonly observed along the northern and southern contacts of the A Zone mineralization. Consequently, a sub-domain was constructed for the A Zone mineralization at a notional grade of 1% soluble Ca to accurately reflect the observed in-situ conditions.

An investigation of the statistical distribution of the raw assay values of soluble MgO, soluble Ca, talc and magnesite was carried out in order to determine whether application of grade capping may be required. Examination of the frequency histograms suggested that no grade capping is required for this initial mineral resource estimate. In Micon's opinion, considering the relationship to the anticipated block sizes and search ellipse criteria that would be utilized for the construction of the grade-block model, a composite length of 3.0 m was appropriate for this assignment.

Bulk densities were measured at the project site by Globex field staff as described in Section 12 of this report. A total of 306 measurements were made of samples from the A Zone core and a total of 39 measurements were made of samples from the A Zone fringe. Micon determined that the average bulk density of the A Zone core samples was 2.96 t/m^3 and that the average bulk density of the A Zone Fringe samples was 2.93 t/m^3 . These values were applied as the average bulk density to estimate the mineral resources of the A Zone.

As an aid in carrying out a variography study of the continuity of the talc and magnesite grades, Micon conducted a short analysis of the overall trends that may be present in the A Zone deposit. From the limited drill hole information that is available, it can be seen that the talc distribution seems to align along the contacts of the mineralized zone. The magnesite distribution on the other hand seems to follow a more podiform mode. In cross-sectional view, the soluble Ca distribution generally parallels the contacts of the mineralized zone.

The analysis of the variographic parameters of the mineralization found in the A Zone core mineralized domain model began with the construction of omni-directional variograms using the uncapped, 3-m composited sample data with the objective of determining the global nugget (C0) for the soluble MgO, soluble Ca, talc and magnesite data set. Preliminary review of the available data for the A Zone fringe failed to produce viable variograms due to the limited number of samples. An evaluation of other anisotropies that may be present in the A Zone core resulted in successful variograms for the three principal directions with model fits ranging from reasonable to good.

An upright, rotated, whole block model with the long axis of the blocks oriented along an azimuth 080° and dipping 90° was constructed using the Gemcom-Surpac v6.1.1 software package and the parameters determined from the variographic analysis. A number of attributes were also created to store such information as mineral grades by the various interpolation methods, distances to and number of informing samples, domain codes, and resource classification codes. Soluble MgO, soluble Ca, talc and magnesite grades were interpolated into the individual blocks for the A Zone core domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. A single-pass approach was used wherein the information from the variography analysis was used to establish the parameters of the search ellipse. Due to the limited amount of drill hole information available for the A Zone fringe, the average grades as determined from the 3 metre composite samples were applied to all blocks located within the A Zone fringe domain model. Validation analyses for the mineral resource estimate at the Timmins Talc-Magnesite deposit consisted of a comparison of the average block grades for the uncapped values against the respective informing composite samples. It can be seen that there is a good correlation for the average block grades estimated using the three interpolation methods, and between the average estimated block grades and the informing composite samples.

The estimate of the mineral resources for the Timmins Talc-Magnesite deposit presented in this report was prepared by Mr. Reno Pressacco, M.Sc.(A), P.Geo., who is a qualified persons as defined in NI 43-101, and is independent of Globex and DMI. The estimated mineral resources for the Timmins Talc-Magnesite deposit are set out in Table 1.3.

Table 1.3
Estimated Mineral Resources for the Timmins Talc-Magnesite Deposit

Category	Tonnes	Sol MgO (%)	Sol Ca (%)	Magnesite (%)	Talc (%)
A Zone Core:					
Indicated	12,728,000	20.0	0.21	52.1	35.4
Inferred	18,778,000	20.9	0.26	53.1	31.7
A Zone Fringe:					
Inferred	5,003,000	17.6	2.82	34.2	33.4

1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.
2. The quantity and grade of reported Inferred Resources in this estimation are conceptual in nature and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Mineral Resource. It is uncertain if further exploration will result in the upgrading of the Inferred Resources into an Indicated or Measured Mineral Resource category.
3. All figures have been rounded to reflect the accuracy of the estimate.

Interpretations and Conclusions:

Since its acquisition of the Timmins Talc-Magnesite property in 2000, Globex conducted further exploration as well as economic and engineering reviews of the feasibility of

producing magnesium metal, before suspending work in the early part of the decade when project financing was not forthcoming. More recently Globex, in partnership with DMI, has been exploring the potential of producing marketable talc and magnesite products using conventional processing technologies for the former and by application of an innovative hydrometallurgical process for the latter.

In support of this renewed activity, Globex has conducted a limited amount of diamond drilling the objectives of which were to confirm the historical drill hole information collected by previous owners of the property, to examine the mineralogical characteristics of the A Zone and B Zone deposits, and to expand the known limits of the A Zone mineralization.

From the limited drill hole information available (one fence of drill holes), the nature of the B Zone deposit appears to include elevated levels of soluble Ca (believed to be related to the presence of ferro-dolomite), such that the production of a marketable magnesite product directly from this material does not appear likely at this time. Geological modeling of the A Zone, however, has revealed that it consists of a core zone containing low concentrations of soluble Ca. This core zone is enveloped along its northern and southern contacts by a skin or a fringe of material containing elevated levels of soluble Ca.

The current geological model of the A Zone spans a width of approximately 200 metres, a strike length of approximately 700 metres and extends to a depth of approximately 100 metres below surface. The limits of the mineralization along strike and at depth for the A Zone have not been identified by drilling and Micon believes that Globex is justified in completing additional diamond drilling programs to locate these limits.

Micon also believes that Globex would be justified in completing an in-fill drilling program at the Timmins Talc-Magnesite deposit in order to confirm the mineralization outline and to provide a better estimate of the mineral distributions at a local scale. Such a drilling program could be designed to provide a data density at a nominal spacing of 50 metres on section, with sections spaced 100 metres apart.

Testwork that has been carried out by previous owners of the property has attempted to produce magnesium refractories by conventional processes available at that time. For the most part, this testwork has shown that magnesium products can be generated from this deposit, albeit with elevated iron contents that are not necessarily desirable under all market conditions.

The conceptual flowsheet that has been the subject of comprehensive bench-scale testing by Globex and DMI contemplates the production of a talc concentrate using conventional flotation technologies. Preliminary testing of the talc flotation concentrate reveals that a commercial grade product can be generated with no impurity issues. The tailings generated from the talc flotation stage will be subjected to a hydrometallurgical process which will produce a high grade final product that is expected to contain a minimum of 98% MgO (M98). In this hydrometallurgical process, the iron content of the feedstock is put into solution and is subsequently removed as a ferruginous precipitate that will be stored in a suitable containment area. In this manner the background iron content of the deposit does

not pose the same barrier to the production of a commercial grade refractory product as was experienced by previous owners of the property.

As is the case with the current product specifications for refractory grade magnesia, the hydrometallurgical flowsheet being contemplated by Globex includes a maximum specification for calcium in the feed. For the purposes of this initial mineral resource estimate, this is expressed on an acid soluble calcium basis (sol Ca) and is set as a maximum of 1% soluble Ca in the feed. The limits of the mineralization were drawn using a minimum of 30% talc + magnesite as a cut-off grade.

Bulk densities were measured at the project site by Globex field staff. A total of 306 measurements were made of samples from the A Zone core and a total of 39 measurements were made of samples from the A Zone fringe. Micon determined that the average bulk density of the A Zone core samples was 2.96 t/m³ and that the average bulk density of the A Zone Fringe samples was 2.93 t/m³.

An upright, rotated, whole block model with the long axis of the blocks oriented along an azimuth 080° and dipping 90° was constructed using the Gemcom-Surpac v6.1.1 software package. Soluble MgO, soluble Ca, talc and magnesite grades were interpolated into the individual blocks for the A Zone core domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. A single-pass approach was used wherein the information from the variography analysis was used to establish the parameters of the search ellipse. Due to the limited amount of drill hole information available for the A Zone fringe, the average grades as determined from the 3 metre composite samples were applied to all blocks located within the A Zone fringe domain model.

The mineralized material was classified into either the Indicated or Inferred mineral resource category after taking into consideration the search ellipse ranges, the density of the drill hole information and the overall average soluble Ca grades. Those blocks contained within the A Zone core which received interpolated grades that were within the variogram ranges and were located between 479700E and 479900E (the two cross sections containing the greatest density of drill hole information) were classified as Indicated mineral resources. The remaining blocks of the A Zone core were classified into the Inferred mineral resource category.

In respect of the A Zone fringe, all blocks were classified in the Inferred category to reflect the fact that the average soluble Ca grades of these blocks exceed the stated upper limit and thus are not expected to produce a final magnesite product at the stated specification. However, Micon believes that a saleable final product can be generated from this material by means of blending with lower grade soluble Ca material from the A Zone core at a suitable ratio.

It is clear that while exploration and delineation work carried out by Globex to-date on the Timmins Talc-Magnesite deposit has focused on the central portion of the A Zone as defined from interpretation of surface geological exposures, the strike limits of the mineralization

have not been fully defined and the depth extents have not been outlined either (Figure 19.1). As well, although three drill holes have been completed to identify the mineralogical character of the B Zone on a preliminary basis (drill holes TM-19, -20 and -21), the full dimensions of this zone also remain untested by a comprehensive drilling and sampling program.

Conceptual geological modeling of the A Zone and B Zone has been carried out by Micon wherein the geological contacts of these two zones have been projected from surface to the 190 metre elevation (being approximately the same elevation as the current model of the A Zone core, approximately 100 metres beneath the surface). This modeling suggests that further exploration and delineation drilling programs, if successful, have the potential of outlining an additional 20 to 25 million tonnes of talc-magnesite mineralization for the A Zone at similar grades to that which have already been intersected. The modeling also suggests that the B Zone has the potential of hosting some 40 to 45 million tonnes of talc-magnesite mineralization as well. It is important to note that the potential quantity and grades are conceptual in nature, that there has been insufficient exploration to define a mineral resource and that it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Recommendations:

Micon recommends that Globex purchase certified blank materials that are composed of pure quartz sand for use in monitoring for any contamination that may occur during the sample preparation stages.

The results of the blank sample control samples suggest that a low level of background talc and magnesite of up to 2% may be present in the sample preparation process. Micon recommends that the sample preparation protocols that are used to prepare the samples for determination of the talc and magnesite contents be reviewed to ensure that no cross-contamination is occurring. A selection of a barren quartz material to use as a blank sample medium may be useful in reducing the suggested levels of background mineralization.

Micon recommends that the control charts for the (future) standards, blanks and duplicates be maintained on a regular basis as new data are received, such that any anomalous results can be identified and addressed in a timely manner.

It is clear that the check assaying program has demonstrated that significant differences have been found when compared to the original soluble Ca and talc assay values.

No standard reference materials have been included as part of the soluble MgO, soluble Ca, magnesite or talc assaying protocols in either the routine assaying program or as part of the check assaying program. Consequently, Micon recommends that a deposit-specific standard reference material be prepared and be inserted on a regular basis as part of any future assaying programs.

In addition, Micon recommends that Globex amend its Quality Assurance/Quality Control protocols by ensuring that a small proportion (5-10%) of the assays of any future samples be confirmed by check assaying at an independent, third-party laboratory. In light of the discrepancies observed from its check assaying, Micon recommends that check assaying at an independent, third-party laboratory also be carried out for samples in the existing drill hole database.

Globex has prepared a proposed exploration program and budget for work to be carried out in 2010 as shown in Table 1.4. Micon has reviewed the proposed budget and believes that it is appropriate and warranted.

Table 1.4
Proposed Exploration Program and Budget

ITEM	ESTIMATED COST (CDN\$)
Phase 1 Budget:	
Timmins Project Site	
Permitting, surveying and project maintenance	200,000
Phase II environmental baseline, water studies and public consultation	500,000
Surface Exploration and Diamond Drilling	
Stripping, mapping & structural studies	50,000
Test pitting and bulk sampling (<50 tonnes)	100,000
Diamond drilling (10,000 m for exploration & definition)	1,000,000
Market Studies	
Consultants, salaries & expenses	200,000
Test marketing of material	50,000
Metallurgy	
Product development and R&D	100,000
Small-scale talc demonstration plant	750,000
Magnesia micro-pilot plant (4 months)	500,000
Engineering and Plant Development	
Scoping study	125,000
Preliminary pit geotechnical studies	100,000
Miscellaneous studies and demonstration plant design	350,000
<i>Subtotal, Phase I</i>	<i>4,025,000</i>
10% Contingency	402,500
15% Management & supervision	603,750
Total, Phase I	5,031,250
Phase II Budget:	
Feasibility Study	2,000,000
Plant Scoping Study	150,000
<i>Subtotal, Phase II</i>	<i>2,150,000</i>
10% Contingency	215,000
15% Management & supervision	322,500
Total, Phase II	2,687,500
GRAND TOTAL, Phase I and II (rounded)	\$7,720,000

2.0 INTRODUCTION

At the request of Mr. Jack Stoch, President and CEO of Globex Mining Enterprises Inc. (Globex), Micon International Limited (Micon) has been retained to complete an initial mineral resource estimate for the Timmins Talc-Magnesite deposit located immediately south of the town of Timmins, Ontario, Canada, and to prepare a Technical Report to support its release to the public. The Timmins Talc-Magnesite deposit is currently the subject of a joint venture agreement between Globex and Drinkard Metalox Incorporated (DMI), in which Globex retains a 75% interest and management and DMI retains a 25% interest (Globex, 2009).

Since its discovery in the early 1900's, no testwork to evaluate the economic viability of producing refractory grade magnesia from the Timmins Talc-Magnesite deposit was completed until the 1960's. Canadian Magnesite Mines Limited then conducted a series of testing programs that were successful in producing a saleable product by means of conventional processing technologies, but it was unable to secure sufficient funding to develop the project. Thereafter, interest in the potential economic viability of the talc component of the mineralization was investigated.

Magnesium Refractories Ltd. (MRL) acquired the mining and surface rights from Royal Oak Mines, Inc. (Royal Oak) in 1989. MRL proceeded to conduct extensive laboratory and pilot plant studies and concluded in a 1991 report that an initial plant should be designed to treat 360,000 tpa of feed to produce 65,000 tpa of caustic calcined MgO including a chlorine roasting step to remove the iron. A high grade 50,000 tpa dead-burned MgO product was envisaged with the remainder to be marketed as a caustic calcined MgO product. By-product talc production was forecast at 70,000 tpa. Efforts by MRL to finance the project were unsuccessful and the property was returned to Royal Oak.

Globex acquired the property in 2000 and has been conducting further exploration along with economic and engineering reviews.

The current report is based on data provided to Micon by Globex and on other relevant, publicly available information from such sources as the World Wide Web, various Canadian Federal and Provincial government maps, reports and databases, and academic journals. This Technical Report discloses the drilling and analytical results obtained from the Timmins Talc-Magnesite deposit as at October, 2009 and includes drilling and assay results up to and including drill hole TM-21.

The Qualified Persons who prepared this report are Reno Pressacco, P. Geo., who holds the position of Senior Geologist with Micon, David Hall, P. Eng., an independent consultant retained by Globex and Peimeng Ling, P. Eng. of Aker Solutions. Mr. Pressacco visited the Timmins Talc-Magnesite property on July 24, 2009 where the nature of the mineralization was observed in outcrop in a number of locations, the methods of drilling, sampling and analysis were reviewed and discussed, representative sections of drill core were inspected, discussions regarding the project's database were held along with discussions regarding the

conceptual flowsheet in relation to the anticipated product specifications and initial operating cost estimates. The site visit was conducted in the presence of Mr. Ray Zalnieriunas, Chief Geologist of Globex. Micon is pleased to acknowledge the helpful cooperation of Globex's management and staff, all of whom made any and all data requested available and responded openly and helpfully to all questions, queries and requests for material.

3.0 RELIANCE ON OTHER EXPERTS

Micon has reviewed and evaluated the data pertaining to the Timmins Talc-Magnesite deposit and has drawn its own conclusions therefrom. Micon has not carried out any independent exploration work, drilled any holes or carried out any sampling and assaying of material from the property, other than the check sampling to confirm the presence of various components of the mineralization which is discussed in Section 14 of this report.

While exercising all reasonable diligence in checking, confirming and testing it, in the preparation of this report Micon has relied upon the data provided by Globex and that found in the public domain.

The status of the mining claims or mineral tenements under which Globex holds title to the mineral rights for the Timmins Talc-Magnesite property has not been investigated or confirmed by Micon, and Micon offers no opinion as to the validity of the title claimed by Globex. The description of the property, and ownership thereof, as set out in this report, is provided for general information purposes only.

The conclusions and recommendations in this report reflect the authors' best judgment in light of the information available to them at the time of writing. The author and Micon reserve the right, but will not be obliged, to revise this report and conclusions if additional information becomes known to them subsequent to the date of this report. Use of this report acknowledges acceptance of the foregoing conditions.

Unless otherwise indicated, all currency amounts are stated in Canadian dollars (CAD\$). The metric system of units is used in Canada, thus, distance is generally expressed in metres (m) or kilometres (km), area in hectares (ha) and weight in grams (g), kilograms (kg) and metric tonnes (t, 1,000 kg). Talc and magnesite mineral grades, along with soluble magnesia and soluble calcium values are generally expressed as percent (%). A list of abbreviations which may appear throughout this report is presented in Table 3.1.

Table 3.1
List of Abbreviations

Abbreviation Unit or Term	Description
AA	Atomic Absorption
ABA	Acid Base Analysis
ADR	Adsorption-Desorption-Recovery
Ag	Silver
Al ₂ O ₃	Alumina
amsl	Above mean sea level
ANFO	Ammonium Nitrate Fuel Oil (explosive)
Ar	Argon
As	Arsenic
Asp or Aspy	Arsenopyrite
Au	Gold
°C	Degrees Centigrade

Abbreviation Unit or Term	Description
Ca	Calcium
CaO	Lime
CDN\$	Canadian dollar
CEAA	Canadian Environmental Assessment Act
cfm	Cubic feet per minute
CIF	Concentrate-in-Freight
CIP	Carbon-in-pulp
cm	Centimeter
CM	Cubic Meter
Cpy	Chalcopyrite
Co	Cobalt
COG	Cut-off-Grade
Cu	Copper
CUV	Chlorite-talc Ultramafic
°	Degree (degrees)
dia	Diameter
DD	Diamond Drilling
EA	Environmental Assessment
EGL	External Grinding Lengths
EIA	Environmental Impact Assessment
EM	Electromagnetic
EPA	Environmental Protection Act
FA	Fire Assay
Fe	Iron
FI	Felsic Intrusive
FOB	Free-on-Board
ft	Foot (feet)
ft ²	Square Foot (feet)
g	Gram
Gal or Gn	Galena
gal	Gallon
g/hr	Grams per hour
g/L	Grams per Liter
g/yr	Grams per year
g/t	Grams Per Tonne
G&A	General & Administration
ha	Hectares
Hg	Mercury
hp	Horse Power
hr	Hour
Hz	Hertz
ICP	Inductively Coupled Plasma
In	Inch (Inches)
IP	Induced Polarization
IRR	Internal Rate of Return
ISR	Inductive Source Resistivity
K	Potassium
k	Thousand
Kg	Kilograms
km	Kilometer

Abbreviation Unit or Term	Description
koz	Thousand Troy Ounces
kt	Thousand Tonnes
kt/yr	Thousand Tonnes per Year
L	Litres
Lbs	Pounds
lb	Pound
LHD	Load Haul Dump
LoM	Life-of-Mine
m	Metre
MCC	Motor Control Center
Mg	Magnesium
MgO	Magnesia
min	Minute
μ	Micron
mm	Millimeter
Mn	Manganese
MRMR	mining rock-mass rating
MOU	Memorandum of Understanding
Moz	Million troy ounces
MPa	Megapascals
MRO	Mining Rights Only
Mt	Million tonnes
MV	Mafic Volcanic
NaOH	Sodium hydroxide
NaCl	Sodium Chloride
NaCN	Sodium Cyanide
NGO	Non-government Organizations
Ni	Nickel
NPV	Net Present Value
NSR	Net Smelter Return Royalty
O&M	Operating & Maintenance
Oz or oz	Ounce
oz/ton	Ounces per Short Ton
Pa	Pascal
Pb	Lead
Po	Pyrrhotite
ppb	Parts per Billion
PLT	Point Load Testing
ppm	Parts per Million
psi	Pounds per square inch
PSR	Production Stope Ramp
Py	Pyrite
%	Percent
QA/QC	Quality Assurance/Quality Control
Rb	Rubidium
RC	Reverse Circulation
RoM	Run-of-Mine
RMR	Rock Mass Rating
RQD	Rock Quality Data
SAD	Stope Access Drifts

Abbreviation Unit or Term	Description
Sb	Antimony
SiO ₂	Silica
Sph	Sphalerite
Sr	Strontium
SRO	Surface Rights Only
t	Tonne (metric ton) (2,204.6 pounds)
TDS	Total Dissolved Solids
Ton(s)	Short Ton (2,000 pounds)
t/day	Tonnes per day
t/hr	Tonnes per hour
t/yr	Tonnes per year
U	Uranium
UCS	Unconfined Compressive Strength
VAT	Value Added Tax
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence
Zn	Zinc

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 PROPERTY LOCATION AND ACCESS

The claim holdings lie in south-central Deloro Township, approximately 11 kilometres southeast of Timmins, Ontario (see Figure 4.1). The deposit is located at approximate UTM (NAD 83, Zone 17) grid coordinates 479,791m E 5,357,848m N (approximately 48° 22' 25" north latitude, 81° 16' 23" west longitude) as shown in Figure 4.2.

The project consists of 19 unsurveyed, staked mining claims, totalling 24 claim units of (more or less) 16 hectares each, covering an approximate area of 384 hectares. As well, the project also consists of an approximately equally sized area of severed, 'surface-rights-only' mining patents (under Ontario law, the boundaries of patented claims are established by surveying and they remain valid as long as the annual land tax payments are made). The mineral rights to the property are held 100% by Globex Mining Enterprises Inc. A list of claims comprising the Timmins Talc-Magnesite property is provided in Table 4.1.

Globex signed a binding Letter of Intent with DMI pertaining to the mining rights only claims listed in Table 4.1 in October, 2008. Micon understands that according to terms of the agreement, Globex and DMI will form a joint venture company (Worldwide Magnesium Corporation) which is owned 75% by Globex and 25% DMI, subject to Globex retaining a 1% Gross Mineral Royalty and DMI retaining a 0.5% Gross Mineral Royalty on all metal, alloys, minerals or mineral compounds recovered or manufactured through processing of rock originating from the property.

The claim group is approximately centred 1.5 kilometres east of Gold Lake and 1.5 kilometres north of the Deloro-Adams township line. The property lies within the Porcupine Mining Division, Timmins Resident Geologists Office of the Ontario Ministry of Northern Development and Mines (MNDM), the Timmins Ministry Administrative District of the Ontario Ministry of Natural Resources (MNR), and the Cochrane Land Titles/Registry Division.

Unless a stream crossing is required, current Ontario provincial regulations do not require permits for on-going exploration work, including the cutting of survey lines, drill access roads and drill platforms.

Micon is aware that exploration work including such activities as prospecting, geological mapping, geophysical surveying, diamond drilling and bulk sampling has taken place on the property over the course of its history. On the basis of its general knowledge of the area and its site visit, Micon believes that no environmental liabilities are present on the claim holdings.

Figure 4.1
Location of the Timmins Talc-Magnesite Property



Figure 4.2

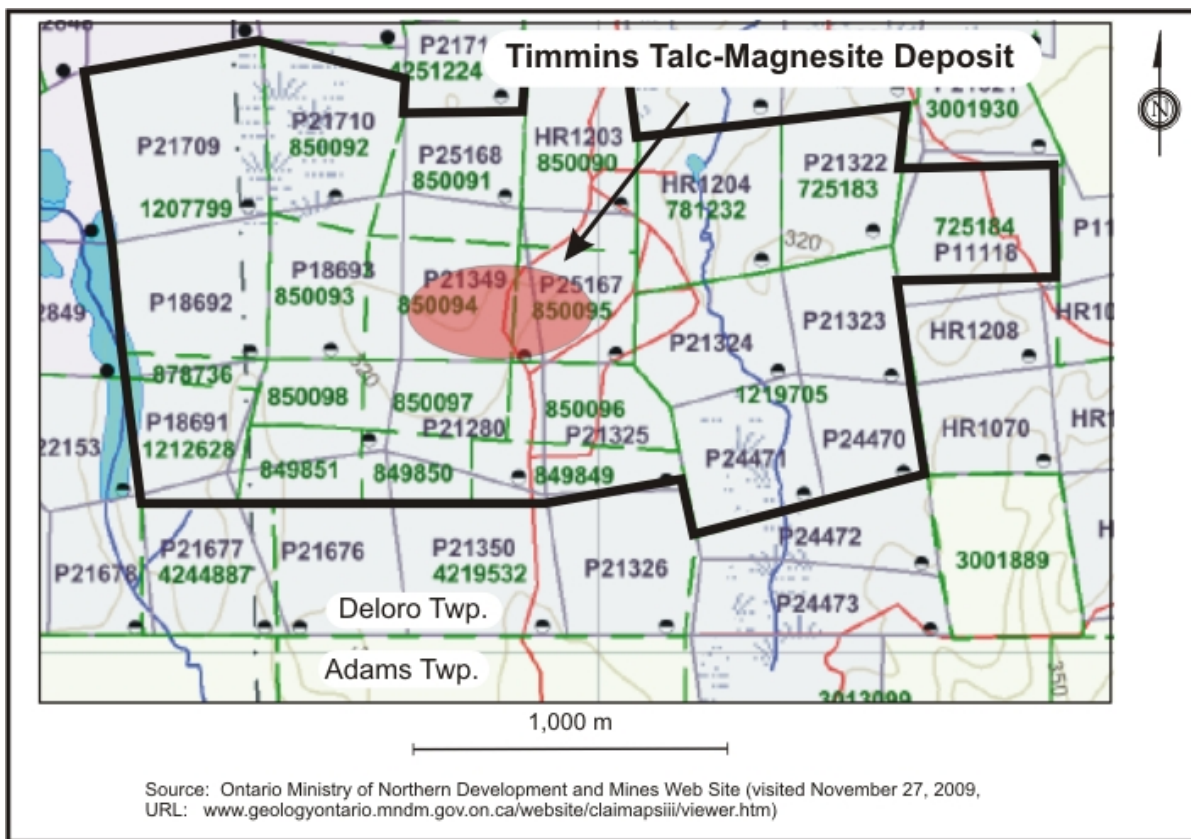


Table 4.1

Claim Number	Recording Date	Claim Due Date	Percent Option	Work Required	Total Applied	Total Reserve
Mining Rights Claims (Mining Rights Only):						
1207799	1997-Aug-28	2013-Aug-28	100 %	\$ 1,200	\$ 16,800	\$14
1212628	1996-Feb-12	2013-Feb-12	100 %	\$ 400	\$ 6,000	\$0
1219705	1999-May-05	2013-May-05	100 %	\$ 1,600	\$ 19,200	\$0
725183	1984-Feb-28	2013-Feb-28	100 %	\$ 400	\$ 11,200	\$7
725184	1984-Feb-28	2013-Feb-28	100 %	\$ 400	\$ 11,200	\$34
781232	1984-Feb-28	2013-Feb-28	100 %	\$ 400	\$ 11,200	\$0
849849	1985-Jun-04	2013-Jun-04	100 %	\$ 400	\$ 10,800	\$7
849850	1985-Jun-04	2013-Jun-04	100 %	\$ 400	\$ 10,800	\$0
849851	1985-Jun-04	2013-Jun-04	100 %	\$ 400	\$ 10,800	\$14
850090	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$51,299
850091	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$ 54
850092	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$ 33
850093	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$ 0

Claim Number	Recording Date	Claim Due Date	Percent Option	Work Required	Total Applied	Total Reserve
850094	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$103,256
850095	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$115,033
850096	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$7,111
850097	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$17,349
850098	1985-May-07	2013-May-07	100 %	\$ 400	\$ 10,800	\$ 0
878736	1987-Feb-02	2013-Feb-02	100 %	\$ 400	\$ 10,000	\$ 0
Patented Claims (Surface Rights Only):						
HR1203		Fee Simple	100 %			
HR1204		Fee Simple	100 %			
P11118		Fee Simple	100 %			
P18691		Fee Simple	100 %			
P18692		Fee Simple	100 %			
P18693		Fee Simple	100 %			
P21276		Fee Simple	100 %			
P21279		Fee Simple	100 %			
P21280		Fee Simple	100 %			
P21322		Fee Simple	100 %			
P21323		Fee Simple	100 %			
P21324		Fee Simple	100 %			
P21325		Fee Simple	100 %			
P21349		Fee Simple	100 %			
P21350		Fee Simple	100 %			
P21568		Fee Simple	100 %			
P21676		Fee Simple	100 %			
P21677		Fee Simple	100 %			
P21709		Fee Simple	100 %			
P21710		Fee Simple	100 %			
P24470		Fee Simple	100 %			
P24471		Fee Simple	100 %			
P25167		Fee Simple	100 %			

Municipal taxes are payable to the City of Timmins for the Surface Rights Only claims. An amount of \$331.14 has been paid for 2009.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

Vehicular access to the claim group is provided by roads that begin with Pine Street South from the City of Timmins, then south for 12 kilometres to the McArthur Forestry Access road, east for 3 kilometres to the 'Wishbone' powerline and then northwards for 3 kilometres by a series of seasonal trails to the centre of the claims.

5.2 CLIMATE

The climate of the area is generally cold. The Timmins region is classified as having a sub-humid mid-boreal ecoclimate (Environment Canada, 2005). Climate normals for the period 1971-2000 for the project area were obtained from Environment Canada (2008). Climate data were recorded at the Timmins Victor Power Airport (Station ID 6028285), located approximately 20 km northwest of the project area, and were assumed to be representative of the climate conditions in the project area. According to these data, the average annual temperature is 1.3°C, and total precipitation is approximately 831 mm, of which approximately 38% falls as snow. Prevailing winds are from the south and have an average wind speed of 12 km/h.

Given this climate range, Micon expects that exploration and mining development activities can be carried out at all times of the year.

5.3 LOCAL RESOURCES

The Timmins area has a long history of gold and base metals mining that dates back to the early 1900's when the discovery of gold was first reported in the area. Since the first mine was commissioned in 1908, some 57 gold mines have produced a cumulative total of 68,351,150 ounces of gold to the end of 2008 (Atkinson et. al., 2008). The region has also recorded production of base metals from copper-zinc deposits (e.g. Kidd Creek mine and several deposits in the Kam Kotia area) and nickel-copper deposits (e.g. Montcalm mine, the Langmuir Nos. 1 and 2 mines and the Redstone mine). In addition, industrial minerals have been produced from the Penhorwood mine (talc), the Kapuskasing mine (phosphate) and the Victor mine (diamonds).

Given this long mining history, the Timmins area is a ready source of all resources necessary to permit and develop a mineral project and to commission and operate a mine and processing facility.

5.4 INFRASTRUCTURE

The Timmins Talc-Magnesite project is strategically located to take advantage of local infrastructure including major road networks, electrical power transmission lines and a commercial airport served by regularly scheduled flights.

A high tension electrical power transmission line serving the city of Timmins passes through the central portions of the claim holdings and the project area has several lakes and rivers which provide an ample supply of fresh water. Rail access to the city of Timmins and access to the all-weather paved highway system allows for shipping of final product by several transportation methods.

The claim group is of sufficient size to support the operation of an open pit mine, although the land holdings will likely need to be expanded to accommodate a processing plant and tailings storage facility.

5.5 PHYSIOGRAPHY

The topography of the property is rather flat and swampy in places, comprising an area of sandy glacial outwash. The relief of the area is generally low, on the order of 10 metres. The vegetation of the property is typical of the Boreal Forest, consisting of mixed stands of black spruce, poplar, balsam fir and white birch (Figure 5.1).

Figure 5.1
View of Access Road and General Physiography, Looking North



6.0 HISTORY

An early description of the Timmins Talc-Magnesite deposit was provided in an article published in the April, 1971 edition of Industrial Minerals (Industrial Minerals, 1971) and is excerpted below:

“The resources of the Timmins area first received attention in 1910, when the gold mining interests moved in. The properties now owned by Canadian Magnesite Mines were originally staked for their gold potential in the early 1940’s, but although the deposits were known to have a substantial magnesium content, it was not until 1959 that an interest was shown in them as a source of magnesia. At that time Dr. A.T. Griffis, and eminent Canadian geologist and president of the geological and mining consulting firm of Watts, Griffis & McOuat Ltd., recognised the magnesia materials present as being talc and magnesite and foresaw the commercial possibilities. The property was acquired from the gold mine, and Canadian Magnesite Mines Ltd. was formed to develop the magnesia potential of the deposits.

The ore is associated with a very large area of ultrabasic ‘intrusives’ and is probably the result of extreme metamorphism of these magnesia-bearing rocks, with recrystallization of serpentine to talc and the introduction of carbonate, which has reacted with the magnesia to form magnesite (MgCO_3). Diamond drilling in 1962/63 and subsequent mineralogical work established that the deposit consists of only four minerals – magnesite, talc, haematite and quartz. Stringers of enriched magnesite up to two feet in width and associated with quartz occur within the matrix, with the haematite concentrated mainly along the fractures in the rock. The deposit outcrops at the surface and extends some 6,000 ft in length, and the width is nearly 1,000 ft at its maximum. The dip is essentially vertical and it appears to have a uniform thickness down to the 800 ft level. Reserves to this depth are estimated to exceed 100 m[illion] [short] tons of ore grading 50% magnesite and between 25% and 30% talc. Apart from its consistency, the deposit is also notable for its very low calcium content, which averages less than 2% throughout.”

It is to be noted that Micon has not been able to verify this estimate and it should not be relied upon, as the parameters that were used at the time to derive this estimate may not be relevant under current market conditions. As well the estimate may not conform to the current standards set out in NI 43-101, as it was prepared prior to the establishment of these standards.

A summary of the drilling history of the property has been provided in Zalnieriunas (2009) and is excerpted below:

“Early diamond drilling, in the area of the current project, was carried out by Porcupine Southgate and focussed on precious metal exploration. A total of 29 bore holes, totalling 8,108.6m were completed. Some of these drill holes fall within the limits of the present claim block.

The current claim group was originally staked by Pamourex and re-staked by Royal Oak Mines Ltd. during 1984-85.

The property had been originally examined for refractory magnesia potential by Canadian Magnesite Mines during the 1960's, during which time 8 diamond drill holes for 1,209.8m were completed in 1962.

Diamond drilling was continued by Pamourex in 1985, when a further 8 diamond drill holes were completed for 591.3m. In addition, during 1986, Pamour Inc., using Ontario Mineral Exploration Program (OMEP) funding, completed a small-scale pit sampling program. According to the report contained within the Timmins Resident Geologists assessment files, the primary purpose of this 1986 bulk sampling program was to provide a large quantity (~15,000 tons) of broken, unweathered and representative magnesite-talc material, to be drilled, blasted and left in the pit, ready for loading and shipping to various potential J.V. partners.”

The “Pamour Pit” is located between 1+10S to 1+60S at 8+60E on the current (1998 Royal Oak) surface exploration grid. It is to be noted that a 5 ft bench of potentially oxidized material was first drilled and blasted off the surface. A subsequent blast was then carried out and the material left in place for future work. Some of this material has subsequently been used, as evidenced by some digging and trenching at the site (i.e. reports of 1,620 tons shipped to Steetley Talc for processing).

The combined sampling and drilling efforts of Canadian Magnesite Mines and Pamour resulted in ultimately outlining in the mid- 1980's of a reported (non-NI 43-101 compliant) proven reserve of 20 million tonnes of material containing 52% magnesite and 28% talc.

The project was optioned by Magnesium Refractories Ltd. during 1989-1994. Development efforts primarily consisted of completing additional mineral and metallurgical ore studies, which resulted in a positive feasibility study, but, the company was unable to raise funds for further work. During 1997, Royal Oak re-staked some claims and completed some additional studies during 1997-98.

Two drill holes, for a total of 151.0m, were completed by Pentland Firth Ventures Ltd. on behalf of Kinross in 1999 on section 7+00E. (Yule, 1999). These holes were subsequently analysed by Globex Mining Enterprises Inc. early in the year 2000 and the results reported in Zalnieriunas (2000a).

Two diamond drill holes (Zalnieriunas, 2000b) were completed by Globex in 2000 (ddh's TM-01 and TM-02), with an additional two diamond drill holes (TM-03 and TM-04) completed in 2001 (Zalnieriunas, 2001), for a total of 342.7m of coring on section 6+00E. The stratigraphic drilling by both Pentland Firth and Globex during these years successfully extended the extents of the magnesite mineralization widths west of the “Pamour Pit” to more than 250 meters.

In 2007, preliminary laboratory work by Drinkard Metalox on selected Globex quartered core from section 6+00E, indicated that the intersected magnesite mineralization could produce a high quality magnesia and magnesia by-products, using hydrometallurgical techniques. Additional bench testing and engineering is currently underway, in order to investigate the potential of using these processing methods. Diamond drilling by Globex in the area of the “Pamour Pit” and the area immediately to the east was carried out in support of these studies.

Seventeen (17) drill holes were completed by Globex in 2008 (Zalnieriunas 2008), totalling 2,126.7m (ddh's TM-05 to TM-21, inclusive) were completed on sections 8+50E, 9+50E and 10+50E, within the core, central area of the Timmins talc-magnesite deposit. Work concentrated on stratigraphic drilling of the main southern magnesite lens, in the area of the Pamour Pit, and samples were selected and analysed for magnesite, talc, MgO (wt%) grades, deleterious materials and mineralogical zonation studies. A stratigraphic fence was also examined by drill holes in the northern magnesite zone, on section 10+50E."

In September 2009, Globex retained Blue Heron Solutions for Environmental Management (Blue Heron) to carry out a phase 1 environmental baseline study at the project site. The phase 1 environmental baseline study was carried out with a combination of desktop reviews of available information and field study programs (Blue Heron, 2010).

The available information indicates that no commercial production has taken place on the property.

7.0 GEOLOGICAL SETTING

Given the high level of mineral endowment in the Timmins area, the geological setting of the region has been the subject of study for a period of time approaching 100 years. As such, details of the regional geology of the area have been updated over the years as additional geological information has become available and the level of understanding has increased. Consequently, a great body of work is available in regard to the various aspects of the regional and local geology of this area, the details of which are available from such publicly available sources as the Ontario Geological Survey, the Geological Survey of Canada, various technical publications and from academia. In the interests of brevity, only an overall summary of the regional and local geology will be presented in this report.

7.1 REGIONAL GEOLOGY

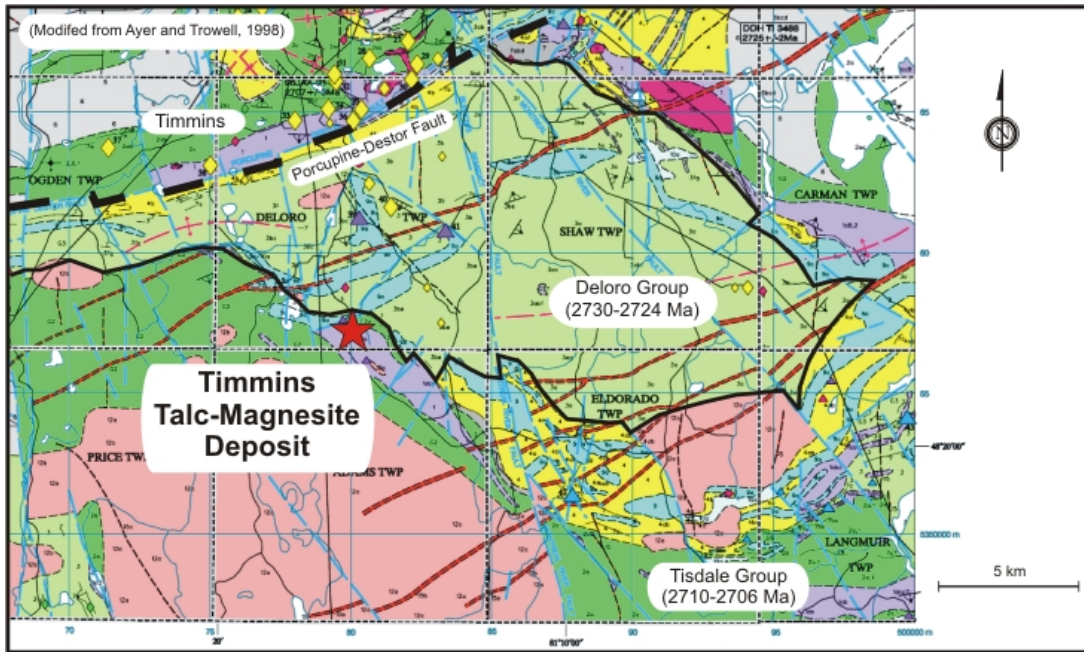
The project area is located along the southeastern flank of a geological structure known as the Shaw Dome, which is interpreted to be a large anticlinal structure that plunges to the southeast (Figure 7.1). The core of the Shaw Dome is composed of an older sequence of rocks that are referred to as the Deloro Group while the peripheries of the Dome are composed of a younger sequence of rocks that are referred to as the Tisdale Group.

The following description of the regional geology was excerpted from Pressacco (1999):

“The Tisdale Group is a mixed assemblage of mafic and ultramafic volcanic rocks containing interbedded clastic and graphitic sediments that have had a complex folding and intrusive history. The rock units include members of the Tisdale, Krist, Porcupine, and Three Nation Assemblages as defined in Jackson and Fyon (1991). Additional descriptions of these rock units have been provided by such other authors as Ferguson, et. al. (1968), Pyke (1982), Brisbin (1998), and the references contained therein. Although a detailed division of the stratigraphic units of this area was done at the assemblage level by Jackson and Fyon (1991), many workers in the Timmins camp utilize the broader nomenclature (e.g. Tisdale and Deloro Groups) as defined by Dunbar (1948) and modified by Pyke (1982). This broader usage is essentially identical to that of Jackson and Fyon, except for the inclusion of the Krist Assemblage in the Tisdale Group. These regional units are briefly summarized below:

The Tisdale Group consists of: i) a lower portion consisting of mixed ultramafic and Mg-tholeiite mafic metavolcanic rocks that have returned an age date of 2707 Ma, ii) a middle sequence dominated by Fe-tholeiitic basalts capped by two distinctive variolitic units, and iii) an upper sequence consisting dominantly of calc-alkaline felsic pyroclastic rocks (Krist Assemblage, 2698 Ma) with minor amounts of carbonaceous argillite. The Tisdale Group is in fault contact in southern Tisdale Township with the older Deloro Group (2727 Ma) located to the south across the Destor-Porcupine fault zone. The rock types in the Deloro Group are dominantly calc-alkaline basalts, andesites, rhyolitic and dacitic tuffs, chemical sediments (Eldorado Assemblage), and lapilli tuffs. A sequence of clastic sediments (Porcupine Assemblage) conformably overlies the Tisdale Group units, and are in turn unconformably overlain by younger clastic sediments of the Timiskaming Assemblage that are at least 2679 Ma in age.

Figure 7.1
Simplified Geology of the Shaw Dome, Timmins (after Ayer and Trowell, 1998)



The Destor-Porcupine Fault is the most significant structure in the area and it consists of a number of zones of shearing and ductile deformation focused mainly within ultramafic flows and intrusions. The fault is either vertical, or dips steeply to the north, and has been traced continuously eastwards to the Duparquet, Quebec area where it splits into the east-trending Manneville Tectonic Zone and the southeast-trending Parforu Lake Fault (Couture 1991). The Destor-Porcupine Fault has an apparent sinistral sense of movement in the Timmins area. A set of brittle faults oriented in a general northwesterly direction is present throughout the region. An example of these brittle faults is the north trending Burrows-Benedict fault which passes through the eastern portions of the mine property. These brittle faults are the youngest structural features in the area and offset all stratigraphic units and older structures.”

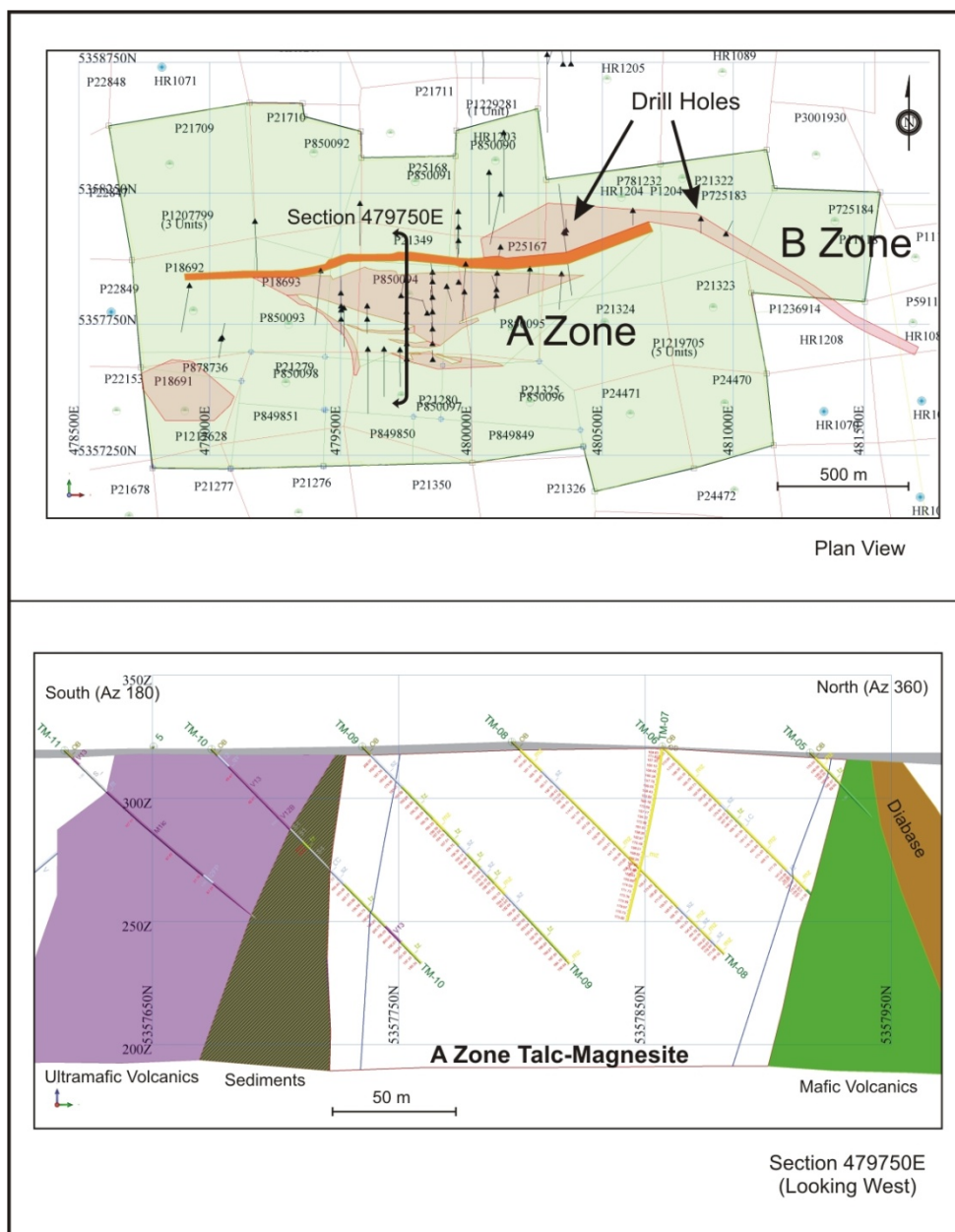
Subsequent work by the Ontario Geological Survey in the area has consisted of detailed compilation, and field work including the selection of samples for geochronological dating and geophysical interpretation (Houlé and Hall, 2007). This work has revealed that the felsic rocks (dacite flows and felsic tuff units) along the peripheries of the Shaw Dome were formed during the same time period as the younger Tisdale Group sequence.

7.2 LOCAL GEOLOGY

The detailed geology of the claim holdings is not well understood, as the presence of a thin cover of glacial deposits results only a few scattered rock outcroppings. Consequently the geology of the property is determined by the use of a number of types of information including surficial mapping, geophysical interpretation and drill hole information.

In brief, the overall trend of the stratigraphic units on the property seems to be generally in an east-west orientation, with the bulk of the claims being underlain by rocks of mafic and ultramafic composition. The presence of an east-west striking diabase dike is interpreted from its magnetic signature, outcrop exposure and from drill hole information (Figure 7.2). The diabase dike has been shown by limited drill hole information to dip moderately to the north, with dips ranging from -60° to -70° . A brief description of the surface geology has been presented in Kretschmar and Kretschmar (1986) as follows:

Figure 7.2
Simplified Local Geology of the Timmins Talc-Magnesite Deposit



“The main magnesite deposit is either a large carbonate-altered dunitic komatiite body or a series of dunitic or peridotitic komatiite flows. It cannot be determined with certainty whether it is one or the other because of the extensive alteration..... Poorly preserved spinifex textures and the fact that the ultramafic sequence occurs on the southwest flank of the Shaw Dome indicate that (stratigraphic, sic) tops are probably to the south. The quartz-carbonate iron formation therefore overlies the altered flows.

Intensely altered dunitic komatiite and peridotitic komatiite have very similar field characteristics. The weathered surface is generally brown to grayish brown and has a patchy appearance. On fresh surface, they are grey, very soft, talcose and generally non-magnetic. Samples fizz in dilute HCl. A reddish colour due to a fine dusting of disseminated hematite and rutile is common. Magnetite is a minor constituent throughout the highly altered zone but increases near the contact with less altered volcanic rocks. This gives rise to a subtle concentric compositional zoning of the main magnesite body. Locally, green mica (fuchsite?) flakes and rusty-weathering pyrite are seen. Quartz veins are very abundant and may constitute up to 30-40 volume percent in some locations. They reflect the intensive carbonate alteration and accompanying release of silica.

Near the southwestern boundary of the main magnesite zone, quartz veins contain hematite and rutile and both quartz veins and disseminated hematite and rutile seem to be more abundant than at the north boundary.

Carbonate alteration is so intense that only vague evidence of the original spinifex textures remains. This consists of repeated talc or chlorite-carbonate zones parallel to the major contacts. Occasionally, talc and chlorite blades radiate in a manner similar to original olivine spinifex blades. The spacing and overall geometry of the chlorite zones also suggest they were originally spinifex.

Massive peridotitic komatiite flows in the southwest corner of the property are unaltered or are less altered (to carbonate). They are light to dark green or bluish green on fresh surface and also weather brown. They are moderately to strongly magnetic and do not fizz in dilute HCl.

Spinifex-bearing and massive polyhedrally-jointed komatiites at the east end of the property are interbedded with siliceous iron formation and are strongly carbonated. They represent a separate, thinner, magnesite-talc zone.

Basaltic komatiite is massive, dense and dark green in colour. No clinopyroxene spinifex was seen, but fragments of brecciated flow tops and vague pillow shapes outcrop.

At the east end of the property, “iron formation” is almost pure quartzite which in places has been recrystallized to quartz veins that cross-cut bedding. Locally iron formation displays beds of jasper or reddish-coloured volcanic fragments and carbonate. At the west end of the property, on the other hand, the “iron formation” is a thin carbonaceous pyritic tuff. Pyrite occurs as concentrically zoned balls. In one place the carbonaceous unit directly overlies the carbonated komatiitic flows and in another, there is thin (several metres thick) argillaceous tuff interposed.

The host volcanic rocks that overlie the magnesite-talc zone are massive andesite, andesite breccia and minor dacite and quartz-crystal lapilli-tuff. Locally units are highly carbonate-

altered. This unit overlies the argillaceous tuff. The underlying basalt is massive and dark green in colour and displays vague outlines of pillows.

The evidence from field and textural relationships is that carbonate alteration is stratigraphically and also probably compositionally controlled. Alteration of dunitic komatiite or the MgO-rich basal portions of peridotitic spinifex-bearing flows is most intense, while host peridotitic komatiite and intermediate volcanic rocks are less carbonated.”

Several occurrences of talc-magnesite are known to be present on the property, the largest of which is located to the south of the diabase dike and is referred to as the A Zone. This zone has been traced by surface trenching, mapping and drill hole information along a strike length of approximately 1,000 metres, to depths of approximately 100 to 150 metres and achieves widths of 200 metres at surface. The information available to date suggests that the A Zone has a near vertical dip in an overall sense, although the north and south contacts can be seen to locally dip steeply to either the north or south. A second zone of magnesite mineralization is located to the north of the diabase dike, although its dimensions and extents are known only from a small number of drill holes that suggest a strike length on the order of 1,000 metres, with widths measuring on the order of a few 10's of metres. A third zone of mineralization is located in the southwestern portions of the claim holdings and is exposed in surface outcroppings, but the extents of this zone are not known in detail.

8.0 DEPOSIT TYPES

The deposit under consideration has long been viewed as a potential source of magnesite and talc. These minerals are found in a variety of deposit types throughout the world and have a variety of end uses. A brief description of the various deposit types of magnesite is provided in Duncan and McCracken (1994). A brief description of the various forms of talc deposits is provided by Harbin (2002). The following excerpts are reproduced from these publications.

8.1 MAGNESITE

“The best known of the minerals directly and widely exploited for its magnesia content is magnesite (MgCO_3), one of the calcite group of rhombohedral carbonates, which includes calcite (CaCO_3), siderite (Fe_2CO_3) and rhodocrosite (MnCO_3), among others. ...

Dolomite is not a member of the calcite group, but it occurs when calcium and magnesium ions alternate in equal number in an ordered structure among carbonate ions. The result of this relationship is that calcite and dolomite are commonly found intermixed with magnesite. They occur, commonly, as identifiable crystal entities, which can be separated to a varying degree from the magnesite by beneficiation techniques.

Magnesite, when pure, contains 47.8% MgO and 52.2% CO_2 . The pure mineral is found occasionally as transparent crystals resembling calcite.

Although the genesis of natural magnesite deposits can be complex, it is distinguished in nature in two distinct physical forms, namely crystalline, (with a wide range of visible crystal sizes) and cryptocrystalline, sometimes referred to as amorphous, where the crystal size is not detectable to the eye and will range from 1 to 10 micrometers. The two types not only differ in crystal structure but in the sizes of the deposits and modes of formations.

8.1.1 Crystalline Magnesite

Crystalline magnesite deposits are generally of large size – on the order of several million tons of ore. Most of the deposits have a striking resemblance to each other, indicating a common mechanism of formation. The deposits are usually associated with dolomite as a host rock, but some, such as those in Brazil, are in limestone formations. In these cases the magnesite is generally not in direct contact with the limestone but is separated by a dolomitized zone.

Magnesite is closely associated both spatially and chronologically with intrusive activity. It has been suggested that igneous activity has been the source of the initial CO_2 -bearing solutions. The mineralogy of magnesite deposits suggests a high temperature of formation. The world's major deposits of crystalline magnesite occur in Austria, Brazil, Canada, Australia (Tasmania), the former USSR, North Korea, China, Nepal, Czechoslovakia, Spain and the United States.

Dolomite geologic measures are widely viewed as being sedimentary, and some investigations have also suggested a sedimentary origin for both the magnesite and the enclosing dolomite, but consensus favours secondary placement of magnesite in pre-existing

dolomite by hydrothermal action on a volume-for-volume basis. The immense size of the magnesite deposit in Liaoning Province of China, which extends for some 60 km and reportedly contains some 130 Gt has led to the proposal that the magnesite was precipitated with the dolomite in a Precambrian lagoon or shallow sea.

At Kilmar, Québec, there is a rather unique occurrence of magnesite where the intermixed rock of magnesite-dolomite is thought to be the product of hydrothermal dolomitization of the limestone.

A large deposit of low lime crystalline magnesite occurs at Timmins, Ontario, intermixed with talc and quartz. The iron content is on the order of 3% Fe₂O₃. Since dolomite is absent it is suggested that this magnesite formed from magnesium-rich solutions in ultrabasic rocks.

The multi-million ton essentially undeveloped deposit of magnesite at Lamasangu, Nepal, is also lime-poor with a fairly high iron content and considerable associated talc.

Although the field evidence is clear and constant, the specific action of the hydrothermal solutions and the mechanism of replacement is not yet fully understood. Mechanisms generally suggested for the hydrothermal emplacement of magnesite in dolomite involve a reaction with Mg-rich, CO₂-bearing solutions. Although these CO₂-bearing solutions may be conveniently derived from nearby intrusive bodies, it is not easy to account for the required Mg-enrichment of such solutions.

8.1.2 Cryptocrystalline Magnesite

Cryptocrystalline or amorphous magnesite is an alteration of serpentine or allied magnesium-bearing rocks which have been subjected to the action of carbonate seawater. The serpentine which lies near or surrounds the magnesite is itself an alteration product of ultrabasic rocks. The mode of formation of the magnesite limits the amounts of impurities to relatively small quantities of iron, lime, and silica.

Occurrences of this type of magnesite are fairly common throughout the world, but because of their usually limited size, few, with the notable exceptions of those in Greece, India, Turkey and Australia, are worked commercially. The deposits are of two types. The first is closely associated with the serpentine mass where the magnesite occurs as veins of various thicknesses, and as massive bodies and lenticular masses or as stockwork with irregular veins from a few centimetres to several meters in thickness. The second is also associated with ultrabasic rocks as the magnesium source, but here the host rock was weathered, eroded, transported and deposited in a lacustrine environment. At this point decomposition was completed and magnesite was precipitated in a mud matrix together with impurities. Subsequently, a recrystallization took place and magnesite was accumulated to form nodules and boulders (lumps) on the shores of the mud-bearing lakes, thus resulting in large scale deposits of secondary magnesite.”

8.2 TALC

“Resources: Large-scale talc deposits form when magnesium in magnesium-rich rocks reacts with hydrothermal silica in the final phases of regional or contact metamorphism. Most commonly, talc (Mg₃Si₄O₁₀(OH)₂) or steatite (the massive and fine grained form of talc)

replaces serpentine in an ultramafic rock like peridotite, either completely or more likely forming an outer rind with zoning (typically granite (silica source), vermiculite, chlorite, actinolite, talc, talc-carbonate and unaltered serpentinite). There is a close geological relationship between talc and chrysotile (Vermont, Georgia, California, Texas, Ontario, Québec, Spain, Finland). Serpentinization of a mafic rock like gabbro produces serpentinite that may be steatized yielding low quality soapstone (Virginia). High quality vein talc forms through the hydrothermal alteration of dolostone by silica- and magnesium-bearing hydrothermal fluids (Alabama, Montana, California, west Texas, Western Australia, South Korea, China). Regional or contact metamorphism of a siliceous dolostone can generate tremolite- or actinolite-containing dolomitic marble that may be attacked by silica-bearing fluids to form talc; or the contact metamorphism of dolomitic strata by granite produces bodies of high purity talc (North Carolina, California, New York, Georgia, Ontario, Italy, Austria, France, Spain, Brazil)."

Additional information regarding the formation of talc deposits can be found in Piniakiewicz et. al. (1994). A summary of the principal types of talc deposits is presented in Table 8.1.

Table 8.1
Types of Talc Deposits and Formation (after Wilson, 2009)

Type of talc deposit	Formation of deposit	Selected locations
Magnesium Carbonate (Represent 60-70% of world's production and provide some of the purest and whitest talc)	Transformation of dolomite and magnesite in the presence of silica. Silica is provided by hydrothermal circulation	Yellowstone, Montana, USA, China, North Korea, Brazil, Respina, Spain
Serpentinite (Represent 20% of world's production)	Commonly called soapstone - is generally grey and never pure. Often upgraded by flotation to increase talc content and whiteness	Finland, Egypt, Vermont, USA, Quebec, Ontario, Canada
Siliceous/silico-aluminous rocks (Represent about 10% of world's production)	Transformation of quartzite (provides silica) with silico-aluminous rocks such as schist and gneiss, chlorite can form as well as talc associated with magnesium carbonate type	Trimouns, France

Source: Rio Tinto Minerals

9.0 MINERALIZATION

The following description of the mineralization is excerpted from Kretschmar and Kretschmar (1986) which describes the status of the knowledge of the mineralization found at the Timmins Talc-Magnesite deposit at the time:

“In 1959, A.T. Griffis recognized that an extensive talc-carbonate zone in Deloro Township was, in fact, a magnesite-talc altered ultramafic rock. Carbonate zones had been described as early as 1944 and the gold potential of the carbonate zones was considered to be high. In 1962, the property was acquired by Canadian Magnesite Mines Limited. Since then, considerable work consisting of industrial testing, geological mapping and chemical analyses has been carried out by Canadian Magnesite Mines Limited with a view to recovering the magnesite and/or talc.

The deposit consists of either a single large magnesite-talc altered dunitic komatiite or a series of altered flows. It is hosted by basaltic or andesitic lavas, serpentinized peridotitic komatiite and quartz-carbonate iron formation. It is about 1,800 m long, has a maximum width of 300 m and has been drilled to a depth of 120 m.

The very low CaO content in the magnesite-talc body makes the carbonate mineralization a potential source of refractory magnesia. However, iron substitution in the magnesite lattice means that the iron cannot be removed by standard physical methods. The iron, therefore, limits the grade of magnesia concentrate or dead-burned refractory product. Extensive metallurgical testing by Canadian Magnesite Mines over a period of years has demonstrated that the best grade of magnesite obtained by flotation concentration produces a 92-94 percent dead-burned MgO product with 4-6 percent Fe₂O₃. A typical analysis of dead-burned MgO product is given as:

MgO	92.5 percent
Fe ₂ O ₃	6.0-6.5 percent
SiO ₂	1.0 percent
CaO	Less than 0.2 percent
Miscellaneous	Less than 0.5 percent
Boron	10 ppm
Bulk density is 3.45 to 3.47 at dead-burning temperature of 1,650°C	

By-product talc also produced by flotation is given as:

Total MgO	31.61 percent
SiO ₂	62.64 percent
Total Fe*	0.35 percent
LOI	5.27 percent
CaO	Nil
Al ₂ O ₃	Nil

* total Fe as Fe₂O₃”

10.0 EXPLORATION

A summary of the exploration activities that have been carried out on the property has been provided in Chapter 6 above.

11.0 DRILLING

A summary of the type of drilling procedures that were followed by Globex for the 2008 drilling campaign is presented in Zalnieriunas (2009) and is excerpted below:

“Drill collars were established using the 1998 Royal Oak surface metric grid and hand held Garmin GPS instruments. Drilling was carried out by Timmins-based crews from Bradley Bro.’s Ltd.. A skid mounted, Longyear 17A drill rig was mobilized into the property on October 21, 2008. Diamond drilling was completed on November 20, 2008, with all equipment de-mobilized out during the subsequent week. All core logging was completed by December 12, 2008 and all core cutting and geotechnical studies (RQD, specific gravity, etc.) were completed by January 9, 2009. No drilling difficulties were experienced. Several diamond drill hole casings were found to make water. These sites are noted in the remarks section of the individual core logs and all of these casings have been properly capped. These bore holes may provide an adequate source of water in the future, as lack of surface drilling water in the immediate area has proven to be an issue in the past.

Supervision and core logging was carried out by R.V. Zalnieriunas, P.Geo. with the geotechnical aid of Messrs. D. Vachon of Larder Lake and A. Soroachak of Matachewan, Ontario. Drill logging was carried out using an IBM X41 ThinkPad laptop using GeoticLog and GeoticGraph software licensed from Géotique Inc., of Val d’Or, QC. Logging data is stored as a MS-Access compatible “*.mdb” database file. Description of these software programs is available at the company’s web site (see www.geotique.net).

All physical work was carried out on claims P 850090, P 850094, P 850095, P 850096 and P 850097.

Core was transported to a rented core shack of Globex Mining Enterprises Inc. in Larder Lake, ON, where it was logged. Visual estimates of mineralization were completed as part of the logging process and are reported within the drill logs. Assay results received to date consist of limited gold and nickel geochemical assays that were collected in pyritic wall rock sections to the principal magnesite target zones. Various geochemical whole rock analyses, scans and assays are pending, and will be reported at a later date.

Except for a few gold assays, no analytical results have been received to date for the current work program, therefore the following discussion should be viewed as being preliminary in nature only, and is restricted to visual observations of core.

The core of the alteration zone is a massive, coarse grained, over-printed and re-crystallized magnesite and lesser talc unit (current database lithology code -mz) showing no visible relic original textures. Within surface stripped zones (i.e. Pamour Pit area), the exposures show a well developed set of quartz-carbonate extensional veins and stockworks, with subvertical to steep south dipping linker veins that strike easterly and are sigmoidally curved, moderately dipping tension ladder structures. The presence of quartz veins probably played a role in forming positive weathering ridges, however, drilling indicates that the “high-grade” magnesite zones are wider than that exposed on surface, and carry much less veining than anticipated. Additional diamond drilling in other directions will be needed to confirm this interpretation. Typically, the core zone area is a leucocratic pale grey in colour showing localized medium pink to dark red (hematitic?) colour bands. Specularite (specular hematite)

occurs ubiquitously throughout, either as fine grained disseminated grains and spots and as centimetric scale, disrupted (boudinaged?), coarse to medium grained cross cutting stringers. Specularite appears in part to be replacing subhedral to euhedral magnetite grain forms. Often, a set of centimetric dark grey fracture/joint controlled alteration is visible as stringers or stockwork. This will locally grade into areas of alternating, cleavage-controlled colour layering. This material is interpreted to represent black magnesium-rich chlorite development.

The transition zone has been logged as a talc-carbonate-chlorite zone (database lithology code -tz). It is physically similar to the above described core magnesite zone, other than it tends to be darker in tone (medium grey) due to the presence of aphanitic to fine grained black chlorite and tends to overall be more bladed to foliated in texture. The zone may be richer in talc (still to be confirmed by analytical means) and has a strongly developed carbonate groundmass, but shows variable lesser amounts of magnesite in inverse proportion to developed ferro-dolomite (as evidenced by positive iron stain responses).

The outer carbonate zone, logged as serpentine-talc-carbonate (database lithology code -sz) is characterized by the presence of medium green, vari-textured serpentine. The proportion of ferro-dolomite to magnesite has not yet been determined. As with the above mentioned core and transition zones, no calcite has been noted.”

A listing of the drill hole collar locations for all holes contained within the drill hole database as of June, 2009 is presented in Table 11.1. The locations of these drill holes relative to the claim boundary and the mineralized zones have been presented in Figure 7.2 above.

Table 11.1
Listing of Drill Hole Collar Information (NAD83, UTM Zone 17N), Timmins Talc-Magnesite Project

Hole Id	Northing (m)	Easting (m)	Elevation (m)	Depth (m)	Dip (°)	Azimuth (°)
1	5357952.88	479423.91	315.00	309.68	-46.00	186.00
10	5358327.84	480067.32	312.00	278.89	-45.00	179.81
11	5359101.80	480352.50	312.00	367.59	-45.00	179.81
12	5359087.50	480231.40	312.00	366.98	-45.00	179.81
13	5359080.40	480170.90	312.00	369.42	-45.00	179.81
14	5359368.50	480543.00	311.00	331.62	-40.00	134.81
15	5358209.45	479573.98	314.00	225.55	-45.00	179.81
16	5358141.23	479172.83	314.00	305.41	-45.00	177.24
17	5358778.08	480289.37	312.00	336.50	-60.00	179.81
18	5358741.90	480350.30	312.00	345.64	-52.00	359.63
19	5358742.80	480380.80	312.00	298.09	-50.00	358.98
2	5357810.20	479513.02	318.00	161.64	-45.00	179.81
20	5359010.40	480392.20	310.00	198.12	-47.00	281.81
21	5359019.30	480449.30	311.00	239.27	-54.00	179.81
22	5358992.90	480426.40	310.00	232.26	-45.00	257.81
23	5359078.90	480170.90	312.00	328.88	-45.00	0.81
24	5358095.46	480359.14	310.00	310.90	-45.00	349.81
25	5358100.21	480353.31	310.00	342.29	-45.00	172.81
26	5358918.60	480073.60	310.00	328.27	-45.00	179.81
27	5357697.19	479047.87	313.00	103.33	-40.00	189.81

Hole Id	Northing (m)	Easting (m)	Elevation (m)	Depth (m)	Dip (°)	Azimuth (°)
28	5357691.96	479041.49	313.00	104.24	-50.00	20.81
29	5357895.71	478921.98	313.00	252.37	-45.00	189.81
3	5357652.45	479604.29	325.00	274.62	-45.00	179.81
4	5357652.71	479666.11	323.00	199.64	-45.00	179.81
5	5357650.39	479726.78	321.00	185.93	-55.00	179.81
6	5358245.50	480111.38	312.00	279.90	-45.00	191.81
7	5358479.87	480123.37	311.00	385.57	-34.00	179.81
8	5358778.08	480289.37	312.00	335.28	-35.00	179.81
9	5358778.11	480289.40	312.00	274.32	-35.00	359.81
KDE99-01	5357817.64	479601.51	318.50	77.00	-45.00	179.81
KDE99-02	5357767.64	479601.67	319.50	74.00	-45.00	179.81
M-1	5357940.60	480345.04	310.00	190.20	-45.00	184.08
M-2	5357943.15	480098.73	314.50	200.56	-45.00	184.88
M-3	5357958.87	480223.28	312.00	132.89	-45.00	184.88
M-4	5357978.00	479978.42	316.00	152.40	-45.00	184.88
M-5	5357856.27	480095.15	315.00	87.17	-45.00	184.08
M-6	5357946.95	479851.73	316.00	147.83	-45.00	184.08
M-7	5357871.51	479973.60	317.00	156.97	-45.00	184.08
M-8	5357946.95	479851.73	316.00	152.10	-45.00	184.08
PM-85-0	5357789.64	479830.75	320.00	76.20	-40.00	342.18
PM-85-1	5357892.83	479906.07	319.00	76.20	-40.00	162.18
PM-85-2	5357880.10	480096.23	315.00	76.20	-40.00	342.18
PM-85-3	5358043.13	480111.36	313.00	76.20	-40.00	192.18
PM-85-4	5358107.50	480362.29	310.00	57.91	-40.00	0.18
PM-85-5	5358182.22	480617.29	313.00	76.20	-45.00	180.18
PM-85-6	5358150.74	480876.74	313.00	76.20	-45.00	180.18
PM-85-7	5358093.55	480972.76	313.00	76.20	-40.00	26.18
TM-01	5357817.32	479501.51	318.50	83.07	-45.00	179.81
TM-02	5357767.32	479501.67	319.50	80.00	-45.00	179.81
TM-03	5357802.32	479501.55	319.00	89.77	-45.00	359.81
TM-04	5357867.32	479501.35	318.00	89.83	-45.00	359.81
TM-05	5357917.01	479750.89	318.50	118.00	-45.00	357.81
TM-06	5357857.00	479731.00	321.00	120.25	-45.00	5.81
TM-07	5357857.00	479731.00	321.00	120.98	-45.00	95.81
TM-08	5357795.92	479751.83	323.00	122.00	-45.00	3.81
TM-09	5357735.22	479752.47	321.00	121.94	-45.00	359.81
TM-10	5357673.92	479752.67	320.00	121.94	-45.00	359.81
TM-11	5357614.32	479752.71	319.50	121.82	-45.00	357.81
TM-12	5357612.64	479852.01	316.50	56.00	-45.00	359.81
TM-13	5357673.84	479851.47	317.00	121.86	-45.00	1.81
TM-14	5357729.54	479851.49	317.00	121.54	-45.00	359.81
TM-15	5357794.74	479851.58	319.50	122.04	-45.00	1.81
TM-16	5357851.04	479851.40	321.00	122.03	-45.00	1.81
TM-17	5357910.44	479851.01	318.00	122.06	-45.00	1.81
TM-18	5357908.86	479951.22	318.00	152.09	-85.00	356.81
TM-19	5358066.95	479950.71	313.00	121.82	-45.00	183.81
TM-20	5358120.35	479950.54	313.00	140.00	-45.00	179.81
TM-21	5358178.15	479949.85	313.00	199.81	-45.00	179.81

12.0 SAMPLING METHOD AND APPROACH

The approach of Globex Mining Enterprises Inc. has been to mitigate the potential effects of weathering on surface rock exposures by solely relying on analysis of fresh rock samples obtained by diamond drill coring methods. To date, these samples have been subjected to standard methods of analysis to determine their “whole rock” cation composition and multi-element scans by reputable Canadian commercial laboratories. Additional soluble elemental determinations using a single acid digestion for Al, Ca, Cr, Cu, Fe, Mg (and MgO), Mn, Ni, Pb and Zn as well as mineral identification of all samples by QEMSCAN™ methods were also carried out.

Sampling was carried out on all drilled intersections of carbonate alteration zones and was continued into the surrounding wall rock units. The drill collar spacing used has varied slightly over time, but is a nominal distance of 100 metres along strike and 60 metres distance across the width of the targeted “A Zone” carbonate zone. Modern diamond drilling to date covers an approximate strike length of the A Zone of 450 metres (from Line 6+00E to Line 10+50E on the local surface grid) by an approximate width of 200 metres (from 0+50m S to 2+50m S on the local surface grid).

Sampling was carried out along at a standard 3 metre core length spacing within individual geological units, with shorter lengths taken as dictated at visible lithological or alteration zone contacts.

Diamond drill logs and examination of available drill core indicate that exceptionally good core recoveries are the norm for drill testing this mineralization type. There are no noted drilling, sampling or recovery factors that could materially impact the accuracy and reliability of the analytical results. A systemic program of rock quality data (RQD) determinations was carried out during the company’s 2008 diamond drilling campaign covering the carbonate mineralized zones and enclosing wall rock. The overall statistics for all rock types of this work were:

- The average examined length of core to which RQD’s were determined was 2.95 m.
- The average recovered core interval was 2.94 m.
- The average RQD value was 92.02.
- The average number of joints or cracks noted in core were 14.50 over the examined distance (or an approximate average of 5 joints per metre).

The 2008 drill core was transported from the field to the secure core logging facility located in Larder Lake by field technicians employed by Globex. Prior drilling campaigns had core transported to Rouyn-Noranda, Quebec. At the logging facilities, the geologist prepared a visual description of the lithologies, alteration and mineralization that were traversed by the drill hole. The geologist then marked those intervals of core to be sampled for analysis. The length of the samples ranged from a minimum of 0.30 m to a maximum of 3.67 m, with a

nominal maximum sample length of 3.0 m being employed. Care was taken to ensure that the samples corresponded to either geological or alteration intervals present in the core. The drill core provided samples of high quality, which were representative of any alteration, veining or sulphide accumulations that were intersected by the drill hole. No factors which may have resulted in a sample bias were identified.

The core was then transferred to the core technician who measured the specific gravity of all marked samples and also determined, at spot intervals of about every 10 metres, the specific gravity of the balance of the drill hole (i.e. the non-sampled portions of the drill core) using the Archimedes principle. The technician then proceeded to separate the core into two halves by means of cutting the samples using an electrical core saw equipped with a diamond impregnated blade. One half of the core was placed into an 8-mil plastic bag and forwarded to the assay laboratory for the analytical determinations as described above, and for some short intervals in the country rock which showed sulphide mineralization for the gold and nickel content. The remaining half core was retained for future reference.

A summary of the significant mineralized intersections that are contained within the domain model for the A Zone is presented in Table 12.1.

Table 12.1
Summary of Significant Mineralized Intersections, Timmins Talc-Magnesite Project

DDH	From (m)	To (m)	Core Length (m)	Horiz. Width (m)	ETW (m)	S.G.	Soluble MgO (%)	Soluble Ca (%)	Magnesite (%)	Talc (%)
Canadian Magnesite Drilling (Main Zone):										
M-2	7.01	200.56	193.55	156.40	154.02	-	23.7	-	-	-
M-3	12.95	106.25	93.30	75.39	74.24	-	23.43	-	-	-
M-4	55.44	149.66	94.22	76.14	74.98	-	20.69	-	-	-
M-5	6.10	51.82	45.72	37.06	36.50	-	23.72	-	-	-
M-6	88.82	145.05	56.23	45.58	44.89	-	23.44	-	-	-
M-7	1.52	152.10	150.58	122.05	120.20	-	24.97	-	-	-
M-8	4.57	152.10	147.53	119.58	117.76	-	24.19	-	-	-
Globex Enterprises Drilling (A Zone):										
TM-01	11.11	35.33	24.22	20.70	20.39	-	22.70	0.28	49.87	31.94
TM-01	55.25	83.07	27.82	24.21	23.84	-	21.72	0.17	50.00	41.11
TM-02	17.95	27.52	9.57	8.10	7.98	-	12.74	1.14	23.73	57.78
TM-02	31.00	37.30	6.30	5.37	5.29	-	12.31	1.66	16.16	52.79
TM-03	4.49	89.77	85.28	55.66	54.81	-	22.30	0.21	54.54	28.91
TM-04	4.10	71.50	67.40	42.48	41.83	-	22.22	0.52	50.63	27.67
TM-05	2.94	9.66	6.72	3.82	3.76	2.94	21.35	0.17	45.2	42.41
TM-06	0.94	70.00	69.06	39.94	39.33	2.97	19.58	0.33	47.2	37.94
TM-07	0.20	120.98	120.78	34.34	33.82	2.98	23.48	0.07	57.4	23.97
TM-08	5.62	122.00	116.38	67.35	66.33	2.88	21.88	0.2	51.5	33.82
TM-09	5.00	121.94	116.94	65.70	64.70	2.96	20	0.36	49.8	40.82

DDH	From (m)	To (m)	Core Length (m)	Horiz. Width (m)	ETW (m)	S.G.	Soluble MgO (%)	Soluble Ca (%)	Magnesite (%)	Talc (%)
TM-10	83.00	121.94	38.94	22.25	21.91	2.96	20.86	0.31	49.7	43.05
TM-14	76.00	121.54	45.54	25.94	25.55	2.96	20.42	0.16	55.9	33.34
TM-15	7.00	122.04	115.04	67.67	66.64	2.98	22.37	0.11	55.4	29.2
TM-16	1.40	77.00	75.60	41.15	40.52	2.99	20.57	0.03	54.2	34.76
TM-18	63.50	152.00	88.50	11.04	10.87	2.91	21.37	0.11	55.9	31.42
Pamour Exploration (PM-85-4) and Pentland Firth Drilling (A Zone):										
PM-85-4	2.13	39.62	37.49	24.47	24.10	-	26.04	-	-	20.19
KDE99-01	3.00	77.00	74.00	60.79	59.87	-	20.47	0.06	53.7	28.86
KDE99-02	3.50	74.00	70.50	59.35	58.45	-	17.12	0.22	48.7	37.88
Porcupine Southgate Drilling (Main Zone and Main Zone 2):										
01	106.38	153.92	47.54	36.31	35.76	-	22.1	-	-	-
01	246.28	296.88	50.60	38.64	38.05	-	18.3	-	-	-
06	99.67	196.90	97.23	74.02	72.90	-	16.1	-	-	-
10	261.52	277.67	16.15	13.26	13.06	-	15.4	-	-	-
25	4.57	55.78	51.21	42.55	41.90	-	21.6	-	-	-
25	127.10	342.29	215.19	178.78	176.06	-	23.38	-	-	-

*Note: ETW=Estimated True Width

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

All samples of cut drill core were delivered as batch shipments to the sample receiving facilities of Expert Laboratories, Inc., located at 127 Boulevard Industriel, Rouyn-Noranda, Québec. The laboratory conducted all aspects of the sample preparation. There, the samples were dried and crushed to pass a 10 mesh screen. A 300-gram subsample was taken for pulverization to a nominal -200 mesh. The pulps were sub-split, with one split consisting of a minimum 25 grams of pulp material forwarded to a sub-contracting laboratory for elemental analysis. From the remaining coarse reject material, a nominal 1,000 grams of material was also riffled out and set aside for forwarding to another laboratory for mineral identification, with the remaining crushed rejects being retained. In some cases, a 29.166-gram sub-sample of this pulp (1 assay-ton) was taken and was fused following the standard procedures used in a fire assay method. The gold and nickel contents of certain samples were determined using Atomic Absorption Spectroscopy. The laboratory was instructed that any samples found to contain greater than 1 g/t Au were to be subjected to a re-assay, whereby the gold content was determined using a gravimetric fire assay method.

The analytical work carried out by other laboratories is described below.

Lithogeochemical analysis was carried out by Activation Laboratories (ACTLABS) of 1428 Sandhill Drive, Ancaster, ON, L9G 4V5, and included elemental whole rock analysis by ICP (Code WRA-ICP 4B), gravimetric water (Code 4F), ferrous iron by titration (FeO, Code 4F), carbon dioxide by colourimetry (Code 4F), SO₄ by infrared (Code 4F), 35 multi-trace element scan by ICP/OES following aqua regia extraction (Code 1E2), and elemental leach for soluble magnesia (MgO) and soluble Ca including the following elements: Mg, Ni, Al, Ca, Fe, Mn, Cr, Pb, Cu and Zn. In addition to using its own blanks and standards, the laboratory was also instructed to prepare and use the customer supplied standard PRS-062708 every 30th sample.

Mineralogical characterization using ExplominTM was carried out by SGS Minerals Services – Advanced Mineralogical Facility, at SGS Lakefield Research Limited, P.O. Box 4300, 185 Concession Street, Lakefield, Ontario. There, each sample was received as -10 mesh coarse reject material, was then riffled and a portion was further stage-crushed to 80% passing 212 microns to get homogeneous splits for preparation of polished sections. One graphite impregnated polished epoxy grain mount was prepared from each sample. However, for every ten samples a replicate polished section was prepared and analyzed to determine the reproducibility and replication of the data. The element concentrations determined by mineralogical characterization of the duplicated samples were reconciled with a Whole Rock Analysis (WRA) by X-Ray fluorescence (XRF). All polished sections were submitted for mineralogical analyses with QEMSCANTM / ExplominTM Bulk Mineral Analysis (BMA) mode of measurement. This BMA is performed by the linear intercept method, in which the electron beam is rastered at a pre-defined point spacing (nominally 4 micrometres, but variable with particle size) along several lines per field. This measurement provides a robust data set for determination of the bulk mineralogy, the mineral identities and their proportions, along with grain size measurements. For each sample, approximately 40,000 – 60,000 data

points are collected. In addition to the QEMSCANTM analysis, selected samples were also submitted for Electron Microprobe Analysis (EMPA) to quantify the mineral chemistries of the magnesite varieties, talc, chlorites and dolomite. In addition the QEMSCANTM calculated assays and the direct chemical assays from the WRA were compared as a quality control for each of the samples. The overall correlation coefficient was 0.97. Additional background information regarding the QEMSCANTM method is provided in Appendix I.

A series of blank, standard reference materials and “quarter-core” duplicates were inserted by Globex with the samples delivered to Expert Laboratories. In respect of the blank samples, Globex inserted small pieces of cement blocks along with the sample stream in order to monitor for any contamination of magnesite and talc that may occur during the crushing, pulverizing, fusion and analytical stages (Figure 13.1). As well, the various laboratories insert a series of either blank samples during the fusion (barren flux only) and during the analytical stage (blank solution) to monitor for any contamination that may occur during those steps. A series of three certified reference materials for gold supplied by Rocklabs Ltd, of Auckland, New Zealand were inserted by Globex into the sample stream, as well as an internal, well defined sample collected by Globex staff of the A Zone in the Pamour pit area.

While the use of cement blocks as material to be used as a blank sample may be appropriate as a monitor of talc contamination, Micon considers that this material is not appropriate for use to monitor for contamination of soluble Ca or soluble MgO as cement is a mixture of materials containing significant quantities of limestone and/or dolomite and may contain trace amounts of magnesite.

Micon therefore recommends that Globex purchase certified blank material that is composed of pure quartz sand for use in monitoring for any contamination that may occur during the sample preparation stages.

The results of the blank control samples suggest that a low level of background talc and magnesite of up to 2% may be present in the sample preparation process. Micon recommends that the sample preparation protocols that are used to prepare the samples for determination of the talc and magnesite contents be reviewed to ensure that no cross-contamination is occurring. Selection of a barren quartz material to use as a blank sample medium may be useful in reducing the suggested levels of background mineralization.

Globex also undertook a duplicate assaying program, where quarter core duplicate samples were submitted to Activation Laboratories for re-assaying of the soluble MgO and soluble Ca contents of the sample material (Figures 13.2 and 13.3). As well, a program of duplicate assaying for soluble MgO and soluble Ca, where sample pulps was re-assayed by Activation Laboratories, was undertaken (Figures 13.4 and 13.5). Duplicate samples of coarse rejects were also submitted to SGS Lakefield for re-assaying of the magnesite and talc contents (Figures 13.6 and 13.7).

Figure 13.1
Control Chart for Cement Blank Material

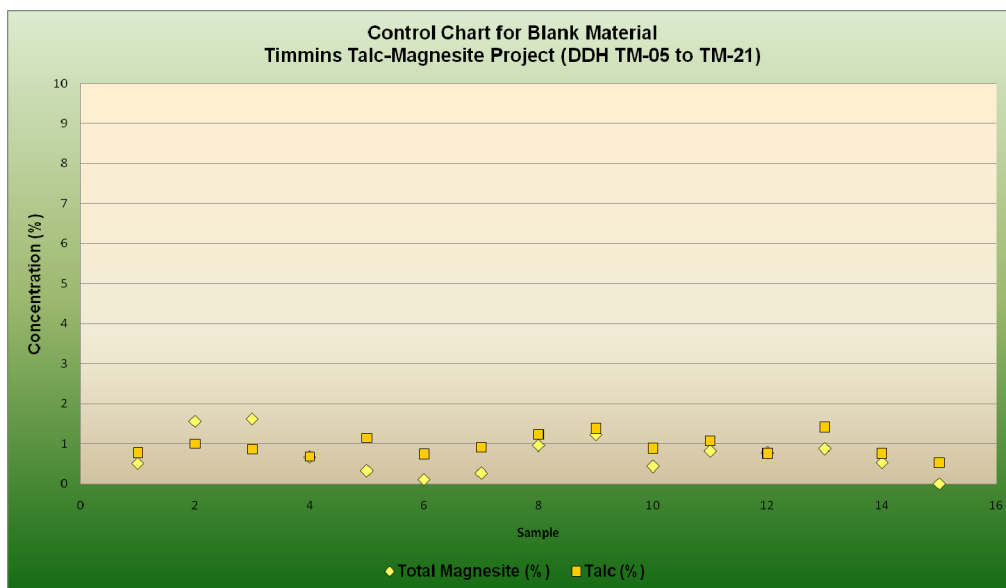


Figure 13.2
Duplicate Sample Results (Quarter Core) for Soluble MgO

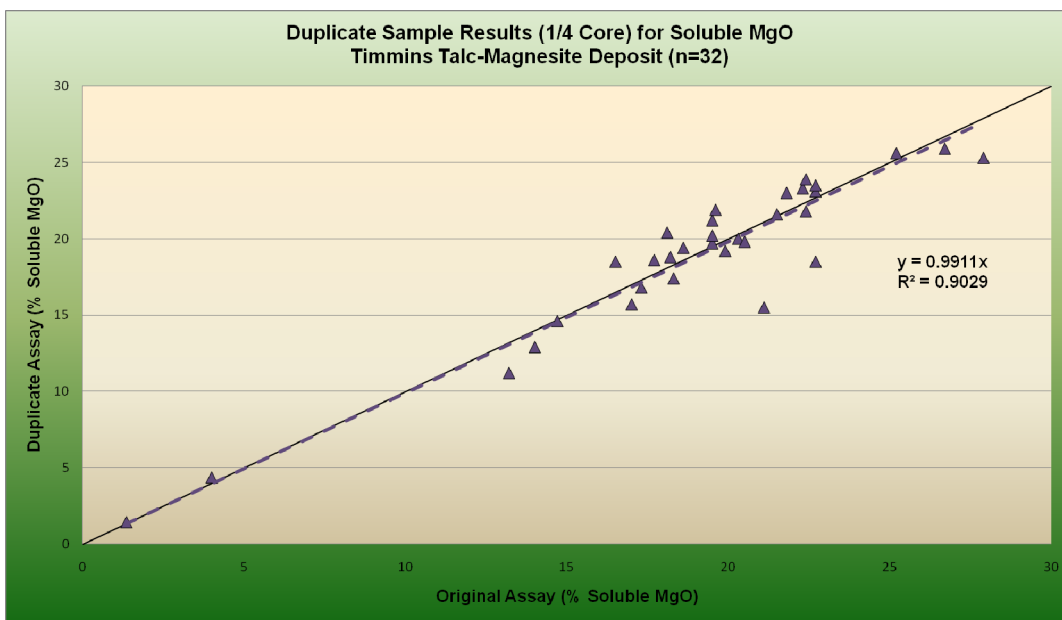


Figure 13.3
Duplicate Sample Results (Quarter Core) for Soluble Ca

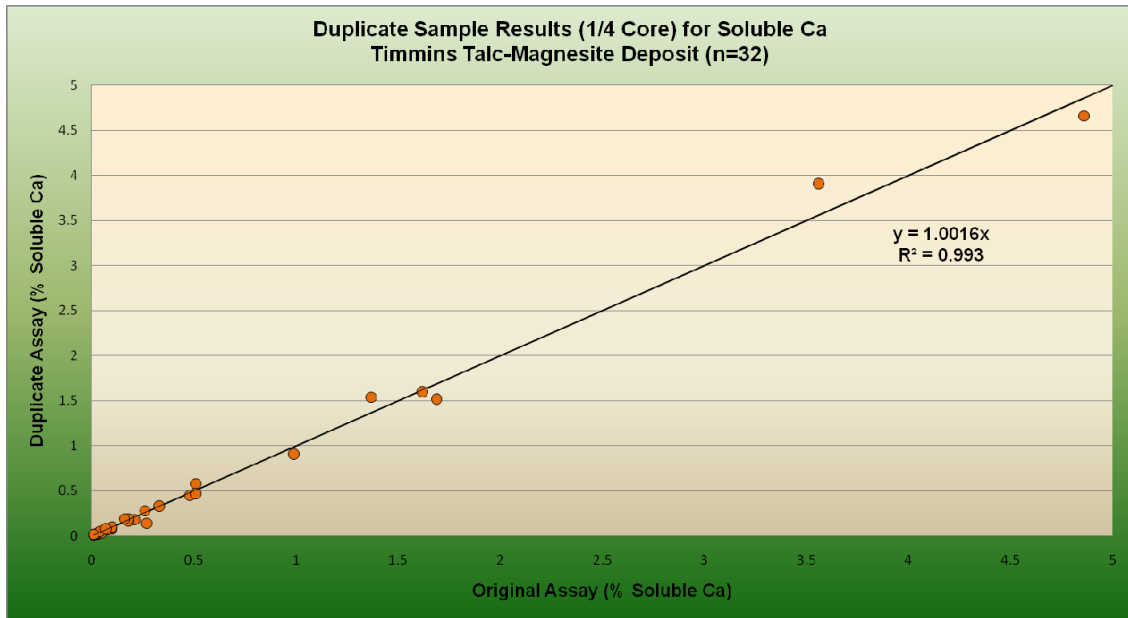


Figure 13.4
Duplicate Sample Results (Pulps) for Soluble MgO

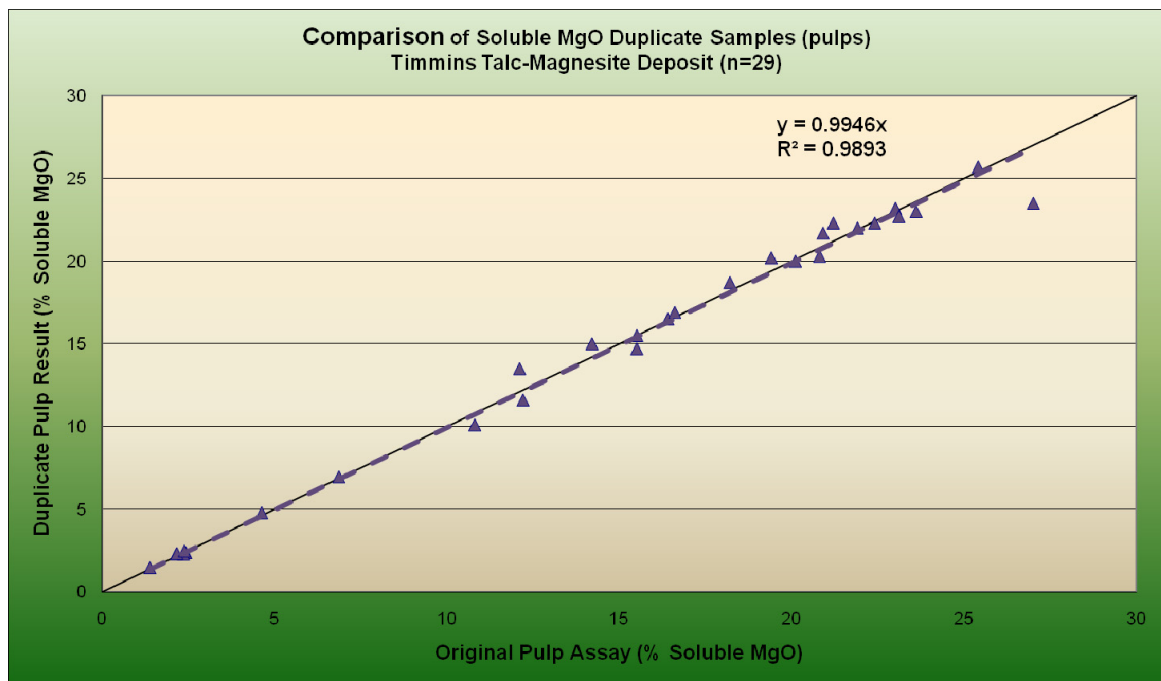


Figure 13.5
Duplicate Sample Results (Pulps) for Soluble Ca

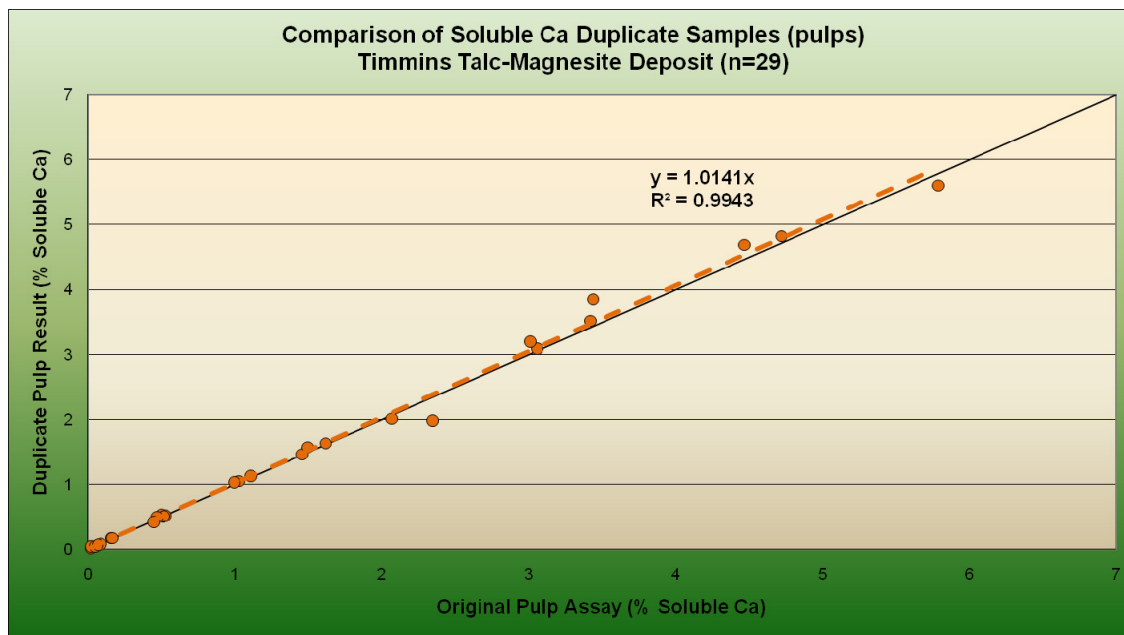


Figure 13.6
Duplicate Sample Results (Coarse Rejects) for Total Magnesite

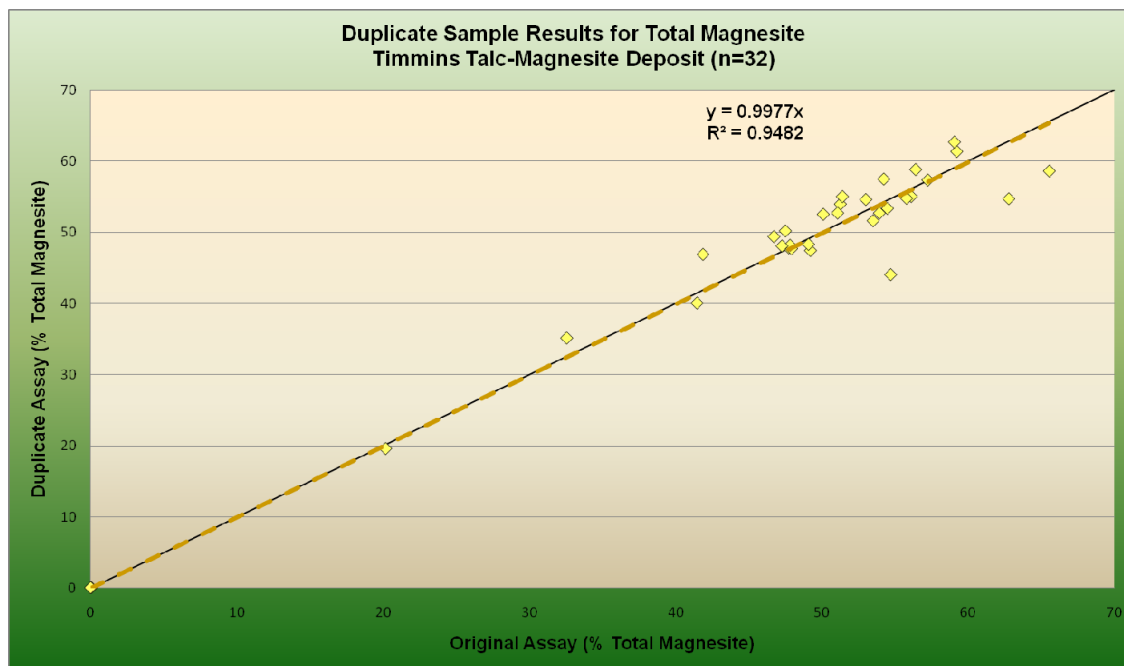
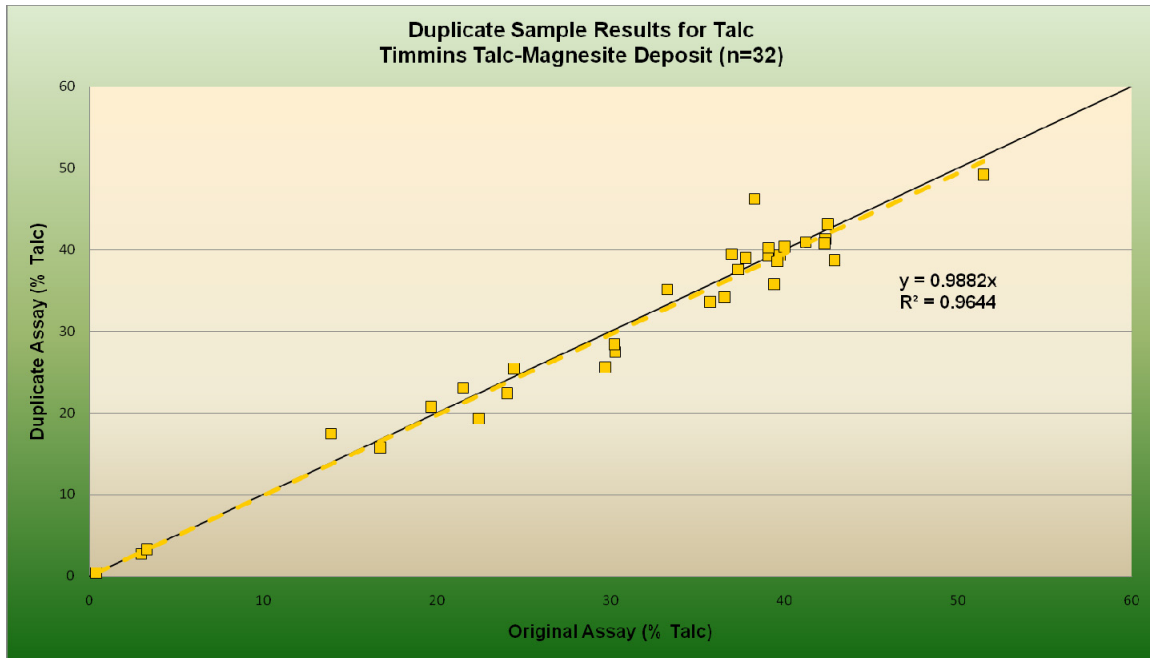


Figure 13.7
Duplicate Sample Results (Coarse Rejects) for Talc



It can be seen that the duplicate sample results agree very well with the original sample results for soluble Ca, soluble MgO, total magnesite and talc.

Given the unique physical nature (in relative terms) of the mineralization itself, along with the application of state-of-the-art technologies to determine the talc and magnesite concentrations, Micon believes that location of an appropriate certified reference material will be, at best, a very difficult undertaking. Consequently, Micon recommends that a deposit-specific reference material be prepared for this deposit and utilized in future assaying programs.

Micon also recommends that the control charts for the (future) standards, blanks and duplicates be maintained on a regular basis as new data are received, such that any anomalous results can be identified and addressed in a timely manner.

A small program of replicate assaying using the Bulk Modal Analysis format in respect of talc and magnesite was undertaken and is described by Gunning (2009) as follows:

“...the submitted 2 kg, -10 mesh sample was spread uniformly on a flat surface. Subsequently, 100 gram aliquots from four random locations of the spread material were taken and further crushed to -212 μm for the QEMSCANTM analysis. Two polished sections of each of the four aliquots were submitted for the BMA ExplominTM analysis.”

The results of this replicate sampling program are presented in Figures 13.8 and 13.9.

Figure 13.8
Replicate Sample Results for Talc

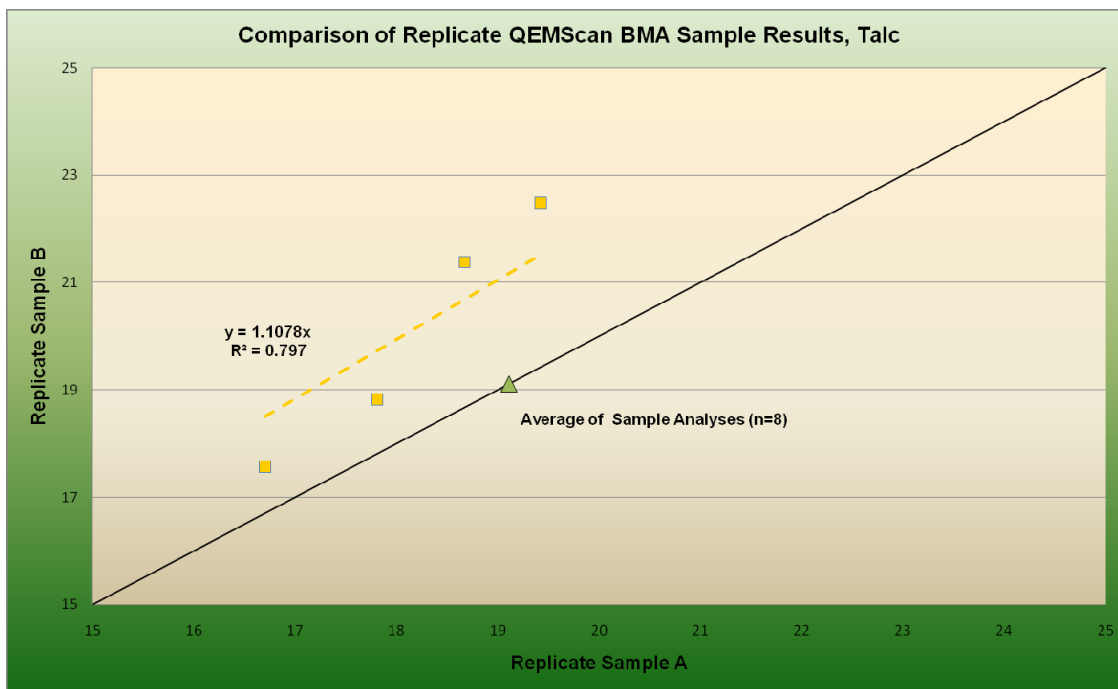
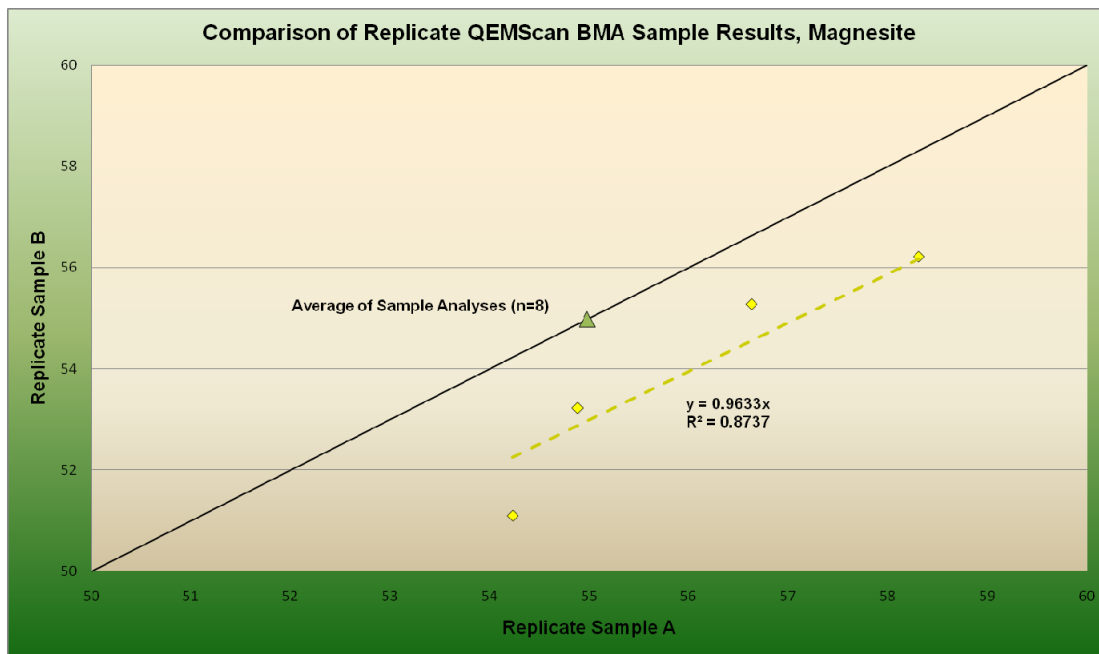


Figure 13.9
Replicate Sample Results for Magnesite



14.0 DATA VERIFICATION

Micon began its data verification activities by conducting a site visit on July 24, 2009, where the field procedures for the drilling program were discussed, examples of the talc-magnesite mineralization were viewed in outcrop, a methodology for determining an appropriate cut-off grade was discussed, the product specifications relative to the proposed flowsheet were discussed and representative sections of drill core were inspected. Micon found that the field procedures that were being used to set up the diamond drill, recover the core, transport the core to the logging facilities and the logging and sampling procedures were all being carried out to the best practices currently in use by the Canadian mining industry.

Micon completed its own program of check sampling of the Timmins Talc-Magnesite deposit. Given the unique nature of the mineralization found in this deposit along with the limited number of facilities that possessed the specific analytical equipment required to conduct the assaying, Micon believed that completing a program of check assaying by having the samples re-assayed by a third-party laboratory would be difficult to accomplish. Consequently, Micon adopted an approach that incorporated a blind numbering system to ensure a faithful round of check assaying. In this approach, a small subset of samples that covered a range of soluble Ca values was selected by Micon. The sample preparation laboratory (Expert Laboratories) was then instructed to prepare a second sub-sample from the sample pulps (for soluble MgO and soluble Ca assays at Activation Laboratories) and the coarse rejects (for talc and magnesite assays at SGS Lakefield), and to re-number these second samples with letters of the alphabet such that neither of the analytical laboratories would know which samples were being submitted for re-assaying.

It was seen that the check assay results for soluble MgO correlated very well with the original values, but that a distinct bias was observed in respect of the soluble Ca check assay results. Consequently, a second round of check assaying was undertaken for soluble MgO and soluble Ca wherein 20 sample pulps were selected, re-numbered and re-submitted on a blind basis to Activation Laboratories for re-assaying. This second batch of sample pulps comprised 10 new sample pulps and a repeat of the 10 original sample pulps. As a result, the results for the soluble MgO and soluble Ca values for the first batch of check samples were revised.

The numeric results of Micon's check assaying of these samples are presented in Table 14.1 and are graphically presented in Figures 14.1 to 14.4. It can be seen that the check assay results for soluble MgO correlated very well for the sample pulps from drill hole TM-06, while a slight bias is observed for the sample pulps from drill hole TM-16. In Micon's opinion, this slight bias observed in the soluble MgO check assaying will not have an impact upon the results of the mineral resource estimate, as soluble MgO is not one of the constituent components of the contemplated flow sheet at the time of the preparation of this report.

Table 14.1
Micon Check Samples, Drill Holes TM-06 and TM-16

Original Assays - TM-06							Revised Check Assays - TM-06, Round 1					Check Assays - TM-06, Round 2				
From (m)	To (m)	Sample No.	Sol MgO	Sol Ca	Mgn (Tot)	Talc	Sample No.	Sol MgO	Sol Ca	Mgn (Tot)	Talc	Sample No.	Sol MgO	Sol Ca	Mgn (Tot)	Talc
13	15.87	27021	22.0	0.09	52.2	36.8	A	22.7	0.12	54.8	27.7	K	21.4	0.10		
16.13	19	27022	24.4	0.07	57.4	33.7	B	25.2	0.1	62.5	25.4	L	24.6	0.08		
19	22	27023	22.8	0.08	52.8	39.8	C	23.5	0.12	60.1	32.2	M	23.6	0.10		
22	25	27024	19.1	0.08	47.0	45.0	D	20.3	0.11	49.7	39.5	N	19.4	0.08		
25	28	27025	21.5	0.15	49.4	41.6	E	21.3	0.18	54.2	34.3	O	22.0	0.18		
28	31	27026	21.3	0.17	52.1	36.5	F	21.7	0.22	53.9	35.3	P	21.2	0.20		
31	33.7	27027	20.2	0.29	48.7	40.8	G	20.7	0.33	57.1	32.0	Q	20.6	0.31		
33.7	36.8	27028	18.1	0.71	45.4	40.3	H	18.9	0.86	45.2	37.2	R	17.9	0.85		
36.8	38.6	27029	16.4	3.07	34.3	36.4	I	15.8	3.37	35.9	33.8	S	16.3	3.60		
38.6	40.53	27030	14.7	1.55	37.5	42.1	J	14.9	1.77	30.2	44.3	T	15.6	1.88		
Original Assays - TM-16												Check Assays - TM-16, Round 2				
From (m)	To (m)	Sample No.	Sol MgO	Sol Ca	Mgn (Tot)	Talc						Sample No.	Sol MgO	Sol Ca	Mgn (Tot)	Talc
72	74	27372	17.9	0.06								A	20.3	0.07		
74	77	27373	19.5	0.10								B	22.4	0.13		
77	80	27374	17.2	0.15								C	19.1	0.20		
80	83	27375	17.3	0.11								D	20.2	0.13		
83	86	27376	17.7	0.44								E	19.5	0.54		
86	89	27377	19.2	0.10								F	19.6	0.12		
89	92	27378	18.5	0.12								G	21.3	0.16		
92	95.35	27379	15.7	1.00								H	17.6	1.27		
95.35	96.49	27380	11.4	3.68								I	12.6	4.39		
96.49	98.5	27381	16.7	2.45								J	19.1	3.20		

* Mgn (Tot) = Total Magnesite (i.e. Magnesite + Ferro-Magnesite)

Figure 14.1
Comparison of Soluble MgO Check Assay Results, Drill Holes TM-06 and TM-16

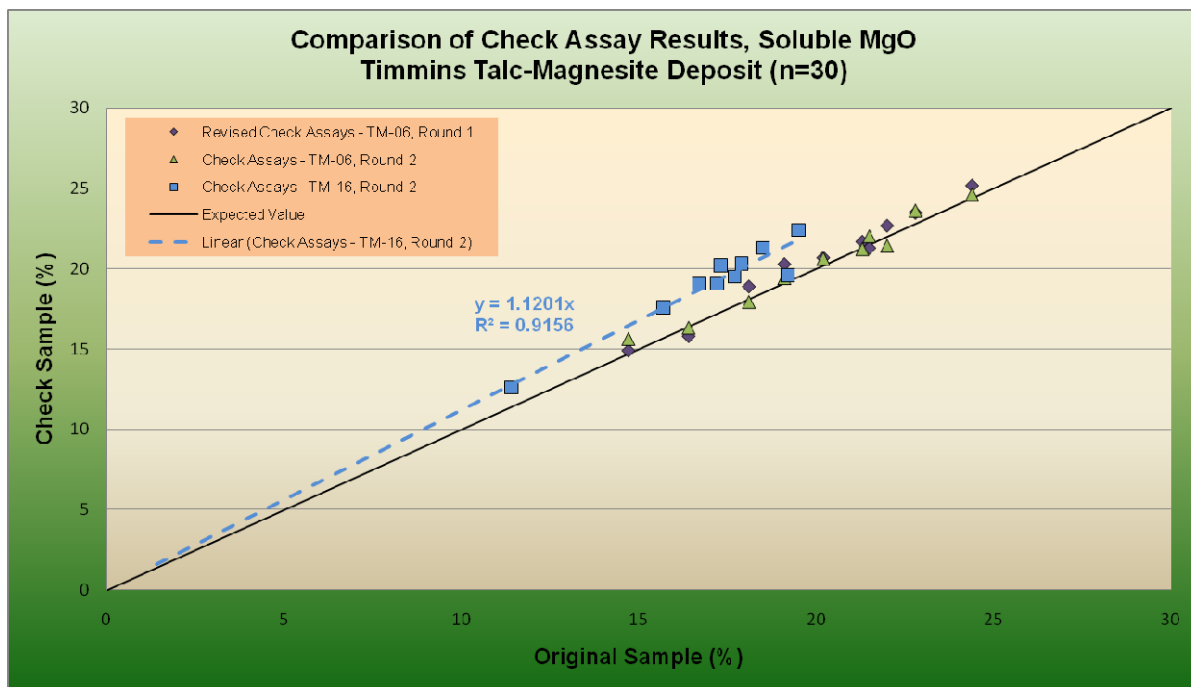


Figure 14.2
Comparison of Soluble Ca Check Assay Results, Drill Hole TM-06

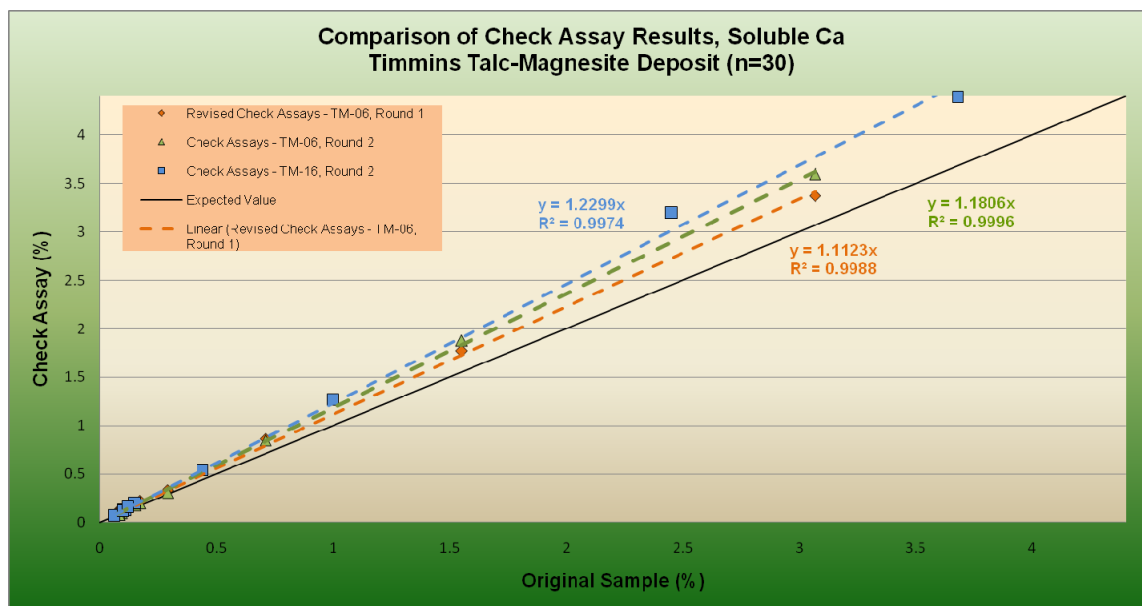


Figure 14.3
Comparison of Magnesite Check Assay Results, Drill Hole TM-06

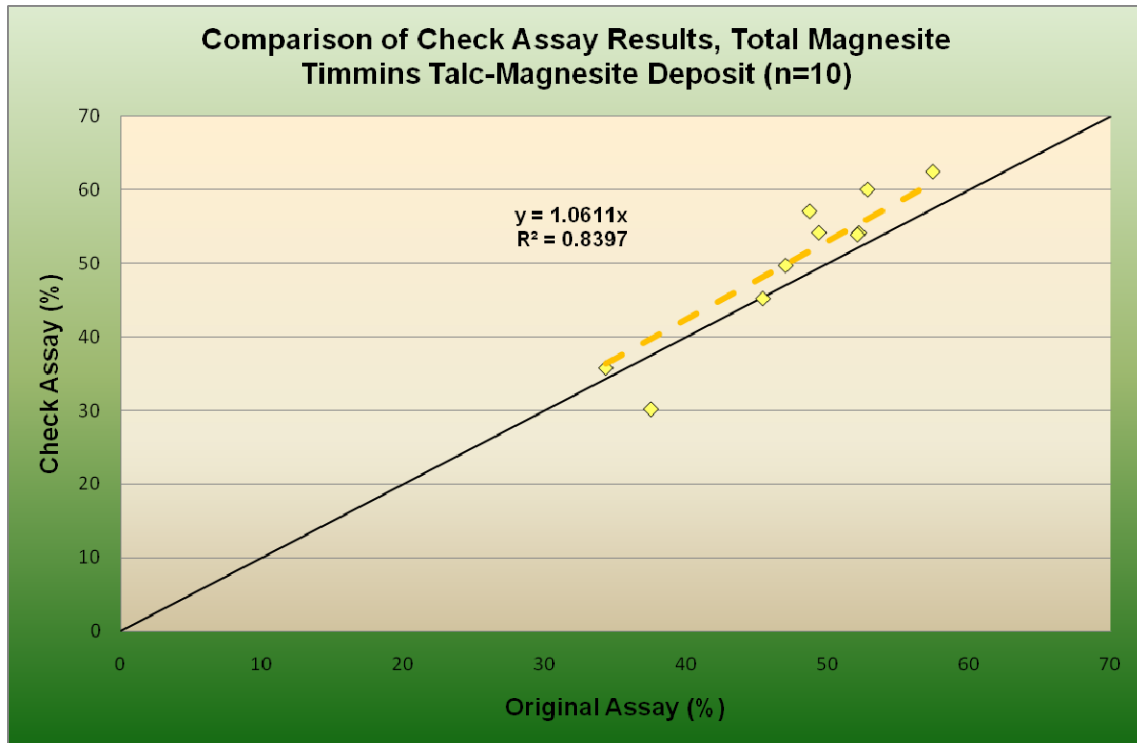
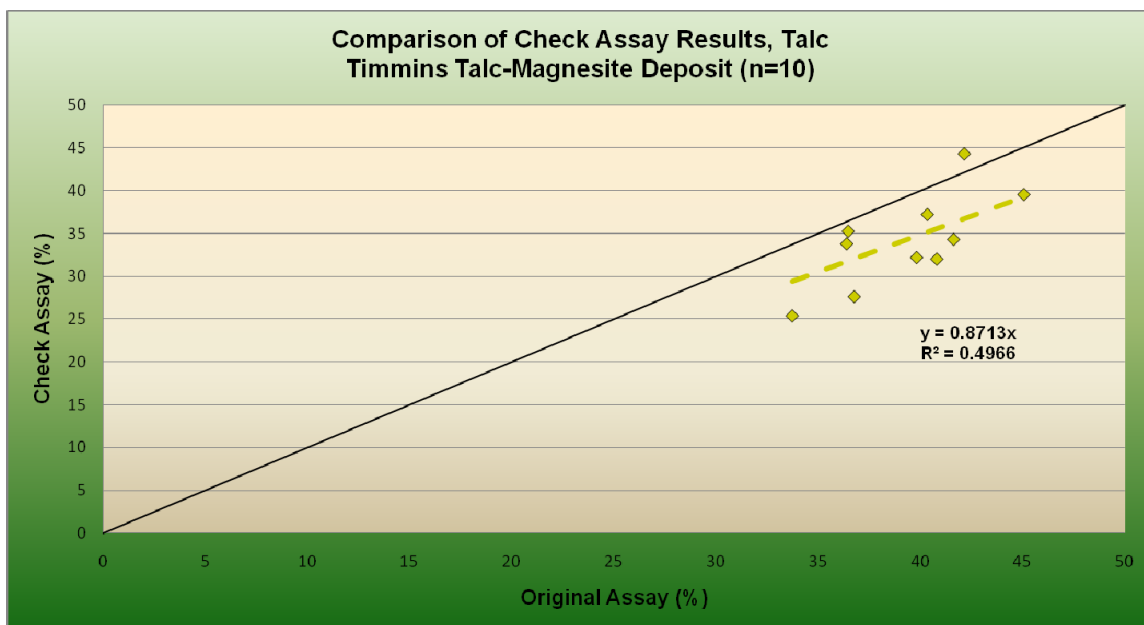


Figure 14.4
Comparison of Talc Check Assay Results, Drill Hole TM-06



It can also be seen that a slight bias is present with respect of the soluble Ca check sample data. Micon believes that this slight bias will not have a significant impact upon the outcome of a mineral resource estimate.

In respect of the magnesite and talc check assay results, it can be seen that the magnesite check assays correlate very well with the original values, while the check assays for the talc exhibit a modest bias compared to the original assay value. While discussions with the analytical laboratory were successful in attributing the source of the dispersion in the assay results to differential settling of individual mineral grains during sample preparation due to density and rheological characteristics, possible causes of the observed bias were not identified. Micon conducted an examination of the impact of such a magnitude bias upon the selection of cut-off grade and domain boundary determination and found that this level of bias, if consistent throughout the data set, would not have a material impact upon the mineral resource estimate.

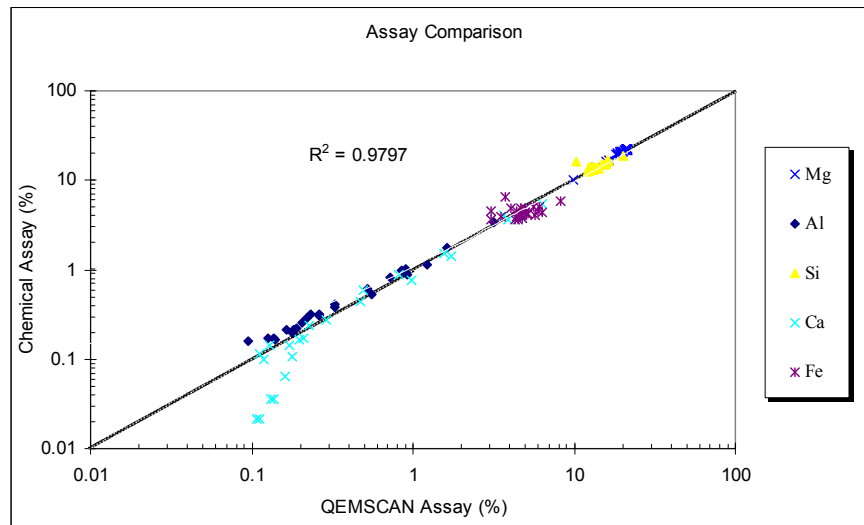
In light of the fact that no standard reference materials have been included as part of the soluble MgO, soluble Ca, magnesite or talc assaying protocols in either the routine assaying program or as part of the check assaying program, it remains uncertain as to which set of data offers a higher degree of accuracy. Consequently, Micon recommends that a deposit-specific standard reference material be prepared and be inserted on a regular basis as part of any future assaying programs.

In addition, Micon recommends that Globex amend its Quality Assurance/Quality Control protocols by ensuring that a small proportion (5-10%) of the assays of any future samples be confirmed by check assaying at an independent, third-party laboratory. In light of the discrepancies observed from its check assaying, Micon recommends that check assaying at an independent, third-party laboratory also be carried out for samples in the existing drill hole database.

Micon completed its data verification activities by conducting a spot check of the drill hole database. Approximately 10% of the drill holes contained in the database were selected for examination for systematic errors. The information contained in the drill logs and assay sheets was compared to the information contained in the electronic database. No significant errors were detected.

SGS Lakefield conducted an internal data verification program in which the QEMSCANTM calculated assays for total Mg, Al, Si, Ca and Fe and the direct chemical assays from the Whole Rock Analysis were compared. The results of this comparison are presented in Figure 14.5, and the overall correlation coefficient is 0.97.

Figure 14.5
QEMScan Calculated Assay vs. Chemical Assay (after Gunning, 2009).



15.0 ADJACENT PROPERTIES

There are no adjacent properties which materially affect the opinion offered in this report.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

16.1 HISTORICAL OVERVIEW

Records indicate that the first round of metallurgical testing of samples from the Deloro talc-magnesite deposit took place in 1963 at Lakefield Research Centre on behalf of Canadian Magnesite Mining Ltd. (CMML) which had acquired the property in 1962. The initial emphasis of the testing program was on producing a magnesite concentrate that would be suitable as a feedstock for refractory manufacturers. The Lakefield testing indicated "... it should be possible to make product with a dead-burn equivalent assay of 93% MgO, 1% SiO₂, 6% Fe₂O₃, at 65% overall recovery... ." The test procedure involved grinding the material to 65% passing 200 mesh, and floating off the talc with pine oil and the quartz with cationic collectors. Despite use of high intensity magnetic separation the iron content of the magnesite could not be reduced below 3%.

CMML proceeded in 1964 to quarry some 2,000 tons of surface mineralization and undertook a series of pilot plant tests at a facility in North Bay. The 2 ton per day mineral processing pilot plant generated 500 tons of magnesite concentrate for testing of magnesia production. With technical support from Mines Branch personnel, a magnesia flowsheet was developed that included calcining the magnesite concentrate at 1000 -1200°C, regrinding the calcine to 1.5 µm, 2 stage briquetting at 30,000 psi rolls pressure and sintering the briquettes at 1,650-1,750°C to produce periclase crystals with a density >3.4 g/cc. While refractory manufacturers showed willingness to enter into product take-off agreements, CMML was unable to obtain any expression of interest in financing the project development. Thereafter interest in the talc component reportedly grew and the Mines Branch continued providing advice on processing options. Later efforts by Battelle Memorial Institute and R.Opatowski were focused on producing high grade magnesia, but unacceptably high costs of production foiled the former effort while technical problems doomed the latter.

By 1973 a shortage of magnesite had developed as world steel production surged. CMML was approached by several refractory manufacturers which expressed renewed interest in the 92% MgO product. Testwork was also indicating that a superior-grade, asbestos-free talc concentrate could also be produced. Canadian Johns-Manville (JM) optioned the right to develop talc production but ultimately dropped the option, citing difficulties in reducing the Valley Abrasion index of the talc to below 20 mg after extensive bench scale and two pilot plant campaigns. Hazen Research (Hazen) had tested the Timmins Talc-Magnesite material by means of a pilot plant in January 1973 for JM, employing a fine grind of 90% passing 400 mesh and applying heavy dosages of reagents such as sodium hexametaphosphate, sodium silicate and sodium hydroxide for quartz depression and dispersion. A talc concentrate with a brightness of 85.5¹ was produced. Hazen claimed that the talc in the mineralized material was impure and off-colour as acid leaching had no effect on improving the brightness.

Hazen conducted a second series of pilot plant tests in November, 1973 and reported producing a talc concentrate of 97% purity, with 82% recovery and brightness value of 82¹.

¹ Brightness measurement technique unknown

The processing involved grinding to 99% passing 270 mesh, magnetic separation to remove iron minerals, rougher flotation and up to 10 cleaning stages with the use of dispersants and other reagents to depress the small quantities of free quartz. Hazen was subsequently retained by Watts, Griffis and McOuat following an option agreement with CMML to conduct further bench-scale upgrading tests of the talc concentrate produced in previous pilot plant runs. Hazen reported that earlier brightness values of 80¹ could be increased to 88¹ after micronizing, and that the Valley Abrasion index of 35 to 50 mg for pilot plant concentrates could be reduced to 9 mg after micronizing.

After acid-leaching, a Valley Abrasion index test on micronized talc gave a higher value of 34 mg, suspected to be as a result of screen mesh corrosion due to retention of acid within the talc grain structure.

A Lakefield Research test report prepared in June, 1974 for CMML summarized the earlier testing programs and concluded that a two stage grind with magnetic separation for iron removal would be the best route to produce a high grade talc flotation concentrate, though with a significantly simplified reagent scheme with lower addition rates.

The talc product specifications of the best test result obtained are summarized in Table 16.1.

Table 16.1
Talc Product Quality Obtained from Testing Completed in June, 1974

Element	Content
SiO ₂	61.6%
MgO	32.85%
Fe ₂ O ₃	0.42%
Ni	0.71%
Cr	0.025%
Pb	<0.025%
Al ₂ O ₃	0.08%
CaO	0.005%
Na ₂ O	0.003%
Co	0.01%
As	1.6 ppm
LOI (@ 700°C)	0.26%
Reflectance	89.35 of MgO
Brightness	86.9 (unground)
Valley Abrasion	14 mg/test
Bulk Density	39 lbs/cu. ft

In 1981, Pamour Porcupine Gold Mines (Pamour), an affiliate of Noranda Mines Ltd. (Noranda), acquired mineral rights for the Deloro property from CMML. Pamour attempted to interest Noranda in developing the Deloro deposit for magnesium metal production on the basis that the deposit was very large, with good grade and purity. As well, new technologies developed by Alcan and Norsk Hydro offered considerable reductions in capital costs and operating costs over conventional techniques. Noranda's technical evaluation of the Deloro

deposit was based on application of a hydrochloric acid leach to produce a concentrated MgCl_2 solution followed by the production of anhydrous MgCl_2 using the Norsk Hydro dehydration technique and electrolysis of MgCl_2 in large cells. Noranda, however, elected not to pursue the project and in 1989 Magnesium Refractories Ltd. (MRL) acquired the mining and surface rights from Royal Oak Mines, Inc. (Royal Oak), the successor company to Pamour.

MRL conducted extensive laboratory and pilot plant studies and concluded in a 1991 report that an initial plant should be designed to treat 360,000 tpa of feed to produce 65,000 tpa of caustic calcined MgO including a chlorine roasting step to remove the iron. A high grade 50,000 tpa dead-burned MgO product was envisaged with the remainder to be marketed as a caustic calcined MgO product. By-product talc production was forecast at 70,000 tpa. MRL described the talc as being “almost precisely the composition of pure talc. Some iron replaces the magnesia and there is a larger than normal amount of nickel, also replacing magnesium in the crystal lattice”. The colour of the talc was described as slightly greenish. Brightness was said to be good, and in micronized form above 90. Efforts by MRL to finance the project were unsuccessful and the property was returned to Royal Oak which subsequently declared bankruptcy.

Globex acquired the property in 2000 and conducted further exploration as well as economic and engineering reviews of the feasibility of producing magnesium metal before suspending work.

16.2 CURRENT 2009 TALC TESTING PROGRAM

A testwork program was initiated in June, 2009, at SGS Lakefield (Lakefield). Some 360 kg of split diamond drill core from Globex’s 2008 exploration program representing 79 core samples from holes TM-14, -15 and -16 on section 9+50E of A Zone were composited and submitted. Before proceeding with the metallurgical research Lakefield prepared head samples and undertook a preliminary flotation test to produce a talc concentrate. These head and concentrate samples, in duplicate, were sent to Exova (formerly Bodycote Testing Group) where mineralogical characterization and confirmation by transmission electron microscopy showed that asbestos fibres were not detected in any of the samples (Certificate of Analysis 09-013, July 10th, 2009).

The talc testwork program was designed in two parts. The objective of the first part of the program was to recover commercial grade talc concentrates directly from the test sample. The second part of the program was designed to produce a concentrate from a residue after acid leaching of the ore to solubilize the magnesite content. Sample preparation therefore included the grinding of 100 kg of Timmins Talc-Magnesite material to minus 40 mesh for large scale batch leaching tests carried out by Drinkard Metalox Inc. (DMI), in Charlotte, North Carolina, with the resultant leach residue returned to Lakefield for talc testing.

The principal head assays of the two test samples are presented in Table 16.2.

Table 16.2
Head Assay Results, Talc Flotation Test Samples

Element	Head Sample	Leach Residue
MgO (%)	35.3	25.1
SiO ₂ (%)	29.0	62.6
Fe ₂ O ₃ (%)	5.65	6.83
CaO (%)	0.13	0.02
Al ₂ O ₃ (%)	0.4	0.67
Na ₂ O (%)	0.03	0.02
MnO (%)	0.08	<0.01
Cr ₂ O ₃ (%)	0.15	0.28
LOI (%)	29.0	4.54
CO ₂ (%)	25.2	<0.05
Ni (%)	0.23	0.42
As (%)	<0.001	<0.001
Est. Talc (%)	35.6	77.8

16.2.1 Talc Recovery

A total of 14 tests have been performed on samples to the end of December, 2009, with a scheduled completion planned for early 2010. The following concentration techniques and test parameters were evaluated:

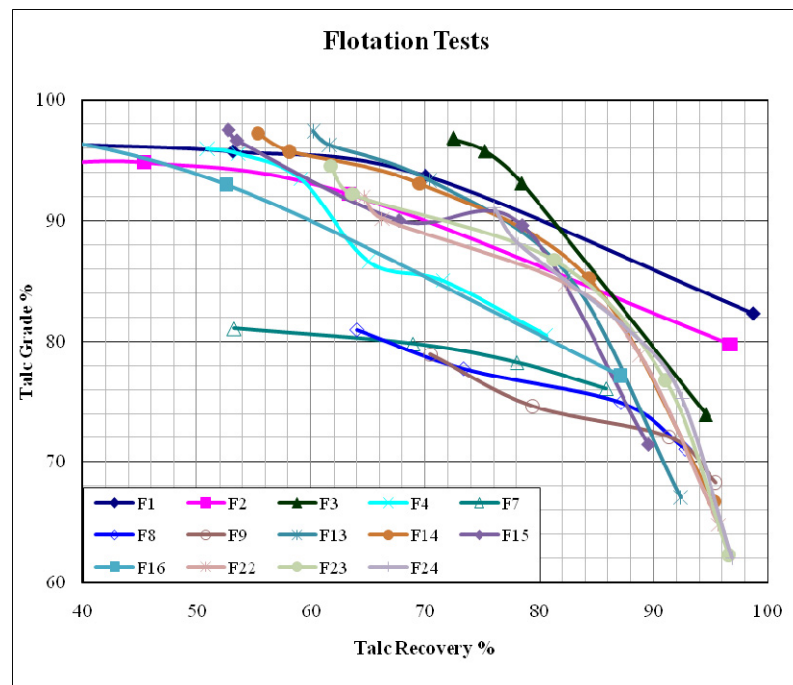
1. Magnetic Separation – low and high intensity magnetic separation steps were tested and incorporated as part of the standard test procedure. It has been found possible to remove about 30% of the iron minerals by a combination of Wet Low Intensity Magnetic Separation (WLIMS) and Wet High Intensity Magnetic Separation (WHIMS) which, together with natural rejection of the iron minerals in the flotation process, resulted in final talc concentrates containing only 0.9 to 1.2% Fe₂O₃, considered acceptable for commercial purposes given the presence of iron in the talc lattice.
2. Gravity Separation – a single 10 kg pre-concentration test (F3) was undertaken using a Wilfley shaking table. A gravity concentrate was produced grading 47.7% Fe₂O₃ representing 36.1% recovery of the Fe₂O₃. The final talc concentrate after WHIMS treatment assayed 1.04% Fe₂O₃, indicating that while the performance of gravity concentration was good, the overall removal of iron minerals from the talc concentrate was no better than with magnetic separation and flotation upgrading.
3. Flotation – a number of flotation parameters were evaluated including a wide range of fineness of grinding (tests F2, F4, F7-9), rate of Calgon addition (as a slime dispersant) (tests F13-15), and rate of addition of MIBC (a collector/frother) (tests F22-24). A test to determine the reproducibility of the flotation procedure was conducted (tests F2, F16) but the results were unsatisfactory with a spread of over 10% recovery at each level of concentrate grade.

The results of selected tests are displayed in Figure 16.1. The talc content of test products (concentrate) was calculated using a formula involving the MgO and CO₂ assays and assumptions regarding calculated magnesite and iron oxide assays, with the exception of rougher tailings which were analyzed by QEMScanTM – scanning electron microscopy.

Test F3 was judged to be the best of the series and had the following characteristics:

- Grinding to a K₈₀ of 90 microns at natural pH of 8.5 with 500 g/t of Calgon.
- Rougher, scavenger flotation stages with cleaning of combined concentrate in three stages.
- MIBC additions of 20 g/t in the roughing, 55 g/t in the cleaning stages.
- No regrinding practiced.

Figure 16.1
Concentrate Grade-Recovery Curve for Selected Flotation Results, Unprocessed Timmins Talc-Magnesite Feed



F3 Metallurgical Results

The metallurgical balance for the major elements of test F3 is summarized in Table 16.3. The calculated heads compare quite well with the direct head assays for assay quality control purposes.

Table 16.3
Metallurgical Balance for Flotation Test F3

		Assays (%)					Distribution (%)				
F3 Products	Wt. %	SiO ₂	Fe ₂ O ₃	MgO	Magn- esite	Talc	SiO ₂	Fe ₂ O ₃	MgO	Magn- esite	Talc
Wilfley Table Conc	4.5	4.1	47.7	23.0	38.8	14.0	0.9	36.1	2.9	14.3	1.8
Hand Mag Conc	1.4	22.1	23.3	29.2	31.3	44.6	1.1	5.5	1.2	3.6	1.8
Talc Final Conc	26.7	61.1	1.04	30.9	0.00	96.9	57.1	4.6	23.3	0.0	72.5
3 rd Cl Conc	26.8	61.0	1.20	30.9	0.07	96.8	57.1	5.0	23.3	0.2	72.6
2 nd Cl Conc	28.1	60.5	1.37	31.0	0.89	95.8	59.3	5.6	24.5	2.0	75.3
1 st Cl. Conc.	30.1	59.0	2.29	31.2	3.19	93.1	62.1	6.9	26.5	7.8	78.5
Talc.Ro+Sc Conc.	45.7	48.4	2.37	32.9	19.60	73.9	77.3	18.1	42.5	72.7	94.6
Ro+Scav Tail	48.4	12.4	5.00	39.2	2.4	1.36	20.9	40.4	53.4	9.4	1.8
Head Calculated	100.0	28.6	5.99	35.5		35.7	100	100	100	100	100
Head Direct		29.0	5.65	35.3	51.2	33.8					

16.2.2 Talc Recovery from Leach Residue

A sample of the leach residue received from DMI was washed for 60 minutes at 90°C in order to confirm that the concentrated acid leach residue filtration and wash stages had reduced soluble metal contents to low levels. The results presented in Table 16.4 show that from feed concentrations of 50,000 mg/L of Mg, 230 mg/L of Mn and 220 mg/L of Ni the residual wash water concentrations were indeed acceptably low.

Table 16.4
Filtered Solution Analytical Results

Leach Solution, pH 8.7*	
Mg mg/L	11.9
Ni mg/L	< 0.6
Mn mg/L	< 0.04
Ca mg/L	4.00
SO ₄ mg/L	9.10
Residual Acid as mg/L	5.70

* Note: lower results are expected at commercial scale

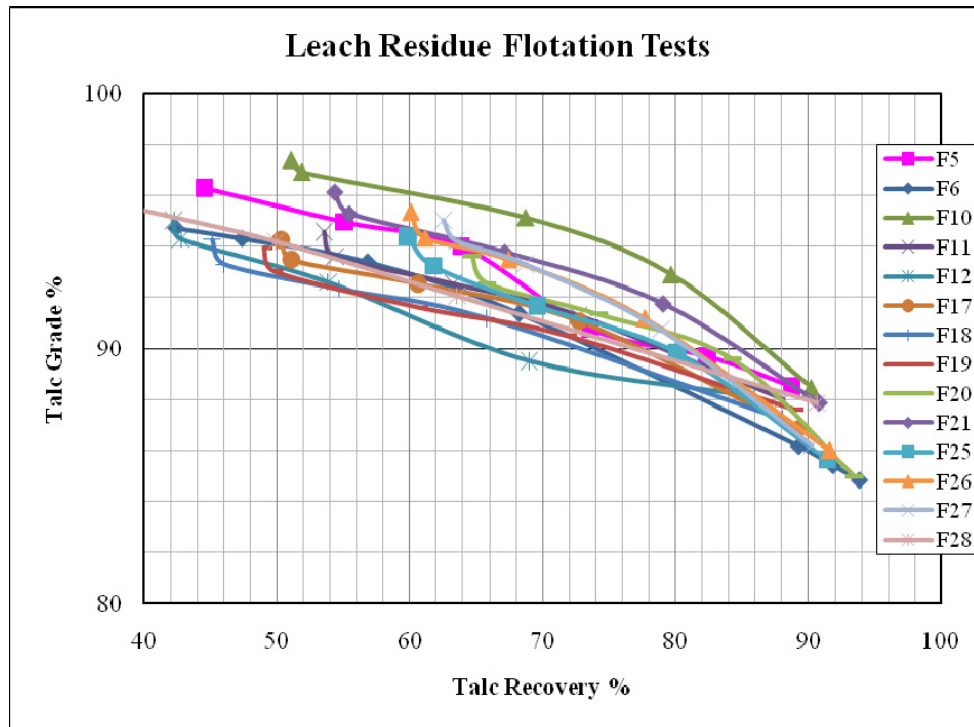
Flotation

Several parameters were investigated by flotation tests including fineness of grinding (tests F5-6), pulp density levels (tests F10-12), pre-screening, coarse-fraction flotation and varying regrinding finenesses (tests F17-19, F28), rate of addition of Calgon (tests F20-21) and rate

of MIBC addition in roughing and scavenging stage (tests F25-27). The test results are displayed graphically in Figure 16.2. The best results were achieved in test F10 which incorporated the following test procedure:

- No grinding or concentrate regrinding.
- Calgon addition of 500 g/t in rougher conditioning stage.
- Rougher pulp density of 35% at start of flotation.
- MIBC additions of 10 g/t in rougher, 35 g/t in scavenger and 25 g/t in cleaning stages.

Figure 16.2
Concentrate Grade-Recovery of Selected Flotation Results, Acid Leached Residue



Test F10 Metallurgical Results

The metallurgical balance for the major elements of test F10 is summarized in Table 16.5.

The best metallurgical results from the leach residue produced somewhat lower recoveries, 70% versus 76% at 95% talc grade, than that were obtained directly from the test sample. Some 10% or more of the talc reported to each of the cleaner tailing products during upgrading. Though locked cycle tests were not undertaken during this phase of the

metallurgical research, it is probable that with recycle of cleaner tailings, recoveries to final product would be higher than the levels obtained in the batch testing.

Table 16.5
Metallurgical Balance for Flotation Test F10

F10 Products	Wt. %	Assays %					Distribution %				
		SiO ₂	Fe ₂ O ₃	MgO	Magn- esite	Talc	SiO ₂	Fe ₂ O ₃	MgO	Magn- esite	Talc
Hand Mag Conc	2.8	23.5	63.2	10.4	0.0	32.6	1.1	25.0	1.2	0.0	1.2
Talc Final Conc	41.2	63.4	0.98	31.1	0.10	97.4	41.4	5.6	51.1	0.0	51.1
3 rd Cl Conc	42.1	63.0	1.45	30.9	0.0	96.9	42.0	8.5	52.0	0.0	51.9
2 nd Cl Conc	56.8	62.9	2.01	30.4	0.0	95.1	57.5	15.9	68.8	0.0	68.7
1 st Cl. Conc.	67.4	62.9	2.58	29.6	0.0	92.9	67.1	24.2	79.7	0.0	79.7
Talc.Ro+Sc Conc.	80.2	63.3	3.52	28.2	0.0	88.5	80.4	39.3	90.2	0.0	90.2
Ro+Scav Tail	17.0	69.2	15.1	12.7	0.0	39.8	18.6	35.7	8.6	0.0	8.6
Head Calculated	100.0	63.2	7.18	25.1	0.04	78.6	100	100	100	0	100
Head Direct		62.6	6.83	25.1		77.8					

Final concentrate samples from both feed and leach residue testing were sent to the Centre for Mineral Technology and Plasturgy, located in Thetford Mines, Quebec, where brightness and micronizing testing were conducted. Preliminary results indicate that the talc concentrates from both feed and leach residue should meet typical product specification brightness criteria for the target markets being envisaged.

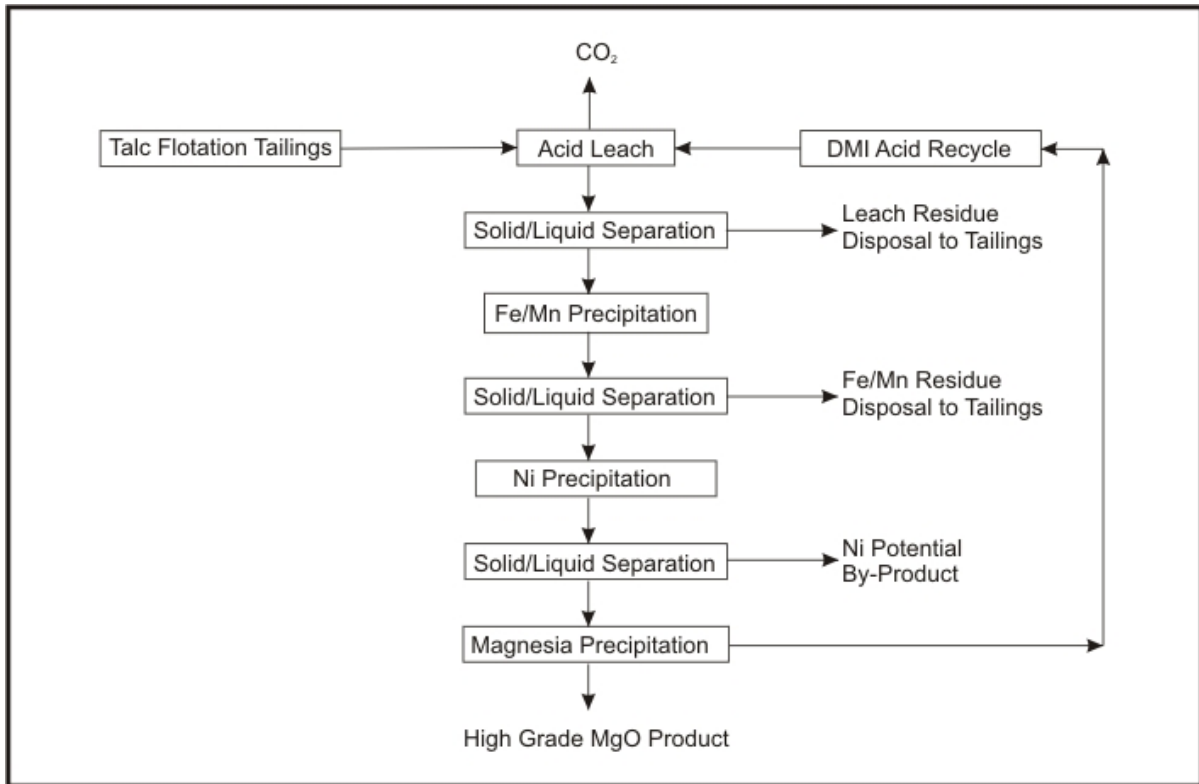
16.3 MAGNESIA RECOVERY FROM TIMMINS TALC-MAGNESITE SAMPLES

Following the decision of Globex earlier in the decade not to pursue magnesium metal production from the Timmins Talc-Magnesite deposit, a search for an alternative, efficient, and low cost solution for the Deloro project resulted in the signing of a joint venture partnership in 2008 with Drinkard Metalox Inc. (DMI), a private U.S. hydrometallurgical research company. Over the past two years DMI has undertaken bench scale metallurgical research on Timmins Talc-Magnesite samples to demonstrate certain patented and patented pending technologies to produce high grade magnesia and other by-products. Aker Metals, a division of Aker Solutions Canada Inc., was contracted by Globex to review and help direct testwork to ensure that appropriate design criteria were collected prior to commencing an engineering study.

16.3.1 Magnesia Flowsheet Development

The basic flowsheet developed by DMI is described below and is shown in Figure 16.3.

Figure 16.3
Block Flow Diagram of the DMI High Grade Magnesia Process



A brief description of the various steps of the DMI hydrometallurgical process is presented below:

- The preferred base case flowsheet involves the pre-concentration of the talc in the feed by a combination of magnetic separation and multiple flotation stages. Combined rougher and cleaner-scavenger tailing slurry would be dewatered and fed to a conventional acid leach circuit operated at atmospheric pressure and elevated temperature.
- The acid leaching stage results in the solubilization of magnesite in addition to minor amounts of other metals. The acid leach stage is followed by a solid-liquid separation stage where the leach residue is filtered, washed and disposed of to an impoundment area. The leaching process involves the evolution of carbon dioxide from magnesite and small quantities of other carbonates such as dolomite and calcite. The carbon dioxide generated could be captured and fixed in a variety of potential saleable products such as precipitated calcium carbonate for which substantial markets already exist or alternatively the carbon dioxide could be compressed and shipped to customers in cryogenic form.

- The pregnant leach solution (PLS) is treated with a neutralizing agent that acts to precipitate iron and manganese from the PLS under acidic conditions. The precipitate is recovered in a solid-liquid separation process and disposed of.
- A second stage of controlled neutralization follows in order to selectively precipitate nickel from solution. The nickel is recovered as by-product.
- The purified PLS is processed to produce high grade magnesia and to reconstitute a concentrated acid for recycle to the leach process.
- The high grade magnesium oxide generated from the DMI process can be further upgraded to lower or remove calcium, the principal diluent.

Testwork on the DMI process commenced in late 2007 before any mineral dressing investigations for talc recovery had been initiated. Thus the bulk of the experimentation has been performed on feed samples only rather than talc flotation tailings. Recently, DMI has commenced evaluation of magnesia production from flotation tailings and has reported excellent magnesium extraction rates in the range of 98-99%. Testwork on this item remains on-going.

16.3.2 Testwork Review 2008-2009

A description of the Timmins Talc-Magnesite samples tested by DMI and the extraction rates of the principal elements is summarized in the table 16.6.

The preliminary tests undertaken on High Grade (HG) and Low Grade (LG) components of Sample 1 served to demonstrate proof of the concept of the application of DMI leach technology to typical Timmins Talc-Magnesite feed. Sample 2 represented selected samples from a previously exploited shallow test pit on the Timmins Talc-Magnesite property and was provided in 4 size ranges from -4 to -200 mesh. Sample 3 is the most recent composite based on the 2008 drilling campaign, representing average grade and identical to the sample being tested at Lakefield for talc recovery.

The term “acid soluble” describes a selective 2-acid digestion method practiced by DMI to determine the maximum solubility potential of species for the DMI acid leach process, whereas a total dissolution method is used in the whole rock analysis. The differences are evident in the comparison of analyses for sample 3, particularly for iron, magnesium and nickel.

Table 16.6
Description of the Samples Used for the Magnesia Testing

	Ore Composition and Leach Dissolutions					
Composition (Wt%)	Al	Ca	Fe	Mg	Mn	Ni
Sample 1 HG “acid soluble”	0.11	0.49	3.41	18.7	0.06	0.15
Sample 1 LG “acid soluble”	0.26	0.14	3.51	14.7	0.06	0.10
Sample 2 “acid soluble”	0.11	0.04	1.37	14.6	0.05	0.06
Sample 3 “acid soluble”	0.10	0.10	1.82	13.9	0.06	0.04
Whole Rock Analysis	0.21	0.10	3.95	21.2	0.06	0.23
Selected Extractions (%)						
Sample 1 HG	94.2	97.4	78.7	98.2	97.0	89.9
	93.5	94.8	74.5	97.0	96.1	89.2
Sample 1 LG	92.7	91.2	48.7	94.9	94.3	87.3
Sample 2	50.0	55.2	59.0	94.8	95.6	83.8
	51.9	64.5	57.6	96.1	97.3	86.2
	40.4	76.8	55.4	92.9	94.8	79.4
	36.7	40.5	50.4	92.6	94.6	78.0
Sample 3	49.4	84.2	73.5	92.6	95.9	81.9
	22.5	92.5	78.2	97.2	98.3	84.3
Aker Metals Design Criteria	50.0	55.0	55.0	95.0	95.0	82.0

It was concluded from the DMI test program that:

- A white high grade magnesium oxide can be produced with >98% purity, the primary impurity being CaO together with trace quantities of iron and manganese.
- Magnesium extractions were similar, 93 – 98%, over a wide range of particle sizes from 4 to 200 mesh. With pre-concentration of the talc to be followed by leaching in the preferred flowsheet, the leach stage feed (i.e. talc tailings) will have a K₈₀ of about 120 microns (115 mesh). The particle size distributions of leach feed and residues were found to be similar.
- Both sequential precipitations of Fe/Mn/Ni and a single stage precipitation were tested. Impurity removal rates were as follows:

Impurity Precipitation (%)	
Ni	99.2
Fe	100.0
Al	94.9
Mn	99.8
Mg	2.6
Ca	1.8

- A series of three magnesia precipitation tests were carried out. In two tests the MgO product assayed >99% purity. On an industrial scale the DMI has recovered greater than 99% of the acid for recycling.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 DESCRIPTION OF THE DATABASE

A digital database was provided to Micon by Globex wherein such drill hole information as collar location, down hole survey, lithology, density measurements and assays was stored in comma delimited format. The cut off date for the drill hole database was October 6, 2009 and included all drill hole information up to and including hole TM-21. This drill hole information was modified slightly so as to be compatible with the format requirements of the Gemcom-Surpac v6.1.1 mine planning software and was imported into that software package. A number of additional tables were generated during the process of creating a grade block model of the mineralization found at the Timmins Talc-Magnesite deposit to store such information as composite assays, zone composites and assorted domain codes. A description of the revised database is provided in Table 17.1, a summary of the drill hole collar information has been provided in Chapter 11 and a plan-view map showing the drill hole locations was provided in Chapter 7 above.

Table 17.1
Summary of the Timmins Talc-Magnesite Drill Hole Database (as at October, 2009)

Table Name	Data Type	Table Type	Records
assay_raw	interval	time-independent	972
collar			68
comp_azone_core_3m	interval	time-independent	423
comp_sol_ca_3m	interval	time-independent	43
flag_by_bench	interval	time-independent	75
flag_bzone	interval	time-independent	5
flag_sol_ca	interval	time-independent	45
litho	interval	time-independent	690
min_zone	interval	time-independent	52
styles			49
survey			263
translation			0

17.2 GEOLOGICAL DOMAIN INTERPRETATIONS

Interpretation of the geological and mineralization features associated with the mineralization found at the Timmins Talc-Magnesite deposit was carried out according to the most current understanding and level of knowledge. On the basis of its review of the surface exposures, drill hole information and discussions carried out during the site visit, Micon understands that the major host lithology consists of sub-vertically dipping ultramafic and mafic metavolcanic rocks in which at least two zones of talc-magnesite mineralization have been formed that strike in a general east-west direction. The southern deposit is known as the A Zone and has been the focus of much of the current drilling while the northern deposit is known as the B Zone and is currently defined by one section of diamond drill holes along with scattered outcrop data. Given the limited data available for the B Zone, the estimate of the mineral resources present on the property will focus on the A Zone.

Examination of the A Zone in weathered surface outcrop (Figure 17.1), in relatively fresh blasted material (Figure 17.2) and in drill core (Figure 17.3) reveals that the mineralization is composed of essentially massive, equigranular talc-magnesite mineralization that is cross cut by paragenetically younger veinlets of quartz, high-grade magnesite containing minor quantities of talc and thin veinlets and disseminations of dark-green to black chlorite. The quartz and high-grade magnesite veins seem to be structurally controlled in their distribution and occur as relatively small, isolated veinlets/veins that are on the order of centimetres to less than approximately 20 centimetres in width. They can have strike and dip lengths measuring from metres to a few tens of metres in length.

On the basis of the observations made during its site visit, Micon believes that these quartz and high-grade magnesite veinlets represent small-scale features that do not have a material impact upon the estimation of the deposits' average talc-magnesite grade. Therefore, for the purposes of preparation of a domain model of the talc-magnesite mineralization found in the A Zone, Micon considers that the presence of these features will have been adequately represented in the drill hole database.

Figure 17.1
View of A Zone Talc-Magnesite Deposit with Quartz Veinlets in Outcrop



Figure 17.2
Boulder of Massive Talc-Magnesite Mineralization with High Grade Magnesite and Quartz Veinlets

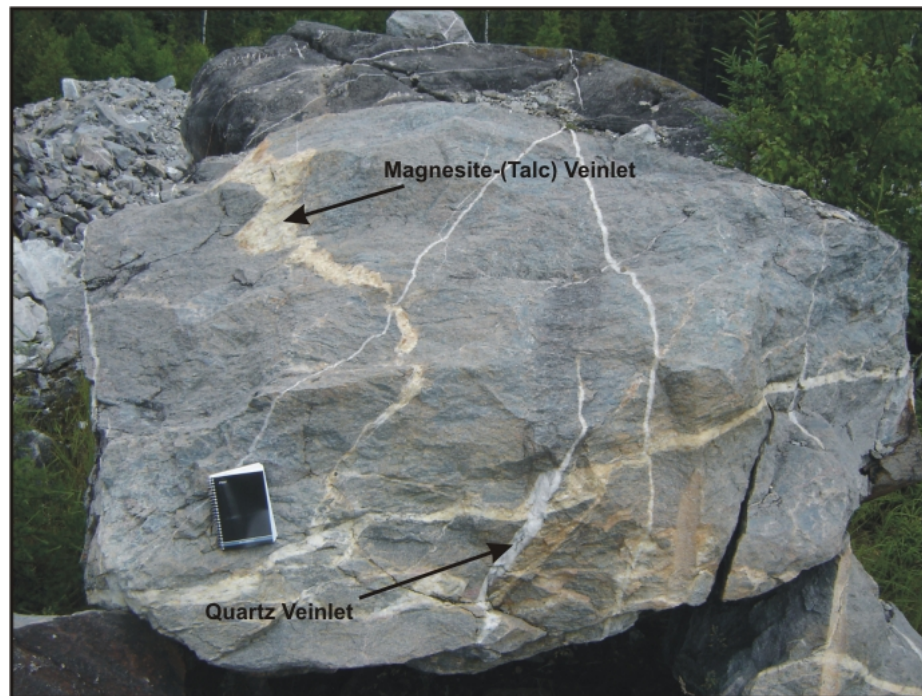
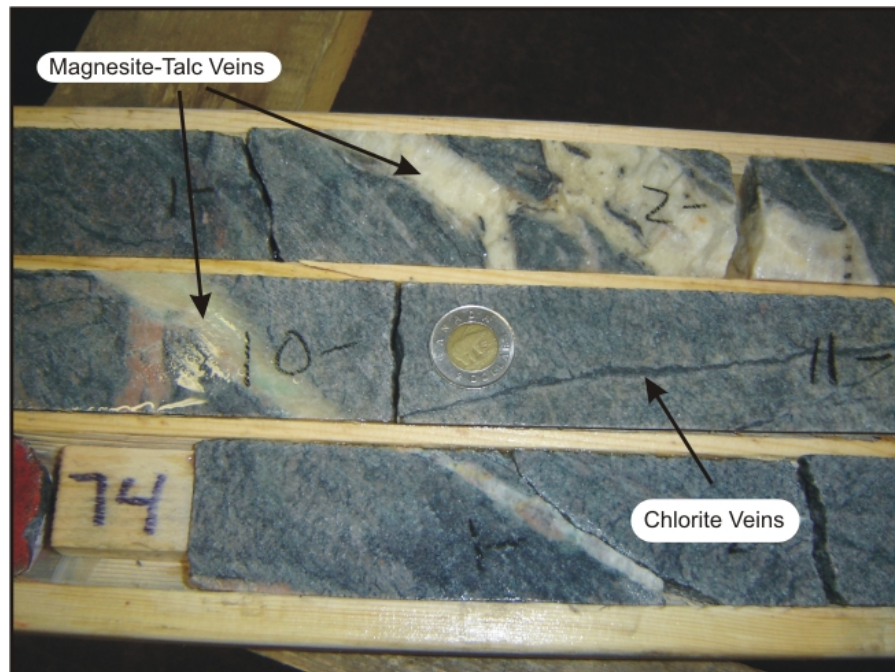


Figure 17.3
View of Massive Talc-Magnesite Mineralization with High Grade Magnesite and Chlorite Veinlets in Drill Core



From a mineralogical perspective, the magnesite found in this deposit has long been known to contain variable iron contents, where the iron sits in solid solution within the magnesite crystal lattice as a result of the growth history of the magnesite crystals. Gunning (2009) carried out an investigation of the iron distribution on 577 samples from the A Zone and has determined that four categories of magnesite are present. Gunning (2009) determined that the 3-7% Fe category appears to contain the highest number of samples, with the 0-3% Fe category containing the second highest number of samples. The 7-9% Fe category contained the third highest number of samples, while the >9% Fe category contained the least number of samples.

Testwork carried out by previous owners of the property has attempted to produce magnesium refractories by conventional processes available at that time. For the most part, this testwork has shown that magnesium products can be generated from this deposit, albeit with elevated iron contents that are not necessarily desirable under all market conditions.

As discussed in Chapter 16 above, the conceptual flowsheet that has been the subject of comprehensive bench-scale testing by Globex and DMI contemplates the production of a talc concentrate using conventional flotation technologies. Preliminary testing of the talc flotation concentrate reveals that a commercial grade product can be generated with no impurity issues. The tailings generated from the talc flotation stage will be subjected to a hydrometallurgical process which will produce a high-grade final product that is expected to contain a minimum of 98% MgO (M98). In this hydrometallurgical process, the iron content of the feedstock is put into solution and is subsequently removed as a ferruginous precipitate that will be stored in a suitable containment area. In this manner the background iron content of the deposit does not pose the same barrier to the production of a commercial grade refractory product as was experienced by previous owners of the property.

As well, a credit is anticipated as a result of the generation of a nickel hydroxide by-product of the hydrometallurgical flowsheet.

As is the case with the current product specifications for refractory grade magnesia, the hydrometallurgical flowsheet being contemplated by Globex includes a maximum specification for calcium in the feed. For the purposes of this initial mineral resource estimate, this is expressed on an acid soluble calcium basis (sol Ca) and is set as a maximum of 1% soluble Ca in the feed.

Micon proceeded to construct a lithologic and domain model of the A Zone talc-magnesite deposit on cross-sections that were spaced nominally 100 metres apart and using viewing windows of +/- 50 metres. The limits of the mineralization were drawn using a minimum of 30% talc + magnesite cut-off grade. The derivation of the cut-off grade criteria is discussed below, and an example of a sectional interpretation has been presented in Figure 7.2 above.

The locations of the lithologic and mineralized contacts were “snapped” to the observed location in the individual drill holes such that the sectional interpretations “wobbled” in three-dimensional space, to either side of the section plane. In preparation of these cross-

sectional interpretations, Micon observed that the down-dip limits of the talc-magnesite mineralization found at the A Zone have not been located by drilling. Consequently Micon judged that a continuation of the interpretation of the down-dip limits of approximately 50 metres below the drilling information was reasonable. Similarly, the eastern and western strike limits of the mineralization at the A Zone have not been defined by drilling, and Micon judged that a projection of the interpretation of 50 metres along strike was reasonable.

Upon completion of construction of the initial domain model of the talc-magnesite mineralization, examination of the distribution of the soluble Ca values revealed that a marked increase is commonly observed along the northern and southern contacts of the A Zone mineralization. Discussions with Globex staff revealed that the increase in soluble Ca values correlates visually with an increase in the abundance of ferro-dolomite. Consequently, a sub-domain was constructed for the A Zone mineralization at a notional grade of 1% soluble Ca to accurately reflect the observed in-situ conditions (Figure 17.4).

In all, interpretations were carried out on 6 cross-sections along a strike length of 700 metres and to a maximum depth of approximately the 225 metre elevation (approximately 100 metres beneath the surface), and the resulting “wobbly polylines” were then linked together to form a three-dimensional solid of the mineralized zone. The width of the A Zone talc-magnesite mineralization is observed to be on the order of 200 metres on cross-section 479750E. A summary of the significant mineralized intersections that are contained within the domain models of the A Zone core and high soluble Ca fringe is presented in Table 17.2.

The resulting three-dimensional solids of the core mineralized zone and soluble Ca fringe were then sliced in plan view. The resulting strings were edited to produce smooth outlines that are believed to better represent the in-situ distribution of the two domains. The resulting smoothed strings were then linked together to form revised, smoothed three-dimensional solid models that were subsequently used to code individual blocks within the grade-block model.

As a result of the domain modeling exercise, it was discovered that the overall strike of the mineralization for the Timmins Talc-Magnesite deposit seems to be essentially east-west and the dip of the deposit seems to be sub-vertical. The limits of the mineralization found along strike and at depth for the A Zone have not been identified by drilling and Micon believes that Globex is justified in completing additional diamond drilling programs to locate these limits.

Figure 17.4
Distribution of Soluble Ca Within the A Zone, Timmins Talc-Magnesite Deposit

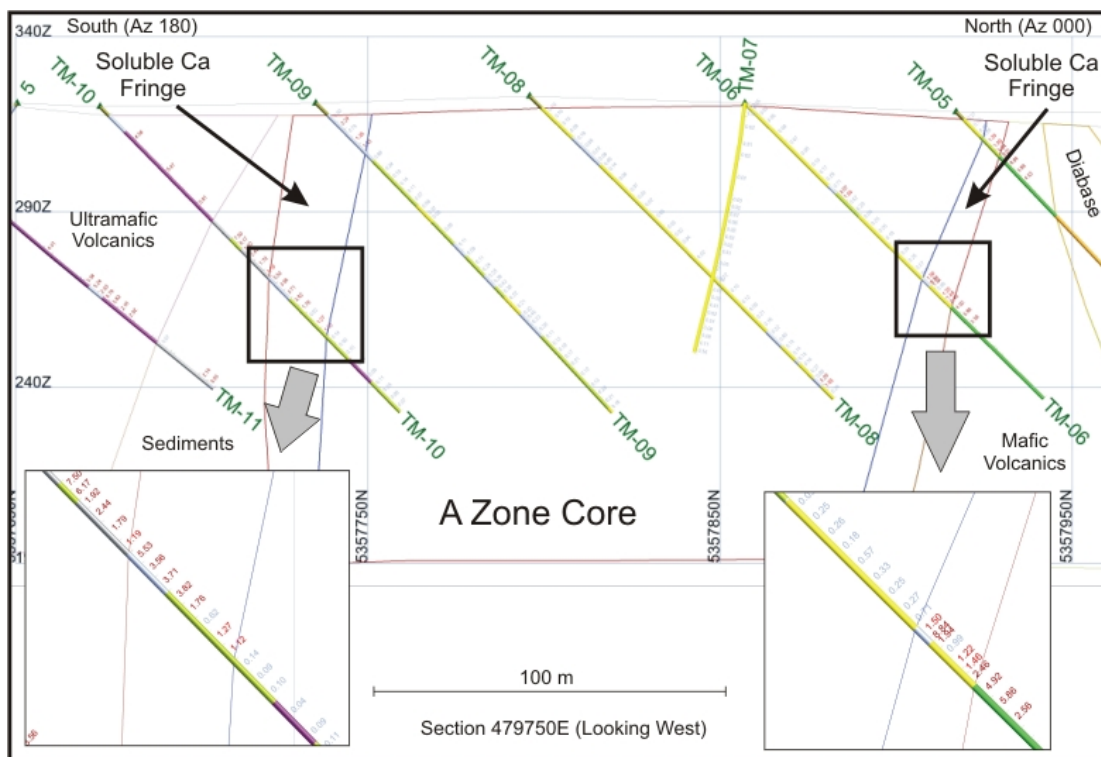


Table 17.2
Summary of Significant Mineralized Intersections Contained Within the A Zone Domain Model, Timmins Talc-Magnesite Project

Hole ID	From	To	Length	Soluble MgO (%)	Soluble Ca (%)	Magnesite (%)	Talc (%)
A Zone Core Zone:							
KDE99-01	3.00	77.00	74.00	19.71	0.11	53.72	28.86
KDE99-02	3.20	68.00	64.80	17.06	0.15	50.48	37.42
M-2	7.01	196.64	189.63	24.57			
M-4	57.12	152.40	95.28	21.23			
M-5	1.34	54.07	52.73	23.72			
M-6	20.47	147.83	127.36	23.44			
M-8	20.47	152.10	131.63	24.27			
TM-01	10.28	35.33	25.05	13.50	0.56	50.32	32.23
TM-01	55.25	83.07	27.82	12.77	0.34	50.00	41.10
TM-03	11.00	89.77	78.77	18.96	0.42	54.95	28.18
TM-04	4.10	60.00	55.90	22.64	0.70	54.50	26.07
TM-05	2.94	11.00	8.06	21.26	0.29	45.63	38.00
TM-06	0.94	71.60	70.66	19.73	0.34	47.53	38.02

Hole ID	From	To	Length	Soluble MgO (%)	Soluble Ca (%)	Magnesite (%)	Talc (%)
TM-07	0.95	120.98	120.03	23.48	0.07	57.38	24.05
TM-08	4.85	122.00	117.15	21.88	0.20	51.54	33.82
TM-09	20.00	121.94	101.94	20.05	0.22	50.14	40.52
TM-10	92.00	121.94	29.94	20.79	0.10	50.05	43.12
TM-13	119.00	121.86	2.86	20.50	0.51	53.93	39.73
TM-14	76.00	121.54	45.54	20.42	0.16	55.93	33.34
TM-15	7.00	122.04	115.04	22.37	0.11	55.37	29.20
TM-16	1.40	122.03	120.63	19.58	0.18	52.24	36.08
TM-17	10.00	31.00	21.00	18.37	0.31	46.82	39.07
TM-18	3.12	152.09	148.97	21.10	0.08	55.49	31.73
TM-19	108.00	121.82	13.82	19.37	0.56	48.99	33.67
A Zone Fringe Zone:							
KDE99-02	68.00	74.00	6.00	10.40	3.66	29.16	42.72
M-2	196.64	200.56	3.92	22.63			
M-4	53.95	57.12	3.17	19.00			
M-8	4.57	20.47	15.90	23.55			
TM-04	60.00	71.50	11.50	17.69	2.33	33.00	35.98
TM-05	11.00	17.70	6.70	16.04	2.82	31.19	35.18
TM-06	71.60	83.23	11.63	20.49	2.01	43.62	16.14
TM-09	5.00	20.00	15.00	19.66	1.32	47.49	42.87
TM-10	68.54	92.00	23.46	18.59	2.61	39.51	43.29
TM-13	114.69	119.00	4.31	15.02	5.20	28.21	41.27
TM-14	61.40	76.00	14.60	15.15	3.74	29.32	23.23
TM-17	31.00	55.06	24.06	13.28	3.47	24.79	31.36
TM-19	106.06	108.00	1.94	19.50	3.51	37.60	8.09

17.3 CUT-OFF GRADE

Due to the fact that revenues are expected to be generated from multiple product streams (dominated by talc and magnesia, with contribution from generation of by-product nickel hydroxide), a Net Smelter Return approach was believed to be the most appropriate method to apply in the development of an appropriate cut-off grade for use in construction of a domain model of the talc-magnesite mineralization. A description of the various concepts and inputs is provided in Hall (2009) and is summarized below:

17.3.1 BASE CASE

“All costs have been generated in Canadian dollars. Market pricing for the products is based on US\$. In this document the current posted bank exchange rate of 0.944 has been used.

The conceptual base case Deloro operating model consists of an open pit mine combined with an integrated magnesium oxide and talc facility processing 1,000,000 tonnes of ore annually. Located only 11 Km south of Timmins, Ontario, the processing facilities will be serviced by extending the nearby high tension electricity and natural gas supply lines, building a railroad spur to connect the site to the Ontario Northland system and North American distribution networks, and building a gravel access road from Gold Mine Road.

The current ore grade estimated from a sectioned drill core composite is:

52.1% total magnesite
35.6% talc
0.30% soluble Ca%

The cut off grade will be managed to maximize finished goods production rather than marginal costing. Selective mining, and flexibility incorporated in the plant design, will enable the company to respond to market opportunities.

The process consists of a flotation system to recover talc, followed by processing of the flotation residue to recover magnesium oxide using the patented DMI process. At the estimated average grades presented above, the talc yield is 23%, while magnesium oxide yield is 19%. Both the talc and magnesium oxide will be high purity products that will command a premium on the market. The high purity is only partially responsible for the premium. The processing technology allows a product consistency that rivals the best available on the planet. The intention is to offer a premium, North American-based product to consumers who in recent years have largely relied upon imports from China.

The talc side of the operation has been fairly well defined by several historical test programs and field proven technology. A current test program at Lakefield Research is once again confirming the assumed talc yield and is providing samples for micronizing and customer validation. The magnesium oxide portion of the operation is based more on leading edge technology. Although only bench-scale laboratory testing has to-date been performed on the Deloro ore to recover magnesia, the DMI process has been applied in the past to a variety of metal recovery systems in the U.S.”

17.3.2 GROSS CONTAINED VALUE (GCV)

“The Gross Contained Value, or net revenue, can be expressed as a function as follows:

(Talc average sales price x talc yield) +
(MgO average sales price x MgO yield) +
(marketing opportunity gain/loss) +
(nickel credit).

Talc Average Sales Price (ASP):

The talc ASP is composed of the commodity grade ASP, the micronized grade ASP, the product mix (the proportion of commodity grade vs. micronized grade product), and the USD/CAD exchange rate.

Estimates of commodity and micronized pricing are derived from personal market knowledge, confirmed by Industrial Minerals Magazine, Minerals Price Watch. As of December 2009, the Commodity ASP was US\$175/tonne, while the Micronized ASP was US\$425/tonne.

The product mix strategy is to sell as much high value material (micronized talc) as possible and utilize any remaining production capacity for production of commodity grade material. The target market for high value product is displacing high brightness Chinese imports to the North American market. According to estimates prepared by the United States Geological Survey (USGS), 2008 Chinese talc imports to the United States amounted to 130,000 tonnes. Recently completed and ongoing work on Deloro talc indicates that the brightness is equivalent to the Chinese material. Microscopic examination shows that Deloro talc has macro crystalline structure suitable for the high end applications and samples have been certified asbestos fibre free. The Chinese ASP is significantly higher than the global average because of its high brightness relative to North American sources. Pricing Deloro product at a North American sourced ASP can be expected to capture a large part of this market.

On the basis of producing approximately 45% as high value micronized talc, the weighted average talc ASP is estimated at approximately CDN\$305/tonne.

Talc Yield:

The talc yield is a function of talc feed grade and is effectively linear over the range of interest. The yield was estimated using a combination of historical test work and personal experience. The complete list of assumptions is presented in the Deloro Operation Worksheet, and will not be reproduced here. The current Lakefield test program is indicating the estimated yield is conservative at the ore body average grade. The formula for estimation of the talc yield is presented below:

$$\text{Talc Yield} = (0.7074 \times \text{Talc Ore Grade}/100 - 0.0215) \times 100$$

(Note the grades are converted to decimal form)

Magnesia (MgO) Average Sales Price (ASP):

The MgO ASP is stated for a product with an estimated grade of 98% MgO (M98). DMI has indicated that calcium can be recovered to CaO in the product, or possibly even physically removed allowing for a purity well above 99% MgO. The MgO ASP is estimated based on Chinese dead-burned 97.5% MgO (FOB China), quoted in Industrial Minerals Magazine, Minerals Price Watch. The target market is to displace Chinese imports to North America by offering equivalent FOB pricing. The customers will benefit from reduced freight rates and increased product consistency. Once established in the market place there is upside potential because of product consistency.

As of December 2009, the quoted price for a 97.5% dead-burned MgO product is US\$450/tonne (approximately CDN\$476.69/tonne).

Magnesia Yield:

The MgO yield is a function of magnesite feed grade and is assumed linear over the range of interest. The Aker Solutions' (Aker) Metsim material balance is used to estimate the MgO

yield relative to magnesite content in the feed. Aker used DMI's recent laboratory test results in their simulation. The Metsim model, with assumptions, is presented in detail in the Deloro Operation Worksheet, Aker leach mass flow tab and MgO design criteria tab. Current DMI testing on larger laboratory samples is indicating the estimated yield is conservative at the deposit average grade. The formula for estimation of the MgO yield is presented below:

$$\text{MgO Yield} = 0.3688 \times \text{Magnesite Ore Grade}$$

Magnesia Opportunity Gain/Loss:

The marketing opportunity gain/loss is a function of the calcium equivalent magnesia ore grade, MgO yield, and product ASP relative to the 98% final product MgO base case.

According to the Aker Metsim model, calcium is enriched from ore to MgO product by a factor of two. Calcium (presumably existing as CaO) is the only significant impurity in the product, so final product grade is effectively 100% less the contained CaO. According to Industrial Minerals Magazine, Minerals Price Watch, December 2009, the ASP for dead-burned MgO moves US\$15/t for each 1% MgO between 90% and 97.5% MgO. For this case the ASP adjustment is extrapolated linearly to 100% MgO.

Nickel Credit:

The nickel credit is an estimate of the value of recoverable nickel as a hydroxide concentrate. Recovery is based on recent DMI test work.”

17.3.3 COST OF GOODS SOLD DERIVATION (COGS)

“The cost of goods sold is a function of the following cost inputs:

$$\begin{aligned} &(\text{fixed}) + \\ &(\text{ore marginal}) + \\ &(\text{talc marginal per \% talc ore grade} \times \text{talc ore grade}) + \\ &(\text{MgO marginal per \% magnesite ore grade} \times \text{magnesite ore grade}). \end{aligned}$$

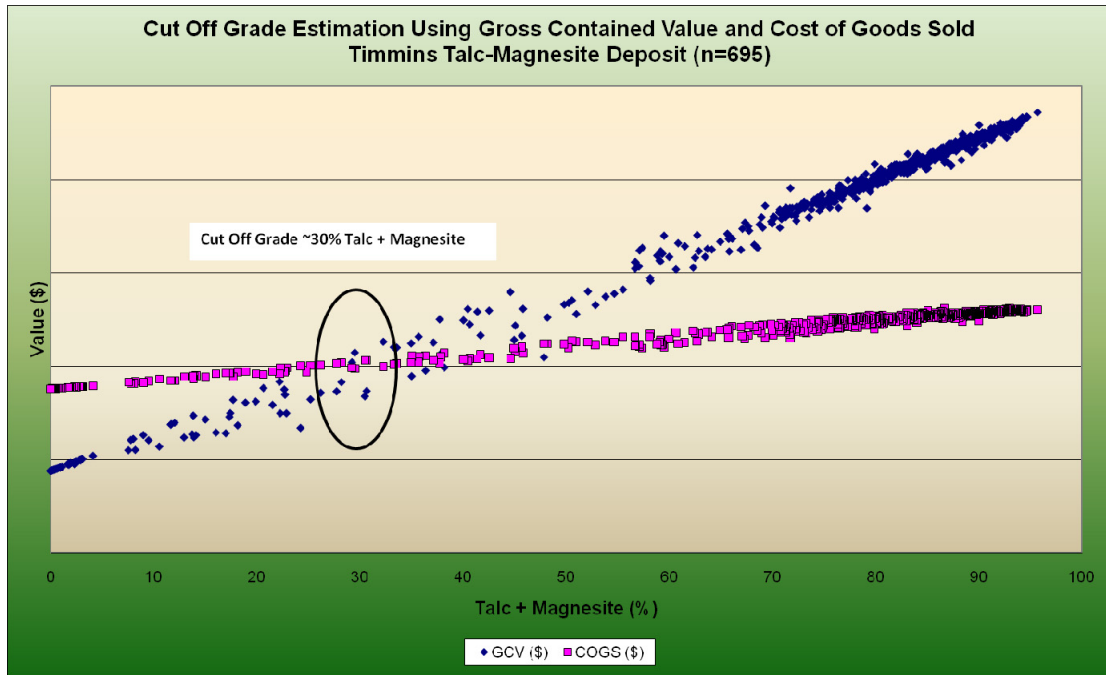
In order to develop the cost structure it was necessary to build an operating model for the conceptual base case scenario. The order of model development was:

- 1 – A block diagram was built using laboratory test results.
- 2 – Historical test results were used to establish a talc grade - recovery curve.
- 3 – Talc circuit mass flows were then developed from the grade – recovery curve for average feed grade.
- 4 – Aker Solutions inputted the DMI laboratory test results into material balancing software (METSIM) to produce MgO mass flow information for average ore grade.
- 5 – The mass flow information was integrated into the block diagram to produce a conceptual operating system.

- 6 – Consolidated tables of notes and assumptions were established.
- 7 – An equipment list, including electrical load, was developed for mining and talc processing.
- 8 – Aker Solutions provided an estimated electrical load for MgO processing.
- 9 – In conjunction with Aker Solutions, heating loads were developed.
- 10 – The conceptual operating system model was used to develop an operations staffing plan, Western Engineering 2008 and local labour rates were used to estimate staff compensation.
- 11 - The conceptual operating system model was used to estimate materials, parts and supplies.
- 12 - The conceptual operating system model was used to estimate capital cost, however, no engineering has been performed to verify the data, and in any case capital expenditure has no bearing on operating cash flow.
- 13 – Costs were categorized by functional area (e.g. mining, plant unit operation, field SG&A) and estimated by cost type (i.e. labour, material, energy, or other).
- 14 – The cost in each functional area/cost type was then distributed accordingly to: fixed, ore marginal, or product marginal.
- 15 – Product marginal was further subdivided in to talc marginal and MgO marginal.
- 16 – Costs then roll up into: fixed, ore marginal, talc marginal, and MgO marginal.”

The gross contained values and cost of goods sold was calculated for samples contained within the drill hole database. The results were then presented in graphical format (Figure 17.5), which enabled the selection of a value of 30% talc + magnesite as a reasonable cut-off grade for the purposes of this initial mineral resource estimate.

Figure 17.5
Cut-Off Grade Estimate Using Gross Contained Value and Cost of Goods Sold



17.4 TOPOGRAPHIC SURFACE

A detailed digital topographic map was not available at the time of preparation of this initial mineral resource estimate, consequently, given the very low relief around the A Zone, Micon proceeded to construct a tentative topographic model using available drill hole collar elevations as guides.

17.5 STATISTICAL ANALYSIS

An investigation of the statistical distribution of the raw assay values of soluble MgO, soluble Ca, talc and magnesite was carried out in order to determine whether application of grade capping may be required. All samples contained within the three-dimensional models of the A Zone core and A Zone high soluble Ca fringe domain model were coded in the database and extracted for analysis. Normal histograms were generated from these extraction files (Figures 17.6 through 17.9 for the A Zone core and 17.10 through 17.13 for the A Zone fringe) and the descriptive statistics of the sample data set were generated. A comparison of the descriptive statistics for the core and fringe data subsets is presented in Table 17.3. Examination of the frequency histograms suggested that no grade capping is required for this initial mineral resource estimate.

Figure 17.6
Frequency Histogram of the Soluble MgO Values, A Zone Core

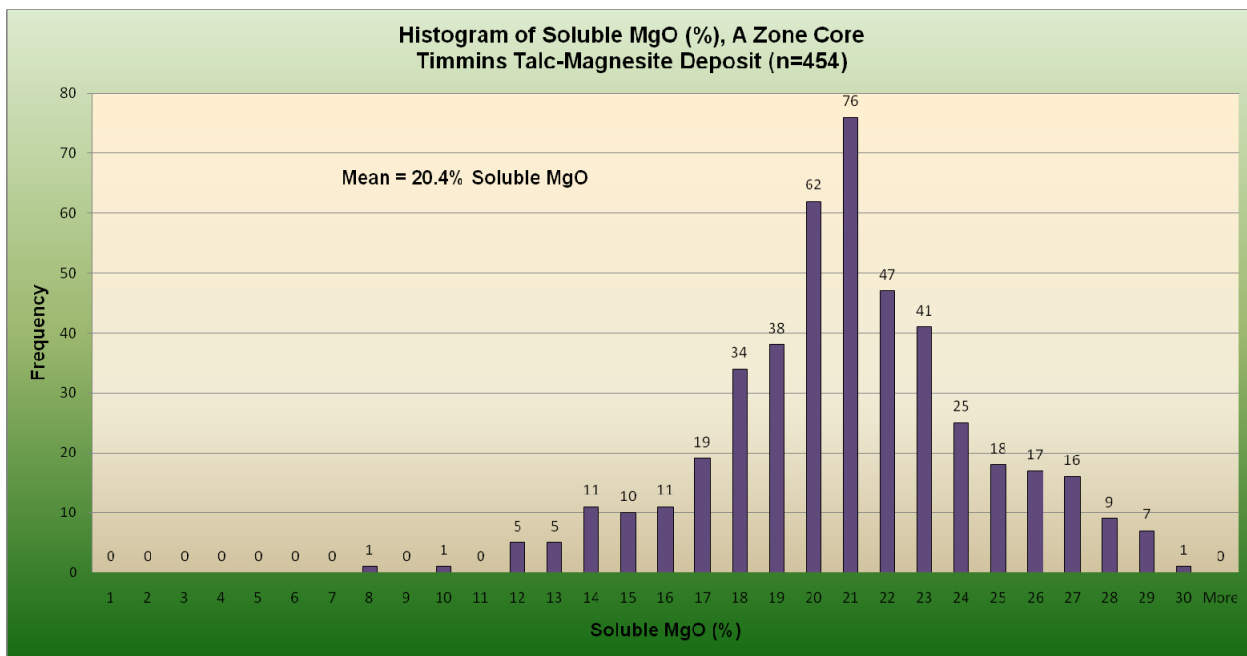


Figure 17.7
Frequency Histogram of the Soluble Ca Values, A Zone Core

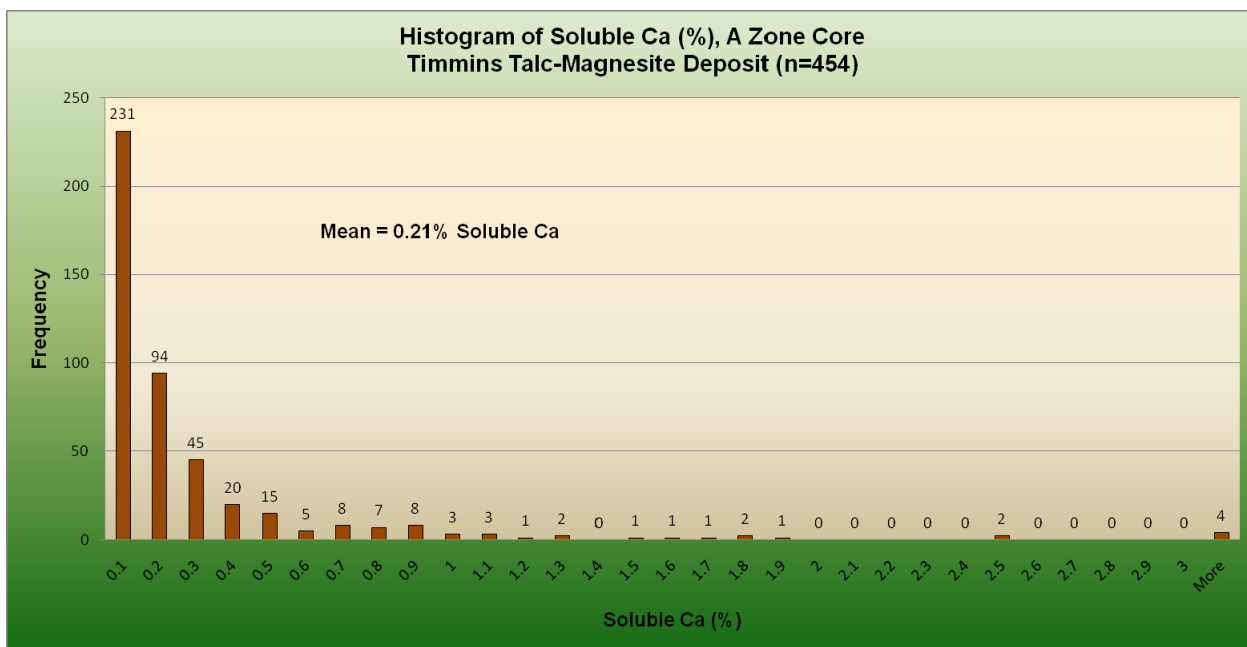


Figure 17.8
Frequency Histogram of the Talc Values, A Zone Core

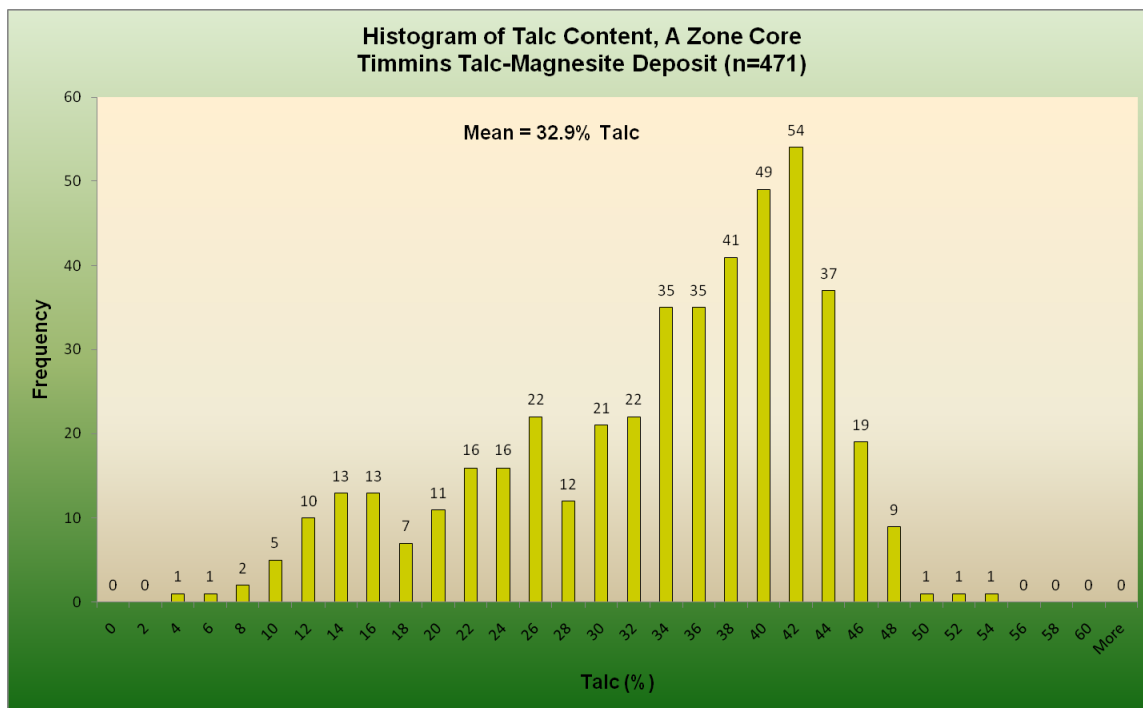


Figure 17.9
Frequency Histogram of the Magnesite Values, A Zone Core

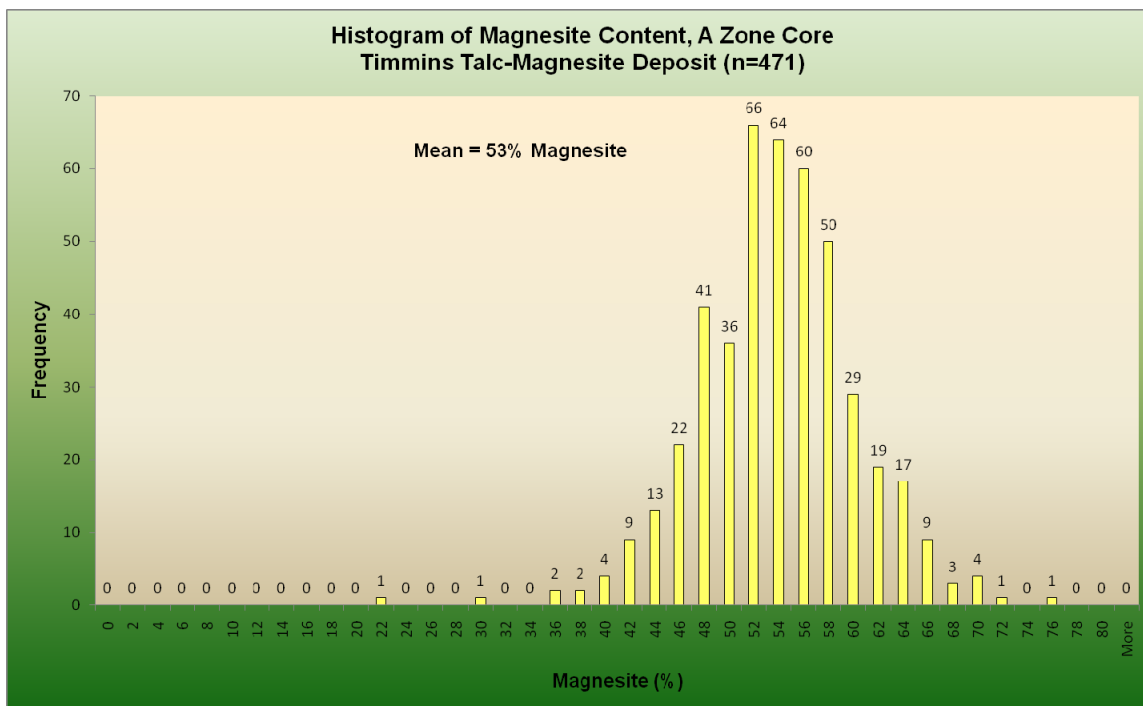


Figure 17.10
Frequency Histogram of the Soluble MgO Values, A Zone Fringe

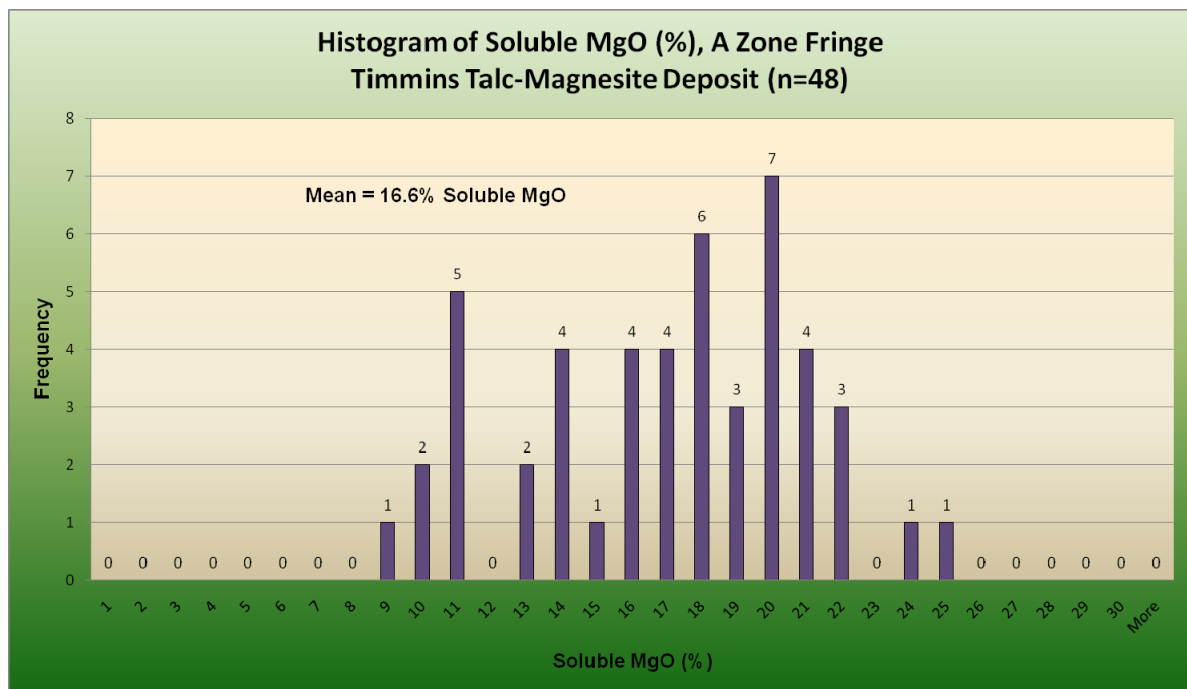


Figure 17.11
Frequency Histogram of the Soluble Ca Values, A Zone Fringe

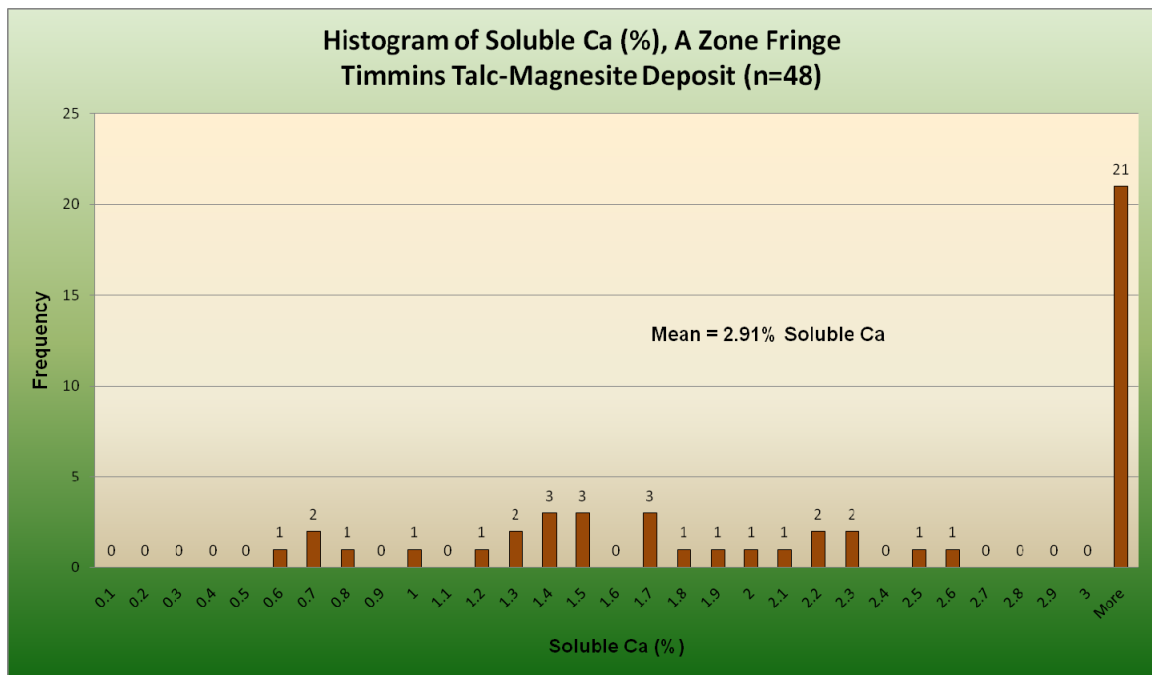


Figure 17.12
Frequency Histogram of the Talc Values, A Zone Fringe

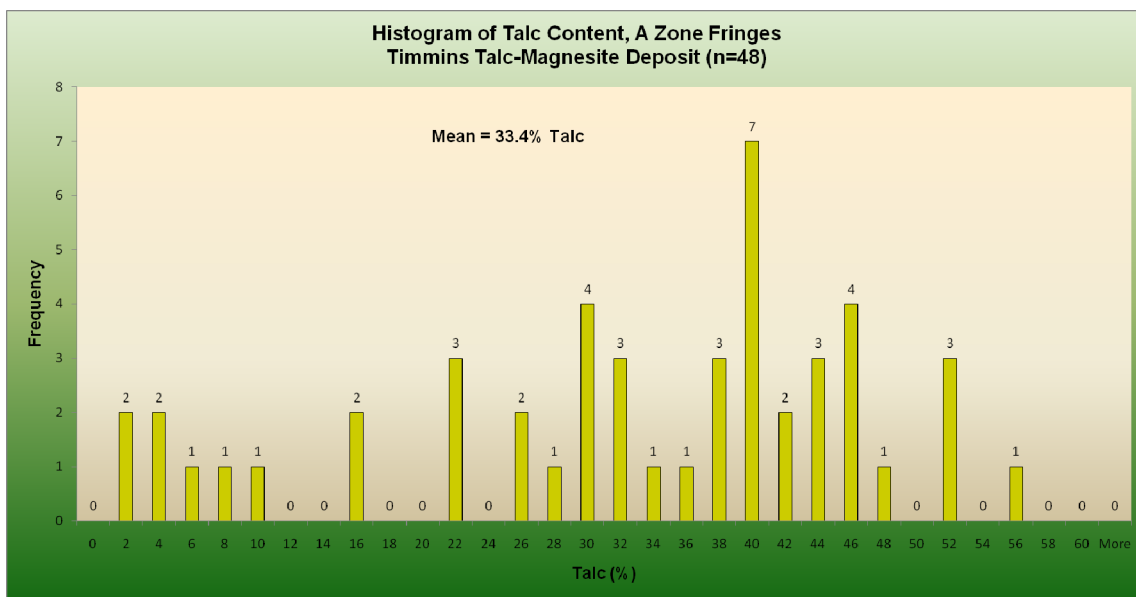


Figure 17.13
Frequency Histogram of the Magnesite Values, A Zone Fringe

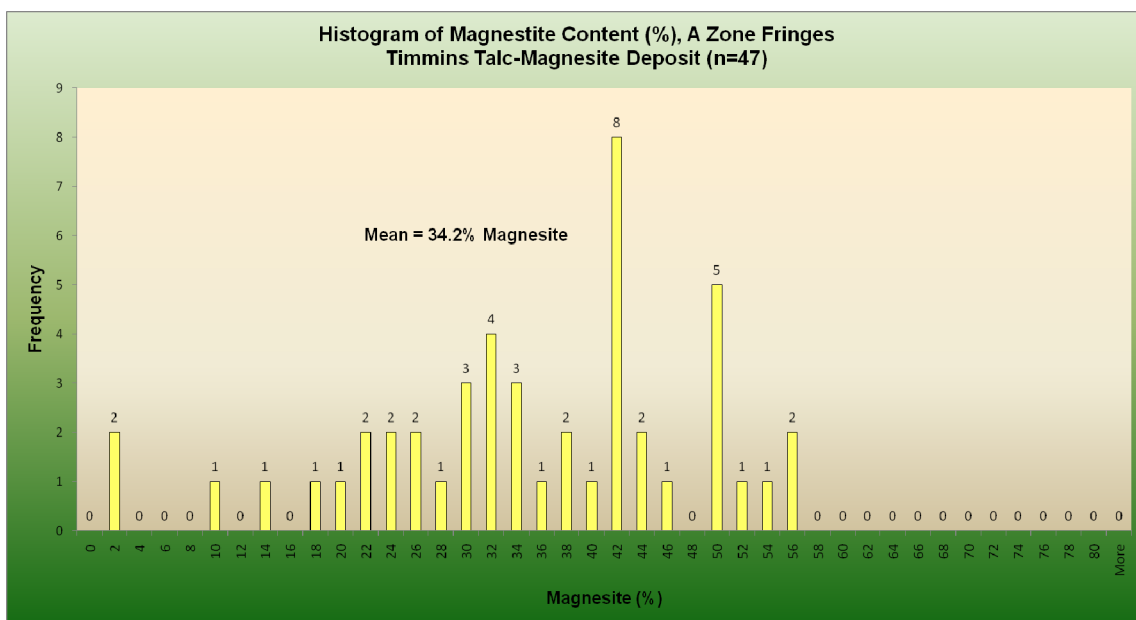


Table 17.3
Summary Statistics for Raw Assay Samples Contained Within the A Zone Core and Fringe Domain
Models, Timmins Talc-Magnesite Deposit

Item	Sol MgO	Sol Ca	Talc	Magnesite
A Zone Core:				
Arithmetic Mean	20.45	0.24	32.56	52.92
Length-Weighted Mean	20.42	0.21	32.85	53.02
Standard Error	0.17	0.02	0.47	0.30
Median	20.40	0.10	35.02	53.06
Mode	20.20	0.02	40.90	46.63
Standard Deviation	3.53	0.43	9.97	6.39
Coefficient of Variation-Arithmetic	0.17	1.81	0.31	0.12
Coefficient of Variation-Weighted	0.17	2.01	0.30	0.12
Sample Variance	12.45	0.18	99.39	40.82
Kurtosis	0.47	26.67	-0.29	1.87
Skewness	-0.17	4.63	-0.76	-0.25
Range	21.82	3.68	48.79	55.33
Minimum	7.88	0.01	3.30	20.47
Maximum	29.70	3.68	52.09	75.80
Sum	9,286.08	107.84	14,783.01	24,026.62
Count	454.00	454.00	454	454
A Zone Fringe:				
Arithmetic Mean	16.63	3.10	31.37	34.01
Length-Weighted Mean	16.56	2.91	33.44	34.15
Standard Error	0.58	0.33	2.11	1.94
Median	17.50	2.24	36.28	35.64
Mode	15.50	1.46	#N/A	48.73
Standard Deviation	4.04	2.29	14.63	13.29
Coefficient of Variation-Arithmetic	0.24	0.74	0.47	0.39
Coefficient of Variation-Weighted	0.24	0.79	0.44	0.39
Sample Variance	16.33	5.24	214.07	176.64
Kurtosis	-0.77	4.07	-0.40	0.19
Skewness	-0.32	1.74	-0.73	-0.67
Range	16.00	11.40	53.14	55.32
Minimum	8.50	0.60	1.33	0.07
Maximum	24.50	12.00	54.47	55.39
Sum	798.01	148.77	1,505.57	1,598.39
Count	48	48	48	47

17.6 COMPOSITING METHODS

Micon examined the distribution of the lengths of the samples contained within the A Zone core and fringe domain models by means of frequency histograms (Figures 17.14 and 17.15, respectively).

Figure 17.14
Frequency Histogram of the Sample Lengths, A Zone Core

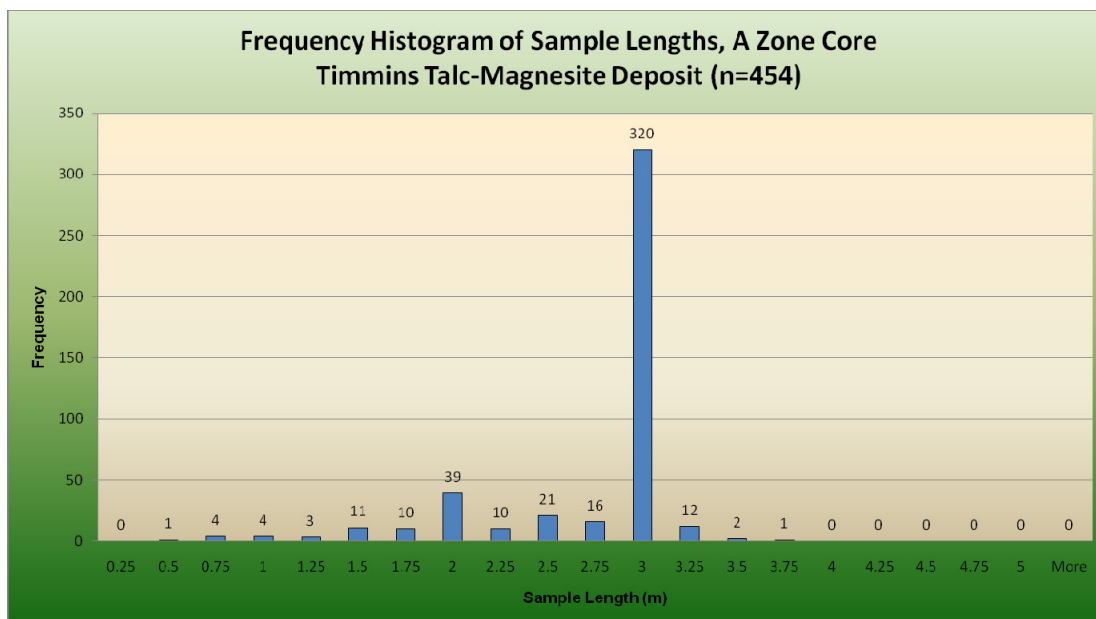
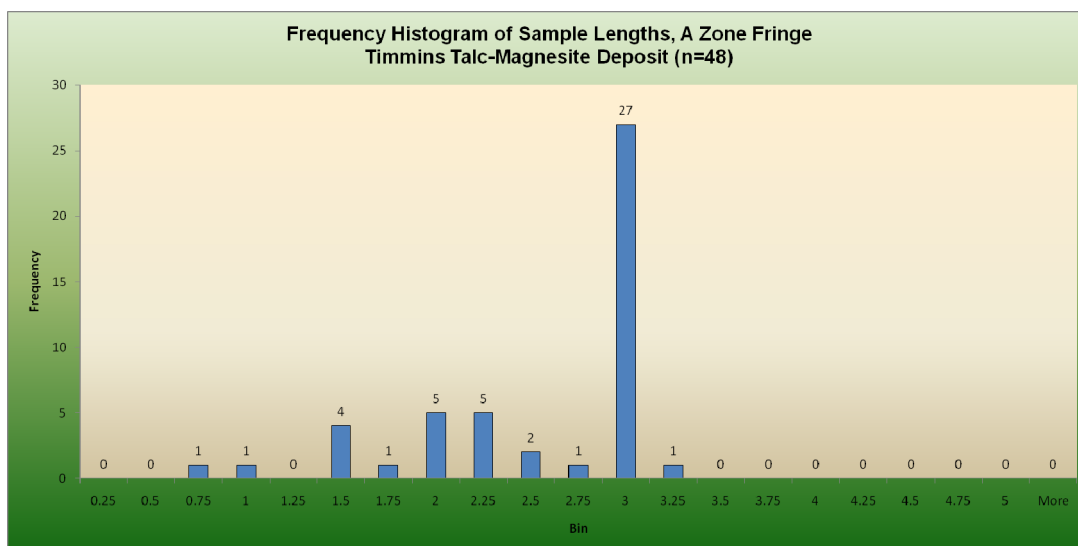


Figure 17.15
Frequency Histogram of the Sample Lengths, A Zone Fringe



In Micon's opinion, considering the relationship to the anticipated block sizes and search ellipse criteria that would be utilized for the construction of the grade-block model, a composite length of 3.0 m was appropriate for this assignment.

All samples of the raw assays were composited to an equal length of 3.0 m using the down hole compositing function of the Gemcom-Surpac mine modeling software. In this function, compositing begins at the point in a drill hole at which the zone of interest is encountered and continues down the length of the hole until the end of the zone is reached. As often happens, the thickness of the mineralized zone encountered by any given drill hole is not an even multiple of the composite length. In these cases, if the remaining length was 75% or greater of the composite length (in this case 2.25 m), the composite was accepted as part of the data set. The remaining sample lengths less than 75% of the composite length were retained for consideration in order to ensure a more accurate estimate of the grades of those blocks along the lower contact of the domain model. The descriptive statistics of the composited samples are presented in Table 17.4.

Table 17.4
Summary Statistics for the 3 Metre Composited Samples Contained Within the A Zone Core and Fringe Domain Models, Timmins Talc-Magnesite Deposit

Item	Sol MgO	Sol Ca	Talc	Magnesite
A Zone Core:				
Arithmetic Mean	20.47	0.21	32.79	52.98
Length-Weighted Mean	20.47	0.21	32.81	53.00
Standard Error	0.16	0.02	0.45	0.27
Median	20.39	0.10	35.42	53.07
Mode	20.50	0.09	36.76	49.21
Standard Deviation	3.25	0.34	9.20	5.62
Coefficient of Variation-Arithmetic	0.16	1.64	0.28	0.11
Coefficient of Variation-Weighted	0.16	1.64	0.28	0.11
Sample Variance	10.54	0.12	84.70	31.60
Kurtosis	0.12	24.40	-0.39	0.44
Skewness	-0.17	4.34	-0.74	-0.14
Range	16.65	3.06	45.62	34.63
Minimum	11.45	0.01	4.89	33.37
Maximum	28.10	3.06	50.51	68.00
Sum	8311.07	84.06	13871.41	22408.88
Count	406	406	423	423
A Zone Fringe:				
Arithmetic Mean	17.58	2.80	33.47	34.12
Length-Weighted Mean	17.56	2.82	33.47	34.12
Standard Error	0.62	0.24	1.91	1.83
Median	18.00	2.60	38.56	35.64

Item	Sol MgO	Sol Ca	Talc	Magnesite
Mode	23.55	#N/A	21.50	23.55
Standard Deviation	4.18	1.53	12.49	12.00
Coefficient of Variation-Arithmetic	0.24	0.54	0.37	0.35
Coefficient of Variation-Weighted	0.24	0.54	0.37	0.35
Sample Variance	17.47	2.33	156.10	143.94
Kurtosis	-0.98	-0.49	0.14	-0.65
Skewness	-0.29	0.57	-0.92	-0.40
Range	13.83	5.89	51.07	45.70
Minimum	9.72	0.60	1.54	6.38
Maximum	23.55	6.49	52.61	52.08
Sum	791.04	109.32	1439.00	1467.12
Count	45	39	43	43

17.7 BULK DENSITY

Bulk densities were measured at the project site by Globex field staff as described in Section 12 of this report. A total of 306 measurements were made of samples from the A Zone core and a total of 39 measurements were made of samples from the A Zone fringe (Figures 17.16 and 17.17, respectively). Micon determined that the average bulk density of the A Zone core samples was 2.96 t/m³ and that the average bulk density of the A Zone Fringe samples was 2.93 t/m³. These values were applied as the average bulk density to estimate the mineral resources of the A Zone.

Figure 17.16
Frequency Histogram of Density Readings of the A Zone Core

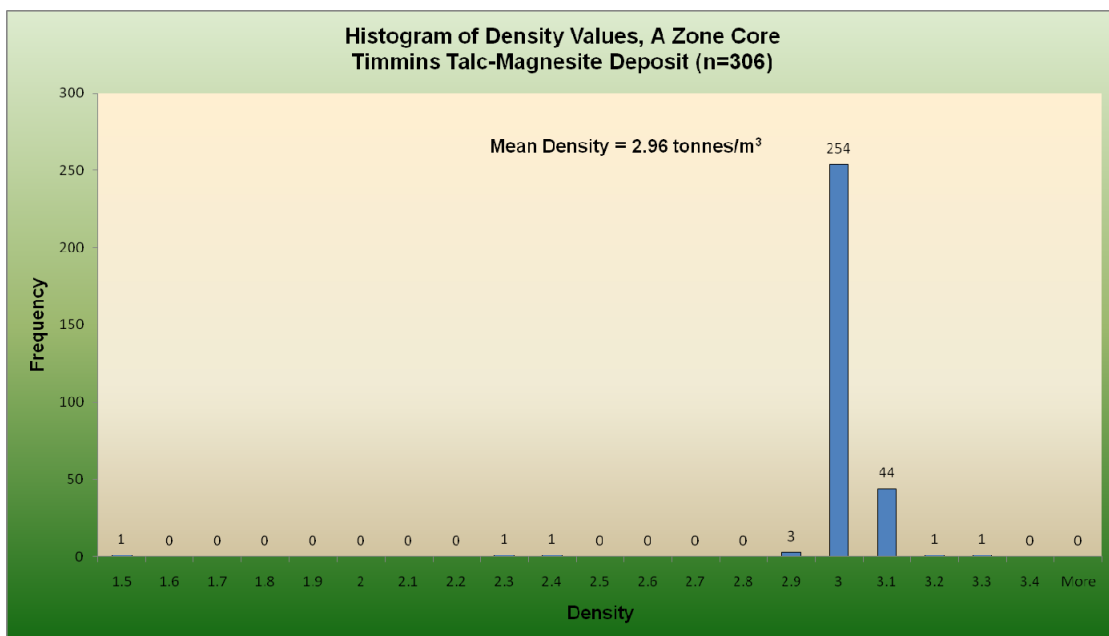
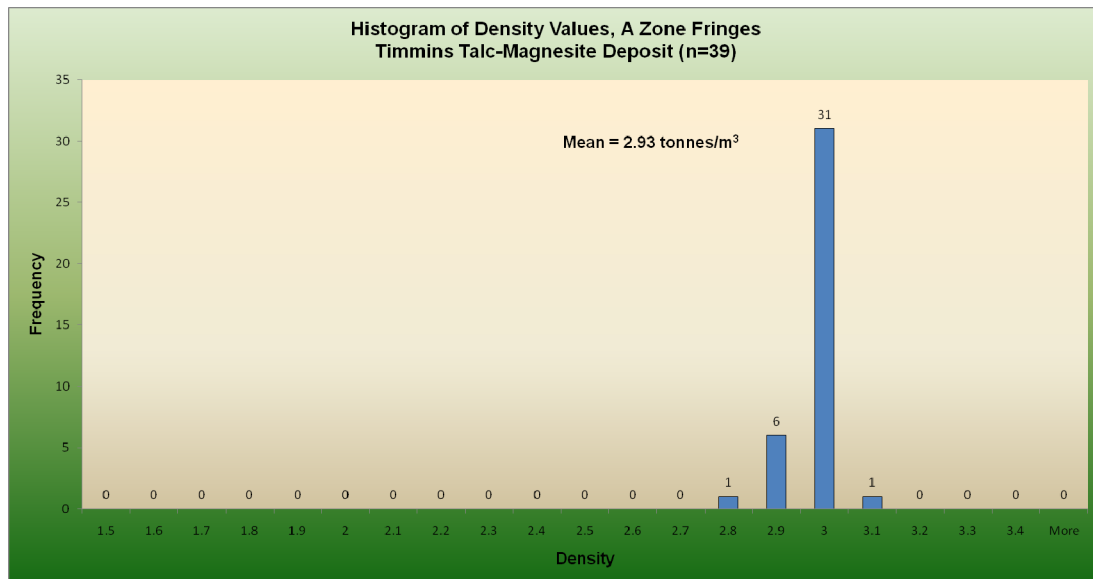


Figure 17.17
Frequency Histogram of Density Readings of the A Zone Fringe



17.8 TREND ANALYSIS

As an aid in carrying out a variography study of the continuity of the talc and magnesite grades, Micon conducted a short analysis of the overall trends that may be present in the A Zone deposit. For this exercise, contoured plan maps were created for the talc and magnesite distribution present on the 290 Bench (Figure 17.18). The distribution of talc, magnesite and soluble Ca was examined in cross-sectional view by constructing contour maps for cross-section 479750E (Figure 17.19).

Figure 17.18
Talc and Magnesite Distribution in the A Zone, 290 Bench

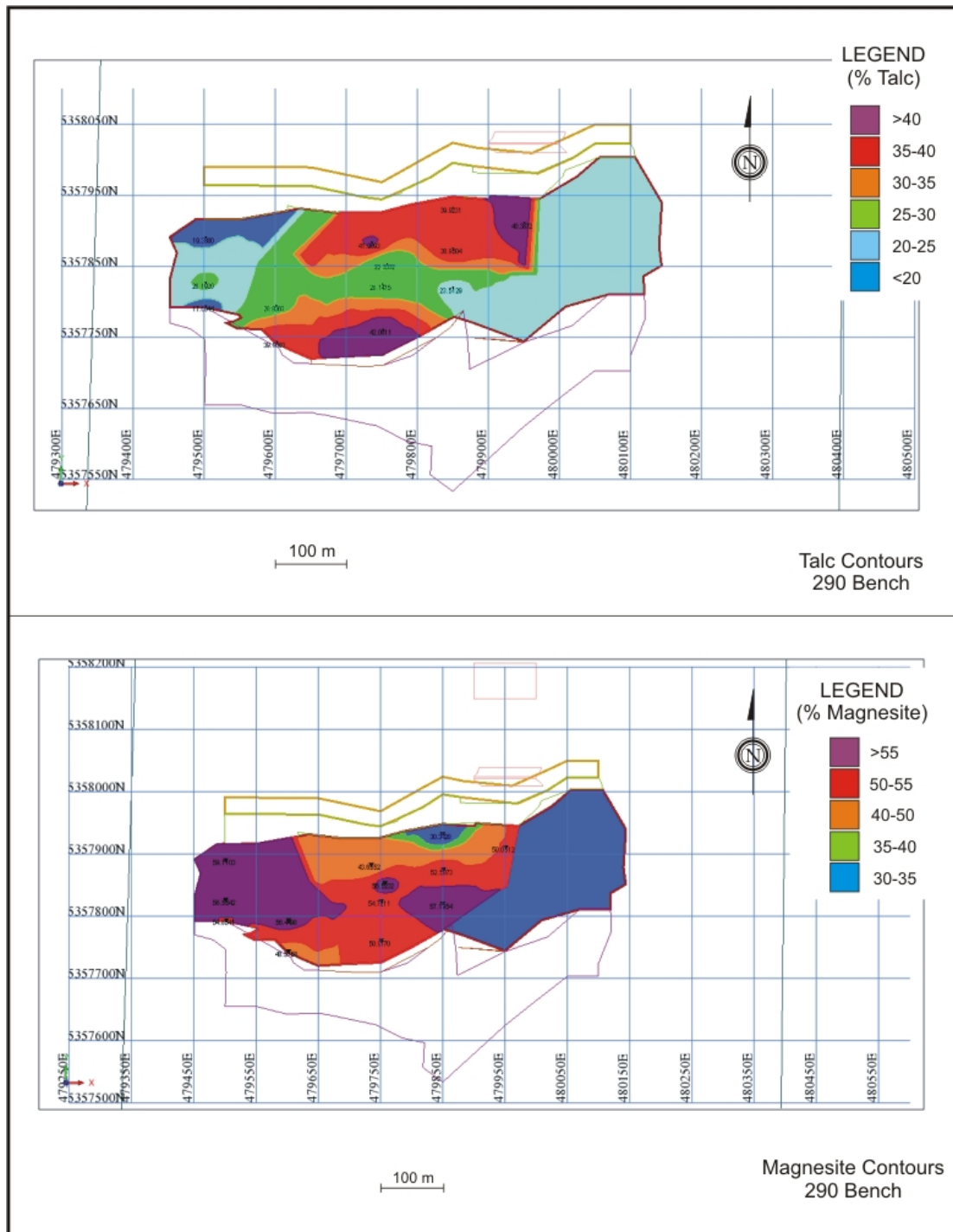
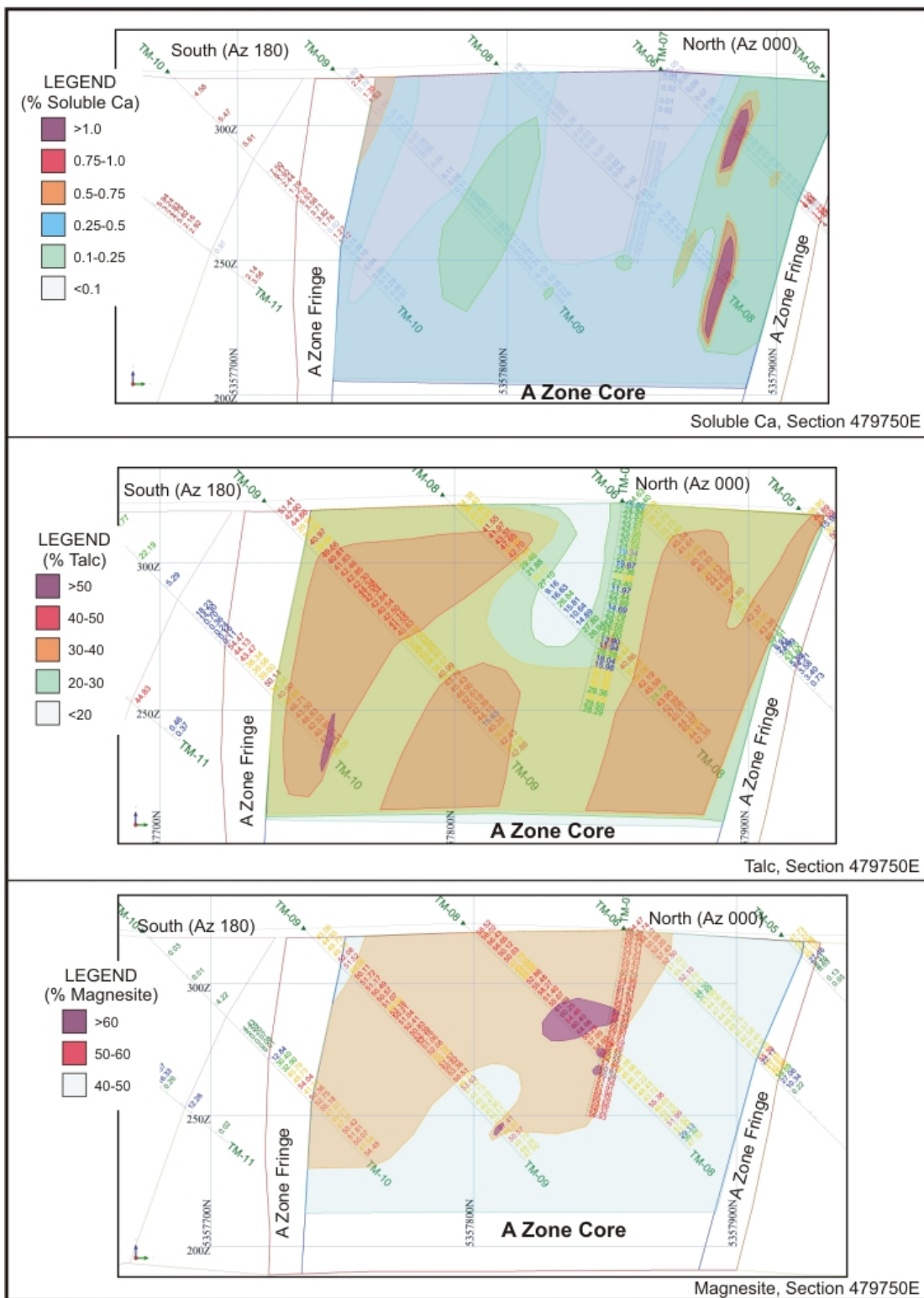


Figure 17.19
Soluble Ca, Talc and Magnesite Distribution in Cross-Section 479750E (Looking West)



From the limited drill hole information that is available, it can be seen that the talc distribution seems to align along the contacts of the mineralized zone. The magnesite distribution on the other hand seems to follow a more podiform mode. In cross-sectional view, the soluble Ca distribution generally parallels the contacts of the mineralized zone.

17.9 VARIOGRAPHY

The analysis of the variographic parameters of the mineralization found in the A Zone core mineralized domain model began with the construction of omni-directional variograms using the uncapped, 3-m composited sample data with the objective of determining the global nugget (C0) for the soluble MgO, soluble Ca, talc and magnesite data set. Preliminary review of the available data for the A Zone fringe failed to produce viable variograms due to the limited number of samples. An evaluation of other anisotropies that may be present in the A Zone core resulted in successful variograms for the three principal directions with model fits ranging from reasonable to good (Appendix II). The results of this variographic analysis are presented in Table 17.5.

Table 17.5
Summary of Variographic Parameters for the A Zone Core (Using Uncapped, 3 Metre Composite Sample Data)

Item	Soluble MgO (D1)	Soluble Ca (D2)	Magnesite (D3)	Talc (D4)
Variogram Type	Spherical	Spherical	Spherical	Spherical
<u>NUGGET:</u>				
Nugget (Downhole)	1.53	0.027	10.57	22.93
Sill (C1-Downhole)	5.43	0.041	24.27	70.86
Range (m)	60	19	78	63
Nugget (Omni Directional)	1.63	0.032	9.65	21.07
Sill (C1-Omni Directional)	8.44	0.045	18.52	83.64
Range (m)	84	59	42	61
<u>ANISOTROPIES:</u>				
<u>Along Strike:</u>				
Orientation	0° → 070°	0° → 070°	0° → 070°	0° → 070°
Angular Tolerance	45°	30°	45°	30°
Sill (C1)	6.607	0.050	21.14	73.22
Range (m)	82	327	112	104
<u>Down Dip:</u>				
Orientation	-70° → 160°	-70° → 160°	-70° → 160°	-70° → 160°
Angular Tolerance	30°	45°	45°	45°
Sill (C1)	4.622	0.026	19.37	66.76
Range (m)	43	99	95	82
<u>Across Strike:</u>				
Orientation	+20° → 160°	+20° → 160°	+20° → 160°	+20° → 160°
Angular Tolerance	45°	30°	45°	30°

Item	Soluble MgO (D1)	Soluble Ca (D2)	Magnesite (D3)	Talc (D4)
Sill (C1) Range (m)	8.011 74	0.122 120	32.02 73	90.06 56
<u>SEARCH ELLIPSE:</u>				
Major Axis (Pass 2, Short Range)	80m@070°(0°)	325m@070°(0°)	110m@070°(0°)	105m@070°(0°)
Semi-Major Axis	75m@160°(+20°)	120m@160°(+20°)	95m@160°(-70°)	80m@160°(-70°)
Minor Axis	45m@160°(-70°)	100m@160°(+20°)	75m@160°(+20°)	55m@160°(+20°)
Major/Semi-Major Ratio	1.07	2.71	1.16	1.31
Major/Minor Ratio	1.78	3.25	1.47	1.91
Minimum Number of Points	2	2	2	2
Maximum Number of Points	8	8	8	8
Search Ellipse Type	Quadrant	Quadrant	Quadrant	Quadrant

Micon believes that Globex would be justified in completing an in-fill drilling program at the Timmins Talc-Magnesite deposit in order to confirm the mineralization outline and to provide a better estimate of the mineral distributions at a local scale. Such a drilling program could be designed to provide a data density at a nominal spacing of 50 metres on section, with sections spaced 100 metres apart.

17.10 BLOCK MODEL CONSTRUCTION

An upright, rotated, whole block model with the long axis of the blocks oriented along an azimuth 080° and dipping 90° was constructed using the Gemcom-Surpac v6.1.1 software package and the parameters presented in Table 17.6. A number of attributes were also created to store such information as mineral grades by the various interpolation methods, distances to and number of informing samples, domain codes, and resource classification codes. These are presented in Table 17.7.

Given the early stage of the Timmins Talc-Magnesite deposit, little information relating to the most appropriate open pit mining equipment which could be employed is available. Consequently, the selection of the block dimensions is preliminary in nature. Selection of block dimensions may need to be revised at a later date as new information permits the identification of the most appropriate mining equipment and as data density increases.

Table 17.6
Timmins Talc-Magnesite Deposit Block Model Parameters

Type	Y (across-dip)	X (along strike)	Z (down-dip)
Minimum Coordinates	5,357,200	479,200	0
Maximum Coordinates	5,358,500	480,500	350
User Block Size	5	10	5
Min. Block Size	5	10	5
Rotation	-10.000	0.000	0.000

Table 17.7
Timmins Talc-Magnesite Deposit Block Model Attributes

Attribute Name	Type	Decimals	Background	Description
classification	Integer	-	0	1=Measured, 2=Indicated, 3=Inferred
density	Real	2	2.87	DIA/UMV/MVO=2.87, 402=2.96, 407=2.93, OVB=2.0, Air=0
litho_code	Integer	-	113	113=UMV, 104=MVO, 105=Dia, 102=OVB, 402=A Zone (Lo Sol Ca), 407=A Zone (Hi Sol Ca), 0=Air
magnesite_id2	Real	2	0	Magnesite by Inverse Distance, Power 2
magnesite_nn	Real	2	0	Magnesite by Nearest Neighbour
magnesite_ok	Real	2	0	Magnesite by Ordinary Kriging
mgn_avg_dist	Real	1	0	Average Distance of Informing Samples, Magnesite
mgn_nearest	Real	1	0	Distance to Nearest Informing Sample, Magnesite
no_sample_mgn	Integer	-	0	Number of Informing Samples, Magnesite
pass_no	Integer	-	0	Long Range=1, Short Range=2
sol_ca_id2	Real	2	0	Soluble Ca by Inverse Distance, Power 2
sol_ca_nn	Real	2	0	Soluble Ca by Nearest Neighbour
sol_ca_ok	Real	2	0	Soluble Ca by Ordinary Kriging
sol_mgo_id2	Real	2	0	Soluble MgO by Inverse Distance, Power 2
sol_mgo_nn	Real	2	0	Soluble MgO by Nearest Neighbour
sol_mgo_ok	Real	2	0	Soluble MgO by Ordinary Kriging
talc_id2	Real	2	0	Talc by Inverse Distance, Power 2
talc_nn	Real	2	0	Talc by Nearest Neighbour
talc_ok	Real	2	0	Talc by Ordinary Kriging

Soluble MgO, soluble Ca, talc and magnesite grades were interpolated into the individual blocks for the A Zone core domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. A single-pass approach was used wherein the information from the variography analysis described in Table 17.5 above was used to establish the parameters of the search ellipse. Due to the limited amount of drill hole information available for the A Zone fringe, the average grades as determined from the 3 metre composite samples were applied to all blocks located within the A Zone fringe domain model.

“Hard” domain boundaries were used along the contacts of the A Zone core mineralized domain model in which only data contained within the core domain model were allowed to be used to estimate the grades of the blocks, and only those blocks within the domain limits were allowed to receive grade estimates. The uncapped, composited grades of all the drill hole intersections were used to derive an estimate of a block’s grade for those locations situated between drill hole pierce points. In this manner, lower grade or barren assay results that occur within the domain boundary were allowed to influence the estimated block grades.

17.11 BLOCK MODEL VALIDATION

Validation analyses for the mineral resource estimate at the Timmins Talc-Magnesite deposit consisted of a comparison of the average block grades for the uncapped values against the respective informing composite samples. The reconciliation is presented in Table 17.8. It can be seen that there is a good correlation for the average block grades estimated using the three interpolation methods, and between the average estimated block grades and the informing composite samples.

Table 17.8
Comparison of Block Model Reports to Composite Samples, A Zone

Item	Tonnes	Inverse Distance, Power 2	Nearest Neighbour	Ordinary Kriging	3 m Composite Average
A Zone Core					
Soluble MgO	31,506,240	20.41	20.20	20.36	20.47
Soluble Ca	31,506,240	0.23	0.30	0.24	0.21
Magnesite	31,506,240	52.61	52.58	52.68	53.00
Talc	31,506,240	33.34	33.17	33.20	32.8
A Zone Fringes					
Soluble MgO	5,003,708	17.56	17.56	17.56	---
Soluble Ca	5,003,708	2.82	2.82	2.82	---
Magnesite	5,003,708	34.20	34.20	34.20	---
Talc	5,003,708	33.40	33.40	33.40	---

17.12 MINERAL RESOURCE CLASSIFICATION CRITERIA

The mineral resources in this report were estimated in accordance with the definitions contained in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves Definitions and Guidelines that were prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council on December 11, 2005.

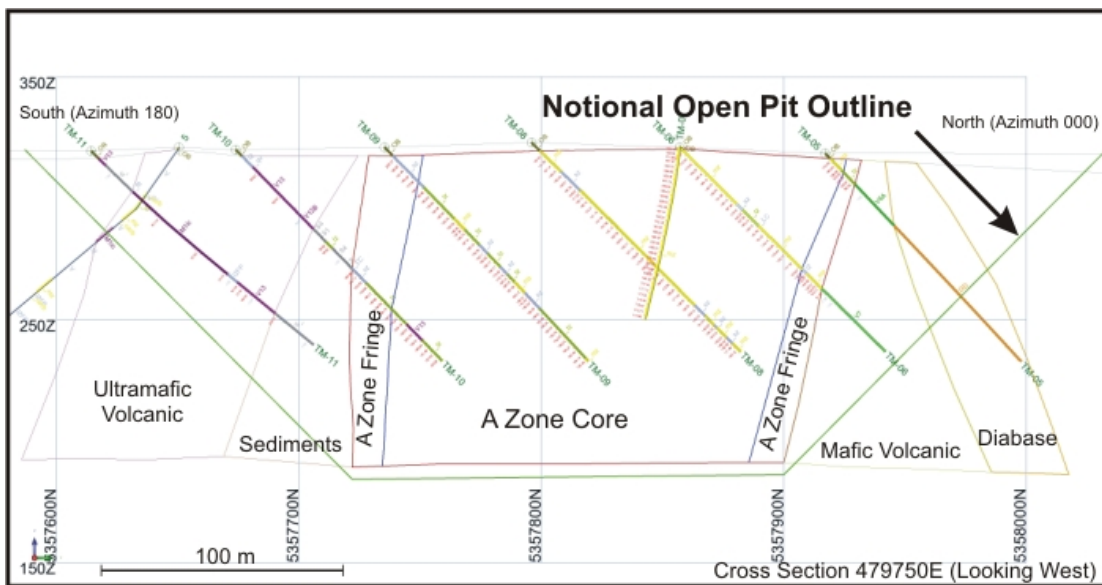
The CIM definition of a mineral resource states that:

“A Mineral Resource is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals in or on the Earth’s crust in such form

and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.”

In order to examine whether the mineral resources found at the Timmins Talc-Magnesite deposit satisfies the requirement of “reasonable prospects for economic extraction” in light of the stated base case operational scenario, Micon proceeded to construct an outline of a notional open pit shape. In order to accomplish this task, Micon created a series of conceptual outlines in cross-sectional view that began at the bottom contact of the mineralized domain model and proceeded upwards at a notional slope angle of 45° (Figure 17.20). Similarly, a slope angle of 45° was used to construct the notional open pit walls at the eastern and western limits of the mineralized domains. It is to be stressed that the resulting shape is of a hypothetical nature only and was generated with the sole purpose of examining whether the contained mineral resources could have a reasonable prospect of supporting the associated waste tonnes required under an open pit operational scenario.

Figure 17.20
Cross-Section 479750E (Looking West) Illustrating the Notional Open Pit Outline



The mineralized material was classified into either the Indicated or Inferred mineral resource category after taking into consideration the search ellipse ranges presented in Table 17.5 above, the density of the drill hole information and the overall average soluble Ca grades. Those blocks contained within the A Zone core which received interpolated grades that were within the variogram ranges and were located between 479700E and 479900E (the two cross-sections containing the greatest density of drill hole information) were classified as Indicated mineral resources. The remaining blocks of the A Zone core were classified into the Inferred mineral resource category.

In respect of the A Zone fringe, all blocks were classified in the Inferred category to reflect the fact that the average soluble Ca grades of these blocks exceed the stated upper limit and thus are not expected to produce a final magnesite product at the stated specification. However, Micon believes that a saleable final product can be generated from this material by means of blending with lower grade soluble Ca material from the A Zone core at a suitable ratio.

17.13 RESPONSIBILITY FOR ESTIMATION

The estimate of the mineral resources for the Timmins Talc-Magnesite deposit presented in this report was prepared by Mr. Reno Pressacco, M.Sc.(A), P.Geo., who is a Qualified person as defined in NI 43-101, and is independent of Globex.

17.14 MINERAL RESOURCE ESTIMATE

As a result of the concepts and processes described above, the mineral resources for the Timmins Talc-Magnesite deposit are set out in Table 17.9.

Table 17.9
Estimated Mineral Resources for the Timmins Talc-Magnesite Deposit (based on data available as of October, 2009)

Category	Tonnes	Sol MgO (%)	Sol Ca (%)	Magnesite (%)	Talc (%)
A Zone Core:					
Indicated	12,728,000	20.0	0.21	52.1	35.4
Inferred	18,778,000	20.9	0.26	53.1	31.7
A Zone Fringe:					
Inferred	5,003,000	17.6	2.82	34.2	33.4

1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.
2. The quantity and grade of reported Inferred Resources in this estimation are conceptual in nature and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Mineral Resource. It is uncertain if further exploration will result in the upgrading of the Inferred Resources into an Indicated or Measured Mineral Resource category.
3. All figures have been rounded to reflect the accuracy of the estimate.

There is a degree of uncertainty associated with the estimation of mineral resources and mineral reserves and their corresponding metal grades. The estimation of mineralization is a somewhat subjective process and the accuracy is a function of the accuracy, quantity and quality of available data, the accuracy of statistical computations, and the assumptions used and judgments made in interpreting engineering and geological information. Until mineral reserves or mineral resources are actually mined and processed, and the characteristics of the deposit assessed, their quantity and grade should be considered as estimates only. In addition, the quantity of mineral reserves and mineral resources may vary depending on

many factors such as exchange rates, energy costs and commodity prices. Fluctuation in commodity prices, results of additional drilling, metallurgical testing, receipt of new information and production and the evaluation of mine plans subsequent to the date of any mineral resource estimate may require revision of such an estimate.

Micon has considered the mineral resource estimates in light of known mining, infrastructure, environmental, permitting, legal, title, taxation, socio-economic, marketing, political and other relevant issues and has no reason to believe at this time that the mineral resources will be materially affected by these items.

18.0 OTHER RELEVANT DATA AND INFORMATION

18.1 MAGNESITE

A description of the world production, commonly generated end products and their specifications for magnesite is provided in Harbin (2002) and is excerpted below:

“Production: More than half of the world’s [2002] magnesite production comes from Russia and China, with Austria, North Korea, Brazil, Turkey, Slovakia, and India each producing more than 250,000 t. Magnesia derived from seawater and brines is more restricted, with the United States accounting for >40% and Japan a further 15%. When combined, the production capacity of 11 Mt MgO from all sources is derived from Russia and China (25% each), the United States (8%), North Korea (5%), Slovakia (4%) and Turkey and Japan (3% each).

Properties and Uses: Raw Natural Magnesite: Mined magnesite has some limited markets based on being a cheap and convenient source of MgO (pasture improvement/fertilizer; batch raw material for glass and ceramics; feedstock for magnesium metal); it is white, relatively soft, and chemically inert (filler in paint, paper, plastics, rubber); and relatively absorbent and fairly unreactive (carrier for germicides and pesticides; anti-caking agent or surface coating in table salt, ammonium nitrate fertilizers, and explosives (ANFO)). A high purity form of magnesium carbonate is produced synthetically from magnesium hydroxide. Most magnesite is converted to caustic calcined magnesia, dead-burned magnesia, or fused magnesia.

Caustic Calcined Magnesia (CCM): Magnesia calcined (burned) at relatively low temperature (600-1,000°C) yields caustic calcined magnesia (CCM), a.k.a. light burned magnesite (MgO), with a relatively high specific surface area (1.0-250 m²/g); it is a concentrated source of chemically active magnesia (agriculture; environmental applications; manufacturing aid; chemical source and feedstock). Less commonly, the term “hard-burned” is used for intermediate calcining (1,000-1,650°C)

Dead-Burned Magnesia (DBM): Magnesia calcined (burned) at higher temperatures (>1,450°C) yields dead burned (DBM) – a.k.a. double calcined magnesite, sintered magnesia, magnesia clinker or periclase – MgO with a surface area of <0.1 m²/g. This is a hard, dense, and chemically non-reactive product with the highest melting point of all common refractory oxides (basic refractory bricks and granular refractories). DBM resists chemical (slag) attack, is highly refractory (melting point 2,800°C for pure periclase), and withstands mechanical abrasion (mag-chrome or mag-carbon bricks; castable refractories and gunning mixes for iron and steel, non-ferrous metal smelting, glass melting, cement production). The initial source of the magnesia – cryptocrystalline or macrocrystalline magnesite, seawater or brine – determines some critical characteristics such as chemical purity, CaO:SiO₂ ratio, BSG, and crystal size.

Fused Magnesia (FM): Caustic calcined magnesia, dead-burned magnesia, or raw magnesite in a three-phase electric arc furnace at 2,800-3,000°C yields refractory grade fused magnesia (a.k.a. electrofused magnesia or EFM); the highest grade of periclase with 96% to >99% MgO, a bulk density near the theoretical limit of 3.58 g/cm³, and large crystalline sizes (>1,000 microns compared with 50-100 microns for DBM); or electrical grade fused magnesia with moderate MgO content and density, low sulphur, boron, and iron and

sufficient silica to enhance its electrical properties (electrical insulation components). Finishing includes heat treatment, crushing, classifying and blending.

Refractories: Compared with DBM, fused magnesia has a higher bulk specific gravity and large periclase crystal size, plus realignment of accessory silicates. It contributes excellent strength, abrasion resistance, and chemical stability translating to superior refractory performance and erosion resistance (specialty refractories such as premium grade magnesia-carbon (mag-carbon) refractory bricks used in hot spots and high wear areas in BOFs, EAFs, converters and ladles and other high temperature furnaces). Ultra high purity (>99% MgO) grades have been used in high tech applications such as optical equipment, nuclear reactors and rocket nozzles.

Electric: The electrical properties of fused magnesia are the basis for electrical insulating material (water heating elements, welding machines, general heating systems, sheathed heating elements for appliances such as iron, washing machines, ovens). Depending on the use, three categories are manufactured: high temperature (950°C and more) requiring high purity fused magnesia of 94-97% MgO and low silica and calcium contents (stove grills); medium temperature (up to 800°C) with 93-96% MgO (elements in ovens); and low temperature (<600°C) with <90% MgO (immersion elements). Fabrication includes electrical grade cements produced by blending electrical grade fused magnesia, plasticizers and hardeners (hot plates, toasted sandwich makers, electric irons).

Specifications: There is enormous variation depending on origin of the raw material and the end use of the final product.

Natural Magnesite: 85-95% MgO, 0.5-2.5% CaO, 0.5-4.0% SiO₂, 0.5-9.0% Fe₂O₃, 0.1-1.0% Al₂O₃, and 0.1-0.5% B₂O₃; Density 3.1-3.45.

Synthetic Magnesite: 96-99+% MgO with 0.4-2.5% CaO, 0.2-1.0% SiO₂, 0.05-1.5% Fe₂O₃, 0.05-0.1% Al₂O₃, and 0.02-0.1% B₂O₃; Density 3.3-3.45.

Caustic Calcined Magnesia – General: 80-90% MgO, max. 3.5% SiO₂, 2.5% CaO, and 5% LOI.

Dead Burned Magnesia – General: 90-95% MgO with max. 4-6% SiO₂, 3.5% CaO, 1-2% Al₂O₃, 1-2% Fe₂O₃, 0.5% LOI.

Refractory Magnesia – General: critical factors include chemical purity >96% MgO, CaO:SiO₂ ratio >3:1, boron <0.02% B₂O₃, iron <0.5% Fe₂O₃ and bulk specific gravity >3.4 g/cm³.

Fused Magnesia, Refractory Grade: min 96% MgO, low silica with CaO:SiO₂ ratios of 2:1, 1-2% CaO, 0.5-0.8% 0.2-0.8% Fe₂O₃ and 0.5-3.5% Al₂O₃, density >3.50.”

Prices: (unless indicated, USD/tonne, source: Industrial Minerals Prices, August, 2009)

Calcined magnesite (90-92% MgO), \$330-350/tonne

Calcined, agricultural, CIF Europe, €205-215/tonne

Chinese, dead-burned, 90% MgO, lump, FOB China, \$320-360

92% MgO, lump, FOB China, \$370-400

94-95% MgO, lump, FOB China, \$400-430

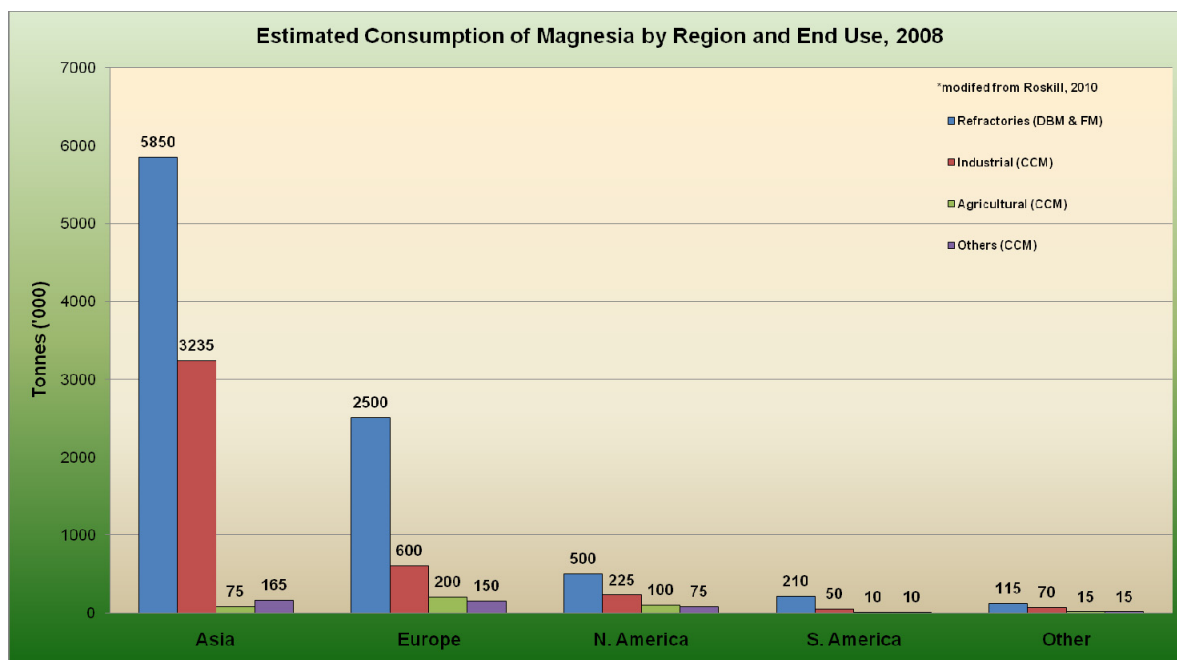
97.5% MgO, lump, FOB China, \$430-470

Greek, raw, max. 3.5% SiO₂, FOB East Mediterranean €65-75/tonne

Markets:

Approximately 70% of the global magnesia production is used to produce Dead Burned Magnesia and Fused Magnesia, which is mostly used in the manufacture of refractories for the steel, cement and other industries. The remaining portion of global magnesia production is used to produce Caustic Calcined Magnesia for a range of applications that include environmental, agricultural, construction and other uses. Estimates for the global magnesia consumption for 2008 total 14,710,000 tonnes and a distribution of consumption by region and end use is presented in Figure 18.1. It can be seen that the largest market by far in 2008 was in the Asian refractory industry, which is dominated by the Chinese market. The other major market was Europe, in which the magnesia was largely used in the manufacture of refractories. A summary of the United States magnesium compounds statistics for the 1987-2007 period is provided in Table 18.1.

Figure 18.1
Estimated Consumption of Magnesia by Region and End Use, 2008 (after Roskill, 2010)



The overall global demand for magnesia is forecast to reach approximately 16,200,000 tonnes by 2010 (Roskill, 2010), a rise of approximately 2,000,000 tonnes over the 2008 estimated consumption. Approximately 75% of the forecast increase in global consumption is expected to take place in the Asian market. The highest rate of growth is expected for CCM (~3.1% per annum), followed by DBM (~2.7% per annum) and FM (~1% per annum). CCM is expected to show the highest growth rate because of demand from the environmental sector. Environmental markets for CCM and magnesium hydroxide are expected to be the main drivers of demand in developed economies, especially in water and effluent treatment. The amount of CCM produced in the USA and used in environmental applications rose by an average of 4.2% per annum between 1997 and 2007. The use of magnesium hydroxide in

flame retardants for plastics is growing and should continue to do so in the immediate future (Roskill, 2010).

Table 18.1
United States Magnesium Compounds Statistics 1987-2007 (after DiFrancesco and Kramer, 2009)

Year	Production	Imports	Apparent Consumption	Unit Value
1987	769	272	1,010	314
1988	950	328	1,220	302
1989	851	284	1,090	310
1990	828	244	973	299
1991	733	259	897	343
1992	693	297	909	320
1993	640	425	978	331
1994	572	476	972	340
1995	597	544	1,050	407
1996	645	398	934	412
1997	667	430	1,000	432
1998	609	570	1,100	391
1999	655	532	1,100	380
2000	614	655	1,180	406
2001	643	509	1,050	425
2002	517	559	967	439
2003	546	551	1,010	512
2004	484	590	1,020	595
2005	499	648	1,100	594
2006	468	615	1,035	602
2007	567	592	1,116	531
Notes: Quantities in thousands of metric tonnes of magnesium oxide content Unit Values in Nominal USD/tonne				

18.2 TALC

A description of the world production, commonly generated end products and their specifications for talc is provided in Harbin (2002) and is excerpted below:

“Production: China and the United States account for more than half of the world’s 6.5 Mt high purity talc production followed by Brazil, Finland, France, Australia, Italy and Russia. Some are noted for particular grades, for example France, Italy and Australia produce significant quantities of cosmetic talc. Production of steatite is dominated by India, Austria and Spain. Accuracy is severely compromised by the intermixing of talc, steatite and pyrophyllite statistics and the commonly used term “unspecified”.

Properties and Uses: Talc is a hydrated magnesium sheet silicate that is soft (unctuous and non-abrasive), lamellar, organophilic, water repellent and chemically inert. The size of the individual talc platelet, that is its lamellarity, can range from less than 1 micron to more than 100 microns depending on the deposit. Hence, a highly lamellar talc (a.k.a. platy or microcrystalline) has large individual platelets compared with the platelets of a compact

(a.k.a. microcrystalline) talc. The stacked sheets of talc are bound by weak (Van der Waal's) forces allowing the platelets to slide easily giving talc its characteristic softness and lubricity.

Filler: Talc is an extremely soft, non-abrasive, inert material that can be ground easily (flaky habit) to form a white and bright (>78 GE), fine to micronized powder that acts as a functional filler (paint, plastics, paper, rubber, adhesives, joint compounds, stucco, pharmaceuticals). Additional advantages include its high oil and grease absorption capabilities (organophilic/hydrophobic); the fact that it is practically insoluble in water and in weak acids and alkalis (paint, cosmetics and pharmaceuticals, pitch control in pulp, paper filler and coater, dusting and mold release agent, bitumen filler, food, feedstuff and fertilizer anti-caking agent, insecticide carrier); and its flaky habit provides structural strength, pigmentation, opacity, rheology, viscosity and corrosion and weathering resistance.

Paper: Comprising a meshwork of cellulose fibres, paper may be filled with fine mineral particles like filler grade talc to improve ink receptivity, opacity and brightness with minimal effect on sheet strength. Although problematic for high speed printing, talc also improves smoothness, porosity and yellow index. As a coating pigment, talc's bright and platy particles provide the paper with gloss, smoothness, reduced friction and improved printability.

Plastics: Talc has a strong reinforcing effect on plastics, increases strength and creep heat resistance, improves melt rheology and reduces mold shrinkage and mold cycle time. In polypropylene, a 20% loading increases stiffness by 80% and a 40% loading by 150%, plus it improves dimensional stability (appliance panels and housings, white goods, plastic furniture, automotive parts like dashboards, interior and exterior trims, fuel tanks, bumpers, under-the-hood parts). Silane-treated talc (-10 micron with specific surface $15\text{--}17\text{ m}^2/\text{g}$) provides higher modulus and test strength of EPDM (single-ply roofing membranes). Talc is also used as an anti-blocking agent to roughen the surface of tacky linear low density polyethylene (LLDPE) film, to prevent cold welding and as a nucleating agent in semi-crystalline polymers (food packaging).

Paint: Talc has a reinforcing effect on paint; controls viscosity of water- and solvent-based formulations; increases the covering power and prevents sagging of paint films; improves suspension and flow characteristics; and because of its large surface area ($>12\text{ m}^2/\text{g}$) and particle shape allows it to flatten out to a smooth finish and dictate gloss (domestic and industrial coatings). Talc enables paints, with the necessary low viscosities, to be formulated with significantly less organic solvents. A relatively low price combined with its platy structure and large grain size (up to 100 microns) provides rheological advantages for heavy-duty applications (marine coatings, steel structure coatings). Talc is an important ingredient in putty, particularly polyester putty, where it improves adhesion and sandability.

Rubber: Talc is used as a reinforcing filler (carpet backing, valve rubber, cable insulation) and as a processing aid to lubricate molds and prevent surfaces sticking together (mold release agents for wires, cables, tire manufacturing).

Ceramics: Talc's high fusion point (heat stable up to 900°C and melts at $1,500^\circ\text{C}$), fluxing action (due to MgO) and predictable thermal expansion allow lower firing temperatures and shorter firing cycles to be achieved in various ceramics. Its high thermal conductivity, high dielectric strength and low electrical conductivity are required for specialty ceramics and its low shrinkage prevents crazing and cracking in glazes. As the talc dissociates on firing (800--

1,050°C) products include enstatite as well as cordierite and mullite. The fluxing action reduces the amount of feldspar required to produce the required strength. Talc containing tremolite or carbonate is preferred since these talcs improve pressing and permeability characteristics and reduce the need for wollastonite. In some technical ceramics, talc replaces clays and feldspars.

Pharmaceuticals and Cosmetics: Talc's greasy feel, fragrance retention based on pH (talcum powder, antiperspirant sticks, soaps and syndets (cleansing bars), creams, lotions) and hiding power (make-up) are useful characteristics for pharmaceuticals and cosmetics. In cosmetics, where talc can constitute 80% of the formulation, talc provides stability, texture, skin adhesion, slip and water resistance. Hydrophobic coatings allow talc to be used in 2-way powder cakes that can be applied wet or dry. In many cases, cosmetic grade talc undergoes additional processing including steam sterilization, gamma irradiation and/or treatment with ethylene oxide. In pharmaceuticals, talc is used for dusting (surgical gloves) or in tablets as a lubricant, diluent or for glide. Talc's lubricity and ease of dispersion are also utilized in lubricants and greases to function over a wide range of temperatures.

Absorptive/Lubricating Uses: In roofing products, talc acts as a stabilizer for the melted asphalt thus increasing resistance to fire and weathering (tar paper, asphalt shingles, roll roofing), and its absorbency prevents the shingles or roll roofing from sticking together during the manufacture and installation. In foods, processed talc acts as an anti-stick coatings agent (chewing gum, candies and cured meats) and as a processing aid in olive oil production.

Water Treatment: Talc's absorption properties are utilized in the treatment of waste water by the activated sludge method. Providing an adequate support surface, talc platelets "ballast" the bacteria in such treatments, thereby improving sedimentation and avoiding the release of bacteria in the final clean effluent. In this way, talc combats activated sludge clarification problems such as hydraulic overload, bulking sludge, light sludge and deflocculation and dewatering difficulties.

Specifications:

Pitch control: 12 m²/g min. surface area, >78 GE brightness, low abrasion, average particle size of 2-5 micron.

Paper Grade: >78 GE brightness, controlled top size (50 micron max.), average particle size of 8-12 microns.

Ceramic Grade: min 30% MgO and 60% SiO₂, max. 1% CaO, 4% Al₂O₃, 1.5% Fe₂O₃, 0.4% alkali (talc containing tremolite is particularly well suited), particle size of 95% -325 mesh. Uniform chemical composition, particle size distribution with constant colour and shrinkage rate on firing.

Paint Grade: min. 88% Mg and Ca silicate, max. CaO, 1%, water-soluble matter, 1% moisture and other volatiles, 7% LOI, -325 mesh, good oil absorption, brightness (>90%) and consistency are required.

Rubber Grade: <2 micron median with controlled top size.

Roofing Grade: low grade with particle size of -80 mesh (passing 180 microns).

Cosmetic Grade: max. 0.1% water soluble substances, 6% acid soluble substances, 6% LOI at 1,000°C, 0.1-1.0% quartz, 0.1% tremolite, 3 ppm arsenic, 20 ppm lead, 40 ppm heavy metals, neutral pH, no fibrous materials, grit or bacteria; odour, slip or lubricity, fragrance retention and whiteness according to customer preference; -200 mesh with average particle size of 7 microns."

Prices:

Due to the competitive nature of the talc market, publicly available pricing information for various talc products on a current basis is not readily available. While the prices for premium fine micronized grades are not currently available from public-domain sources, a summary of the historical pricing of some of the lower grade talc products is provided by Virta (2008):

“Published prices for talc ranged from \$92 to \$245 per ton [Table 18.2]. Prices for pyrophyllite from the Republic of Korea, free on board, were \$130 per ton for fiberglass and refractory manufacturing, \$27 to \$44 per ton for ceramic grade, and \$110 to \$150 per ton for filler grade. The price for filler grades from Australia was \$342 per ton (Industrial Minerals, 2008b). Quoted prices should be used only as a guidelines because actual prices depend on the contract terms between seller and buyer.”

Table 18.2
Summary of Talc Pricing

Product	Price (/metric tonne)
New York:	
Paint-Grade, 200 mesh	USD\$126
400 mesh	USD\$210
Ceramic Grade, 200 mesh	USD\$92
325 mesh	USD\$115
Indian, Cosmetic Grade	USD\$190-195
Chinese, normal (ex-store United Kingdom), 200 mesh	£215-225
350 mesh	£220-245

Source: Industrial Minerals, December, 2008

Markets:

A brief summary of the world talc market is provided by Virta (2008) as follows:

“World production of talc and pyrophyllite was estimated to be 7.51 Mt in 2008, a decrease from the 7.68 Mt produced in 2007. China was the world’s leading producer of talc, followed by the United States, India, Finland, and France (crude). The Republic of Korea was the leading producer of pyrophyllite, followed by Japan and Brazil. Brazil, China, Finland, France, India, Japan, the Republic of Korea, and the United States together produced 81% of the world’s talc and pyrophyllite.

China is the leading producer and supplier of talc to global markets. Its global share, however, may decrease because domestic demand for talc has led to export restrictions, some talc operations are nearing exhaustion, and some new talc operations may encounter quality control issues. Conversely, India may increase its share of global markets owing to a planned expansion of production by Golcha Group to 800,000 t from 700,000 t in 2009.”

Wilson (2009) estimated that the world talc production to be 6.1 million tonnes, with the consumption by end use globally and for the United States market being summarized

graphically as shown in Figure 18.2. A summary of the United States talc and pyrophyllite statistics for the 1987-2007 period is provided in Table 18.3.

Figure 18.2
Summary of Talc Consumption by End Use (after Wilson, 2009)

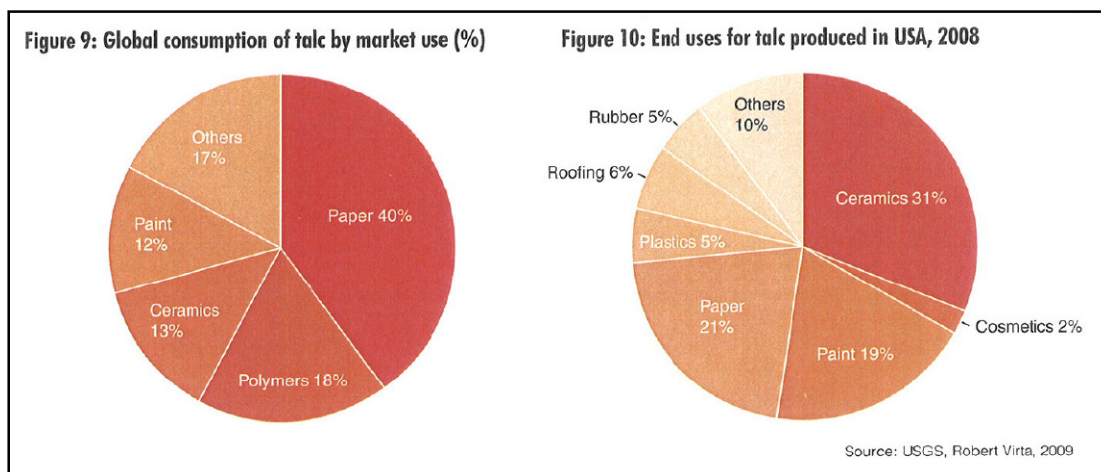


Table 18.3
United States Talc and Pyrophyllite Statistics 1987-2007 (after Porter and Virta, 2009)

Year	Production	Imports	Apparent Consumption	Unit Value
1987	1,160	48.3	956	127
1988	1,230	79.4	1,050	130
1989	1,250	77.7	1,010	108
1990	1,270	65.1	1,050	95.60
1991	1,040	66.8	926	85.60
1992	997	79.6	902	107
1993	968	99.8	933	101
1994	935	115	936	109
1995	1,060	146	1,020	89.80
1996	994	187	989	91.40
1997	1,050	123	994	111
1998	971	165	990	120
1999	925	208	986	117
2000	851	270	967	113
2001	863	180	906	111
2002	828	232	894	111
2003	840	237	885	101
2004	833	226	857	107
2005	856	237	895	98
2006	895	314	1,050	101
2007	769	221	807	131

Notes:
Quantities in thousands of metric tonnes of talc and pyrophyllite
Unit Values in Nominal USD/tonne

19.0 INTERPRETATIONS AND CONCLUSIONS

Since its acquisition of the Timmins Talc-Magnesite property in 2000, Globex conducted further exploration as well as economic and engineering reviews of the feasibility of producing magnesium metal, before suspending work in the early part of the decade when project financing was not forthcoming. More recently Globex, in partnership with DMI, has been exploring the potential of producing marketable talc and magnesite products using conventional processing technologies for the former and by application of an innovative hydrometallurgical process for the latter.

In support of this renewed activity, Globex has conducted a limited amount of diamond drilling the objectives of which were to confirm the historical drill hole information collected by previous owners of the property, to examine the mineralogical characteristics of the A Zone and B Zone deposits, and to expand the known limits of the A Zone mineralization.

From the limited drill hole information available (one fence of drill holes), the nature of the B Zone deposit appears to include elevated levels of soluble Ca (believed to be related to the presence of ferro-dolomite), such that the production of a marketable magnesite product directly from this material does not appear likely at this time. Geological modeling of the A Zone, however, has revealed that it consists of a core zone containing low concentrations of soluble Ca. This core zone is enveloped along its northern and southern contacts by a skin or a fringe of material containing elevated levels of soluble Ca.

The current geological model of the A Zone spans a width of approximately 200 metres, a strike length of approximately 700 metres and extends to a depth of approximately 100 metres below surface. The limits of the mineralization along strike and at depth for the A Zone have not been identified by drilling and Micon believes that Globex is justified in completing additional diamond drilling programs to locate these limits.

Micon also believes that Globex would be justified in completing an in-fill drilling program at the Timmins Talc-Magnesite deposit in order to confirm the mineralization outline and to provide a better estimate of the mineral distributions at a local scale. Such a drilling program could be designed to provide a data density at a nominal spacing of 50 metres on section, with sections spaced 100 metres apart.

Testwork that has been carried out by previous owners of the property has attempted to produce magnesium refractories by conventional processes available at that time. For the most part, this testwork has shown that magnesium products can be generated from this deposit, albeit with elevated iron contents that are not necessarily desirable under all market conditions.

The conceptual flowsheet that has been the subject of comprehensive bench-scale testing by Globex and DMI contemplates the production of a talc concentrate using conventional flotation technologies. Preliminary testing of the talc flotation concentrate reveals that a commercial grade product can be generated with no impurity issues. The tailings generated

from the talc flotation stage will be subjected to a hydrometallurgical process which will produce a high grade final product that is expected to contain a minimum of 98% MgO (M98). In this hydrometallurgical process, the iron content of the feedstock is put into solution and is subsequently removed as a ferruginous precipitate that will be stored in a suitable containment area. In this manner the background iron content of the deposit does not pose the same barrier to the production of a commercial grade refractory product as was experienced by previous owners of the property.

As is the case with the current product specifications for refractory grade magnesia, the hydrometallurgical flowsheet being contemplated by Globex includes a maximum specification for calcium in the feed. For the purposes of this initial mineral resource estimate, this is expressed on an acid soluble calcium basis (sol Ca) and is set as a maximum of 1% soluble Ca in the feed. The limits of the mineralization were drawn using a minimum of 30% talc + magnesite as a cut-off grade.

Bulk densities were measured at the project site by Globex field staff. A total of 306 measurements were made of samples from the A Zone core and a total of 39 measurements were made of samples from the A Zone fringe. Micon determined that the average bulk density of the A Zone core samples was 2.96 t/m³ and that the average bulk density of the A Zone Fringe samples was 2.93 t/m³.

An upright, rotated, whole block model with the long axis of the blocks oriented along an azimuth 080° and dipping 90° was constructed using the Gemcom-Surpac v6.1.1 software package. Soluble MgO, soluble Ca, talc and magnesite grades were interpolated into the individual blocks for the A Zone core domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. A single-pass approach was used wherein the information from the variography analysis was used to establish the parameters of the search ellipse. Due to the limited amount of drill hole information available for the A Zone fringe, the average grades as determined from the 3 metre composite samples were applied to all blocks located within the A Zone fringe domain model.

The mineralized material was classified into either the Indicated or Inferred mineral resource category after taking into consideration the search ellipse ranges, the density of the drill hole information and the overall average soluble Ca grades. Those blocks contained within the A Zone core which received interpolated grades that were within the variogram ranges and were located between 479700E and 479900E (the two cross sections containing the greatest density of drill hole information) were classified as Indicated mineral resources. The remaining blocks of the A Zone core were classified into the Inferred mineral resource category.

In respect of the A Zone fringe, all blocks were classified in the Inferred category to reflect the fact that the average soluble Ca grades of these blocks exceed the stated upper limit and thus are not expected to produce a final magnesite product at the stated specification. However, Micon believes that a saleable final product can be generated from this material by

means of blending with lower grade soluble Ca material from the A Zone core at a suitable ratio.

As a result of the concepts and processes described above, the mineral resources for the Timmins Talc-Magnesite deposit are set out in Table 19.1.

Table 19.1
Estimated Mineral Resources for the Timmins Talc-Magnesite Deposit (based on data available as of October, 2009)

Category	Tonnes	Sol MgO (%)	Sol Ca (%)	Magnesite (%)	Talc (%)
A Zone Core:					
Indicated	12,728,000	20.0	0.21	52.1	35.4
Inferred	18,778,000	20.9	0.26	53.1	31.7
A Zone Fringe:					
Inferred	5,003,000	17.6	2.82	34.2	33.4

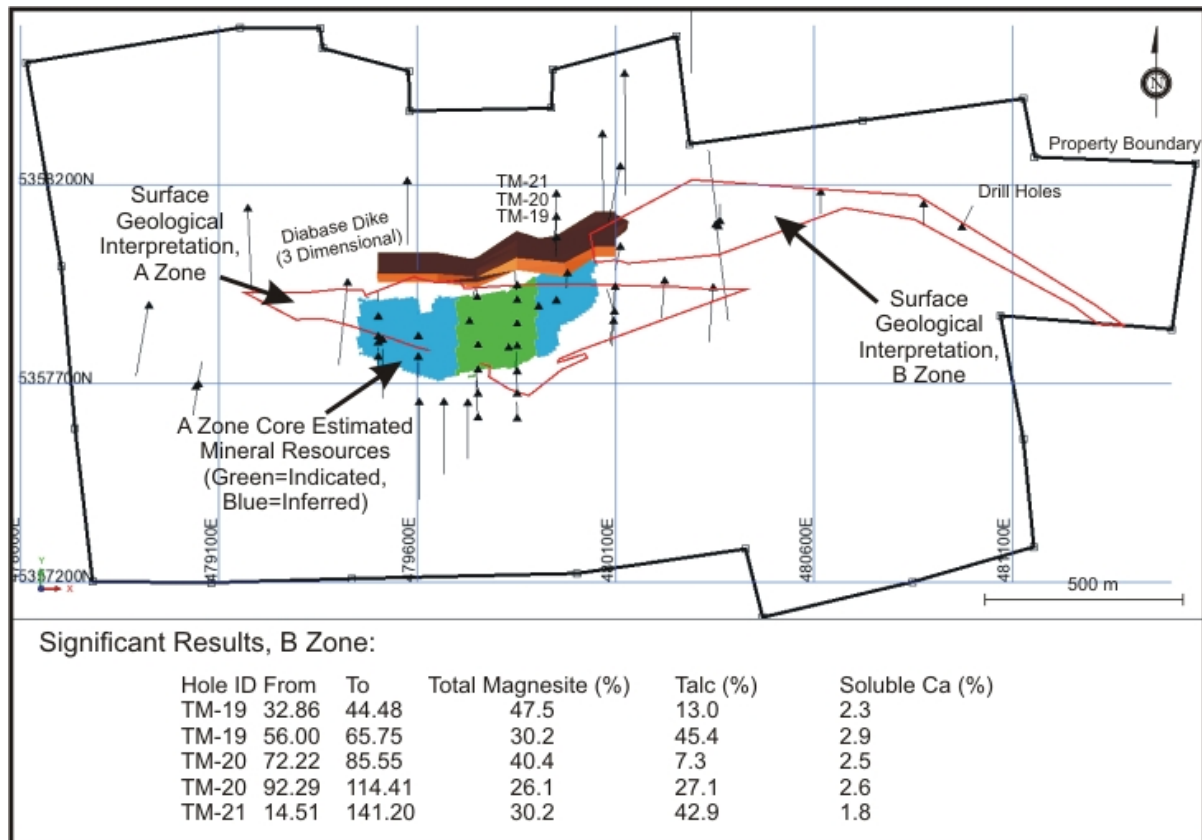
1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.
2. The quantity and grade of reported Inferred Resources in this estimation are conceptual in nature and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Mineral Resource. It is uncertain if further exploration will result in the upgrading of the Inferred Resources into an Indicated or Measured Mineral Resource category.
3. All figures have been rounded to reflect the accuracy of the estimate.

It is clear that while exploration and delineation work carried out by Globex to-date on the Timmins Talc-Magnesite deposit has focused on the central portion of the A Zone as defined from interpretation of surface geological exposures, the strike limits of the mineralization have not been fully defined and the depth extents have not been outlined either (Figure 19.1). As well, although three drill holes have been completed to identify the mineralogical character of the B Zone on a preliminary basis (drill holes TM-19, -20 and -21), the full dimensions of this zone also remain untested by a comprehensive drilling and sampling program.

Conceptual geological modeling of the A Zone and B Zone has been carried out by Micon wherein the geological contacts of these two zones have been projected from surface to the 190 metre elevation (being approximately the same elevation as the current model of the A Zone core, approximately 125 metres beneath the surface). This modeling suggests that further exploration and delineation drilling programs, if successful, have the potential of outlining an additional 20 to 25 million tonnes of talc-magnesite mineralization for the A Zone at similar grades to that which have already been intersected. The modeling also suggests that the B Zone has the potential of hosting some 40 to 45 million tonnes of talc-magnesite mineralization as well. It is important to note that the potential quantity and grades are conceptual in nature, that there has been insufficient exploration to define a

mineral resource and that it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Figure 19.1
Schematic Compilation Map, Timmins Talc-Magnesite Property



Micon believes that this report has met the objectives set out in Chapter 2 above.

20.0 RECOMMENDATIONS

Micon recommends that Globex purchase certified blank materials that are composed of pure quartz sand for use in monitoring for any contamination that may occur during the sample preparation stages.

The results of the blank sample control samples suggest that a low level of background talc and magnesite of up to 2% may be present in the sample preparation process. Micon recommends that the sample preparation protocols that are used to prepare the samples for determination of the talc and magnesite contents be reviewed to ensure that no cross-contamination is occurring. A selection of a barren quartz material to use as a blank sample medium may be useful in reducing the suggested levels of background mineralization.

Micon recommends that the control charts for the (future) standards, blanks and duplicates be maintained on a regular basis as new data are received, such that any anomalous results can be identified and addressed in a timely manner.

No standard reference materials have been included as part of the soluble MgO, soluble Ca, magnesite or talc assaying protocols in either the routine assaying program or as part of the check assaying program. Consequently, Micon recommends that a deposit-specific standard reference material be prepared and be inserted on a regular basis as part of any future assaying programs.

In addition, Micon recommends that Globex amend its Quality Assurance/Quality Control protocols by ensuring that a small proportion (5-10%) of the assays of any future samples be confirmed by check assaying at an independent, third-party laboratory. In light of the discrepancies observed from its check assaying, Micon recommends that check assaying at an independent, third-party laboratory also be carried out for samples in the existing drill hole database.

Globex has prepared a proposed exploration program and budget for work to be carried out in 2010 as shown in Table 20.1. Micon has reviewed the proposed budget and believes that it is appropriate and warranted.

Table 20.1
Proposed Exploration Program and Budget

ITEM	ESTIMATED COST (CDN\$)
Phase 1 Budget:	
Timmins Project Site	
Permitting, surveying and project maintenance	200,000
Phase II environmental baseline, water studies and public consultation	500,000
Surface Exploration and Diamond Drilling	
Stripping, mapping & structural studies	50,000
Test pitting and bulk sampling (<50 tonnes)	100,000
Diamond drilling (10,000 m for exploration & definition)	1,000,000
Market Studies	
Consultants, salaries & expenses	200,000
Test marketing of material	50,000
Metallurgy	
Product development and R&D	100,000
Small-scale talc demonstration plant	750,000
Magnesia micro-pilot plant (4 months)	500,000
Engineering and Plant Development	
Scoping study	125,000
Preliminary pit geotechnical studies	100,000
Miscellaneous studies and demonstration plant design	350,000
<i>Subtotal, Phase I</i>	<i>4,025,000</i>
10% Contingency	402,500
15% Management & supervision	603,750
Total, Phase I	5,031,250
Phase II Budget:	
Feasibility Study	2,000,000
Plant Scoping Study	150,000
<i>Subtotal, Phase II</i>	<i>2,150,000</i>
10% Contingency	215,000
15% Management & supervision	322,500
Total, Phase II	2,687,500
GRAND TOTAL, Phase I and II (rounded)	\$7,720,000

SIGNATURES:

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February 19, 2010

“David Hall” {signed and sealed}

David Hall, P. Eng.
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February 19, 2010

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CERTIFICATE FOR RENO PRESSACCO

As a co-author of this report on certain mineral properties of Globex Mining Enterprises Inc. located in Ontario, Canada, I, Reno Pressacco, do hereby certify that:

1. I am employed by, and carried out this assignment for

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2. I hold the following academic qualifications:

CET (Geological Engineering)	Cambrian College	1982
B.Sc. (Geology)	Lake Superior State College	1984
M.Sc. (A) (Mineral Exploration)	McGill University	1986

3. I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Ontario (Registration Number 0939), with the Association of Professional Geoscientists of the Province of Manitoba (Registration Number 32726) and with the Professional Engineers and Geoscientists of Newfoundland and Labrador (Registration Number 05297). As well, I am a member in good standing of other technical associations and societies, including the Prospectors and Developers Association of Canada.
4. I have worked as a geologist in the minerals industry for 29 years.
5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My experience includes mineral exploration, advanced exploration and mine development, open pit production, environmental compliance, financial evaluation and mine commissioning with a variety of deposit types including gold, silver, copper, zinc, lead, uranium, nickel, platinum-group metals and industrial minerals.
6. I visited the Timmins Talc-Magnesite project site on July 24, 2009.
7. I am responsible for the preparation of Chapters 2 through 15, inclusive, Chapters 17.1, 17.2 and 17.4 through 17.14, inclusive and Chapter 18, and portions of Chapters 1, 19 and 20 of this Technical Report titled "Technical Report on the Initial Mineral Resource Estimate for the Timmins Talc-Magnesite Deposit, Ontario, Canada" and dated February 24, 2010.

8. Other than providing consulting services, I am independent of the issuer for which this report is required, as defined in Section 1.4 of NI 43-101.
9. I have had no prior involvement with the mineral property in question.
10. I have read NI 43-101 and this report has been prepared in compliance with the Instrument.
11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 24th day of February, 2010

“Reno Pressacco” {signed and sealed}

Reno Pressacco, P.Geol.

CERTIFICATE FOR DAVID HALL

As a co-author of this report on certain mineral properties of Globex Mining Enterprises Inc. located in Ontario, Canada, I, David Hall, do hereby certify that:

1. I am employed by, and carried out this assignment for

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2. I hold the following academic qualifications:
BASc. (Geo Engineering) University of Toronto 1985
3. I am a registered Professional Engineer with Professional Engineers Ontario (Registration Number 90341439).
4. I have worked as a mineral process engineer in the minerals industry for 24 years.
5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My experience includes mineral process engineering and management experience in the mining industry with broad exposure to base metals, precious metals, and industrial minerals. Managed the mining, production processes, and distribution of products needed to meet customer requirements in an ISO9001 (quality) certified, ISO 14001 (environment) certified, and OHSAS18000 (health and safety) compliant company.
6. I visited the Timmins Talc-Magnesite project site on August 4, 2009.
7. I am responsible for the preparation of Chapters 16.1, 16.2, Chapter 17.3 and portions of Chapter 1 of this Technical Report titled "Technical Report on the Initial Mineral Resource Estimate for the Timmins Talc-Magnesite Deposit, Ontario, Canada" and dated February 24, 2010.
8. Other than providing consulting services, I am independent of the issuer for which this report is required, as defined in Section 1.4 of NI 43-101.
9. I have had no prior involvement with the mineral property in question.
10. I have read NI 43-101 and this report has been prepared in compliance with the Instrument.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 24th day of February, 2010

“David Hall” {signed and sealed}

David Hall P.Eng.

CERTIFICATE FOR PEIMENG LING

As a co-author of this report on certain mineral properties of Globex Mining Enterprises Inc. located in Ontario, Canada, I, Peimeng Ling, do hereby certify that:

1. I am employed by, and carried out this assignment for

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2. I hold the following academic qualifications:

B.Eng. (Chemical Engineering)	Zhejiang University, PRC	1982
M.Sc. (Chemical Engineering)	University of Toronto	1994

3. I am a registered Professional Engineer with Professional Engineers Ontario (Registration Number 90444985).
4. I have worked as a chemical engineer in the petrochemical/chemical and the hydrometallurgical industries for 26 years.
5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My experience includes hydrometallurgical test work, project feasibility study, process design, plant design, environmental compliance, and financial evaluation with a variety of deposit types including gold, silver, copper, zinc, nickel, cobalt, vanadium, platinum-group metals and industrial minerals.
6. I have not visited the Timmins Talc-Magnesite project site.
7. I am responsible for the preparation of Chapter 16.3, and portions of Chapter 1 of this Technical Report titled "Technical Report on the Initial Mineral Resource Estimate for the Timmins Talc-Magnesite Deposit, Ontario, Canada" and dated February 24, 2010.
8. Other than providing consulting services, I am independent of the issuer for which this report is required, as defined in Section 1.4 of NI 43-101.
9. I have had no prior involvement with the mineral property in question.

10. I have read NI 43-101 and this report has been prepared in compliance with the Instrument.
11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 24th day of February, 2010

“Peimeng Ling” {signed and sealed}

Peimeng Ling, P.Eng.

APPENDIX I
QEMScan™ Background Information

SGS advanced mineralogy Network overview

SGS Minerals Services' Advanced Mineralogy Network is a laboratory network dedicated to providing automated process mineralogy services expressly for high volume users. At its various sites around the world, the Network offers several different instruments, technologies and unique methods to provide "fit-for-purpose" data. Run by mineralogists and technicians with years of characterization experience, data produced by the Mineralogy Network is monitored by a comprehensive quality control program.

The advanced characterization available from the SGS facilities provides the following advantages:

- Ore-type definition
- Environmental planning
- Plant control and optimization
- Feed-forward control
- Financial risk reduction
- Mine planning strategies
- Economic analysis
- Future cash-flow forecasting

The core mineralogical instrument in the Advanced Mineralogy Network is the QEMSCAN™ instrument. SGS' QEMSCAN™ instruments, are sophisticated, state-of-the-art instruments that provide statistically robust data that is quantitative, precise, accurate and objective. High Definition Mineralogy technology has the proven ability to make operations more efficient and is used by mining companies at major projects internationally.

SGS has several years of experience using the QEMSEM® based technology QEMSCAN™ and has completed hundreds of projects integrating High Definition Mineralogy with pilot plants, geometallurgical mapping, plant optimization and on-site operations. We have also provided staff and training to several operations.

Advanced Mineralogy network Services

Mineralogy Services

- QEMSCAN analysis
- X-ray diffraction analysis
- Image analysis
- Scanning electron microscopy
- Electron microprobe analysis
- Petrography and ore characterization (polished and thin polished section)
- Photography

Chemical analysis

- Subcontracted on preferred-client basis to a local SGS laboratory.



QEMSCAN Operational Modes

QEMSCAN is an acronym for Quantitative Evaluation of Materials by Scanning Electron Microscopy, a system which differs from image analysis systems in that it is configured to measure mineralogical variability based on chemistry at the micrometer-scale. QEMSCAN utilizes both the back-scattered electron (BSE) signal intensity as well as an Energy Dispersive X-ray Signal (EDS) at each measurement point. It thus makes no simplifications or assumptions of homogeneity based on the BSE intensity, as many mineral phases show BSE overlap. EDS signals are used to assign mineral identities to each measurement point by comparing the EDS spectrum against a mineral species identification program (SIP) or database.

There are two general types of measurement: those using the linear intercept and those based on particle mapping. Bulk mineral analysis (BMA) is performed using the linear intercept method, and is used to provide statistically abundant data for speciation and mineral distribution. Particle mapping modes, including Particle Mineral Analysis (PMA), Specific Mineral Search (SMS) analysis and Trace Mineral Search (TMS) analysis provide information on spatial relationships of minerals, including liberation and association data and provide a visual representation of mineral textures. The particle mapping modes of measurement also allow for advanced analysis of the minerals of interest, including grade vs. recovery relationships and mineral release curves. Specific details of the measurement modes are presented below, while visual examples of these two measurement classes are presented in Figures 1 and 2.

Bulk Mineral Analysis, or BMA, is performed by the linear intercept method, in which the electron beam is rastered at a pre-defined point spacing (nominally 3 micrometers, but variable with particle size) along several lines per field, and covering the entire polished section at any given magnification. An example of a BMA measurement image is shown in Figure 1. This measurement provides a robust data set for determination of the bulk mineralogy, with mineral identities and proportions, along with grain size measurements.

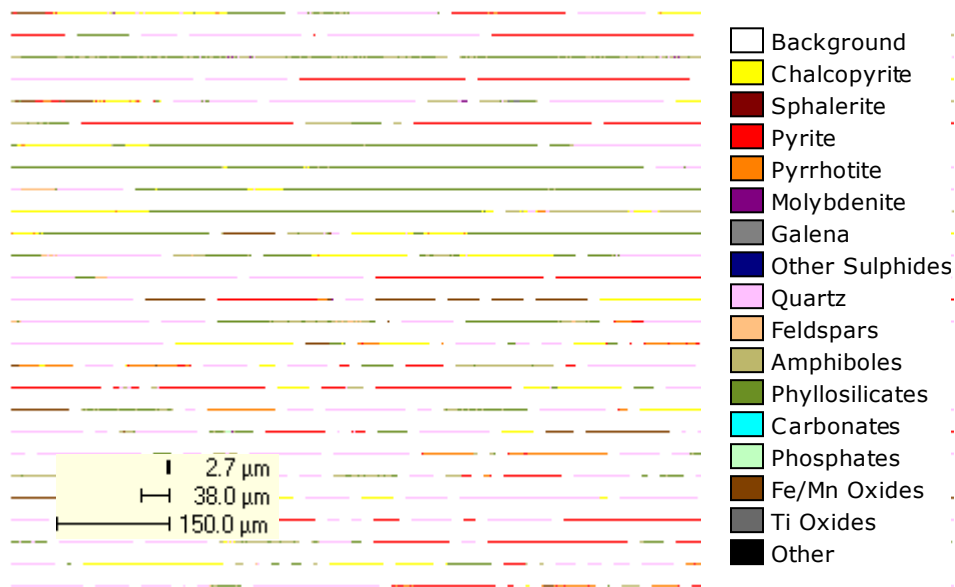


Figure 1. BMA Measurement Mode

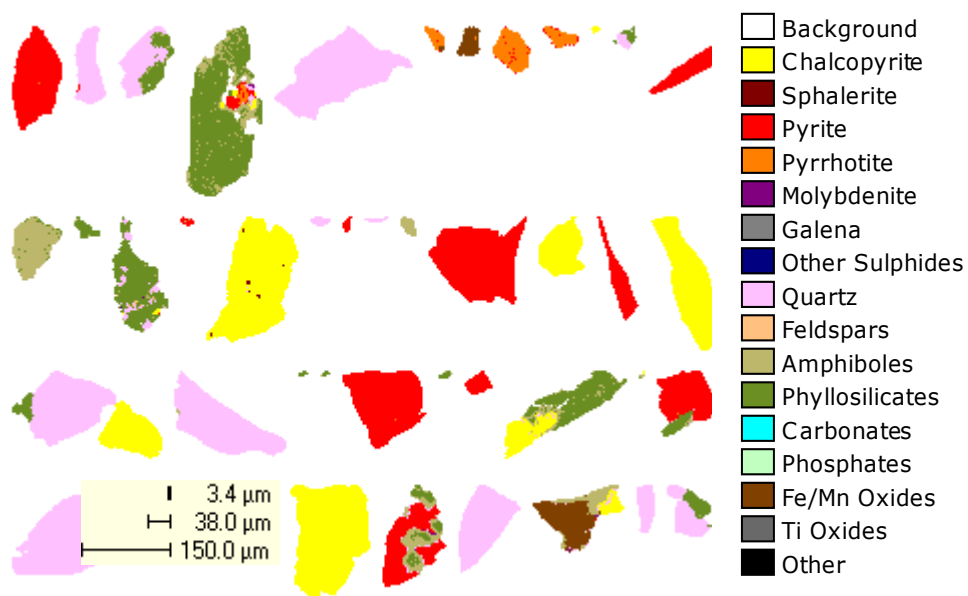


Figure 2. Particle Mapping (PMA, SMS or TMS) Measurement Mode

Particle Mineral Analysis (PMA) is a two-dimensional mapping analysis aimed at resolving liberation and locking characteristics of a generic set of particles. A pre-defined number of particles are mapped at a point spacing selected in order to spatially resolve and describe mineral textures and

associations. This mode is often selected to characterize concentrate products, as both gangue and value minerals report in statistically abundant quantities to be resolved.

Specific Mineral Search, or SMS, is a modified Particle Mineral Analysis (PMA) routine. However, in an SMS routine, a phase reports as a low-grade constituent and can be located by thresholding of the back-scattered electron intensity. Any accompanying phases of similar and higher brightness are also mapped. For example, this mode of measurement would be selected in ores of low sulphide grade, searching specifically for particles containing sulphide minerals.

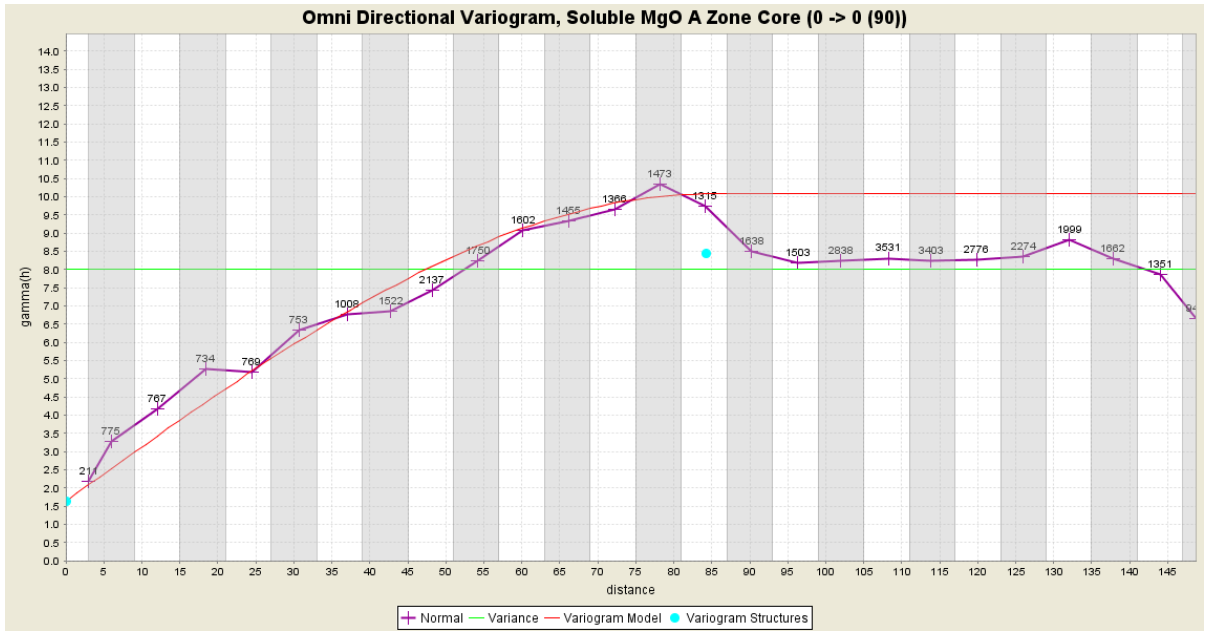
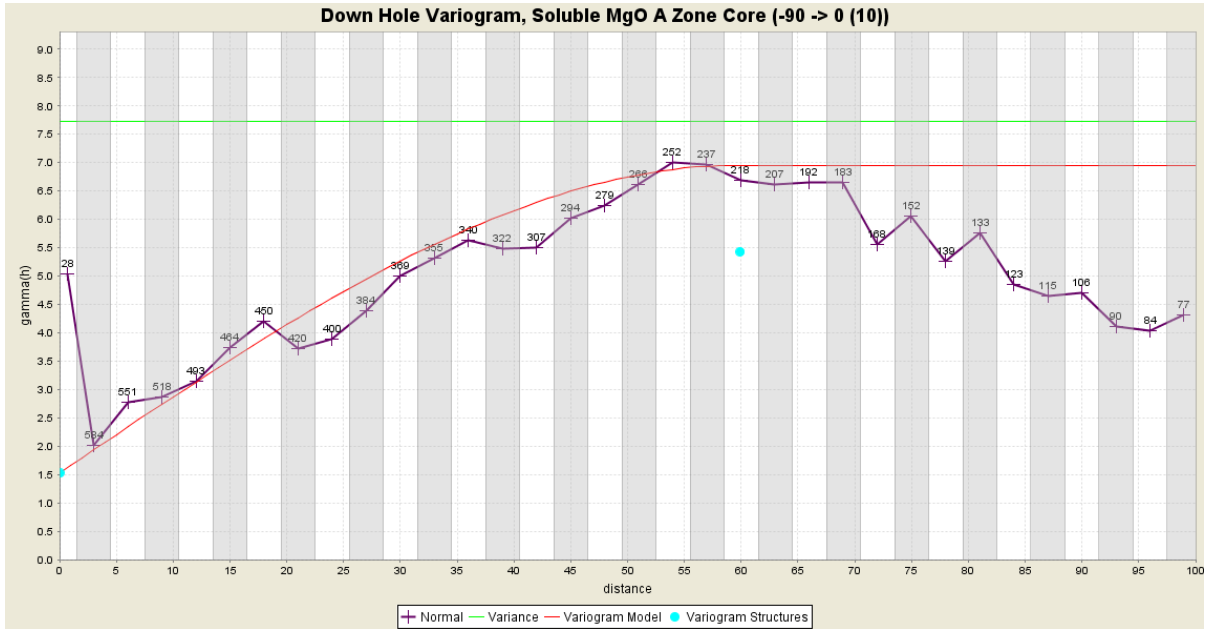
Trace Mineral Search (TMS) is an additional mapping routine, where a phase reports as a trace constituent and can be located by thresholding of the back-scattered electron intensity. The objective of this routine is to reject barren fields and increase analysis efficiency. The outputs are otherwise identical to the SMS routine. This mode of measurement is often used for advanced studies of PGE ore types, or trace minerals of interest such as molybdenite.

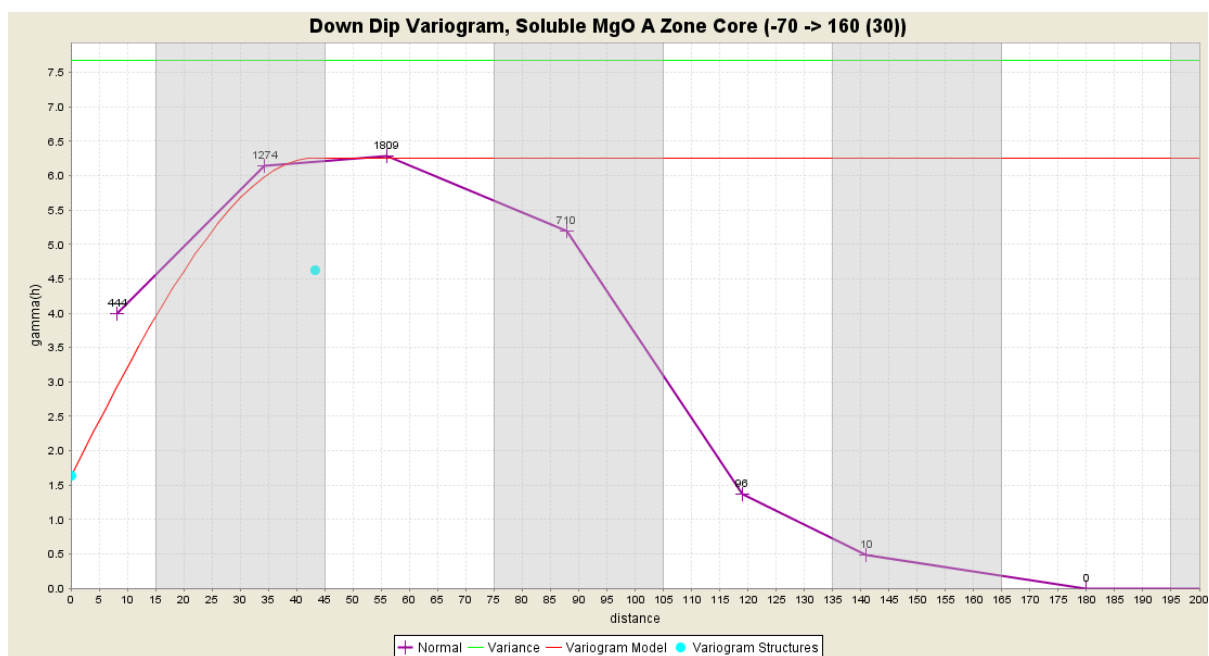
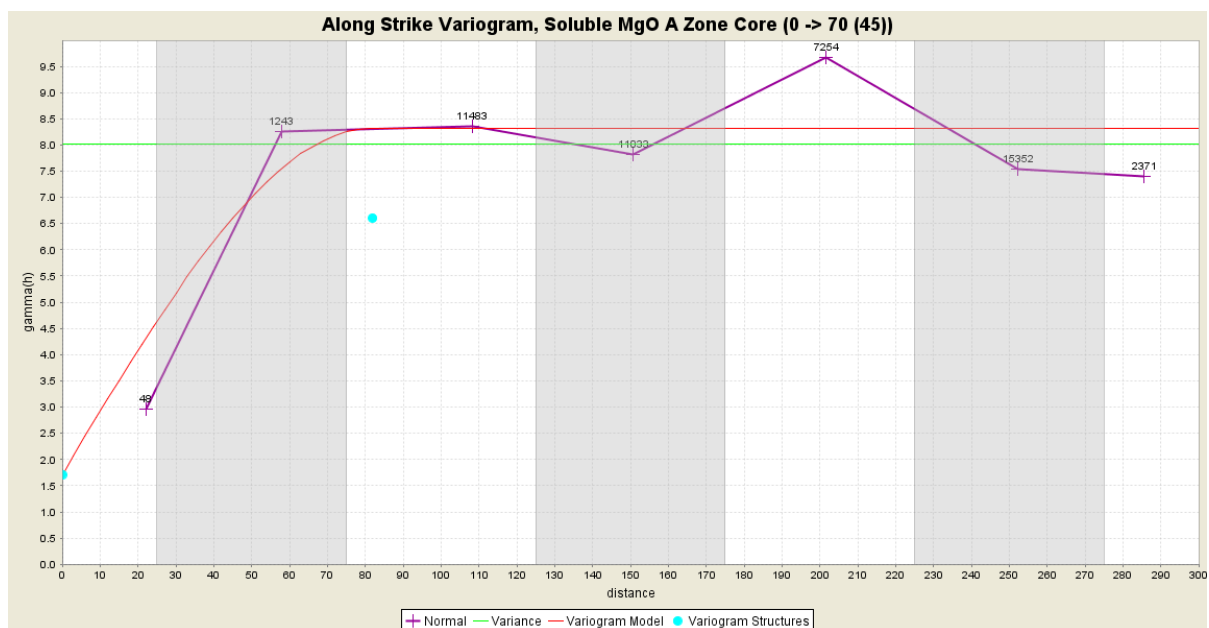
It is important to note that with regards to SMS and TMS modes, results pertain only to the target minerals. PMA must be selected if quantitative gangue characterization is required. For example, in some sulphide ores, it may be more efficient to reject barren pyrites in favour of copper-bearing minerals. However, it must be noted that data captured in this manner will not reflect the true characteristics of pyrite, as only the pyrite associated with the copper-bearing minerals will be represented.

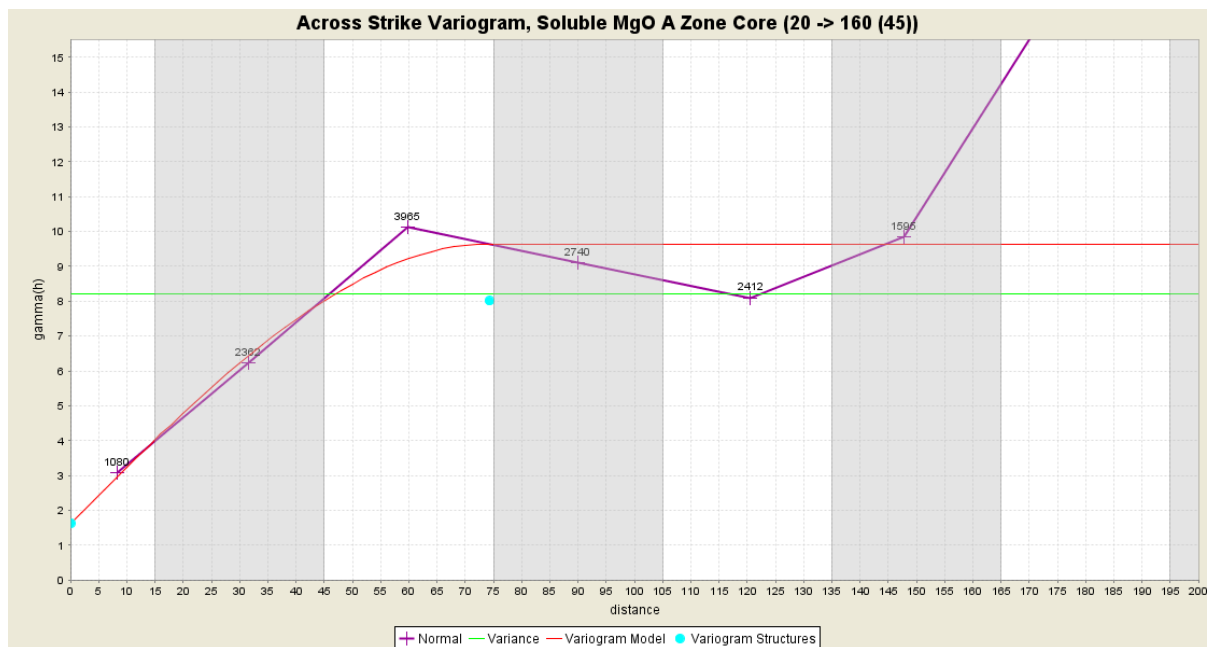
APPENDIX II

Variograms

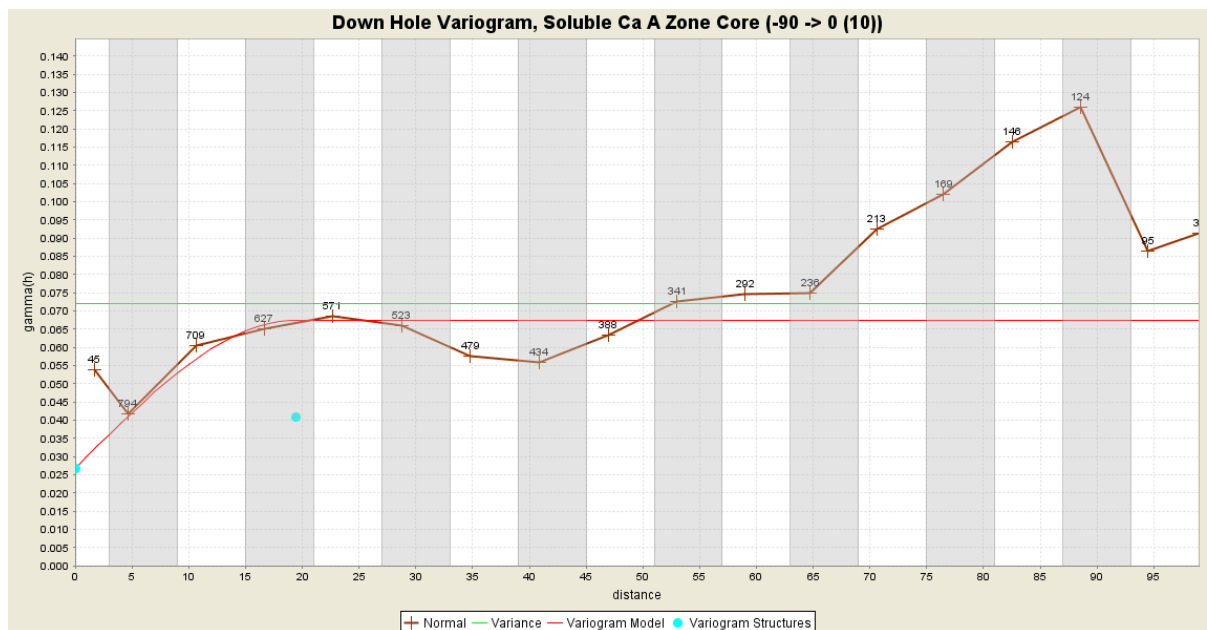
Soluble MgO:

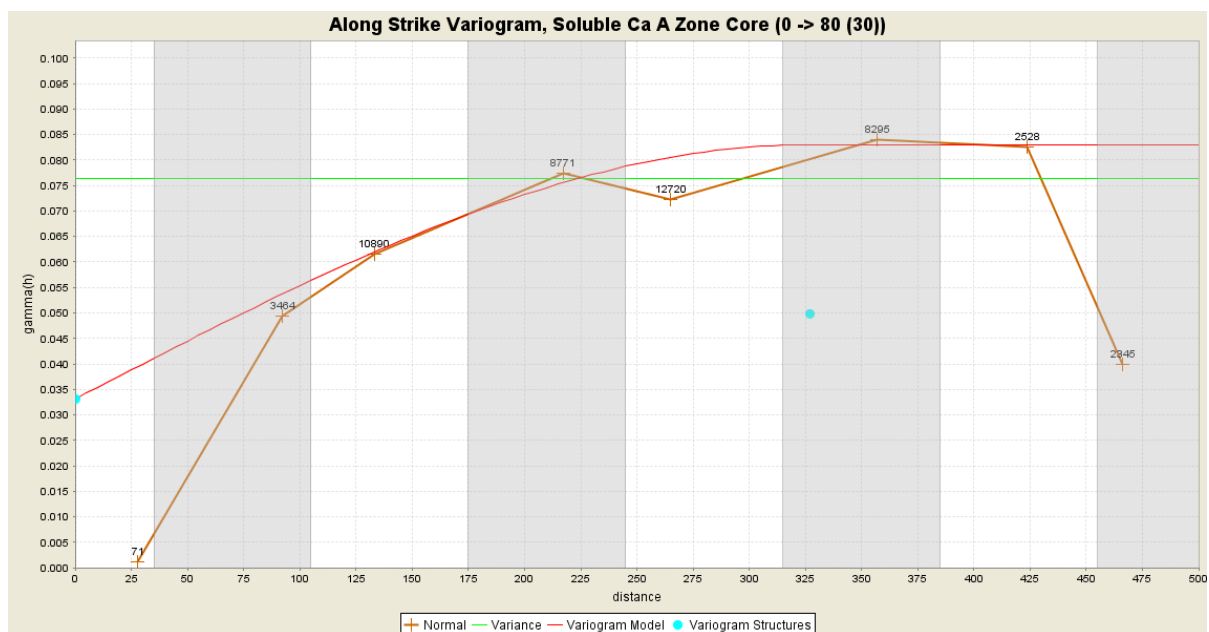
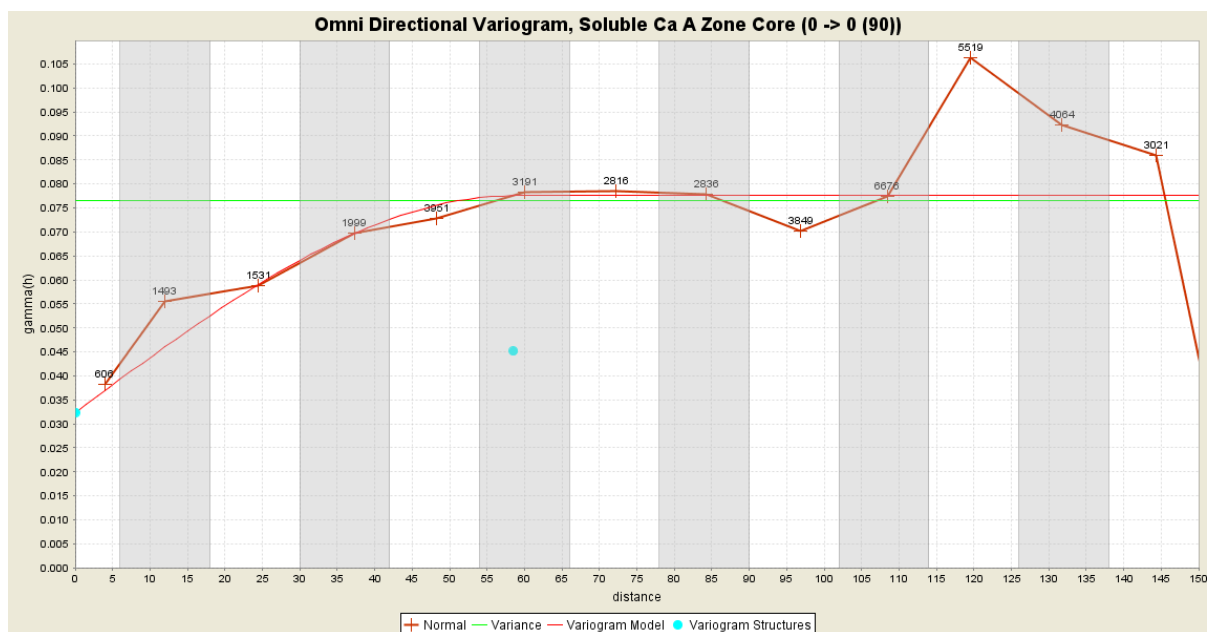


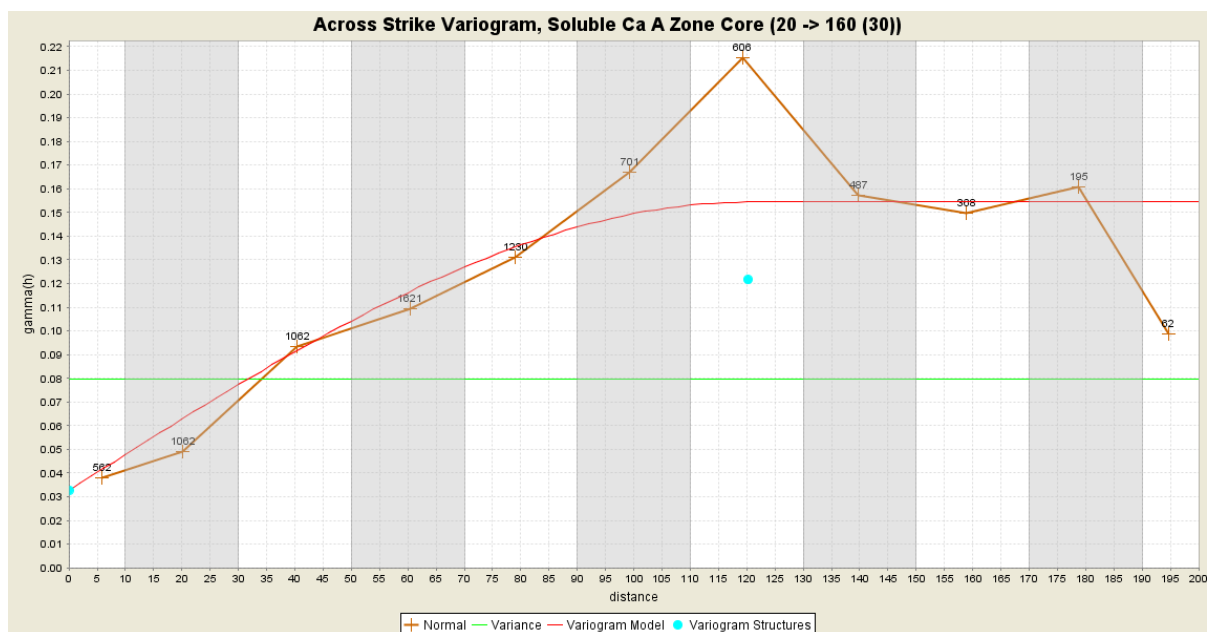
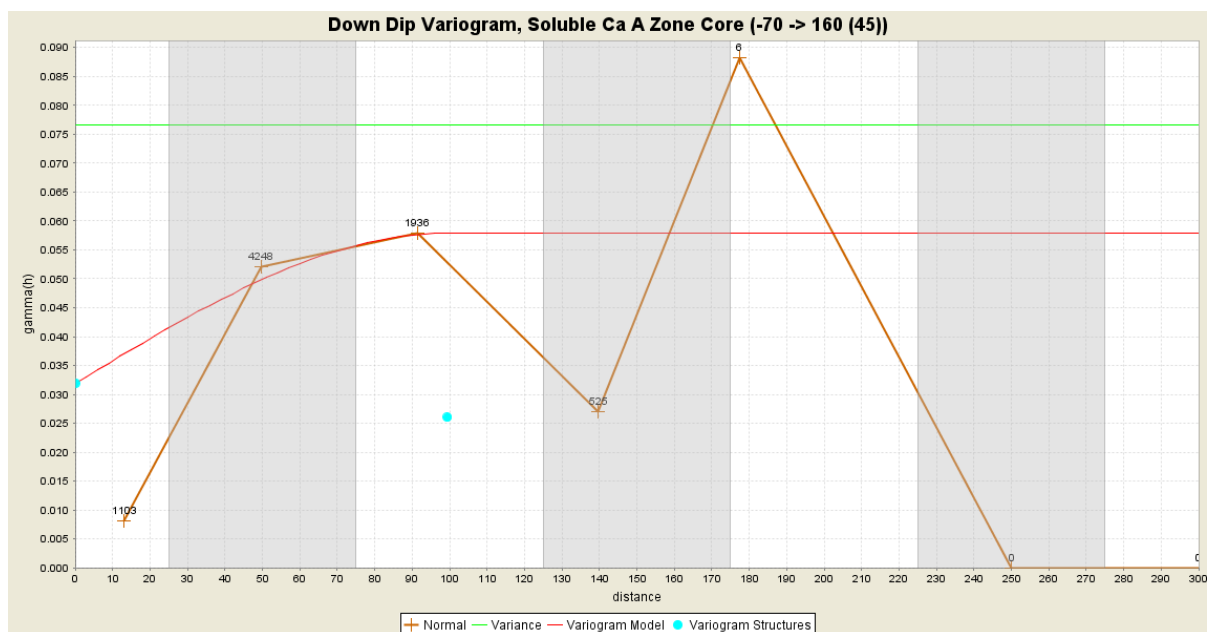




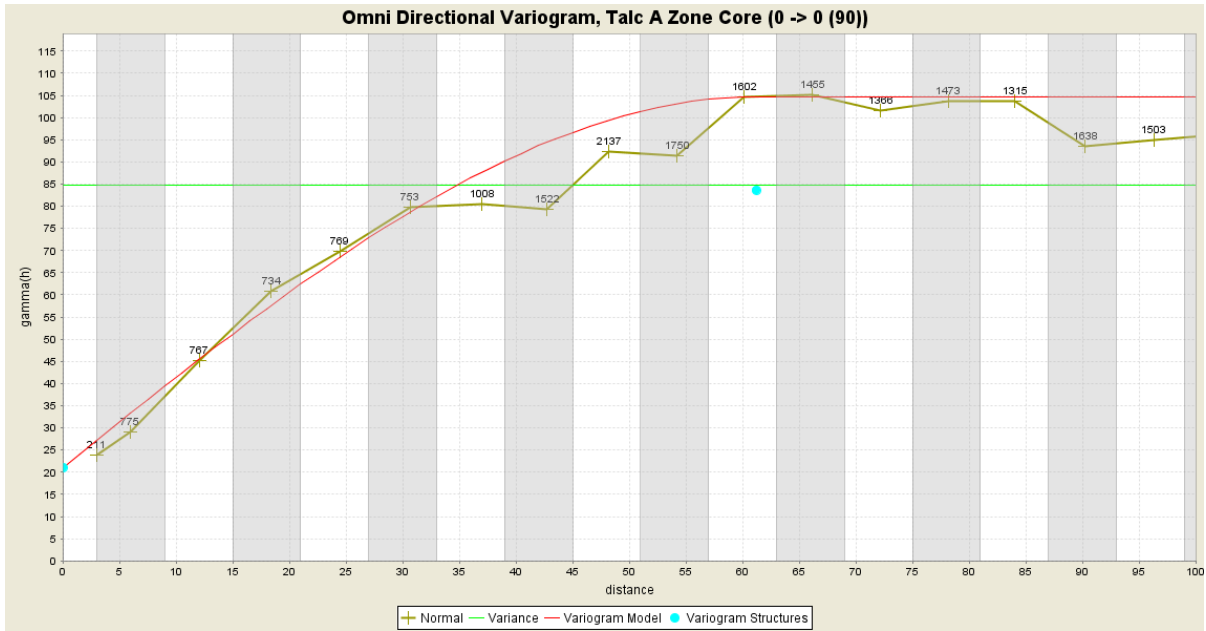
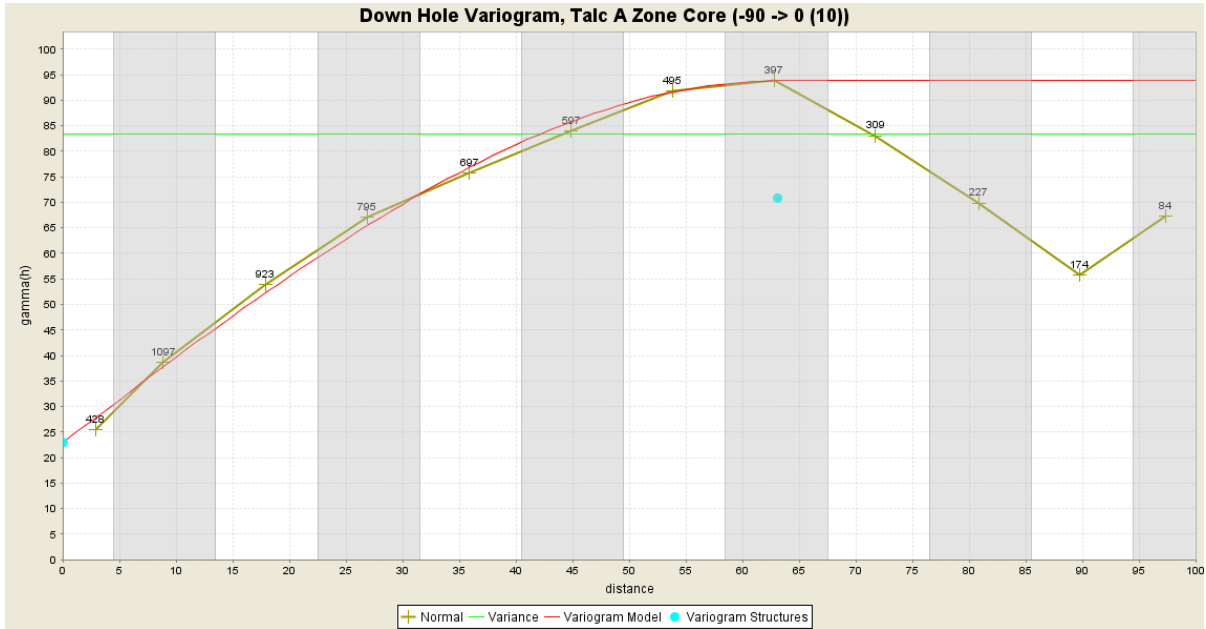
Soluble Ca:

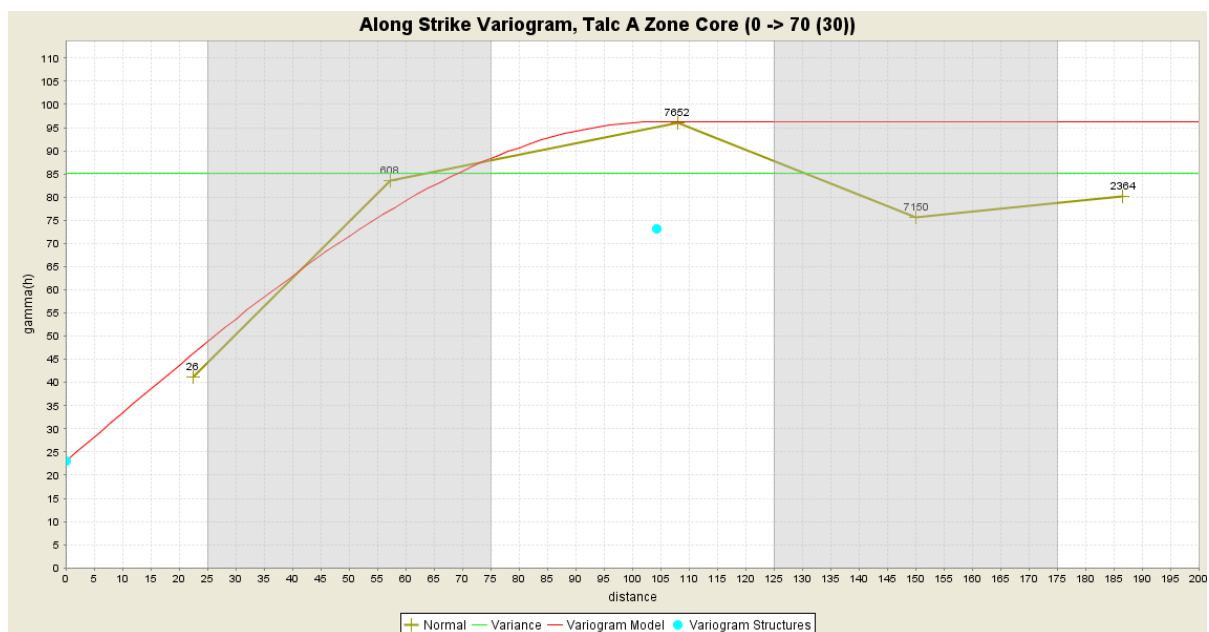
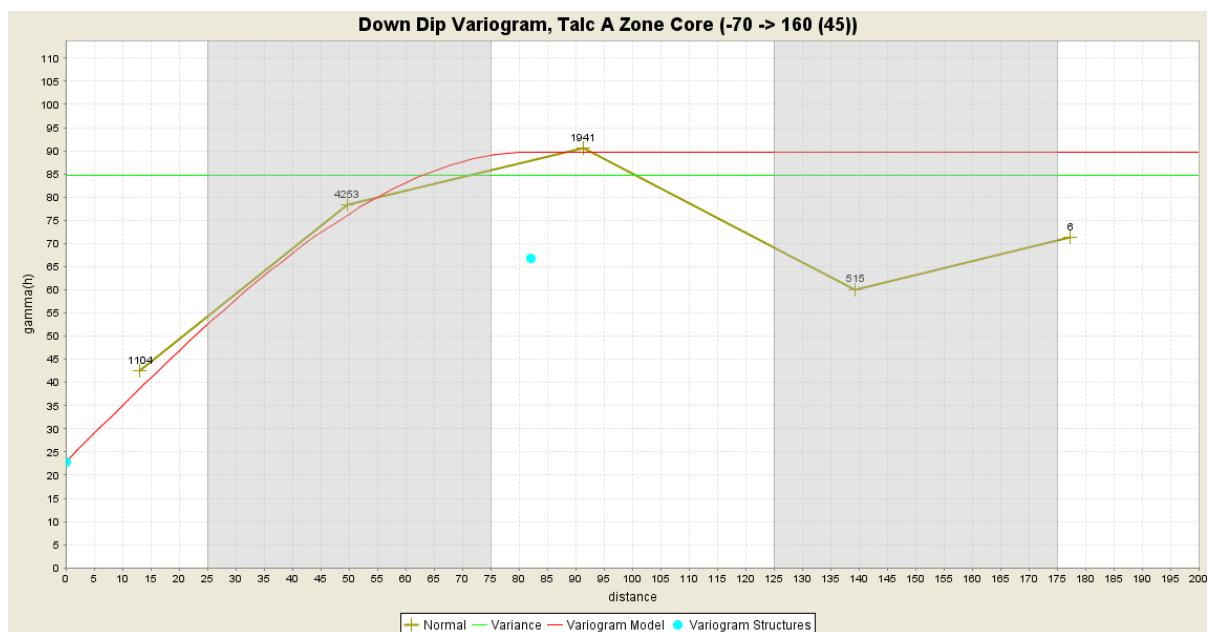


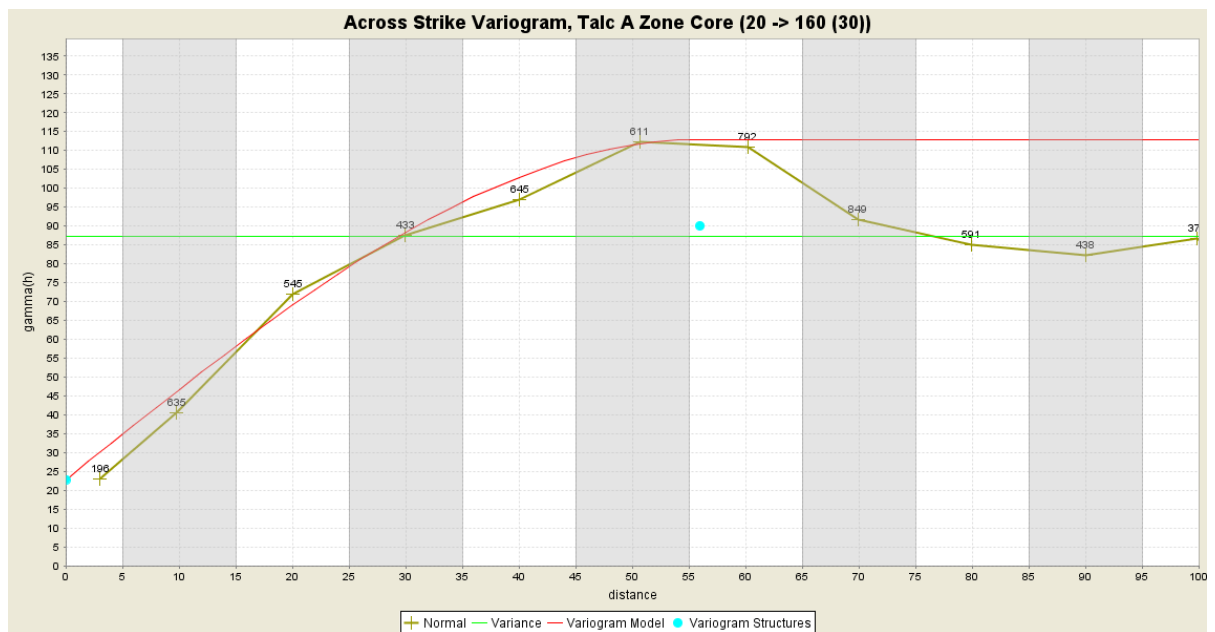




Talc:







Magnetite:

