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GLOBEX MINING ENTERPRISES INC.
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WORLDWIDE MAGNESIUM CORPORATION

A PRELIMINARY ECONOMIC ASSESSMENT FOR THE TIMMINS TALC-MAGNESITE, DEPOSIT, TIMMINS, ONTARIO CANADA

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List of Abbreviations

Abbreviation	Unit or Term
'	minutes of longitude or latitude
~	approximately
%	percent
<	less than
>	greater than
º	degrees of longitude, latitude, compass bearing or gradient
$	Canadian dollar (CAD or CDN also used)
ºC	degrees Celsius
2D	two-dimensional
3D	three-dimensional
µm	microns, micrometres
ac	acre
AAS (or AA)	atomic absorption spectroscopy
ABA	acid base analysis
ADR	adsorption-desorption recovery
Ag	silver
Al	aluminum
ANFO	ammonium nitrate and fuel oil explosives
As	arsenic
Aspy	arsenopyrite
Au	gold
Ca	calcium
CAPM	capital asset pricing model
CCM	caustic calcined magnesia
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	centimetre(s)
Co	cobalt
COG	cut-off grade
Cr	chromium
Cpy	chalcopyrite
Cu	copper
CUV	chlorite-talc ultramafic
d	day
DBM	dead burned magnesia
ddh	diamond drill hole
dmt	dry metric tonnes
E	east
et al.	and others
EA	environmental assessment
EGL	external grinding lengths
EIA	environmental impact assessment
EM	electromagnetic, usually in reference to an EM geophysical survey
EMPA	electron microprobe analysis
ETW	estimated true width
FA	fire assay
Fe	iron
fob (FOB)	freight on board
ft	foot, feet
g	gram or gauge
Ga	billion years
Gal or Gn	galena
gal	gallon
Gj/h	Giga joules per hour
Gj/t	Giga joules per tonne

Abbreviation	Unit or Term
g/hr	grams per hour
g/L	grams per liter
g/t	grams per tonne
g/t Au	grams per tonne of gold
GPS	global positioning system satellite navigation system
G&A	general and administrative
Gt	Giga tonnes
h	hour(s)
ha	hectare(s)
HDIP	high definition induced polarization
HDPE	high density polyethylene
h/d	hours per day
Hg	mercury
hp	horsepower
HQ	H-sized core, Longyear Q-series drilling system
h	hour
HVAC	heating, ventilation and air conditioning
Hz	hertz
ICP	inductively coupled plasma
ICP-AES	inductively coupled plasma atomic emission spectrometry
ICP-OES	inductively coupled plasma optical emission spectrometry
ID	inverse distance grade interpolation
ID^2	inverse distance to the power of two
in	inch (inches)
IP	induced polarization geophysical surveys
IRR	internal rate of return
K	potassium
k	thousand
kg	kilogram(s)
kg/h	kilograms per hour
km	kilometre(s)
km^2	square kilometre(s)
kPa(g)	kilopascals
kV	kilovolt(s)
kW	kilowatt(s)
kWh	kilowatt hour(s)
L	litre(s)
L/d	litres per day
L/h	litres per hour
lb	pound(s)
LIMS	laboratory information management system/low intensity magnetic separation
LOI	loss on ignition
LOM	life of mine
m	metre(s)
m^2	square metre(s)
m^3	cubic metre(s)
m^3/min	cubic metres per minute
M	million(s)
Ma	million years
masl	metres above sea level
MCC	motor control centre
mg	milligram
Mg	magnesium
MgO	magnesia, magnesium oxide
min	minute
mm	millimetre(s)

Abbreviation	Unit or Term
mL	millilitre(s)
Mn	manganese
Mo	molybdenum
MOU	memorandum of understanding
Moz	million troy ounces
MPa	megapascals
MRO	mining rights only
Mt	million tonnes
Mt/y	million tonnes per year
m/s	metres per second
MV	mafic volcanic
MW	megawatt(s)
MWh	megawatt hour(s)
N	north
n.a.	not applicable, not available
Na	sodium
NaOH	Sodium hydroxide
NaCl	Sodium Chloride
NaCN	Sodium Cyanide
NAA	Neutron Activation Analysis
NGO	non-governmental organization
Ni	nickel
NI 43-101	National Instrument 43-101
Nm^3/h	normal cubic metres per hour
NPV	net present value
NQ	N-sized core, Longyear Q-series drilling system
NSR	net smelter return (royalty)
OK	ordinary kriging grade interpolation
oz	troy ounce(s)
oz/ton	troy ounces per short ton
Pb	lead
pH	concentration of hydrogen ion
PIMA	portable infrared mineral analyzer
ppb	parts per billion
ppm	parts per million, equal to grams per tonne (g/t)
PQ	P-sized core, Longyear Q-series drilling system
psi	pounds per square inch (pressure)
Py	pyrite
QA/QC	quality assurance/quality control
QP	qualified person
RC	reverse circulation
ROM	run of mine
RMR	rock mass rating
RQD	rock quality designation (data)
s	second
S	south
Sb	antimony
SD	standard deviation
SEM	scanning electron microscope/microscopy
SG	specific gravity
SiO_2	silica
SI	International System of Units
SO_4	sulphate (ion)
Sph	sphalerite
SRO	surface rights only
t	tonne(s) (metric)
t/h	tonnes per hour

Abbreviation	Unit or Term
t/d	tonnes per day
TDS	total dissolved solids
t/m^3	tonnes per cubic metre
t/d	tonnes per day
t/hr	tonnes per hour
t/y	tonnes per year
ton, T	short ton
UCS	uniaxial compressive strength
UPS	uninterruptible power supply
US	United States
US$	United States dollar(s)
US$/oz	United States dollars per ounce
US$/t	United States dollars per tonne
V	volt
VFD	variable frequency drive
VLF-EM	very low frequency - electromagnetic geophysical surveys
W	west or watt
WACC	weighted average cost of capital
WRA	whole rock analysis
wt	weight
wt %	percent by weight
XRD	X-Ray diffraction
XRF	X-Ray fluorescence
y	year
yd^3	cubic yard(s)
Zn	zinc

The conclusions and recommendations in this report reflect the authors' best judgment in light of the information available at the time of writing. The authors and Micon International Limited (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.

This report is intended to be used by Globex Mining Enterprises Inc. (Globex) subject to the terms and conditions of its agreement with Micon. That agreement permits Globex to file this report as a National Instrument 43-101 Technical Report with the Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities laws, any other use of this report, by any third party, is at that party's sole risk.

1.0 SUMMARY

1.1 INTRODUCTION

At the request of Globex Mining Enterprises Inc. (Globex), Micon International Limited (Micon) has been retained to publish a preliminary economic analysis (PEA, or scoping study) on its Timmins Talc-Magnesite deposit (may be referred to as TTM in this document) and to prepare an independent Technical Report, in accordance with the reporting standards and definitions required under Canadian National Instrument 43-101 (NI 43-101), to support its release to the public. For the PEA, Jacobs Minerals Canada Inc. (Jacobs), a division of the Jacobs Engineering Group Inc., was responsible for metallurgy and processing, Golder Associates Ltd. (Golder) was responsible for ground control and hydrogeology, Blue Heron Environmental - Solutions for Environmental Management (Blue Heron) was responsible for environmental issues, Applied Minerals Research Inc. was responsible for talc product quality and Micon took responsibility for the previously-filed mineral resource estimate (Pressacco, 2010), the mine plan and schedule, and the cash flow and economic analysis.

The Timmins Talc-Magnesite deposit is currently the subject of a joint venture agreement between Globex and Drinkard Metalox Inc. (DMI), in which Globex retains a 90% interest and DMI retains a 10% 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 t/y of feed to produce 65,000 t/y of caustic calcined MgO including a chlorine roasting step to remove the iron. A high grade 50,000 t/y 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 t/y. 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 technical and economic studies.

1.2 PROPERTY

The claim holdings lie in south-central Deloro Township, approximately 11 km southeast of Timmins, Ontario. The project consists of 29 unsurveyed, staked mining claims, totalling 57 claim units of (more or less) 16 ha each, covering an approximate area of 912 ha. As well, the project also consists of an approximately 384 ha-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 under the terms of the agreement, Globex and DMI will form a joint venture company called Worldwide Magnesium Corporation (WMI) in which the 90% interest by Globex and 10% by DMI will be held, 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 public roads that begin with Pine Street South from the City of Timmins, then south for 12 km to the McArthur Forestry Access road, east for 3 km to the ‘Wishbone’ power line and then northwards for 3 km 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, and the land holdings were recently increased 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 m.

1.3 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 8,108.6 m were completed. The property had originally been examined for refractory magnesia potential by Canadian Magnesite Mines during the 1960’s, at which time 8 diamond drill holes for 1,209.8 m 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’s exploration arm Pamourex, resulted in ultimately outlining in the mid-1980’s of a reported “proven reserve” of 20 Mt of material containing 52% magnesite and 28% talc. (This historical reserve estimate is not compliant with NI 43-101 and should not be relied on.)

The project was optioned by Magnesium Refractories Ltd. during 1989-1994. Development efforts primarily consisted of completing additional mineral and metallurgical 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 DMI indicated that the intersected magnesite mineralization could be processed to produce high quality magnesia together with lower quality magnesia products, using hydrometallurgical techniques. Additional bench testing and engineering were undertaken in order to investigate the potential of using these processing methods.

1.4 REGIONAL AND LOCAL GEOLOGY

The geological setting of the Timmins region, an important mining district, has been the subject of study for a period of time approaching 100 years. 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 large body of work is available in regard to 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.

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 is 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.

With the exception of the A Zone mineralization, 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 m, to depths of approximately 100 to 150 m and achieves widths of 200 m 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.

1.5 DEPOSIT TYPES AND MINERALIZATION

The Timmins Talc-Magnesite deposit is a hydrothermally altered ultramafic rock composed, at its core, largely of talc and magnesite although, at its fringes, the content of calcium in the carbonate increases.

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, historically limited the grade of magnesia concentrate or dead-burned refractory product produced by conventional methods. 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% dead-burned MgO product with 4 to 6% Fe_2O_3.

The DMI process proposed in this PEA deals with the high iron content by dissolution and separate precipitation.

1.6 EXPLORATION

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 Bros. Limited. 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 aid of two geotechnicians. Visual estimates of mineralization were completed as part of the logging process and are reported within the drill logs.

The core magnesite 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 when 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.

Since the completion of Micon's mineral resource estimate in late 2009, (Pressacco, 2010) Globex has re-established 62.9 km of cut line on the property and completed ground magnetometer, induced polarization (IP) and very low frequency-electromagnetic (VLF-EM) geophysical surveys.

1.7 SAMPLING

The approach of Globex has been to mitigate the potential effects of weathering on surface rock exposures by relying solely 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 m 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.

Bulk density measurements were taken of marked samples within the mineralized zone and also at spot intervals about every 10 m for the balance of the drill hole using Archimedes' principle. The core was sawn into two halves using an electrical core saw equipped with a diamond impregnated blade. One half of the core was placed into a plastic bag and forwarded to the assay laboratory for the analytical determinations.

1.8 SAMPLE PREPARATION AND ANALYSES

All samples of cut drill core were delivered as batch shipments to Expert Laboratories, Inc. in 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 g subsample was taken for pulverization to a nominal -200 mesh. The pulps were sub-split, with one split consisting of a minimum 25 g of pulp material forwarded to a sub-contracting laboratory for elemental analysis. From the remaining coarse reject material, a nominal 1,000 g 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 Ancaster, Ontario, and included elemental whole rock analysis by ICP, gravimetric water, ferrous iron by titration, carbon dioxide by colourimetry, SO_4 by infrared, 35 multi-trace element scan by inductively coupled plasma optical emission spectrometry (ICP-OES) following aqua regia extraction, 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 (SGS Lakefield), at 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 the QEMSCAN™/ Explomin™ Bulk Mineral Analysis (BMA) mode of measurement. 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, chlorite and dolomite. 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.

A series of blanks, standard reference materials and “quarter-core” duplicates were inserted by Globex with the core 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 a blank sample material may be appropriate as a monitor of talc contamination, Micon considers that this material is not appropriate to monitor for contamination of soluble Ca or soluble MgO as cement is a mixture of materials possibly containing significant quantities of limestone and/or dolomite and possibly containing 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. As well, a program of duplicate pulp assaying for soluble MgO and soluble Ca, where sample pulps were re-assayed by Actlabs, was undertaken. Duplicate samples of coarse rejects were also submitted to SGS Lakefield for re-assaying of the magnesite and talc contents. The duplicate sample results agreed well with the original sample results for soluble Ca, soluble MgO, total magnesite and talc.

1.9 DATA VERIFICATION

Micon conducted a site visit where it examined the field procedures used for the drilling program, viewed examples of the talc-magnesite mineralization in outcrop and core and discussed a methodology for determining an appropriate cut-off grade and the product specifications relative to the proposed flowsheet. Micon found that the field procedures that were being used to set up the diamond drill, recover and transport the core to the logging facilities and the logging and sampling procedures were all being carried out to the best practice standards 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 Actlabs 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 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 flowsheet at the time of the preparation of this report. It can also be seen that a slight bias is present with respect to 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 as discussed in Section 12 of this report.

It was also 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. Micon conducted an examination of the impact of such a 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 also 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 (QA/QC) 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 own 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.

1.10 MINERAL PROCESSING AND METALLURGICAL TESTING

Hydrometallurgical testwork was managed by Globex and conducted in the DMI laboratories in Charlotte, North Carolina. A process development team was formed with Jacobs, DMI and Globex which collectively reviewed results and enhanced the testing program in the following areas:

- Leach.
- Iron removal by chemical / mixed hydroxide precipitation.
- Decomposition and reagent recovery.

Several micro-plant trials were run using the bench-scale experimental leaching, precipitation, solution purification, decomposition and reagent recovery setup constructed at DMI. The decomposition unit consists of a stirred heated reactor containing purified leach solution which is heated to 560ºC. The off-gases were collected and condensed before being passed through a series of absorbers where reagent is recovered. Talc and magnesite recoveries reported are 73.6 % and 95%, respectively.

More than 95% of leach reagent was recovered for recycle to the process, a figure that is expected to be higher in an industrial scale plant, based on DMI's previous experience. The large number of gas and liquid connections and the relatively small sample size capable of being placed in the heating kiln are the main cause of reported losses.

1.11 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

1.11.1 Mineral Resources

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 found at the Timmins Talc-Magnesite deposit was carried out based on the current understanding and level of knowledge.

The hydrometallurgical flowsheet being contemplated at the time by Globex included a maximum specification for calcium in the feed. For the purposes of the initial mineral resource estimate, this was expressed on an acid soluble calcium basis (sol Ca) and 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 m apart and using viewing windows of +/- 50 m. The limits of the mineralization were drawn using a minimum of 30% talc + magnesite cut-off grade as determined from initial modelling of the hydrometallurgical process. Upon completion of construction of the initial domain model for 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. Consequently, a sub-domain boundary was constructed 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 and these suggested that no grade capping was required. 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 is appropriate.

As noted above, bulk density was 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/m^3 and that the average bulk density of the A Zone Fringe samples was 2.93 t/m^3. These values were applied separately as the average bulk density to estimate the mineral resources of the A Zone.

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 080º and dipping 90º was constructed using the Gemcom-Surpac v6.1.1 software. 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 (OK), Inverse Distance to the power 2 (ID^2) and Nearest Neighbour (NN) interpolation methods.

A single-pass approach was used wherein the information from the variographic 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 m composite samples were applied to all blocks located within the A Zone fringe domain model. No A Zone fringe mineralization is scheduled to be milled in this PEA beyond diluting material encountered in the mining of the A Zone core.

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 estimate of the mineral resources for the Timmins Talc-Magnesite deposit was prepared by Reno Pressacco, M.Sc.(A), P.Geo. For this report B. Terrence Hennessey, P.Geo., has taken responsibility for the estimate. Both Mr. Hennessey and Mr. Pressacco are Qualified Persons (QP) as defined in NI 43-101, and independent of Globex and DMI. The estimated mineral resources for the Timmins Talc-Magnesite deposit are set out in Table 1.1.

Table 1.1
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. Based on data available as of October, 2009.
2. 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.
3. 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.

4. All figures have been rounded to reflect the accuracy of the estimate.

1.11.2 Mineral Reserves

The economic study presented in this report is a PEA as defined in NI 43-101. As such there have been no mineral reserves determined for the Timmins Talc-Magnesite project.

1.12 MINING METHODS

1.12.1 Geotechnical

Based on inspection of the exploration drill holes and core photos, a preliminary engineering geology model (EGM) was developed. The EGM considers that the pit slopes will ultimately be comprised of some overburden overlying slightly weathered rocks which, in turn, overlie altered or fresh, medium strong to strong rocks of, predominantly, fair to good quality rock masses.

From these, preliminary recommendations for overburden slope configuration and rock slope design were made for the open pit to be developed on the A Zone (see Table 1.2).

Table 1.2
Recommended Conceptual Pit Slope Angles for the Rock Slopes

Design Sector	Wall Dip Direction	BFA[1] (º)	Vertical Bench Separation (m)	Berm Width (m)	IRA[1] (º)
Slightly Weathered Zone					
All Sectors	-	65	10	6	43
Bedrock Zone					
I – North	180° (160° to 200°)	70	20	8.5	52
II – Southeast	330° (310° to 350°)	70	20	8.5	52
III – South	000° (340° to 020°)	65 (70)[2]	20	9.5	47 (50)[2]
IV – West	090° (070° to 110°)	70	20	8.5	52

[1] BFA = Bench face angle, IRA = inter-ramp angle.
[2] There is the potential to steepen the BFA to 70° and the IRA to 50° if the rock mass quality is better than anticipated.

1.12.2 Mining

The proposed mining method for the Timmins Talc-Magnesite project is open pit mining with truck haulage delivering to a process plant located approximately 1.5 km southwest of the deposit. The average life-of-mine waste to plant feed ratio is 1.28:1. Mining will be by drilling and blasting for the bedrock, with the overlying overburden not requiring blasting.

The deployment of a contractor fleet has been assumed to manage pit operations, run-of-mine stockpiling and crushing. The final bench height in the open pit was designed for 20 m, with operational benches advancing in 10-m lifts.

The resource block model was used as the basis for the open pit design. Economically-optimized pit shells were generated using Whittle 4.4 software which guided the design for an ultimate pit and one 10-year starter pit phase with access ramps. Portions of the mineral resource (measured, indicated and inferred) within these pit designs were included in the conceptual mine plan that served as the basis of this PEA. Mine development capital expenditures and operating costs were estimated to the level of accuracy appropriate for a PEA.

The ultimate open pit contains sufficient material to feed the plant with 500,000 t/y for more than 60 years. However, for the purposes of this PEA, only 20 years of plant feed are considered in the conceptual mine production schedule, as shown in Table 16.5.3.

Table 1.3
20-year Mine Production Schedule

Period	Process Feed (t)	Waste (t)	Total (t)	Magnesite (%)	Talc (%)	Strip Ratio	Plant Stockpile (t)
Year -1		1,014,499	1,014,499	-	-		-
Year 1	553,486	485,016	1,038,502	52.86	34.58	0.88	53,486
Year 2	550,165	1,028,334	1,578,499	51.97	34.58	1.87	103,651
Year 3	549,763	1,263,737	1,813,500	52.26	34.58	2.30	153,414
Year 4	552,534	550,479	1,103,013	52.36	34.58	1.00	205,948
Year 5	619,548	315,452	935,000	52.07	34.58	0.51	325,496
Year 6	549,580	275,420	825,000	52.10	34.58	0.50	375,076
Year 7	549,893	165,107	715,000	53.13	34.58	0.30	424,969
Year 8	500,241	216,718	716,959	52.28	34.58	0.43	425,210
Year 9	512,742	422,258	935,000	52.65	34.58	0.82	437,952
Year 10	549,897	1,870,102	2,419,999	51.94	34.58	3.40	487,849
Year 11	550,255	1,871,071	2,421,326	52.78	32.52	3.40	538,104
Year 12	550,255	1,871,071	2,421,326	52.78	32.52	3.40	588,359
Year 13	550,255	1,871,071	2,421,326	52.78	32.52	3.40	638,613
Year 14	550,255	1,871,071	2,421,326	52.78	32.52	3.40	688,868
Year 15	550,255	1,871,071	2,421,326	52.78	32.52	3.40	739,123
Year 16	512,782	1,739,684	2,252,466	52.79	32.52	3.39	751,905
Year 17	512,782	1,739,684	2,252,466	52.79	32.52	3.39	764,687
Year 18	512,782	1,739,684	2,252,466	52.79	32.52	3.39	777,468
Year 19	222,532	754,971	977,503	52.79	32.52	3.39	500,000
Year 20	0	0	0	-	-	0.00	0
Total	**10,000,000**	**22,936,501**	**32,936,501**	**52.55**	**33.65**	**2.29**	

The PEA assumes that a contractor fleet will be deployed to manage pit operations and crushing. However, a capital allowance has been made in the cash flow model for the pre-stripping.

1.13 MINERAL PROCESSING AND METALLURGY

A mining contractor will crush, screen and stockpile the ore. Reclaimed ore is conveyed to a tertiary crusher, followed by a primary grinding mill to further reduce the particle size.

The ground ore is treated in rougher and cleaner flotation circuits where talc is recovered to the concentrate streams. Flotation tails are pumped to separate leach circuits. To finish the talc, it is flash dried, micronized and stored in silos.

Magnesite and other minerals contained in the flotation tails are dissolved in a leaching circuit. The impurities are precipitated from the solution and excess water is evaporated.

The purified and concentrated solution flows by gravity into thermal decomposition units to produce active magnesium oxide (MgO). The MgO is briquetted and screened, then dead-burned in a shaft kiln. The dead-burned magnesite (DBM) product is stored in a bunker.

The rejected fines from the briquetter screen are crushed and fed back into the impurity precipitation step. The reagent used in the leaching circuits is recovered and recycled back to the process.

The plant design is based on a block flowsheet and design criteria provided by Globex and DMI (Table 1.4) further refined by Aker Solutions (Jacobs). The Metsim® model of the process was developed by Aker Solutions for the mass and heat balance.

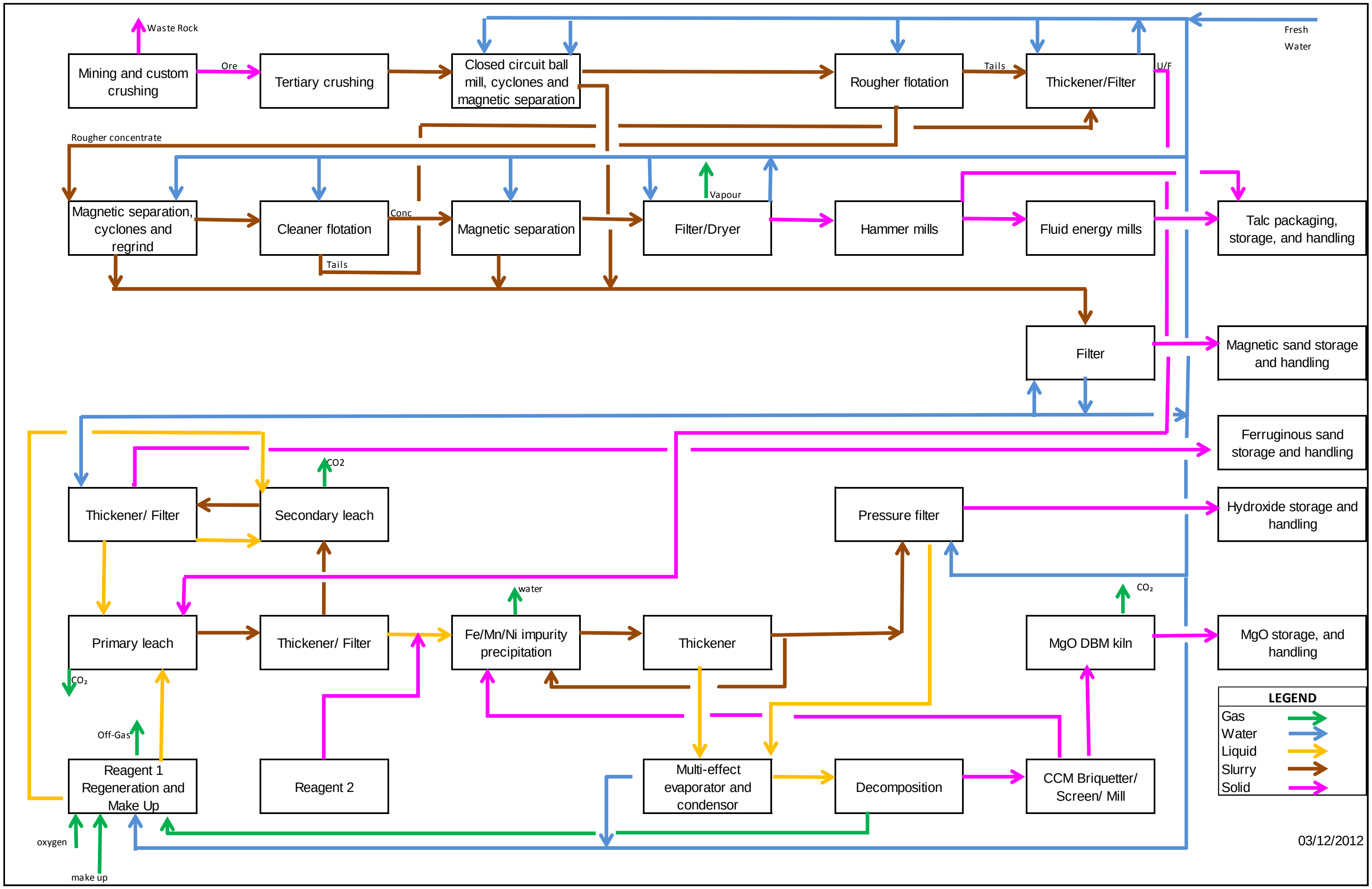
Table 1.4
Plant Process Parameters

ROM feed rate	500,000 dry t/y
Feed talc grade	35.6 %
Feed magnesite grade	52.1%
Operating availability	85%
Leach conditions	105ºC at Atmos. Pressure
Overall talc recovery	73.6%
Overall magnesium oxide recovery	95%
Talc production	137,060 t/y
Magnesium oxide production	118,293 t/y
Talc product purity	>97%
Magnesium oxide product purity	>98%

1.14 PROCESS PLANT

The process facilities are for the production of talc and magnesite from ore to be excavated from the Timmins Talc-Magnesite mine at a rate of 500,000 t/y. The plant is designed to operate 365 days per year at 85% availability. The process block diagram showing the major streams established for the process plant is provided in Figure 1.1.

Figure 1.1
Timmins Talc-Magnesite Process Block Diagram



The plant will produce talc and magnesium oxide from the ore via a series of crushing, grinding, flotation, leaching, evaporation, decomposition, and sintering operations.

There are three divisions on the figure, namely,

- Talc processing.
- Magnesite leach, thermal processing and regeneration of reagent.
- Utilities for water, chillers and cooling units which are distributed around the plant area.

The main plant is housed in heated structures, except for the evaporator units and rotary kiln. The enclosed footprint occupies approximately 24,000 m^2.

A 900-m^2 storage area for maintenance supplies, offices and change room facility, form the administration complex. A larger 2,000-m^2 unheated area is reserved for product storage and loadout.

Ore is loaded from a crushed ore stockpile to feed the talc processing area. Corresponding to the flowsheet, flotation tails are directed to the main working area of the plant for magnesite processing (refer to site plan Figure 1.2).

A fully equipped truck shop is not required at the site. The preference will be to service the mining and plant mobile fleet in Timmins. Access will be provided from the public road to the administration complex and loading bays. The mining trucks will deliver crushed ore from the pit area to the stockpile area on a private road.

The facilities are designed in consideration of the fire insurance requirements set by local regulations for industrial applications. During the next phases of engineering, these requirements will put under review by an appointed local inspector to confirm acceptance and compliance with the Ontario Fire Code.

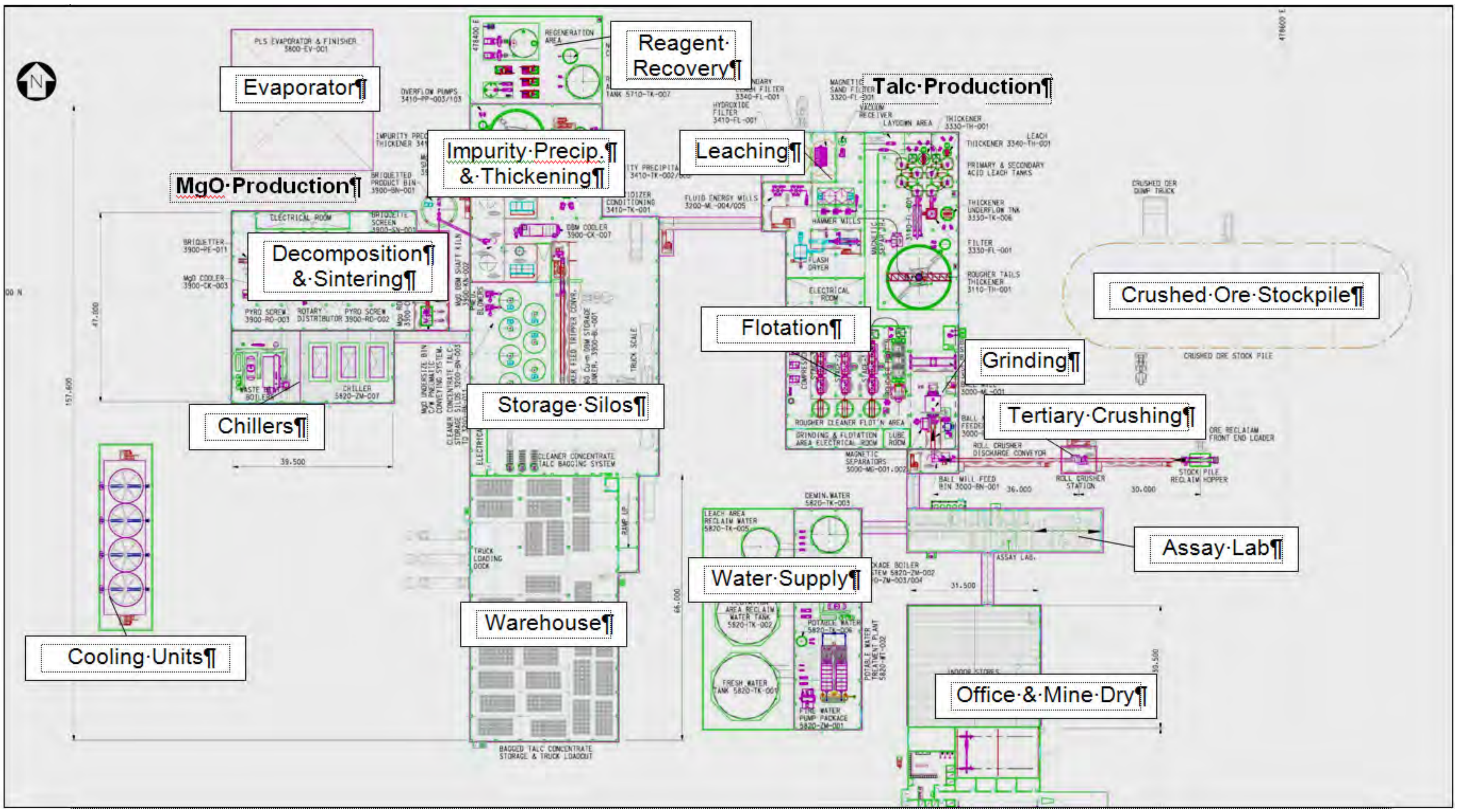
1.15 INFRASTRUCTURE

Existing infrastructure (roads, power transmission, gas lines and communication networks) are available for connecting in close proximity to the site. Costs for infrastructure connections or developments were quoted and input to the estimate.

Power for the Timmins Talc-Magnesite project will be sourced from a 115 kV transmission line situated in a corridor a few kilometres to the west.

The process requires a constant supply from the water system. Given the cold climate, the system will be protected from freezing by either electrical tracing or back-up power to run critical pumps and maintain circulation.

Figure 1.2
Timmins Talc-Magnesite Process Plant Footprint



The nearest railway is 15 km due north, within the Timmins city boundary. The existing Hallnor rail loadout facility will be used by the carriers hired to transfer bulk shipments by road and rail.

1.16 ENVIRONMENTAL AND SOCIAL OR COMMUNITY IMPACT

Environmental baseline studies were initiated in September, 2009 by Blue Heron on behalf of Globex, to assess a range of environmental variables including: terrestrial habitat, aquatic habitat, geology, surface water quality and mine rock geochemistry, as part of the overall mine permitting process.

1.16.1 Terrestrial Habitat

The project area is located within the Abitibi Plains ecoregion which borders the southern boundary of the James Bay Lowland ecoregion. Topography is dominated by fine textured, level to undulating glacial deposits with a mix of bedrock outcrops and organic deposits. The Timmins region is classified as having a sub-humid mid-boreal ecoclimate.

Native plant species observed on the site are common and widespread in Ontario and typical of the Timmins region, consisting predominantly of black spruce with balsam fir, poplar, and white birch. A total 52 species of birds were observed during the breeding bird survey. Characteristic wildlife of the region includes moose, black bear, lynx, snowshoe hare, caribou, wolf and coyote. Provincially endangered or threatened native species of wildlife or plants were not observed at the site. Desktop study results indicated the potential for 10 federally listed species and three provincially listed species to occur in the region containing the site. Based on species range information and habitat requirements, none of these species has a high potential to occur on the site. Areas of Natural and Scientific Interest (ANSIs) and provincially significant wetlands are not known to be present on the site.

1.16.2 Aquatic Habitat

A diversity of fish and benthic species were discovered in water bodies located on the property which include Shaw Creek, Gold Lake Outflow and associated tributaries. Although no cold water species (e.g. brook trout) were captured during baseline studies, conditions in lower sections of Shaw Creek may be suitable to support such species. In consideration of its designation as a cold water stream by the Ontario Ministry of Natural Resources, Shaw Creek should be considered sensitive to disturbance. Potential effects of discharge from the project or physical disturbance to Shaw Creek should be avoided or mitigated. The Mountjoy River which runs along the southern boundary of the property is occupied by both cold and warm water fish species including several sport fish species.

Overall, the water quality monitoring data indicate that the concentrations of the majority of parameters in area creeks, rivers and lakes were within acceptable limits (governed under Ontario Regulation 560/94 Schedule 1 and Provincial Water Quality Objectives (PWQO)).

Some moderately elevated concentrations of iron, aluminum, phosphorus and copper were noted at some locations.

Down-gradient groundwater users that could be influenced by the mine development were not identified. On-site monitoring indicated that groundwater was slightly alkaline. Parameter concentrations in groundwater which were elevated above PWQO included: aluminum, arsenic, cadmium, cobalt, chromium, copper, iron, nickel, phosphorus, thallium, uranium, vanadium and zinc. Parameter concentrations which were elevated above Ontario Drinking Water Quality Standards (ODWQS) included: aluminum, chromium, antimony, iron, manganese (aesthetic objective) and hardness. Given the location of the site, these results are considered to be representative of pre-production conditions and, as such, the elevated concentrations identified are considered to be naturally occurring and are a consequence of the local mineralized geology.

It is recommended that an elevation survey is conducted of the tops of the groundwater monitoring well pipes to allow for interpretations of hydraulic gradients at the site. In order to facilitate estimation of groundwater seepage into the open pit, a supplemental drilling program may be required in order to assess the deeper hydrogeology of the proposed open pit. It may be possible to utilise existing exploration drill holes for this purpose, depending upon their location, orientation and condition. Groundwater sampling should be continued to establish baseline groundwater quality conditions at the site.

1.16.3 Risk of Acid Rock Drainage and Metal Leaching from Mine Wastes

Waste rock, ore and hydrometallurgical residue samples contained low to negligible sulphide concentrations and were predicted to be non-acid generating. The sample of acid leach residue from pilot plant hydrometallurgical processing was acidic due to the process chemistry employed.

Metal leaching from all samples was generally very low to negligible. In comparison to PWQO, aluminum and vanadium concentrations were moderately elevated in leachate from some waste rock samples. It is acknowledged that comparison of short-term leach test data to water quality objectives that apply to receiving waters is not strictly appropriate. However, for screening purposes this comparison does indicate that vanadium and aluminum concentrations in runoff from waste rock may be relatively elevated. As the mine plan and waste management strategies are developed, additional sampling of mine wastes may be required to properly characterize the materials.

1.16.4 Process Solids Management

Temporary storage of two potentially saleable by-products comprising magnetic sand and ferruginous sand may be required on site. Permanent on-site storage of a hydroxide filter cake will be required in an engineered storage basin equipped with an HDPE liner. The storage basin will contain a water collection pond for water recycle to the mill. There is not expected to be any off-site effluent discharge from the storage basin. Separate storage pads will be provided for each of the two sand by-products. During site closure, in order to provide long-term physical and chemical stability, the filter cake stack will be regraded, covered with soil and re-vegetated.

1.16.5 Water Management and Site Monitoring

During operations it is anticipated that the open pit will require dewatering with this surplus water being pumped to a sedimentation pond, prior to release to the environment. It is not anticipated that treatment of pit water will be required. During operations and during mine site closure, a site wide environmental monitoring program will be in effect that will meet the permitting requirements for the project.

Closure options for the open pit have yet to be addressed in detail. However, it is likely that at cessation of mining operations, the open pit will be allowed to flood with eventual passive discharge of pit water occurring to the local environment. Based upon the testing carried out to date, is not anticipated that treatment of open pit water will be required post-closure.

1.16.6 Project Permitting

The main provincial regulatory permits likely associated with the project include: i) Ministry of Environment - Permit to Take Water, ii) Ministry of Environment - Environmental Compliance Approval (ECA) for Industrial Sewage Works, iii) Ministry of Environment - Environmental Compliance Approval (ECA) for Air and Noise, iv) Ministry of Northern Development, Mines and Forestry - Mine Closure Plan, and v) Ministry of Health/local Public Health Units - Approval of Septic Systems (may be required).

To date, it is not anticipated that the proposed mine development at the site will trigger an Environmental Assessment (EA). Based upon the current status of the mine plan, the permitting effort has been focused upon collection of necessary baseline data to allow preparation of a Mine Closure Plan at the appropriate time.

1.16.7 First Nations Consultation

The Mattagami First Nation is the primary First Nation with traditional territory in the project area. In November, 2011 an introductory meeting was attended by representatives of Wabun Tribal Council and Mattagami First Nation, Globex and Blue Heron. At this meeting, Globex made a presentation introducing the company and its goals for the site. Additional discussions and meetings between Globex, First Nations and the Métis Nation of Ontario will be scheduled as the project develops.

1.17 CLOSURE

No detailed closure plan has been developed as of this date. A closure bond of $2 million has been allowed for in the cash flow model.

1.18 CAPITAL COSTS

A project capital cost estimate to ±25% accuracy was developed. A contingency allowance of 30% is included in the project total capital cost estimate.

The costs were developed in the third quarter 2011 in Canadian dollars, subject to the qualifications and exclusions listed in Section 15.6.2. The capital costs for the process plant, services and infrastructure are summarized in Table 1.5 and are inclusive of the costs up to and including plant commissioning and start-up.

Table 1.5
Capital Cost Summary

Description		Cost ($)
Process Plant		
	Mechanical	80,571,582
	Earthworks	805,716
	Concrete	6,445,727
	Structural steel	6,836,867
	Architectural	4,818,672
	Building mechanical services	1,807,002
	Electrical	9,758,564
	Instrumentation and controls	7,040,249
	Process Piping	14,268,257
	Insulation protection and heat tracing	1,709,217
	Subtotal	134,061,853
Infrastructure		
	Site development	691,000
	Access road	300,000
	Plant roads	830,000
	Hydroxide waste and sands	4,460,639
	Power line, 115 kV	5,600,000
	Main substation	5,359,000
	Electrical power distribution, plant site	nil
	Emergency power, 500kW	500,000
	Diesel fuel storage facility and distribution	nil
	Gas supply line	6,644,000
	Boiler house and hot water distribution	nil
	Sewage treatment facility	1,034,000
	Water supply, treatment and distribution	1,040,000
	Communications	280,000
	Plant mobile equipment	1,753,000
	Subtotal	28,491,639
Infrastructure Buildings		
	Administration building	3,338,000
	Warehouse, unheated	1,075,000
	Gatehouse and medical facility	100,000
	Assay laboratory facility	1,560,000
	Reagent storage	50,000
	Stockpile dome facility	nil
	Subtotal	6,123,000
	Indirect costs	34,189,000
	Contingency (30%)	56,742,000
	Owner's costs	5,000,000
Total		**264,607,000**

The figures in Table 1.5 exclude mining.

Excluded from the estimate are:

- Harmonized and Goods and Services Tax, import duties/permits and other taxes.
- Deferred capital.
- Process royalty fees.
- Sustaining capital.
- Working capital.
- Financing and interest during construction.
- Escalation.
- Corporate withholding taxes.
- Sunk costing.
- Metallurgical and pilot testing costs.
- Feasibility studies.

1.19 OPERATING COSTS

The total operating cost estimate for the process plant at 500,000 t/y production in third quarter 2011 as Canadian dollars is presented Table 1.6. Contract mining and crushing costs are excluded.

Table 1.6
Summary of Operating Costs

	$/y	$/t Ore	Distribution (%)
Labour	11,311,250	22.62	29.0
Reagents and consumables	6,102,374	12.20	15.7
Natural gas	8,713,495	17.43	22.4
Diesel	609,343	1.22	1.6
Electrical power	7,168,205	14.34	18.4
Maintenance supplies	5,054,745	10.11	13.0
Subtotal	**38,959,412**	**77.92**	**100.0**
Other expenses, 7%	2,727,159	5.44	
Total	**41,686,571**	**83.36**	

[1]This operating cost summary by Jacobs does not contain contract mining costs.

A contingency allowance of 7% has been added to cover unidentified and other minor costs.

Off-site Owner's cost, co-product credits and product freight to market are not included.

1.20 PROJECT EXECUTION PLAN AND SCHEDULE

Globex has indicated its immediate intention, on completion of this PEA, to move forward with a pre-feasibility study on the project in 2012. Assuming a successful outcome of that study, and satisfactory progress with permitting, a pilot plant and basic engineering of the project required for a feasibility study could be completed during 2013. Detailed engineering, procurement and construction could take place during 2014 and 2015 (Years -2 and -1 in the cash flow schedule). First production from the project (Year 1) could therefore take place as early as 2016.

1.20.1 Feasibility Phase

The process design has progressively developed to the present level with work completed for this study.

Additional testwork is recommended to verify assumptions used for the performance parameters, i.e., thickening, filtration.

1.20.2 Detailed Engineering and Procurement

The challenges that face the engineering work in future are not unique to this project. Details will emerge, out of closely working with all vendors so that all parties understand the parameters involved. A straight-forward approach to tendering and negotiating will be in place with vendors and contractors, while maintaining quality and adhering to schedule. The timing for deploying the work packages is crucial, to ensure a favourable climate for a competitive bidding process on lumped sum contracts.

1.20.3 Construction

The site is in a region with a diverse and experienced workforce due to the local presence of the mining industry.

Contracts will be administered locally from rented office space in Timmins. Large construction equipment, such as cranes, graders and haulers will be hired for short terms.

1.20.4 Plant Commissioning and Operations

Vendor representatives will participate in the commissioning phase of major equipment packages while the Start-up Team prepares to hand off the operation to the Owner's team. This is projected into the next calendar year after commencing construction.

1.21 MARKET STUDIES

The Roskill Consulting Group Ltd. (Roskill) was retained by Globex to provide market analyses for talc and magnesium compounds. Globex also provided more detailed data on the North American talc market compiled by an independent talc market specialist.

Products from the Timmins Talc-Magnesite project will offer North American buyers an alternative to Chinese suppliers of talc and magnesia over which there is increasing concern relating to long term availability.

1.21.1 Talc

There are three key market segments for talc in North America: the automobile industry (where talc is used in polypropylene, technical ceramics, paint and rubber), construction (paint, asphalt roofing and ceramic tiles) and consumer products (paper, cosmetics, pharmaceuticals and a range of minor uses).

Testwork completed to date indicates that talc from the Timmins Talc-Magnesite project will be a high purity, high brightness product that will be readily accepted as a functional filler in polypropylene for the automotive industry. The project is well-located to supply the key North American markets for this material. There are no existing producers in North America of high brightness talc that can compete in terms of quality with product imported from China.

1.21.2 Magnesite

Market analysis focused on refractory magnesia and caustic calcined magnesia as having the most accessible markets for Globex in North America.

Significant volumes of refractory magnesia are imported to the United States, principally from China. Roskill considered that refractories producers in the United States would welcome a new North American supplier of refractory magnesia.

1.21.3 Price Outlook

Micon concurs with the projections of unit revenues used in the project economic model.

There are no contracts or off-take agreements in place relating to talc or magnesia from the Timmins Talc-Magnesia property.

1.22 ECONOMIC ANALYSIS

1.22.1 Basis of Evaluation

Micon has prepared its economic assessment of the project on the basis of a discounted cash flow model, from which net present value (NPV), internal rate of return (IRR), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested.

The objective of the study was to establish the economic viability of the proposed development of an open pit mining operation and processing for the production of talc and magnesia from the deposit. In order to do this, the cash flow arising from the base case has been forecast, enabling a computation of the NPV to be made. The sensitivity of this NPV to changes in the base case assumptions is then examined.

1.22.2 Macro-Economic Assumptions

The project cash flow model and all results derived from the model are expressed in Canadian dollars ($). Constant, first quarter-2012 money terms are used throughout, i.e., without provision for inflation. The cash flow is discounted to the period in which a decision is taken to proceed with project construction, assumed to be two years before the commencement of production.

The base case has been evaluated using a price for magnesia (MgO) of $570/t and a price for a 96.5% pure talc product of $500/t.

Micon estimates a cost of equity for the project of between 8% and 12%, and has taken the lower end of this range as its base case.

The project will be subject to Canadian federal income tax, and Ontario income and mining taxes. These have been provided for in the cash flow model.

Applicable royalties of 1.0% and 0.5% of gross revenue, respectively, as well as annual selling expenses totalling $112,500 have also been provided for in the cash flow model.

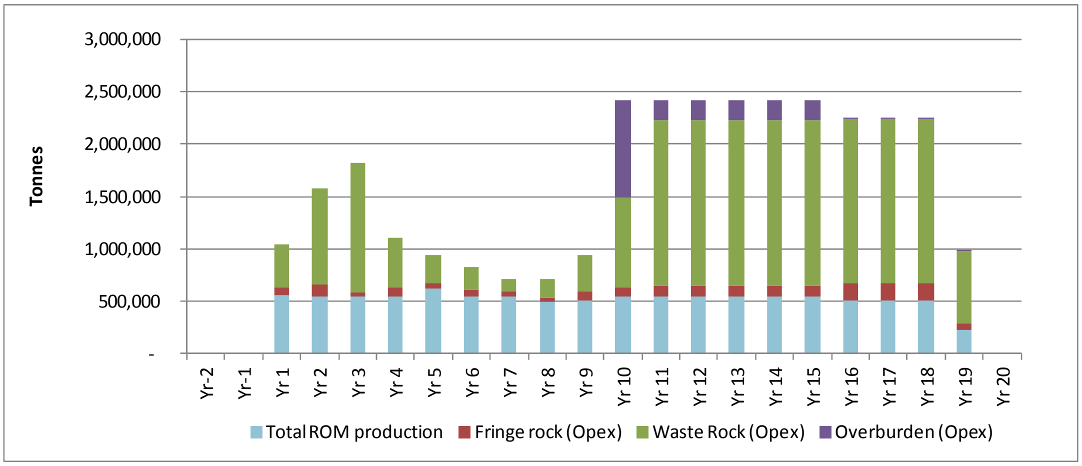
1.22.3 Technical Assumptions

The technical parameters, production forecasts and estimates described in this report are reflected in the base case cash flow model. These inputs to the model are summarized below.

Figure 22.2 shows the annual schedule for mining of process feed, overburden and waste rock from the open pit. While the annual mined tonnage of process feed remains constant over the LOM, the amounts of overburden and waste rock vary in line with the phasing of pit development. Over the LOM period, a total of approximately 0.78 Mt of ROM material is accumulated on a stockpile that is then depleted during the final two years of production.

The processing plant will treat 500,000 t/y of ROM material, together with material reclaimed from the stockpile in the last two years of operation. The grade of material treated is forecast to remain steady, averaging 33.65% talc and 52.55% MgO over the 20-year initial LOM period. During this time, 47% of revenue is derived from talc and 53% from magnesia.

Figure 1.3
Open Pit Mining - Annual Production Schedule



1.22.4 Operating Costs

Cash operating costs average $98.65/t treated over the LOM period. Mining and primary crushing costs amount to $15.29/t treated, or around 15% of total operating costs. Processing costs average $69.02/t treated, equivalent to 70% of total operating costs, and general and administrative costs are forecast to amount to $14.34/t treated, approximately 15% of total operating costs.

1.22.5 Capital Costs

Pre-production capital expenditure of $266.4 million is incurred in Years -2 and -1 for pre-stripping of the open pit mine and construction of the processing plant and site infrastructure, including a contingency of $56.7 million. See Table 1.7. In addition to the above, provision is made for closure bonding of $2.0 million and, during the operating period, annual sustaining capital of approximately $4.0 million is also provided, totalling around $65 million over the LOM period. During the first year of operations, an increase of approximately $16.0 million in working capital is assumed, this amount being released on closure of the mine in Year 20.

Table 1.7
Summary of Initial Capital Cost

Area	Thousand $
Mine	1,909
Plant	134,128
Infrastructure	28,492
Buildings	6,123
Indirect	34,003
Contingency	56,706
Owner's costs	5,000
Total	**266,361**

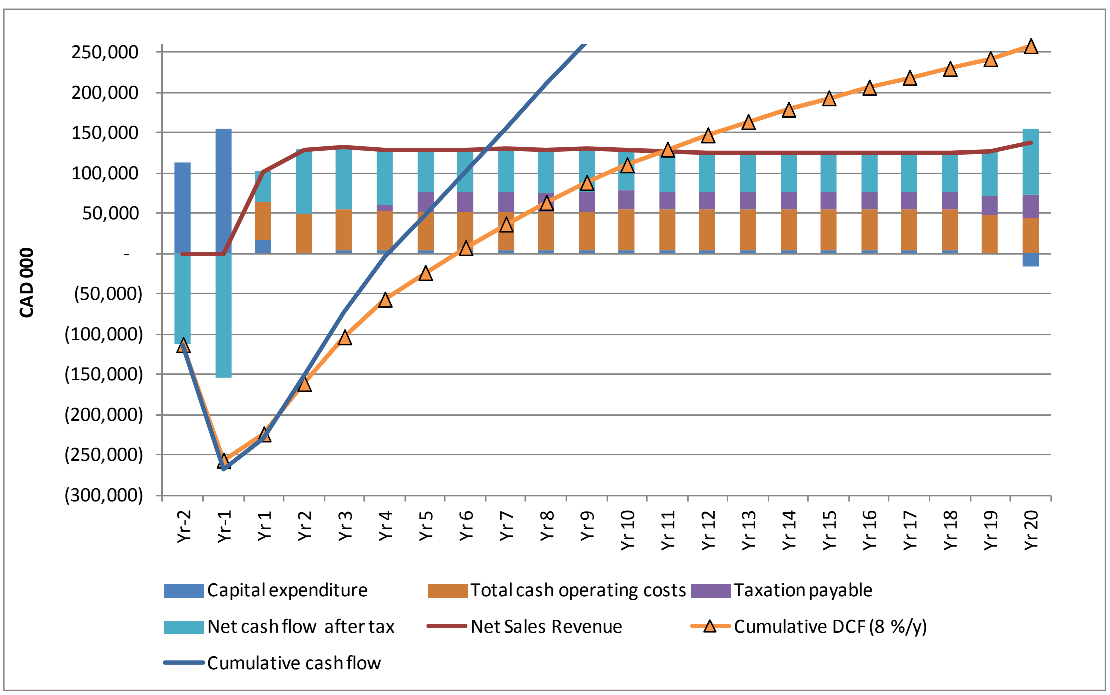
1.22.6 Project Cash Flow

The LOM base case project cash flow is summarised in Table 1.8. Annual cash flows are presented in Figure 1.4. It will be seen that undiscounted payback occurs in Year 4 and, when discounted at 8%, in Year 6.

Table 1.8
Life-of-Mine Cash Flow Summary

	LOM Total ($ 000)	$/t Treated
Gross sales	2,578,530	257.85
Less royalties	38,678	3.87
Less selling expenses	2,250	0.23
Net sales revenue	2,537,602	253.76
Mining costs	152,879	15.29
Processing costs	690,230	69.02
G&A costs	143,374	14.34
Total cash operating costs	986,483	98.65
Net cash operating margin	1,551,119	155.11
Initial/expansion capital	266,361	26.64
Sustaining capital & closure	66,879	6.69
Changes in working capital	-	-
Net cash flow before tax	1,217,879	121.79
Taxation payable	377,338	37.73
Net cash flow after tax	840,541	84.05

Figure 1.4
Life-of-Mine Cash Flows



1.22.7 Base Case Evaluation

At the end of Year -1, the project has cumulative pre-production capital expenditure of $268 million. After taking into account working capital of $16 million, the total project funding requirement rises to $284 million. Thereafter, the project is forecast to be cash positive in each year of operation, generating a cumulative net cash flow before tax of $1,218 million and $840 million after tax. On the undiscounted cash flow, payback occurs after 4.1 years. On the cash flow discounted at 8%, payback occurs after 5.8 years, and leaves a production tail of more than 14 years, based on the initial 20-year pit limits.

Over the LOM period, the average cash operating cost equates to $98.65/t treated, providing an average margin of 61% over the operating period.

The base case evaluates to an IRR before- and after-tax of 23% and 20%, respectively. At the selected discount rate of 8%, the net present value (NPV_8) of the cash flow is $404 million before tax and $258 million after tax. The base case cash flow evaluation results are shown in Table 1.9, which also shows the results at the higher discount rates of 10% and 12%. In Micon's opinion, the results demonstrate economic viability of the project base case, under the conditions described above.

Table 1.9
Base Case Cash Flow Evaluation

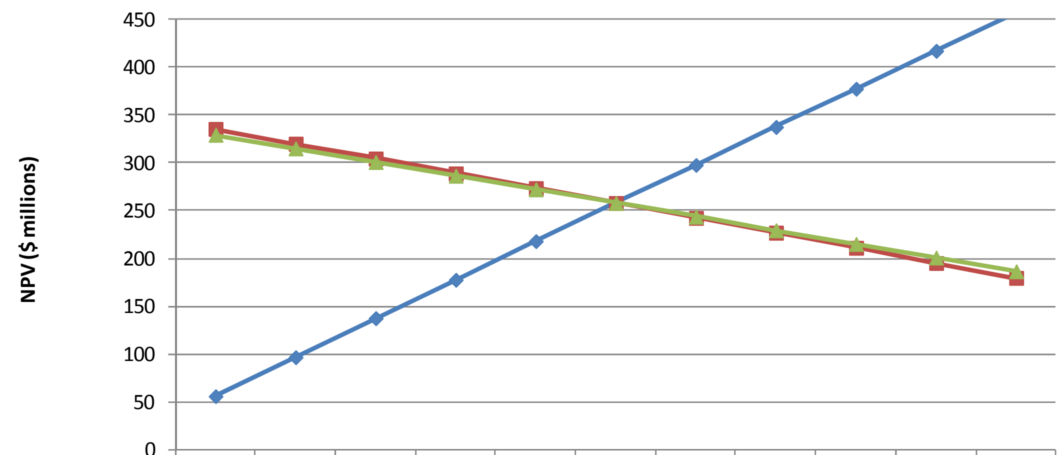
$ million	LOM Total	Discounted at 8%/y	Discounted at 10%/y	Discounted at 12%/y	IRR (%)
Gross Sales	2,578,530	1,164,507	989,551	851,005	
Less royalties	38,678	17,468	14,843	12,765	
Less selling expenses	2,250	1,023	871	750	
Net Sales Revenue	**2,537,602**	**1,146,017**	**973,837**	**837,489**	
Mining costs	152,879	66,799	56,318	48,085	
Processing costs	690,230	314,365	267,749	230,804	
G&A costs	143,374	65,170	55,483	47,809	
Total cash operating costs	**986,483**	**446,334**	**379,549**	**326,698**	
Net cash operating margin	1,551,119	699,683	594,288	510,792	
Initial capital	266,361	255,015	252,437	249,950	
Sustaining capital, closure	66,879	37,743	33,543	30,065	
Changes in w. capital	-	10,532	11,053	11,266	
Net cash flow before tax	**1,217,879**	**403,792**	**305,145**	**227,661**	**23%**
Taxation payable	377,338	145,839	118,513	97,310	
Net cash flow after tax	**840,541**	**257,953**	**186,631**	**130,351**	**20%**

It should be noted that this PEA is preliminary in nature and it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the conclusions of the PEA will be realized.

1.22.8 Sensitivity Study

The sensitivity of the project returns to changes in all revenue factors (including grades, recoveries, and prices) together with capital and operating costs was tested over a range of 25% above and below base case values. Figure 1.5 shows the results of this analysis.

Figure 1.5
Sensitivity to Capital, Operating Costs and Revenue



	75%	80%	85%	90%	95%	100%	105%	110%	115%	120%	125%
Revenue drivers	56	97	138	178	218	258	298	337	377	417	456
Operating costs	335	320	304	289	273	258	242	227	211	195	180
Capital costs	329	315	301	286	272	258	244	229	215	201	187

The results show that the project is most sensitive to revenue factors, with an adverse change of 25% reducing NPV_8 by 78% to $56 million. The project is less sensitive to capital and operating costs, with an adverse change of 25% reducing NPV_8 by around 30% to $187 million and $180 million, respectively.

In further analysis, Micon notes that applying an increase of more than 43% to both capital and operating costs simultaneously would be required in order to reduce NPV_8 to zero.

Micon concludes that the project is sufficiently robust to withstand adverse changes in the principal value drivers of the project within the limits of accuracy of the estimates.

1.22.9 Conclusion

Micon concludes that this study demonstrates the economic potential of the project as proposed, and that further development is warranted.

1.23 INTERPRETATIONS AND CONCLUSIONS:

Since its acquisition of the Timmins Talc-Magnesite property in 2000, Globex has 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 conducted a program 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, 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. Using these data and its interpretation Micon prepared the mineral resource estimate (Pressacco, 2010) set out in Table 1.1.

The current geological model of the A Zone spans a width of approximately 200 m, a strike length of approximately 700 m and extends to a depth of approximately 100 m 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 and infill drilling to increase confidence so that the resource could be used in a pre-feasibility study.

Ongoing metallurgical testwork, engineering design studies, geotechnical and environmental evaluation have led to the completion of a PEA the results of which are summarized above and presented in more detail in the remainder of this report. The PEA has demonstrated the economic potential of the project and further work to advance it is found to be warranted. More detailed interpretations and conclusions are presented in Section 25 of this report which justify the continuation of work in the areas of mineral resource expansion and upgrading, metallurgical testing, process design, geotechnical and environmental studies.

1.24 RECOMMENDATIONS

The authors of this report have made numerous detailed recommendations in specific technical areas for the advancement of the project as outlined in Section 26 of this report.

Globex has proposed a two-phased program of work to advance the Timmins Talc-Magnesite property towards a production decision. This program consists of completion of the pre-feasibility and feasibility studies, permitting and developing the mine, building a reduced-scale talc market demonstration plant, piloting certain aspects of the DMI magnesia process, and commencement of engineering of the main commercial 500,000 t/y plant.

The proposed program and associated budget is set out in Table 1.10. It should be noted that the work in Phase 2 is contingent on the successful outcome of work in Phase 1.

Table 1.10
Exploration and Development Program Budget

	Item	Cost ($)
Phase 1		
1.0	Pre-Feasibility study	
1.1	Diamond drilling	
	Definition in-fill and zone extension testing	1,000,000
	Variability study drilling	300,000
1.2	Talc variability study	
	Laboratory work and micronization	500,000
1.3	Geotechnical	
	Plant and holding pad soil studies	300,000
1.4	Miscellaneous	
	Archeology and environmental	200,000
	Alternative talc process testing, evaluation reporting and property claim maintenance	700,000
Phase 2		
2.0	Feasibility studies and site preparation	
2.1	Geotechnical	
	Plant and pit ground stability and hydrogeology	2,000,000
2.2	Permitting and development	
	Site acquisition	200,000
	Environmental	200,000
	Closure plan and bonding	1,500,000
	Pit pre-development	500,000
	First Nations and public consultations	200,000
2.3	Plant and process feasibility study	
	Demonstration plant engineering	3,500,000
	Main plant engineering	6,000,000
	Trade-off studies	500,000
	Marketing study updates	120,000
2.4	1/5th Scale demonstration plant (Talc + DMI)	
	DMI Equipment and installation	5,300,000
	Talc mechanical equipment	6,800,000
	Factored commodities	4,500,000
	Site infrastructures	3,100,000
	Indirect costs	2,500,000
2.5	Miscellaneous	
	Reporting and property claim maintenance	400,000
	Subtotal Phase 1	3,000,000
	Subtotal Phase 2	36,920,000
	10% Contingency	4,032,000
	15% Management and supervision	6,048,000
	Grand Total (Phase 1 and 2)	**$50,000,000**

Micon has reviewed the proposed exploration and development program and finds it to be reasonable and justified in light of the observation made in this report. Should it fit with the strategic goals of Globex management it is Micon's recommendation that the company conduct the proposed program.

2.0 INTRODUCTION

Globex Mining Enterprises Inc. (Globex) has retained Micon International Limited (Micon) to publish a preliminary economic analysis (PEA, or scoping study) on its Timmins Talc-Magnesite deposit (may be referred to as TTM in this document) and to prepare an independent Technical Report, in accordance with the reporting standards and definitions required under Canadian National Instrument 43-101 (NI 43-101), to support its release to the public. For the PEA, the metallurgy and processing sections were contributed by Jacobs Canada Inc. (Jacobs), a division of the Jacobs Engineering Group Inc., ground control and hydrogeology were completed by Golder Associates Ltd. (Golder) and environmental issues were completed by Blue Heron - Solutions for Environmental Management (Blue Heron). Micon has taken responsibility for a previously-filed mineral resource estimate (Pressacco, 2010), the mine plan and schedule, and the cash flow and economic analysis.

The Timmins Talc-Magnesite property is located in Deloro Township within the city of Timmins, in northeastern Ontario, some 11 km southeast of the city centre. It is 100% owned by Globex but will be transferred to a joint venture company (see below). It is currently the subject of engineering studies leading to a pre-feasibility study. This report presents the results of the initial PEA for the A zone mineralization on the property and a summary of the project’s geology, mineralization and current mineral resources.

The Timmins Talc-Magnesite property was originally recognized as a potential source of magnesite as early as 1959 although it had been explored for gold previously. The property has been controlled or optioned by a number of companies since that time including Canadian Magnesite Mines Ltd., Pamourex, Royal Oak Mines, Magnesium Refractories Ltd. and Pentland Firth Ventures Ltd. The project was acquired by Globex in 2000.

The property was drilled by a number of these companies and a bulk sample was collected by Pamourex. A non-NI 43-101 compliant mineral resource estimate was also made. Since its acquisition of the property, Globex has continued drilling and has completed 21 diamond drill holes mostly on the A Zone.

In October, 2008 Globex signed a letter of intent (amended March 5, 2010) with Drinkard Metalox Inc. (DMI) to form a joint venture company, Worldwide Magnesium Corporation (WMC), to develop the deposit. To WMC, (10% DMI and 90% Globex), DMI contributed certain proprietary processing technology and Globex contributed the deposit and mineral lands, subject to Globex retaining a 1% gross mineral royalty and DMI retaining a 0.5% gross mineral royalty. The claims were 100% controlled by Globex.

Except for the bulk sample collected by Pamourex, there is no known previous production from the property.

The geological setting, mineralization styles and occurrences, and exploration history of the Timmins Talc-Magnesite property were described in a report prepared by Micon (Pressacco,

2010) and in various government and other publications listed in the references of this report. The relevant sections of those reports are reproduced herein.

The Timmins Talc-Magnesite property was visited by B. Terrence Hennessey, P.Geo., Vice President, and Dayan Anderson, MMSA, Senior Mining Engineer, both of Micon, on November 21 to 23, 2010 in the company of Ray Zalnieriunas, P.Geo., Globex's chief geologist and David Hall, P.Eng., a retained consultant. Discussions were held with the representatives of Globex at the company's Timmins Talc-Magnesite project site and the core storage facility in Larder Lake, Ontario. Outcrops of mineralization and a selection of drill core were reviewed.

Mr. L. Castro visited the property and the Larder Lake core shed in January, 2011 to carry out geotechnical logging and inspection of exploration drill core.

Mr. D. Hall, who resides in Timmins, commenced work on the project in March, 2009 and has made numerous trips to site between June, 2009 and November, 2011.

Mr. T. Hayes, P.Eng., of Jacobs, and Mr. Jacobs, C.Eng., MIMMM, and Ms. Spooner, P.Geo., of Micon have not visited the property.

Mr. Ken Bocking, P.Eng., visited Blue Heron's office in Timmins and the project site on December 9 and 10, 2010 in the company of R. Zalnieriunas.

Messrs. Bocking, Castro, Hall, Hayes and Hennessey, and Mesdames Anderson and Spooner, are Qualified Persons (QP) as defined in NI 43-101.

All currency amounts in this report are stated in US (US$) or Canadian dollars ($), as specified, with commodity prices typically in US dollars. Quantities are generally stated using the Système International d'Unités (SI), the Canadian and international practice, including metric tons (tonnes, t), kilograms (kg) or grams (g) for weight, kilometres (km) or metres (m) for distance, hectares (ha) for area, litres (L) for volume. Talc and magnesite grades are usually expressed in weight percent (%). Geochemical results may be expressed in parts per million (ppm) or parts per billion (ppb). Elevations are given in metres above sea level (masl).

The preliminary economic analysis presented in this report is current as of March 2, 2012 and is based on a mineral resource estimate and interpretation current as of February 24, 2010, which, in turn, is based on a database of exploration results current as of October, 2009.

This report is intended to be used by Globex subject to the terms and conditions of its contract with Micon. That contract permits Globex to file this report as an NI 43-101 Technical Report with the Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities laws, any other use of this report, by any third party, is at that party's sole risk.

3.0 RELIANCE ON OTHER EXPERTS

Micon and its co-authors have reviewed and analyzed exploration data, and metallurgical test results provided by Globex and its consultants, and have drawn their own conclusions therefrom, augmented by in some cases by direct field examination. Micon has not carried out any independent exploration work, drilled any holes or carried out any significant program of sampling and assaying. However, the presence of talc and magnesite mineralization at significant grades is substantiated by visual examination and the project's previous history.

Samples of duplicate core collected by Micon independently confirm the presence of magnesite and talc at grades similar to those claimed by Globex.

While exercising all reasonable diligence in checking, confirming and testing it, Micon has relied upon the data presented by Globex and any previous operators of the project, in formulating its opinion.

The various agreements under which Globex holds title to the mineral lands for this project have not been thoroughly investigated or confirmed by Micon and Micon offers no opinion as to the validity of the mineral title claimed. The descriptions were provided by Globex.

The description of the property is presented here for general information purposes only, as required by NI 43-101. Micon is not qualified to provide professional opinion on issues related to mining and exploration title or land tenure, royalties, permitting and legal matters. Accordingly, the authors have relied upon the representations of the issuer, Globex, for Section 4 of this report, and have not verified the information presented therein.

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

Those portions of the report that relate to the location, property description, infrastructure, history, geological setting, deposit types, exploration, drilling, sampling and assaying, data validation and mineral resource estimates (Sections 4 to 12 and 14) are taken from a previous Technical Report prepared by Micon (Pressacco, 2010) as well as updated information provided by Globex. Mr. Hennessey has taken responsibility for these sections.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 PROPERTY LOCATION AND ACCESS

The claim holdings lie in south-central Deloro Township, approximately 11 km southeast of Timmins, Ontario, Canada (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).

Figure 4.1
Location of the Timmins Talc-Magnesite Property

4.2 PROPERTY DESCRIPTION AND TITLE

The project consists of 29 unsurveyed, staked mining claims, totalling 57 claim units of (more or less) 16 ha each, covering an approximate area of 912 ha. As well, the project also consists of an approximately 384 ha-sized area of 23 severed, 'surface-rights-only' mining patents held in Deloro Township. 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. A list of claims comprising the Timmins Talc-Magnesite property is provided in Table 4.1.

Table 4.1
List of Claims, Timmins Talc-Magnesite Property, Ontario

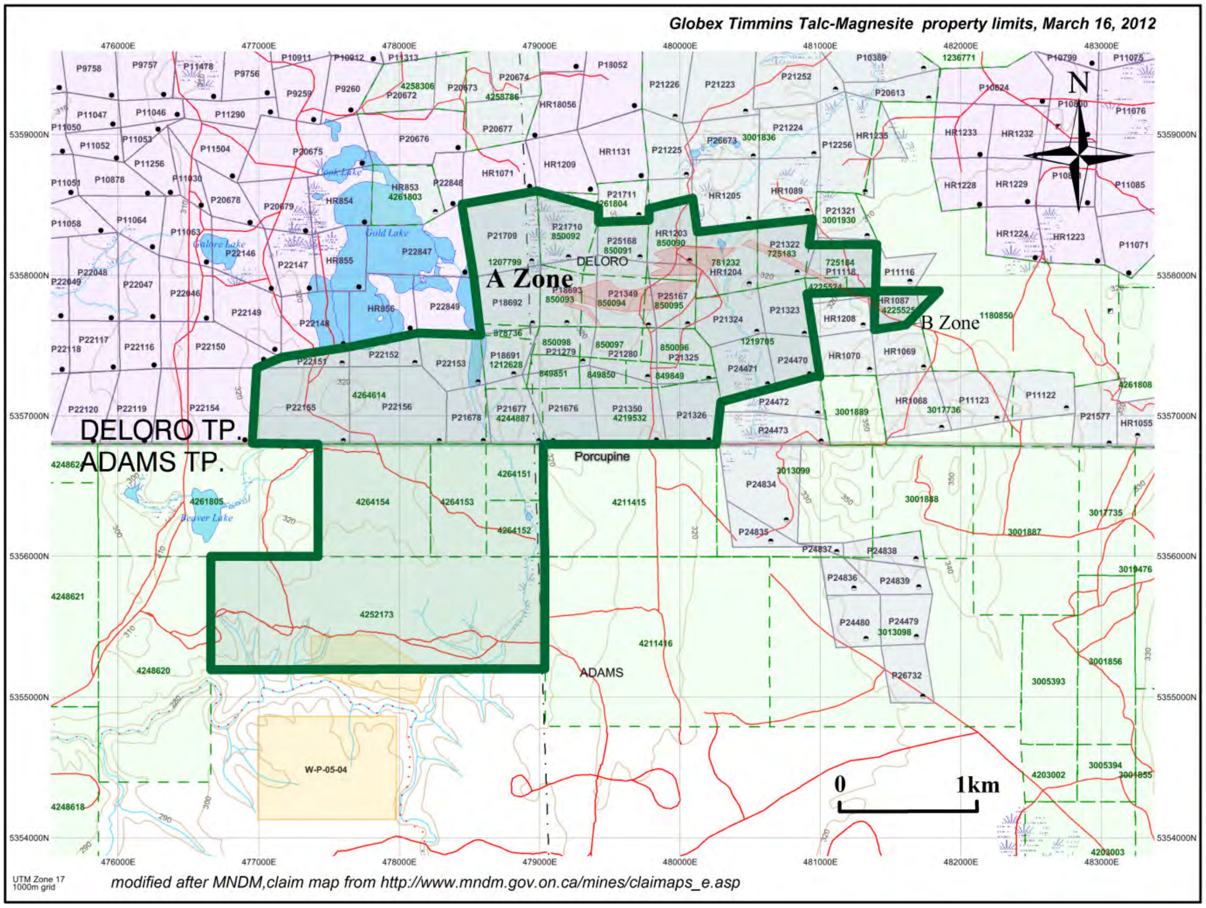
Township/ Area	Claim Number	Recording Date	Claim Due Date	Claim Units	Work Required ($)	Total Applied ($)	Total Reserve ($)
Mining Rights Claims (Mining Rights Only)							
Adams	4252173	2010-Feb-16	2013-Feb-16	12	4,800	4,800	9,615
Adams	4264151	2011-Jul-04	2013-Jul-04	1	400	0	0
Adams	4264152	2011-Jul-04	2013-Jul-04	1	400	0	0
Adams	4264153	2011-Jul-04	2013-Jul-04	2	800	0	0
Adams	4264154	2011-Jul-04	2013-Jul-04	4	1,600	0	0
Deloro	1207799	1997-Aug-28	2013-Aug-28	3	1,200	16,800	3,127
Deloro	1212628	1996-Feb-12	2013-Feb-12	1	400	6,000	4,884
Deloro	1219705	1999-May-05	2013-May-05	4	1,600	19,200	5,503
Deloro	4219532	2009-Jul-15	2013-Jul-15	4	1,600	3,200	16,495
Deloro	4225524	2010-Feb-22	2013-Feb-22	1	400	400	0
Deloro	4225525	2010-Feb-22	2013-Feb-22	1	400	400	0
Deloro	4244887	2009-Jun-24	2013-Jun-24	1	400	800	5,671
Deloro	4264614	2011-Jul-15	2013-Jul-15	6	2,400	0	0
Deloro	725183	1984-Feb-28	2013-Feb-28	1	400	11,200	1,672
Deloro	725184	1984-Feb-28	2013-Feb-28	1	400	11,200	1,337
Deloro	781232	1984-Feb-28	2013-Feb-28	1	400	11,200	1,882
Deloro	849849	1985-Jun-04	2013-Jun-04	1	400	10,800	2,158
Deloro	849850	1985-Jun-04	2013-Jun-04	1	400	10,800	1,676
Deloro	849851	1985-Jun-04	2013-Jun-04	1	400	10,800	1,835
Deloro	850090	1985-May-07	2013-May-07	1	400	10,800	52,602
Deloro	850091	1985-May-07	2013-May-07	1	400	10,800	123
Deloro	850092	1985-May-07	2013-May-07	1	400	10,800	902
Deloro	850093	1985-May-07	2013-May-07	1	400	10,800	1,738
Deloro	850094	1985-May-07	2013-May-07	1	400	10,800	105,464
Deloro	850095	1985-May-07	2013-May-07	1	400	10,800	117,133
Deloro	850096	1985-May-07	2013-May-07	1	400	10,800	9,283
Deloro	850097	1985-May-07	2013-May-07	1	400	10,800	19,557
Deloro	850098	1985-May-07	2013-May-07	1	400	10,800	1,520
Deloro	878736	1987-Feb-02	2013-Feb-02	1	400	10,000	579

Township/ Area	Claim Number	Recording Date	Claim Due Date	Claim Units	Work Required ($)	Total Applied ($)	Total Reserve ($)
Patented Claims (Surface Rights Only)							
Deloro	HR1203		Fee Simple				
Deloro	HR1204		Fee Simple				
Deloro	P11118		Fee Simple				
Deloro	P18691		Fee Simple				
Deloro	P18692		Fee Simple				
Deloro	P18693		Fee Simple				
Deloro	P21276		Fee Simple				
Deloro	P21279		Fee Simple				
Deloro	P21280		Fee Simple				
Deloro	P21322		Fee Simple				
Deloro	P21323		Fee Simple				
Deloro	P21324		Fee Simple				
Deloro	P21325		Fee Simple				
Deloro	P21349		Fee Simple				
Deloro	P21350		Fee Simple				
Deloro	P21568		Fee Simple				
Deloro	P21676		Fee Simple				
Deloro	P21677		Fee Simple				
Deloro	P21709		Fee Simple				
Deloro	P21710		Fee Simple				
Deloro	P24470		Fee Simple				
Deloro	P24471		Fee Simple				
Deloro	P25167		Fee Simple				

Figure 4.2 shows a map of the claims and the location of the A Zone talc-magnesite deposit.

Municipal taxes are payable to the City of Timmins for the surface-rights-only claims. An amount of $189.26 was indicated as the 2011 annualized taxes due to the city.

Figure 4.2
Land Holdings Map of the Timmins Talc-Magnesite Property, Deloro Township, Ontario



The original Deloro claim group was centred approximately 1.5 km east of Gold Lake and 1.5 km north of the Deloro-Adams township line. In the last couple of years, the claim group has been expanded by staking and outright purchase to the southwest, so that it is now comprised of an irregular block of claims that extends from about 50 m east of Gold Lake to 3.5 km east of Gold Lake and from the southern shore of Gold Lake southwards into Adams Township for a distance of about 2.5 km. The property lies within the Porcupine Mining Division, under the responsibility of the 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.

4.3 AGREEMENTS

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 90% by Globex and 10% by 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.

4.4 PERMITS

Historically, unless a stream crossing was required, Ontario provincial regulations did not require permits for on-going exploration work, including the cutting of survey lines, drill access roads and drill platforms. Bill 173- An Act to Amend the Mining Act passed third reading in the Ontario Legislative Assembly on October 21, 2009. After review, the resulting *Mining Amendment Act*, 2009, received Royal Assent on October 28, 2009.

The legislation is intended to modernize the mineral development process in Ontario through amendments to the Mining Act, and related regulations and policies. Much of the proposed Act enables processes that will be detailed in the regulations, and which are still currently under development. As part of the Mining Act Modernization initiative, and according to the MNDM website (http://www.mndm.gov.on.ca/mines/mining_act_e.asp), the ministry has begun introducing a new set of regulatory provisions that support the updated Ontario Mining Act. These proposed provisions will introduce new rules which will have effects on items such as the following:

- Undertaking early exploration activities, including reclamation requirements and compliance measures.
- Aboriginal notification and consultation for certain early exploration activities, closure plans for advanced exploration projects and mines and for voluntary rehabilitation projects.
- Withdrawals from staking or surface restrictions for sites of Aboriginal cultural significance.
- Requirements for prospectors to take a Mining Act awareness program.
- Assessment work provisions for mining claims.

On March 12, 2012 MNDM posted regulatory proposals for the second phase of new regulations under the Mining Act on Ontario's Regulatory and Environmental Registries and has requested public feedback.

4.5 ENVIRONMENTAL LIABILITIES

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 claims held.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The information in this section is taken from Pressacco (2010).

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 km to the McArthur Forestry Access road, east for 3 km to the 'Wishbone' power line and then northwards for 3 km 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 oz 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 parts of the claim holdings and the project area has several lakes and rivers which provide an ample supply of fresh water. Rail access to Timmins and access to the all-weather paved highway system allow 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, 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 m. The vegetation of the property is typical of the Boreal Forest, consisting of mixed stands of black spruce, poplar, balsam fir and white birch.

6.0 HISTORY

The information in this section is amended from Pressacco (2010).

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, an 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."

Micon has not been able to verify the estimate discussed above 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."

The hydrometallurgical process flowsheet was further investigated at bench scale by DMI and was reviewed by Aker Solutions Canada Inc. (Aker Solutions) during 2008-2009. Several different flowsheet variations were tested. Globex also undertook to characterize the talc quality of material recovered before or after acid leaching. Initial leach work during this period by DMI was conducted on a composite grab sample collected over the centre of the Pamour pit. Subsequent work was carried out on an approximate 350-kg diamond drill sample reject composite of the A Zone as drilled by Globex in 2007-2008 on section line 9+50E. In 2010, work was deemed to be sufficiently advanced to carry out a "micro-plant pilot" run on the drill sample coarse rejects from section 8+50E. During 2011, Aker Solutions, now merged and known as Jacobs Minerals Canada Inc. (Jacobs), began work on a conceptual plant layout and cost estimate for processing Globex's talc-magnesite material.

In September, 2009, Globex retained Blue Heron Solutions for Environmental Management (Blue Heron) to carry out a phased environmental baseline study at the project site. The Phase I environmental baseline study was carried out with a combination of desktop reviews of available information and field study programs (Blue Heron, 2010). Baseline study work by Blue Heron, partly in conjunction with Golder, was continued through 2010 and 2011 as a Phase II work program. Work consisted of background reviews and surveying for terrestrial habitat assessment, bird, plant, wildlife, species at risk and aquatic habitat assessments as well as initiating hydrogeology assessments (including the installation of five groundwater monitoring wells), acid rock drainage and metal leaching assessments and initial conceptual designs for pit slopes and lay-down areas.

Field work in 2010 undertaken by Globex included the following:

- Enlargement of the unpatented mining claim land base in Adams and Deloro townships either by staking or outright sale in 2010 and 2011.

- Re-establishment of 62.925 km of cut, chained and picketed grid as 100-m and 50-m spaced lines on the original Deloro claim block and certain new claims which had been bought to extend the property to the southern township boundary line. Larder Geophysics Ltd. (Larger Geophysics) completed ground magnetometer and VLF-EM surveys over the entire Deloro grid (Ploeger, 2010b). In addition, 13 lines of induced polarization (IP) and resistivity surveying were carried out to access the newly acquired southern claims, from line L0+00 to L13+00E (inclusive) in a dipole-dipole array configuration that mapped a nominal of 400 m of line length at N= 1 to 10 and A = 50 m. Three lines of Deep IP were read over lines L4+00E, L8+00E and

L12+00E. Geological mapping of the grid was also completed by year end (Zalnieriunas, in prep.)

- Establishment of a 100-m line spaced, cut chained and picketed grid of approximately 18.5 km on the 12-unit claim 4252173 (referred to as the Adams Block at that time). Larder Geophysics surveyed this grid with ground magnetometer and VLF-EM (Ploeger, 2010a)

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

7.0 GEOLOGICAL SETTING AND MINERALIZATION

The information in this section is taken from Pressacco (2010).

7.1 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 some 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 large 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.

7.2 REGIONAL GEOLOGY

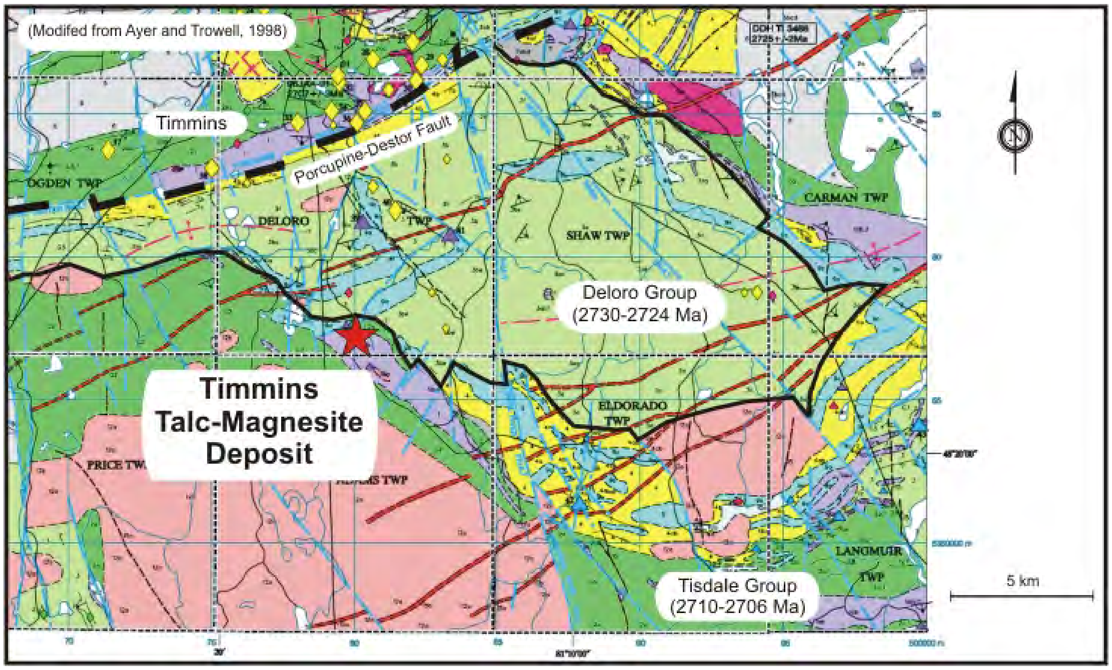
The project area is located along the southeastern flank of a geological structure known as the Shaw Dome, which is interpreted to be a large anticlinal structure that plunges to the southeast (Figure 7.1). The core of the Shaw Dome is composed of an older sequence of rocks that are referred to as the 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 overlie the Tisdale Group units, and are in turn unconformably overlain by younger clastic sediments of the Timiskaming Assemblage that are at least 2,679 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.

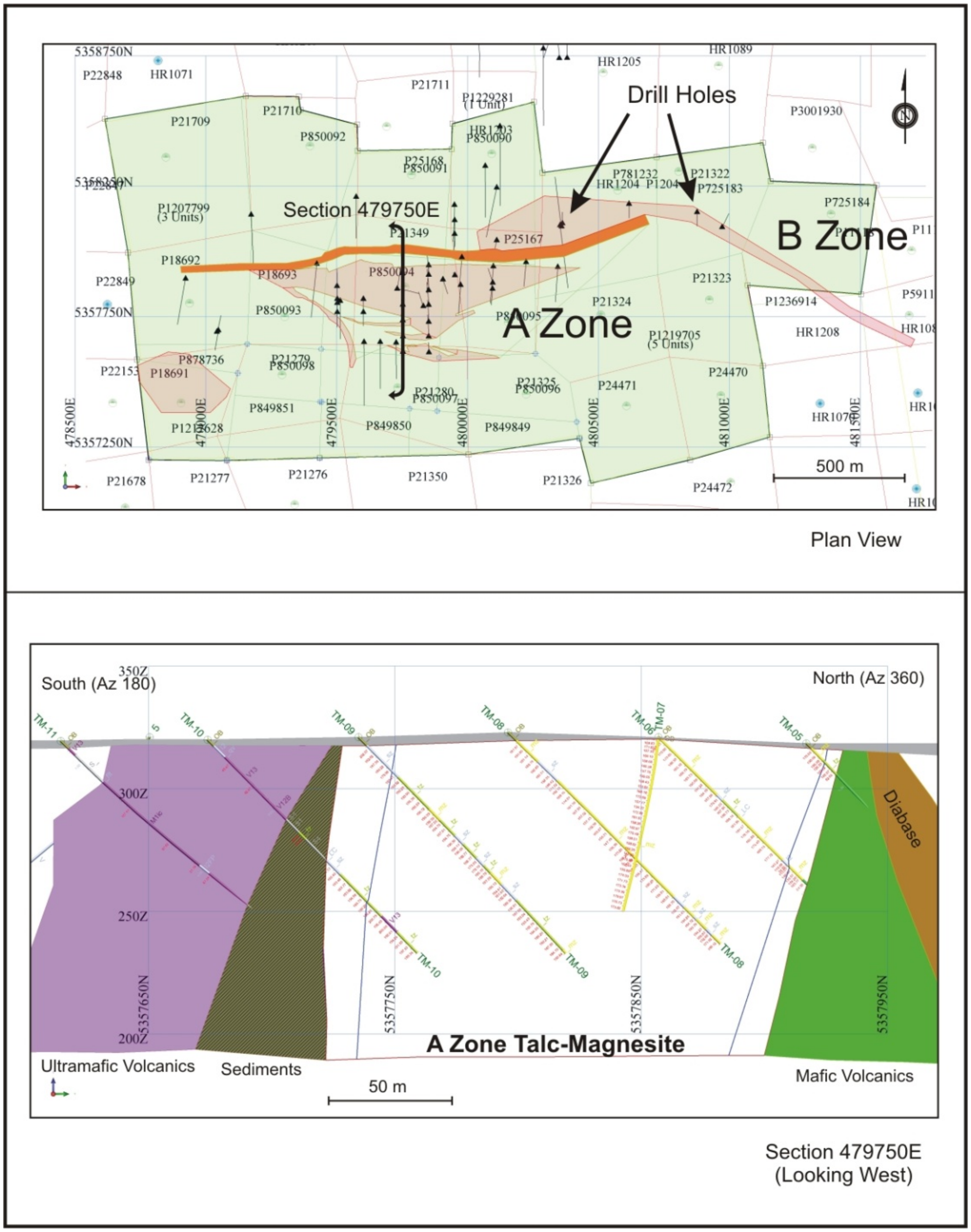
7.3 LOCAL GEOLOGY

With the exception of the area of the A Zone, the detailed geology of the claim holdings is not well understood, as the presence of a thin cover of glacial deposits results in 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 was presented in Kretschmar and Kretschmar (1986) as follows:

> "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.

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



"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 m, to depths of approximately 100 to 150 m and achieves widths of 200 m 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 m, with widths measuring on the order of a few tens 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.

7.4 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 Fe_2O_3. A typical analysis of dead-burned MgO product is given as:

MgO	92.5 percent
Fe_2O_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_2O_3	Nil

* total Fe as Fe_2O_3"

It should be noted that the DMI process being considered for use in this report does not have the iron-in-final-product issues described above.

8.0 DEPOSIT TYPES

The information in this section is taken from Pressacco (2010).

The Timmins Talc-Magnesite deposit 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% Fe_2O_3. 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, CO_2-bearing solutions. Although these CO_2-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 ($Mg_3Si_4O_{10}(OH_2)$) 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 Piniazkiewicz 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

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

After Wilson, 2009.

9.0 EXPLORATION

A summary of the exploration activities that have been carried out on the property prior to Pressacco's (2010) resource estimate has been provided in Section 6 above. Drilling is discussed in Section 10 below.

Since the 2010 mineral resource estimate, Globex re-established 62.9 km of cut line on the property and completed ground magnetometer, induced polarization (IP) and very low frequency-electromagnetic (VLF-EM) geophysical surveys.

9.1 GEOLOGY

The general geology of the area is described in Ontario Geological Report 219, "Geology of the Timmins Area" by D. R. Pyke (1982), while the deposit has been described in the Ontario Geological Survey Study 28, "Talc, Magnesite and Asbestos Deposits in the Timmins Kirkland Lake Area, Districts of Timiskaming and Cochrane" by Kretschmar and Kretschmar (1986).

The initial property geology was established in the mid-1940's by mapping outcrops along chained claim lines, by C. S. Longley for Porcupine Southgate, while diamond drilling was being carried out. This work formed the base of all further investigations on the property until the 1980's, when the area was re-mapped along a series of cut, chained and picketed grid lines by Pamour Inc. (Hurely, 1984). Some physical work was filed for assessment by Royal Oak ML 1998 (Harvey 1998, MNDM file 42A06NW2012). In 2010, Globex carried out some initial prospecting and geological mapping on the re-established metric grid as reported by Zalnieriunas (in press).

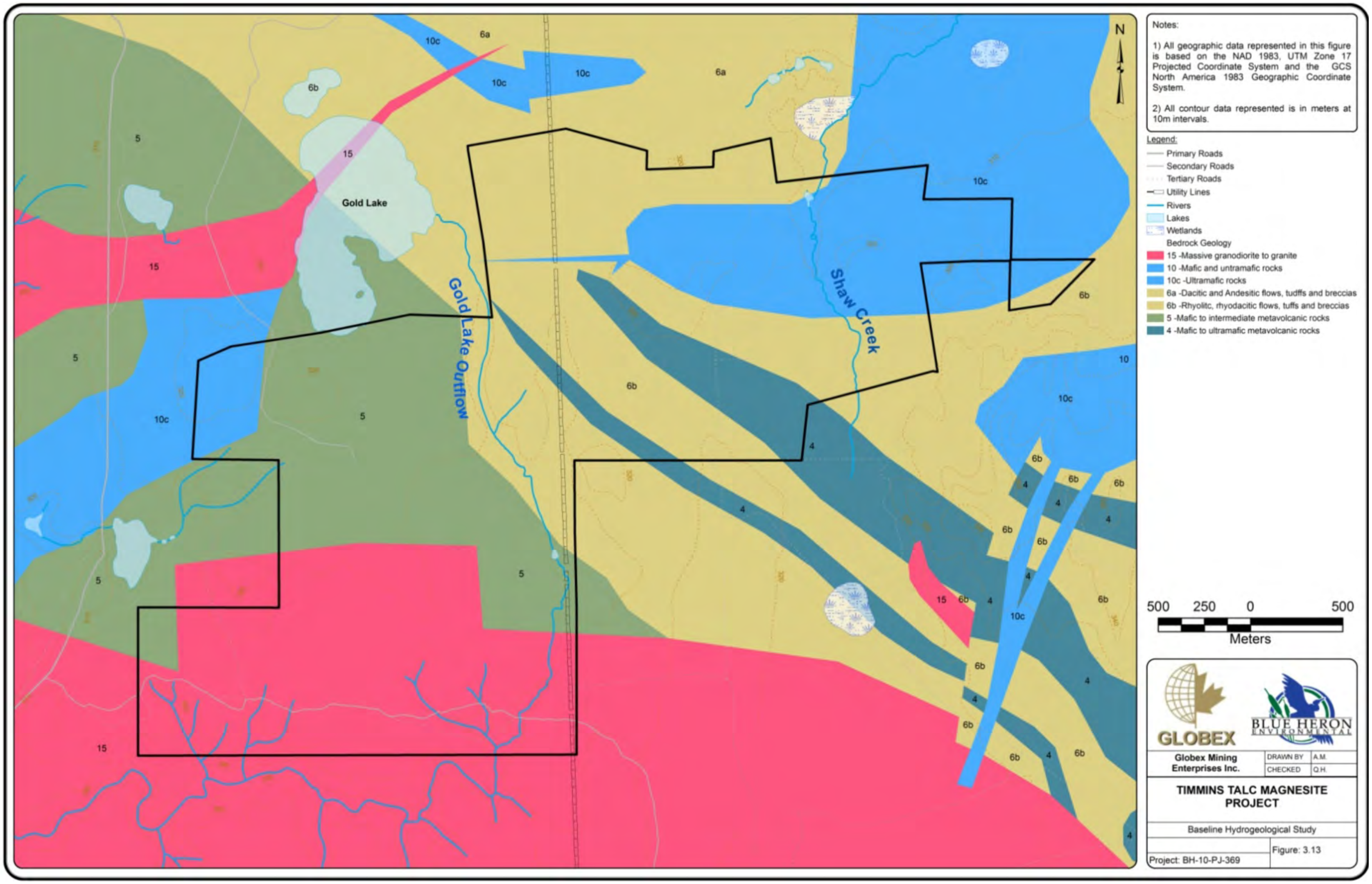
Figure 9.1 shows the most recent compilation of the results of this mapping.

9.2 GEOPHYSICS

The Timmins area of northeastern Ontario is a mature mining camp, and, as such, has seen a vast amount of regional and property scale geophysical surveying carried out by individuals, corporations and various government agencies. Much of this work is now available to the public as maps, documents, data and assessment reports via the provincial web portal at http://www.mndm.gov.on.ca/mines/geologyontario/default_e.asp.

High resolution airborne magnetic and electromagnetic surveys, over major greenstone belts, were initiated in 1975 by the Ontario Department of Mines (now the Ontario Geological Survey) to aid geological mapping and mineral exploration. In the period 1975 to 1992, 32 airborne surveys were flown and processed by different survey contractors and subcontractors. Most of these surveys were flown at a nominal flight line spacing of 200 m. The flight directions for the surveys, including individual survey blocks, were chosen to transect the predominant regional structural trends of the underlying rocks.

Figure 9.1
Timmins Talc-Magnesite Project Geological Map



February, 2012.

The result of the surveys were published on 1:20,000 semi-controlled photo mosaic paper maps, showing total magnetic field contours onto which picked electromagnetic conductor anomalies were superimposed in symbol form. Airborne magnetometer and electromagnetic data for the Timmins area are available as Geophysical Data set 1004-Revised (OGS, 2003). In addition, parts of Deloro and Adams townships were flown by the province in 1987 as part of a peripheral survey to the Shaw Dome structure. This, plus some privately acquired data, is available digitally as Geophysical Data set 1046 (OGS, 2004).

The township boundary clipped data for the total magnetic field airborne response are presented in Figure 9.2 for the region of Deloro and Adams townships. The current Globex claim group straddles the common central township line.

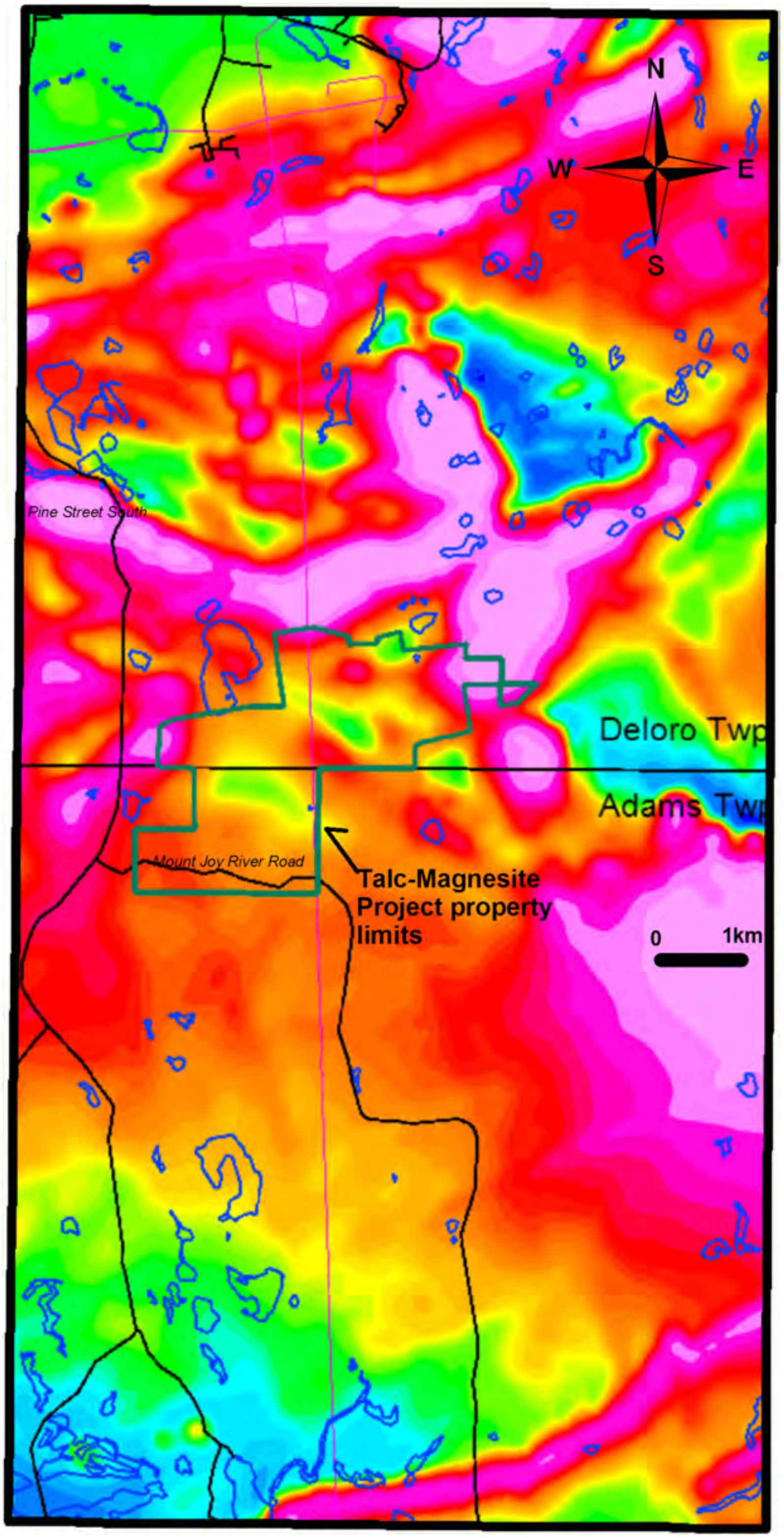
Earlier ground geophysical exploration activities on the “Magnesite Claims” or “Pamour Magnesite” consisted of completing a ground based magnetic survey (Jensen, 1982), and a VLF-EM survey (Jensen, 1983).

During 1997, Royal Oak Mines Inc. re-staked some claims and completed line cutting, ground total field magnetic and VLF-EM surveys (Daigle 1997, MNDM assessment File 42A06SW0013 (2.16494)) while physical work was filed for assessment in 1998 (Harvey 1998, MNDM file 42A06NW2012).

In 2002, a 50-m spaced, detailed ground magnetometer survey was completed for Globex. (Lambert 2002), on an area immediately covering the Pamour pit and what is now called the A Zone of talc-magnesite mineralization. This grid was refreshed and extended to cover the entire project area in 2010. By this time, Globex had acquired the additional southern claims in Deloro and Adams township. Ground surveying was carried out using a GSM-19 Overhauser magnetometer/VLF with a second GSM-19 magnetometer used as a recording base station. Ploeger (2010a) reported the Deloro block survey results as:

> “Varied magnetic signatures appear throughout the property. From this, it appears that two magnetic domains may exist.
>
> “The first magnetic domain is a generally magnetically stable domain which is the magnetic median of the survey area. This represents the country rock which most likely is a mafic flow.
>
> “The most predominant of these magnetic features appears to be a magnetic high located in the north-east portion of the survey area. This magnetic high appears to cover the majority of survey lines 1700E and eastward. The southwest and northwest extents of the survey area also appear to be magnetically elevated and most likely fall within this magnetic domain. These areas most likely represent an ultramafic intrusive.

Figure 9.2
Adams and Deloro Township Total Magnetic Field Results



April 3, 2012, modified after OGS-GDS1004 gridded magnetic data file TIMAGONL83.GRD (in OGS 2003).

> "East west through the baseline area of the property appears a narrow magnetically high signature. This may represent a regional dike; however most likely is related to the potential ultramafic intrusive. This linear feature appears to bisect a circular magnetic anomaly which extends from 200E to 1000E and 250N and 450S. North of the baseline, the circular feature is represented by a magnetic high with the area south of the baseline being represented by a magnetically neutral region with a magnetically high hallow. This may represent an alteration of the south part of this feature.
>
> "The VLF EM survey does not highlight any intense VLF EM signatures. The VLF EM signatures that do appear most likely represent geological contacts."

With respect to the VLF-EM results on the Deloro block, Zalnieriunas (personal communication) notes that numerous weak and shallow electromagnetic conductors can be discerned on the Fraser Filtered plot of the VLF response. Much of the property is swampy and poorly drained and is the likely immediate source of these conductors. However, the orientation of the VLF-EM conductors, predominately northwest, but also to the west and southwest, directly mimics the orientation of cleavage and fabrics seen in bedrock and may, in part, outline some underlying textures or structures.

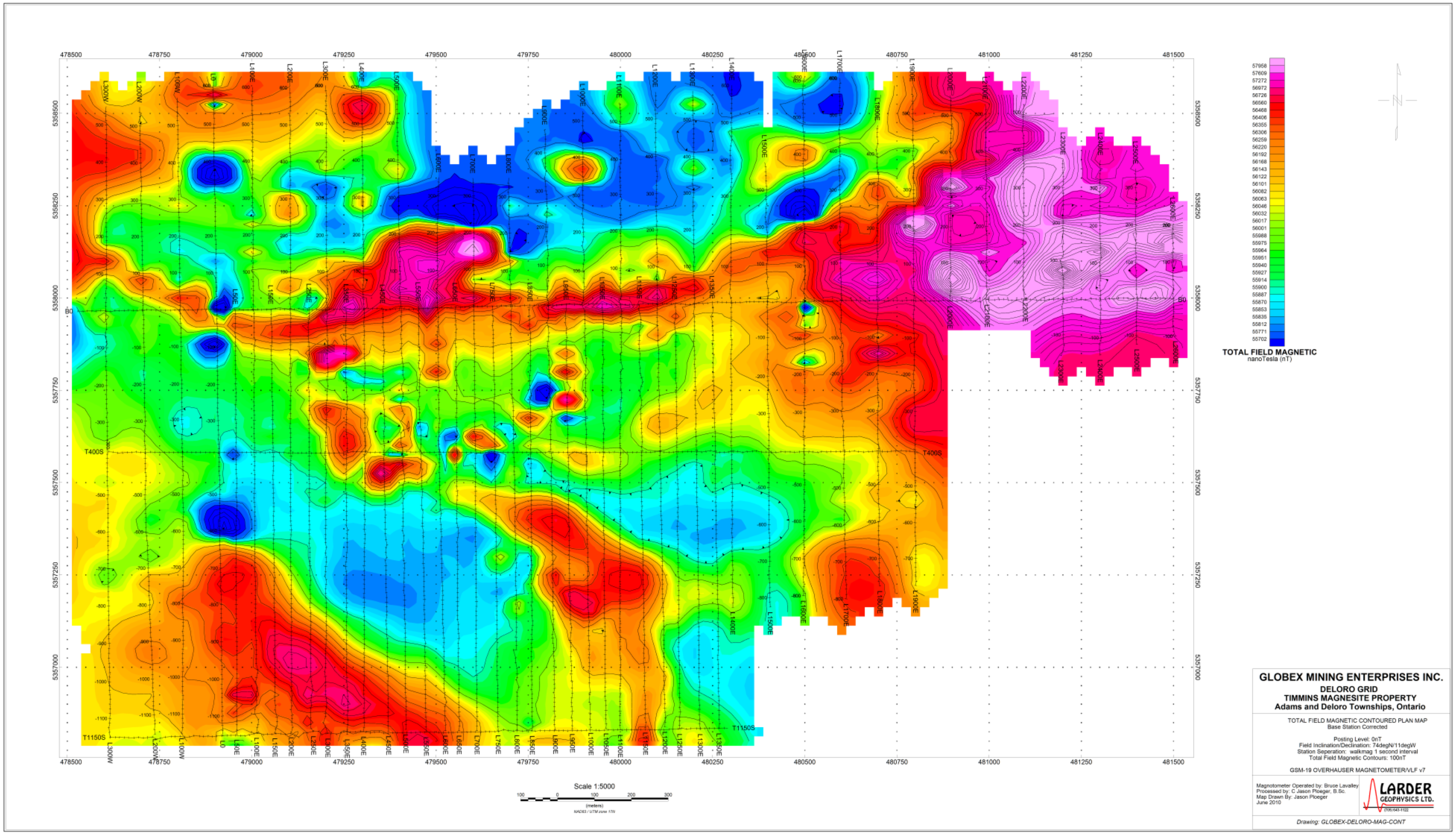
The magnetometer and VLF survey results can be seen in Figures 9.3 and 9.4.

Globex also commissioned some IP surveying on the Deloro claim block in 2010. A combined IP and resistivity survey was completed from lines 0 to 1300E in a 400 m dipole-dipole array (N=1 to 10, A=50 m) covering an area of the grid from about 10+50S to 6+50S. A 10-channel Elrec Pro receiver and a VIP 3000 (3 kW) transmitter powered by a Honda 5000 generator were utilized as instrumentation. This condemnation work failed to outline any significant anomalies.

In addition, three test lines of deep IP, or HDIP (high definition, induced polarization), surveying were carried out across the entire Deloro claim block on lines 400E, 800E and 1200E. The deep IP array consisted of a proprietary configured set of 21 mobile potential electrodes connected to the receiver by means of the "snake" and two current electrodes (C1 and C2). A 2-second transmit cycle with a minimum of 12 receiver stacks was used. In total, 4.975 line-km of deep IP surveying was completed in August, 2010.

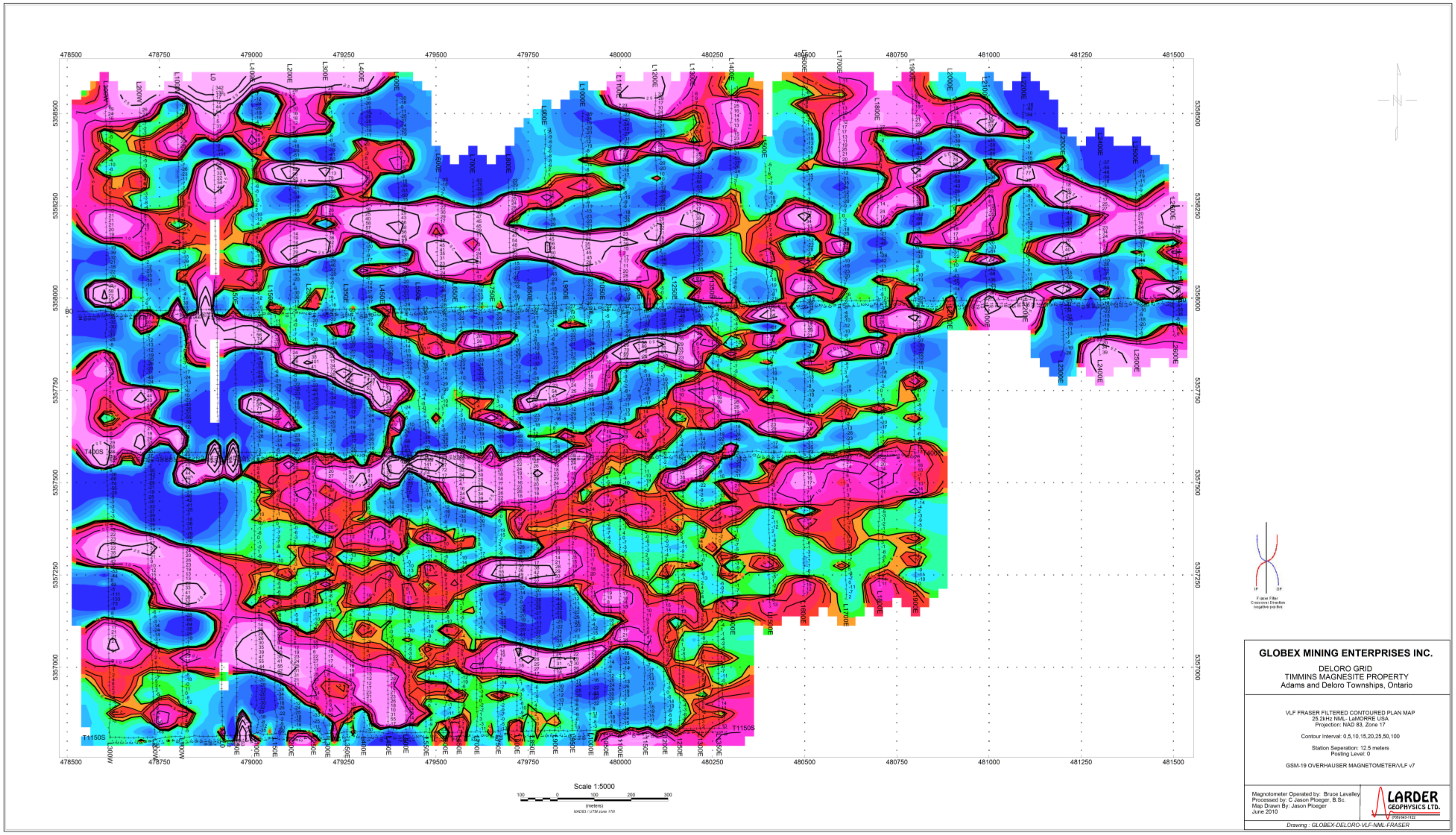
Figure 9.5 shows example chargeability and resistivity HDIP sections from the line 8+00E on the property.

Figure 9.3
Timmins Talc-Magnesite Project - Magnetometer Survey Results



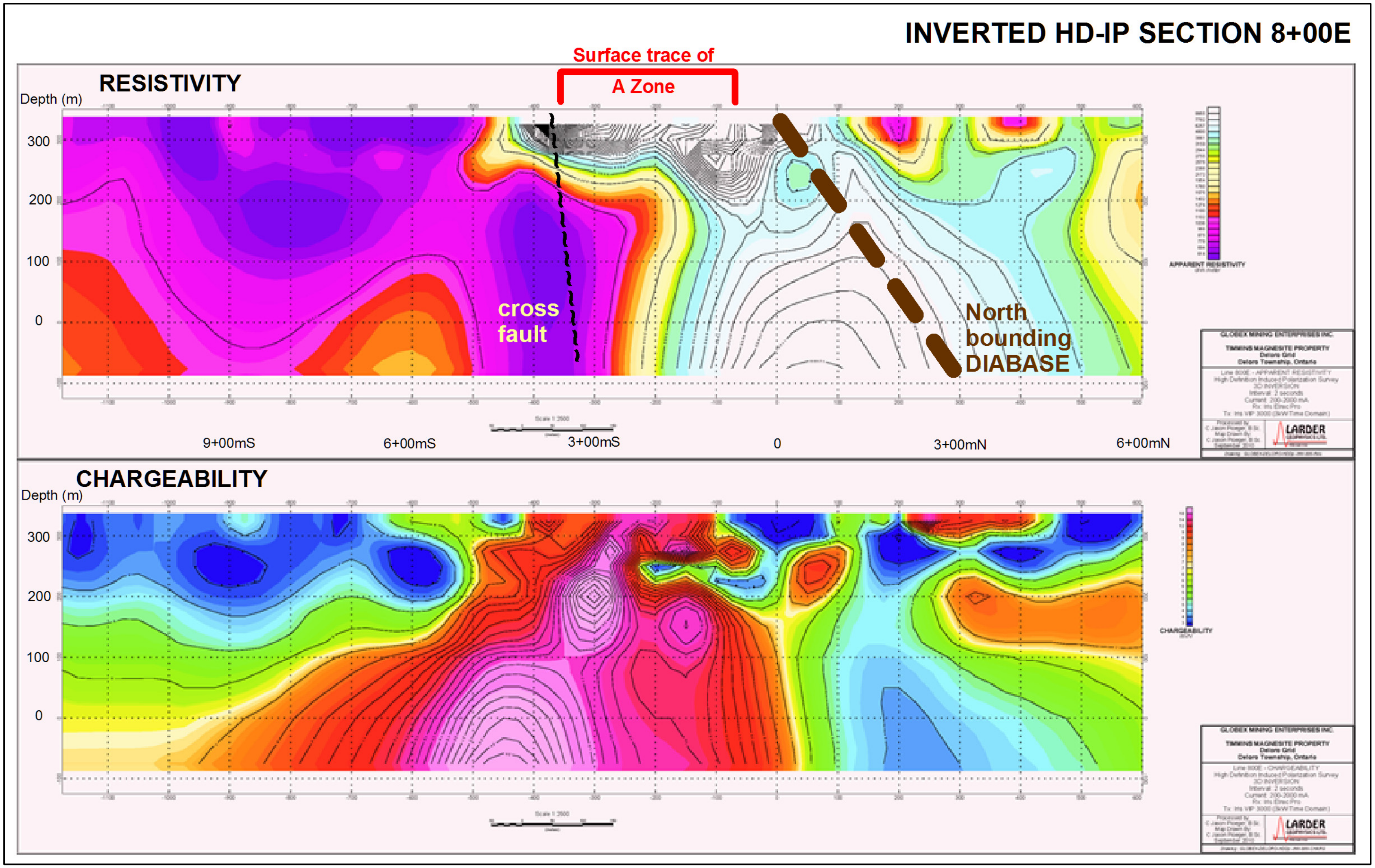
June, 2010.

Figure 9.4
Timmins Talc-Magnesite Project - VLF Survey Results



June, 2010.

Figure 9.5
HDIP Survey Results



June, 2010.

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Ploeger (2010b) noted that this deep IP surveying had located the following responses:

Line 4+00E

- Good chargeability anomaly (similar to a sulphide stringer/graphitic response) at 450S, depth to top at 250 m below surface.
- Two shallow resistivity highs located between 475S to 225S and 200S to 50S.
- Constrained chargeability anomaly between 250N to 500N at 200 m below surface.

Line 8+00E

- Strong resistivity low and chargeability high at 400S, 125 m below surface.
- Two shallow resistivity highs at 450S to 225S and 125S to Base Line 0 (Note: these two responses essential map the known talc-magnesite A Zone from 330S to 80S).
- Three breaks in the resistivity pattern; at 450S and shallow south dipping; 150S - possible structure/geological unit; 150N and moderate north dipping.

Line 12+00E

- Changeability anomaly at 500S with no corresponding resistivity.
- Two shallow subsurface resistivity highs at 400S to 200S and 100S to 50N.
- Resistivity and corresponding changeability high from 225N to 325N that may represent a magnesite carbonate zone that is broadened and extending to depth.

10.0 DRILLING

The information in this section is taken from Pressacco (2010). No new drilling has been conducted since the 2010 resource estimate by Micon.

10.1 DRILLING

A summary of the 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 geo-technical aid of Messrs. D. Vachon of Larder Lake and A. Sorochak of Matachewan, Ontario. Drill logging was carried out using an IBM X41 ThinkPad laptop using GeoticLog and GeoticGraph software licensed from Géotic 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.geotic.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 10.1. The locations of these drill holes relative to the claim boundary and the mineralized zones have been presented in Figure 7.2 above.

Table 10.1
Drill Hole Collar Information, Timmins Talc-Magnesite Project

Hole Number	Northing[1] (m)	Easting[1] (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

Hole Number	Northing[1] (m)	Easting[1] (m)	Elevation (m)	Depth (m)	Dip (°)	Azimuth (°)
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
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

[1] NAD83, UTM Zone 17N.

10.2 SAMPLING METHOD AND APPROACH

The approach of Globex has been to mitigate the potential effects of weathering on surface rock exposures by relying solely 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 m along strike and 60 m distance across the width of the targeted A Zone carbonate. Modern diamond drilling to date covers an approximate strike length of the A Zone of 450 m (from Line 6+00E to Line10+50E on the local surface grid) by an approximate width of 200 m (from 0+50m S to 2+50m S on the local surface grid).

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 systematic 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 in this work were:

- The average examined length of core to which RQDs 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 five 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, Québec. 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 bulk density (in this case equivalent to specific gravity) of all marked samples and also determined, at spot intervals of about every 10 m, the specific gravity of the balance of the drill hole (i.e. the non-sampled portions of the drill core) using 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 10.2.

Table 10.2
Summary of Significant Mineralized Intersections, Timmins Talc-Magnesite Project

Hole Number	From (m)	To (m)	Core Length (m)	Horiz. Width (m)	ETW[1] (m)	SG	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
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

Hole Number	From (m)	To (m)	Core Length (m)	Horiz. Width (m)	ETW[1] (m)	SG	Soluble MgO (%)	Soluble Ca (%)	Magnesite (%)	Talc (%)
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	-	-	-

[1] Estimated true width.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The information in this section is taken from Pressacco (2010).

All samples of cut drill core were delivered as batch shipments to the sample receiving facilities of Expert Laboratories, Inc. (Expert Laboratories), 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-g subsample was taken for pulverization to a nominal -200 mesh. The pulps were sub-split, with one split consisting of a minimum 25 g of pulp material forwarded to a sub-contracting laboratory for elemental analysis. From the remaining coarse reject material, a nominal 1,000 g 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-g 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 (AA) 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, wherein the gold content was determined using a gravimetric finish 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, Ontario, 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), SO_4 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 Lakefield, 185 Concession Street, Lakefield, Ontario. There, each sample was received as -10 mesh coarse reject material, 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 10 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^{TM} 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^{TM} 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^{TM} method is provided in Appendix I of Pressacco (2010).

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 11.1). 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.

In Pressacco (2010), Micon noted that 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 recommended 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 recommended (Pressacco, 2010) 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 Actlabs for re-assaying of the soluble MgO and soluble Ca contents of the sample material (Figures 11.2 and 11.3). As well, a program of duplicate assaying for soluble MgO and soluble Ca, where sample pulps were re-assayed by Actlabs, was undertaken (Figures 11.4 and 11.5). Duplicate samples of coarse rejects were also submitted to SGS Lakefield for re-assaying of the magnesite and talc contents (Figures 11.6 and 11.7).

Figure 11.1
Control Chart for Cement Blank Material

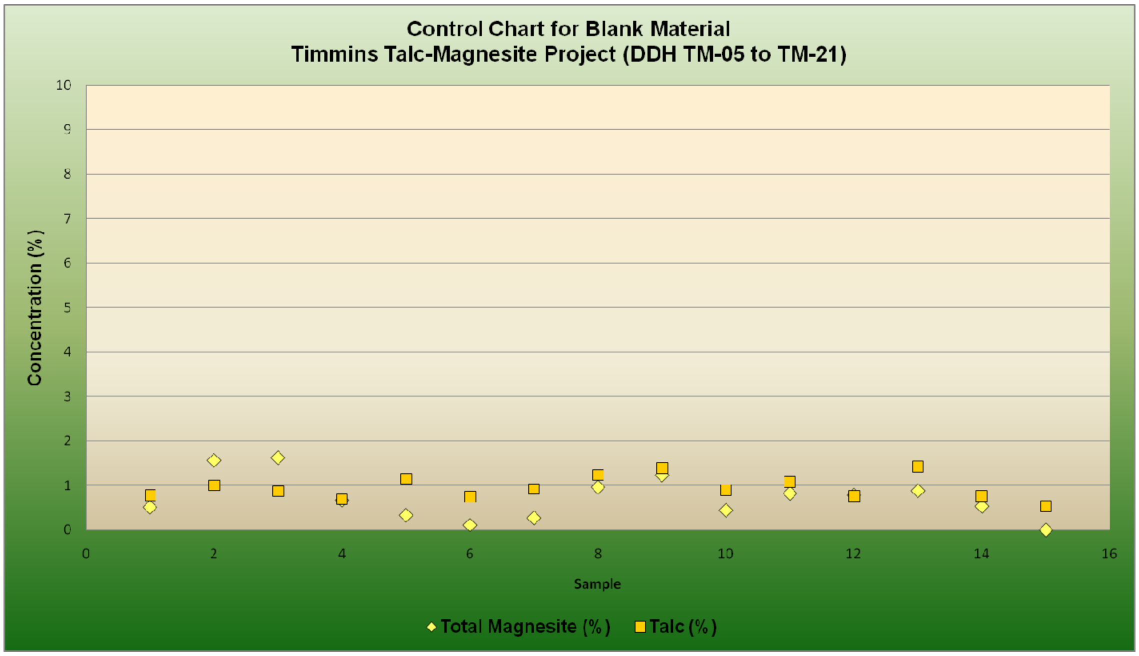


Figure 11.2
Duplicate Sample Results (Quarter Core) for Soluble MgO

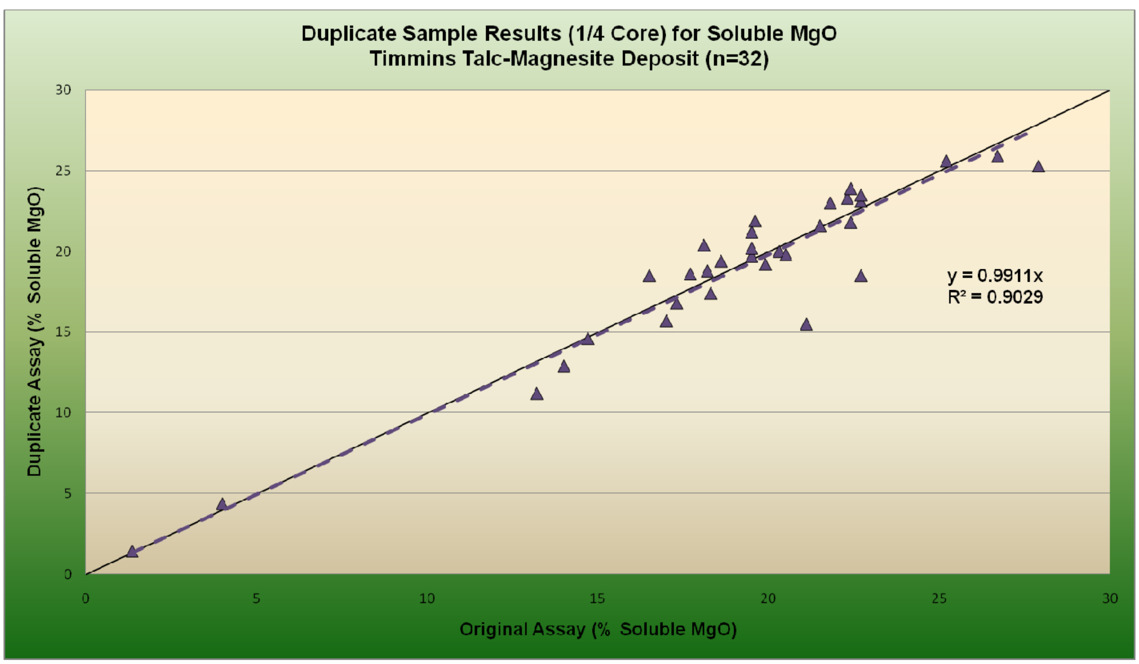


Figure 11.3
Duplicate Sample Results (Quarter Core) for Soluble Ca

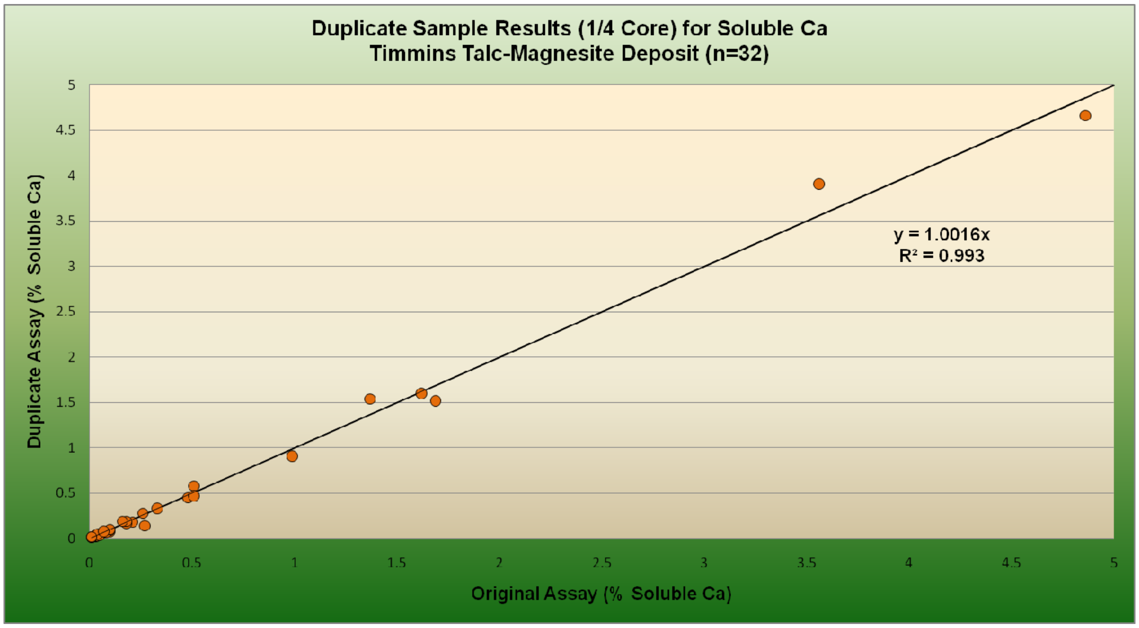


Figure 11.4
Duplicate Sample Results (Pulps) for Soluble MgO

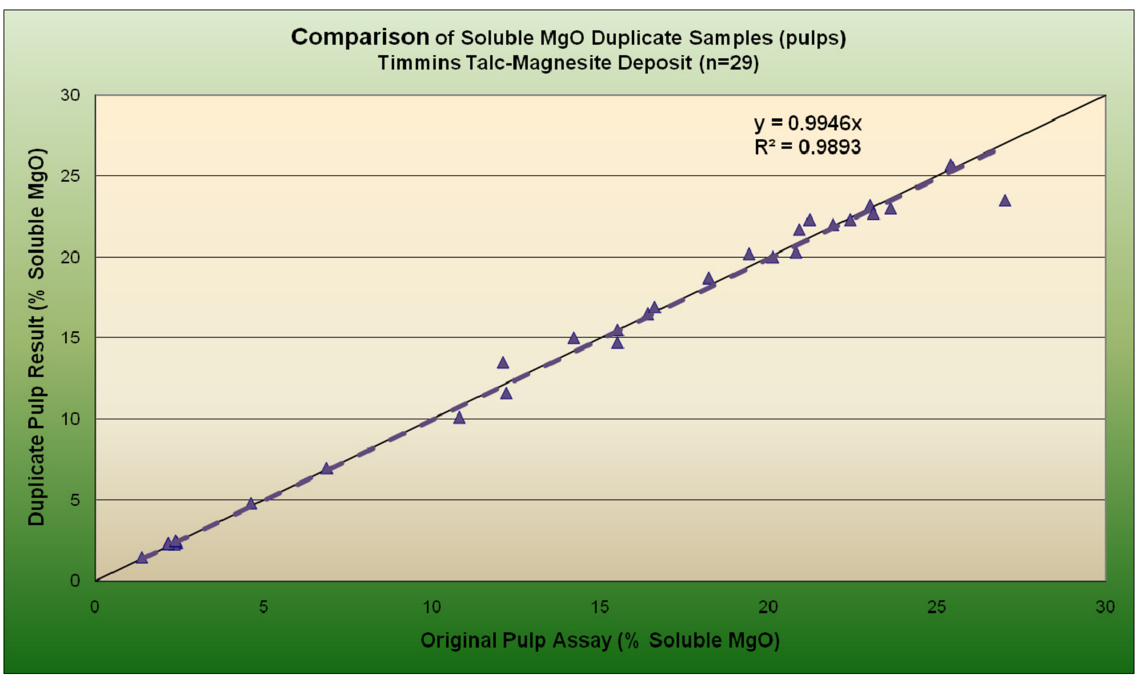


Figure 11.5
Duplicate Sample Results (Pulps) for Soluble Ca

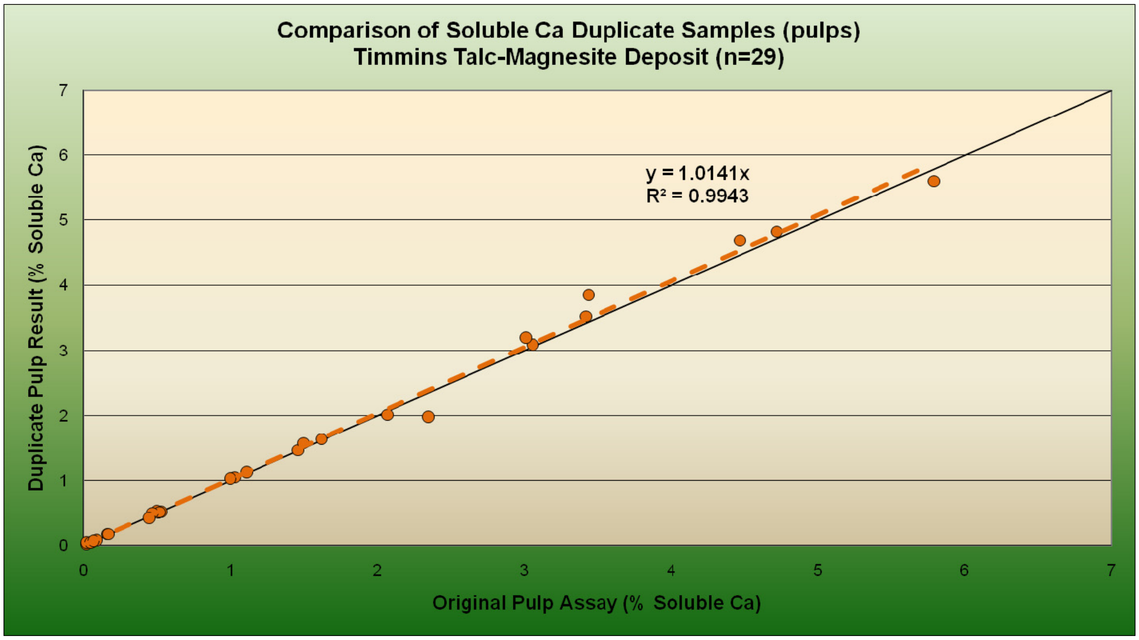


Figure 11.6
Duplicate Sample Results (Coarse Rejects) for Total Magnesite

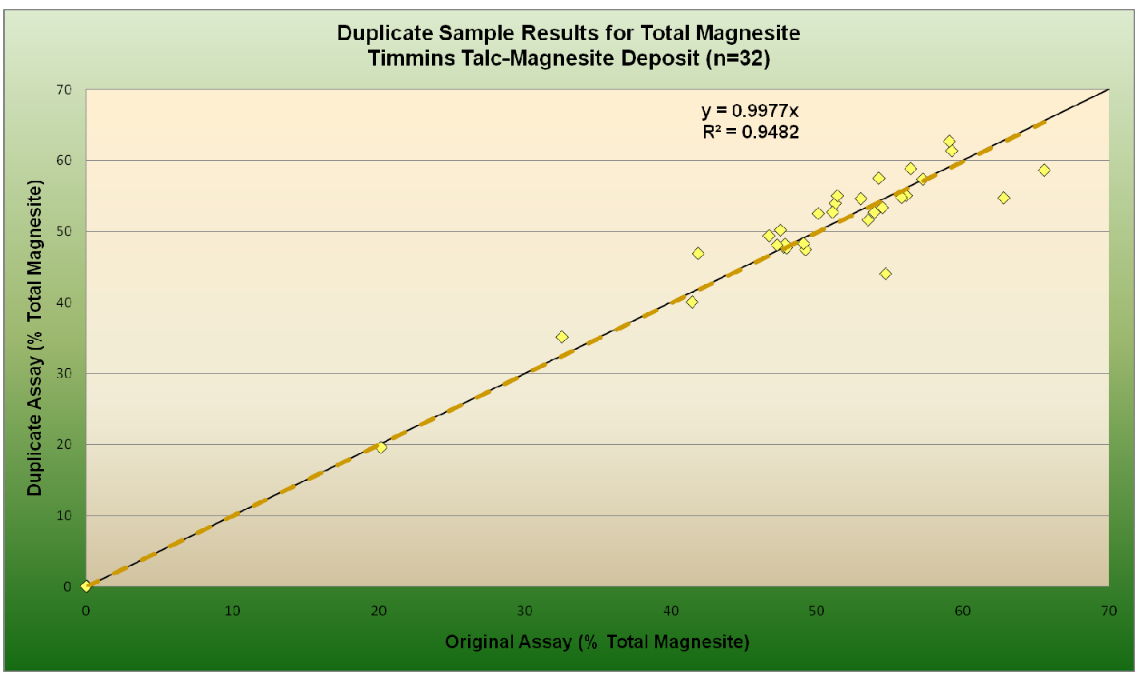
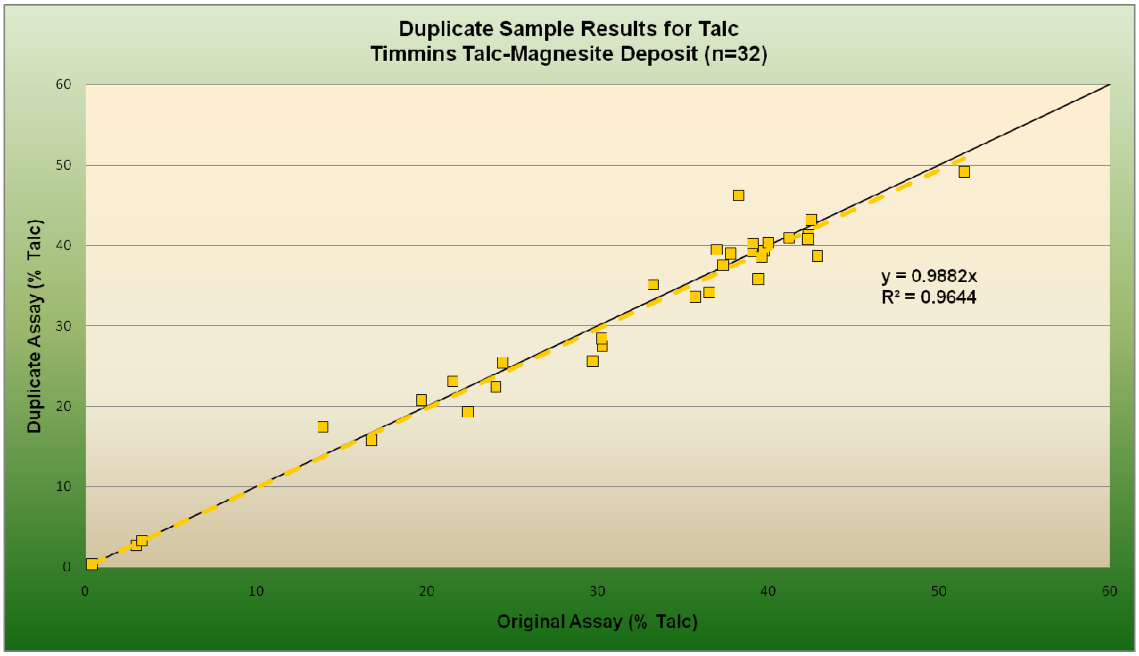


Figure 11.7
Duplicate Sample Results (Coarse Rejects) for Talc



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 recommended (Pressacco, 2010) that a deposit-specific reference material be prepared for this deposit and utilized in future assaying programs.

Micon also recommended 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 QEMSCAN™ analysis. Two polished sections of each of the four aliquots were submitted for the BMA Explomin™ analysis."

The results of this replicate sampling program are presented in Figures 11.8 and 11.9.

Figure 11.8
Replicate Sample Results for Talc

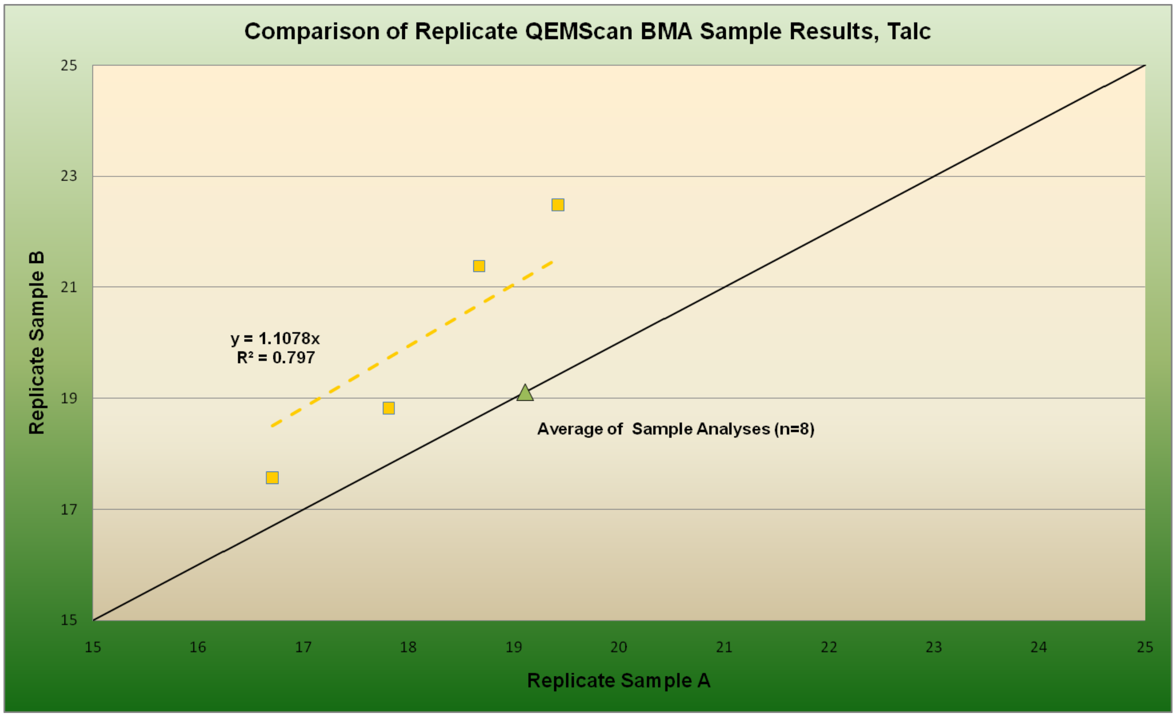
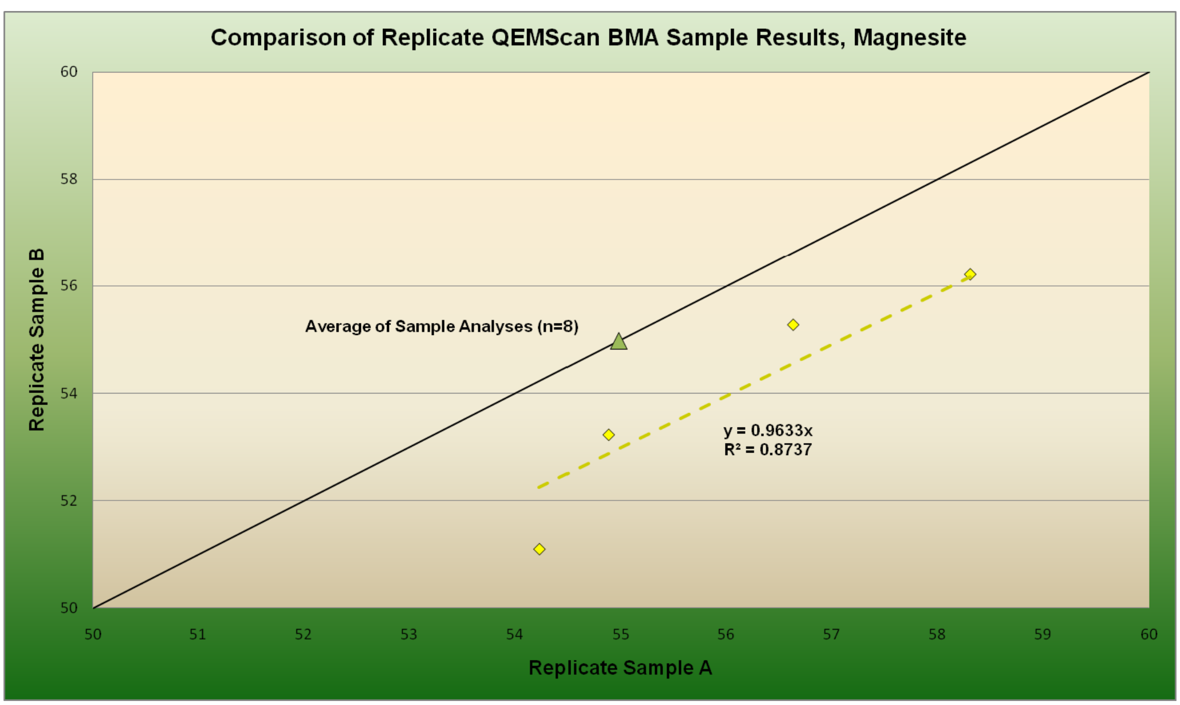


Figure 11.9
Replicate Sample Results for Magnesite



Analysis for industrial minerals is often more complex than the simple analyses for metal content in most ores. Micon accepts that Globex has chosen appropriate methods for the determination of the talc and magnesite components of the mineralization at the Timmins Talc-Magnesite deposit. It is Micon's opinion that, as a result of the check sampling and analysis completed above and described in Section 12 below, the database generated by the exploration program is suitable for use in a mineral resource estimate.

12.0 DATA VERIFICATION

The information in this section is taken from Pressacco (2010).

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 practice standards currently in use by the Canadian mining industry.

Micon completed its own program of check sampling of the Timmins Talc-Magnesite deposit. Given the unusual 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 Actlabs) 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 Actlabs 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 12.1 and are graphically presented in Figures 12.1 to 12.4. 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 a material impact upon the results of the mineral resource estimate, as soluble MgO is not one of the constituent components of the contemplated flowsheet at the time of the preparation of the mineral resource report (Pressacco, 2010).

Table 12.1
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.	Soluble MgO (%)	Soluble Ca (%)	Total Mgn[1] (%)	Talc (%)	Sample No.	Soluble MgO (%)	Soluble Ca (%)	Total Mgn[1] (%)	Talc (%)	Sample No.	Soluble MgO (%)	Soluble Ca (%)	Total Mgn[1] (%)	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.**	**Soluble MgO (%)**	**Soluble Ca (%)**	**Total Mgn[1] (%)**	**Talc (%)**						**Sample No.**	**Soluble MgO (%)**	**Soluble Ca (%)**	**Total Mgn[1] (%)**	**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		

[1] Total Mgn = Total Magnesite (i.e. Magnesite + Ferro-Magnesite).

Figure 12.1
Comparison of Soluble MgO Check Assay Results, Drill Holes TM-06 and TM-16

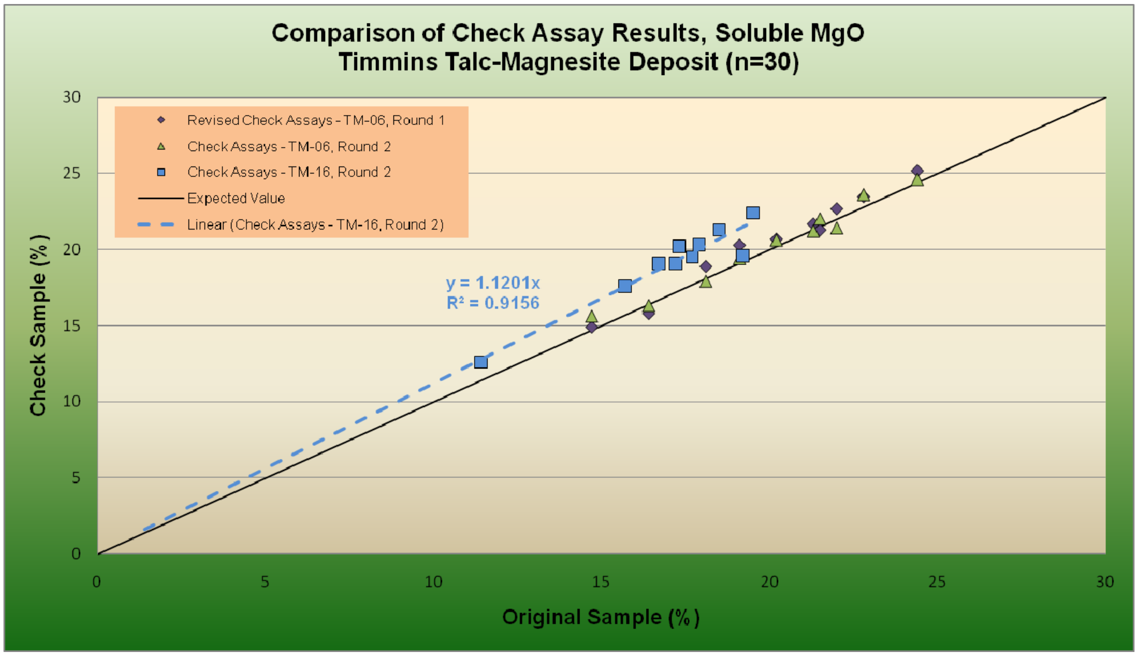


Figure 12.2
Comparison of Soluble Ca Check Assay Results, Drill Hole TM-06

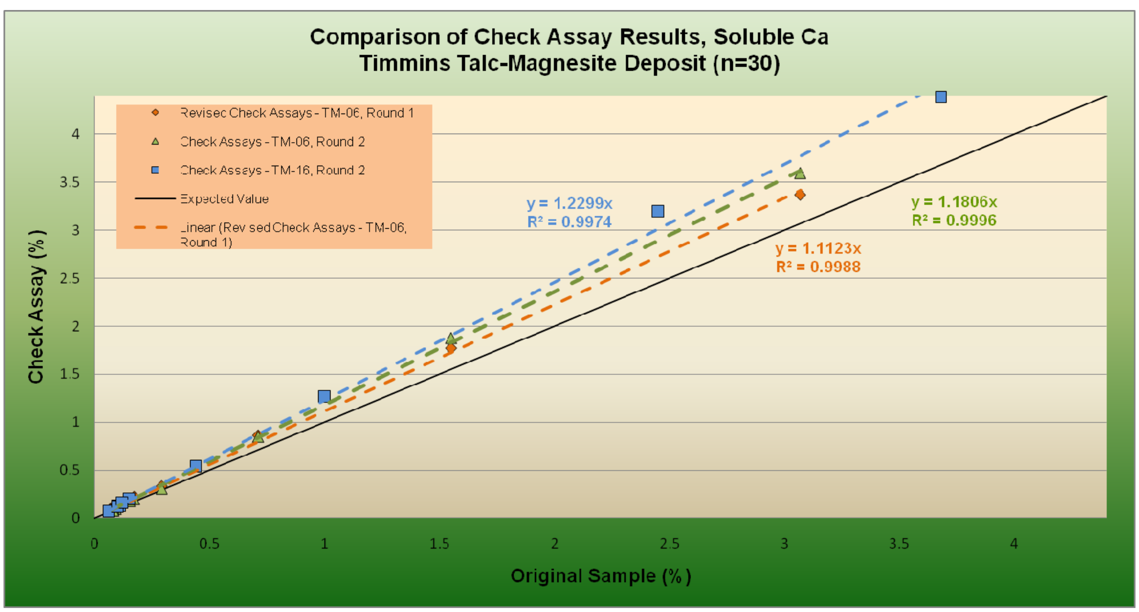


Figure 12.3
Comparison of Magnesite Check Assay Results, Drill Hole TM-06

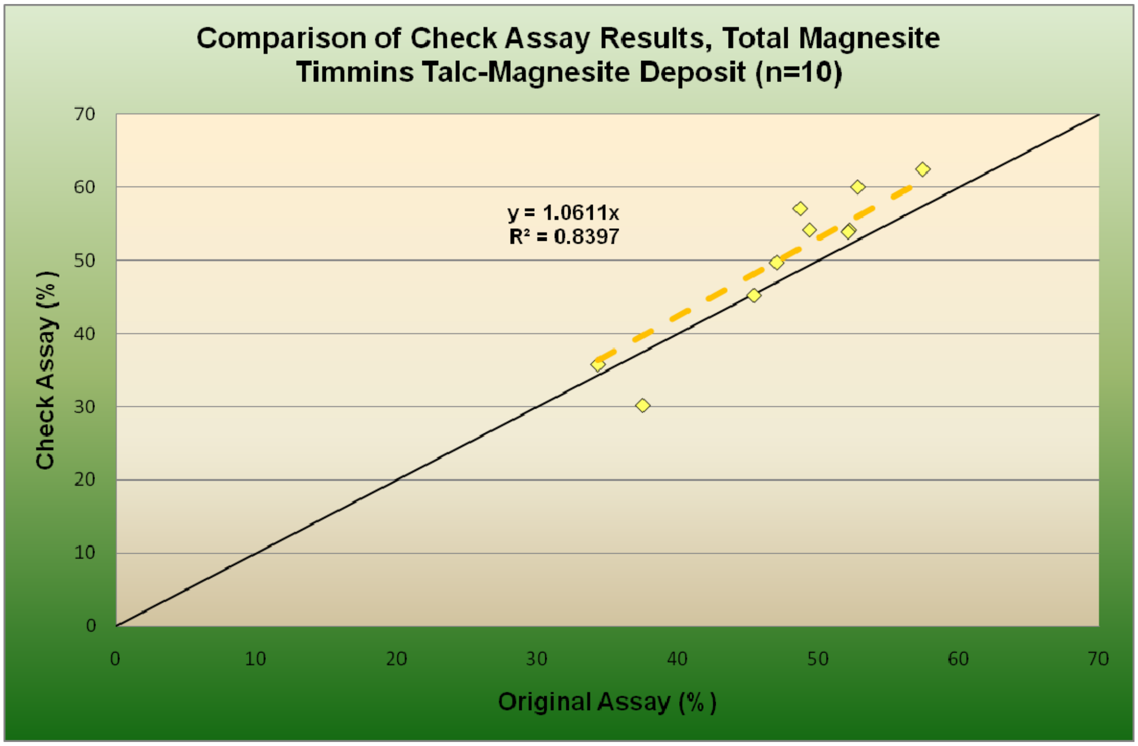
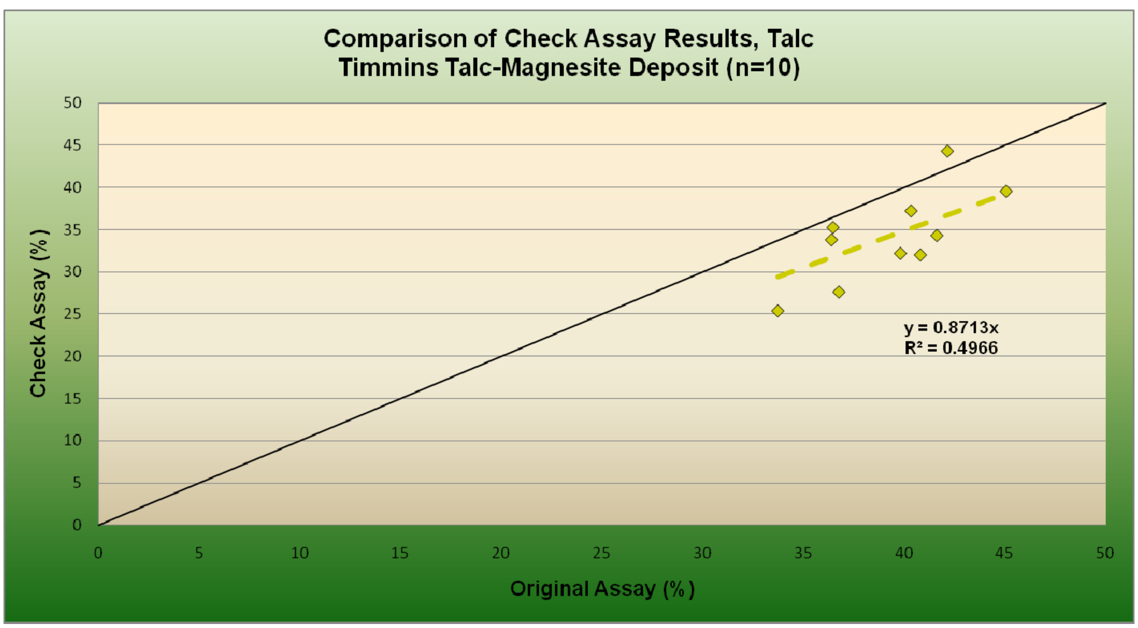


Figure 12.4
Comparison of Talc Check Assay Results, Drill Hole TM-06



It can also be seen that a slight bias is present with respect to the soluble Ca check sample data. Micon believes that this slight bias does 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.

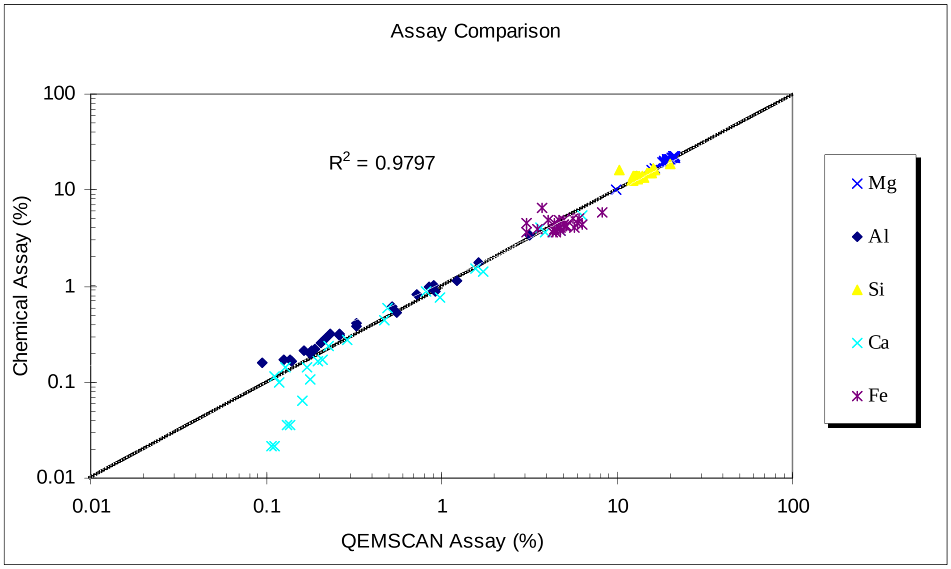
In light of the fact that no standard reference materials have been included as part of the soluble MgO, soluble Ca, magnesite or talc assaying protocols in either the routine assaying program or as part of the check assaying program, it remains uncertain as to which set of data offers a higher degree 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 QA/QC protocols by ensuring that a small proportion (5 to 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 QEMSCAN^{TM} 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 12.5. The overall correlation coefficient is 0.97.

Figure 12.5
QEMSCAN™ Calculated Assay vs. Chemical Assay



After Gunning, 2009.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 METALLURGY

13.1.1 Summary

Testwork in the 1980s-1990s by previous owners of the property attempted to produce refractory grade magnesia by conventional processes available at that time. For the most part, this testwork showed that magnesium products can be generated from this deposit, albeit with elevated iron contents that are not necessarily desirable under all market conditions.

In late-2007, Globex commissioned a series of scoping level tests with Drinkard Metalox Inc (DMI) which had previously developed, patented and commercialized a hydrometallurgical process for the dissolution of magnesium from magnesite, the purification of the solubilized magnesium salt, concentration by evaporation and decomposition of the salt and the regeneration and recycle of the key reagent to the process. Indications were that the magnesia product was high grade, low in impurities and could be highly desirable in the refractory market for magnesia of dead burned magnesia (DBM) quality.

Metallurgical bench scale testwork continued at DMI from 2008 through 2010 and preliminary engineering studies were initiated with Aker Solutions which was familiar with the DMI technology. A bench scale research program into talc recovery was launched in 2009 followed by a pilot plant study in 2010 which served to confirm results from the bench scale testing while providing feed stock for a 14-week micro plant program undertaken at DMI's facilities. The aim of the micro plant study was to evaluate and optimize process parameters under semi- and continuous operating conditions and to demonstrate and quantify reagent regeneration. Laboratory evaluations of solid-liquid separation stages in the DMI process were undertaken by Pocock Industrial, Inc. (Pocock) of Salt Lake City, an experienced research and development service provider in solid liquid separation and filtration.

The data gathered from the aforementioned research studies, including comprehensive bench-scale and pilot testing, were incorporated into Globex's process design for a talc-magnesite processing plant.

Globex contemplates the production of a talc concentrate using conventional flotation technologies; iron can be partially removed by employing low intensity or high intensity magnetic separation (LIMS or HIMS). Preliminary testing of the talc flotation concentrate reveals that a commercial grade product can be generated with no impurity issues. The micronized talc concentrate has been shown to exhibit high brightness and other characteristics that are desirable in the higher value-added talc markets.

The tailings generated from the talc flotation stage will be subject to a hydrometallurgical process which will produce a high grade caustic calcined magnesia (CCM) that will be converted to a DBM product for marketing. In this hydrometallurgical process the magnesite is solubilized together with the residual iron, nickel and manganese content of the feedstock. The latter impurities are subsequently removed as a ferruginous precipitate that will be stored in a suitable containment area. In this manner the iron content of the deposit expressed as both distinct iron minerals and ferro-magnesite does not pose the same barrier to the production of a commercial grade refractory product as was experienced by previous owners of the property.

13.1.2 Magnesia Recovery - Process Research and Development

Hydrometallurgical testwork continues to be managed by Globex and conducted in the DMI laboratories in Charlotte, North Carolina. A process development team with DMI and Globex has collectively reviewed results and enhanced the testing program in the following areas:

- Leaching.
- Iron removal by chemical/mixed hydroxide precipitation.
- Decomposition and reagent recovery.

Several micro plant trials were run using the bench-scale experimental leaching, precipitation, solution purification, decomposition and reagent recycle setup constructed at DMI. The decomposition unit consists of a stirred heated reactor containing purified leach solution which is heated to 560ºC. The off gases are collected and condensed before being passed through a series of absorbers where reagent is recovered.

More than 95% of the leach reagent was recovered for recycle to the process, a figure that, based on DMI's previous experience, is expected to be higher in an industrial scale plant. The large number of gas and liquid connections and the relatively small sample size capable of being placed in the heating kiln are the main cause of reported losses.

13.2 MINERAL PROCESSING

A mining contractor will crush, screen and stockpile the ore. Reclaimed ore is conveyed to a tertiary crusher, followed by a primary grinding mill to further reduce the particle size. The ground ore is treated in rougher and cleaner flotation circuits where talc is recovered to the concentrate streams. Flotation tails are pumped to separate leach circuits. To finish the talc, it is flash-dried, micronized and stored in silos.

Magnesite and other minerals contained in the flotation tails are dissolved in a leaching circuit. The impurities are precipitated from the solution and excess water is evaporated. The purified and concentrated solution flows by gravity into thermal decomposition units to produce active magnesium oxide (MgO). The MgO is briquetted and screened.

The rejected fines from the briquetter screen are crushed and fed back into the impurity precipitation step. The reagent used in the leaching circuits is recovered and recycled back to the process.

To finish the process, the briquettes are dead-burned in a shaft kiln. The DBM product is stored in a bunker.

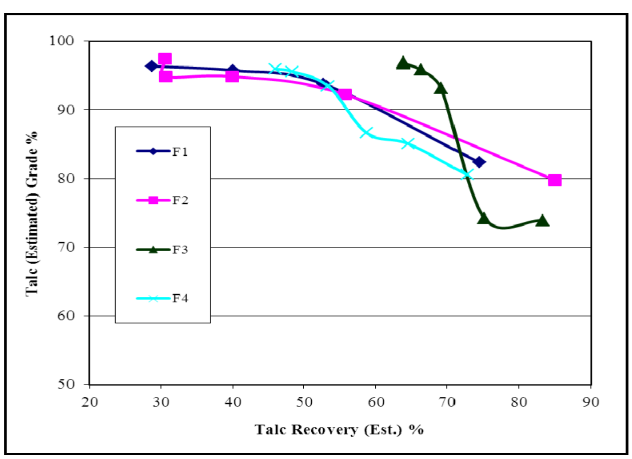
The plant design is based on a block flowsheet and design criteria provided by Globex and DMI (Table 13.1) further refined by Aker Solutions. The Metsim® model of the process was developed by Aker Solutions for the mass and heat balance.

Table 13.1
Plant Process Parameters

Run-of-mine feed rate	500,000 dry t/y
Feed talc grade	35.6 %
Feed magnesite grade	52.1%
Operating availability	85%
Leach conditions	105ºC at Atmos. Pressure
Overall talc recovery	73.6%
Overall magnesium oxide recovery	95%
Talc production	137,060 t/y
Magnesium oxide production	118,293 t/y
Talc product purity	>97%
Magnesium oxide product purity	>98%

The talc recovery is referenced from TTM Worksheet 500,000 t/a Vm03-24-11 mass balance supplied by Globex (Appendix E9, not provided with the present report). Globex based its talc recovery estimate on the results, shown in Figure 13.1, obtained in testwork conducted at Lakefield Research in 2009 - 2010, supported by pilot plant testing at the Unité de Recherche et de Service en Technologie Minérale (URSTM) pilot plant facility in Rouyn-Noranda, Que.

Figure 13.1
SGS Lakefield Flotation Test Results



Test F3 was judged the best of the batch bench scale tests. According to the SGS Lakefield report summary, "For the master composite (TTM 9+50), the best test (F3) generated final concentrate grading 98.0% talc at 67.8% recovery". The standard test procedure involved grinding the ore to about P(80) 120 microns using MIBC as a collector/frother and Calgon as a dispersant.

In the subsequent pilot plant testing a 50 kg/h grinding and flotation circuit was arranged at the facilities of the URSTM at the CEGEP college in Rouyn-Noranda. The 700-kg sample was derived from the TTM 8+50 drill core composite, a program conducted by Globex in 2008. A comparison of sample grades assayed at different laboratories is shown in Table 13.2.

Table 13.2
Comparison of 8+50 Head Grade Samples

	Review of TTM 8+50 Head Sample Analyses							
	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	MgO (%)	CaO (%)	CO_2 (%)	LOI (%)	Talc (%)
URSTM calculated head assays	29.2	0.60	6.3	35.1	0.40	24.1	28.0	40.9
Actlabs A10-5891	29.5	0.60	5.9	35.3	0.42	25.9	27.45	
SGS-Lakefield	30.2	0.60	6.0	35.3	0.42			42.6

During a 10-hour sampling period the overall talc flotation circuit results were collected and are shown on Table 13.3.

Table 13.3
Results of URSTM pilot plant talc flotation

Product	Weight (kg)	Weight (%)	Talc Grade (%)	Talc Distribution (%)
Fe concentrate	22.5	5.3	11.7	1.5
Talc concentrate	181.3	42.8	87.7	91.3
Talc tailings	219.6	51.9	5.7	7.2
Calculated head	423.4	100.0	41.2	100.0

The overall results for the flotation of a talc rougher concentrate grading 87.7% talc at 91.3% recovery exceeded the SGS Lakefield bench scale batch results, which indicated an initial recovery of 70% at the same rougher grade. Further investigations showed that a talc mineralogical determination by the QEMSCAN™ scanning electron microscope (SEM) technique gave a more accurate result particularly of talc tailings than calculated talc values using WRA/LOI analyses as first used. The F3 test result described now reported using QEMSCAN™ gave a revised rougher concentrate of 74.5% talc at 88.2% recovery, closer to the pilot plant recovery. Based on projections of the pilot plant rougher-scavenger results, laboratory upgrading performance and recirculation of cleaner tailing flows, not tested in the laboratory, and finally on industrial experience of the talc specialist retained by Globex, the commercial plant performance has been projected at >97% talc concentrate grade at 73.6% recovery.

Other findings from QEMSCAN™ analyses of the Timmins Talc-Magnesite talc included:

- Particle mapping indicates that the talc is 76% free and liberated in minus 10 mesh material and 98% free and liberated at minus 200 mesh,
- The relatively coarse particle liberation allows for high purity talc production without the issues of slime losses.

The magnesium oxide recovery is based on the micro plant test results at DMI's Charlotte laboratory on samples from Globex (DMI, 2010).

13.3 PRODUCT QUALITY CONSIDERATIONS

13.3.1 Talc

High grade 95 - 98% talc flotation cleaner concentrates produced by Lakefield were sent to CTMP (Centre de Technologie Minérale et de Plasturgie) in Thetford Mines, Quebec, for micronizing as Lakefield lacks the facilities to perform this work. Though CTMP uses a non-industry standard Microtrac laboratory equipment for measurement of sub-sieve sizing, Globex was able to correlate results with the industry standard Sedigraph through the services of Applied Mineral Research (AMR), an independent third party. CTMP prepared micronized samples at several particle sizes for product characterization and customer validation with consistent results.

Timmins Talc-Magnesite talc when micronized to 2 micron median particle size exhibited dry brightness (CIE Y) value of 94.0-95.0, superior to North American production and equivalent to high brightness Chinese talc imports. Of particular interest is the low calcium and iron contents of 0.02 and 0.9%, respectively, well below macrocrystalline talc from Mondo Minerals BV in Finland and Imerys' Penhorwood mine in northern Ontario. The lower iron content generates a micronized talc that lacks the grey tint, significant for applications where greater additions of high cost TiO_2 would otherwise be required. Lower CaO will give a lower coefficient of thermal expansion in technical ceramic.

Samples of Timmins Talc-Magnesite micronized talc have been submitted to major international coatings and plastics manufacturers – the latter reporting that micronized Timmins Talc-Magnesite talc meets the automotive specification for mechanical properties and brightness, unlike all current North American sourced talc. Both manufacturers express eagerness to have a secure North American supply to offset the unreliable Chinese supply.

13.3.2 Magnesia

Magnesia produced to date from the Timmins Talc-Magnesite material using the DMI process has been in the form of a pseudo-CCM as the decomposition temperature of the salt decomposed to produce magnesia is in the order of 550°C rather than the 700-1,000°C used when magnesite is decomposed to CCM by calcining.

Samples of the high grade Timmins Talc-Magnesite CCM produced in laboratory decomposition experiments at DMI's facilities have yielded typical analyses as shown in Table 13.4.

Table 13.4
TTM MgO Analysis

TTM 9+50 H.G. MgO	
	(%)
MgO	98.4
CaO	0.85
Al_2O_3	0.009
Cr_2O_3	0.05
Fe_2O_3	0.016
Mn_2O_3	0.014
Ni	0.003
NO_3	0.015
LOI	0.96

Samples of CCM from the micro plant trials have been submitted for preliminary evaluation by refractory manufacturers. The briquetting and firing of samples to 1,500-2,000°C for conversion of the CCM to DBM, the market product favoured by Globex, has yet to be undertaken but is planned during the feasibility study stage.

13.4 DESIGN BASIS

Various assumptions have been made in the plant design and the equipment selection and sizing due to the lack of confirmatory closed circuit talc testwork, continuous piloting studies of the DMI process, and industrial benchmarking information not available in certain areas. The design is based on available test data, previous experience on similar projects, internal and external expertise as well as client input. The design should be revisited when more accurate and reliable data and information are available, as is planned in the subsequent feasibility study stage.

Testing to date shows it will be possible to produce both a commercial grade talc product with no impurity issues and a high grade magnesia product as well. Primary objectives for 2012 will include:

- Finalization of the talc plant design and talc variability testing.
- Approval to build a small-scale 100,000 t/y demonstration plant.

Metallurgical studies are also ongoing for alternate talc-magnesite separation technologies.

14.0 MINERAL RESOURCE ESTIMATES

The information in this section is taken from Pressacco (2010).

14.1 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 14.1, a summary of the drill hole collar information has been provided in Table 10.1 and a plan-view map showing the drill hole locations was provided in Figure 7.2.

Table 14.1
Summary of the Timmins Talc-Magnesite Drill Hole Database as of October, 2009

Table Name	Data Type	Table Type	No. of 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

14.2 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 at the time. 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 generally 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 is focused on the A Zone.

Examination of the A Zone in weathered surface outcrop (Figure 14.1), in relatively fresh blasted material (Figure 14.2) and in drill core (Figure 14.3) reveals that the mineralization is composed of essentially massive, equigranular talc-magnesite 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 cm 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 average talc-magnesite grade of the deposit. 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 14.1
View of A Zone Talc-Magnesite Deposit with Quartz Veinlets in Outcrop

Figure 14.2
Boulder of Massive Talc-Magnesite Mineralization with High Grade Magnesite and Quartz Veinlets

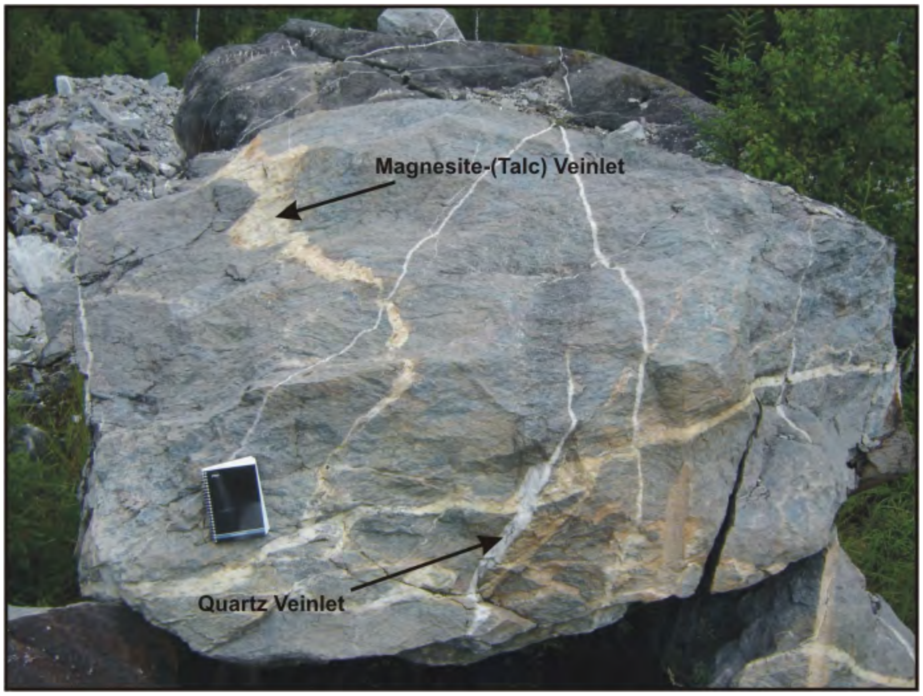
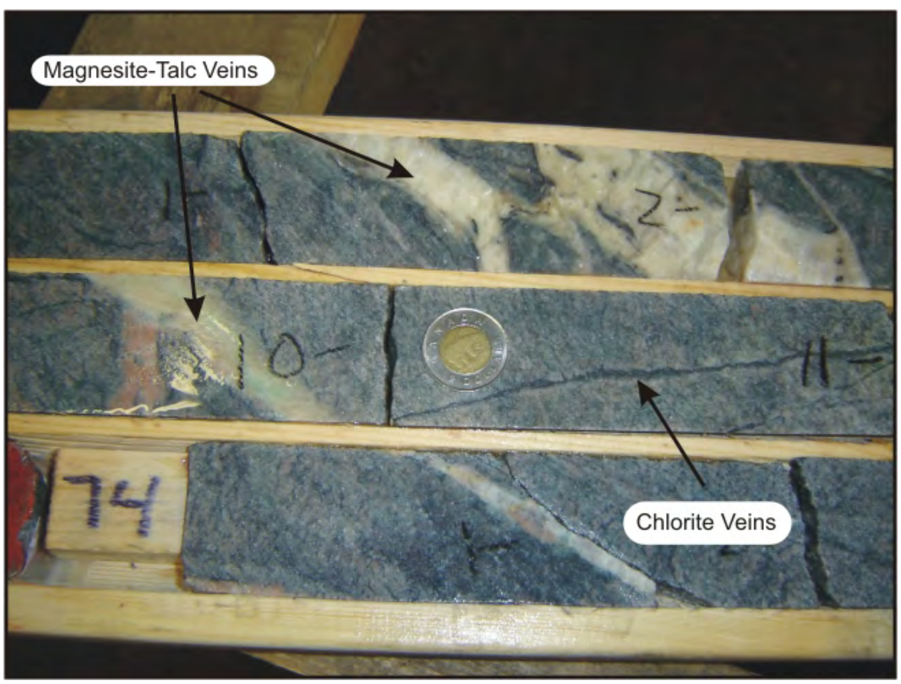


Figure 14.3
View of Massive Talc-Magnesite Mineralization with High Grade Magnesite and Chlorite Veinlets in Drill Core



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

As discussed in the metallurgical sections of this report, 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 potential credit may result from the generation of a nickel hydroxide by-product of the hydrometallurgical flowsheet although this is not considered in the PEA presented in this report. It is estimated that it would represent a limited contribution to cash flow.

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 the initial mineral resource estimate (Pressacco, 2010), this is expressed on an acid soluble calcium basis (soluble 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 m apart and using viewing windows of +/- 50 m. 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 m 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 m 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 14.4).

In all, interpretations were carried out on six cross-sections along a strike length of 700 m and to a maximum depth of approximately the 225 m elevation (approximately 100 m 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 m 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 10.2.

The resulting three-dimensional solids of the core mineralized zone and high 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 14.4
Distribution of Soluble Ca Within the A Zone, Timmins Talc-Magnesite Deposit

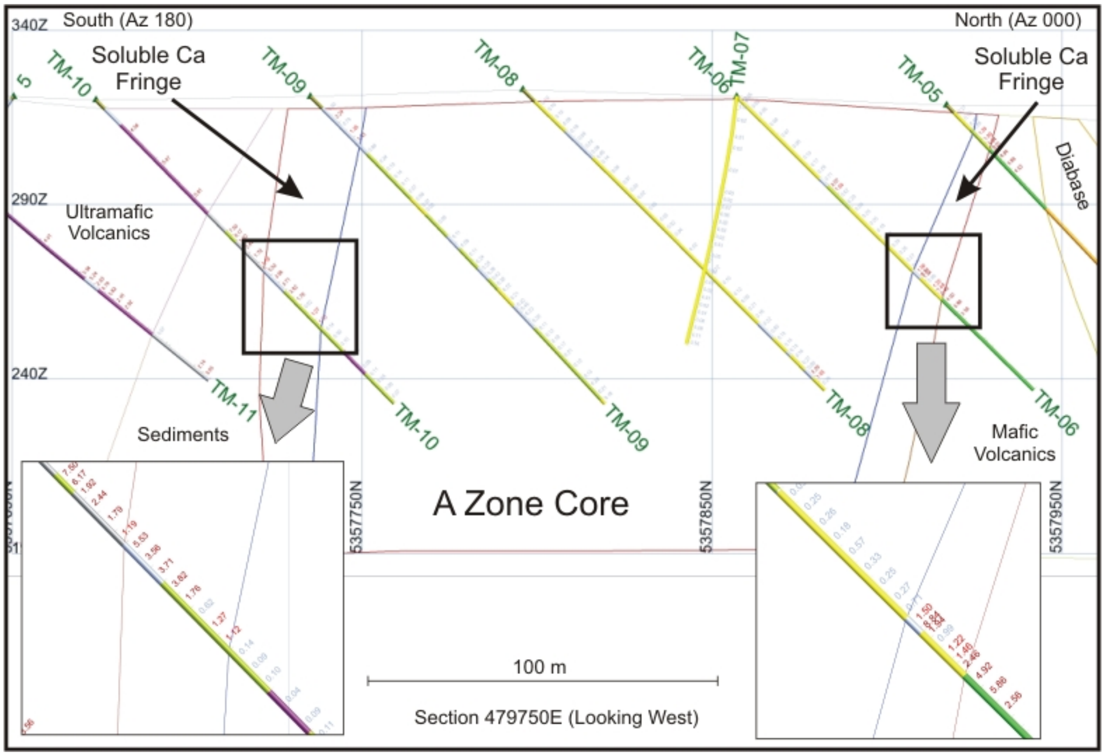


Table 14.2
Summary of Significant Mineralized Intersections Contained Within the A Zone Domain Model, Timmins Talc-Magnesite Project

Hole Number	From (m)	To (m)	Length (m)	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
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

Hole Number	From (m)	To (m)	Length (m)	Soluble MgO (%)	Soluble Ca (%)	Magnesite (%)	Talc (%)
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

14.3 CUT-OFF GRADE

Due to the fact that revenues are expected to be generated from multiple product streams (dominated by talc and magnesia, with a potential contribution from generation of by-product nickel hydroxide), a net smelter return (NSR) 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:

14.3.1 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."

14.3.2 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 testwork 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:

Talc Yield = (0.7074 X Talc Ore Grade/100 - 0.0215) X 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:

MgO Yield = 0.3688 X 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."

As described above the potential nickel hydroxide credit has not been considered in the cash flow presented in this PEA. The cash contribution is not considered to be significant.

14.3.3 Cost Of Goods Sold Derivation (COGS)

Hall (2009) continued:

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

(fixed) +
(ore marginal) +
(talc marginal per % talc ore grade*talc ore grade) +
(MgO marginal per %magnesite ore grade * magnesite ore grade).

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.

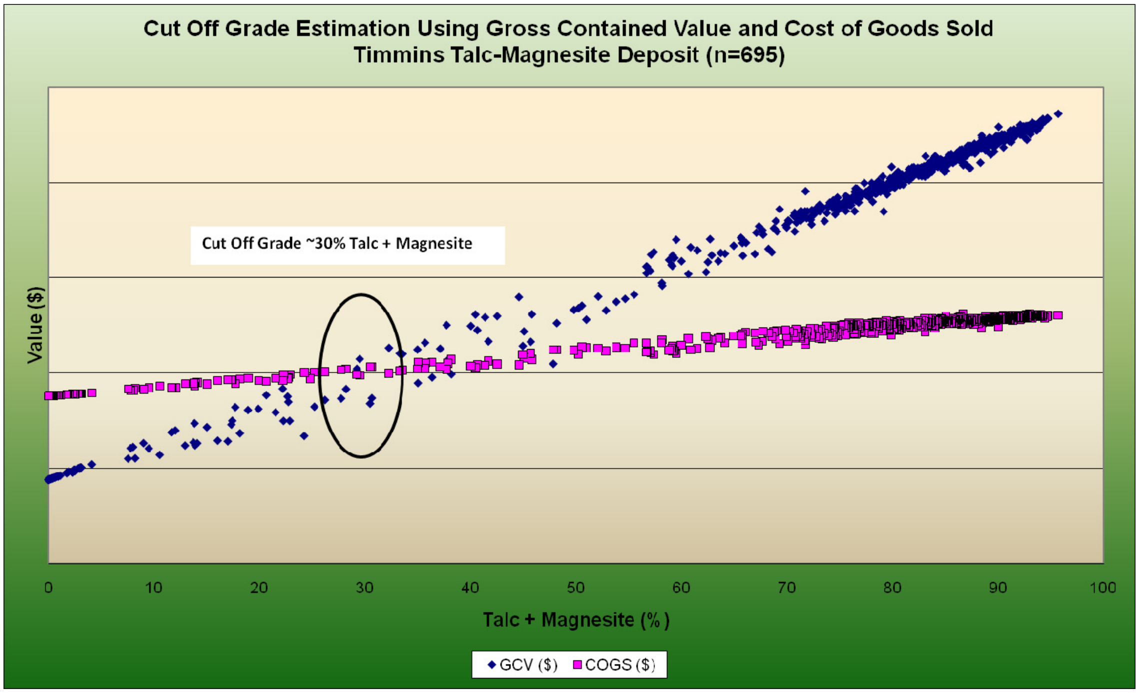
15. - Product marginal was further subdivided in to talc marginal and MgO marginal.

16. - Costs then roll up into: fixed, ore marginal, talc marginal, and MgO marginal."

Some of these variables have been updated for the PEA presented in this report but are not believed to have a material effect on the mineral resource estimate presented herein. The edges of the A zone core mineralization are generally not defined by a grade cut-off but rather the increasing level of a penalty element, calcium.

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 14.5), 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 14.5
Cut-off Grade Estimate Using Gross Contained Value and Cost of Goods Sold



14.4 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.

14.5 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 14.6 through 14.9 for the A Zone core and 14.10 through 14.13 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 14.3. Examination of the frequency histograms suggested that no grade capping is required for this initial mineral resource estimate.

Figure 14.6
Frequency Histogram of Soluble MgO Values, A Zone Core

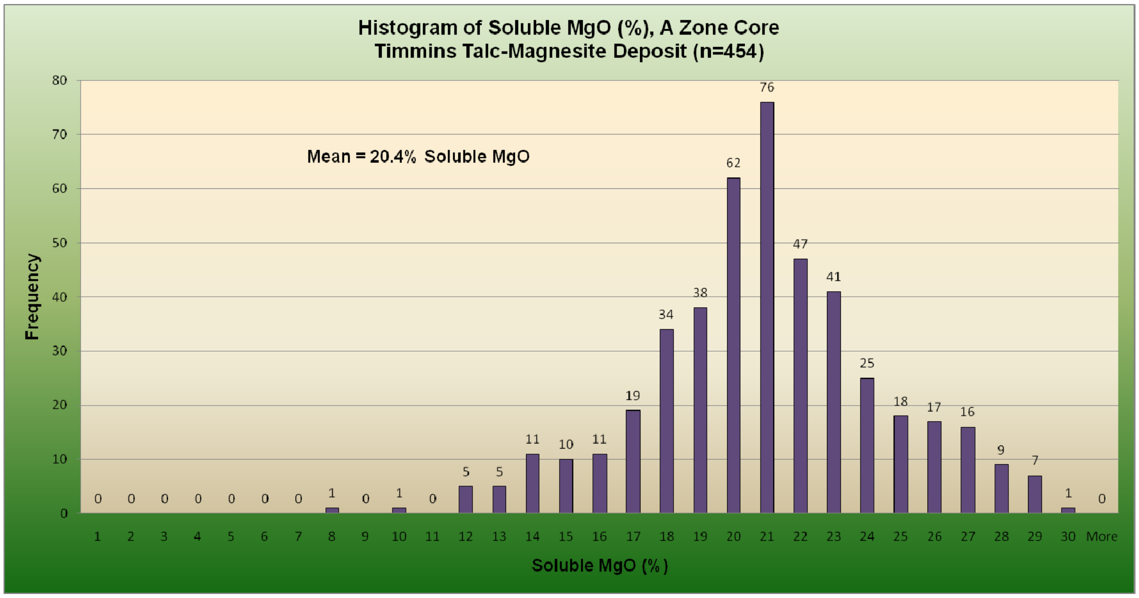


Figure 14.7
Frequency Histogram of Soluble Ca Values, A Zone Core

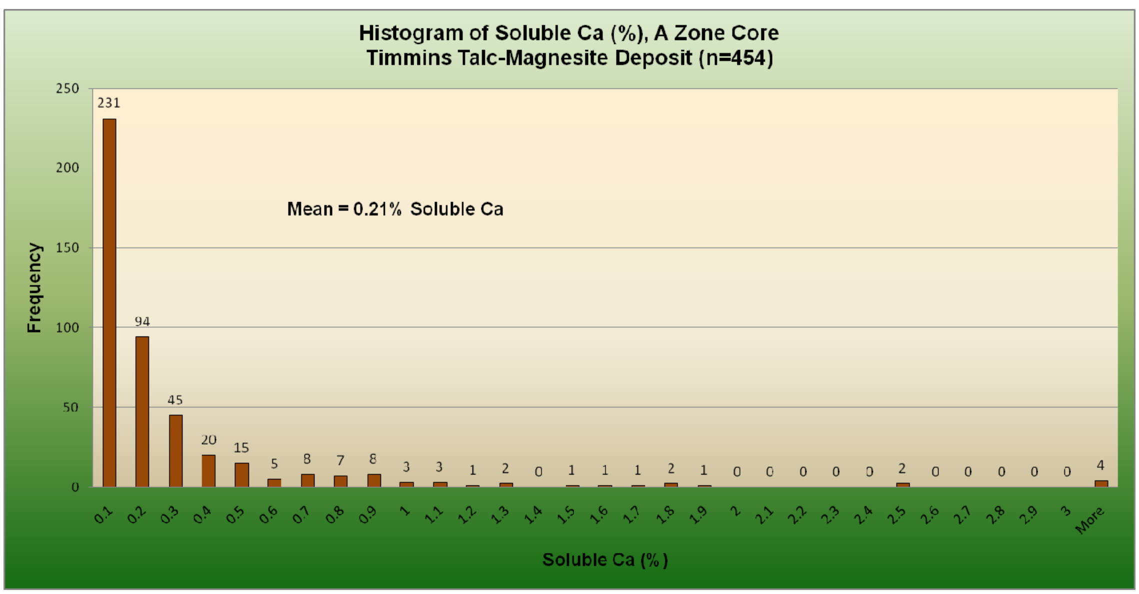


Figure 14.8
Frequency Histogram of Talc Values, A Zone Core

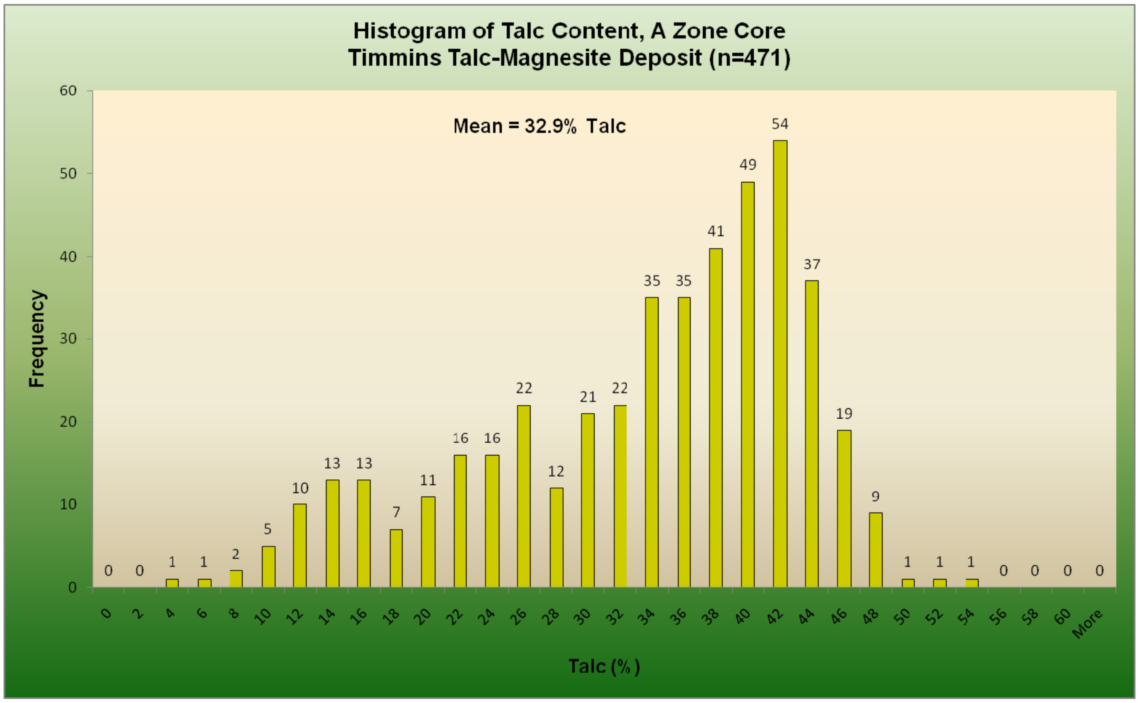


Figure 14.9
Frequency Histogram of Magnesite Values, A Zone Core

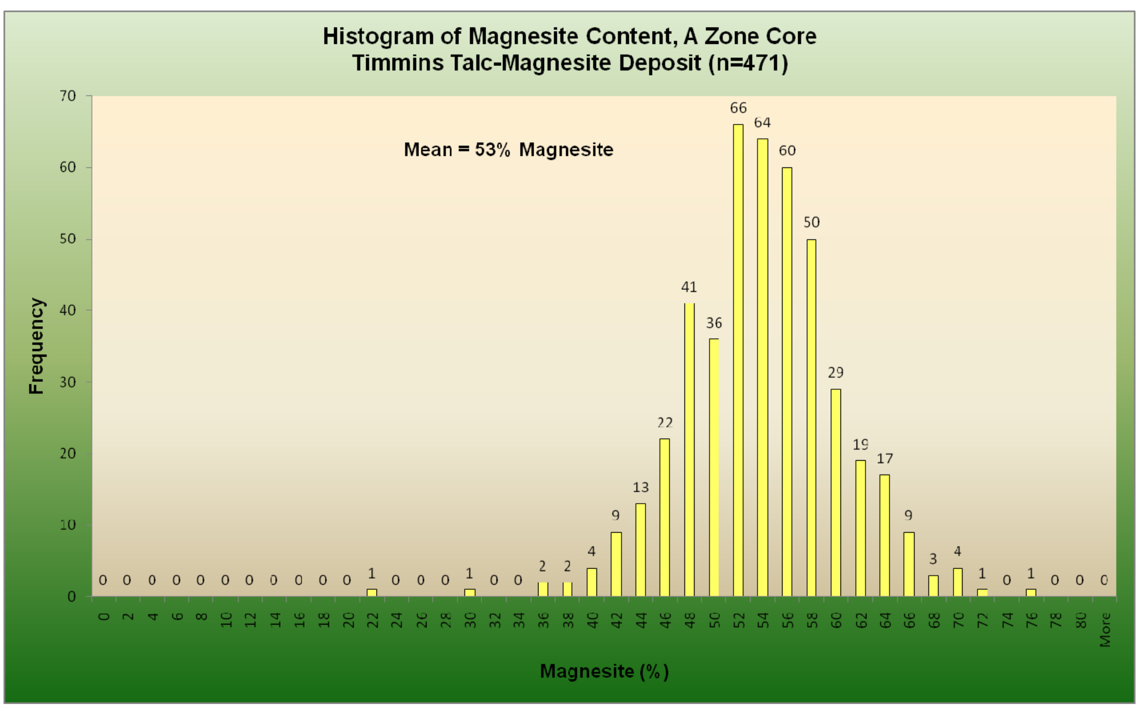


Figure 14.10
Frequency Histogram of Soluble MgO Values, A Zone Fringe

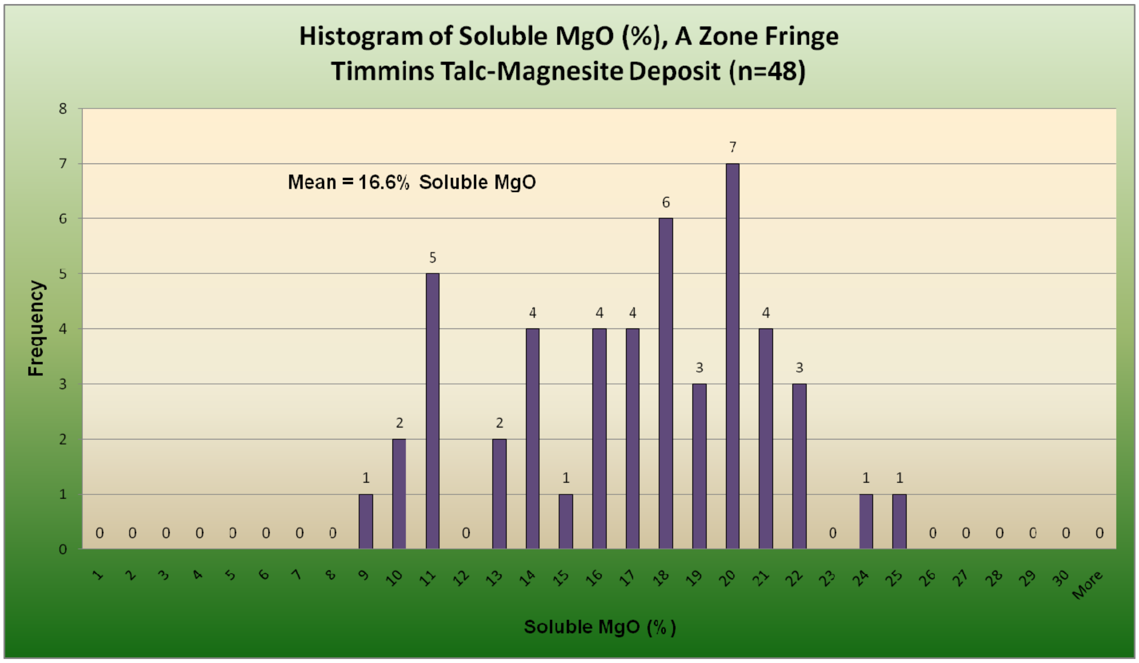


Figure 14.11
Frequency Histogram of Soluble Ca Values, A Zone Fringe

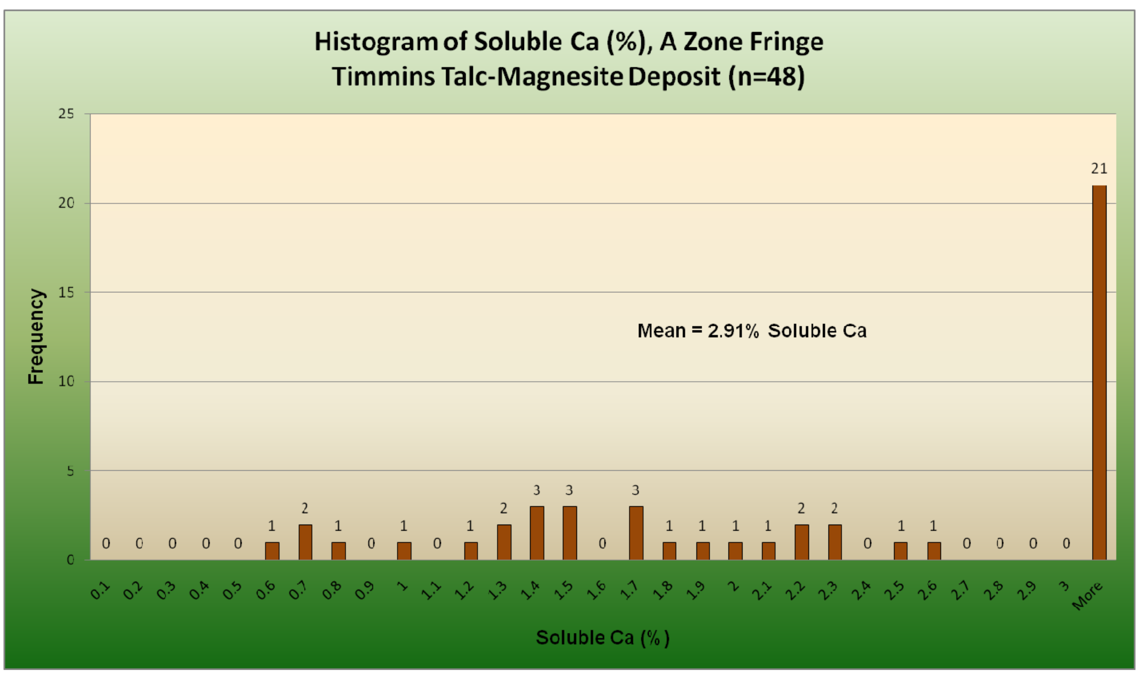


Figure 14.12
Frequency Histogram of Talc Values, A Zone Fringe

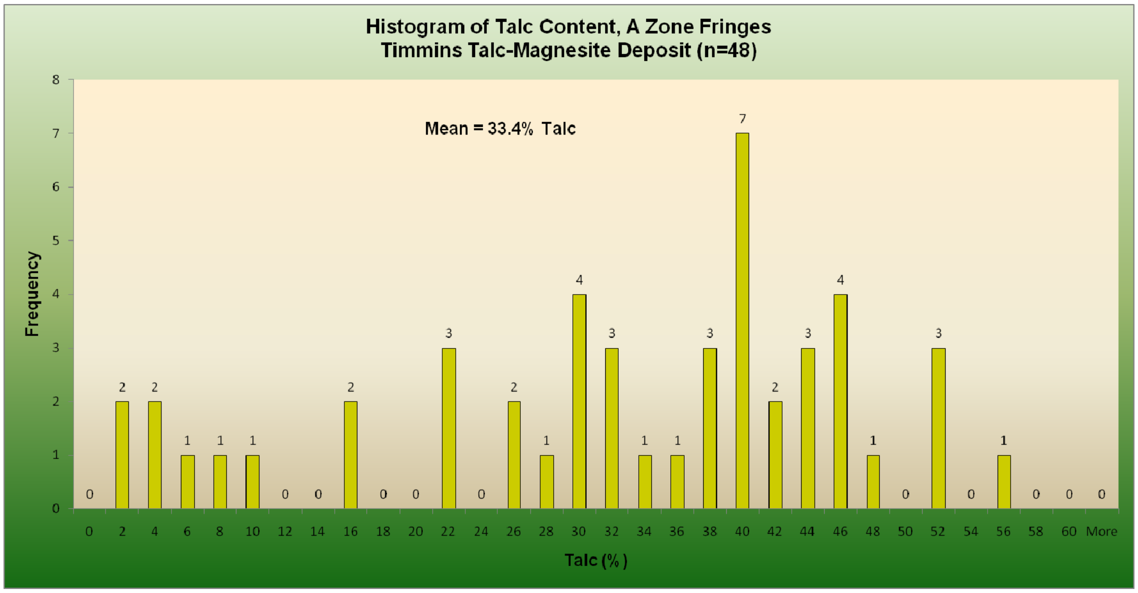


Figure 14.13
Frequency Histogram of Magnesite Values, A Zone Fringe

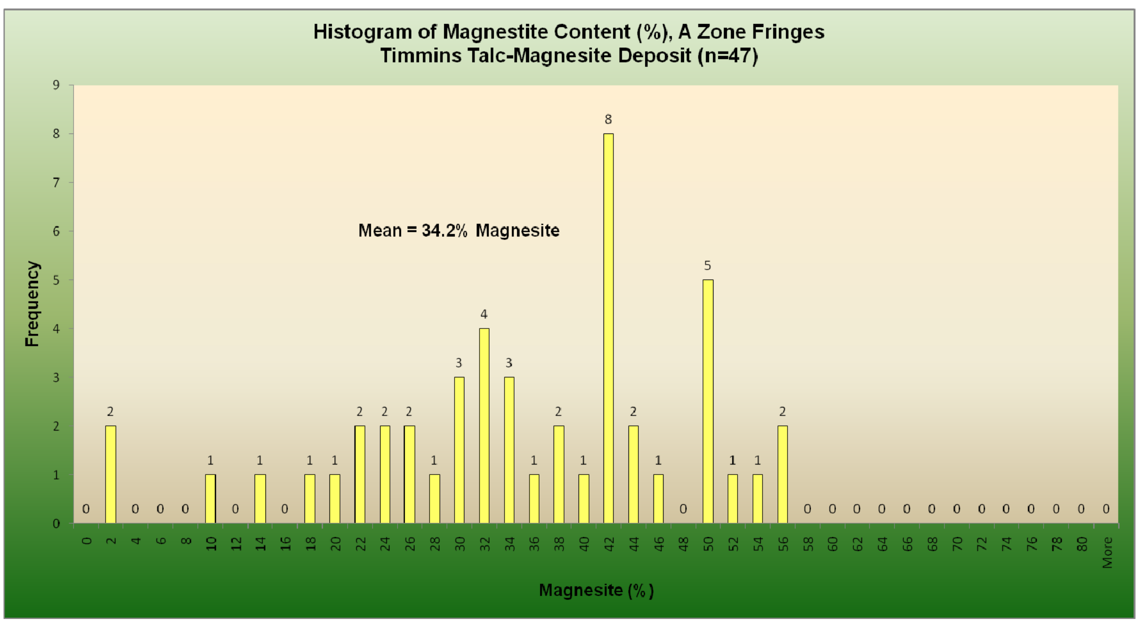


Table 14.3
Summary Statistics for Raw Assay Samples Contained Within the A Zone Core and Fringe Domain Models, Timmins Talc-Magnesite Deposit

Item	Soluble MgO (%)	Soluble 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	454	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

14.6 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 14.14 and 14.15, respectively).

Figure 14.14
Frequency Histogram of Sample Lengths, A Zone Core

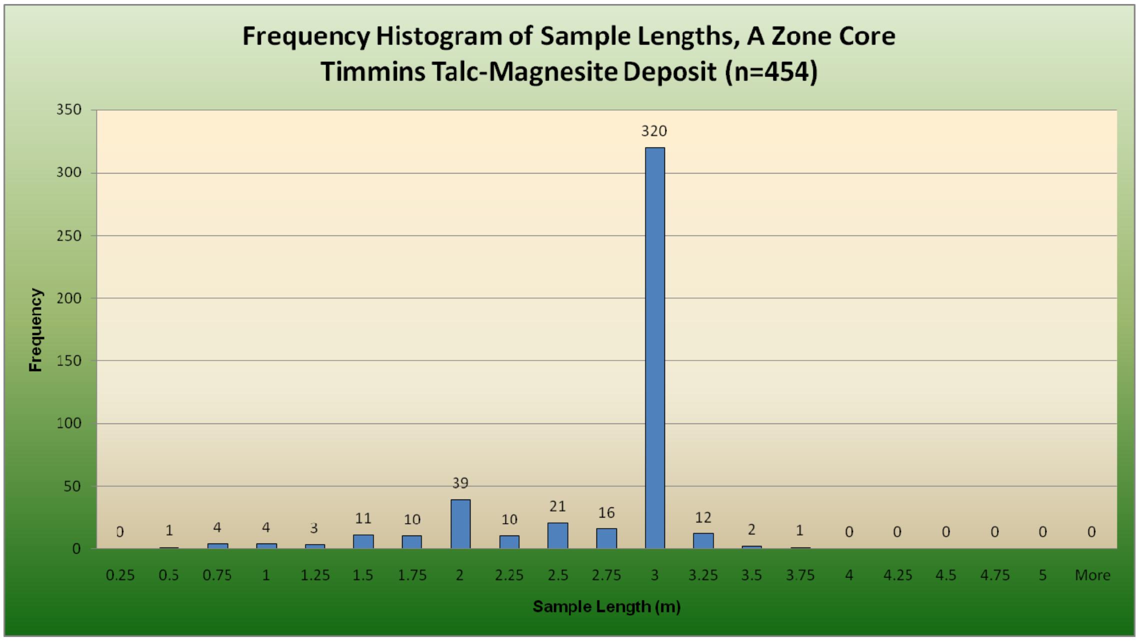
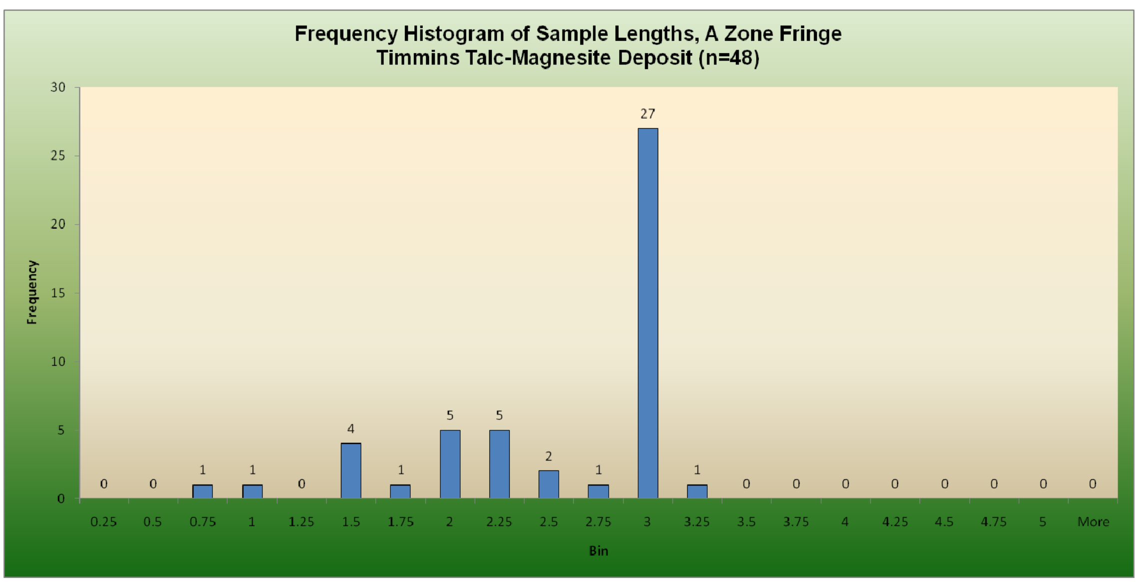


Figure 14.15
Frequency Histogram of Sample Lengths, A Zone Fringe



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 14.4.

Table 14.4
Summary Statistics for the 3-metre Composited Samples Contained Within the A Zone Core and Fringe Domain Models, Timmins Talc-Magnesite Deposit

Item	Soluble MgO (%)	Soluble 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
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

14.7 BULK DENSITY

Bulk densities were measured at the project site by Globex field staff as described in Section 10 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 14.16 and 14.17, respectively). 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.

Figure 14.16
Frequency Histogram of Bulk Density Readings of the A Zone Core

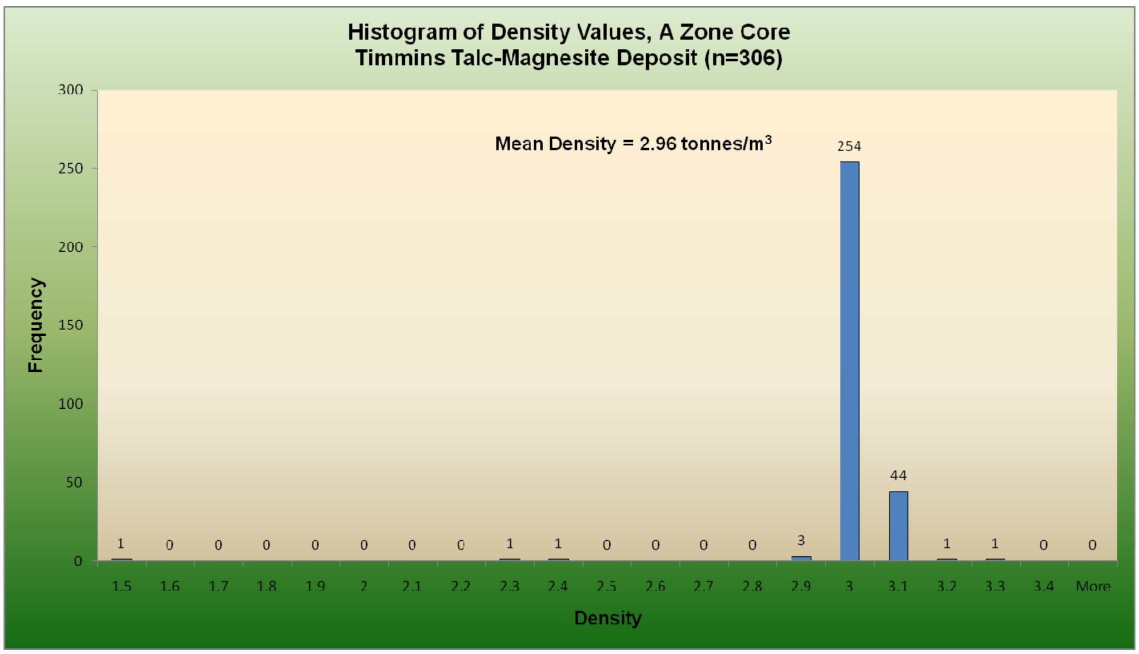
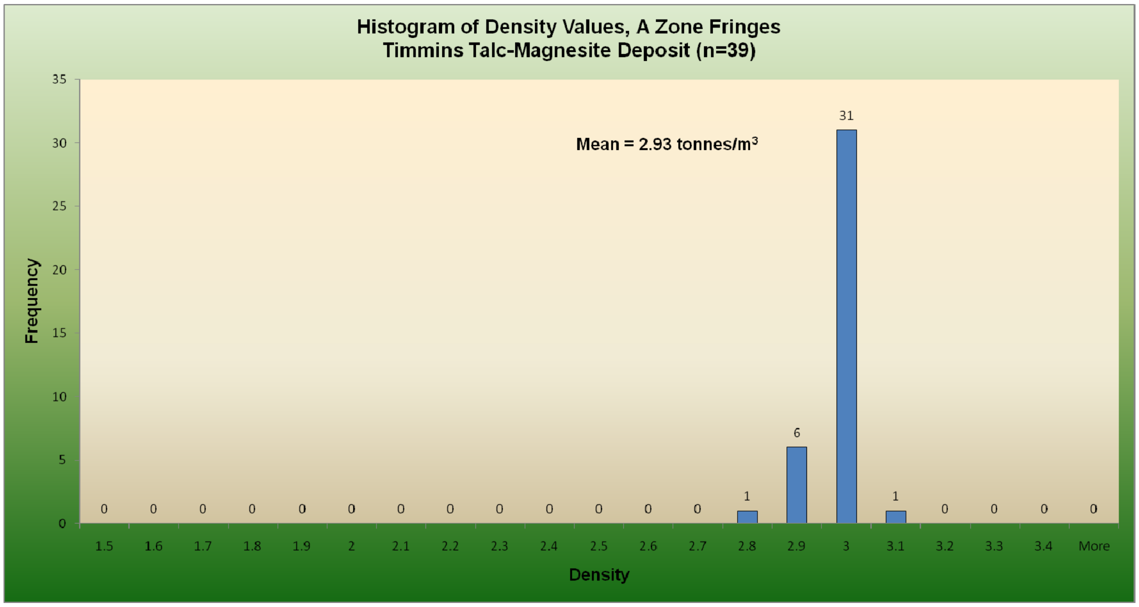


Figure 14.17
Frequency Histogram of Bulk Density Readings of the A Zone Fringe



14.8 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 14.18). The distribution of talc, magnesite and soluble Ca was examined in cross-sectional view by constructing contour maps for cross-section 479750E (Figure 14.19).

Figure 14.18
Talc and Magnesite Distribution in the A Zone, 290 Bench

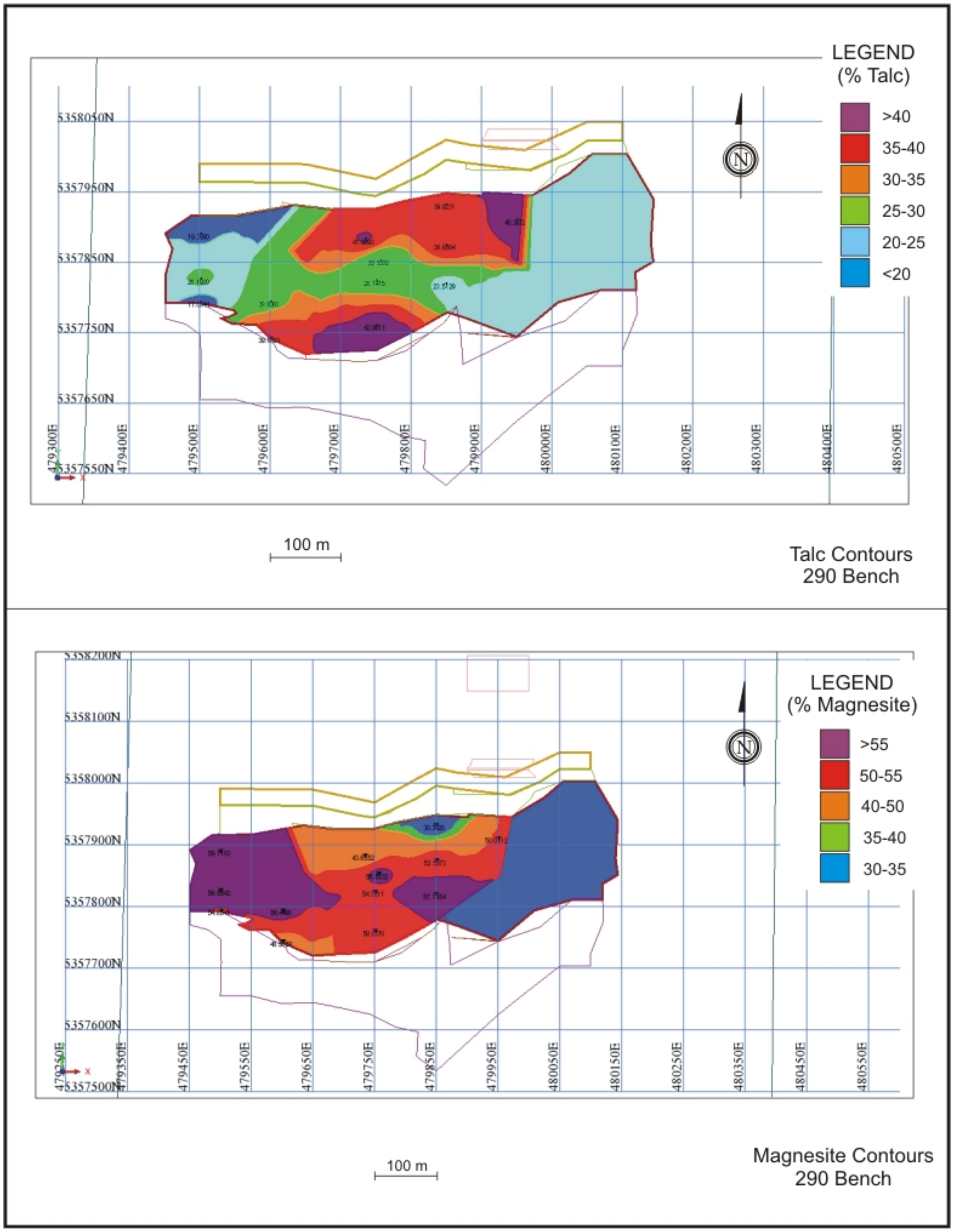
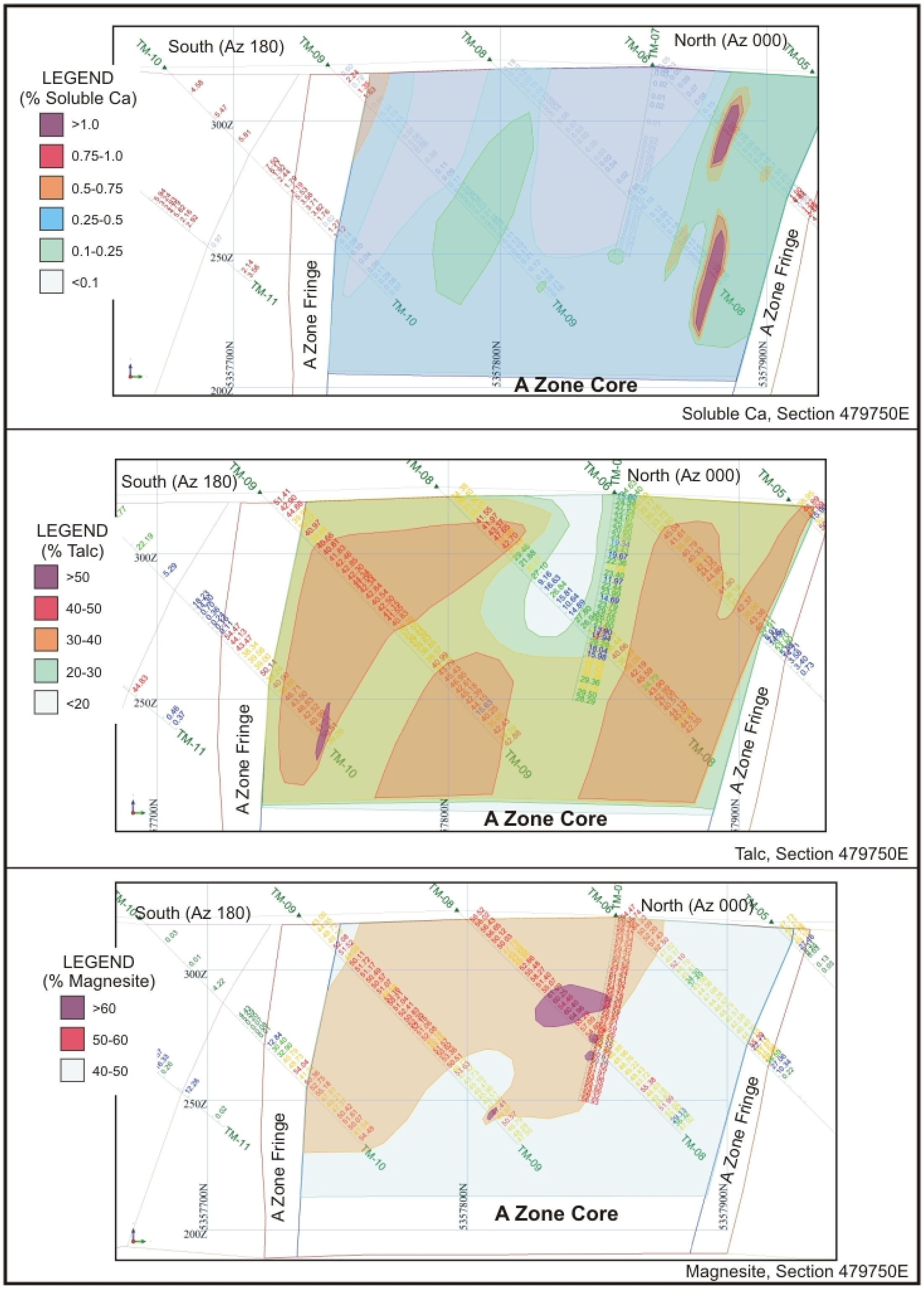


Figure 14.19
Soluble Ca, Talc and Magnesite Distribution in Cross-Section 479750E
(Looking West)



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.

14.9 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 (see Appendix II of Pressacco, 2010). The results of this variographic analysis are presented in Table 14.5.

Table 14.5
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**
Nugget				
Nugget (Down hole)	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
Anisotropies				
Along Strike Orientation Angular Tolerance Sill (C1) Range (m)	 0° → 070° 45° 6.607 82	 0° → 070° 30° 0.050 327	 0° → 070° 45° 21.14 112	 0° → 070° 30° 73.22 104
Down Dip Orientation Angular Tolerance Sill (C1) Range (m)	 -70° → 160° 30° 4.622 43	 -70° → 160° 45° 0.026 99	 -70° → 160° 45° 19.37 95	 -70° → 160° 45° 66.76 82
Across Strike Orientation Angular Tolerance Sill (C1) Range (m)	 +20° → 160° 45° 8.011 74	 +20° → 160° 30° 0.122 120	 +20° → 160° 45° 32.02 73	 +20° → 160° 30° 90.06 56

Item	Soluble MgO (D1)	Soluble Ca (D2)	Magnesite (D3)	Talc (D4)
Search Ellipse				
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 m on section, with sections spaced 100 m apart.

14.10 BLOCK MODEL CONSTRUCTION

An upright, rotated, whole block model with the long axis of the blocks oriented along an azimuth 080º and dipping 90º was constructed using the Gemcom-Surpac v6.1.1 software package and the parameters presented in Table 14.6. 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 14.7.

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 was available at the time of estimation of the resource. 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 14.6
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 14.7
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 ID^2
magnesite_nn	Real	2	0	Magnesite by NN
magnesite_ok	Real	2	0	Magnesite by OK
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 ID^2
sol_ca_nn	Real	2	0	Soluble Ca by NN
sol_ca_ok	Real	2	0	Soluble Ca by OK
sol_mgo_id2	Real	2	0	Soluble MgO by ID^2
sol_mgo_nn	Real	2	0	Soluble MgO by NN
sol_mgo_ok	Real	2	0	Soluble MgO by OK
talc_id2	Real	2	0	Talc by ID^2
talc_nn	Real	2	0	Talc by NN
talc_ok	Real	2	0	Talc by OK

Soluble MgO, soluble Ca, talc and magnesite grades were interpolated into the individual blocks for the A Zone core domain using the Ordinary Kriging (OK), ID^2 and Nearest Neighbour (NN) interpolation methods. A single-pass approach was used wherein the information from the variographic analysis described in Table 14.5 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.

14.11 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 14.8. 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 14.8
Comparison of Block Model Reports to Composite Samples, A Zone

Item	Tonnes	ID^2	NN	OK	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	-

14.12 MINERAL RESOURCE CLASSIFICATION CRITERIA

The mineral resources presented in Pressacco (2010) 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.

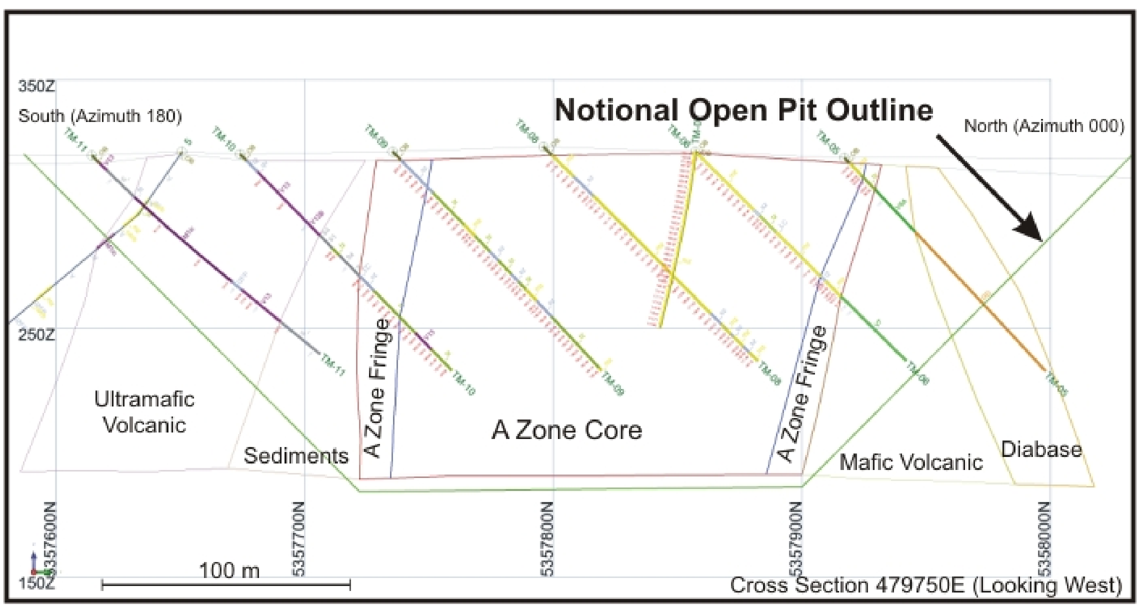
The CIM definition of a mineral resource states that:

> "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 14.20). 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. A Whittle pit optimization has since been completed for this PEA.

Figure 14.20
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 14.5 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.

14.13 RESPONSIBILITY FOR ESTIMATION

The estimate of the mineral resources for the Timmins Talc-Magnesite deposit presented herein was originally prepared by Reno Pressacco, M.Sc.(A), P.Geo., who is a Qualified Person as defined in NI 43-101, and is independent of Globex. For this report B. Terrence Hennessey, P.Geo., similarly a Qualified Person and independent of Globex, has accepted responsibility for the estimate.

14.14 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 14.9.

Table 14.9
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. Based on data available as of October, 2009.
2. 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.
3. 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.
4. 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 had considered the mineral resource estimates in light of known mining, infrastructure, environmental, permitting, legal, title, taxation, socio-economic, marketing, political and other relevant issues at the time of estimation and had no reason to believe that the mineral resources would be materially affected by these items. Some of the assumptions for the resource estimate have been updated for this report.

15.0 MINERAL RESERVE ESTIMATES

The CIM defines a Mineral Reserve as the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. The economic study presented in this report is a PEA as defined in NI 43-101. This PEA is preliminary in nature and it includes inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as Mineral Reserves. As such there have been no mineral reserves determined for the Timmins Talc-Magnesite project.

16.0 MINING METHODS

16.1 GEOTECHNICAL STUDIES - OPEN PIT DESIGN

The following discussion was adapted from Golder (2011a).

16.1.1 Engineering Geology Model

Based on the inspection of the exploration holes and core photos, a preliminary engineering geology model (EGM) was developed. The EGM considers that the pit slopes will ultimately be comprised of some overburden overlying slightly weathered rocks which, in turn, overlie altered or fresh, medium strong to strong rocks of, predominantly, fair to good quality rock masses. The geotechnical zones are delineated as follows:

- Overburden - Generally comprised of sandy glacial outwash and estimated to have an average thickness of about 4 m.

- Slightly Weathered (Oxide) Zone (SWZ) - The upper portion of the bedrock is associated with an increased degree of fracturing, a decreased quality of the surfaces of the discontinuities, medium strong rocks (meaning uniaxial compressive strength, UCS, in the range of 25 to 40 MPa), and a potential increase in water activity. The rock masses within the SWZ are classified as being of generally fair quality.

- Bedrock Zone - Occurring below the Slightly Weathered Zone, the pit slope walls will ultimately be comprised of medium strong sediments and ultramafic volcanics to mafic volcanics, to very strong (UCS >100 MPa) diabase dyke rocks. The rock mass is typically slightly to moderately foliated and moderately fractured, and was preliminary classified as possessing fair to good quality rock mass.

- Shear/Fault Zones - The shear/fault zones identified in the exploration holes tend to locally impact the rock mass causing a reduction in the quality to poor (or very poor).

16.1.2 Assessment of Pit Slope Design Parameters

16.1.2.1 Overburden Slope Configuration

The stability of the overburden slopes would be strongly adversely affected by a high degree of saturation; therefore, it will be important to maintain adequate drainage. Recognizing that the overburden thickness is on average <5 m, it is preliminarily recommended that the overburden slopes be fully dewatered and then excavated at a 2H:1V slope (2 horizontal to 1 vertical).

A catch berm should be constructed at the base of the overburden on top of bedrock. The catch berm should be a minimum of 6 m wide, and preferably 8 m wide (e.g., in areas below thicker overburden or closer to Shaw Creek). Excavation is assumed to be by mechanical means with the use of dozers or backhoes. Perimeter surface drainage ditches should be maintained along the outside perimeter of the pit more than 15 m behind the pit crest, in areas where water run-off could affect the stability of the pit face.

These preliminary recommendations should be reassessed once additional geotechnical investigations of the overburden are completed.

16.1.2.2 Rock Slope Design Definitions

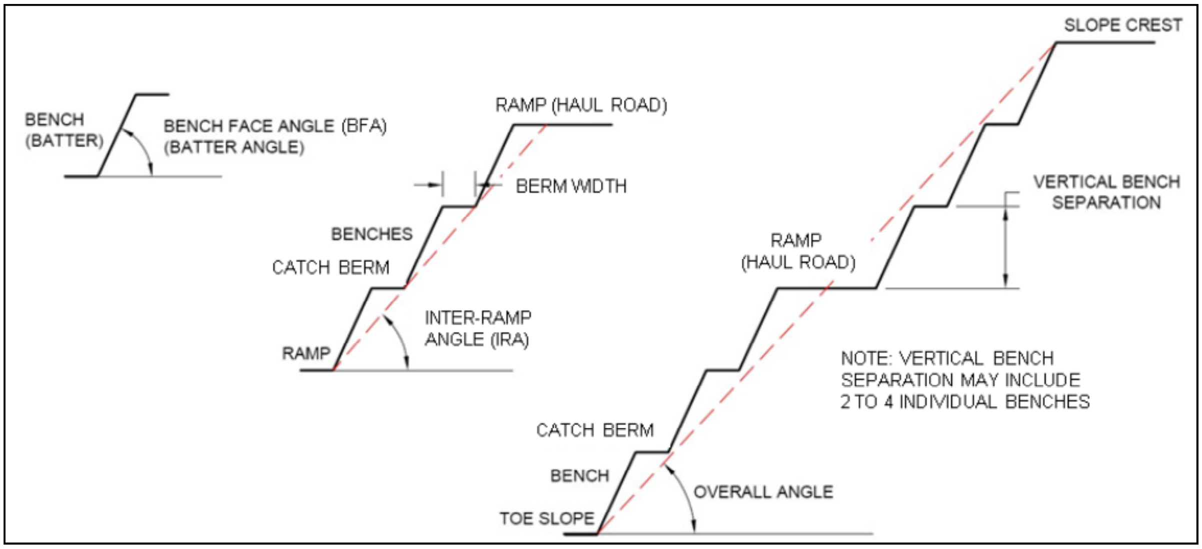
A pit slope has three major components, as illustrated on Figure 16.1 and described below:

- Bench Configuration - Defined by vertical bench separation (or bench height), catch berm or (berm width) and bench face (or batter) angle. For the conceptual pit slope design, 10 m bench heights will be considered. A single (i.e., 10 m) bench configuration is recommended within the SWZ and a double bench configuration (i.e., 20 m) appears to be achievable within the Bedrock Zone. The double bench configuration will also help optimize the overall pit slope angles. For the conceptual pit slope design of the Timmins Talc-Magnesite project, it is recommended that minimum berm widths of 6.0 m and 8.5 m be used for bench heights of 10 m and 20 m, respectively, when there is no kinematic control. Increased berm widths are required for lesser quality rock mass conditions, where ravelling or failures are expected to result in increased masses of rock collecting on the berms. For instance, up to 9.5 m wider berms will be required in the design sector for the south wall.

- Inter-ramp slope (IRA) - formed by a series of uninterrupted benches. The inter-ramp angle is the slope angle formed from the combined benches. To prevent multi-bench failures, the slope of the IRA should be less than the dip of major or persistent weakness planes in the rock mass, such as faults or persistent dykes.

- Overall slope (OSA) - formed by a series of inter-ramp slopes separated by haul roads.

Figure 16.1
Schematic Representation of Bench Face Angle (BFA) and Inter-Ramp Angle (IRA).



16.1.2.3 Rock Slope Design

Design Sectors

Based on the preliminary pit geometry, four design sectors were considered for the purpose of the conceptual design:

- Design Sector I - North Wall (or hanging wall) with 180° mean dip direction.
- Design Sector II - Southeast Wall with 330° mean dip direction.
- Design Sector III - South Wall (or footwall) with 0° mean dip direction.
- Design Sector IV - West Wall with 90° mean dip direction.

Pit Wall Stability

Kinematic analyses were carried out to assess the potential for structurally controlled failure in rock slopes, occurring as the result of movement along pre-existing geological discontinuities, which could form planar, wedge and/or toppling failures. Dry conditions were assumed, (i.e., natural (or gravitational) drainage conditions would be achieved as the slope is excavated). Otherwise, pit dewatering might be locally required to minimize water pressure effects.

For the kinematic assessment, the joint and fault sets were not measured at depth and were only estimated based on an interpretation of the potential rock mass fabric. Recognizing this deficiency in the structural data, Table 16.1 describes the conceptual pit slope angles considered to be achievable for each design sector based on the kinematic assessment.

Table 16.1
Preliminary Rock Slope Configuration, Based on the Kinematic Analysis

WALL DIP DIRECTION		POTENTIAL FAILURE MECHANISM								COMMENTS
		Toppling		Planar		Wedge (F.S.<=1.2)				
		Set	Dip (°)	Set	Dip (°)	Combination		Plunge (°)	Trend (°)	
I	**North Wall Mean Dip Dir 180°**	**FO1** FO-N/JN2	**70** 60	**FO1A** JN2A	**70** 60	**Fault1** **Fault1A**	JN2A JN2A	55 59	147 196	Potential for planar failure along FO1A, wedge failure with combinations of faults and joint sets, and toppling due to FO1
II	**Southeast Wall Mean Dip Dir 330°**	-	-	**Fault2** Variaton of FO1	**75** 70	**Fault1** **Fault1A** **Fault1A** **Fault2** **Fault2** **Fault2**	FO_N/JN2 FO_N/JN2 **FO1** **Fault1** **FO1** **Fault1A**	59 55 **64** **63** **70** **72**	16 327 317 23 8 293	Potential for planar failure along the fault and wedges formed by the foliation and joint sets.
III	**South Wall Mean Dip Dir 000°**	**FO1A** JN2A	**70** 60	**FO1** **Fault2**	**70** **75**	**Fault1A** **Fault2** **Fault1** **Fault1** **Fault1A** **Fault1** **Fault2**	FO-N/JN2 FO-N/JN2 FO-N/JN2 **Fault2** **FO1** **FO1** **FO1**	55 56 59 **63** **64** **67** **70**	327 032 016 **023** **317** **030** 008	Potential for instability due to planar sliding along the foliation and wedges formed by the faults, foliation and joint sets.
IV	**West Wall Mean Dip Dir 090°**	**Fault1A**	**75**	**Fault1**	**75**	**Fault1** **Fault1**	JN2A **FO1A**	55 **73**	147 **107**	Potential for planar failure along the fault and wedges formed by the intersection of the fault with the foliation.

DEFINITIONS: BFA = BENCH FACE ANGLE (degrees)
IRA = INTER-RAMP ANGLE (degrees)

Sets in BOLD TYPE are considered to be strong kinematic controls.

Rock Slope Configuration

Table 16.2 presents the conceptual (preliminary) slope configurations for the rock slopes. Additional field and laboratory investigation will be required as part of future studies to confirm the assumptions made in relation to structural controls, (i.e., the occurrence and orientation of the main geological structures (or rock mass fabric)).

Table 16.2
Recommended Conceptual Pit Slope Angles for the Rock Slopes

Design Sector	Wall Dip Direction	BFA[1] (º)	Vertical Bench Separation (m)	Berm Width (m)	IRA[1] (º)
Slightly Weathered Zone					
All Sectors	-	65	10	6	43
Bedrock Zone					
I – North	180° (160° to 200°)	70	20	8.5	52
II – Southeast	330° (310° to 350°)	70	20	8.5	52
III – South	000° (340° to 020°)	65 (70)[2]	20	9.5	47 (50)[2]
IV – West	090° (070° to 110°)	70	20	8.5	52

[1] BFA = Bench face angle, IRA = inter-ramp angle.
[2] There is the potential to steepen the BFA to 70° and the IRA to 50° if the rock mass quality is better than anticipated.

16.1.2.4 Overall Rock Mass Stability

Limit equilibrium analyses were conducted for the overall pit walls considering the potential for non-circular or circular failure surfaces through the rock mass. These analyses were performed on 150 m and 200 m high slopes to confirm that the proposed pit walls would exhibit a factor of safety (FS) greater than an acceptance criteria of FS = 1.3 for dry conditions and 1.1 for partially saturated conditions when analyzing deep-seated failure.

The analysis results for the north and south walls indicated that, despite the low strength of the rock masses, there is not a significant concern regarding deep seated slope failure through the rock mass for the up to 150 m high slope configurations analysed. The results indicate adequate factors of safety against rock mass failure. Exceptions could occur where a major fault or open shear daylights on the pit wall, where failure could develop locally through the poor rock mass quality. As the pit depth increases to 200 m, the factor of safety reduces to 1.1 in the north wall, reinforcing the need for the collection of geotechnical and hydrogeological data at depth. In summary, these very preliminary analyses suggest that the proposed slopes, based upon the recommended slope design criteria presented in Table 16.2 would show low risk of deep-seated rock mass failure.

16.1.3 Recommendations for Further Geotechnical and Hydrogeological Studies

Golder’s recommendations with respect to further geotechnical work are presented in Section 26.2.

16.2 MINING METHOD SUMMARY

The proposed mining method for the Timmins Talc-Magnesite project is open pit mining with truck haulage delivering to a process plant located approximately 1.5 km southwest of the deposit. The average life-of-mine waste to plant feed ratio is 1.28:1. Mining will be by drilling and blasting for the bedrock, with the overlying overburden not requiring blasting. The deployment of a contractor fleet has been assumed to manage pit operations, run-of-mine stockpiling and crushing. The final bench height in the open pit was designed for 20 m, with operational benches advancing in 10-m lifts.

The resource block model, discussed in Section 14.0, was used as the basis for the open pit design. The mine design process involved the following steps:

- Generation of economically-optimized ultimate open pit shells for each deposit using Whittle 4.4 software.

- Design of an ultimate pit and one 10-year starter pit phase with access ramps. The portions of the mineral resource within these pit designs were included in the mine plan that served as the basis of this PEA.

- Estimation of mine development capital expenditures and operating costs based on contract mining and crushing to the level of accuracy appropriate for a PEA.

16.2.1 Open Pit Optimization Parameters

Technical and economic parameters for the Timmins Talc-Magnesite project, summarized in Table 16.3, were applied to the geologic model to create a net value block model for open pit optimization.

Table 16.3
Whittle Pit Optimization Assumptions for the Timmins Talc-Magnesite Project

Item	Units	Value	Notes	Source
Waste mining	$/waste t	3.02	Contract mining rate	Globex
Ore mining	$/ore t	3.77	Contract mining rate	Globex
Contract crushing	$/ore t	4.62	Contract crushing rate	Globex
Fixed ore processing costs	$/ore t	24.31		Aker[1]
Ore marginal processing	$/ore t	18.85		Aker[1]
Talc marginal processing	$/ore t	20.75	0.5829 x talc grade	Aker[1]
MgO marginal processing	$/ore t	24.40	0.4684 x magnesite grade	Aker[1]
Talc sales price	$/t	500	FOB Mine	Globex
MgO sales price	$/t	570	FOB Mine	Globex
Talc avg. ore grade	%	35.6		Globex
Magnesite avg. ore grade	%	52.1		Globex
Talc recovery	%	73.8		Globex
MgO recovery	%	95.0		Globex
Talc product purity	%	95.0		Globex
MgO product purity	%	98.0		Globex

[1] now Jacobs.

16.3 LIFE OF MINE PIT DESIGN

Geotechnical parameters used in the pit designs are based on work completed in 2011 by Golder. Pit slopes were designed to an inter-ramp slope angle of 27° in overburden, and 52° in bedrock. Haulage roads were designed to a width of 16 m to accommodate two-way haulage for the contract fleet envisioned for this project.

The conceptual 60-year LOM process feed tonnages as of March 1, 2012 for the Globex Timmins Talc-Magnesite deposit are summarized in Table 16.4. Mining losses of 5% are assumed to be offset by the anticipated dilution resulting from fringe zone material that would be shipped to the plant during standard pit operations. The process feed was therefore diluted using the average grades of the fringe zone that encapsulates the core of the deposit. The average magnesite grade for the fringe zone is 34.2%, and the average grade for talc is 33.4%.

Table 16.4
Globex Timmins Talc-Magnesite Project 60-year LOM Process Feed (Undiluted)

Category	Process Feed (Million Tonnes)	Talc (%)	Magnesite (%)
Measured resource	0	0	0
Indicated resource	12.4	35.27	52.17
Total M&I resources	**12.4**	**35.27**	**52.17**
Inferred resource	17.9	31.59	53.19

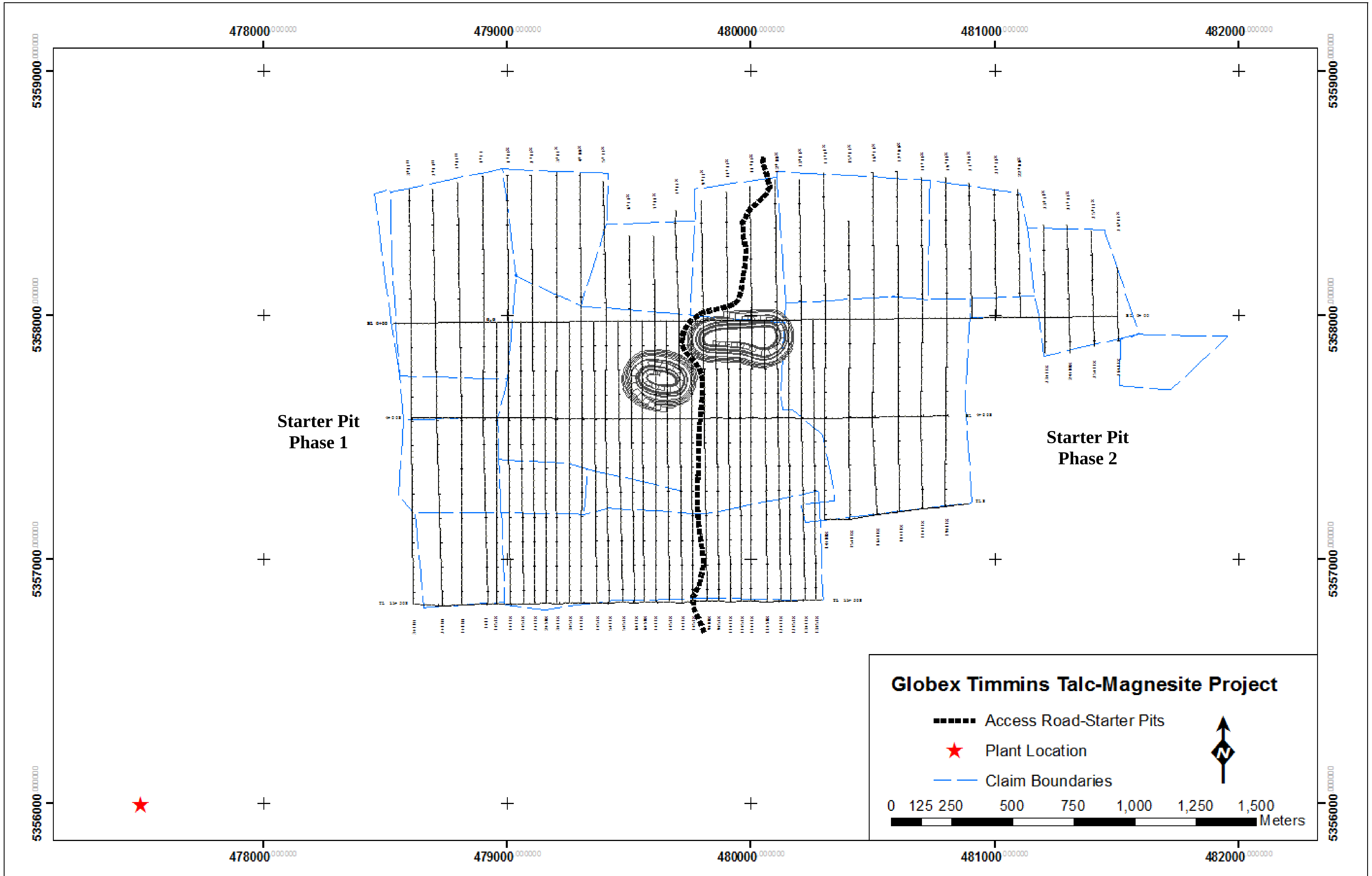
16.4 MINE PRODUCTION SCHEDULE

The mine production schedule was developed using phased pit designs and Minesched scheduling program within the Gemcom suite of mine planning software. Two low strip ratio pits were designed and developed in tandem in order to meet the following operational objectives:

- Target for a process feed rate of 500,000 t/y.
- Minimize variability in process feed grades.
- Manage run-of-mine stockpiles to maintain a high-grade process feed of 34.6% talc in the first 10 years of the project.
- Defer stripping where feasible in the early years of the project.

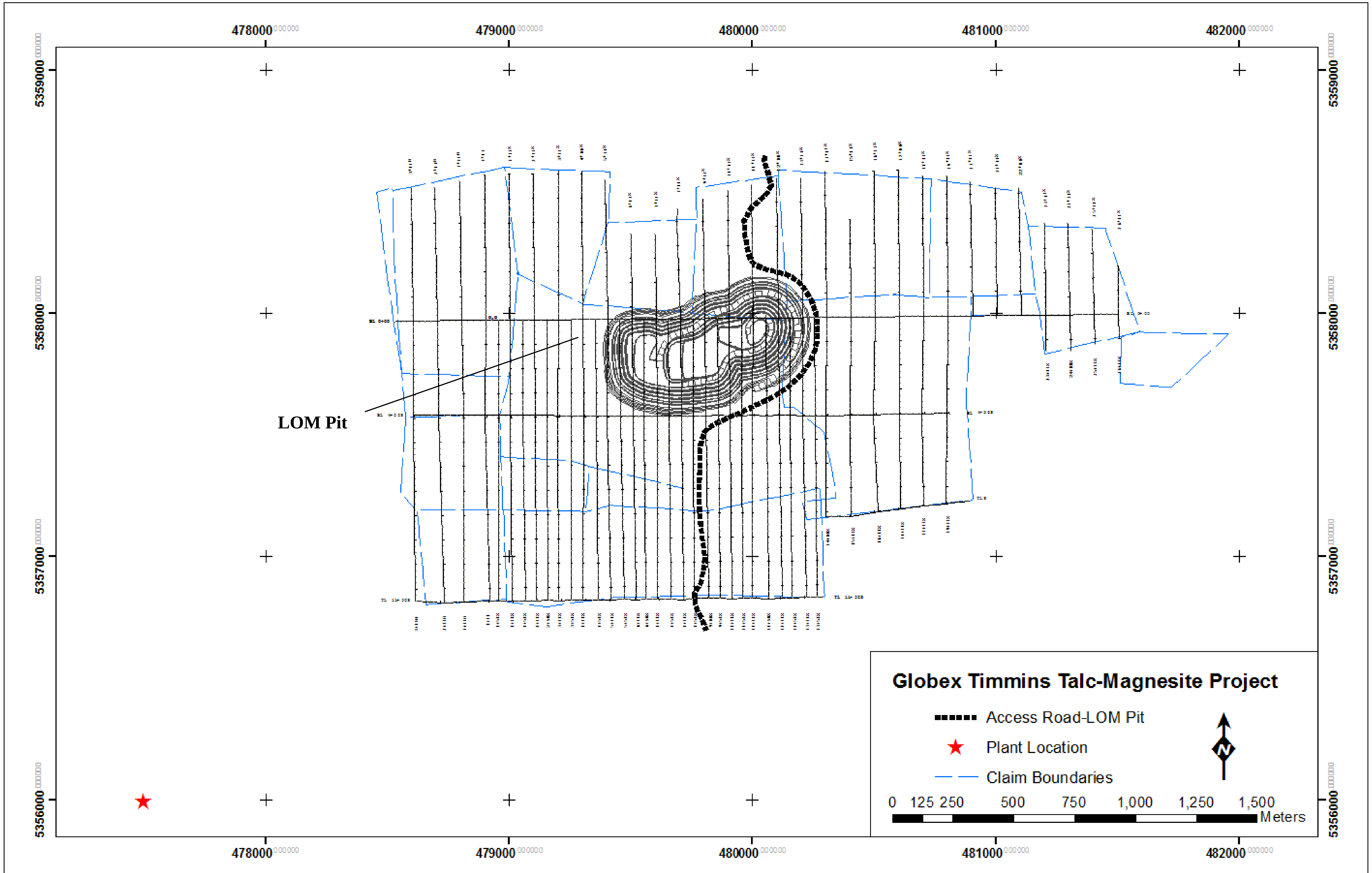
Figure 16.2 shows the two low-strip starter pits and Figure 16.3 shows the ultimate life of the 60-year LOM pit.

Figure 16.2
Starter Pit Design - Globex Timmins Talc-Magnesite Project



February, 2012.

Figure 16.3
60-year LOM Pit Design - Globex Timmins Talc-Magnesite Project



February, 2012.

The ultimate open pit contains sufficient material to feed the plant with 500,000 t/y for more than 60 years. However, for the purposes of this PEA, only 20 years of plant feed are considered in the conceptual mine production schedule, as shown in Table 16.5.

Table 16.5
20-year Mine Production Schedule

Period	Process Feed (t)	Waste (t)	Total (t)	% Magnesite	% Talc	Strip Ratio	Plant Stockpile (t)
Year -1		1,014,499	1,014,499	-	-		-
Year 1	553,486	485,016	1,038,502	52.86	34.58	0.88	53,486
Year 2	550,165	1,028,334	1,578,499	51.97	34.58	1.87	103,651
Year 3	549,763	1,263,737	1,813,500	52.26	34.58	2.30	153,414
Year 4	552,534	550,479	1,103,013	52.36	34.58	1.00	205,948
Year 5	619,548	315,452	935,000	52.07	34.58	0.51	325,496
Year 6	549,580	275,420	825,000	52.10	34.58	0.50	375,076
Year 7	549,893	165,107	715,000	53.13	34.58	0.30	424,969
Year 8	500,241	216,718	716,959	52.28	34.58	0.43	425,210
Year 9	512,742	422,258	935,000	52.65	34.58	0.82	437,952
Year 10	549,897	1,870,102	2,419,999	51.94	34.58	3.40	487,849
Year 11	550,255	1,871,071	2,421,326	52.78	32.52	3.40	538,104
Year 12	550,255	1,871,071	2,421,326	52.78	32.52	3.40	588,359
Year 13	550,255	1,871,071	2,421,326	52.78	32.52	3.40	638,613
Year 14	550,255	1,871,071	2,421,326	52.78	32.52	3.40	688,868
Year 15	550,255	1,871,071	2,421,326	52.78	32.52	3.40	739,123
Year 16	512,782	1,739,684	2,252,466	52.79	32.52	3.39	751,905
Year 17	512,782	1,739,684	2,252,466	52.79	32.52	3.39	764,687
Year 18	512,782	1,739,684	2,252,466	52.79	32.52	3.39	777,468
Year 19	222,532	754,971	977,503	52.79	32.52	3.39	500,000
Year 20	0	0	0	-	-	0.00	0
TOTAL	**10,000,000**	**22,936,501**	**32,936,501**	**52.55**	**33.65**	**2.29**	

16.5 MINING METHODS

16.5.1 Mining Equipment

This PEA assumes that a contractor fleet will be deployed to manage pit operations and crushing. Unit mining rates were provided by a regional contractor reflecting a typical fleet of 5-yd^3 excavators and wheel loaders, 50-t trucks, track dozers, water trucks, service trucks and portable crushing and grinding equipment. Drilling and blasting would also be contracted and articulated trucks would likely be rented to address the overburden stripping campaigns.

16.6 WASTE ROCK STORAGE

Prior to this study, Globex had assumed that the initial years of mining would remain within the core of the mineralization. Any minor quantities of generated waste rock were planned to be used for near-pit infrastructure, such as road beds and safety berms. However, in order to maintain consistent high-grade talc production in the first 10 years of the project, tandem starter pits were designed resulting in additional stripping requirements earlier in the project life. Waste stockpiles have not yet been sited or designed for this additional stripping, but the contract mining rates applied in this PEA reflect the assumption that sufficient capacity will be available in close proximity to the pit. Upon completion of adequate baseline geotechnical and environmental site reviews, more detailed stockpile design work will be required to advance this project to pre-feasibility status.

16.7 ORE STOCKPILES

Due to the significant haul distance from the pit to the process plant, and to facilitate a steady, reliable plant feed, run-of-mine stockpiles were managed in the production schedule. In order to maintain a consistent high-grade talc tonnage for the first 10 years, the production schedule accounts for an average of approximately two months of additional feed mined per annum. These run-of-mine stockpiles may be divided into low, medium and high grade piles to better facilitate blending.

17.0 RECOVERY METHODS

17.1 PROCESS DESCRIPTION

17.1.1 Introduction

The process facilities have been designed to treat 500,000 t/y of talc-magnesite ore, mined at the Timmins Talc-Magnesite mine. The plant will operate continuously with 85% availability to exceed 310 days per year.

The production of talc and magnesium oxide will involve processing the ore through a series of crushing, grinding, flotation, leaching, evaporation, decomposition and sintering steps, as shown in the process block diagram (Figure 17.1).

A contractor will be responsible for crushing, screening and stockpiling the ore. Reclaimed ore will be conveyed to a tertiary crusher, followed by a primary grinding mill to reduce the particle size. The ground ore will be treated in rougher and cleaner flotation circuits where talc will be recovered to the concentrate streams. Flotation tails will be pumped to separate leach circuits. Talc will be flash dried, micronized and stored in silos.

Magnesite and other minerals contained in the flotation tails will be dissolved in the leaching circuit. The impurities are to be precipitated from the solution and excess water evaporated. The purified and concentrated solution will flow by gravity into decomposition units where active magnesium oxide (MgO) will be produced. The magnesium oxide will be then briquetted and screened. The briquettes from the screen will be dead-burned in shaft kilns and the resulting product is stored in a bunker. The fines from the briquetter screen will be returned to the process.

The primary reagent used in the leaching circuits will be recovered and recycled back to the process.

The plant design is based on the flowsheet and design criteria with input from Globex and DMI (Table 17.1) combined with in-house experience from past projects. The Metsim® model provides the mass and heat balance for the process. The preliminary design supports capital and operating cost estimates to an accuracy of +/-25%.

Figure 17.1
Timmins Talc-Magnesite Process Block Diagram

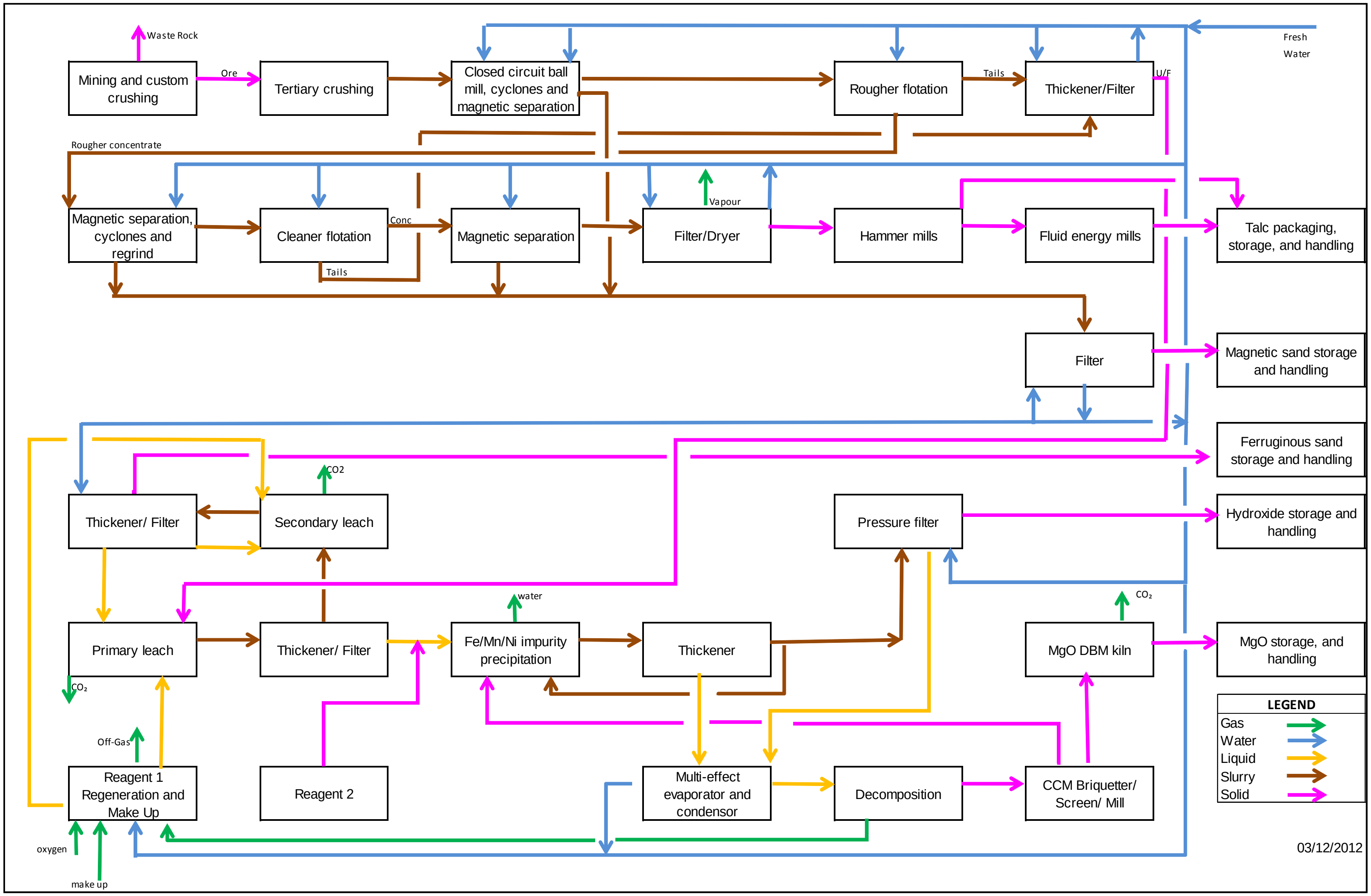


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Table 17.1
Key Plant Process Parameters

ROM feed rate	500,000 dry t/y
Feed talc grade	35.6%
Feed magnesite grade	52.1%
Operating availability	85%
Leach temperature	105ºC
Leach pressure	Atmospheric
Total leach retention time	2 h
Overall talc recovery	77%
Overall magnesium oxide recovery	95%
Annual talc production	137,060 t/y
Annual magnesium oxide production	118,293 t/y
Talc product purity	97%
Magnesium oxide product purity	98%

The plant consists of the following areas:

- Tertiary Crushing
- Grinding
- Flotation
  - Rougher Flotation
  - Cleaner Flotation
- Talc Processing
  - Drying
  - Micronization
- Leaching and Solution Purification
  - Primary Leaching Circuit
  - Secondary Leaching Circuit
  - Impurity Precipitation
- Magnesium Oxide Production
  - Solution Evaporation
  - Thermal Decomposition
  - Magnesium Oxide Sintering
- Product Packaging Plant
- Primary Reagent Recovery and Make-up Plant
- Process Reagents
- Air Systems
- Water and Steam Systems.

The design criteria, simplified process flowsheets and preliminary equipment list have been developed in conjunction with the prefeasibility study currently being prepared by Jacobs.

17.1.2 Tertiary Crushing

Globex will contract the mining, primary and secondary crushing and stockpiling of Timmins Talc-Magnesite material.

The tertiary crushing circuit consists of a hopper, feeder, bucket elevator, fine ore bin and roll crusher.

17.1.3 Primary Grinding

The primary grinding circuit is a closed-loop wet grinding circuit consisting of a ball mill, a classification cyclone cluster and two low-intensity magnetic separators (LIMS). The targeted particle size reduction is 80% passing 0.125 mm.

The cyclone underflow flows by gravity to a pump box from where it is fed to two LIMS installed in parallel. The LIMS tails are fed back to the primary grinding mill and the LIMS concentrate is pumped to the magnetic sand vacuum filter. The cyclone overflow is gravity fed into an agitated rougher flotation conditioning tank where a flotation agent is added.

17.1.4 Flotation

The following sections describe the rougher and cleaner flotation.

17.1.4.1 Rougher Flotation and Regrind

Slurry is conditioned with a collector reagent in a conditioning tank prior to flotation. The slurry is pumped from the conditioning tank to the first of four rougher flotation cells.

Rougher tails are pumped to a rougher tails thickener. An anionic polyacrylamide flocculant is added to the thickener to improve the settling characteristics of the solids. The thickener underflow is pumped to an agitated rougher tails thickener underflow tank, while the thickener overflow is pumped to a flotation area reclaim water tank.

The thickener underflow is pumped from the thickener underflow tank to a rougher tails filter where dry cake is produced. The filter cake is discharged and conveyed to the first primary leach tank. The filtrate is pumped to a flotation area reclaim water tank.

The rougher concentrate is collected in a (rougher) launder, and pumped by a vertical froth pump to a high-intensity magnetic separator (HIMS) in the regrinding area. The HIMS concentrate is pumped to a magnetic sand vacuum filter. The HIMS tails are pumped to a classification cyclone cluster. The cyclone overflow is discharged to a regrind mill discharge pump box. The cyclone underflow, with plus 0.1-mm size material, flows by gravity to a regrind mill, an attritor, where it is polished to 0.1 mm. The polished material is discharged to the regrind mill discharge pump box and pumped to the first cleaner column.

17.1.4.2 Cleaner Flotation

Cleaner flotation is carried out in three stages, each with one flotation column, followed by three mechanical cells. The columns and the cells in each stage are installed in a step arrangement to allow for flow by gravity.

The concentrate from the first stage column overflows to the second stage column. The concentrate from the first stage cells is collected in a launder and pumped by a vertical froth pump to the second stage column. The tails from the first stage cells are pumped to the rougher tails thickener.

The concentrate from the second stage column overflows to the third stage column. The concentrate from the second stage cells is collected in a launder and pumped by a vertical froth pump to the third stage column. The tails from the second stage cells are pumped to the first stage column.

The concentrate from the third stage column overflows to the third stage launder. The concentrate from the third stage cells is collected in the launder and pumped by a vertical froth pump to the cleaner concentrate HIMS. The tails from the third stage cells are pumped to the second stage column. The magnetic separator concentrate is pumped to the magnetic sand vacuum filter. The magnetic separator tails are transferred by pump to an agitated filter feed tank.

The magnetic sand vacuum filter filters the magnetic concentrates from primary grinding, regrind, and cleaner flotation circuits. The filtrate is pumped to a flotation area reclaim water tank. The filter cake is discharged to a load out area beneath the filter for loader transport to the magnetic sand storage area.

17.1.5 Talc Processing

The cleaner concentrate HIMS tails are discharged to an agitated filter feed tank from where they are is pumped to a cleaner concentrate pressure filter. The filtrate is pumped to the flotation area reclaim water tank.

The filter cake is conveyed via a belt conveyor to a talc flash dryer, where it is dried using hot gas. The talc powder is separated from the hot gas via a cyclone. The solids are then pneumatically conveyed to a storage silo. A bag house is provided to capture fine particles in the gas phase before it is vented to the atmosphere.

Cleaner concentrate talc from the silo is pneumatically conveyed to three hammer mills operating in parallel, where the particle size is reduced to 50% passing 7.5 microns. A portion of the hammer mill product is further reduced in size to 50% passing 2 microns using two fluid energy mills installed in parallel. The micronized product from the fluid energy mills is pneumatically conveyed to one of the talc product silos for storage.

17.1.6 Leaching and Solution Purification

The following sections describe the primary and secondary leaching, and impurity precipitation steps.

17.1.6.1 Primary and Secondary Leaching Circuits

The design of the primary and the secondary leach circuits is based on the testwork results provided by DMI and Pocock for the leach and solids/liquid separation tests, respectively.

The leach circuit consists of a two-stage leach. Each stage has four agitated tanks which are arranged in series and staggered in elevation to allow flow by gravity.

(i) Primary Leach Stage

Filter cake from the rougher tails pressure filter is fed to the first primary leach tank where it is mixed with secondary leach thickener overflow and secondary leach pressure filter filtrate. Regenerated reagent is also added to this tank. The discharge from the last tank of primary leach stage is pumped to the primary leach thickener.

The thickener is covered and vented to the tank vent scrubber. Flocculant is added to the thickener. The thickener overflow is collected in a primary leach thickener overflow tank from where it is pumped to impurity precipitation circuit. The thickener underflow is pumped to an agitated filter feed tank which is covered and vented to the local scrubber. The slurry is pumped to a primary leach pressure filter to produce washed filter cake. The filter is vented to a scrubber. The solids are conveyed to the first secondary leach tank. The mother liquor and wash filtrate are pumped to the impurity precipitation circuit.

(ii) Secondary Leach Stage

The feed to the first secondary leach tank consists of the primary leach pressure filter cake, secondary leach pressure filter wash water and the regenerated reagent. Discharge from the secondary leach tanks is pumped to the secondary leach thickener.

The thickener is covered and vented to the tank vent scrubber. Flocculant is added to the thickener to improve solids settling characteristics. The thickener overflow is collected in a secondary leach thickener overflow tank and then pumped into the first primary leach tank. The thickener underflow is pumped to an agitated tank which is covered and vented to the tank vent scrubber. The slurry is then pumped to a pressure filter where solution is removed producing a filter cake. The solids are discharged to a load out area beneath the filter for loader transport to the ferruginous sand storage area. The filtrate is pumped to the first primary leach tank.

17.1.6.2 Impurity Precipitation

The purpose of this step is to remove soluble nickel, iron, manganese, and aluminum impurities from the leached solution by adjusting the pH level of the solution.

The solution is pumped to the first of four impurity precipitation tanks which are installed in series and staggered in elevation to allow flow by gravity. The tanks are insulated, covered and vented to atmosphere. Magnesium oxide is added as solid powder to the solution raising the pH level to between 6.5 and 7. Metal salts react with the MgO to form metal hydroxide precipitates. The precipitation is operated at 80ºC.

The slurry leaving the fourth tank is pumped to an impurity precipitation thickener for solid/liquid separation. Flocculant is added to the thickener to improve solids settling characteristics. The thickener overflow is pumped to the solution evaporation area. The thickener underflow is split to two streams – one is pumped to an agitated filter feed tank while the other is recirculated as seed to the precipitation stage aiming to produce larger precipitation floccs to improve solids/liquid separation.

The underflow is pumped from the agitated filter feed tank to the impurity precipitation pressure filter. The filter produces a washed filter cake. The solids are discharged to a load-out area beneath the filter for loader transport to the hydroxide storage area. The mother liquor and wash filtrate are pumped to the PLS evaporator.

17.1.7 Magnesium Oxide Production

The following sections describe the magnesium salt solution evaporation, decomposition to form active magnesium oxide and the oxide sintering.

17.1.7.1 Solution Evaporation

The purpose of this step is to remove excess water in the magnesium salt solution to control hydration at the tetrahydrate stage.

The purified leach solution is stored in a covered and insulated evaporation feed surge tank. A triple effect concentrator operates at temperatures ranging from 105ºC to 160ºC using high pressure steam. The process vapour from the concentrator is condensed, collected, and sent to the leach area reclaim water tank.

17.1.7.2 Thermal Decomposition and Sintering

The purpose of this step is to obtain active magnesium oxide, also called calcined caustic magnesia (CCM). Part of the CCM is used in the impurity precipitation step and the remaining CCM is dead burned in a kiln.

The concentrated solution is fed by gravity directly to the decomposition circuit. The decomposition circuit consists of six indirect-heated screw heat exchangers (three evaporators and three decomposition units) and two coolers. Each heat exchanger has two hollow helical screws heated by thermal fluid. The final decomposition temperature reaches 560ºC. The decomposition product, magnesium oxide (MgO) is then cooled with cooling water to 80ºC in a screw cooler.

The vapours from the evaporator units are vented to combine with vapours of the triple effect stages. Only the decomposition off-gas is sent to a waste heat boiler where part of the heat is recovered as steam. The off-gas from the waste heat boiler is fed to the reagent condenser.

The cooled MgO powder is gravity-fed to the CCM briquetter, where the powder is compressed to form briquettes. The briquettes are conveyed to a briquetter screen where fines are removed. Briquettes are conveyed using a bucket elevator to the briquetted product bin.

The fines from the briquetter screen are gravity fed to a roll crusher. The roll crusher discharges into an impurity precipitation MgO bin for transport to the impurity precipitation area. The discharged material from a second leg is pneumatically conveyed back to one of the six CCM briquetters.

The briquetted product bin has two legs operating in parallel. Each leg discharges to one screw feeder, which feeds one bucket elevator. Each bucket elevator discharges into one dead burned magnesia (DBM) shaft kiln. The kilns are direct heated using natural gas and operate at 1,700ºC. The DBM briquettes are cooled down to 80ºC in the DBM cooler and conveyed to a bunker.

17.1.8 Talc and Magnesium Oxide Warehouse/Packaging Plant

The warehouse for both talc and magnesium oxide has an estimated floor area of 2,000 m^2.

The packaging plant has various product lines such as robotic bag packaging and palletizing system for fine talc, individual semi-bulk bag automated packaging systems for fine, medium and coarse talc and bulk loading systems for MgO and other talc products. Each packaging line includes a dust collector system.

A pneumatic conveyor loads bulk talc directly into 50 t tanker trucks. A front end loader is used for load out of bulk MgO. A concrete deck truck weigh scale is provided for accounting purposes.

17.1.9 Reagent Recovery and Make-up Plant

The following sections describe recovery of the prime reagent and make-up plant.

17.1.9.1 Reagent Recovery

The purpose of this step is to recover greenhouse gases (GHG) formed in the evaporation and decomposition stages by absorbing with weak reagent to produce regenerated reagent at concentration. The circuit remains proprietary property developed through micro plant testwork at DMI (see DMI, 2010).

The process plant tail gas emitted to the atmosphere contains 17 t/h of CO_2 produced by leaching.

17.1.9.2 Reagent Make-up Plant

Approximately 3% of reagent is lost to tailings, MgO product and scrubber tail gas. The purpose of this step is to produce make-up reagent from a raw material.

17.1.10 Plant Reagents

Common reagents required for the process plant include flotation agents, flocculant for solid/ liquid separation, platinum/rhodium catalyst for the top up of the prime reagent, and oxygen and peroxide for the prime reagent regeneration. Additional reagent systems are provided in the plant.

17.1.10.1 Flotation Agent

(i) Collector

Collector is used as frother in talc flotation. It is delivered in liquid form in drums. A distribution system is provided. The estimated consumption is 50 g/t of ore or 3.35 kg/h. Diaphragm metering pumps distribute the chemical to points of use in the talc flotation area.

(ii) Dispersant

A dispersant preparation system is provided consisting of a bag hopper with a discharge feeder, a wetting unit, mixing tank with agitator, a transfer pump, a storage tank and metering pumps. Freshwater is filtered and used for dispersant solution preparation. The make down concentration of the solution is 5% (wt). Diaphragm metering pumps distribute the dispersant to the users in the talc flotation area.

17.1.10.2 Flocculant

A flocculant preparation system is provided. The system consists of a bag hopper with a discharge feeder, a wetting unit, mixing tank with agitator, a transfer pump, a storage tank and metering pumps. Fresh filtered water is used for flocculant solution preparation. The make down concentration of the solution is 0.5% (wt). Diaphragm metering pumps distribute the flocculant throughout the plant.

17.1.10.3 Raw Material for Prime Reagent

Fresh reagent for the plant start-up needs to be purchased and delivered to the plant. A fresh reagent supply pump is provided to deliver the reagent to the regenerated reagent storage tank.

Raw material for the prime reagent is delivered in tank trailers to the site. A storage tank is provided on-site and a pump is provided to transport the liquid to the reaction circuit.

17.1.10.4 Oxygen

Oxygen is required for reagent regeneration. The oxygen consumption of 192 Nm^3/h is estimated by mass balance calculation. This is a small demand and on-site oxygen generation is not considered. Bulk liquid oxygen will be purchased and delivered in tank trailers to the plant. Equipment for the storage and supply of oxygen to the plant is provided by the oxygen supplier. The oxygen supply line is connected to the battery limit of the plant.

17.1.10.5 Hydrogen Peroxide

Hydrogen peroxide is used to oxidize the tail gas during the start-up and shutdown of the reagent regeneration circuit. An estimate of 1,500 t/y at 50% (wt) hydrogen peroxide is required.

17.1.11 Air

Two dedicated compressed air systems, plant air and instrument air, are provided for the plant. The plant air system consists of four operating and one standby 81-m^3/min compressors and intake filters, and associated equipment. Instrument air system consists of a 20-m^3/min compressor, an intake filter, and associated equipment. A minimum delivery pressure of 690 kPa(g) is designed for the systems. Plant air is stored in a plant air receiver, whereas the instrument air is first dried by a lower purge twin-tower desiccant air dryer and is then stored in an instrument air receiver.

17.1.12 Fuel

Natural gas is used for talc drying, steam generation, thermal fluid heating for magnesium salt decomposition, and MgO dead burning. The gas is delivered to the plant by a natural gas pipeline, pressure letdown station and distributed for use.

Diesel fuel consumption is mainly by mobile equipment, including two front-end loaders. A diesel tank and a diesel supply pump are considered in the design.

17.1.13 Water and Steam Systems

The following water systems are considered.

17.1.13.1 Fresh Water

Fresh water for the plant is pumped from four wells to the fresh water storage tank in the plant. Water is mainly used for cooling water makeup, reagent mixing, gland water, demineralized water feed, process water makeup, and firewater. The total fresh water required for the plant operation is 260 t/h.

17.1.13.2 Firewater

The fresh water tank includes a capacity for 4 h of firewater. The firewater package is a dual-drive skid-mounted system, including a firewater pump, a diesel-driven pump, a diesel fuel tank, and a jockey pump.

17.1.13.3 Flotation Process Water

Water collected from the thickeners and pressure filters in the flotation area is collected in the flotation area reclaim water tank. This water will be of satisfactory quality to be reused in the flotation circuit. Excess is pumped to the leach area reclaim water tank.

17.1.13.4 Leach Process Water

Water collected from the thickeners and pressure filters in the leach area and water condensed from the first stage of the solution evaporation is collected in the leach area reclaim water tank. This water contains reagent and is, therefore, redistributed back to the leaching circuit. Any excess leach process water is discharged to the tailings area.

17.1.13.5 Potable Water

A potable water treatment system, including a potable water tank and supply pumps, is installed to provide water for the plant. The estimated water requirement is 0.88 m^3/h based on 105 people in day shift.

17.1.13.6 Demineralized Water

The demineralization water system is installed to generate demineralized water required for boiler feed water makeup. The system consists of anion and cation columns. Intermediate tanks and pumps for regeneration of ion exchange resins are also included.

17.1.13.7 Cooling Water

Countercurrent flow design cooling water towers are considered to provide cooling water to the users in process areas including the reagent regeneration circuit. Four cells are required to provide sufficient cooling capacity. The cooling water supply temperature is 20ºC with return at 40ºC.

17.1.13.8 Chilling Water

Three centrifugal chillers are provided to supply chilled water to the reagent regeneration circuit. Each chiller supplies chilled water at 7ºC.

17.1.13.9 Steam

(i) A high-pressure steam boiler package is installed to produce saturated steam at 160°C. The package includes condensate tank, deaerator and associated pump, natural gas fired boiler and fans, boiler feed water pumps, blowdown tank, and control system.

High pressure steam is required for solution evaporation, and dry steam and low pressure steam makeup. Dry steam is used for talc micronization.

(ii) Low pressure steam is generated in two waste heat boilers which use waste heat from magnesium salt decomposition and reaction of the raw material during make up of the prime reagent.

Low pressure steam is utilized for process temperature control in the leach circuits, the evaporator and superheater.

17.2 PROCESS DISCUSSION

17.2.1 Energy Requirement

The energy required is in the form of natural gas, steam, diesel and electric power.

- Natural gas, estimated 280 GJ/h or 4.1 GJ/t of ore, is used for steam generation, 1 GJ/t for talc drying, plus heating of thermal fluid, and magnesium oxide dead burning. The natural gas usage is distributed as follows: 41% to talc processing, 18% to solution evaporation, and 42% to magnesium salt decomposition and dead burning.

- Diesel, at 65 L/h, is required mainly for the plant mobile equipment, such as front-end loaders for material reclaim and plant vehicles. It is a relatively small consumption compared with the consumptions of other forms of energy in the process.

- To reduce the energy required for steam generation, a waste heat boiler is considered on the decomposition off-gas streams. Without the waste heat boiler, the energy requirement would be higher.

- The total connected electric power requirement is 18 MWh with the main consumers being the chiller at 4 MWh, recovery of prime reagent (due to large recirculating pumps) and talc grinding.

17.2.2 Water Requirements

The water balance is included in Appendix A3 (not included with the present report). The consumption of fresh water is 260 t/h. The major water loss is through evaporation in the cooling tower at 151 t/h. The amount of water lost to tailings is 6 t/h. Excess water from the leach plant is currently estimated at 0.42 t/h and cannot be used in other parts of the plant in the current flowsheet. Further study into utilizing the excess water is needed.

17.2.3 Reagent Requirements

Peroxide is required to neutralize the GHG tail gas in the scrubber during shutdowns. The annual cost of the amount needed is estimated to $1,000,000/a. Continued work to determine cost saving opportunities is warranted.

The flocculant consumption is estimated based on the Pocock report (Pocock, 2010). The high flocculant usage suggests that improvements are possible by modifying the application or by screening alternate products.

It is estimated that 0.27 t/h of oxygen is required in the reagent regeneration circuit. This number could be lower in real production due to ingress air into the system.

17.2.4 Magnesium and Reagent Losses

Magnesium loss occurs in the mixed hydroxide precipitation and filtration steps. Reagent tends to be bound in the solids due to inefficient cake washing. This can be minimized with higher accuracy pH control, better performing filter equipment and improved solids washing technique.

Reagent losses are in the forms of salts in leach tailings, of calcium salt in magnesium salt solution (which does not decompose at the temperature of magnesium salt decomposition), and of residual GHG in the vent gas after the final scrubbing stage. To minimize reagent loss, adequate washing of leach tailings before discharge, higher decomposition temperature, and high efficiency scrubbing of GHG gas should be considered. However, this should be based on a balance between operating cost and capital cost.

17.2.5 Carbon Dioxide and Greenhouse Gas Emissions

The total CO_2 emissions are estimated at 32 t/h (includes talc dryers, GHG scrubbers, and kilns) and the GHG emissions after the final scrubber are 1.1 kg/h. The health, safety and environmental (HSE) requirements for emitting CO_2 and GHG gases need to be investigated. The CO_2 capture technology and the potential for producing value added specialty products should be investigated. A GHG dispersion model will provide useful data on scrubbing requirements.

18.0 PROJECT INFRASTRUCTURE

This section outlines the infrastructure and services required to support the development and operation of the Timmins Talc-Magnesite project.

Existing infrastructure, in the form of roads, electrical power and communication networks, lies in relatively close proximity. The contracts needed to gain access to the services will be small in magnitude.

18.1 GENERAL

The plant site is located approximately 13 km south of the Timmins city limits in Ontario. Access by road is along Pine Street south to a point where Mount Joy River Road runs east. This route travels across the southern property line of the site which lies next to the Wishbone high voltage transmission corridor.

The current PEA is based on assuming predominantly flat topography for the plant site. Topographic survey and soils investigation will be acquired for the next phase of the project.

Site preparation consists of clearing and grubbing of an area approximately 73,000 m^2 to a depth of 900 mm which consists of top soil, followed with a backfill to 300 mm. The region is in an area with frost depths to 1.8 m. At least 2.0 m depth will be considered for spread footing foundations.

The large pieces of process equipment are represented on the layout drawing (see Figure 18.1). Pumps, fittings, and piping are omitted for clarity, but space allowances are provided.

The layout emphasizes placement of the equipment in an order following the process sequence. Peripheral facilities such as assay laboratory, water treatment, chillers and cooling towers and the warehouse appear on the layout, with final locations and configurations needing optimization.

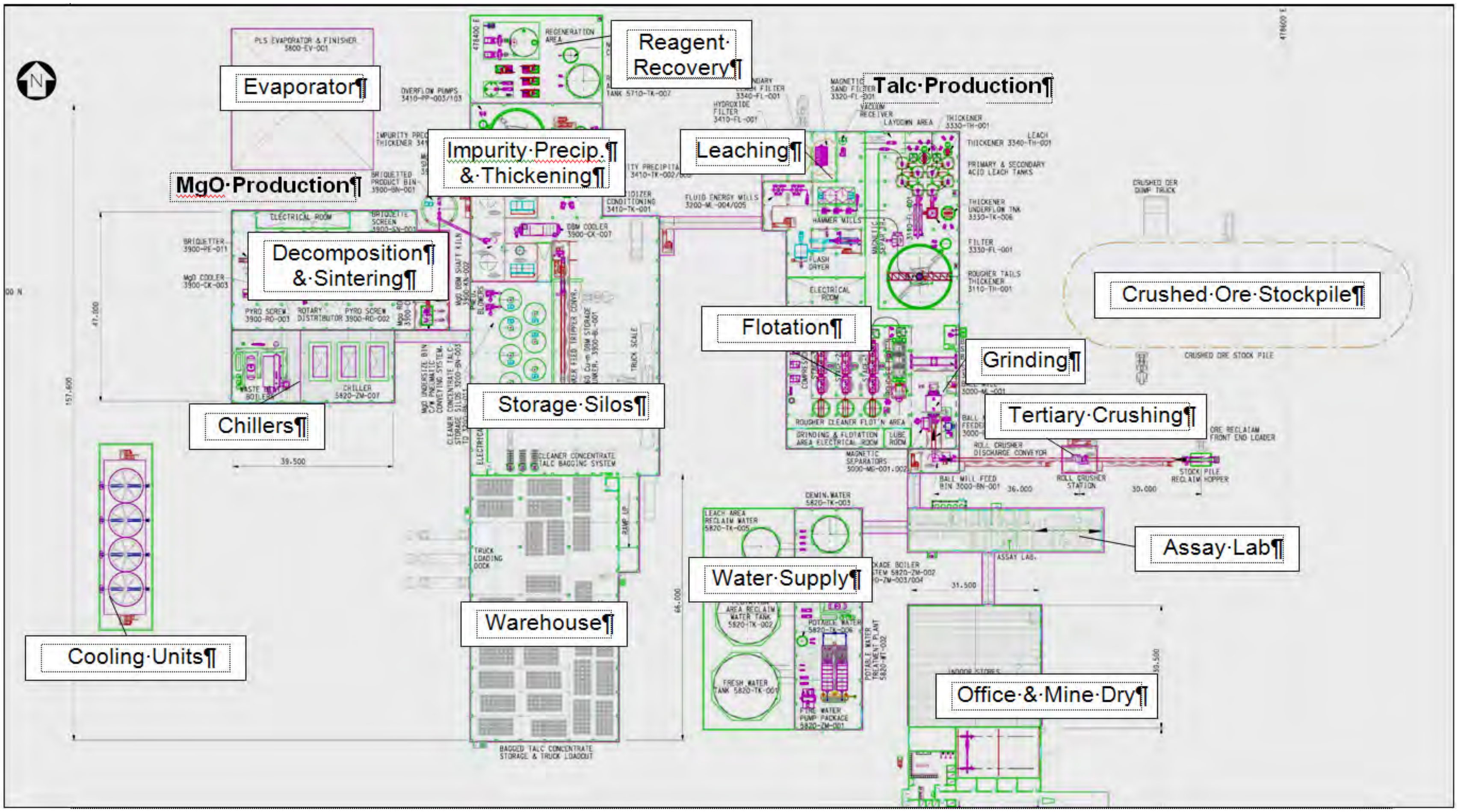
Elevations and sections will be developed once sufficient detail has been obtained from the suppliers of the plant equipment.

18.2 POWER

18.2.1 Power to Site

The project will obtain electricity from an existing 115 kV transmission line situated several kilometres to the west. The connecting transmission line will be constructed on a turnkey basis by a local contractor.

Figure 18.1
Timmins Talc-Magnesite Process Plant Footprint



The scope battery limit for incoming power is the secondary terminal point of the 115/35 kV power transformer at the main switch yard of the Timmins Talc-Magnesite project site.

18.2.2 Plant Power Distribution

The switch rooms feeding each part of the plant are included in the infrastructure budget.

The electrical system for the plant includes the following main features.

18.2.2.1 Main Plant Substation

The 115-kV transmission line will terminate at the Globex plant switchyard.

The switchyard will consist primarily of overhead busbar, lockable isolators, circuit breakers, current and voltage transformers, surge diverters, controls, 115/35-kV power transformers, 35 kV indoor switchgear. Protective impermeable bunding will be built around the transformers and other electrical equipment containing oils/fluids. A diesel powered back-up generator set is to be installed.

18.2.2.2 Area Unit Substation

Various plant unit substations will be provided for power distribution to drives and other services.

Each unit substation will consist of, as applicable, 35 kV, 4.25 kV and/or 600 V switchgear, MCC, VFD's, control system panels, communication hubs, power distribution panel, UPS, grounding and other utility services (HVAC, lighting, telephone, fire detection panels).

18.2.2.3 Emergency Power Supply

The plant will be provided with an emergency power train comprising a 2 MW packaged diesel generator located outside the main plant electrical room, complete with day tank for diesel fuel, synchronising gear and controls.

Changeover from mains to diesel power will be a manual switching operation. Safety and isolation from the mine distribution network is maintained via mechanical and electrical interlocks. Start-up of generators will be initiated automatically through the plant control system.

18.3 BUILDINGS

18.3.1 Administration

Only minimal space for offices is needed at the plant site. Workstations for the operations manager, traffic co-ordinator and the shift supervisor will be made available on site.

18.3.2 Maintenance

A workshop with tool crib, welding machines, cutting table and brake press, storage area for spares and hardware will be available in the maintenance shop.

18.3.3 Assay Laboratory

The assay laboratory is essential for the operation of the plant. The laboratory will be well-equipped with analytical equipment and manned by technicians for all shifts.

18.3.4 Warehouse

The warehouse is described in Section 17, Recovery Methods (17.1.8).

18.3.5 Truck Shop

Maintenance of the mobile fleet will be conducted at repair facilities located nearby in Timmins. Oversize vehicles will be transported on a flat deck trailer.

18.3.6 Explosives

The preparation and handling of blasting agents will be by the mining contractor. A suitably secure location for the trailer will be selected by the contractor.

18.4 WATER AND SEWAGE

18.4.1 Fresh Water Supply

The process requires a constant supply of water necessitating 100% duty from the water system. In a cold climate the system must be protected from freezing by either electrical tracing or back-up power to run critical pumps and maintain circulation

Depending on the requirement of the plant site, the number of wells or size of water intake from the local water source will need to be determined at a later study phase.

18.4.2 Potable Water Treatment

The supply of potable water, whether sourced from a local river or from boreholes on the property, will require treatment before being certified for drinking. The quantities of potable water needed to serve the plant will be determined during the next study phase. Consideration will be given to bottled water deliveries if a cost benefit is realized.

18.4.3 Sewage Treatment

Collection tanks will be vacuum pumped into tanker trucks specializing in the removal of sludge.

18.4.4 Waste Management

Suitable areas will be designated for the storage of domestic waste and solid refuse scheduled to be produced over the life of the mining operations.

A contract to haul solid waste from the site will need further review during the next phase of engineering

18.5 BULK FUEL STORAGE

Mobile equipment will be refuelled from a local filling station requiring fuel truck deliveries.

18.6 COMMUNICATIONS

Wireless phone service in the area will be developed. An existing pole line on Pine Street will provide connectivity to the local telephone service.

18.7 SITE ROADS

A geotechnical investigation will be required to complete the design of site roads.

Regular watering and grading will be required for gravel roads to maintain an acceptable surface and to limit dust generation.

18.8 PLANT FIRE PROTECTION SYSTEM

Piping is to be provided for fresh water from the pump house to the fresh water collection tank. All lines are to be pre-insulated HDPE pipe of varying diameters. Piping will be laid at grade or in partially cut trenches. The lines are to be buried only where required to traverse roadways.

A piping system will be provided for the firewater pump package and distribution system at the process plant.

The facilities as designed would satisfy typical fire insurance company guidelines, such as Liberty Mutual or Factory Mutual, whose requirements generally exceed local regulations in industrial applications. During further phases of engineering, this system will be reviewed by the appointed local technical institute to ensure acceptance and compliance with the local regulations.

19.0 MARKET STUDIES AND CONTRACTS

It is proposed that 2.47 Mt of high brightness talc and 2.381 Mt of high purity magnesia (magnesium oxide) will be recovered as saleable products from the Timmins Talc-Magnesite property. Average annual production rates over the first 20 years of mine life, as set out in the economic model, are 123,500 t/y of talc and 119,065 t/y of magnesia.

The Roskill Consulting Group Ltd. (Roskill) was retained by Globex to provide market analyses for talc and magnesium compounds. Roskill prepared two reports based on desk research and interviews, with a focus on markets in the Great Lakes region:

- Analysis of the North American market outlook for talc, dated October, 2010. (Roskill, 2010a)

- Analysis of the North American market outlook for magnesium compounds, dated 2 November, 2010. (Roskill, 2010b).

Globex also provided more detailed data on the North American talc market compiled by an independent talc market specialist.

The following discussion is based on the Roskill reports and detailed talc market data, supplemented by currently available data where needed.

19.1 TALC

Markets for talc are based on the physical and chemical characteristics of the mineral, including whiteness, chemical resistance, high dielectric strength, high thermal conductivity and low electrical conductivity. Macrocrystalline talcs have high aspect ratio and are used as functional fillers to reinforce plastic resins, and in architectural paints and marine and industrial coatings. Talcs with high brightness and purity are particularly valued in the reinforced polyolefins used in automotive and appliance parts since, even at high loadings, the talc does not darken the resin.

The Timmins Talc-Magnesite deposit contains macrocrystalline talc comparable in brightness to Chinese high brightness talc and has a low iron oxide content. The project is well-located to supply the key North American markets for this material. There are no existing producers in North America of high brightness talc that can compete in terms of quality with imported product from China.

Roskill estimates that up to 140,000 t/y of bright lump talc has been imported from China to the United States. High brightness talc accounts for, perhaps, 20% of total world talc reserves and the majority is located in China and India. India is not a major player in international trade. China’s reserves of bright talc are declining, however, and coupled with that, is the increasing emphasis placed by the Government of China on developing domestic markets for a range of minerals and restricting exports of raw materials. There is increasing concern regarding the availability of supply of high brightness talc from China and Roskill believes that consumers will welcome a new North American producer in the market.

Roskill concluded that the automobile sector is the principal market for high brightness talc that is imported into the United States from China. It is in applications in the automobile sector that talc has the strongest technical advantages compared to other minerals, where talc is less-price sensitive than in other markets and where the risk of substitution by other minerals is lower. Further, the use of talc-filled polypropylene is gaining market share from ABS (acrylonitrile butadiene styrene) in the automobile sector due to its lower weight.

19.1.1 Markets

There are three key market segments for talc in North America: the automobile industry (where talc is used in polypropylene, technical ceramics, paint and rubber), construction (paint, asphalt roofing and ceramic tiles) and consumer products (paper, cosmetics, pharmaceuticals and a range of minor uses).

The automobile sector is the principal market for high brightness talc imported to the United States from China and is the sector in which material from the Timmins Talc-Magnesite project is expected to compete directly. Roskill is less optimistic over the short to medium term on the outlook for talc in the construction and pulp and paper sectors in North America. This is due to the recessionary conditions which have severely impacted residential construction, and general trends in the pulp and paper industry.

Talc produced and sold in the United States is broken down by end-use sector as shown in Table 19.1.

Table 19.1
End-uses for Talc Produced in the United States
(thousand t)

	2006	2007	2008	2009	2010
Ceramics	248	209	109	95	111
Cosmetics	10	16	14	16	16
Paint	153	128	124	81	88
Paper	124	143	100	81	101
Plastics	41	31	43	39	40
Roofing	61	51	49	31	41
Rubber	23	26	17	14	11
Other	99	77	80	65	47
Total	**760**	**681**	**536**	**421**	**454**

Roskill, 2010a; USGS, 2010a.

When imported material is included, the estimated breakdown is as follows: plastics, 26%; ceramics, 17%, paint, 16%; paper 16%; cosmetics, 7%; roofing, 6%; rubber 3% and other, 9% (USGS, 2012a). Roskill believes that a very high proportion of the lump talc imported into the United States is destined for use in plastics, as shown in Table 19.2.

Table 19.2
Estimated Consumption of Domestically Produced and Imported Talc, 2009

	% of Total		Apparent Consumption
	Domestic	Imported	(thousand t)
Plastics	10	22	96
Paint	21	17	74
Paper	20	16	70
Ceramics	18	15	65
Roofing	8	7	30
Cosmetics	3	5	22
Rubber	3	3	13
Other	17	15	65
Total			**435**

Roskill, 2010a.

Apparent consumption in the United States decreased between 2007 and 2009, reflecting poor economic conditions, but increased to 622,000 t in 2010 and to an estimated 670,000 t in 2011.

19.1.2 Production

In 2011, total world production of talc and the related mineral, pyrophyllite, was estimated at 7.2 Mt by the USGS. China is by far the largest single producer, with output estimated at approximately 2.0 Mt/y. Other major producers are India, the United States, Finland, France and Brazil.

The operation formerly owned by Rio Tinto Minerals at Penhorwood, Ontario was purchased by Imerys through its acquisition of the Luzenac Group in 2011. The Madoc mine in Ontario, owned by Sherritt International, was closed in 2011. Production data for talc are withheld due to the small number of participants, but Canadian output of pyrophyllite, talc and soapstone totalled approximately 96,000 t in 2010. Talc is also produced in Montana, Vermont and Texas.

At over 120,000 t/y, the Timmins Talc-Magnesite project will be a major new North American producer.

19.2 MAGNESIA

At the request of Globex, Roskill’s report on magnesium compounds covered magnesium hydroxide, oxide, carbonate, nitrate and sulphate and, also, calcium nitrate, ammonium nitrate and precipitated calcium carbonate (PCC).

Among these, Roskill focused its analysis on caustic calcined magnesia (CCM), refractory magnesia (i.e., fused and dead burned magnesia, FM and DBM, respectively), magnesium hydroxide and PCC, and considered these products to have the most accessible markets for Globex.

Roskill concluded that the potential for Globex to become a major player in the North American refractory magnesia (DCM) market was "very good". Entry into the non-refractory markets would be more challenging, however, and would be best achieved through the development of relationships with distributors.

Since the economic analysis for this PEA is based on magnesia, markets for other products covered in the Roskill report are not discussed further.

19.2.1 Markets

The USGS estimated that, in 2011, approximately 52% of demand for magnesium compounds in the United States was in refractories. Significant volumes of refractory magnesia are imported to the United States, principally from China, and Roskill estimates that this may account for up to 15% of United States consumption. The USGS reported total imports at 323,000 t in 2010. (See USGS, 2010b and 2012b). Roskill considered that refractories producers in the United States would welcome a new North American supplier of refractory magnesia.

In the United States, CCM is used in environmental applications (water treatment and flue gas desulphurization), agriculture (principally animal feed) and for production of a wide range of magnesium chemicals. In 2010, the USGS estimated that environmental applications accounted for 47% of CCM, followed by agriculture at 28% and chemical intermediates at 28%. Based on data from 2008, Roskill reported that the majority of CCM used in environmental applications is converted to magnesium hydroxide, the principal use for which is in water treatment. Large volumes of CCM are imported to the United States, principally from China and, to a lesser extent from Canada (the USGS reported imports of 127,000 t CCM in 2010). However, material imported from China appears to be relatively low grade.

19.2.2 Production

Baymag Inc. mines magnesite in British Columbia and produces CCM at Exshaw, Alberta. The company reports CCM capacity of 100,000 t/y, a significant proportion of which is sold for use in animal feeds, paper pulp and water treatment. Virtually all Canadian exports of magnesia (approximately 30,000 t in 2010) originate in Alberta.

There is no Canadian production of DBM and Martin Marietta Magnesia Specialities is the only producer of DBM in the United States, for which output is not reported. CCM is produced by Martin Marietta and Premier Chemicals LLC. Output of CCM in 2010 was reported by the USGS at 162,000 t (USGS, 2010b).

The USGS estimated total production of magnesium compounds, worldwide, was 11.4 Mt MgO equivalent in 2010. Of this, just under 8.3 Mt MgO equivalent was based on DBM and 3.1 Mt MgO equivalent was based on CCM. China and Russia are by far the largest producers, accounting for nearly 60% of the total. China accounted for some 65% of United States imports of refractory magnesia in 2010. (USGS, 2010b).

19.3 PRICE OUTLOOK

19.3.1 Talc

Industrial Minerals (through www.indmin.com/Prices/Prices.aspx) reports prices for three South African talc grades and two Chinese grades, as shown in Table 19.3.

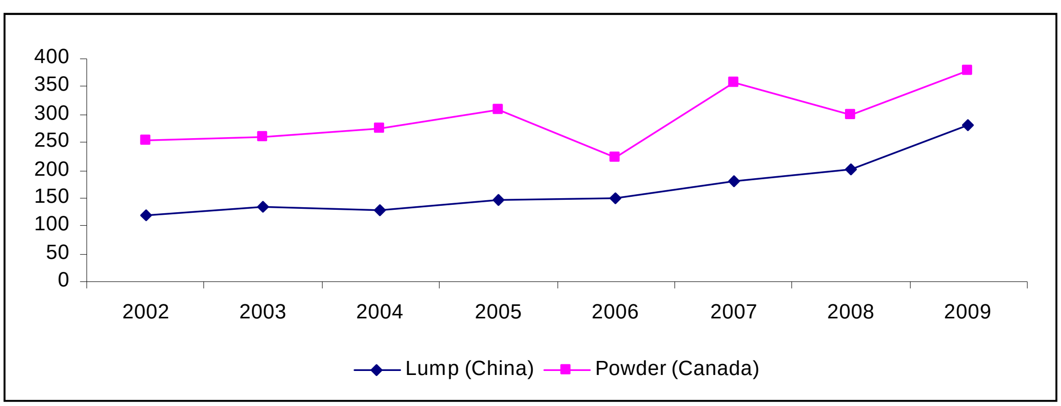
Table 19.3
Reported Talc Prices

	Basis	Roskill Report	March, 2012
South Africa			
Pharmaceutical grade	US$/t, fob Durban	460	460-480
Cosmetic/paint "A" grade	US$/t FCL's bagged	410	410-430
Paint/soap "B" grade	US$/t FCL's bagged	260	260-280
China			
Normal talc, 200 mesh	£/t ex-store	215-235	215-235
Normal talc, 350 mesh	£/t ex-store	220-245	220-245

Roskill, 2010a; Industrial Minerals.

Figure 19.1 shows Roskill's compilation of average values of talc imported to the United States between 2002 and 2009 based on data from the Global Trade Atlas. The general upward trend continued in 2010 with average values reported by the USGS at US$380/t for powdered talc from Canada and US$280/t for lump talc from China.

Figure 19.1
Average Value of Talc Imported to the United States From Canada and China, 2002-2009 (US$/t)



Roskill, 2010a.

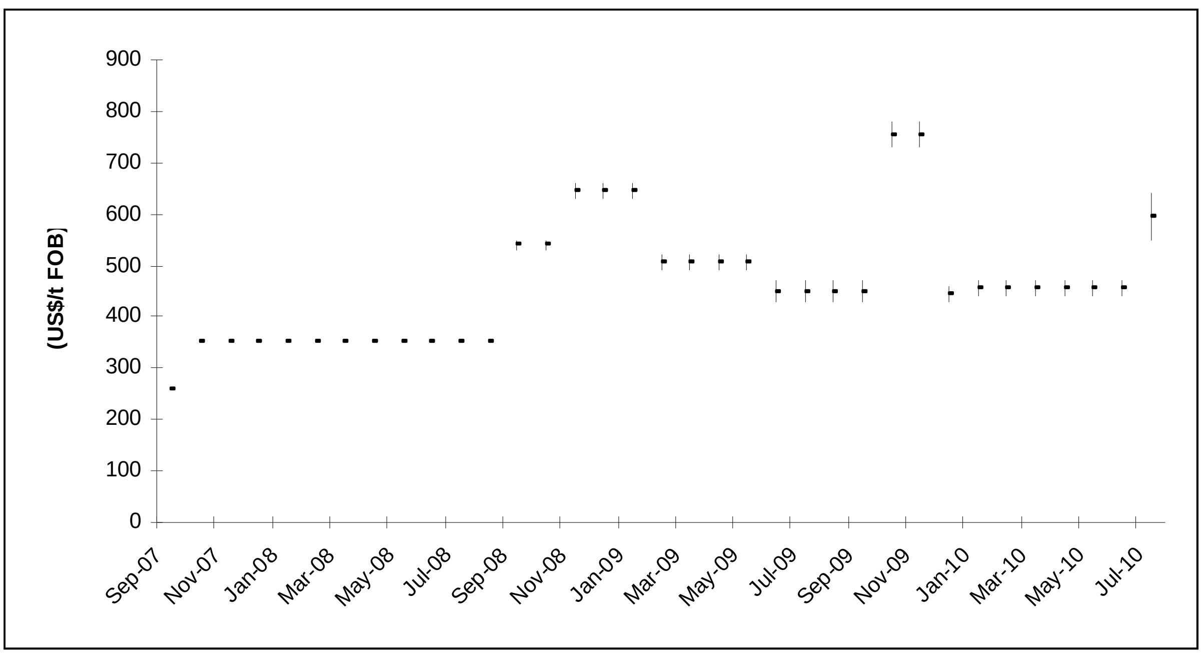
It should be noted, however, that the data shown in Figure 19.1 are averages based on a range of talc products, only a portion of which is high purity, high brightness material.

It is anticipated that sales of talc from the Timmins Talc-Magnesite project will have to be discounted in the first two years in order to take account of the time required for market acceptance. In the economic model, talc prices are built up from $400/t in year 1, and $475/t in year 2. Average revenue of $500/t has been used from year 3. Estimated revenues are based on detailed analysis of talc products based on imported material with specifications similar to those expected to be achieved by the Timmins Talc-Magnesite project.

19.3.2 Magnesia

Projected unit revenue of $570/t for magnesia is supported by analysis of average prices for various grades of DBM exported from China. Price ranges from September, 2007 through July, 2010 reported by Industrial Minerals are shown in Figure 19.2. As of March, 2010, lump DBM at 97.5% MgO was quoted in Industrial Minerals journal at US$560-600/t, fob China. Roskill considered that price trends in North America for refractory grade magnesia would follow global economic trends as recessionary conditions ease, and would also tend to increase in line with energy prices. Since mid-2010, when the Roskill report was completed, prices softened to the US$530-560 range between February, 2011 and January, 2012 but moved up sharply in February, 2012.

Figure 19.2
Monthly High/Low and Average Prices for Chinese DBM
(97.5% MgO lump, US$/t fob)



Roskill, 2010b.

Magnesia from the Timmins Talc-Magnesite project is expected to be immediately accepted in the market and no build up of revenue has been incorporated into the economic model.

19.4 CONCLUSIONS

Testwork completed to date indicates that talc from the Timmins Talc-Magnesite project will be a high purity, high brightness macrocrystalline product that will be readily accepted as a functional filler in polypropylene for the automotive industry. Roskill's research concluded that magnesia from the Timmins Talc-Magnesite project would be welcomed as a new source of refractory material. In both cases, products from the Timmins Talc-Magnesite project will offer North American buyers an alternative to Chinese supplies over which there is increasing concern relating to long term, high volume availability.

Micon concurs with the projections of unit revenues used in the project economic model.

19.5 CONTRACTS

There are no contracts or off-take agreements in place relating to talc or magnesia from the Timmins Talc-Magnesia property.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 ENVIRONMENTAL BASELINE STUDIES

Environmental baseline studies were initiated in September, 2009 by Blue Heron to assess a range of environmental variables including terrestrial habitat, aquatic habitat, geology, surface water quality and mine rock geochemistry as part of the overall mine permitting process. The baseline studies incorporated both desktop and field-based data gathering activities with a focus upon what, at the time, was two separate claim areas referred to as the Adams and Deloro claim blocks (see Adams and Deloro township claims in Figure 4.2). The results of the environment baseline studies for the period 2009 to 2011 are summarized below (adapted from Blue Heron, 2012).

20.1.1 Terrestrial Habitat

The project area is located within the Abitibi Plains ecoregion which borders the southern boundary of the James Bay Lowland ecoregion. Topography in the region is dominated by fine textured, level to undulating glacial deposits with a mix of bedrock outcrops and organic deposits.

The Timmins region is classified as having a sub-humid mid-boreal ecoclimate with average annual temperature of 1.3°C, and total precipitation of approximately 831 mm. Prevailing winds are from the south and have an average speed of 12 km/h.

Native plant species observed on the site are common and widespread in Ontario and typical of the Timmins region, consisting predominantly of black spruce with balsam fir, poplar and white birch. A total 52 species of birds were observed during the breeding bird survey. Figure 20.1 shows an ecosite classification map for the site.

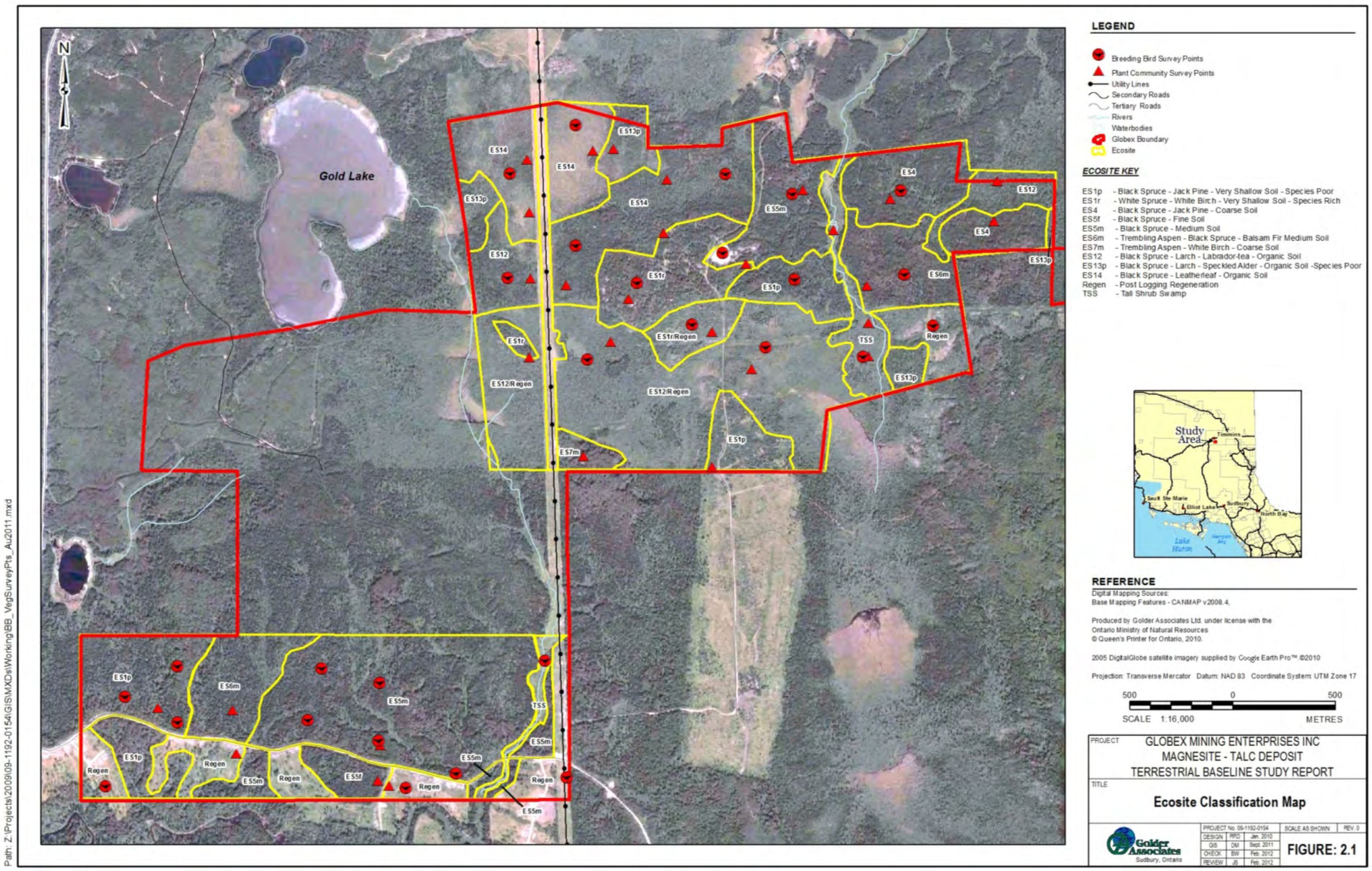
Characteristic wildlife of the region includes moose, black bear lynx, snowshoe hare, caribou, wolf and coyote. Incidental observations of wildlife and wildlife sign observed in the various plant communities on the site included red squirrel, moose and wood frog. A review of the incidental wildlife observations recorded for the site did not indicate the presence of provincially endangered or threatened native species of wildlife.

20.1.1.1 Conclusions

A review of the plant species list recorded for the site did not indicate the presence of provincially endangered or threatened native species of plants.

None of the bird species identified during field surveys were designated as provincially or federally endangered, threatened or of special concern.

Figure 20.1
Ecosite Classification Map



February, 2012.

Desktop records review indicated the potential for ten federally listed species and three provincially listed species to occur in the region containing the site. Based on species range information and habitat requirements none of these species has a high potential to occur on the site. Eastern wolf, olive sided flycatcher, rusty blackbird, Canada warbler, bald eagle and monarch butterfly are assessed as having moderate potential to occur on the site.

The desktop review indicated that Areas of Natural and Scientific Interest (ANSIs) and provincially significant wetlands are not known to be present on the site. Globex has since acquired the land located between the original two claim block areas. The requirement to carry out additional baseline study work due to the enlarged claim block area will be assessed during 2012.

20.1.2 Aquatic Habitat Assessment

The principal water bodies in the vicinity of the site are Shaw Creek, Gold Lake, and the Mountjoy River and associated tributaries. Shaw Creek and the outflow from Gold Lake cross the claim block area. Sampling of fish and benthic invertebrates was carried out at a number of locations shown on Figures 20.2 and 20.3.

20.1.2.1 Shaw Creek

Shaw Creek and its inflowing tributaries exhibited similar physical characteristics. This system is low gradient (flat) and appears to drain several large wetland areas. Given the low flows and shallow depths observed during assessments completed in 2009 and in 2010, portions of the small, first order tributaries and the headwater areas for Shaw Creek may freeze solid during the winter months. The fish community consisted of cyprinids (minnow species), primarily cool water species (e.g. brook stickleback, pearl dace, finescale dace etc.).

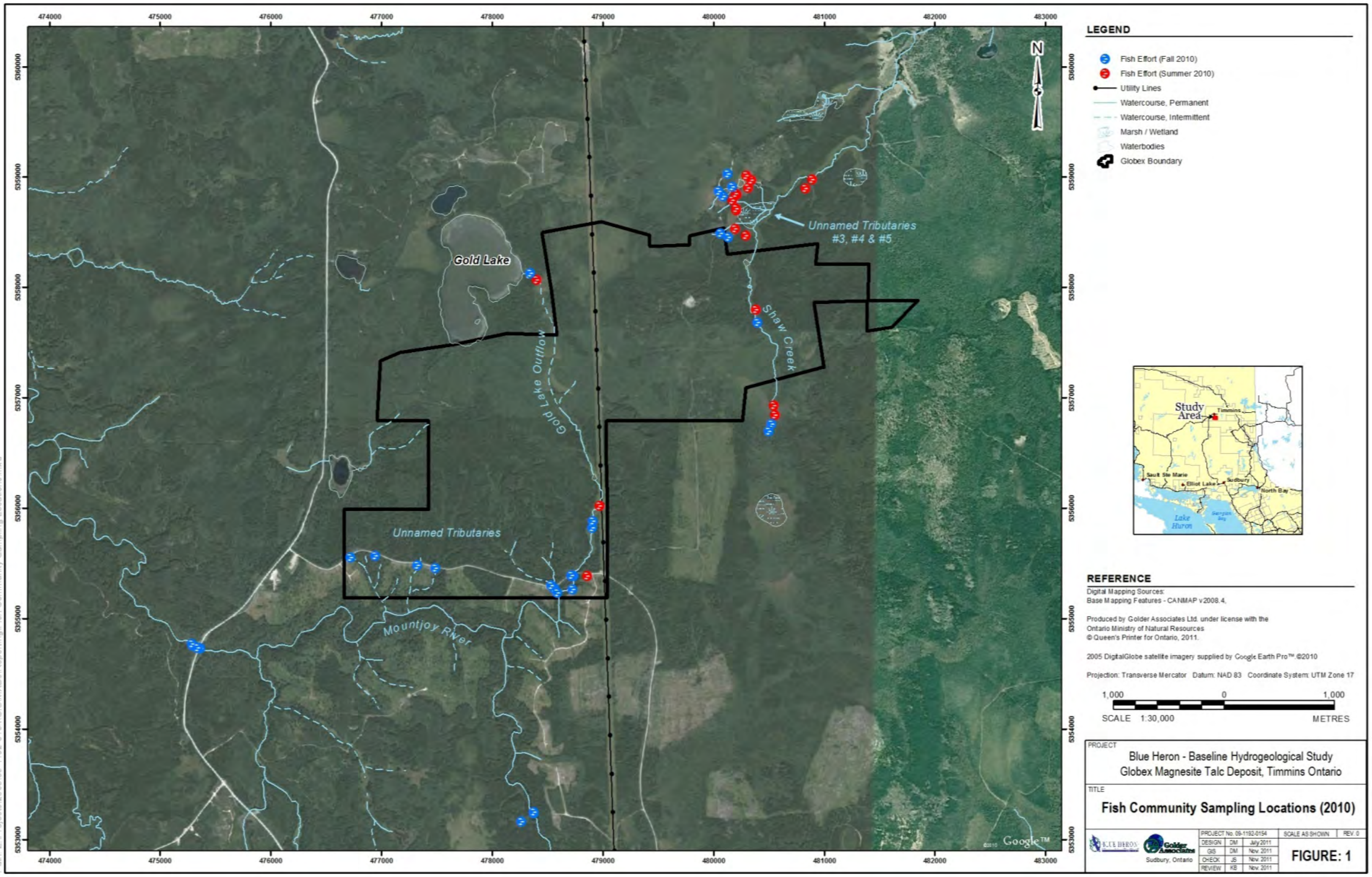
Benthic invertebrate community composition at all stations is comprised primarily of Chironomidae species, a group generally considered tolerant to environmental perturbations and capable of thriving in habitats unsuitable for more intolerant groups.

20.1.2.2 Gold Lake Outflow and Creek

The creek channel upstream of the access road is a low gradient, meandering, 1- to 1.5-m wide channel. A total of seven fish species, all small bodied species, were captured in the outflow and in the small tributary that flows across the access road and into the Gold Lake outflow. The creek empties into the Mountjoy River approximately 500 m downstream of the access road.

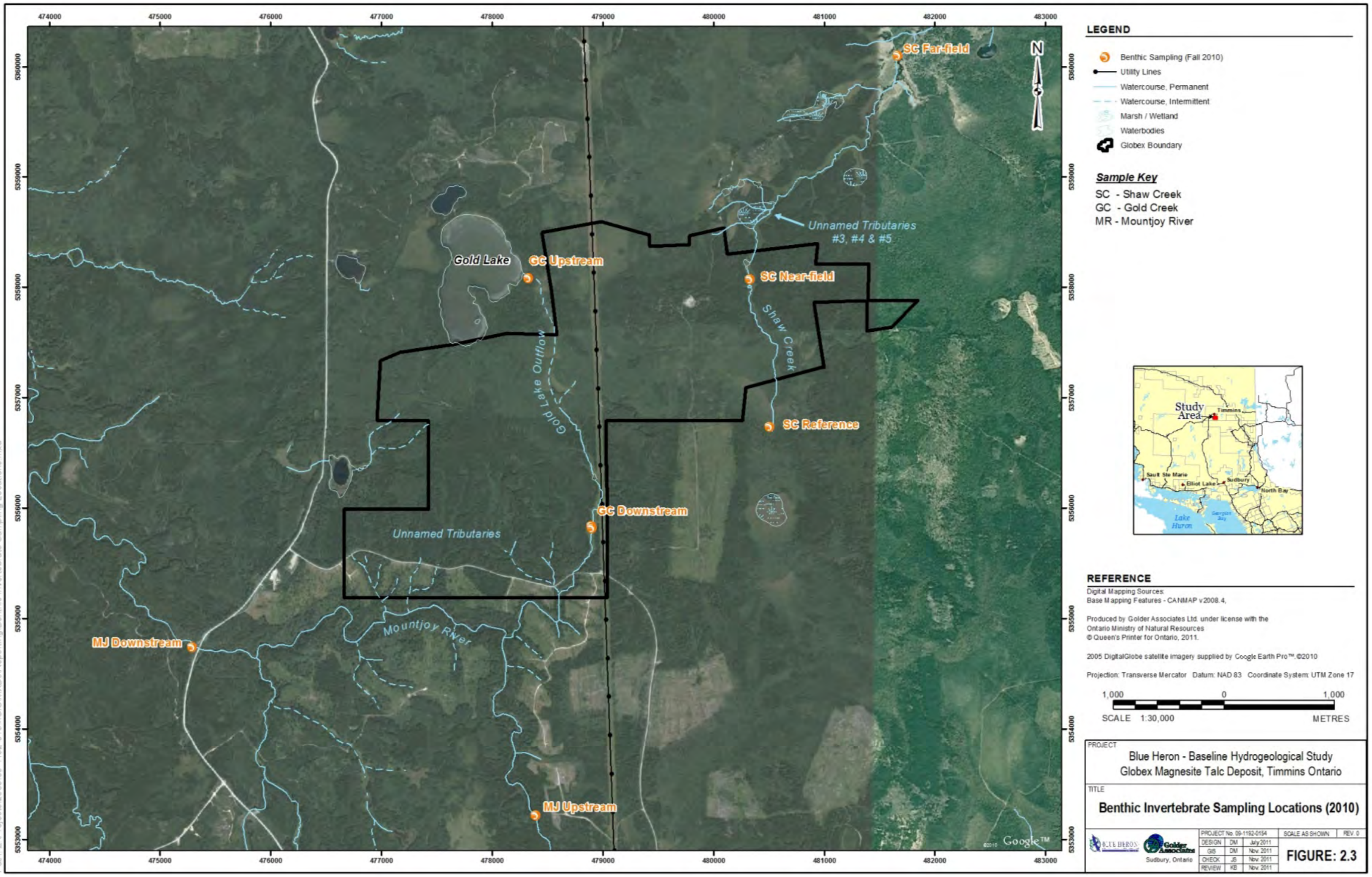
Gold Creek benthic invertebrate data suggest a tolerant community made up of few taxonomic groups.

Figure 20.2
Fish Community Sampling Locations



November 2011.

Figure 20.3
Benthic Invertebrate Sampling Locations



November, 2011.

20.1.2.3 Mountjoy River

The Mountjoy River is occupied by both cold and warm water fish species including several sport fish species. This diversity suggests that the river provides a wide variety of habitat characteristics and conditions. Anecdotal information indicates that the river is used by anglers fishing for brook trout and walleye.

Overall the Mountjoy River sample locations appear to support a diverse benthic community with moderate densities.

20.1.2.4 Conclusions

Although no cold water species (e.g. brook trout) were captured during baseline studies, conditions in the lower sections of Shaw Creek may be suitable to support such species. In consideration of its designation as a cold water stream by the Ontario Ministry of Natural Resources, Shaw Creek should be considered sensitive to disturbance. Potential effects of discharge from the project or physical disturbance to Shaw Creek should be avoided or mitigated.

20.1.3 Surface Water Quality Assessment

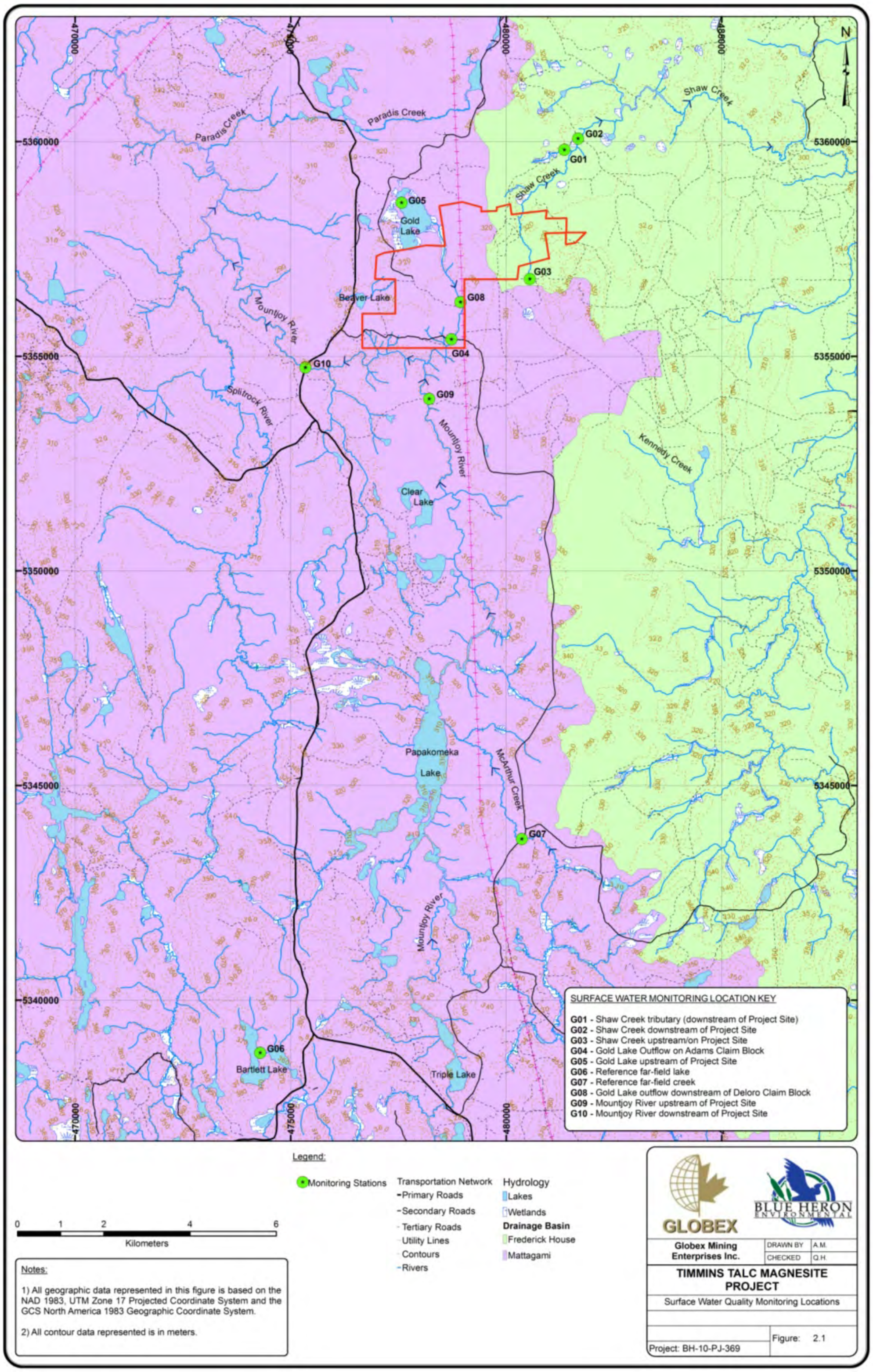
Baseline surface water monitoring locations are shown on Figure 20.4.

Overall, the water quality monitoring data indicate that the concentrations of the majority of parameters are within acceptable limits (governed under Ontario Regulation 560/94 Schedule 1 and Provincial Water Quality Objectives (PWQO)). Some moderately elevated concentrations of iron, aluminum and copper were noted at some locations.

20.1.3.1 Conclusions

The surface water quality results were generally consistent with typical surface water quality characteristics found in the Canadian Shield. Such waters are typically characterized by having relatively low alkalinity and hardness. Creeks and streams in Northern Ontario typically have an acidic pH due to the abundance of carbonic acid and organic (fulvic) acids associated with plant root respiration and organic decay. These sources of acidity are poorly buffered by the thin soils and typically carbonate-poor bedrock. Fulvic acid plays a significant role in the transportation and deposition of iron and aluminum in soils, which may account for the elevated concentrations found in surface water samples. Elevated total phosphorus concentrations were observed at times at a number of locations. Generally, the differences in water quality were minimal between the monitoring stations located in the vicinity of the site and the far field monitoring stations.

Figure 20.4
Surface Water Quality Monitoring Locations



March, 2012.

20.1.4 Hydrogeological Assessment

The field investigation program began in September, 2010 and comprised drilling and installation of two monitoring well nests and three single monitoring wells, carrying out rising head tests and groundwater sampling. Groundwater monitoring well locations are shown in Figure 20.5. Overburden deposits in the area of the site vary from thick areas of deposits of peat/topsoil, silt/clay, sand/silt mixtures and cobbles or boulders in a silty sand matrix overlying bedrock. Some areas near the centre of the site had exposed bedrock at surface.

Overburden hydraulic conductivity ranged from 7.4×10^{-7} m/s to 2.9×10^{-5} m/s. The bedrock hydraulic conductivity at the site ranged from 3.6×10^{-7} m/s to 4.2×10^{-7} m/s.

Groundwater at the site is expected to originate as infiltrating precipitation, with groundwater flow directions generally following topographic gradients toward local surface water features. Down gradient groundwater users that could be influenced by the mine development were not identified.

20.1.4.1 Conclusions

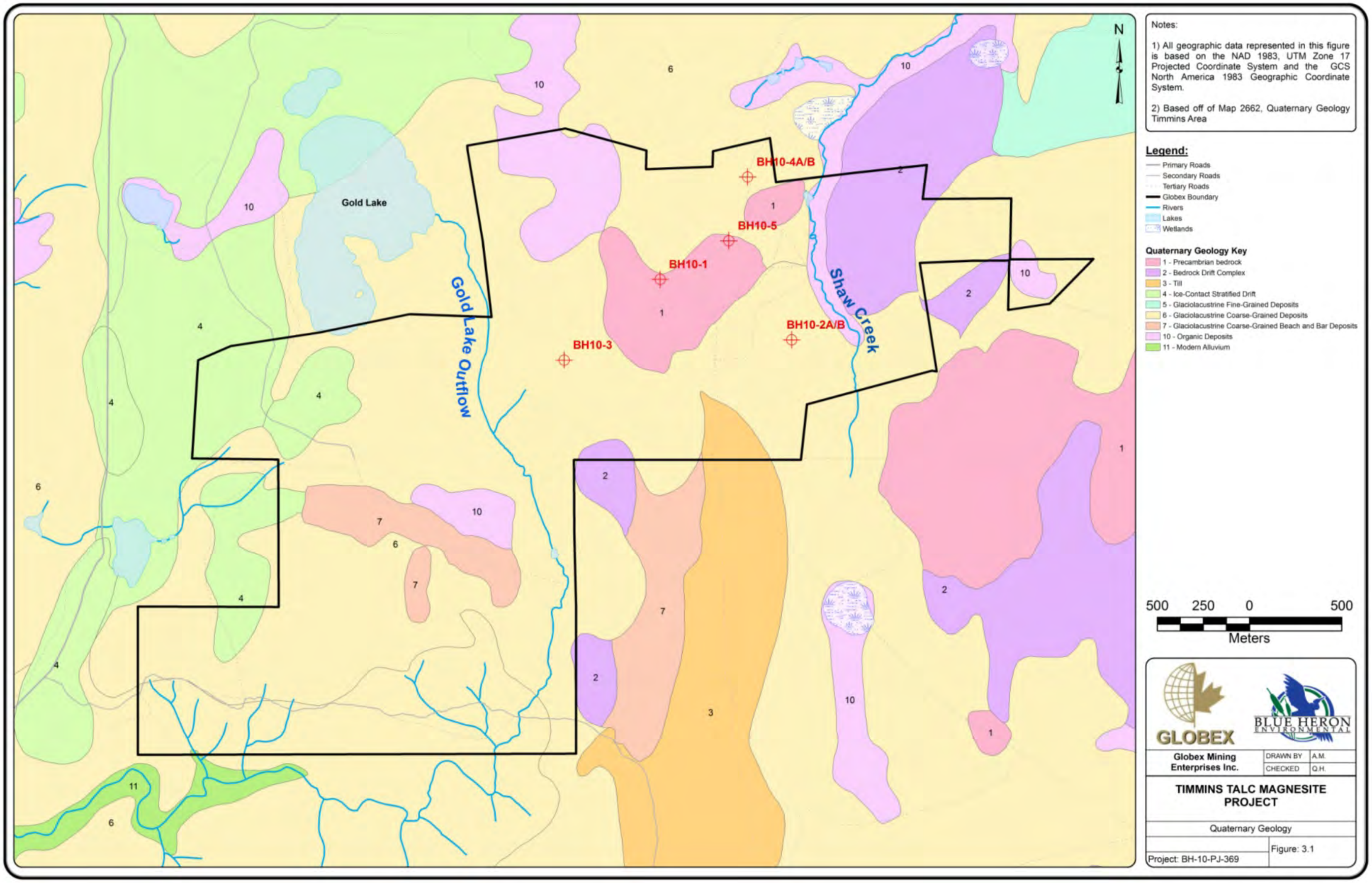
Background groundwater quality at the site is typical of recently recharged water, with a relatively low conductivity. The groundwater was found to be slightly basic. Parameters which have groundwater concentrations exceeding PWQO included aluminum, arsenic, cadmium, cobalt, chromium, copper, iron, nickel, phosphorus, thallium, uranium, vanadium and zinc. Parameters exceeding Ontario Drinking Water Quality Standards (ODWQS) included aluminum, chromium, antimony, iron, manganese (aesthetic objective) and hardness. Given the location of the site, these results are considered to be representative of pre-production conditions and, as such, the elevated concentrations identified are considered to be naturally occurring and are a consequence of the local mineralized geology.

20.1.5 Acid Rock Drainage and Metal Leaching Assessment

The acid rock drainage and metal leaching (ARD/ML) assessment generally followed the recommended methods and strategy outlined in the Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND, 2009).

A total of six carbonate ore samples, 21 waste rock samples and three hydrometallurgical pilot plant residue samples were submitted for a range of static tests including metals analysis, modified acid base accounting (ABA), short-term leach tests and mineralogy. All laboratory testing was carried out by SGS Lakefield Research Limited based in Lakefield, Ontario.

Figure 20.5
Ground Water Monitoring Well Locations



20.1.5.1 Conclusions

Waste rock, ore and hydrometallurgical residue samples contained low to negligible sulphide concentrations and were predicted to be non-acid generating. The sample of acid leach residue from pilot plant hydrometallurgical processing was acidic due to the process chemistry employed.

Metal leaching from all samples was generally very low to negligible. In comparison to PWQO, aluminum and vanadium concentrations were moderately elevated in leachate from some waste rock samples. It is acknowledged that comparison of short-term leach test data to water quality objectives that apply to receiving waters is not strictly appropriate. However, for screening purposes this comparison does indicate that vanadium and aluminum concentrations from runoff from waste rock may be relatively elevated.

The results of short-term leach testing of pilot plant hydrometallurgical samples indicates that management and possible treatment of runoff from magnesia (product), iron/manganese/nickel waste and acid leach residue will likely be required, if any of these materials are stockpiled or stored in a manner which exposes them to precipitation.

20.1.6 Recommendations

Recommendations related to environmental base line work have been made in Section 26 of this report.

20.2 PROCESS SOLIDS MANAGEMENT

The following discussion on process solids management was adapted from Golder (2011b).

20.2.1 Types of Process Solids

Ore processing will produce talc and magnesite products which will be loaded out directly from hoppers into rail cars, with no need for temporary storage piles.

Storage of three materials will be required on site:

- Temporary storage of two potentially saleable by-products:
  - Magnetic sand
  - Ferruginous sand
- Permanent on-site storage of a hydroxide filter cake in an engineered basin.

Neutralization of the barren solution generated at the mill will produce a hydroxide sludge which will be dewatered to produce the filter cake. It is understood that the filter cake will comprise about 80% iron hydroxide and about 10% magnesium hydroxide (by weight), and that it will also contain nickel, chromium and manganese, as well as nitrates. While there is some prospect that the hydroxide filter cake could be a saleable by-product, for planning purposes, it has been assumed that this material will have to be stored permanently on site as a waste.

20.2.2 General Storage Facility Layout

The mineral processing plant (mill) will be located on the Adams Block. Figure 20.6 shows a potential general layout of the three storage facilities, as well as the assumed mill location within the Adams Block. A draft drawing of the generic storage/disposal design for the hydroxide filter cake and sand by-products is shown in Figure 20.7.

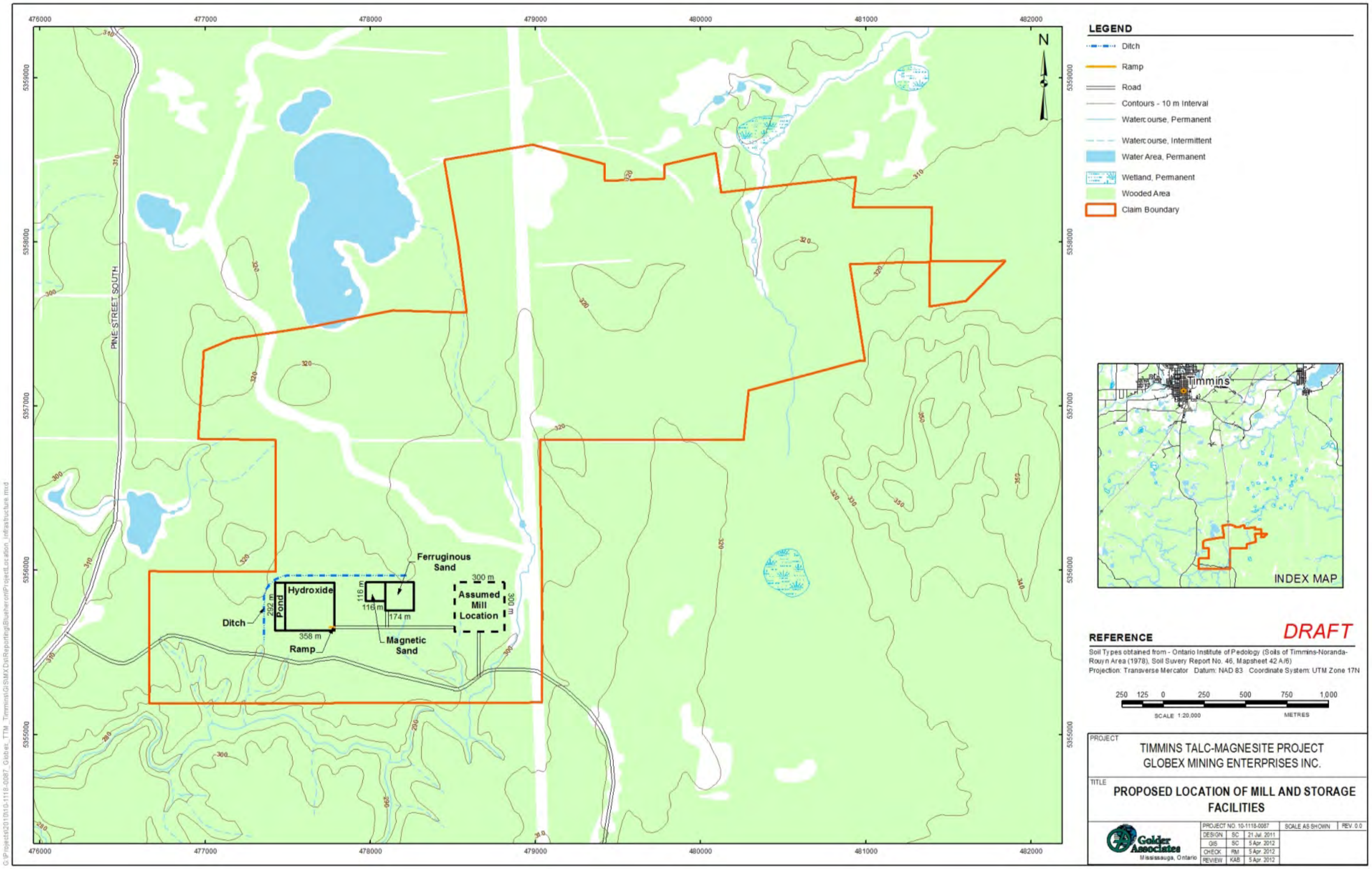
20.2.3 Hydroxide Residue Storage Basin

It is assumed that the moisture content of the filter cake will be about 20% (by weight). The material could either be trucked to the storage basin, or it could be slurried with water and pumped into storage. It is recommended that it be trucked as a filter cake because doing so will simplify the storage and management of the waste and will allow for a smaller storage facility. Within the storage basin, the filter cake will be dumped and then spread in layers with a dozer, eventually forming a rectangular stack.

It is proposed that the storage basin be lined in order to mitigate against the possibility of metal remobilization if the material is exposed to acidic precipitation. In addition, the surficial geology conditions suggest that the facility will be sited on pervious outwash sands, which are likely to contain an unconfined aquifer hydraulically connected to the adjacent esker system. The proposed liner system will comprise (from bottom up): a base layer of compacted silty clay, a geomembrane (assumed 1.5 mm (60 mil) HDPE), a geotextile, and a granular cover layer. The granular cover layer will be designed to safely support trucks and dozers without damaging the geomembrane.

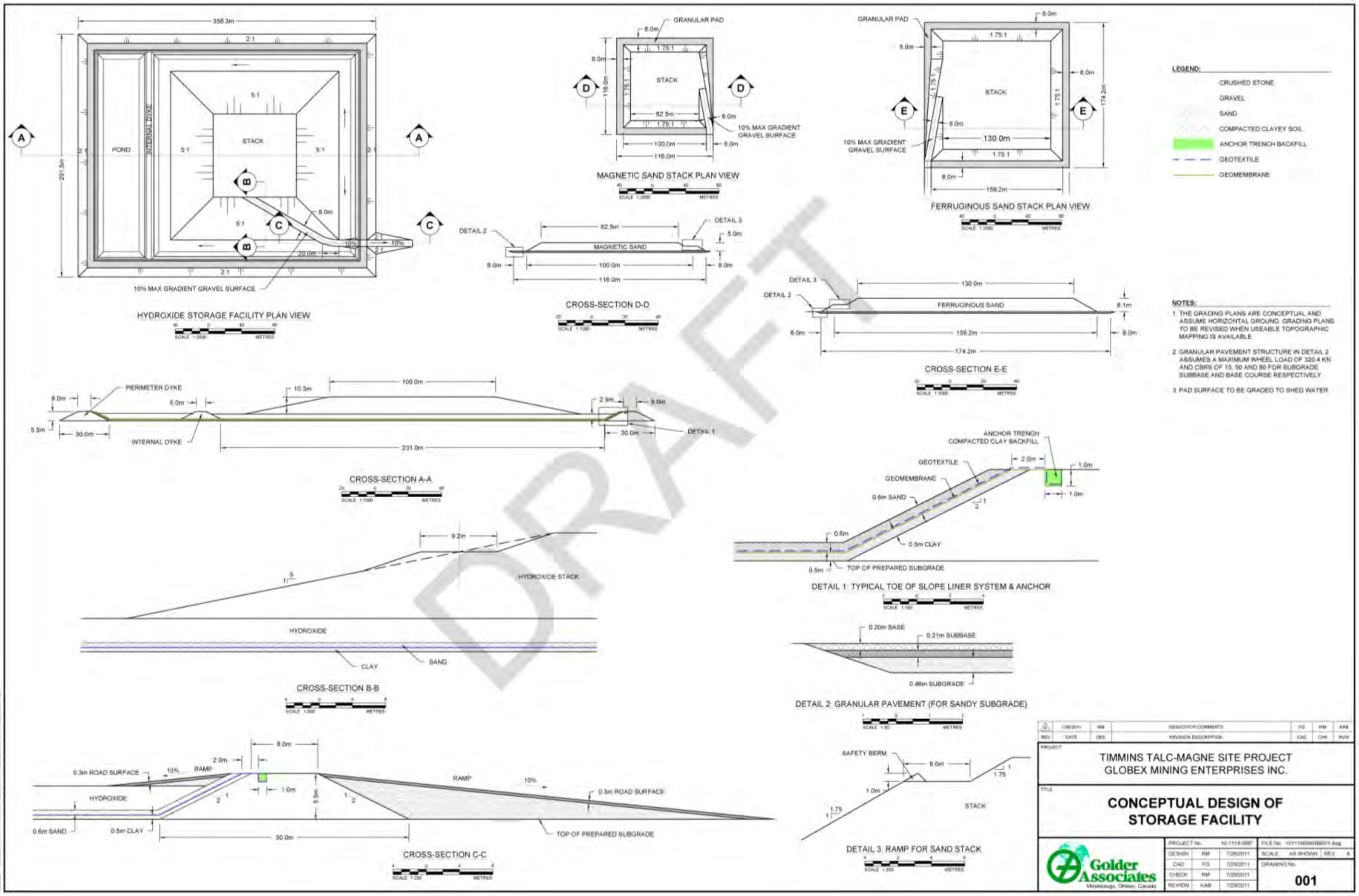
The storage basin will contain a water collection pond at one end. The purpose of the pond will be to collect runoff from the hydroxide residue stack and to store it, prior to the water being pumped back to the processing plant for reuse. The storage basin will include a perimeter water-retaining dyke which will completely surround both the stack and the water collection pond as an additional seepage interception measure. An internal pervious dyke will be constructed within the facility to keep the hydroxide residue solids out of the water collection pond and thus reduce the required length of the perimeter dyke. The height of the perimeter dyke will be governed by the water collection pond storage requirement with an allowance of 1.5 m for freeboard. The hydroxide residue stack should have a minimum offset of 20 m from the perimeter dyke and the toe of the internal stack to allow equipment to drive around the facility.

Figure 20.6
Proposed Location of Mill and Storage Facilities



April, 2012.

Figure 20.7
Conceptual Design of Storage Facility



As shown on Figure 20.7, the perimeter dyke will have a sandy shell with a liner system on the upstream face. The liner system will comprise a geomembrane placed on top of a 0.5-m thick layer of clay. The geomembrane will be covered with a geotextile covered with a 0.6-m thick layer of granular soil. The final selection of the basin liner will be made during the detailed design stage. The perimeter dyke will have 8-m wide crests, an upstream and a downstream slope of 2H:1V.

During site closure, in order to provide long-term physical and chemical stability, the stack will be regraded, covered with soil and re-vegetated. During placement, the side slopes of the stack will be constructed at 5:1 (horizontal:vertical) specifically to facilitate covering after closure. As part of the regrading, the water collection pond will be pumped out and then filled in with hydroxide filter cake to prevent future ponding. The height of the stack will be reduced from 10.3 m to 6 m in the process.

20.2.4 Hydroxide Residue Storage Basin Water Balance

It is understood that the ore processing facility will be a net consumer of water, because it will produce a steady flow of steam. Any water collected in the storage basin will be reclaimed back to the mill for re-use. Consequently, there is not expected to be any off-site effluent discharge from the storage basin. As discussed above, a water collection pond will be maintained within the storage basin to facilitate water recycling back to the mill. An estimation of required water collection pond volume was determined using a water balance model which incorporated historical meteorological data, watershed sizes, run-off factors, wet and dry beach areas, estimated seepage losses and interstitial storage values as model inputs for maximum flow events during the spring freshet. Using this approach, the total required volume of the water collection pond located within the storage basin was estimated at approximately 40,150 m^3.

20.2.5 Temporary Sand Storage Pads

As shown in Figure 20.6, separate storage pads, each having a three layer granular base, will be provided for each of the two sand by-products with a capacity sufficient to store five years worth of production which could be extended at any time. Each of the two sand by-products will be trucked to, and stacked on, its respective pad. The storage pads were designed as granular pavements capable of supporting a front end loader. When the by-products are sold, the sands will be loaded into highway trucks for shipment.

At mine closure, any remaining ferruginous sand or magnetic sand will be sold and shipped off site and the pad surfaces will be sub-cut slightly to remove any remaining by-product. For this reason, there should be no requirement to regrade and revegetate the sand piles at closure. Following that, the pad surfaces will be scarified and will be allowed to re-vegetate naturally.

20.3 WATER MANAGEMENT AND SITE MONITORING

During operations it is anticipated that the open pit will require dewatering with this surplus water being pumped to a sedimentation pond, prior to release to the environment. Based upon the laboratory testing carried out to date, it is not anticipated that treatment of pit water will be required. As discussed in Section 20.2 (Process Solids Management), it is anticipated that there will be no net effluent discharge from the hydroxide residue storage basin due to water reclaim for the mill.

Site run-off will be managed using drainage ditch and sedimentation ponds, as required, and it is anticipated that effluent will be of a suitable quality for direct discharge to the environment without treatment.

During operations and during mine site closure, a site wide environmental monitoring program will be in effect that will meet the permitting requirements for the project.

At mine closure, the open pit will represent the main physical legacy of past mining operations at the site. Closure options for the open pit have yet to be addressed in detail. However, it is likely that at cessation of mining operations, the open pit will be allowed to flood with eventual passive discharge of pit water occurring to the local environment. Based upon the testing carried out to date, is not anticipated that treatment of open pit water will be required post-closure.

20.4 PROJECT PERMITTING

The main provincial regulatory permits likely associated with the project include:

- Ministry of Environment - Permit to Take Water is required for the taking of water from any water body (surface or groundwater) in a volume that exceeds 50,000 L/d.

- Ministry of Environment - Environmental Compliance Approval (ECA) for Industrial Sewage Works is required for the discharge of mining related effluent to the downstream environment including all water management facilities such as settling ponds that are associated with the management of effluent.

- Ministry of Environment - Environmental Compliance Approval (ECA) for Air and Noise is required for discharges to air including mine ventilation systems and diesel generators.

- Ministry of Northern Development, Mines and Forestry - Mine Closure Plan is required to be filed with MNDMF complete with financial assurance to adequately rehabilitate the mine project to the standards provided in Ontario Regulation 240/00 – Mine Development and Closure.

- Ministry of Health/local public health units - Approval of Septic Systems may be required.

It should be noted that the above list is not exhaustive as there are many other provincial and federal permits or authorizations that may, in certain instances, be required from other regulatory agencies. With regard to permit scheduling, the requirement to carry out environmental assessments (EAs) requires particular consideration. For example, under the federal Fisheries Act, an EA could be triggered if disruption of key fish habitat during mine development was predicted. To date, it is not anticipated that the proposed mine development at the site will trigger an EA. Based upon the current status of the mine plan, the permitting effort has been focused upon collection of necessary baseline data to allow preparation of a mine closure plan at the appropriate time.

For mining operations to be carried out at the site, a mine closure plan will be required as part of project permitting. Part of the mandatory requirements for inclusion in the closure plan will be the allocation of sufficient funds to cover future mine closure costs.

20.5 FIRST NATIONS CONSULTATION

According to the Ministry of Natural Resources (MNR), the Mattagami First Nation is the primary First Nation with traditional territory in the project area. It is recommended that the Mattagami First Nation be engaged as the project moves forward to confirm that the construction and operation phases of the project will not conflict with traditional land-use practices or values. This engagement process should also be used to identify other potential First Nation interests, potential community concerns and potential community benefits associated with the project.

With regard to land use by members of the Métis Nation of Ontario, the MNR does not recognize the Timmins region of the Métis Nation of Ontario as having a traditional territory (pers. comm., 2009a). However, it would be prudent to keep the Timmins office of the Métis Nation of Ontario informed as the project moves forward and confirm that the project will not conflict with traditional land-uses.

In November, 2010, Globex issued introductory letters to the Mattagami, Matachewan and Flying Post First Nations and to the Métis Nation of Ontario (based in Ottawa) with the aim of establishing contact and creating lines of communication for subsequent meetings.

In November, 2011, a meeting was set up and coordinated by Globex/Blue Heron which was attended by representatives of the Wabun Tribal Council and Mattagami First Nation, Globex and Blue Heron. At this meeting, Globex made a presentation introducing the company and its goals for the site. Discussion was held concerning the scope of an advanced exploration agreement between Globex and First Nations.

Additional discussions and meetings between Globex, First Nations and the Métis Nation of Ontario will be scheduled as the project develops.

20.6 MINE CLOSURE

At the current time, mine closure planning is at a preliminary stage of development pending the preparation of a formal mine closure plan document as part of the overall mine permitting process.

21.0 CAPITAL AND OPERATING COSTS

21.1 CAPITAL COST SUMMARY

The order of magnitude capital cost estimate for the process plant and infrastructure facilities, as described within this PEA, is $264.6 million in third quarter 2011 Canadian dollars, and is subject to the qualifications and exclusions listed below. The capital cost excludes mining.

The capital cost estimate is summarized in Table 21.1 and is inclusive of the costs up to and including plant commissioning and start up. Sustaining capital and working capital are excluded from this estimate. Mine site development costs are also excluded.

Budgetary quotations were solicited for major processing equipment. The estimate on the remaining equipment was based on in-house pricing database. Pricing for earthwork, concrete, steel and architectural has been factored from equipment costs. The cost estimate accuracy is assessed at +/-25%.

21.2 BASIS OF ESTIMATE

The capital cost estimate includes the following:

- Direct costs of new equipment for processing facilities.
- Construction materials and installation labour.
- Project infrastructure.
- Temporary buildings and services.
- Construction support services.
- Spare parts.
- Initial fills (inventory).
- Freight.
- Owner's cost.
- Engineering, procurement and construction management (EPCM).
- Commissioning and start up.
- Contingency.

Table 21.1
Capital Cost Summary

Description		Cost ($)
Process Plant		
	Mechanical	80,571,582
	Earthworks	805,716
	Concrete	6,445,727
	Structural steel	6,836,867
	Architectural	4,818,672
	Building mechanical services	1,807,002
	Electrical	9,758,564
	Instrumentation and controls	7,040,249
	Process piping	14,268,257
	Insulation protection and heat tracing	1,709,217
	Subtotal	134,061,853
Infrastructure		
	Site development	691,000
	Access road	300,000
	Plant roads	830,000
	Hydroxide waste and sands	4,460,639
	Power line, 115 kV	5,600,000
	Main substation	5,359,000
	Electrical power distribution, plant site	nil
	Emergency power, 500kW	500,000
	Diesel fuel storage facility and distribution	nil
	Gas supply line	6,644,000
	Boiler house and hot water distribution	nil
	Sewage treatment facility	1,034,000
	Water supply, treatment and distribution	1,040,000
	Communications	280,000
	Plant mobile equipment	1,753,000
	Subtotal	28,491,639
Infrastructure Buildings		
	Administration building	3,338,000
	Warehouse, unheated	1,075,000
	Gatehouse and medical facility	100,000
	Assay laboratory facility	1,560,000
	Reagent storage	50,000
	Stockpile dome facility	nil
	Subtotal	6,123,000
	Indirect costs	34,189,000
	Contingency (30%)	56,742,000
	Owner’s costs	5,000,000
Total		**264,607,000**

21.3 DIRECT COST ELEMENTS

The direct costs are all the costs associated with permanent facilities. This includes equipment and material costs, as well as construction and installation costs.

21.3.1 Process Equipment

Equipment pricing is based on the equipment list and the process block diagram. Vendor budget pricing was obtained for major equipment. The remaining equipment items were estimated based on in-house historical quotations for items such as tanks, bins, pumps, conveyors and plate work. Costs for installation of equipment are based on unit man-hour requirements and adjusted for local conditions. Local labour rates were established for estimating mechanical equipment erection.

The following represents the percentage value of quoted versus estimated equipment:

- Budget quotations 42%
- In-house estimate 58%

Other direct costs were factored based on the total installed cost of process equipment for items such as:

- Earthwork/site work.
- Concrete.
- Structural steel.
- Buildings and architectural.
- Electrical.
- Instrumentation and controls.
- Piping.

In addition Globex has sourced and provided quotations for the connections to the high voltage power line and natural gas pipeline. These costs have been included in the estimate in addition to the cost of land acquisition of $5.5 million.

21.4 INDIRECT COST ELEMENTS

The indirect costs cover the costs associated with temporary construction facilities and services, construction support, freight, vendor representatives, spare parts, initial fills and inventory, Owner's costs, EPCM, commissioning and start-up assistance.

21.4.1 Construction Facilities

The costs for construction facilities are factored for all temporary facilities, services and operation, site office operations, security buildings and services, construction warehousing and material management, construction power and utilities, site transportation, medical facilities and services, garbage collection and disposal, and surveying.

21.4.2 Spare Parts

The cost for spare parts is factored based on equipment costs.

21.4.3 Initial Fills

The estimated cost for initial fills (inventory) of reagents is based on three months of operating requirements. Budget quotations were obtained for reagent pricing.

21.4.4 Freight

The freight costs are factored and typically include containerized and break bulk shipping. For imported equipment, the cost of freight and export packing, ex-works to a local port, is included with the cost of the equipment.

21.4.5 Vendor Representatives

The requirement for vendor representatives to supervise the installation of equipment or to conduct a checkout of the equipment prior to start up of the equipment as deemed necessary for equipment guarantees or warranties has been included in the estimate. Typically, the cost for this item is inclusive of salary, travel and accommodation.

21.4.6 Taxes and Duties

Taxes and duties are excluded.

21.4.7 Engineering, Procurement and Construction Management

Engineering, procurement and construction management (EPCM) has been calculated based on the direct cost. The EPCM cost amounts to 12% of the project direct and indirect costs.

21.5 CONTINGENCY

A contingency allowance of 30% has been included in the estimate. This was arrived at by considering the unknowns and the accuracy in each of the sections of the PEA costing.

21.6 CAPITAL COST QUALIFICATIONS AND EXCLUSIONS

21.6.1 Qualifications/Assumptions

Qualifications and assumptions are listed as follows.

- Soil report is not available, assumed spread footing foundations.

- Topographical drawings are not available, assumed site is flat and minor cut and fill work will be required.

- Cost of land acquisition of $5.5 million for the power and natural gas lines corridor is included. The corridor can be used for a future railway line.

- Residue storage (hydroxide waste and sands) estimate was provided by Golder.

- Mine equipment maintenance will be conducted at a shop in Timmins; truck shop facility is excluded.

- The estimate accounts for a high level control system.

- Process water is supplied from four wells.

- Dewatering pumps and lighting at the mine will be powered by diesel generators provided by the mine contractor. High voltage power line to the mine is not required.

- Excess steam will be used for plant heating.

- 2,000 m^2 unheated warehouse.

21.6.2 Exclusions

The following are excluded from the estimate:

- Mine and plant close out costs.
- Railway line to the plant.
- Sunk and development costs such as exploration, testwork and feasibility study costs.
- Sustaining capital.
- Currency fluctuation.
- Financing and interest during construction.
- Escalation beyond the third quarter of 2011.
- Legal costs.
- Process royalty fees.
- Government approvals or any necessary permitting work and cost.
- Costs associated with environmental studies, permitting and remediation.
- All insurances and bonds are considered in Owner's costs.
- Sales taxes and duties.

21.7 OPERATING COST SUMMARY

The overall operating cost for the process plant is provided as a summary breakdown in Table 21.2. The overall annual operating cost is approximately $44.16 million, which equates to $88/t of bulk concentrate processed. Contract mining and crushing costs are excluded. A contingency allowance of 7% has been added to cover unidentified and other minor costs.

Table 21.2
Summary of Operating Costs

	$/y	$/t Ore	Distribution (%)
Labour	11,311,250	22.62	29.0
Reagents and consumables	6,102,374	12.20	15.7
Natural gas	8,713,495	17.43	22.4
Diesel	609,343	1.22	1.6
Electrical power	7,168,205	14.34	18.4
Maintenance supplies	5,054,745	10.11	13.0
Subtotal	**38,959,412**	**77.92**	**100.0**
Other expenses, 7%	2,727,159	5.44	
Total	**41,686,571**	**83.36**	

[1]This operating cost summary by Jacobs does not contain contract mining costs.

21.8 ESTIMATING METHOD AND ACCURACY RANGE

The operating costs for the TTM process plant were developed based on the following criteria.

1. Labour: all around the clock operations are based on a four-shift rotation of 12 h shifts using a 7-day week. Non-shift labour is based on a 40-h work week. It is assumed that labour for the entire complex will be locally based.

2. A master labour list and labour rates supplied by Globex was used as the basis for estimating manpower costs for this project. All positions for each discipline within the specified departments are included along with a complete breakdown of employee wage distribution. A total of 138 people will be required for the process operations.

3. Commodity usage rates were developed from testwork and mass balance calculations. Unit pricing for commodities were obtained through direct quotes from various vendors, in the second quarter of 2011.

4. Vendor quotations acquired by Aker/Jacobs were based on spot pricing used for budgetary purposes, thus actual vendor quotes may differ slightly.

5. Electrical power costs are $0.095/kWh based on grid power.

6. Maintenance supplies for stationary equipment are based on 3.5% of the installed mechanical and electrical equipment cost.

7. "Plant Other" costs for this project were taken from Akers' data bank and include miscellaneous costs incurred by the process plant such as light vehicle service and repair, personal protection equipment, heating, office supplies, external check assaying etc.

All cost data are presented in third quarter 2011 Canadian dollars and are considered to have an accuracy of +/- 25% for both capital and operating costs.

21.8.1 Qualifications

The project cost estimates are exclusive of:

- Project financing or interest charges.
- Customs duties and value added taxes.
- Ongoing exploration costs.
- Rehabilitation costs (included in deferred capital schedule).
- Land tenure and tenement fees.
- All costs associated with areas beyond the Timmins Talc-Magnesite process facility battery limits.
- Transportation costs to and from site for process plant personnel.

21.9 MINING CAPITAL AND OPERATING COSTS

As discussed previously, it is anticipated that mining and crushing operations will be undertaken by a contractor. Budgetary unit mining costs were obtained from a regional contractor as follow:

- Waste mining: $3.02/t
- Ore mining: $3.77/t
- Crushing: $4.62/t

At an average ratio of 2.29 t of waste per tonne of ore, the average mining and crushing cost is equivalent to $15.29/t of ore processed.

Provision has been made in the cash flow model for $1.91 million in respect of pre-stripping in the open pit area. In Year -1, 764,500 t overburden and 250,000 t waste rock are scheduled to be moved, the latter being used in construction of haul roads to the plant and waste rock storage areas. The contractor's mobilization charges are understood to have been included in the respective unit mining and crushing rates.

All mining and primary crushing will be by a contract miner, likely on a seasonal basis. Therefore no capital allowance has been made for mining equipment.

21.10 PROJECT EXECUTION PLAN AND SCHEDULE

21.10.1 Introduction

Globex has indicated its immediate intention, on completion of this PEA, to move forward with a pre-feasibility study on the project in 2012. Assuming a successful outcome of that study, and satisfactory progress with permitting, a pilot plant and basic engineering of the project required for a feasibility study could be completed during 2013. Detailed engineering, procurement and construction could take place during 2014 and 2015 (Years -2 and -1 in the cash flow schedule). First production from the project (Year 1) could therefore take place as early as 2016.

21.10.2 Feasibility Phase

The process design has progressively developed to the present level with work completed for this study.

Additional testwork is recommended to verify assumptions used for the performance parameters, i.e., thickening, filtration.

21.10.3 Detailed Engineering and Procurement

The challenges that face the engineering work in future are not unique to this project. Details will emerge, out of closely working with all vendors so that all parties understand the parameters involved. A straight-forward approach to tendering and negotiating will be in place with vendors and contractors, while maintaining quality and adhering to schedule. The timing for deploying the work packages is crucial, to ensure a favourable climate for a competitive bidding process on lumped sum contracts.

21.10.4 Construction

The site is in a region with a diverse and experienced workforce due to the local presence of the mining industry.

Contracts will be administered locally from rented office space in Timmins. Large construction equipment, such as cranes, graders and haulers will be hired for short terms.

21.10.5 Plant Commissioning and Operations

Vendor representatives will participate in the commissioning phase of major equipment packages while the Start-up Team prepares to hand off the operation to the Owner's team. This is projected into the next calendar year after commencing construction.

22.0 ECONOMIC ANALYSIS

22.1 BASIS OF EVALUATION

Micon has prepared its economic assessment of the project on the basis of a discounted cash flow model, from which net present value (NPV), internal rate of return (IRR), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested.

The objective of the study was to establish the economic viability of the proposed development of an open pit mining operation and processing for the production of talc and magnesia from the deposit. In order to do this, the cash flow arising from the base case has been forecast, enabling a computation of the NPV to be made. The sensitivity of this NPV to changes in the base case assumptions is then examined.

22.2 MACRO-ECONOMIC ASSUMPTIONS

22.2.1 Exchange Rate, Inflation and Discounting

The project cash flow model and all results derived from the model are expressed in Canadian dollars ($).

Constant, first quarter-2012 money terms are used throughout, i.e., without provision for inflation. The cash flow is discounted to the period in which a decision is taken to proceed with project construction, assumed to be two years before the commencement of production.

22.2.2 Expected Product Prices

The base case has been evaluated using a price for magnesia (MgO) of $570/t and a price for a 96.5% pure talc product of $500/t, as determined by independent experts in the industry, based on the quality of material produced during testwork on the deposit. During production Years 1 and 2, Micon has assumed a discount to the talc price of 20% and 6% respectively, taking account of the need initially to build market share, and making provision for some product of lesser quality during a ramp-up to steady-state operations.

22.2.3 Weighted Average Cost of Capital

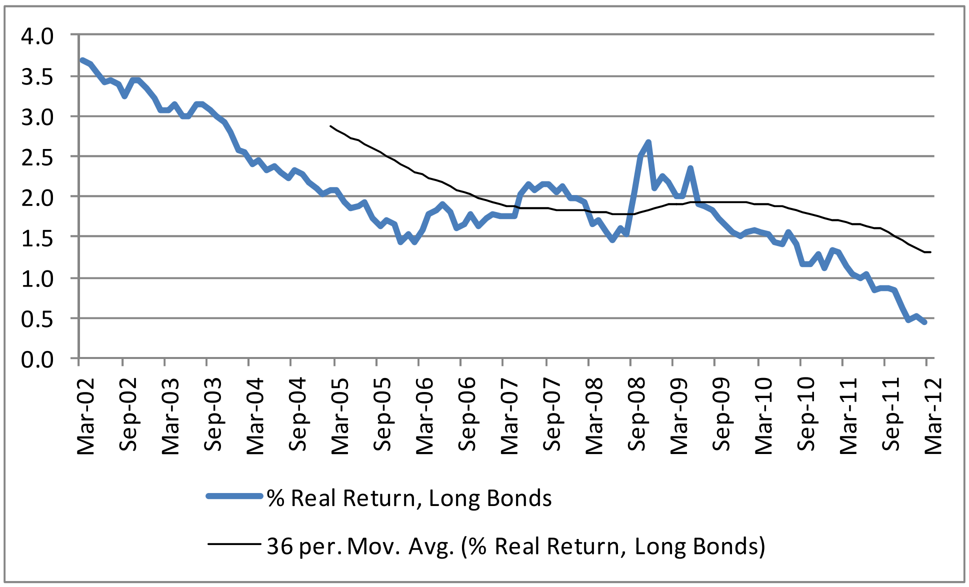
In order to find the NPV of the cash flows forecast for the project, an appropriate discount factor must be applied which represents the weighted average cost of capital (WACC) imposed on the project by the capital markets. The cash flow projections used for the valuation have been prepared on an all-equity basis. This being the case, WACC is equal to the market cost of equity, and can be determined using the Capital Asset Pricing Model (CAPM):

$$E(R_i) = R_f + \beta_i(E(R_m) - R_f)$$

where $E(R_i)$ is the expected return, or the cost of equity. R_f is the risk-free rate (usually taken to be the real rate on long-term government bonds), $E(R_m)$-R_f is the market premium for equity (commonly estimated to be around 5%), and beta (β) is the volatility of the returns for the relevant sector of the market compared to the market as a whole.

Figure 22.1 illustrates the real return on Canadian long-term bonds computed by the Bank of Canada, taken as a proxy for the risk-free interest rate. Despite falling to historically low levels recently, over the past five years this has averaged around 1.5% and over 10 years the average is 2.0%. It is generally accepted that using a long-term average rate will give a more reliable estimate of the cost of equity. Micon has therefore used a value of 2.0% for the risk free rate.

Figure 22.1
Real Return on Canadian Long Bonds



Source: Bank of Canada.

The value of beta is problematic since direct peers in the industry are seldom publicly traded. However, taking beta for this sector of the market to be similar to that of a base metal producer, a value in the range 1.2 to 2.0 would be appropriate. The CAPM gives a cost of equity for the project of between 8% and 12%.

Micon has taken a figure at the lower end of this range as its base case, and provides the results at higher rate of discount for comparative purposes.

22.2.4 Taxation Regime

The project will be subject to Canadian federal income tax, and Ontario income and mining taxes. These have been provided for in the cash flow model.

22.2.5 Royalties

Applicable royalties of 1.0% and 0.5% of gross revenue, respectively, have been provided for in the cash flow model.

22.2.6 Marketing Costs

Provision has been made for annual selling expenses totalling $112,500.

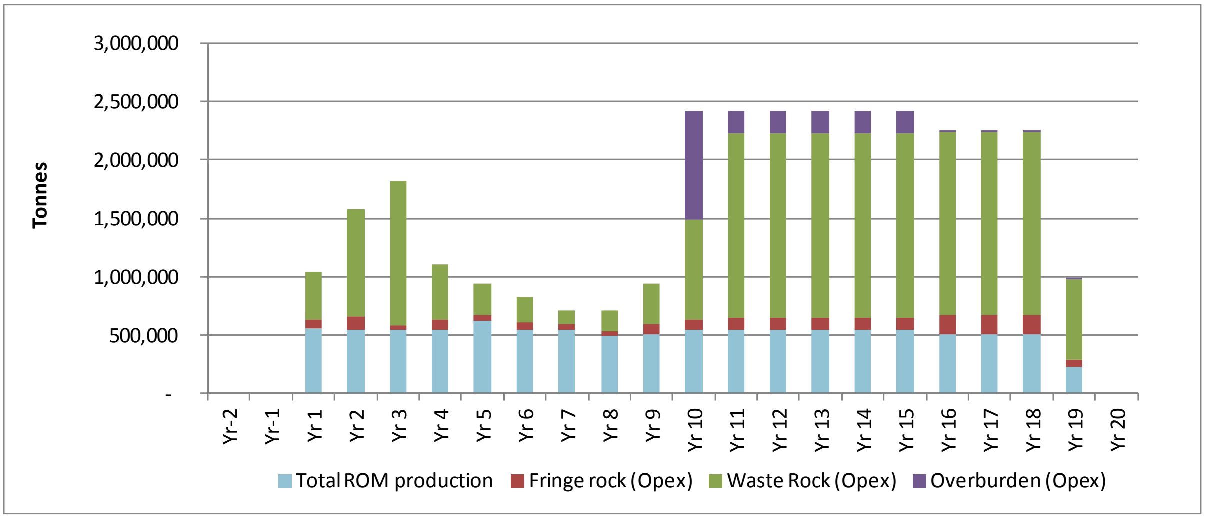
22.3 TECHNICAL ASSUMPTIONS

The technical parameters, production forecasts and estimates described earlier in this report are reflected in the base case cash flow model. These inputs to the model are summarized below.

22.3.1 Mine Production Schedule

Figure 22.2 shows the annual schedule for mining of process feed, overburden and waste rock from the open pit. While the annual mined tonnage of process feed remains constant over the LOM, the amounts of overburden and waste rock vary in line with the phasing of pit development.

Figure 22.2
Open Pit Mining - Annual Production Schedule



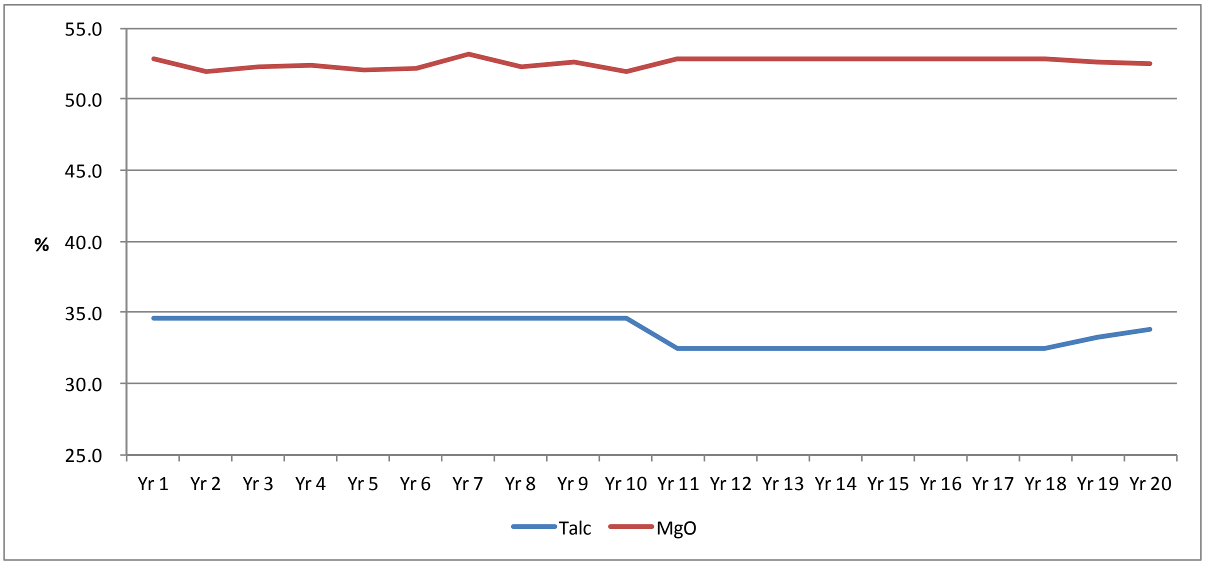
22.3.2 Stockpiling

Over the LOM period, a total of approximately 0.78 Mt of ROM material is accumulated on a stockpile that is then depleted during the final two years of production.

22.3.3 Processing Schedule

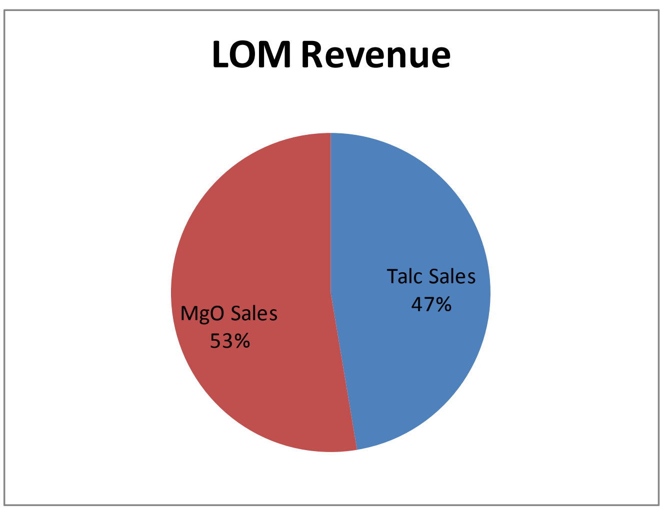
The processing plant will treat 500,000 t/y of ROM material, together with material reclaimed from the stockpile in the last two years of operation. The average grade of material treated is forecast to remain steady over the LOM period, as shown in Figure 22.3.

Figure 22.3
LOM Grade Profile



Over the 20-year initial LOM period, revenue from talc and magnesia is generated in the proportions shown in Figure 22.4.

Figure 22.4
LOM Revenue Split

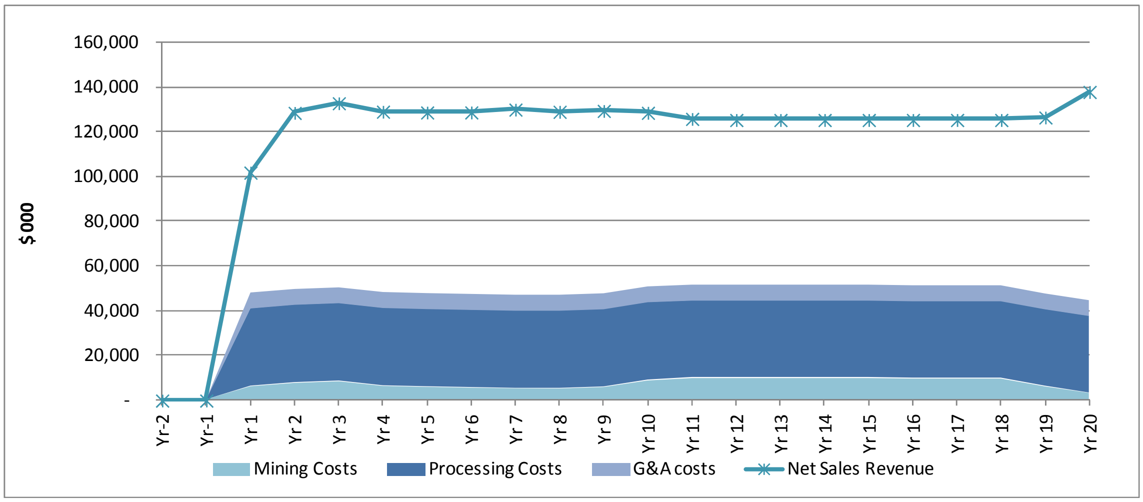


22.3.4 Operating Costs

Cash operating costs average $98.65/t treated over the LOM period. Mining and primary crushing costs amount to $15.29/t treated. Unit mining costs equate to $3.24/t moved, assuming a contract fleet plus supervision, technical support and stockpile rehandle. The average waste to ore ratio is 2.3 over the LOM period. Processing costs average $69.02/t treated, and general and administrative costs are forecast to total $14.34/t treated.

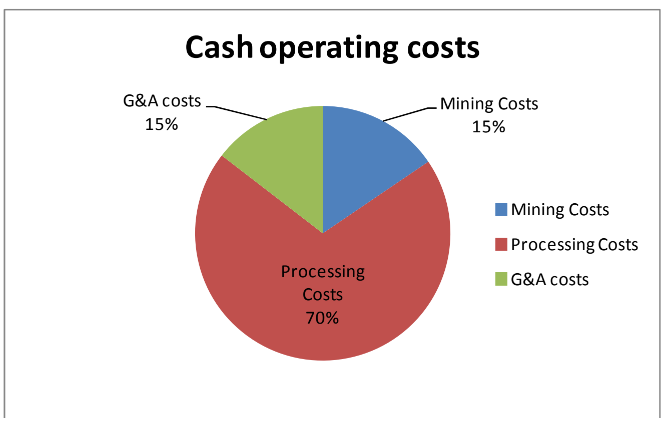
Figure 22.5 shows the operating expenditures over the LOM period, compared to the net sales revenue. The large and consistent operating margin averages more than 61% over the LOM period.

Figure 22.5
Cash Operating Costs



Over the 20-year initial LOM period, operating costs break down as shown in Figure 22.6.

Figure 22.6
LOM Operating Cost Split



22.3.5 Capital Costs

Pre-production capital expenditure of $266.4 million is incurred in Years -2 and -1 for pre-stripping of the open pit mine and construction of the processing plant and site infrastructure, including a contingency of $56.7 million. See Table 22.1.

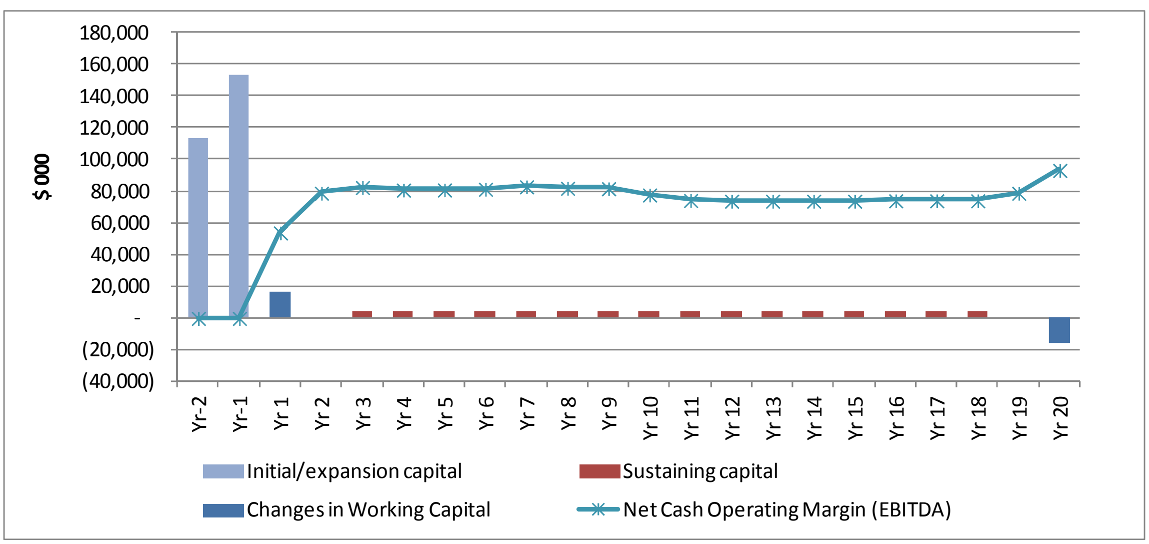
Table 22.1
Summary of Initial Capital Cost

Area	$ 000
Mine	1,909
Plant	134,128
Infrastructure	28,492
Buildings	6,123
Indirect	34,003
Contingency	56,706
Owner's Costs	5,000
Total	**266,361**

In addition to the above, provision is made for closure bonding of $2.0 million and, during the operating period, annual sustaining capital of approximately $4.0 million is also provided, totalling around $65 million over the LOM period. During the first year of operations, an increase of approximately $16.0 million in working capital is assumed, this amount being released on closure of the mine in Year 20.

Figure 22.7 compares annual capital expenditures over the preproduction and LOM periods with the project's cash operating margin. This shows that the project's pre-tax cash flows are strongly positive over the operating period.

Figure 22.7
Capital Expenditures



22.3.6 Project Cash Flow

The LOM base case project cash flow is summarised in Table 22.2. Annual cash flows are presented in Figure 22.8 and Table 22.3 (over). It will be seen that undiscounted payback occurs in Year 4 and, when discounted at 8%, in Year 6.

Table 22.2
Life-of-Mine Cash Flow Summary

	LOM Total ($ 000)	$/t Treated
Gross Sales	2,578,530	257.85
Less Royalties	38,678	3.87
less Selling Expenses	2,250	0.23
Net Sales Revenue	2,537,602	253.76
Mining Costs	152,879	15.29
Processing Costs	690,230	69.02
G&A costs	143,374	14.34
Total cash operating costs	986,483	98.65
Net Cash Operating Margin	1,551,119	155.11
Initial/expansion capital	266,361	26.64
Sustaining Capital & Closure	66,879	6.69
Changes in Working Capital	-	-
Net cash flow before tax	1,217,879	121.79
Taxation payable	377,338	37.73
Net cash flow after tax	840,541	84.05

Figure 22.8
Life-of-Mine Cash Flows

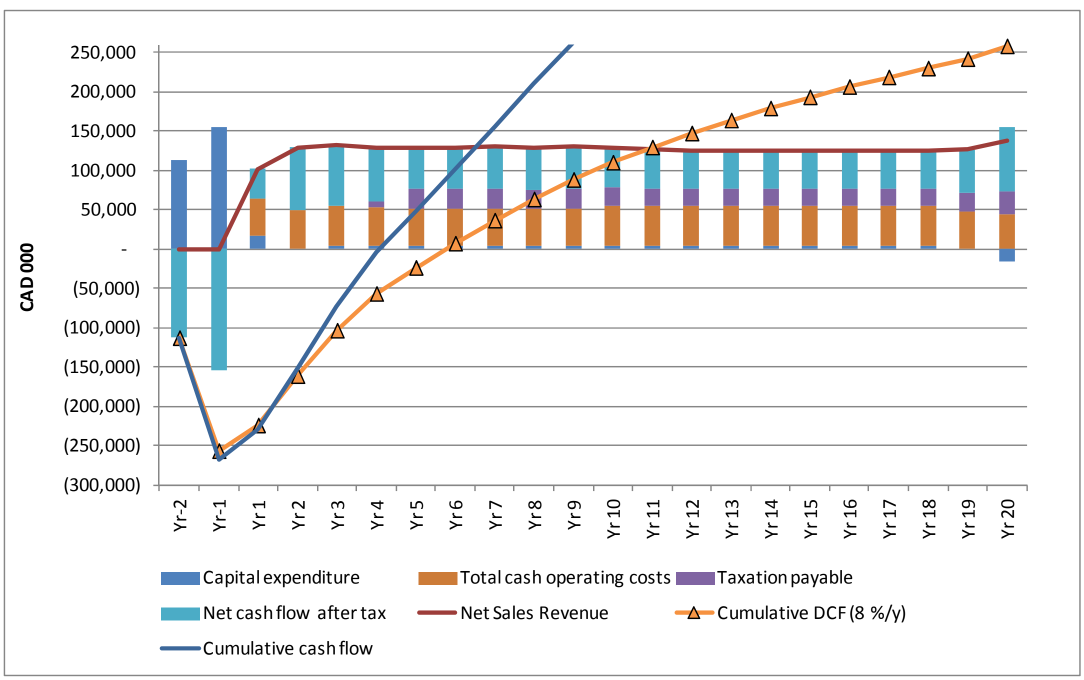


Table 22.3
Base Case 20-Year Annual Cash Flow

Period		TOTAL	Yr-2	Yr-1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20
Total ROM production	tonnes	10,000,000			553,486	550,165	549,763	552,534	619,548	549,580	549,893	500,241	512,742	549,897	550,255	550,255	550,255	550,255	550,255	512,782	512,782	512,782	222,532	-
	Talc grade (%)	33.65			34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	32.52	32.52	32.52	32.52	32.52	32.52	32.52	32.52	32.52	-
	Magnesite grade (%)	52.55			52.86	51.97	52.26	52.36	52.07	52.10	53.13	52.28	52.65	51.94	52.78	52.78	52.78	52.78	52.78	52.79	52.79	52.79	52.79	-
Fringe rock (Opex)	tonnes	1,705,746			76,180	111,859	30,978	79,970	59,937	60,797	42,485	36,625	87,900	82,040	97,423	97,423	97,423	97,423	97,423	160,124	160,124	160,124	69,489	-
Waste Rock (Opex)	tonnes	18,282,486			408,836	916,475	1,232,759	470,509	255,515	214,623	122,622	180,093	334,358	856,582	1,579,853	1,579,853	1,579,853	1,579,853	1,579,853	1,569,860	1,569,860	1,569,860	681,272	-
Overburden (Opex)	tonnes	1,933,770						-	-	-	-	-	-	931,480	193,796	193,796	193,796	193,796	193,796	9,700	9,700	9,700	4,210	-
Total Waste Mined	tonnes	22,936,501	-	1,014,499	485,016	1,028,334	1,263,737	550,479	315,452	275,420	165,107	216,718	422,258	1,870,102	1,871,071	1,871,071	1,871,071	1,871,071	1,871,071	1,739,684	1,739,684	1,739,684	754,971	-
Waste/Ore Ratio	tonnes	2.29	-	-	0.88	1.87	2.30	1.00	0.51	0.50	0.30	0.43	0.82	3.40	3.40	3.40	3.40	3.40	3.40	3.39	3.39	3.39	3.39	-
Mill feed	tonnes	10,000,000			500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
	Talc grade (%)	33.65			34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	32.52	32.52	32.52	32.52	32.52	32.52	32.52	32.52	33.25	33.80
	Magnesite grade (%)	52.55			52.86	51.97	52.26	52.36	52.07	52.10	53.13	52.28	52.65	51.94	52.78	52.78	52.78	52.78	52.78	52.79	52.79	52.79	52.62	52.49
Talc production	Product tonnes (t)	2,469,603			127,374	127,374	127,374	127,374	127,374	127,374	127,374	127,374	127,374	127,374	118,747	118,747	118,747	118,747	118,747	118,747	118,747	118,747	121,798	124,087
	Talc inventory (t)				31,844	23,883	15,922	15,922	15,922	15,922	15,922	15,922	15,922	15,922	14,843	14,843	14,843	14,843	14,843	14,843	14,843	14,843	15,225	-
	Talc sales (t)	2,469,603			95,531	135,335	135,335	127,374	127,374	127,374	127,374	127,374	127,374	127,374	119,825	118,747	118,747	118,747	118,747	118,747	118,747	118,747	121,417	139,312
Magnesia	MgO (t)	2,381,301			119,765	117,744	118,410	118,632	117,966	118,055	120,387	118,455	119,299	117,678	119,587	119,587	119,587	119,587	119,587	119,609	119,609	119,609	119,218	118,926
	MgO inventory (t)				4,990	4,906	4,934	4,943	4,915	4,919	5,016	4,936	4,971	4,903	4,983	4,983	4,983	4,983	4,983	4,984	4,984	4,984	4,967	-
	MgO sales (t)	2,381,301			114,775	117,829	118,383	118,623	117,994	118,051	120,289	118,535	119,263	117,745	119,508	119,587	119,587	119,587	119,587	119,609	119,609	119,609	119,235	123,894
Revenue	Gross Sales	2,578,530	-	-	103,634	130,770	135,146	131,302	130,944	130,976	132,252	131,252	131,667	130,802	128,032	127,538	127,538	127,538	127,538	127,550	127,551	127,551	128,672	140,275
less	Royalty 1	25,785	-	-	1,036	1,308	1,351	1,313	1,309	1,310	1,323	1,313	1,317	1,308	1,280	1,275	1,275	1,275	1,275	1,276	1,276	1,276	1,287	1,403
less	Royalty 2	12,893	-	-	518	654	676	657	655	655	661	656	658	654	640	638	638	638	638	638	638	638	643	701
less	Selling Expenses	2,250	-	-	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113
	Net Sales Revenue	2,537,602	-	-	101,967	128,696	133,006	129,220	128,867	128,899	130,156	129,171	129,580	128,727	125,999	125,513	125,513	125,513	125,513	125,525	125,525	125,525	126,630	138,059
Cash op. costs	Mining Costs	152,879	-	-	6,099	7,727	8,437	6,293	5,836	5,451	5,119	5,088	5,756	8,862	9,980	9,980	9,980	9,980	9,980	9,720	9,720	9,720	6,087	3,065
	Processing Costs	690,230	-	-	34,699	34,699	34,699	34,699	34,699	34,699	34,699	34,699	34,699	34,699	34,324	34,324	34,324	34,324	34,324	34,324	34,324	34,324	34,324	34,324
	G&A costs	143,374	-	-	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169	7,169
	Total cash operating costs	986,483	-	-	47,967	49,595	50,304	48,161	47,704	47,319	46,987	46,956	47,623	50,729	51,473	51,473	51,473	51,473	51,473	51,213	51,213	51,213	47,580	44,558
Net Cash Operating Margin (EBITDA)		1,551,119	-	-	54,000	79,101	82,702	81,060	81,164	81,580	83,169	82,215	81,956	77,998	74,526	74,040	74,040	74,040	74,040	74,312	74,313	74,313	79,049	93,501
Capital Expenditure	Initial/expansion capital	266,361	113,193	153,168	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sustaining capital	64,879				-	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	-	-
	Closure Provision	2,000	-	2,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Changes in Working Capital	-	-	-	15,989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(15,989)
Net cash flow before tax		1,217,879	(113,193)	(155,168)	38,011	79,101	78,647	77,005	77,109	77,525	79,114	78,160	77,901	73,943	70,472	69,985	69,985	69,985	69,985	70,257	70,258	70,258	79,049	109,490
Taxation payable		377,338	-	-	-	-	-	8,340	24,549	24,623	24,853	24,422	24,238	22,909	21,755	21,559	21,523	21,491	21,463	21,523	21,499	21,476	23,127	27,989
Net cash flow after tax		840,541	(113,193)	(155,168)	38,011	79,101	78,647	68,664	52,560	52,903	54,261	53,738	53,663	51,034	48,716	48,427	48,463	48,494	48,523	48,734	48,759	48,781	55,922	81,501
Cumulative cash flow			(113,193)	(268,361)	(230,350)	(151,249)	(72,602)	(3,938)	48,622	101,525	155,786	209,524	263,187	314,221	362,938	411,364	459,827	508,321	556,844	605,578	654,337	703,118	759,040	840,541
Payback period on undiscounted cash flow (years)		4.1			1.00	1.00	1.00	1.00	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discounted Cash Flow (8 %/y)		257,953	(113,193)	(143,674)	32,589	62,793	57,808	46,732	33,121	30,868	29,316	26,882	24,857	21,888	19,346	17,806	16,500	15,287	14,163	13,171	12,202	11,303	11,998	16,191
Cumulative DCF (8 %/y)			(113,193)	(256,867)	(224,278)	(161,486)	(103,678)	(56,946)	(23,825)	7,044	36,359	63,242	88,098	109,986	129,332	147,138	163,638	178,925	193,088	206,260	218,462	229,765	241,763	257,953
Payback period on discounted cash flow (years)		5.8			1.00	1.00	1.00	1.00	1.00	0.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure		333,239	113,193	155,168	15,989	-	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055	-	(15,989)
Net Revenue per tonne treated		253.76	-	-	203.93	257.39	266.01	258.44	257.73	257.80	260.31	258.34	259.16	257.45	252.00	251.03	251.03	251.03	251.03	251.05	251.05	251.05	253.26	276.12
Ave Cost per tonne treated		98.65	-	-	95.93	99.19	100.61	96.32	95.41	94.64	93.97	93.91	95.25	101.46	102.95	102.95	102.95	102.95	102.95	102.43	102.43	102.43	95.16	89.12
Operating Margin		61%	0%	0%	53%	61%	62%	63%	63%	63%	64%	64%	63%	61%	59%	59%	59%	59%	59%	59%	59%	59%	62%	68%

22.4 BASE CASE EVALUATION

At the end of Year -1, the project has cumulative pre-production capital expenditure of $268 million. After taking into account working capital of $16 million, the total project funding requirement rises to $284 million. Thereafter, the project is forecast to be cash positive in each year of operation, generating a cumulative net cash flow before tax of $1,218 million and $840 million after tax. On the undiscounted cash flow, payback occurs after 4.1 years. On the cash flow discounted at 8%, payback occurs after 5.8 years, and leaves a production tail of more than 14 years, based on the initial 20-year pit limits.

Over the LOM period, the average cash operating cost equates to $98.65/t treated, providing an average margin of 61% over the operating period.

The base case evaluates to an IRR before- and after-tax of 23% and 20%, respectively. At the selected discount rate of 8%, the net present value (NPV_8) of the cash flow is $404 million before tax and $258 million after tax. The base case cash flow evaluation results are shown in Table 22.4, which also shows the results at the higher discount rates of 10% and 12%. In Micon's opinion, the results demonstrate economic viability of the project base case, under the conditions described above.

Table 22.4
Base Case Cash Flow Evaluation

$ million	LOM Total	Discounted at 8%/y	Discounted at 10%/y	Discounted at 12%/y	IRR (%)
Gross Sales	2,578,530	1,164,507	989,551	851,005	
less Royalties	38,678	17,468	14,843	12,765	
less Selling Expenses	2,250	1,023	871	750	
Net Sales Revenue	**2,537,602**	**1,146,017**	**973,837**	**837,489**	
Mining Costs	152,879	66,799	56,318	48,085	
Processing Costs	690,230	314,365	267,749	230,804	
G&A costs	143,374	65,170	55,483	47,809	
Total cash operating costs	**986,483**	**446,334**	**379,549**	**326,698**	
Net Cash Operating Margin	1,551,119	699,683	594,288	510,792	
Initial capital	266,361	255,015	252,437	249,950	
Sustaining capital, closure	66,879	37,743	33,543	30,065	
Changes in W. Capital	-	10,532	11,053	11,266	
Net cash flow before tax	**1,217,879**	**403,792**	**305,145**	**227,661**	**23%**
Taxation payable	377,338	145,839	118,513	97,310	
Net cash flow after tax	**840,541**	**257,953**	**186,631**	**130,351**	**20%**

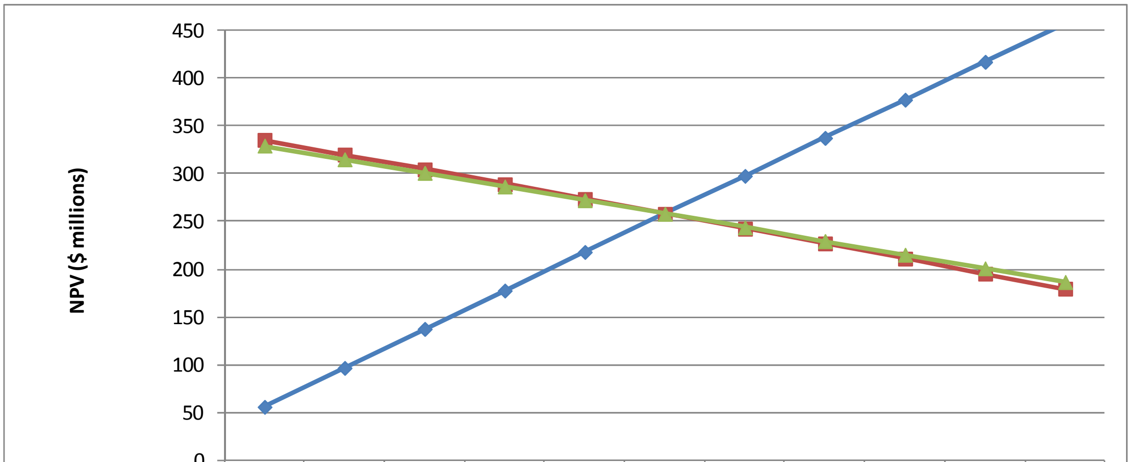
It should be noted that this PEA is preliminary in nature and it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the conclusions of the PEA will be realized.

22.5 SENSITIVITY STUDY

22.5.1 Sensitivity to Revenue Factors, Operating and Capital Costs

The sensitivity of the project returns to changes in all revenue factors (including grades, recoveries, and prices) together with capital and operating costs was tested over a range of 25% above and below base case values. Figure 22.9 shows the results of this analysis.

Figure 22.9
Sensitivity to Capital, Operating Costs and Revenue



	75%	80%	85%	90%	95%	100%	105%	110%	115%	120%	125%
Revenue drivers	56	97	138	178	218	258	298	337	377	417	456
Operating costs	335	320	304	289	273	258	242	227	211	195	180
Capital costs	329	315	301	286	272	258	244	229	215	201	187

The results show that the project is most sensitive to revenue factors, with an adverse change of 25% reducing NPV_8 by 78% to $56 million. The project is less sensitive to capital and operating costs, with an adverse change of 25% reducing NPV_8 by around 30% to $187 million and $180 million, respectively.

In further analysis, Micon notes that applying an increase of more than 43% to both capital and operating costs simultaneously would be required in order to reduce NPV_8 to zero.

Micon concludes that the project is sufficiently robust to withstand adverse changes in the principal value drivers of the project within the limits of accuracy of the estimates.

22.6 CONCLUSION

Micon concludes that this study demonstrates the economic potential of the project as proposed, and that further development is warranted.

23.0 ADJACENT PROPERTIES

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

24.0 OTHER RELEVANT DATA AND INFORMATION

All information or explanation necessary to make this Technical Report understandable and not misleading is included in the other sections of this report.

25.0 INTERPRETATION AND CONCLUSIONS

Since its acquisition of the Timmins Talc-Magnesite property in 2000, Globex has conducted further exploration as well as economic reviews and engineering studies on the feasibility of producing magnesium metal, before suspending work 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 a proprietary hydrometallurgical process for the latter.

25.1 GEOLOGY AND MINERAL RESOURCES

In support of this renewed activity, and prior to the previous Technical Report, Globex conducted a limited diamond drilling program 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 m, a strike length of approximately 700 m and extends to a depth of approximately 100 m 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 infill 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 may result in upgrading of some of the inferred resource to the indicated category.

An upright, rotated, whole block model with the long axis of the blocks oriented along an azimuth 080º and dipping 90º was constructed using the Gemcom-Surpac v6.1.1 software package (Pressacco, 2010). Soluble MgO, soluble Ca, talc and magnesite grades were interpolated into the individual blocks for the A Zone core domain using the OK, ID^2 and NN interpolation methods and source data from the diamond drill hole database. 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 m composite samples were applied to all blocks located within the A Zone fringe domain model.

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/m^3 and that the average bulk density of the A Zone fringe samples was 2.93 t/m^3.

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 might be generated from this material by means of blending with lower grade soluble Ca material from the A Zone core at a suitable ratio. While the A Zone fringe material has not been scheduled for mining in this PEA it has been included in the mineral resource statement.

The mineral resources for the Timmins Talc-Magnesite deposit, originally determined by Pressacco (2010) are set out in Table 25.1.

Table 25.1
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.

As described in Pressacco (2010) conceptual geological modeling of the deposit shows the potential to increase in size given the available geological and geophysical information and the fact that drilling has not closed it off down dip or along strike. Pressacco estimated that the A Zone core has the potential of outlining an additional 20 to 25 Mt of talc-magnesite mineralization at similar grades to those which have already been intersected.

25.2 MINING

Using the indicated and inferred resources outlined above, a relatively simple and conventional mining plan has been developed for the Timmins Talc-Magnesite deposit, which is a relatively wide and shallow deposit.

A total of 12.4 million tonnes of indicated resources containing 35.27% talc and 52.17% magnesite and 17.9 million tonnes of inferred resources containing 31.59% and 53.19% magnesite were identified as being available for mining from the pit. At 500,000 t/y this is sufficient resource for approximately 60 years of operation.

Mining will conducted by a contractor using conventional truck, shovel and loader equipment.

25.3 PROCESS PLANT

A robust and adaptable process has been defined on the basis of a series of test programs conducted at DMI, prior project involvement by Aker Solutions/Jacobs and operating experience of David Hall. The 500,000 t/y processing plant encompasses a conservative design utilizing conventional equipment contributing to the technical and economic viability of the plant. The plant design has room for improvements that can be investigated with the next engineering study.

An important element of the process that sets it apart from alternatives is the ability to recycle the primary reagent. The recycle flowsheet consists of three steps: barren solution evaporation, magnesium salt decomposition and reagent regeneration. Even though the recovery system has been demonstrated commercially in chemicals manufacture, it is different to other processes and may be perceived as carrying the greatest part of the process risk. Additional and ongoing demonstration of the recycle process is necessary.

A magnesium salt decomposition testing program will be arranged with the manufacturer of the indirectly-heated screw heat exchangers to define the operating parameters (i.e. screw pitch, residence time, etc.) and to minimize the energy consumed. The program will provide detailed design data that could result in reduced capital and operating cost.

A combined demonstration of the magnesium salt decomposition using a screw heat exchanger, in conjunction with recovery columns will generate design data whilst addressing perceived technical risk. A demonstration plant needs to run through a continuous program of several weeks duration to confirm key process steps such as feed distribution, the production of a saleable output, confirmation of key operating parameters that impact costs, confirmation of materials of construction and a definitive insight into energy and water balances. A well-managed and funded demonstration plant would provide the necessary data to complete the detail design and allow for a full-scale plant to be built.

Globex's aim is to commercialize the process. To successfully achieve this goal, four key areas are to be considered.

- Generic items of perceived technical risk - scrutinize areas where the practical operating knowledge and design information remains in the control of the vendor as a starting point.

- Site and resource specific issues - land ownership and access rights, particularly for gas supply, mining trucks.

- Ongoing design review - attention to the progression of quality design of the particular equipment is essential to ensure success.

- Co-products strategy - ramping up talc production as market share is realized for each of the high grade and fineness ranges.

Further market studies need to be carried out in order to determine the most appropriate products to generate and to gain detailed understanding of product specifications acceptable to consumers. The downstream magnesite market is diverse enough to accept a wide range of qualities. In addition, co-products and by-products that have potential commercial markets also need to be assessed.

25.3.1 Health, Safety and Environment Implications of the Process

The Globex process comprises a number of significant health, safety and environment benefits:

- The recycle of reagent eliminates a neutralizing step which would have required additional tanks, and a discharge protocol along with larger receiving capacity for supplies.

- The process offers greater sustainability than rival processes by presenting the opportunity to produce saleable co-products and by-products from leach tails.

- The presence of minute amounts of residual salts in the neutralized tailings facilitates the reclamation of the tailings disposal facility. The residue is suited to act as fertilizer in the remediation phase.

- Proper insulation for piping and equipment will provide for energy conservation and personal protection.

- There will be a reduction of GHG emissions with gas recovery in operation.

The core technology was first conceived by William Drinkard of DMI more than 20 years ago with significant developments being made to the process over the past 5 years including:

- Greater than 95% of the principal reagent is recovered from the process through the use of DMI core technology. The small amount lost is replenished with fresh make-up in the range of 20 to 40 kg/t of feed.

- Thermal decomposition of magnesium salt produces GHG which are recovered in the regeneration step. Active magnesia is also utilized in the seeding of hydroxides and impurities precipitation, after the leaching step.

- Saleable co-products result in reduced tailings which do not contain magnesium sulphate.

- Under most conditions, the low pH reactions can be carried out in 304 stainless steel equipment.

25.3.2 Principal Equipment

Most of the equipment considered in the design is commonly used in the mining and chemical industries. However, there are items that will require more specialized design and will need more investigation at the next phase of engineering design.

(a) Attritor

Based on Mr. Hall's previous experience in the talc industry, an attritor is selected to polish the feed particle size before the cleaner flotation. The desired size reduction is from 120 microns to P(80) 100 microns. Testwork is required to determine whether this level of particle polishing adds significant value to the cleaner flotation.

(b) Solution Evaporation

Evaporation uses approximately 18% of the process natural gas consumption. There are two approaches to reduce this energy consumption:

(i) reduce water addition to the process and, thus, reduce water to be evaporated, and
(ii) adopt more energy efficient process/equipment to improve steam economy.

A triple-effect concentrator is considered at this stage. If more effects can be added, the steam economy will improve significantly. To seek improved energy utilization, future testwork and engineering studies will investigate:

- The relationship of slurry density with leach extraction to minimize water addition.

- The evaporation system is operated at up to 260ºC which requires high-temperature steam or hot thermal oil as a heating medium; further investigation will determine which heating medium is preferred, based on capital and operating costs.

- The maximum salt concentration in the leach stage, without causing crystallization in downstream of process, should be used to minimize the water evaporation.

(c) Thermal Decomposition Unit

This is a critical piece of equipment in the process. The equipment selected is a type of indirectly-heated screw heat exchanger using thermal fluid (molten salt) as the heating medium. The equipment receives the feed as a magnesium salt tetrahydrate solution at 160ºC directly from the evaporation stage. First, water is evaporated in the dryer and anhydrous magnesium salt is obtained, then salts are chemically disassociated while traveling along the decomposition unit. The material goes through phase changes from liquid, to molten salt, to solids, which results in a dramatic volume reduction and change in heat transfer characteristics.

In an earlier version of thermal processing, the manufacturer recommended various types of granulation systems. These were examined in an effort to provide uniform feed to the decomposition circuit, including:

- Extrusion using a votator, a scraped surface heat exchanger that freezes the material and then extrudes it through a die.

- Rotoforming (pastillation).

- Spray drying (prilling).

The thermal processor was expanded to include a drying stage to overcome the need for granulation. The technology to granulate the magnesium salt monohydrate remains unproven due to the following.

- The temperature and throughput were found to exceed the design conditions of the votator equipment.

- Magnesium salt monohydrate is a solid at ambient temperature and has a sticky consistency at the process temperature making it difficult to pump. The material will plug the pipes as it cools down or heats up by approximately

20ºC. In addition, a special pump capable of handling molten salts is required. These pumps are available and used in the solar energy power plants to pump molten mixtures of sodium and potassium salts. A practical method of transporting magnesium salt monohydrate to the top of the spray dryer (priller) is to be devised.

- For prilling, the manufacturer of the spray dryer will need to test for the maximum feed temperature versus performance.

- Confirmation of the ideal size range that can be accepted as feed to the decomposition unit is required. Prills are usually between 200 to 400 microns.

- The rotoforming equipment supplier needs additional process data for an equipment specification.

(d) Briquetter

The formulation of the briquettes will require development to confirm the need of a binding agent. Common binders for MgO briquetting are magnesium sulphate solution, sulphuric acid, lignin sulphonates, reactive MgO flue dust and water. A briquetter manufacturer will assess the MgO before recommending a binder.

The preferred briquetting temperature ranges from 200ºC to 500ºC at a desired pressure range of 4 to 15 t/cm. The current process design assumes the feed temperature to be 80ºC. The best operating temperature and pressure range of the briquetters will be confirmed.

Two suppliers with MgO briquetting experience provided budgetary quotes. One manufacturer recommends using six briquetters to produce briquettes with the desired physical properties. A recycling rate was not specified. Another manufacturer recommends using nine briquetters with 7 t/h throughput at 75% recycling rate. Additional process options should be explored to find more cost effective briquetting equipment.

(e) DBM Kiln

A shaft kiln is recommended by the kiln supplier for dead burning of MgO. Literature research shows that, depending on the content of fluxing agents, dead burning is performed at 1,700ºC to more than 2,000ºC for approximately 20 h. The desired holding temperature required to obtain dead-burned MgO briquettes inside the shaft kiln will require pilot work in the next phase of engineering.

25.3.3 Materials of Construction

The material of construction for most of the flotation circuit is carbon steel assuming that low pH reclaim water is not used in the flotation circuit.

Stainless steel is used for the equipment that is subject to the potentially corrosive chemicals involved in the process. Synthetic rubber-lined carbon steel slurry pumps are used in the leach and impurity precipitation area to resist abrasion wear. Their application at temperatures 110°C and higher and low pH needs to be verified.

DMI claims that 304 stainless steel is the suitable material of construction for the equipment in the reagent regeneration circuit. The condenser design will be examined more thoroughly, since zirconium tubes have been suggested. This would increase the capital cost of the condenser to approximately $6 million.

25.3.4 Solids/Liquid Separation Equipment

The available data are sufficient only for estimating rough sizing for the thickeners and filters. The preliminary testwork completed by Pocock characterized settling rates and filtration rates for two process streams of certain density and concentration. The assumptions used for sizing these thickeners and filters will need confirming by performing the tests under conditions that match actual operations. The thickener and the filter sizing will be revisited when more test data are available.

DMI recommended 20:1 underflow recycle rate on a conventional thickener. A high ratio leads to excessive surface area and retention volume. After discussion with Globex and suppliers of the high rate thickener, a ratio of 4:1 was derived.

The impurity precipitation thickener overflow contains suspended solids, mainly mixed hydroxides, in the 100- to 200-ppm range. A polishing filter installed downstream of the thickener will be considered. Removing the impurities will improve the final product quality as well as the evaporator operating conditions.

Four pressure filters in the process need to be operated at a temperature higher than 80ºC. They are the primary leach filter, secondary leach filter, and hydroxide precipitation filter. Candle filters have been selected for these services as they can sustain a maximum operating temperature of 250ºC while being used for high throughput.

25.3.5 Risk

- Scale formation on the walls of the impurity precipitation tanks may occur during neutralization.

25.3.6 Leaching

Leach and recovery tests have been successfully demonstrated by DMI using medium-strength reagent. To improve the water balance and to minimize evaporation of water in leach solution, DMI stated that the leach can be done using stronger reagent. This has been incorporated into the current design criteria, but needs to be verified in future testwork. Corresponding salt losses also need to be confirmed.

To date, only a single-stage leach has been tested. The current two-stage leach design is based on the results from single-stage leaching with best possible assumptions. Testwork is required to determine the primary and secondary leach parameters. Equipment sizing should be revisited once the test results are available.

25.3.7 Reagent Regeneration

The key element of the process is the ability to recover and recycle the primary reagent. The flowsheet consists of three steps: solution evaporation, magnesium salt decomposition and reagent regeneration. This flowsheet has not yet been established commercially; thus it is perceived to carry substantial technical risk. A test to demonstrate the entire process on a larger scale is necessary.

The GHG absorption efficiency decreases significantly at temperatures above 50ºC. The current design calls for use of chillers, in order to run the absorption units at 30ºC. However, the capital, as well as the operating cost of the chillers is high. In addition, the current GHG absorption circuit design does not allow any utilization of the excess heat created by this system. A traditional generation plant takes advantage of that heat and uses it to generate electricity. A trade-off study on capital and operating cost of chillers versus the costs for a reagent plant, offset by revenue, will be a determining factor.

Adding cooling coils to the absorption units is worth investigating. The cooling water can be supplied by the cooler at 20ºC. This decreases the cooling load on the chillers, as well as the recirculating load into the absorption units, thus decreasing the sizes of the associated equipment. The capital and operating costs of the reagent regeneration circuit could significantly decrease.

25.3.8 Alternative Equipment

Reverse osmosis was considered to concentrate the feed to the evaporator, thus decreasing the evaporation load.

Reverse osmosis is a type of filtration which uses a membrane to physically separate large and small molecules and ions by applying a high pressure to the solution. The result is that the concentrated solution (the solute) is retained on the pressurized side of the membrane and the purified liquid (the solvent) is allowed to pass to the other side. Reverse osmosis is most commonly used in drinking water production from seawater.

The limit of practical operating temperature of a membrane is between 35ºC and 45ºC. The current temperature of the feed to the evaporator is 80ºC which exceeds the limits for the commercially available membranes. Additional tests are required to determine whether the feed temperature can be safely lowered without causing solidification. A trade-off study will compare the costs of using combination of reverse osmosis filtration and crystallization versus evaporation.

25.4 ENVIRONMENT, PERMITTING AND COMMUNITY IMPACT

Environmental baseline studies were initiated in September, 2009 by Blue Heron to assess a range of environmental variables including: terrestrial habitat, aquatic habitat, geology, surface water quality and mine rock geochemistry as part of the overall mine permitting process.

The results of the study did not indicate the presence of provincially endangered or threatened native species of plants at the site.

A diversity of fish and benthic species were discovered in water bodies located on the property which include Shaw Creek, Gold Lake Outflow and associated tributaries. Although no cold water species (e.g. brook trout) were captured during baseline studies, conditions in the lower sections of Shaw Creek may be suitable to support such species. In consideration of its designation as a cold water stream by the Ontario Ministry of Natural Resources, Shaw Creek should be considered sensitive to disturbance. Potential effects of discharge from the project or physical disturbance to Shaw Creek should be avoided or mitigated. The Mountjoy River which runs along the southern boundary of the property is occupied by both cold and warm water fish species including several sport fish species.

Overall, the water quality monitoring data indicate that the concentrations of the majority of parameters in area creeks, rivers and lakes were within acceptable limits (governed under Ontario Regulation 560/94 Schedule 1 and Provincial Water Quality Objectives (PWQO)). Some moderately elevated concentrations of iron, aluminum, phosphorus and copper were noted at some locations.

Down gradient groundwater users that could be influenced by the mine development were not identified. On-site monitoring indicated that groundwater was slightly alkaline. Parameter concentrations in groundwater which were elevated above PWQO included: aluminum, arsenic, cadmium, cobalt, chromium, copper, iron, nickel, phosphorus, thallium, uranium, vanadium and zinc. Parameter concentrations which were elevated above Ontario Drinking Water Quality Standards (ODWQS) included: aluminum, chromium, antimony, iron, manganese (aesthetic objective) and hardness. Given the location of the site, these results are considered to be representative of pre-production conditions and, as such, the elevated concentrations identified are considered to be naturally occurring and are a consequence of the local mineralized geology.

Waste rock, ore and hydrometallurgical residue samples contained low to negligible sulphide concentrations and were predicted to be non-acid generating. The sample of acid leach residue from pilot plant hydrometallurgical processing was acidic due to the process chemistry employed.

Metal leaching from all samples was generally very low to negligible. In comparison to PWQO, aluminum and vanadium concentrations were moderately elevated in leachate from some waste rock samples. It is acknowledged that comparison of short-term leach test data to water quality objectives that apply to receiving waters is not strictly appropriate. However, for screening purposes this comparison does indicate that vanadium and aluminum concentrations from runoff from waste rock may be relatively elevated.

The main provincial regulatory permits likely associated with the project include: i) Ministry of Environment - Permit to Take Water, ii) Ministry of Environment - Environmental Compliance Approval (ECA) for Industrial Sewage Works, iii) Ministry of Environment - Environmental Compliance Approval (ECA) for Air and Noise, iv) Ministry of Northern Development, Mines and Forestry - Mine Closure Plan, and v) Ministry of Health/local public health units - Approval of Septic Systems (may be required).

To date, it is not anticipated that the proposed mine development at the site will trigger an Environmental Assessment (EA). Based upon the current status of the mine plan, the permitting effort has been focused upon collection of necessary baseline data to allow preparation of a Mine Closure Plan at the appropriate time.

The Mattagami First Nation is the primary First Nation with traditional territory in the project area. In November, 2011 an introductory meeting was attended by representatives of the Wabun Tribal Council and Mattagami First Nation, Globex and Blue Heron. At this meeting, Globex made a presentation introducing the company and its goals for the site. Additional discussions and meetings between Globex, First Nations and the Métis Nation of Ontario will be scheduled as the project develops.

25.5 ECONOMIC ANALYSIS

Micon has prepared its assessment of the project on the basis of a discounted cash flow model, from which net present value (NPV), internal rate of return (IRR), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested.

The objective of the study was to establish the economic viability of the proposed development of an open pit mining operation and processing for the production of talc and magnesia from the deposit. In order to do this, the cash flow arising from the base case has been forecast, enabling a computation of the NPV to be made. The sensitivity of this NPV to changes in the base case assumptions is then examined.

At the end of Year -1, the project has cumulative pre-production capital expenditure of $268 million. After taking into account working capital of $16 million, the total project funding requirement rises to $284 million. Thereafter, the project is forecast to be cash positive in each year of operation, generating a cumulative net cash flow before tax of $1,218 million and $840 million after tax. On the undiscounted cash flow, payback occurs after 4.1 years. On the cash flow discounted at 8%, payback occurs after 5.8 years, and leaves a production tail of more than 14 years, based on the initial 20-year pit limits.

Over the LOM period, the average cash operating cost equates to $98.65/t treated, providing an average margin of 61% over the operating period.

The base case evaluates to an IRR before- and after-tax of 23% and 20%, respectively. At the selected discount rate of 8%, the net present value (NPV_8) of the cash flow is $404 million before tax and $258 million after tax. The base case cash flow evaluation results are shown in Table 1.925.2, which also shows the results at the higher discount rates of 10% and 12%. In Micon's opinion, the results demonstrate economic viability of the project base case, under the conditions described in this report.

Table 25.2
Base Case Cash Flow Evaluation

$ million	LOM Total	Discounted at 8%/y	Discounted at 10%/y	Discounted at 12%/y	IRR (%)
Gross Sales	2,578,530	1,164,507	989,551	851,005	
less Royalties	38,678	17,468	14,843	12,765	
less Selling Expenses	2,250	1,023	871	750	
Net Sales Revenue	**2,537,602**	**1,146,017**	**973,837**	**837,489**	
Mining Costs	152,879	66,799	56,318	48,085	
Processing Costs	690,230	314,365	267,749	230,804	
G&A costs	143,374	65,170	55,483	47,809	
Total cash operating costs	**986,483**	**446,334**	**379,549**	**326,698**	
Net Cash Operating Margin	1,551,119	699,683	594,288	510,792	
Initial capital	266,361	255,015	252,437	249,950	
Sustaining capital, closure	66,879	37,743	33,543	30,065	
Changes in W. Capital	-	10,532	11,053	11,266	
Net cash flow before tax	**1,217,879**	**403,792**	**305,145**	**227,661**	**23**
Taxation payable	377,338	145,839	118,513	97,310	
Net cash flow after tax	**840,541**	**257,953**	**186,631**	**130,351**	**20**

It should be noted that this PEA is preliminary in nature and it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the conclusions of the PEA will be realized.

Micon concludes that this study demonstrates the economic potential of the project as proposed, and that further development is warranted.

26.0 RECOMMENDATIONS

Given the successful outcome of the PEA, in that this study has demonstrated the economic potential of the project as proposed, it is Micon's opinion that further development and study is warranted. The authors of this report make the following recommendations to Globex.

26.1 DATA COLLECTION AND MINERAL RESOURCE ESTIMATES

The mineral resources estimated in this report contain a material amount of inferred mineral resources which are acceptable for use in a PEA (with appropriate cautionary language) but are not acceptable for use in a prefeasibility or feasibility study to determine mineral reserves. Micon recommends that Globex conduct a drill program designed to upgrade a sufficient amount of this inferred material to measured or indicated resources in order to meet the requirements of the feasibility study.

The following recommendations were made by Pressacco (2010). Micon recommends that they be followed for the drilling program.

Micon recommends that Globex purchase known blank materials that are composed of commercial clean 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.

26.2 GEOTECHNICAL

The following additional work is recommended by Golder in order to bring the pit slope design to the pre-feasibility level:

Overburden

- Create a map of the overburden thickness based on the existing and new exploration holes.

- Excavate test pits for better define the overburden layers.

- Collect soil samples for carrying out laboratory classification index tests (e.g., sieve analysis with hydrometer, Atterberg limits, and natural water content).

- Install piezometers at the overburden-bedrock interface as part of the proposed hydrogeology program.

Bedrock

- Preparation of a surface geological map by Globex geologists.

- Diamond drilling of at least 4 to preferably 5 inclined, geotechnical holes with core orientation and packer testing to investigate the geomechanical (rock mass fabric and quality) and the hydrogeological rock mass conditions. These holes would target and penetrate into the North Wall (2 holes), Southeast Wall, South Wall and West Wall to assist in collecting structural data at depth.

- Televiewer surveys – based on the current exploration drill holes, structural data at depth could also be obtained sooner by carrying out optical or acoustic televiewer surveys on at least 4 holes. Additional surveys could be conducted later on the geotechnical holes drilled into the North and South walls, as recommended above.

- In terms of packer testing and televiewer surveys, consideration should be given to use the existing or planned exploration holes.

- Laboratory rock testing – Additional core samples should be collected for performing the following laboratory rock tests: Brazilian tensile strength tests, uniaxial compressive strength and triaxial strength tests, complementing the screening laboratory results presented in this technical memorandum. As the project advances to the pre-feasibility stage, it would also be recommended that direct shear tests be performed along the discontinuity/foliation surfaces.

The estimated cost for carrying out the above Phase II investigations is in the range of $250,000 to $350,000.

26.3 MINING

Micon recommends that the scope for the environmental base line studies should include evaluation of locations for waste rock storage.

26.4 MARKETING

Micon recommends that Globex continues to evaluate the markets for high purity magnesia and high brightness talc, particularly in North America, and develops appropriate strategies for market entry.

26.5 ENVIRONMETAL BASE LINE STUDIES

26.5.1 Surface Water Quality

Surface water sampling and flow rate monitoring should be continued to establish baseline conditions at the site.

26.5.2 Hydrogeological Assessment

Recommendations include:

- It is recommended that an elevation survey is conducted for the top of the groundwater monitoring well pipes to allow for interpretations of hydraulic gradients at the site.

- In order to facilitate estimation of groundwater seepage into the open pit to support the pit design and permitting process, a supplemental drilling program may be required in order to assess the deeper hydrogeology of the proposed open pit. It may be possible to utilize existing exploration drill holes for this purpose, depending upon their location, orientation and condition. This should be determined prior to drilling any new boreholes.

- Continuation of groundwater sampling to establish baseline groundwater quality conditions.

26.5.3 Risk of Acid Rock Drainage/Metal Leaching

Recommendations include:

- As the mine plan and waste management strategies are developed, tonnages of the various waste rock units should be estimated in order to help refine the overall geochemistry sampling program to ensure that sufficient representative samples have been collected to characterize all of the mine wastes.

- As additional hydrometallurgical waste residues become available from ongoing research into hydrometallurgical processing options, it would be beneficial to carry out some additional geochemical testing in order to better characterize these materials including their risk of leaching nitrogenous species (nitrate, ammonia and nitrite).

- Based upon the results of short-term leach testing of hydrometallurgical residues, it is recommended that consideration be given to the use of synthetic or natural liners to minimize the risk of groundwater impacts arising from seepage from temporary magnesia stockpiles and/or permanent impoundments used to store residue wastes at the site. This recommendation may be modified pending the collection and testing of additional samples.

A budget of approximately $30,000 should be allowed to cover any additional geochemical testwork, if required.

26.6 WATER SUPPLY

Jacobs makes the following recommendations in regard to water supply.

The process requires a constant supply of water necessitating 100% duty from the water system. In a cold climate the system must be protected from freezing by either electrical tracing or back-up power to run critical pumps and maintain circulation

Supply of potable water could be sourced from the local river or from boreholes on the property. Sufficient quantities of potable water are to be made available – see note on Process Recommendations

26.7 PROCESS PLANT

Jacobs makes the following recommendations in regard to the process plant.

26.7.1 Layout

The layout demonstrates an orderly placement of the unit operations according to the process sequence. Peripheral facilities such as the assay laboratory, the warehouse and related utilities including water treatment, chillers and cooling towers appear on the layout; however their positions may change when the final design is completed.

26.7.2 Process Design

The process design requires further refinement to be based on results of testwork currently underway and planned for the future. The tests are to confirm assumptions already being considered and support the design criteria for the basis of the process design. Several specific areas warranting further study are recommended as follows:

- Investigate the process steps that are large consumers of energy or can be reconfigured to operate more efficiently:

  - Triple effect evaporator: control temperature to achieve an intermediary tetrahydrate.

  - Thermal decomposition units - Optimal feeding method to the decomposition step. A testing program involving the equipment manufacturer is required to optimize the operating parameters, to determine if granulation is required or if pumping magnesium salt monohydrate is possible. Currently, planning is underway to test the transfer of partial tetrahydrate between the evaporator and thermal processor. Alternate decomposition equipment can also be investigated to determine the most cost effective decomposition process.

  - Shaft kiln - optimize the operating temperature and conditions for MgO dead burning.

  - Chiller - achieve highest efficiencies for dissipating heat in the reagent regeneration circuit.

- Optimize the briquetting step starting with trials on produced CCM. The binder type and recipe is still to be determined.

- Investigate and select economic grades of material for the construction of vessels and piping. The current design already has allotted carbon steel to the tanks for flotation, and limits 304 stainless steel equipment for reagent.

- Review filter sizing and performance by conducting bench scale and pilot tests on representative samples of process material. Apply techniques to achieve improved filtration results using commercially available equipment. Further solid-liquid separation testwork to investigate the settling and filtration rates to optimize the sizes of thickeners and filters. The flocculant consumptions currently reported contribute to a high operation cost.

- Conduct pilot tests on the leach circuits to assess the benefit of a secondary stage. This will involve examining stage recoveries, reagent addition rate, reagent strength, and residence time for primary and secondary leaching steps in a two-stage countercurrent leach flowsheet.

- Study harnessing the excess heat liberated from the reagent regeneration circuit to generate power. The current GHG absorption circuit design does not allow for utilization of the excess heat created by this system. Traditional reagent plants take advantage of the heat to generate electricity and feed that back into the grid at a preferred rate. A trade-off study on the capital and operating cost of chillers versus the costs for such a plant, offset by revenue, may be significant.

- Source alternate equipment able to achieve the desired results while maintaining simplicity and energy efficiency. Significant improvement in talc flotation will be achieved using an attritor as a polishing mill before the cleaner flotation. Other testwork data, as it becomes available, will be put towards more precise selection and sizing of associated equipment, and to verify the water and energy balances.

- Evaluate the MgO process on a larger pilot scale to fully demonstrate decomposition and reagent regeneration. As an interim step, the talc production stage could be pursued with shipping of flotation tails to external processors. An additional testing program with the decomposition equipment manufacturer will generate useful data in order to optimize the operating parameters and to determine if granulation is necessary. From an energy saving point, liquid feeding conserves energy through both operations by eliminating the cooling step to solidify and granulate the product and subsequent heating step to liquefy for the decomposition unit. However, from a material handling point, solid feeding would be preferred as distributing a molten product presents more of a challenge.

- Study the behaviour of temperature and rates of absorption in reagent recovery. The work should lead to more effective heat removal in the reagent absorption circuit.

- Evaluate scrubber units, regeneration columns or carbon capture methods to minimize greenhouse gas emissions. Permissible GHG emission levels in Ontario need to be understood, in order to determine the scrubber operating parameters including consumption of additives such as hydrogen peroxide.

- Develop the marketability of dewatered hydroxides as a value added product. Mixed hydroxides tails contain 87% (wt) ferric hydroxide. The formulation closely matches that found in adsorbents to remove heavy metals (i.e., arsenic and chromium) from contaminated soil and water.

- Practise zero discharge by treating and returning the plant effluent water back into the process. A significant decrease in fresh water requirements for the process will be beneficial.

26.8 PROPOSED TIMMINS TALC-MAGNESITE PROGRAM AND BUDGET

Globex has proposed a two-phased program of work to advance the Timmins Talc-Magnesite property towards a production decision.

Starting in 2012, the Globex budget for the project presents an aggressive work program designed to:

- complete the pre-feasibility and feasibility studies,
- permit and develop the mine,
- build a 1/5th scale talc market demonstration plant,
- pilot certain aspects of the DMI magnesia process,
- start engineering of the main commercial 500 kt/y plant.

The proposed program and associated budget is set out in Table 26.1.

Table 26.1
Exploration and Development Program Budget

	ITEM	COST (CDN$)
PHASE 1		
1.0	Pre-feasibility study	
1.1	Diamond drilling	
	Definition in-fill and zone extension testing	1,000,000
	Variability study drilling	300,000
1.2	Talc variability study	
	Laboratory work and micronization	500,000
1.3	Geotechnical	
	Plant and holding pad soil studies	300,000
1.4	Miscellaneous	
	Archeology and environmental	200,000
	Alternative talc process testing, evaluation reporting and property claim maintenance	700,000
PHASE 2		
2.0	Feasibility studies and site preparation	
2.1	Geotechnical	
	Plant and pit ground stability and hydrogeology	2,000,000
2.2	Permitting and development	
	Site acquisition	200,000
	Environmental	200,000
	Closure plan and bonding	1,500,000
	Pit pre-development	500,000
	First Nations and public consultations	200,000
2.3	Plant and process feasibility study	
	Demonstration plant engineering	3,500,000
	Main plant engineering	6,000,000
	Trade-off studies	500,000
	Marketing study updates	120,000
2.4	1/5th Scale Demonstration Plant (Talc + DMI)	
	DMI Equipment and installation	5,300,000
	Talc mechanical equipment	6,800,000
	Factored commodities	4,500,000
	Site infrastructures	3,100,000
	Indirect costs	2,500,000
2.5	Miscellaneous	
	Reporting and property claim maintenance	400,000
	Subtotal Phase 1	3,000,000
	Subtotal Phase 2	36,920,000
	10% Contingency	4,032,000
	15% Management and supervision	6,048,000
	GRAND TOTAL (Phase 1 and 2)	**$50,000,000**

Micon has reviewed the proposed exploration and development program and finds it to be reasonable and justified in light of the observation made in this report. Should it fit with the strategic goals of Globex management it is Micon's recommendation that the company conduct the proposed program.

The preliminary economic analysis presented in this report is current as of March 2, 2012 and is based on a mineral resource estimate and interpretation current as of February 24, 2010, which, in turn, is based on a database of exploration results current as of October, 2009.

This report, titled "A Preliminary Economic Assessment For The Timmins Talc-Magnesite, Deposit, Timmins, Ontario, Canada", and prepared for Globex Mining Enterprises Inc., was completed by the following authors:

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28.0 CERTIFICATES

CERTIFICATE

B. TERRENCE HENNESSEY

As co-author of this report on certain mineral properties of Globex Mining Enterprises Inc. in northeastern Ontario, Canada, I, B. Terrence Hennessey, P.Geo., do hereby certify that:

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

Micon International Limited
Suite 900, 390 Bay Street
Toronto, Ontario
M5H 2Y2

tel. (416) 362-5135
fax (416) 362-5763
e-mail: thennessey@micon-international.com

2. I hold the following academic qualifications:

B.Sc. (Geology)	McMaster University	1978

3. I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Ontario (membership # 0038); as well, I am a member in good standing of several other technical associations and societies, including:

The Australasian Institute of Mining and Metallurgy (Member)
The Canadian Institute of Mining, Metallurgy and Petroleum (Member).

4. I have worked as a geologist in the minerals industry for over 30 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 work experience includes 7 years as an exploration geologist looking for iron ore, gold, base metal and tin deposits, more than 11 years as a mine geologist in both open pit and underground mines and 15 years as a consulting geologist working in precious, ferrous and base metals as well as industrial minerals.

6. I visited Timmins, Ontario and the Timmins Talc-Magnesite property, as well as the core storage facility in Larder Lake, Ontario during the period November 21 and 23, 2010 to see mineralized exposures in the field, to review exploration results and examine drill core. The property had not previously been visited by me.

7. I am responsible for the preparation of Sections 2 to 12, 14, 23, 24, 26.1 and 26.8, and portions of Sections 1, 25 and 26 summarized therefrom, of the Technical Report titled

"A Preliminary Economic Assessment For The Timmins Talc-Magnesite, Deposit, Timmins, Ontario, Canada" and dated April 16, 2012.

8. I am independent of the parties involved in the property for which this report is required, as defined in Section 1.5 of NI 43-101.

9. I have had no prior involvement with the mineral properties in question.

10. I have read NI 43-101 and the portions of this report for which I am responsible have 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.

The effective date of the mineral resource used in this report is February 24, 2010, which, in turn, is based on a database of exploration results current as of October, 2009. The effective date of the Preliminary Economic Analysis presented herein is March 2, 2012.

Dated this 16th day of April, 2012

"B. Terrence Hennessey" {signed and sealed}

B. Terrence Hennessey, P.Geo.

CERTIFICATE

TIMOTHY HAYES

As co-author of this report on certain mineral properties of Globex Mining Enterprises Inc. in northeastern Ontario, Canada, I, Timothy Hayes, P.Eng., do hereby certify that:

1. I am employed as a project engineer by, and carried out this assignment for:

Jacobs Minerals Canada Inc.
#301-1920 Yonge St.
Toronto, Ontario
Canada, M4S 3E2

tel. (416) 440-2162
fax (416) 343-9300
e-mail: Tim.Hayes@jacobs.com

2. I hold the following academic qualifications:

B.A.Sc.	University of Toronto	1983

3. I am a member of the Professional Engineers Ontario (P.Eng., licence #90220047) and a member in good standing of the Project Management Institute (Project Management Professional, Member ID 1242690, PMP #1258047).

4. I have practiced my profession for 22 years since obtaining the P. Eng. licence in 1990. I have been directly involved in project feasibility studies, plant design, pilot testwork, materials handling and liquid solid separation in mining operations.

5. As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101, Standards of Disclosure for Mineral Projects (NI 43-101).

6. I did not visit the Timmins Talc-Magnesite property.

7. I am responsible for portions of Item 17 Recovery Methods, Item 18 Infrastructure, Item 21 Capital Cost of Plant (21.1 to 21.8 and 21.10.2 to 21.10.5) and those portions of Item 1 Summary, Item 25 Interpretations and Conclusions and Item 26 Recommendations that pertain to these sections of the Technical Report titled “A Preliminary Economic Assessment For The Timmins Talc-Magnesite, Deposit, Timmins, Ontario Canada” and dated April 16, 2012.

8. I am independent of the issuer (Globex Mining Enterprises Inc. and Micon International Limited as described by section 1.5 of NI 43-101.

9. I have been involved with the Timmins Talc-Magnesite project since March 2011 performing services to prepare technical contributions for engineering and design of the processing plant and contribution to certain items of the Technical Report.

10. I have read NI 43-101, the parts of the report I am responsible for have been prepared in compliance with NI 43-101.

11. As of the date of this certificate, to the best of my knowledge, information and belief, those parts of the Technical Report which I am responsible for contain all scientific and technical information that is required to be disclosed to make such parts of the Technical Report not misleading.

Dated this 16th day of April, 2012

"Timothy Hayes, P. Eng." {signed and sealed}

Timothy Hayes, P. Eng., PMP.

CERTIFICATE OF AUTHOR
DAYAN ANDERSON

As co-author of this report on certain mineral properties of Globex Mining Enterprises Inc. in northeastern Ontario, Canada, I, Dayan Anderson, do hereby certify that:

1. I am the Principal of Onyx Mining Services, California, and I carried out this assignment as an associate for Micon International Limited, Suite 900, 390 Bay Street, Toronto, Ontario, M5H 2Y2- tel. (416) 362-5135, fax (416) 362-5763;

2. I hold the following academic qualifications:
   B.S. Mining Engineering, Colorado School of Mines, (1997);

3. I am a Qualified Professional (QP) Member of the Mining & Metallurgical Society of America (MMSA);

4. I have worked as a mining engineer in the minerals industry for over 15 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 work experience includes 11 years as a mining engineer at various active mine operations and 4 years with Micon as a senior mining engineering consultant;

6. I visited Timmins, Ontario and the Timmins Talc-Magnesite property, as well as the core storage facility in Larder Lake, Ontario during the period November 21 and 23, 2010 to see mineralized exposures in the field and to examine drill core. The property had not previously been visited by me;

7. I am responsible for the preparation of Sections 15 and 16.2 to 16.7 of the Technical Report titled “A Preliminary Economic Assessment For The Timmins Talc-Magnesite Deposit, Timmins, Ontario, Canada” and dated April 16, 2012;

8. I am independent of the parties involved in the property for which this report is required, as described in Section 1.5 of NI 43-101;

9. I have had no prior involvement with the mineral properties in question;

10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument;

11. As of the effective date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

The effective date of the Preliminary Economic Analysis presented herein is March 2, 2012.

Dated this 16th Day of April, 2012.

“Dayan Anderson” {signed}

Dayan Anderson, QP, MMSA

CERTIFICATE OF AUTHOR
DAVID HALL

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

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

Applied Mineral Research Inc.
860 Reg Pope Blvd
Timmins, Ontario
P4N 8K8

tel. (705) 288-2218
fax (705) 268-0603
e-mail: david.hall@appliedmineral.com

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 27 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. In recent years I have led an operating industrial minerals company to new levels of health safety and environmental performance, profitability, personnel development, continuous improvement of processes products and services, and sustainable development.

6. I visited the Timmins Talc-Magnesite project site on several occasions starting July 24, 2009 to observe mineralized exposure and collect metallurgical samples.

7. I am responsible for the preparation of Sections 20.1, 20.3 to 20.6 and 13.3.1, and portions of Sections 1, 25 and 26 summarized therefrom, of the Technical Report titled “A Preliminary Economic Assessment For The Timmins Talc-Magnesite Deposit, Timmins, Ontario, Canada” and dated April 16, 2102.

8. I am independent of the parties involved in the property for which this report is required, as defined in Section 1.5 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 the portions of this report for which I am responsible have 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.

The effective date of the Preliminary Economic Analysis presented herein is March 2, 2012.

Dated this 16th day of April, 2012

"David C Hall" {signed and sealed}

David C. Hall, P.Eng.

CERTIFICATE OF AUTHOR
Jane Spooner

As a co-author of this report entitled "A Preliminary Economic Assessment For The Timmins Talc-Magnesite, Deposit, Timmins, Ontario Canada", dated 16 April, 2012, I, Jane Spooner, P.Geo., do hereby certify that:

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

Micon International Limited
Suite 900, 390 Bay Street
Toronto, Ontario
M5H 2Y2
tel. (416) 362-5135 fax (416) 362-5763
e-mail: jspooner@micon-international.com

2. I hold the following academic qualifications:

   B.Sc. (Hons) Geology, University of Manchester, U.K. 1972
   M.Sc., Environmental Resources, University of Salford, U.K. 1973

3. I am a member of the Association of Professional Geoscientists of Ontario (membership number 0990); as well, I am a member in good standing of the Canadian Institute of Mining, Metallurgy and Petroleum.

4. I have worked as a specialist in mineral market analysis for over 30 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 work experience includes the analysis of markets for base and precious metals, industrial and specialty minerals, coal and uranium and, specifically, for magnesite products and talc.

6. I have not visited the project site.

7. I am responsible for the preparation of Section 19 of this report entitled "A Preliminary Economic Assessment For The Timmins Talc-Magnesite, Deposit, Timmins, Ontario Canada", dated 16 April, 2012.

8. I am independent of the parties involved in the Timmins Talc-Magnesite property, as described in Section 1.5 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 the portions of this report for which I am responsible have 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 sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Effective Date: 2 March, 2012
Signing Date: 16 April, 2012

"Jane Spooner" {signed and sealed}

Jane Spooner, M.Sc., P.Geo.

CERTIFICATE OF AUTHOR
Christopher Jacobs

As co-author of this report entitled "A Preliminary Economic Assessment for the Timmins Talc-Magnesite Deposit, Timmins, Ontario, Canada", with an effective date of 02 March, 2012 (the "Technical Report"), I, Christopher Jacobs, do hereby certify that:

1. I am employed by, and carried out this assignment for:
   Micon International Limited, Suite 900 - 390 Bay Street, Toronto, ON, M5H 2Y2
   tel. (416) 362-5135 email: cjacobs@micon-international.com

2. I hold the following academic qualifications:
   B.Sc. (Hons) Geochemistry, University of Reading, 1980;
   M.B.A., Gordon Institute of Business Science, University of Pretoria, 2004.

3. I am a Chartered Engineer registered with the Engineering Council of the U.K. (registration number 369178);

   Also, I am a professional member in good standing of: The Institute of Materials, Minerals and Mining; and The Canadian Institute of Mining, Metallurgy and Petroleum (Member);

4. I have worked in the minerals industry for 30 years; my work experience includes 10 years as an exploration and mining geologist on gold, platinum, copper/nickel and chromite deposits; 10 years as a technical/operations manager in both open pit and underground mines; 3 years as strategic (mine) planning manager and the remainder as an independent consultant when I have worked on a variety of precious and base metal deposits;

5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101;

6. I have not visited the Timmins Talc-Magnesite property;

7. I am responsible for the preparation of Sections 21.9, 21.10.1 and 22, and the portions of Sections 1, 25 and 26 summarized therefrom, of the Technical Report.

8. I am independent of Globex Mining Enterprises Inc., as defined in Section 1.5 of NI 43-101;

9. I have had no previous involvement with the property;

10. I have read NI 43-101 and the portions of this report for which I am responsible have 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 sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 16th day of April, 2012

"Christopher Jacobs" {signed and sealed}

Christopher Jacobs, CEng MIMMM

CERTIFICATE

LUIZ CASTRO

As a co-author of this report on certain mineral properties of Globex Mining Enterprises Inc. in northeastern Ontario, Canada, I, Luiz Castro, P.Eng., do hereby certify that:

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

Golder Associates Ltd.
2390 Argentia Road
Mississauga, Ontario
Canada, L5N 5Z7

Phone: (905) 567-4444
Fax: (905) 285-0166
Email: lcastro@golder.com

2. I hold the following academic qualifications:

Ph.D. (Rock Mechanics), University of Toronto, 1996
M.Sc. (Soil Mechanics), New University of Lisbon, Portugal, 1987
B.Sc. (Civil Engineering), Catholic University of Rio de Janeiro, Brazil, 1980

3. I am a registered Professional Engineer in the Province of Ontario (membership number 90517921) in the areas of geotechnical and rock mechanics engineering applied to open pit and underground mining projects.

4. I have worked as a geotechnical engineer since 1980 and as a professional engineer in the Province of Ontario since 1997.

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 work experience includes geotechnical (soil and rock) engineering, field investigations, support design and mining sequence evaluation for underground excavations, numerical modelling for evaluating excavation, pillar stability and mining sequences and open pit slope designs.

6. I was responsible for the preparation of the technical memorandum titled "Conceptual Pit Slope Design for the Globex Timmins Talc-Magnesite Project dated March 2011", which is summarized in Sections 1.12.1, 16.1 and 26.2 of the Technical Report titled "*A Preliminary Economic Assessment For The Timmins Talc-Magnesite, Deposit, Timmins, Ontario Canada*" and dated April 16, 2012.

7. I visited Timmins, Ontario and partially the Timmins Talc-Magnesite property, as well as the core storage facility in Larder Lake, Ontario in January 2011 to carry out geotechnical logging and inspection of exploration drill core.

8. I am independent of the parties involved in the property for which this report is required, as defined in Section 1.5 of NI 43-101.

9. I have had no prior involvement with the mineral properties in question.

10. I have read National Instrument 43-101 and certify that the portion of Sections 1.12.1, 16.1 and 26.2 of the Technical Report for which the Golder Associates memorandum was used, reflects, to the best of my knowledge, information and belief, the technical information presented in those reports and contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 16th day of April, 2012

"Luiz Castro" {signed and sealed}

Luiz Castro, P. Eng,

CERTIFICATE

KENNETH A. BOCKING

As co-author of this report on certain mineral properties of Globex Mining Enterprises Inc. in northeastern Ontario, Canada, I, Kenneth A. Bocking, P.Eng., do hereby certify that:

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

Golder Associates Ltd.
2390 Argentia Road
Mississauga, Ontario
L5N 5Z7

Phone: (905) 567-4444
Fax: (905) 567-6561
e-mail: kbocking@golder.com

2. I hold the following academic qualifications:

B.Sc. (Civil Engineering)	University of Saskatchewan	1974
M.Sc. (Geotechnical Engineering)	University of Saskatchewan	1978

3. I am a registered Professional Engineer with the Association of Professional Engineers of Ontario (Membership # 4253654).

4. I have worked as a professional engineer consulting to the minerals industry for over 23 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 work experience includes geotechnical (soil) engineering, field investigations and the design of mine waste management facilities.

6. I visited Timmins, Ontario and the Timmins Talc-Magnesite property on December 12, 2010 to see mineralized exposures in the field, and to view the "Adams Block" (the potential location of the processing plant).

7. I was responsible for the preparation of a report titled "Conceptual Design of Storage Facilities for the Globex TTM Project" dated March 2011", which is summarized in Section 20.2 of the Technical Report titled "*A Preliminary Economic Assessment For The Timmins Talc-Magnesite, Deposit, Timmins, Ontario Canada*" and dated April 16, 2012.

8. I visited Timmins, Ontario and the Timmins Talc-Magnesite property, and also viewed the "Adams Block" (the potential location for the processing plant) on December 9, 2010. These sites were visited on a "drive by" basis only. No detailed site reconnaissance and no geotechnical drilling have been carried out.

9. I am independent of the parties involved in the property for which this report is required, as defined in Section 1.5 of NI 43-101.

10. I have had no prior involvement with the mineral properties in question.

11. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

12. As of the date of this certificate, to the best of my knowledge, information and belief, Section 20.2 of the Technical Report for which the Golder Associates report was used, contains all scientific and technical information that is required to be disclosed to make this report not misleading.

The effective date of the Preliminary Economic Analysis presented herein is March 2, 2012.

Dated this 16th day of April, 2012

"Kenneth A. Bocking" {signed and sealed}

Kenneth A. Bocking, P.Eng.