



**PROPERTY VISIT AND SAMPLING REPORT**

**ON THE**

**SEPARATION RARE METAL PROPERTY**

**PATERSON LAKE AREA**

**DISTRICT OF KENORA**

**ONTARIO**

**FOR**

**MEGA GRAPHITE INC.**

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## 1. INTRODUCTION

The Separation Rare Metal Property of Mega Graphite Inc. is comprised of two claim groups containing 25 mining claims containing 206 units plus one Mining Lease CLM 428 and covering in total 3492 ha in Northwestern Ontario. The Property was acquired for its potential to host Rare Metal mineralization of economic interest.

The Property is located approximately 60 kilometres north of the town of Kenora, at 50°17.9'N latitude and 94°36.4'W longitude. Kenora is located on Provincial Highway 17 (Transcanada Highway), on the north shore of Lake of the Woods, 210 kilometres east of Winnipeg, Manitoba and 510 kilometres west of Thunder Bay, Ontario (Figure 1).

The writer was requested by Mega Graphite Inc. ("MGI" or "the Company") to visit the Property, review the past work on the Property and surrounding area and to prepare a preliminary report on the Property.

This report is based on the Property visit and publically available information. The writer visited the Property on 16 May 2012.

Metric units and Canadian dollars are used throughout this report unless otherwise indicated.

## 2. PROPERTY DESCRIPTION AND LOCATION

The Separation Rare Metal Property is centred at approximately 94°36.4'W longitude and 50°17.9'N latitude within NTS Sheet 52L/8SW within the Kenora Mining Division of Northwestern Ontario. Specifically, claims are located in the Mining Land Tenure Maps, Paterson Lake (G-2634) Area (Figures 2 and 2a). The property is comprised of two claim groups containing 25 active mining claims (206 units) plus one Mining Lease CLM 428 with a total area of approximately 3492 ha.

MGI holds a 100% interest in both the surface and mining rights of the 25 active claims. The work requirements and the due dates are provided in Table 1. The basic

assessment requirement is \$400 exploration expenditure per unit per year. No work has been carried out on the subject claims by the Company.

Mining Lease CLM 428 is a crown lease covering 195.760 ha (196 ha) covering surface and mining rights as specified in Plan 23R-10223, Land Registry Office, Kenora, Ontario.

On the 19 May 2010 Mega Graphite Inc. entered into a "Mining Claims Purchase and Transfer Agreement" (the "Agreement") with Pacific Iron Ore Corporation whereby Mega Graphite could acquire a 100% interest in the Separation mining claims and one mining lease held by Pacific Iron Ore Corporation. The Agreement specified that Mega Graphite Inc. could acquire a 100% interest in the subject claims and mining lease by paying to the optionor 900,901 shares in the capital stock of Mega Graphite to be issued and delivered to the optionor on or before the closing date of June 30, 2010. The sale was subject to Mega Graphite Inc. going public by November 2011. For a number of reasons, including a soft IPO market, this did not take place. Pacific Iron Ore then exercised an option to take cash in lieu of the shares. The payment was to be \$1,000,000 spread over a period to be determined, most likely on the order of 5 or 6 months. The Company has indicated that once it completes its IPO scheduled for August/September 2012 that the terms of this payment will be finalized to reflect a monthly remittance schedule along these lines. There is no provision in the agreement for a Net Smelter Royalty (NSR).

The mining lease CLM 428 is part of the claim group covered by the Agreement, however, for the same reasons as laid out above transfer of ownership to Mega Graphite Inc. has not been completed and will be finalized upon completion of an amended agreement. The writer checked the ownership of CLM 428 in the Land Registry Office in Kenora on May 15, 2012 and the claim is currently registered to Pacific Iron Ore.

There are no recognized environmental liabilities to which the Property is subject.

A new Ontario Mining Act was passed in October 2009 and changes are being phased in. In 2012 a "graduated regulatory scheme setting rules for early exploration activities, including consultation with First Nations and Metis" and "measures protecting

areas which meet criteria as sites of Aboriginal cultural significance from the impacts of mineral exploration” are being implemented. The Property lies within the traditional lands of the Wabaseemoong Independent Nations of Whitedog, Ontario, an aboriginal community located approximately 35 kilometres southwest of the Property. Before work can commence on the Property discussions with the community will be required (Wabaseemoong Independent Nations, 2012).



**TABLE 1  
MEGA GRAPHITE INC.  
SEPARATION RARE METAL PROPERTY CLAIMS**

Claim No.	Township/Area	UNITS	AREA (ha)	Work Required	CLAIM DUE DATE
1178880 *	Paterson Lake	4	64	1600	2012-Oct-03
1178881 *	Paterson Lake	1	16	400	2012-Oct-03
1178882 *	Paterson Lake	3	48	1200	2012-Oct-03
1178883 *	Paterson Lake	6	96	2400	2012-Oct-03
1178884 *	Paterson Lake	1	16	400	2012-Oct-03
1220417 *	Paterson Lake	6	96	2400	2012-Nov-21
1220418 *	Paterson Lake	4	64	1600	2012-Nov-21
1220419 *	Paterson Lake	2	32	800	2012-Oct-29
1220421 *	Paterson Lake	4	64	1600	2012-Aug-27
1220424 *	Paterson Lake	16	256	1620	2012-Oct-29
1220425 *	Paterson Lake	6	96	2400	2012-Oct-29
1221299	Paterson Lake	12	192	4800	2012-Oct-31
4204691	Paterson Lake	10	160	4000	2012-Oct-29
4204692	Paterson Lake	6	96	2400	2012-Oct-29
4204693	Paterson Lake	15	240	6000	2012-Oct-29
4204694	Paterson Lake	12	192	4800	2012-Oct-29
4214236 *	Paterson Lake	14	224	11200	2012-Oct-29
4214237 *	Paterson Lake	6	96	4800	2012-Oct-29
4224109	Paterson Lake	4	64	1600	2013-Aug-08
4224110	Paterson Lake	10	160	4000	2013-Aug-08
4267301	Paterson Lake	8	128	3200	2013-Nov-22
4267302	Paterson Lake	8	128	3200	2013-Nov-22
<b>Separate Claim Block to the North</b>					
4253660	Paterson Lake	16	256	6400	2012-Oct-29
4253661	Paterson Lake	16	256	6400	2012-Oct-29
4253662	Paterson Lake	16	256	6400	2012-Oct-29
<b>TOTAL 25</b>		<b>206</b>	<b>3296</b>	<b>85,620</b>	
<b>* Claims transferred to Mega Graphite from Pacific Iron Ore Corporation - June, 2010</b>					

### 3. ACCESS

The Separation Rare Metal Property can be accessed from Kenora by secondary provincial highway 658 north from the intersection of highway 17 for a distance of 20 kilometres to the English River road approximately 2 kilometres south of Redditt which is on the main transcontinental rail line of Canadian National Railways (CN). From the turn off, the English River road leads north to Kilometer 64 where a road turns to the west. This road is followed for approximately 8 kilometres at which point the Avalon Road turns off to the right (north). After approximately 2 kilometres this becomes an ATV trail which leads to CLM 428 and the southeastern part of the Property (Figure 2). A forest access road previously led to the western and northwestern part of the Property, however, this road has been decommissioned by the Ministry of Natural Resources i.e., culverts, water crossings etc. have been removed.

### 4. PREVIOUS WORK

The Separation Lake Greenstone Belt and the general area of the subject property has an extended history of both base and precious metal exploration with additional work focusing on the iron and uranium potential of certain units. More recently, research and mapping by the Ontario Government has demonstrated the potential of the rare metal pegmatites in the area. Much of the understanding of the geology of the Separation Lake Greenstone Belt and the adjacent area has come from the work of the Ontario Geological Survey and in particular that by Blackburn and Breaks and their colleagues from 1991 through 2000 (Figures 3, 4 and 5).

#### Mid-1930's

At this time, exploration work on a sporadic basis for base metals was conducted near Minnitaki on the Minnitaki pyrite prospect on Vermillion Lake south of the current property.

### 1948

Within the area of the current property adjacent to Selwyn Lake, Mr. E.O. Chisholm, resident geologist, Kenora reported pyrite, pyrrhotite, sphalerite, chalcopyrite, "lead" (or molybdenite) in a series of six pits. Reported assays ranged from 0.10 to 1.20% Zn, 0.9 to 1% Pb and 0.56% Cu (Blackburn et al, 2000).

### 1956

Sporadic work was directed towards the search for base metals in the Redditt area again south of the current property area.

### 1963

The Canadian Nickel Company Ltd., the exploration arm of the International Nickel Company of Canada Ltd. at that time, completed an exploration program south of Paterson Lake. The program consisted of one diamond drill hole, however, no assay results were submitted.

### 1968

Can-Fer Exploration Syndicate completed a regional radiometric airborne survey of a large area which included parts of the present property. Claims were staked in the following year on radiometric anomalies and ground work consisting of prospecting, trenching, geological mapping, scintillometer and ground magnetometer surveys plus three Winki drill holes were completed in 1969 and 1970.

### 1976

Huronian Mines Ltd. acquired the Can-Fer Exploration Syndicate property in 1974 and in 1976 optioned the property to Consolidated Summit Mines who completed nine diamond drill holes totalling 1635 ft. Eight of the holes were drilled in the previously trenched area and the drilled zone is reported to have an average grade of 0.82 lbs U<sub>3</sub>O<sub>8</sub> across 3.7 ft for a length of 370 ft. Subsequently, the program was suspended.



## **1990**

Kamo Energy and Resources Ltd. carried out an airborne magnetic and electromagnetic (ELF-EM) survey over what is now part of the present property.

## **1987 to 1992**

Champion Bear Resources Ltd. acquired claims in the Separation Lake Greenstone Belt in 1987 for the purposes of evaluating the properties for gold and base metal mineralization associated with geophysical anomalies. The exploration programs were carried out between 1988 and 1992 as follows.

- 1988 The Company optioned 23 claims and staked an additional 36 claims to cover the Alcock occurrence at Selwyn Lake (Figure 2).
- 1988 – 1989 Completed ground magnetic and electromagnetic surveys over the claims.
- 1989 Carried out airborne geophysical surveys, geological mapping and stripping with additional staking.
- 1990 Line-cutting, geological mapping and manual and mechanical stripping were carried out.
- 1990 – 1991 Forty diamond drill holes totalling 14,186 ft within the property were completed.
- 1991 – 1992 An additional 59 holes for a total of 21,030 ft were drilled within the property boundaries.

Champion Bear Resources traced out the base metal bearing horizon for over 20 kilometres with base metal mineralization assay values ranging from below detection limits to 0.66% Cu, 0.97% Zn and 9 g/t Ag.

### **1999**

Champion Bear Resources turned their attention to the rare metal pegmatites within the confines of the present property and carried out detailed mapping and sampling. During this work, a total of 94 samples were taken and three pegmatites were identified which were named Glitter, Wolf and Rattler. These pegmatites are described further in Section 7.3 Mineralization (Figure 3). None of these pegmatites have been drilled.

### **1996**

At this time, Avalon Ventures Ltd. staked a series of claims immediately south and west of the southeastern part of the current property and mining lease CLM 428 wherein lies the Big Mack pegmatite. Avalon Ventures drilled 4 holes on what they consider to be their property, however, when the property boundary was surveyed, it was found that the boundary was actually further south than previously thought with the result that the Avalon Ventures holes were drilled on third party claims held by Emerald Fields Resources Corp. The Avalon diamond drill holes intersected numerous pegmatites in each hole with values ranging from 0.01% LiO<sub>2</sub> over 2 metres to 2.08% LiO<sub>2</sub> across 0.35 metres.

### **1997**

Mr. A. Mowat and P. Thorgrimson staked claims at this time following the release of the Ontario Geological Survey reports by Breaks and Tindle (1993, 1996b). These claims are now part of mining lease CLM 428. During the spring and summer of 1997 the property was prospected and 62 samples were collected from pegmatite bodies. These samples were analyzed for 32 elements and lithium values were obtained ranging from 7 to 380 ppm Li (59 samples). Three samples gave lithium values of 800, 4400 and 5000 ppm. These high values came from the petalite – bearing pegmatite which was subsequently named the Big Mack.

In the fall of 1997 Emerald Fields Resources Corp. was formed to further evaluate the property and in particular the area of the Big Mack pegmatite. In the fall of

1997 three AW size core diamond drill holes were completed on the Big Mack pegmatite with values ranging from below detection limits to 1.10% Li across 1 metre.

### **1998**

Emerald Fields Resources Corp. continued work in the area of the Big Mack pegmatite with line-cutting, soil and rock sampling, prospecting and stripping being carried out. Numerous additional dykes were identified by the prospecting including one named the Eleven Zone pegmatite. Soil sampling indicated anomalous tantalum values associated with the lithium bearing units.

### **1999**

Emerald Fields Resources Corp. continued their work on the Big Mack pegmatite with 11 diamond drill holes being completed. This work defined the Big Mack pegmatite to a depth of approximately 50 metres below surface. A trench was blasted across the Big Mac pegmatite (25 metres) and a 5 ton sample of the blasted rock was collected and shipped to International Metallurgical and Environmental Inc. of Kelowna, B.C. The sample was processed to extract a petalite concentrate which was then sent to Corning Laboratory Services, Corning, NY for analysis and trial glass metal use. It is reported that the petalite yielded glass of acceptable visual quality.

In the fall of 1999 four claims of the Emerald Fields Resource Corp. were combined and perimeter surveyed and brought to lease as CLM 428.

### **2001**

A compilation report was prepared for the work that had been completed on the Emerald Fields Resources Corp. claims. This report summarized the work completed on the property and indicated two diamond drill targets, one with the potential to host tin mineralization and the second with the potential to host tantalum mineralization. As part of the compilation work a tonnage was calculated for the Big Mack pegmatite. The tonnage estimate is non-compliant with the 43-101 and CIM Standards for resource estimates (See Section 14, Mineral Resource Estimates). Diamond drilling on the Big



Mack pegmatite had tested a strike length of 75 metres and a depth of 50 metres. Diamond drill holes below 50 metres intersected pegmatite that was non-petalite bearing. A 17 hole diamond drill program was completed testing a number of pegmatite dykes within CLM 428 for their potential to host tin and tantalum mineralization. One hole was drilled on the Eleven Zone and one on the Big Mack pegmatite.

## **5. REGIONAL AND PROPERTY GEOLOGY**

### **5.1 REGIONAL GEOLOGY**

The Separation Rare Metal Property is underlain by the western end of the Separation Lake greenstone Belt along the southern boundary of the English River Subprovince which also has been referred to as the English River Gneiss Belt (Blackburn and Young, 2000) (Breaks, 1991). The subject Property is close to a major crustal boundary between the Archean English River Gneiss Belt to the north and the Archean Winnipeg River Pluton Belt to the south (Figure 4). To the north of the English River Subprovince is the Uchi Subprovince with the boundary between the two Subprovinces being the Sidney Lake - Lake St. Joseph Fault. To the west in Manitoba, the English River Subprovince has two subdivisions, the Manigotogan-Ear Falls Gneiss Belt and to the south the Bird River Greenstone Belt. In the area of the subject property, the Separation Lake Greenstone Belt occupies a position similar to that of the Bird River Greenstone Belt i.e., it is along the southern border of the English Rier Subprovince.

The English River Subprovince has been interpreted as an interarc sedimentary basin and more recently as an accretionary prism. Interbedded wackes and pelites and their migmatitic derivatives comprise approximately 60% of the Subprovince. The maximum age of sedimentation is poorly constrained but it continued until 2698 Ma (Breaks, 1991).

Numerous intrabelt batholiths, stocks and allied dykes were emplaced between 2698 and 2560 +/- 40 Ma. These plutonic rocks account for most of the remainder of the English River Subprovince and are divisible into five distinct groups in terms of their relative and absolute ages and are as follows.



- 1) Gneissic tonalite suite (3170 Ma).
- 2) Tonalite-trondhjemite-granodiorite suite (2665 +/- 20 to >3000 Ma).
- 3) Peraluminous granite granodiorite suite (2668 to 2692 Ma).
- 4) Biotite granite granodiorite suite (2660 +/- 40 to 2698 Ma).
- 5) Mafic ultramafic plutonic suite whose absolute age is unknown.

Along its southern edge, the English River Subprovince in the Kenora area lies against 2690 +/- 15 to 3170 Ma granitoid rocks of the Winnipeg River Subprovince. To the east, the English River Subprovince is in contact with the Wabigoon Subprovince.

## 5.2 PROPERTY GEOLOGY

The Separation Lake Greenstone Belt is characterized by a bimodal volcanic sequence comprising dominantly mafic flows with subordinate felsic pyroclastic rocks. Mafic metavolcanic rocks metamorphosed to amphibolites, comprise approximately 80% of the north facing sequence, south of the Selwyn lineament (Figures 4 and 5). Felsic metavolcanic rocks comprise the remaining 20%. Mafic amphibolites comprise all of the identified volcanic rocks around the Paterson Lake antiform north of the fault (Figure 4). In this area quartz-rich phases of the migmatites may be of felsic volcanic and/or sedimentary origin.

Pillowed flows are typical of the mafic metavolcanics, however, intense deformation has made top determinations almost impossible except in a few cases. Coarser gabbroic textured mafic rocks may be flows or subvolcanic sills. The mafic metavolcanics are dominated by the metamorphic mineral assemblage of hornblende, plagioclase, garnet and/or epidote.

Tuff and lapilli tuff are typical of the felsic metavolcanic rocks throughout the area. Chemical metasedimentary rocks in the form of magnetite – bearing iron formation occur at two identified stratigraphic levels within the mafic metavolcanic sequence south of the Selwyn Lake lineament. Typically the units are layered chert magnetite beds in the order of 1 metre to 5 metres wide. Sulphide minerals, predominantly pyrrhotite with subordinate pyrite locally replaced magnetite.

Clastic metasedimentary rocks occur at two stratigraphic levels, one within the mafic metavolcanic sequence and the second one overlying the felsic metavolcanic rocks in the eastern part of the area.

Polymictic conglomerate, in places interbedded with wacke occurs over a width up to 30 metres lying immediately above the metavolcanic sequence east of the English River. To the west, the unit pinches out and similar rocks have been observed along strike to the east.

South of the Selwyn Lake lineament granitic rocks invade or disrupt the continuity of the volcanic sedimentary sequences within the greenstone belt. All of these granitic bodies contain remnants of volcanic rocks and foliation within the granitic bodies is oriented in the general east-west direction suggesting a pre- to syn-tectonic emplacement. Along the English River, coarse pegmatitic phases are common and within this area beryl crystals are present.

Structural analyses of the collected data suggests that the Selwyn Lake lineament represents the boundary between two structural and possibly metamorphic terrains. To the east the contact between the felsic metavolcanic rocks of the Separation Lake Greenstone Belt and the migmatites of the English River Sub-province appears to be a continuation of this structural boundary. The open east-plunging Paterson Lake antiform north of this line is in contrast with the homoclinal, vertical to steeply dipping sequences with locally westerly plunging folds in the vicinity of the English River road to the south of this line. Mineral lineations and minor fold axis around the Paterson Lake antiform plunged between  $45^{\circ}$  and  $75^{\circ}$  to the east while those associated with folds at the English River road plunge between  $45^{\circ}$  and  $70^{\circ}$  to the west and southwest.

Within the homoclinal metavolcanic sequence, the degree of deformation increases from south to north across the belt. A zone of intense deformation coincides with the transition from felsic metavolcanic rocks of the Separation Lake Greenstone Belt to metasedimentary rocks of the English River Subprovince.

Foliations measured throughout the area are consistently oriented east-west (Blackburn et al, 1992).

## 6. MINERALIZATION

The zoned, complex pegmatites identified within and adjacent to the Separation Rare Metal Property are host to many of the rare metals such as lithium, beryllium, tin, tantalum, niobium, rubidium and cesium. The most important pegmatites identified to date are the Big Mack, Eleven Zone, Glitter, Wolf and Rattler. Table 2 lists the main minerals referred to in this and the following sections.

**TABLE 2**  
**MEGA GRAPHITE INC.**  
**SEPARATION RARE METAL PROPERTY**  
**MINERALS IN COMPLEX PEGMATITES**

MINERAL	CHEMICAL FORMULA	COMMENTS
<b>Lithium-bearing Minerals</b>		
amblygonite-montebrazite	LiAl(PO <sub>4</sub> )(FOH)	Lithium-aluminum-phosphate.
lepidolite	K <sub>2</sub> Li <sub>3</sub> Al <sub>4</sub> Si <sub>7</sub> O <sub>21</sub> (OH,F) <sub>3</sub>	
petalite	LiAlSi <sub>4</sub> O <sub>10</sub>	
spodumene	LiAlSi <sub>2</sub> O <sub>6</sub>	
<b>Tantalite-Columbite (Niobium) Minerals</b>		
tantalite	(FeMn)Ta <sub>2</sub> O <sub>6</sub>	
columbite	(FeMn)Nb <sub>2</sub> O <sub>6</sub>	
<b>Tin-bearing Minerals</b>		
cassiterite	SnO <sub>2</sub>	
wodginite	Mn(Sn,Ta)Ta <sub>2</sub> O <sub>8</sub>	
<b>Cesium-bearing Mineral</b>		
pollucite	(Ca,Na) <sub>2</sub> Al <sub>2</sub> Si <sub>4</sub> O <sub>12</sub> 2H <sub>2</sub> O	Cesium (Cs) may occur in both lepidolite and pollucite.
<b>Rubidium-bearing Mineral</b>		
lepidolite	K <sub>2</sub> Li <sub>3</sub> Al <sub>4</sub> Si <sub>7</sub> O <sub>21</sub> (OH,F) <sub>3</sub>	Rubidium (Rb) may occur in lepidolite or feldspar.
<b>Other Minerals of Potential Use/Interest</b>		
albite	NaAlSi <sub>3</sub> O <sub>8</sub>	
potassium feldspar	KAlSi <sub>3</sub> O <sub>8</sub>	
quartz	SiO <sub>2</sub>	
muscovite	KAl <sub>2</sub> (AlSi <sub>3</sub> O <sub>10</sub> )(F,OH) <sub>2</sub>	
beryl	Be <sub>3</sub> Al <sub>2</sub> (SiO <sub>3</sub> ) <sub>6</sub>	Source of beryllium.
chrysoberyl	BeAl <sub>2</sub> O <sub>4</sub>	Source of beryllium.
<b>Other Minerals and Terms</b>		
cordierite	Mg <sub>2</sub> Al <sub>4</sub> Si <sub>5</sub> O <sub>18</sub>	Occurs in metamorphic rocks.
holmquistite		A member of the amphibole family.
smectite		One of the clay mineral groups.
tourmaline		A complex borosilicate of aluminum, iron, magnesium and alkalis. May contain lithium.
aplite		Fine grained dyke rock with the composition of granite.



## **Big Mack Pegmatite - Visited**

The following description of the Big Mac pegmatite is modified from Breaks et al, (1999) and Clark and Cullen (2009) (Figure 3).

"The Big Mack pegmatite is the largest petalite-bearing mass on the Property. The pegmatite comprises a 30 by 100 metre main mass coupled with several prominent, narrow apophyses that taper towards the south and southeast. These apophyses consist of non-petalite-bearing sodic pegmatites, sodic aplites, potassic pegmatite and hornblende-bearing granitic rocks, which contain sporadic, scattered grains of dark brown cassiterite and black oxide minerals.

The Big Mack Pegmatite exhibits an internal zonation expressed by a continuous wall zone, 0.5 to 3 metres thick that grades into a main core mass of petalite-rich pegmatite. The wall zone is composed mainly of cordierite, quartz and plagioclase and generally lacks petalite. Petalite megacrysts, up to 2.5 by 6 cm, are only locally evident in the wall zone and are invariably partially altered to light pink clay minerals of the smectite group. Other varietal minerals include light green muscovite and garnet.

Petalite-rich pegmatite comprises most of the body and contains areas up to 56 to 60% light brown-weathering petalite, 30 to 33% blocky potassium feldspar, 5 to 11% quartz and 2 to 4% muscovite. The petalite is white, grey or faint blue, translucent to locally transparent with individual well preserved crystals up to 10 by 15 cm. Cordierite and mica-rich aggregates that replace this mineral are also noted locally in petalite-rich zones as at the northern end of the blasted trench. Deep-blue hornblende is apparent along the fringes of these mica-rich aggregates and also extends into adjacent petalite.

Chrysoberyl-bearing petalite pegmatite is confined to a 2 to 6 by 25 metre unit that is exposed within the southern end of the trench. The petalite content is noticeably lower than the adjacent quartz-potassium feldspar-petalite unit with milky to clear white petalite (10 to 20%) limited to sporadic megacrysts up to 10 cm diameter and narrow, irregular segregations composed of polycrystalline petalite, lesser white feldspar and sporadic, lime-green chrysoberyl".

Exploration work by Emerald Fields Resources Corp. included diamond drilling, bulk sampling and metallurgical testing. Drill holes that intersected the dyke below a depth of 50 metres indicated that at this level the dyke was non-petalite bearing.

### Glitter Pegmatite - Not Visited

"The Glitter Pegmatite (Figure 3) is a highly deformed, petalite-bearing pegmatite exposed along its southeastern strike-length for 75 metres. It reaches a maximum width of 25 metres and shows internal zonation as four distinct units:

- discontinuous wall zone of garnet + muscovite + quartz + plagioclase aplite
- main mass of muscovite + quartz + potassium feldspar + petalite pegmatite
- holmquistite + cordierite + muscovite + biotite granitic pegmatite
- replacement stage garnet + muscovite aplite as irregular patches and anastomosing vein network.

Channel samples were selected at 1 metre intervals by Champion Bear Resources across part of the main petalite-bearing unit. The results revealed  $\text{Li}_2\text{O}$  contents between 1.03 and 1.64% accompanied by anomalous trace levels of other rare-metals.

Petalite in the main unit is light brown on the weathered surface and intensely recrystallized, such that original crystal shapes could not be discerned. Locally up to 80% petalite was noted".

Oxide minerals that are tin, tantalite and niobium-bearing are sparsely disseminated throughout the dyke.

### Rattler Pegmatite - Not Visited

"This dyke consists of pink weathering, pegmatic segregations, up to 7 by 12 metres, hosted in the most westward-striking apophysis of the Skidder pluton (Figure 3).

The segregations, which grade imperceptibly into its medium- to coarse-grained, garnet-biotite granite host, are composed of tourmaline-muscovite potassic pegmatite. The pegmatite contains 5 to 10% coarse books of silver to light brown muscovite up to 10 cm thick. Sporadic dark brown and black oxide specks, and faint green apatite are present. Milky and lime-green euhedral beryl, up to 6 by 10 cm, is the most striking rare metal mineral present and is most conspicuous in muscovite-quartz-rich pods. Oxide minerals are quite sparse and have been identified to date only in the aplite and muscovite-quartz pods. Champion Bear Resources registered maximum bulk values of 831 ppm Cs, 0.021% Ta<sub>2</sub>O<sub>5</sub>, 0.015% Nb<sub>2</sub>O<sub>5</sub>, 124 ppm Sn, 0.41% Rb<sub>2</sub>O, and 0.20% Li<sub>2</sub>O in the zone".

### Wolf Pegmatite - Not Visited

"This mass of pink-weathering pegmatite occupies a 40 by 100 metre area within a west-striking apophysis from the Skidder pluton. The zone consists mostly of tourmaline-garnet-biotite-muscovite potassic pegmatitic leucogranite characterized by graphic intergrowths of quartz-potassium feldspar up to 0.7 by 1 metre and abundant coarse books of silver-coloured muscovite up to 5 cm thick. A gradational contact between medium-grained, garnet-biotite-muscovite granite was noted on the north side of the pegmatite mass.

Oxide minerals up to 5 mm in diameter are mainly confined to small pods and layers of sodic aplite up to 0.8 to 1 metre in size. Green beryl is rare.

Maximum bulk values of 1000 ppm Cs, 0.016% Ta<sub>2</sub>O<sub>5</sub>, 0.024% Nb<sub>2</sub>O<sub>5</sub>, 859 ppm Sn, 0.17% Rb<sub>2</sub>O and 0.39% Li<sub>2</sub>O, were obtained in the sampling of Champion Bear Resources".

## 7. WORK DONE

The writer visited the Property on 16 May 2012 accompanied by Mr. Lorne Snell, Dryden, Ontario. Access was by the English River road from Hwy. 658 approximately 2 km south of Redditt. From the turnoff, the English River road leads north to kilometre 64 where a road turns to the west. This road is followed for approximately 8 km at which point the Avalon road turns off to the right or north. After approximately 2 km on the



Avalon road it becomes an ATV trail which leads to CLM 428 and the southeastern part of the Property.

In the area of the Big Mack pegmatite considerable stripping, washing and sampling (of blasted trenches) has taken place. These and the surrounding areas were inspected by the writer following which a trench across the Big Mack pegmatite was sampled.

The writer collected 4 composite grab samples from a 20 metre long rock trench excavated by previous claim owners across the Big Mack Pegmatite. The samples were collected from the trench blasted in bedrock which in turn had been stripped and washed to expose the pegmatite body. The samples were described, placed in plastic sample bags with a sample ticket, labeled on the outside of the bag with a permanent marker then closed. The samples were transported in the writer's pack to the truck and retained in the writer's possession until they were delivered by the writer to the Activation Laboratories Ltd. (Actlabs) preparation lab in Dryden, Ontario.

Actlabs is ISO/IEC 17025 standard certified and the samples were analyzed for tantalum and rubidium with a multielement analysis package which included lithium.

The locations of the samples are shown in Figure 6 and the sample descriptions are presented below and the analytical results are presented in Table 3.



**TABLE 3  
MEGA GRAPHITE INC.  
SEPARATION RARE METAL PROPERTY  
BIG MACK PEGMATITE SAMPLES**

Sample	Location *	Sample Length	Li %	Li <sub>2</sub> O %	Ta ppm	Rb ppm
* 91557	North 1/3 of dyke	6.5 m	0.68	1.46	15	>500
* 91558	Central 1/3 of dyke	6.5 m	0.18	0.39	19	>500
* 91559	South 1/3 of dyke	6.5 m	0.81	1.74	10	>500
* 91560	Composite grab	20 m	0.59	1.27	14	>500

\* Pegmatite was sampled in an old trench across 20 m width. Each sample was a composite grab across approximately 6.5 m. Sample 91560 was a composite grab across the total dyke width.

+ Refer to figures 6-B for UTM and referenced to line post co-ordinates

The UTM co-ordinates ZONE 15, NAD 83 of the centre of the trench are 386528mE, 5569874 mN.

The sampled pegmatite is zoned or banded with a coarse to pegmatitic textured, grey to white in colour and containing feldspar-petalite with muscovite (5%) and minor amounts of dark oxide minerals. The petalite tends to weather a light brown colour.

## **8. ADDITIONAL COMMENTS**

Avalon Rare Metals Inc. (Avalon) holds 5 mining claims in good standing plus one mining lease (CLM 469) contiguous to the south of the Mega Graphite claim group and lease CLM 428 (Figure 2). This is the Separation Rapids Property.

The Separation Rapids property is the host to one of the largest complex-type rare metal pegmatite deposits in the world known as the Big Whopper. It is a rare metal pegmatite with the size required to be of economic importance. Geological mapping and diamond drilling by Avalon have traced out the Big Whopper pegmatite system over a strike length of over 1.5 kilometres with widths ranging from 10 to 80 metres and with drill testing to a vertical depth of approximately 300 metres. It is open at depth.

A 1997-1998 drilling program delineated a 43-101 compliant indicated petalite resource of 8.9 million tonnes and an inferred petalite resource of 2.7 million tonnes both grading 1.34%  $\text{Li}_2\text{O}$ , 0.007%  $\text{Ta}_2\text{O}_5$  and 0.30%  $\text{Rb}_2\text{O}$ .

Avalon acquired their Separation Rapids Property in 1996 and has spent approximately \$4,000,000 on exploration and development work primarily focused on the potential from the lithium minerals within the complex type pegmatites. This work involved geological mapping, trenching, ground magnetic surveys, mineralogical studies and diamond drilling with over 10,000 metres being completed. In 1999 a comprehensive pre-feasibility study with regard to the production of petalite with by-product feldspars was carried out. The business model involved the production of a high purity petalite concentrate for the glass-ceramics industry. At that time, the major manufacturer was Corning Inc., however, in 2000 they sold this business to a new owner who subsequently shut down the US manufacturing facility and moved the operation to China.

In 2000 – 2001 the Company completed follow-up work on the property including additional exploration drilling and metallurgical test work for tantalum with associated market studies and a plant design and cost studies. However, the economics of the study did not justify development of the property on a stand-alone basis for tantalum.

In 2002 – 2003 Avalon completed a scoping study to evaluate an alternative project development concept that would produce a diluted petalite product called "high lithium feldspar". Subsequent work on a 6 ton bulk sample demonstrated that an acceptable quality product could be produced which would have the advantage of lowering the melting temperature of the glass batch thereby reducing energy costs.

In 2005 a potential new market for the petalite was identified as an ingredient in a new non-combustible composite material with various potential construction applications.

Avalon has reported that they no longer consider the Big Whopper petalite deposit to be a potential long-term viable source of lithium carbonate for the lithium chemicals market since they consider this market will be well served for the foreseeable future from the low cost brine deposits in South America and elsewhere. Because of this

situation they have investigated other applications and markets for petalite and other lithium-bearing minerals.

Currently four companies produce 90% of the world's lithium requirements, three are in South America and the fourth is Talison Lithium Limited (Talison), which currently produces 370,000 tonnes of lithium concentrate annually from its Greenbushes complex-type pegmatite deposit in southwestern Australia (Saywell, T., 2012). Talison expects the world lithium market to at least double over the next decade.

## 9. SUMMARY AND CONCLUSIONS

The Separation Rare Metal Property of Mega Graphite Inc. is underlain by part of the central to western sections of the Separation Lake Greenstone Belt which hosts a number of rare metal pegmatites. Within the subject property, the petalite-bearing Big Mack complex pegmatite has been mapped out over an area 80 metres by 225 metres. The main pegmatite mass is 30 metres by 100 metres with several prominent apophyses to the south and southeast. Petalite values are present to a depth of approximately 50 metres where they appear to taper off. Additional complex pegmatites on the Property are the Glitter, Wolf and Rattler, none of which have been drilled and the Eleven Zone which has been tested by 2 drill holes.

On the adjacent property of Avalon Rare Metals Inc. the Big Whopper rare metal pegmatite body has been drill tested with a 43-101 compliant indicated petalite resource of 8.9 million tonnes and an inferred petalite resource of 2.7 million tonnes, both grading 1.34% LiO<sub>2</sub>, 0.007% Ta<sub>2</sub>O<sub>5</sub> and 0.30% Rb<sub>2</sub>O.

The demand for lithium is expected to double over the next 10 years, however, there are questions as to how much of this new demand will be supplied by current producers and how much would be available to new suppliers.

It is considered that apart from the area of the Big Mack pegmatite, the Property is underexplored and that a surface exploration program to provide a better understanding of the geology of the Property and its economic potential is warranted.



Between 1988 and 1992 Champion Bear Resources traced out a base metal bearing horizon for over 20 kilometres within the Separation Lake Greenstone Belt and in part within the area of the subject property. An exploration program on the subject Property could identify any areas of base metal or gold potential within the Property.

#### 10. RECOMMENDATIONS

The Property is considered to be of merit and to further evaluate its potential for rare metal complex-type pegmatites and gold and/or base metal mineralization, a two phase program of exploration is recommended. Phase 1 would consist of prospecting, geological mapping, a soil geochemical survey, a magnetometer survey and trenching, stripping and sampling. Phase 2 would be a preliminary diamond drilling program to test targets identified in the Phase 1 program.

L.D.S. Winter, P. Geo.

7 June 2012

Revised January 29<sup>th</sup>, 2013  
AJM Mowat, C.E.T.





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**CERTIFICATE OF AUTHOR**

I, Lionel Donald Stewart Winter, P. Geo. do hereby certify that:

1. I am currently an independent consulting geologist.
2. I graduated with a degree in Mining Engineering (B.A.Sc.) from the University of Toronto in 1957. In addition, I have obtained a Master of Science (Applied) (M.Sc. App.) from McGill University, Montreal, QC.
3. I am a Member of the Geological Association of Canada, a Life Member of the Canadian Institute of Mining, a Life Member of the Prospectors and Developers Association of Canada and a Registered Geoscientist in Ontario and in British Columbia (P.Ge.).
4. I have worked as a geologist for over 50 years since my graduation from university.
5. I am the author responsible for the preparation of the Report titled "Property Visit and Sampling Report on the Separation Rare Metal Property, Paterson Lake Area, District of Kenora, Ontario" and dated 7 June 2012.

Dated this 7<sup>th</sup> Day of June 2012

  
\_\_\_\_\_  


\_\_\_\_\_  
L.D.S. Winter, P.Geol.



# **APPENDIX 1**

## **CERTIFICATES OF ANALYSIS**

Date Submitted: 18-May-12  
Invoice No.: A12-05286  
Invoice Date: 04-Jun-12  
Your Reference: Treelined

Mega Graphite Inc.  
86 Wilson Street, Suite A  
Oakville ON L6K 3G5  
Canada

ATTN: Chief Operation Officer Paul Cooper

### CERTIFICATE OF ANALYSIS

10 Rock samples were submitted for analysis.

The following analytical packages were requested:

REPORT	<b>A12-05286</b>	Code 1F2-Tbay Total Digestion ICP(TOTAL)
		Code 5D-C-Total Infrared
		Code 8-Li (Sodium Peroxide Fusion) Sodium Peroxide Fusion
		Code UT-6 Total Digestion ICP & ICP/MS

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY :



Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**

1336 Sandhill Drive, Ancaster, Ontario Canada L9G 4V5 TELEPHONE +1.905.648.9611 or  
+1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com



Activation Laboratories Ltd. Report: A12-05286

Analyte Symbol	C-Total	Li	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Ag	Cs	Co	Eu	Bi	Se
Unit Symbol	%	%	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	0.01	0.5	0.01	0.01	0.01	0.01	0.01	0.1	1	0.5	1	0.01	0.1	0.5	0.1	0.1	0.1	0.05	0.05	0.1	0.05	0.02	0.1
Analysis Method	IR	FUS- Na2O2	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
91551	6.18																							
91552	1.00																							
91553	0.80																							
91554	0.58																							
91555	9.15																							
91556	0.40																							
91557		0.66	> 400	1.57	0.02	6.98	1.09	0.12	< 0.1	1	6.1	331	0.38	0.3	1.0	0.1	67.1	< 0.1	< 0.05	25.6	0.2	< 0.05	13.3	1.2
91558		0.18	> 400	> 3.00	0.01	7.44	0.94	0.30	0.2	1	12.4	473	0.36	0.9	1.0	0.2	175	< 0.1	< 0.05	12.9	0.2	< 0.05	15.4	1.0
91559		0.81	> 400	1.57	0.03	7.90	1.64	0.14	0.1	2	9.5	328	0.44	0.2	1.0	0.2	90.9	< 0.1	< 0.05	31.6	0.2	< 0.05	16.4	0.3
91560		0.59	> 400	2.19	0.03	8.11	1.50	0.17	0.1	2	16.3	282	0.58	0.2	1.1	0.2	108	0.1	< 0.05	24.0	0.3	< 0.05	10.1	1.0

Activation Laboratories Ltd. Report: A12-05286

Analyte Symbol	Zn	Ga	As	Rb	Y	Sr	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu	Ge
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.2	0.1	0.1	0.2	0.1	0.2	1	0.1	0.1	0.1	1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Analysis Method	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS

91551  
 91552  
 91553  
 91554  
 91555  
 91556  
 91557  
 91558  
 91559  
 91560

59.4	31.8	5.8	> 500	2.5	15.2	4	35.5	0.9	< 0.1	36	0.3	0.4	2	0.6	1.7	0.2	0.8	0.6	0.6	0.1	0.6	3.5	< 0.1
117	38.2	1.6	> 500	4.3	10.5	11	46.9	0.2	< 0.1	30	0.1	0.3	< 1	0.9	2.7	0.3	1.2	0.9	1.0	0.2	1.0	4.3	< 0.1
81.4	31.7	2.1	> 500	4.0	11.5	3	30.4	0.2	< 0.1	54	0.1	0.5	2	0.8	2.4	0.3	1.2	0.9	0.9	0.2	0.8	2.7	0.2
107	50.5	1.5	> 500	4.7	14.2	3	46.5	< 0.1	< 0.1	128	0.1	0.3	5	0.9	2.9	0.4	1.3	1.1	1.2	0.3	1.1	2.2	0.5



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Analyte Symbol	Tm	Yb	Lu	Ta	W	Re	Tl	Pb	Sc	Th	U	Ti	P	S	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
Detection Limit	0.1	0.1	0.1	0.1	0.1	0.001	0.05	0.5	1	0.1	0.1	0.0005	0.001	0.01	0.3	0.01	3	7	1	2	0.01	0.3	1	1
Analysis Method	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-ICP	TD-MS	TD-MS	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP
91551													0.049	0.08	0.8	9.65	75	> 1000	1	3	1.00	< 0.3	7	91
91552													0.034	0.26	0.5	7.52	< 3	28	4	< 2	6.87	< 0.3	9	79
91553													0.025	0.30	0.4	7.14	< 3	> 1000	< 1	3	0.75	< 0.3	1	22
91554													0.033	1.12	0.4	7.13	9	447	2	2	0.91	< 0.3	7	33
91555													0.023	0.62	0.7	5.46	4	736	2	2	0.85	< 0.3	< 1	25
91556													0.016	0.72	0.5	5.03	12	902	3	< 2	0.12	< 0.3	4	17
91557	< 0.1	0.1	< 0.1	15.1	0.7	0.003	14.6	5.1	< 1	3.1	2.1	0.0028	0.018	< 0.01										
91558	< 0.1	0.3	< 0.1	19.0	< 0.1	0.003	4.67	9.6	< 1	4.3	7.0	0.0027	0.020	< 0.01										
91559	< 0.1	0.2	< 0.1	10.0	0.4	< 0.001	16.6	4.6	< 1	3.4	1.6	0.0027	0.016	< 0.01										
91560	< 0.1	0.2	< 0.1	14.2	1.6	< 0.001	10.9	4.4	2	4.7	2.2	0.0076	0.013	< 0.01										

Activation Laboratories Ltd. Report: A12-05286

Analyte Symbol	Cu	Fe	Ga	Hg	K	Mg	Li	Mn	Mo	Na	Ni	Pb	Sb	Sc	Sr	Te	Ti	Tl	U	V	W	Y	Zn	Zr
Unit Symbol	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	1	0.01	1	1	0.01	0.01	1	1	1	0.01	1	3	5	4	1	2	0.01	5	10	2	5	1	1	5
Analysis Method	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP
91551	95	4.09	33	< 1	4.91	0.41	21	949	5	1.27	24	57	< 5	19	306	< 2	0.22	< 5	< 10	142	< 5	11	78	220
91552	9	3.32	26	< 1	0.19	0.92	21	1890	3	0.55	27	5	< 5	9	89	< 2	0.23	< 5	< 10	65	< 5	88	138	193
91553	13	0.99	21	< 1	4.97	0.20	15	244	2	1.08	7	30	< 5	5	130	< 2	0.07	< 5	< 10	26	< 5	7	30	90
91554	41	2.10	22	1	4.24	0.46	32	302	< 1	1.28	17	27	< 5	< 4	122	< 2	0.08	< 5	< 10	26	< 5	9	114	123
91555	36	5.05	18	< 1	3.69	0.10	11	356	4	1.35	6	35	< 5	11	62	< 2	0.07	< 5	< 10	36	< 5	6	77	119
91556	21	1.40	26	< 1	2.58	0.35	26	151	2	1.35	7	30	< 5	< 4	82	< 2	0.10	< 5	< 10	16	< 5	21	33	265
91557																								
91558																								
91559																								
91560																								

Activation Laboratories Ltd. Report: A12-05286

Quality Control																								
Analyte Symbol	C-Total	Li	Li	Na	Mg	Al	K	Ca	Cd	V	Cr	Mn	Fe	Hf	Ni	Er	Be	Ho	Ag	Cs	Co	Eu	Bi	Se
Unit Symbol	%	%	ppm	%	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	0.01	0.5	0.01	0.01	0.01	0.01	0.01	0.1	1	0.5	1	0.01	0.1	0.5	0.1	0.1	0.1	0.05	0.05	0.1	0.05	0.02	0.1
Analysis Method	IR	FUS- Na2O2	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
GXR-1 Meas			8.9	0.05	0.22	2.37	0.05	0.82	2.3	79	13.0	824	23.5	0.4	37.3		1.1		32.0	2.62	7.8	0.62	1610	16.4
GXR-1 Cert			8.20	0.0520	0.217	3.52	0.050	0.960	3.30	80.0	12.0	852	23.6	0.960	41.0		1.22		31.0	3.00	8.20	0.690	1380	16.6
GXR-1 Meas																								
GXR-1 Cert																								
GXR-4 Meas			12.9	0.51	1.83	7.05	2.86	0.95	< 0.1	82	41.6	144	2.91	1.2	36.8		2.2		2.83	2.42	13.9	1.42	20.3	4.8
GXR-4 Cert			11.1	0.564	1.66	7.20	4.01	1.01	0.860	87.0	64.0	155	3.09	6.30	42.0		1.90		4.00	2.80	14.6	1.63	19.0	5.60
GXR-4 Meas																								
GXR-4 Cert																								
SDC-1 Meas			40.1	1.53	1.11	8.62	1.99	1.00	< 0.1	43	48.0	825	4.68	0.8	32.8	3.6	3.4	1.2	< 0.05	3.71	18.0	1.59	0.18	
SDC-1 Cert			34.00	1.52	1.02	8.34	2.72	1.00	0.0600	102.00	64.00	880.00	4.82	8.30	38.0	4.10	3.00	1.50	0.0410	4.00	18.0	1.70	2.60	
SDC-1 Meas																								
SDC-1 Cert																								
SCO-1 Meas			52.5	0.70	1.77	7.70	1.57	1.82	0.1	118	65.2	383	3.57		26.5		2.2		< 0.05	7.41	11.5		0.33	
SCO-1 Cert			45	0.670	1.64	7.24	2.30	1.87	0.140	130	68.0	410	3.59		27		1.80		0.134	7.80	11.00		0.37	
SCO-1 Meas																								
SCO-1 Cert																								
GXR-6 Meas			46.1	0.11	0.55	> 10.0	1.39	0.18	< 0.1	124	58.2	919	4.88	1.8	21.3		1.5		0.10	3.39	12.5	0.44	0.08	0.1
GXR-6 Cert			32.0	0.104	0.609	17.7	1.87	0.180	1.00	186	96.0	1010	5.58	4.30	27.0		1.40		1.30	4.20	13.8	0.760	0.290	0.940
GXR-6 Meas																								
GXR-6 Cert																								
LKSD-4 Meas	18.8																							
LKSD-4 Cert	17.7																							
OREAS 13P Meas																								
OREAS 13P Cert																								
DNC-1a Meas		< 0.01	5.5							152	178				269						57.6	0.58		
DNC-1a Cert		0.00	5.20							148.0	270				247						57.0	0.59		
NCS DC86303 Meas		0.21																						
NCS DC86303 Cert		0.21																						
NCS DC86314 Meas		1.78																						
NCS DC86314 Cert		1.81																						
91557 Orig		0.69																						
91557 Dup		0.67																						
Method Blank	< 0.01																							
Method Blank			< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 1	< 0.5	< 1	< 0.01	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.05	< 0.05	< 0.1	< 0.05	< 0.02	< 0.1
Method Blank			< 0.01																					

Quality Control																								
Analyte Symbol	Zn	Ga	As	Rb	Y	Sr	Zr	Nb	Mo	In	Sn	Sb	Te	Ba	La	Ce	Pr	Nd	Sm	Gd	Tb	Dy	Cu	Ge
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.2	0.1	0.1	0.2	0.1	0.2	1	0.1	0.1	0.1	1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Analysis Method	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
GXR-1 Meas	770	10.5	369	2.7	28.5	300	18	0.7	16.7	0.8	28	32.4	11.8	626	7.0	14.0		8.1	2.8	4.1	0.8	4.9	1110	
GXR-1 Cert	760	13.8	427	14.0	32.0	275	38.0	0.800	18.0	0.770	54.0	122	13.0	750	7.50	17.0		18.0	2.70	4.20	0.830	4.30	1110	
GXR-1 Meas																								
GXR-1 Cert																								
GXR-4 Meas	69.6	17.9	87.0	119	13.0	215	38	8.1	293	0.2	7	5.4	0.9	108	52.6	102		38.8	6.0	4.8	0.5	2.8	5990	
GXR-4 Cert	73.0	20.0	98.0	160	14.0	221	186	10.0	310	0.270	5.60	4.80	0.970	1640	64.5	102		45.0	8.60	5.25	0.360	2.60	6520	
GXR-4 Meas																								
GXR-4 Cert																								
SDC-1 Meas	101	21.7	0.9	89.8	32.2	182	30	1.9	< 0.1		< 1	< 0.1		606	39.6	85.7		38.7	7.7	7.3	1.1	6.5	27.8	
SDC-1 Cert	103.00	21.00	0.220	127.00	40.0	180.00	290.00	21.00	0.250		3.00	0.54		630	42.00	93.00		40.00	8.20	7.00	1.20	6.70	30.00	
SDC-1 Meas																								
SDC-1 Cert																								
SCO-1 Meas	106	16.2	9.7	83.4	19.4	172	58	1.5	0.2		2	0.3		535	28.2	55.1	6.6	25.0					28.5	
SCO-1 Cert	100	15	12.00	110.0	26	170	160	11	1.4		3.7	2.50		570	30.0	62.00	6.6	26.0					29	
SCO-1 Meas																								
SCO-1 Cert																								
GXR-6 Meas	120	31.6	204	52.2	8.5	39.8	66	0.7	0.4	< 0.1	< 1	0.4	< 0.1	1350	7.7	21.1		7.9	1.7	1.7	0.3	1.8	64.5	
GXR-6 Cert	118	35.0	330	90.0	14.0	35.0	110	7.50	2.40	0.260	1.70	3.60	0.0180	1300	13.9	36.0		13.0	2.67	2.97	0.415	2.80	66.0	
GXR-6 Meas																								
GXR-6 Cert																								
LKSD-4 Meas																								
LKSD-4 Cert																								
OREAS 13P Meas																								
OREAS 13P Cert																								
DNC-1a Meas	66.5				16.3	148	35					0.8		96	3.6									96.4
DNC-1a Cert	70.0				18.0	144.0	38					0.96		118	3.6									100.0
NCS DC86303 Meas																								
NCS DC86303 Cert																								
NCS DC86314 Meas																								
NCS DC86314 Cert																								
91557 Org																								
91557 Dup																								
Method Blank																								
Method Blank	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 0.2	< 1	< 0.1	< 0.1	< 0.1	< 1	< 0.1	0.4	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1
Method Blank																								



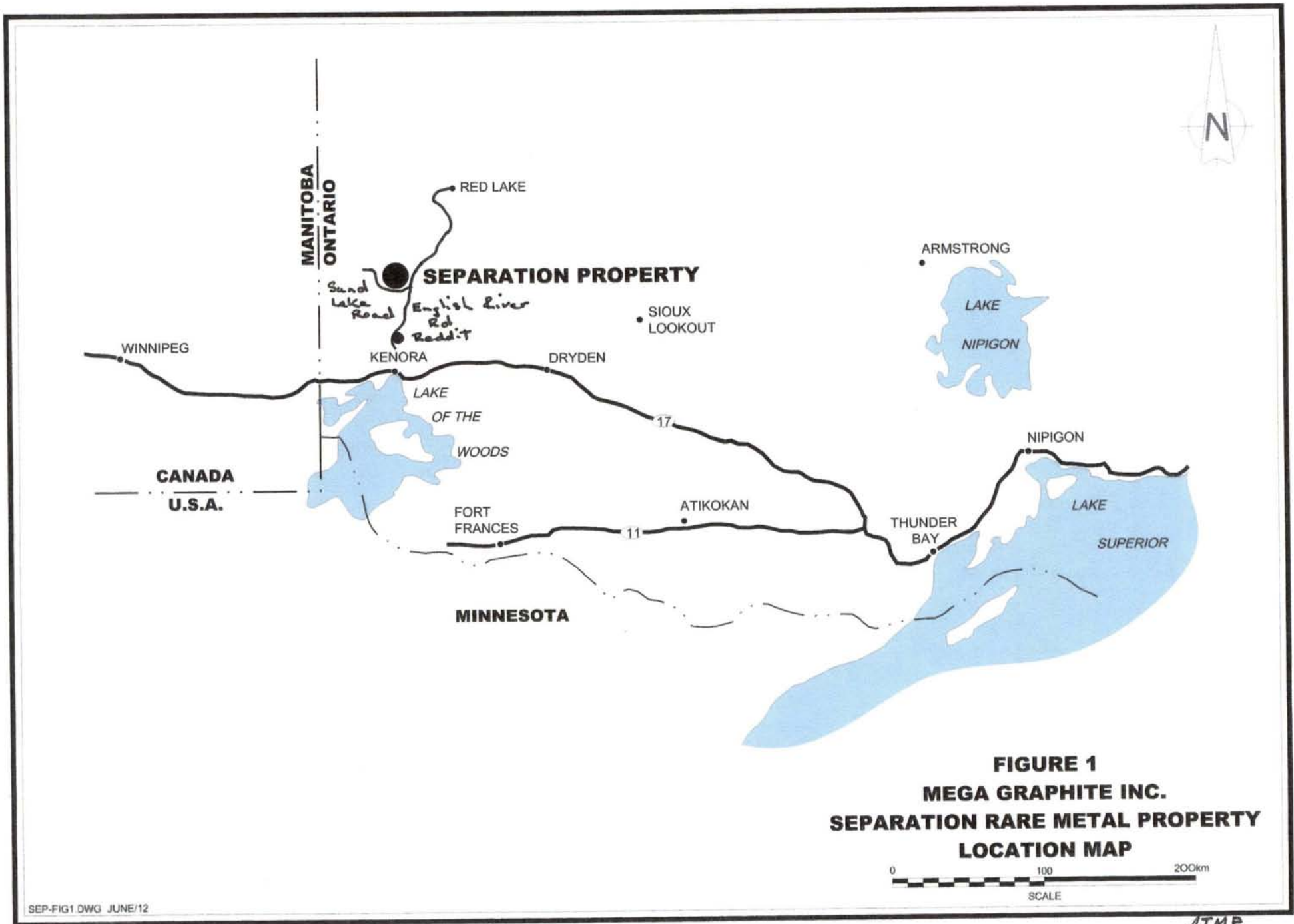
Activation Laboratories Ltd. Report: A12-05286

Quality Control																									
Analyte Symbol	Tm	Yb	Lu	Ta	W	Re	Tl	Pb	Sc	Th	U	Ti	P	S	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
Detection Limit	0.1	0.1	0.1	0.1	0.1	0.001	0.05	0.5	1	0.1	0.1	0.0005	0.001	0.01	0.3	0.01	3	7	1	2	0.01	0.3	1	1	
Analysis Method	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-ICP	TD-MS	TD-MS	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	
GXR-1 Meas	0.4	2.1	0.3	< 0.1	126		0.36	708	2	3.1	32.2		0.059	0.24	31.4	2.24	425	786	1	1370	0.92	3.4	4		
GXR-1 Cert	0.430	1.90	0.290	0.175	164		0.390	730	1.58	2.44	34.9		0.0650	0.257	31.0	3.52	427	750	1.22	1380	0.960	3.30	8.20		
GXR-1 Meas													0.059	0.24											
GXR-1 Cert													0.0650	0.257											
GXR-4 Meas	0.2	1.0	0.1	0.5	34.5		2.85	42.9	7	18.0	5.3		0.135	1.78	3.9	6.60	108	182	2	23	1.17	0.4	15	61	
GXR-4 Cert	0.210	1.60	0.170	0.790	30.8		3.20	52.0	7.70	22.5	6.20		0.120	1.77	4.00	7.20	98.0	1640	1.90	19.0	1.01	0.860	14.6	64.0	
GXR-4 Meas													0.122	1.64											
GXR-4 Cert													0.120	1.77											
SDC-1 Meas	0.5	3.1		< 0.1	< 0.1		0.57	21.3	16	12.4	2.9	0.324	0.054	0.07	< 0.3	7.95	6	718	3	3	1.16	< 0.3	19	57	
SDC-1 Cert	0.65	4.00		1.20	0.800		0.70	25.00	17.00	12.00	3.10	0.606	0.0690	0.0650	0.0410	8.34	0.220	630	3.00	2.60	1.00	0.0800	18.0	64.00	
SDC-1 Meas													0.056	0.07											
SDC-1 Cert													0.0690	0.0650											
SCO-1 Meas					< 0.1			29.0	12	10.0		0.258	0.080	0.08	< 0.3	7.15	5	666	2	< 2	2.01	< 0.3	12	55	
SCO-1 Cert					1.4			31.0	11.0	9.70		0.380	0.0900	0.0630	0.134	7.24	12.00	570	1.80	0.37	1.87	0.140	11.00	58.0	
SCO-1 Meas													0.074	0.06											
SCO-1 Cert													0.0900	0.0630											
GXR-6 Meas	0.2	1.2	0.2	< 0.1	< 0.1		1.85	81.8	30	3.7	1.1		0.035	0.02	0.8	12.9	251	> 1000	1	4	0.22	0.4	16	73	
GXR-6 Cert	0.0320	2.40	0.330	0.485	1.90		2.20	101	27.5	5.30	1.54		0.0350	0.0160	1.30	17.7	330	1300	1.40	0.290	0.180	1.00	13.8	96.0	
GXR-6 Meas													0.039	0.02											
GXR-6 Cert													0.0350	0.0160											
LKSD-4 Meas																									
LKSD-4 Cert																									
OREAS 13P Meas																									
OREAS 13P Cert																									
DNC-1a Meas		1.9							30									114					57	192	
DNC-1a Cert		2.0							31									118					57.0	270	
NCS DC86303 Meas																									
NCS DC86303 Cert																									
NCS DC86314 Meas																									
NCS DC86314 Cert																									
91557 Orig																									
91557 Dup																									
Method Blank																									
Method Blank	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.001	< 0.05	< 0.5	< 1	< 0.1	< 0.1	< 0.0005	< 0.001	< 0.01											
Method Blank																									

Activation Laboratories Ltd. Report: A12-05286

Quality Control																									
Analyte Symbol	Cu	Fe	Ga	Hg	K	Mg	Li	Mn	Mo	Na	Ni	Pb	Sb	Sc	Sr	Te	Ti	Tl	U	V	W	Y	Zn	Zr	
Unit Symbol	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Detection Limit	1	0.01	1	1	0.01	0.01	1	1	1	0.01	1	3	5	4	1	2	0.01	5	10	2	5	1	1	5	
Analysis Method	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	
GXR-1 Meas	1160	23.6	8	6	0.04	0.21	8	891	15	0.04	44	730	18	< 4	299	17		< 5	30	90	148	26	745	26	
GXR-1 Cert	1110	23.6	13.8	3.90	0.050	0.217	8.20	852	18.0	0.0520	41.0	730	122	1.58	275	13.0		0.390	34.9	80.0	164	32.0	760	38.0	
GXR-1 Meas																									
GXR-1 Cert																									
GXR-4 Meas	6520	3.18	22	1	4.12	1.77	11	178	319	0.53	46	45	< 5	9	227	4		< 5	< 10	98	37	13	72	42	
GXR-4 Cert	6520	3.09	20.0	0.110	4.01	1.66	11.1	155	310	0.564	42.0	52.0	4.80	7.70	221	0.970		3.20	6.20	87.0	30.8	14.0	73.0	186	
GXR-4 Meas																									
GXR-4 Cert																									
SDC-1 Meas	29	4.81	27	< 1	1.61	1.00	34	919	1	1.52	43	24	< 5	17	180		0.15	< 5	< 10	50	< 5	31	99	36	
SDC-1 Cert	30.00	4.82	21.00	0.20	2.72	1.02	34.00	880.00	0.250	1.52	38.0	25.00	0.54	17.00	180.00		0.606	0.70	3.10	102.00	0.800	40.0	103.00	290.00	
SDC-1 Meas																									
SDC-1 Cert																									
SCO-1 Meas	27	3.63	21		3.35	1.61	44	399	< 1	0.69	32	28	< 5	13	168		0.35			142	< 5	19	99	52	
SCO-1 Cert	29	3.59	15		2.30	1.84	45	410	1.4	0.670	27	31.0	2.50	11.0	170		0.380			130	1.4	28	100	160	
SCO-1 Meas																									
SCO-1 Cert																									
GXR-6 Meas	71	5.62	36	< 1	1.42	0.63	35	1080	< 1	0.10	33	93	< 5	31	43	< 2		< 5	< 10	149	< 5	12	129	78	
GXR-6 Cert	66.0	5.58	35.0	0.0680	1.87	0.609	32.0	1010	2.40	0.104	27.0	101	3.60	27.6	35.0	0.0180		2.20	1.54	186	1.90	14.0	118	110	
GXR-6 Meas																									
GXR-6 Cert																									
LKSD-4 Meas																									
LKSD-4 Cert																									
OREAS 13P Meas	2630	8.01																							
OREAS 13P Cert	2500	7.58																							
DNC-1a Meas	100						5						< 5	33	135					147		14	51	37	
DNC-1a Cert	100.0						5.20						0.96	31	144.0					148.0		16.0	70.0	38	
NCS DC86303 Meas																									
NCS DC86303 Cert																									
NCS DC86314 Meas																									
NCS DC86314 Cert																									
91557 Orig																									
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Method Blank																									
Method Blank																									
Method Blank																									

## **LIST OF FIGURES**





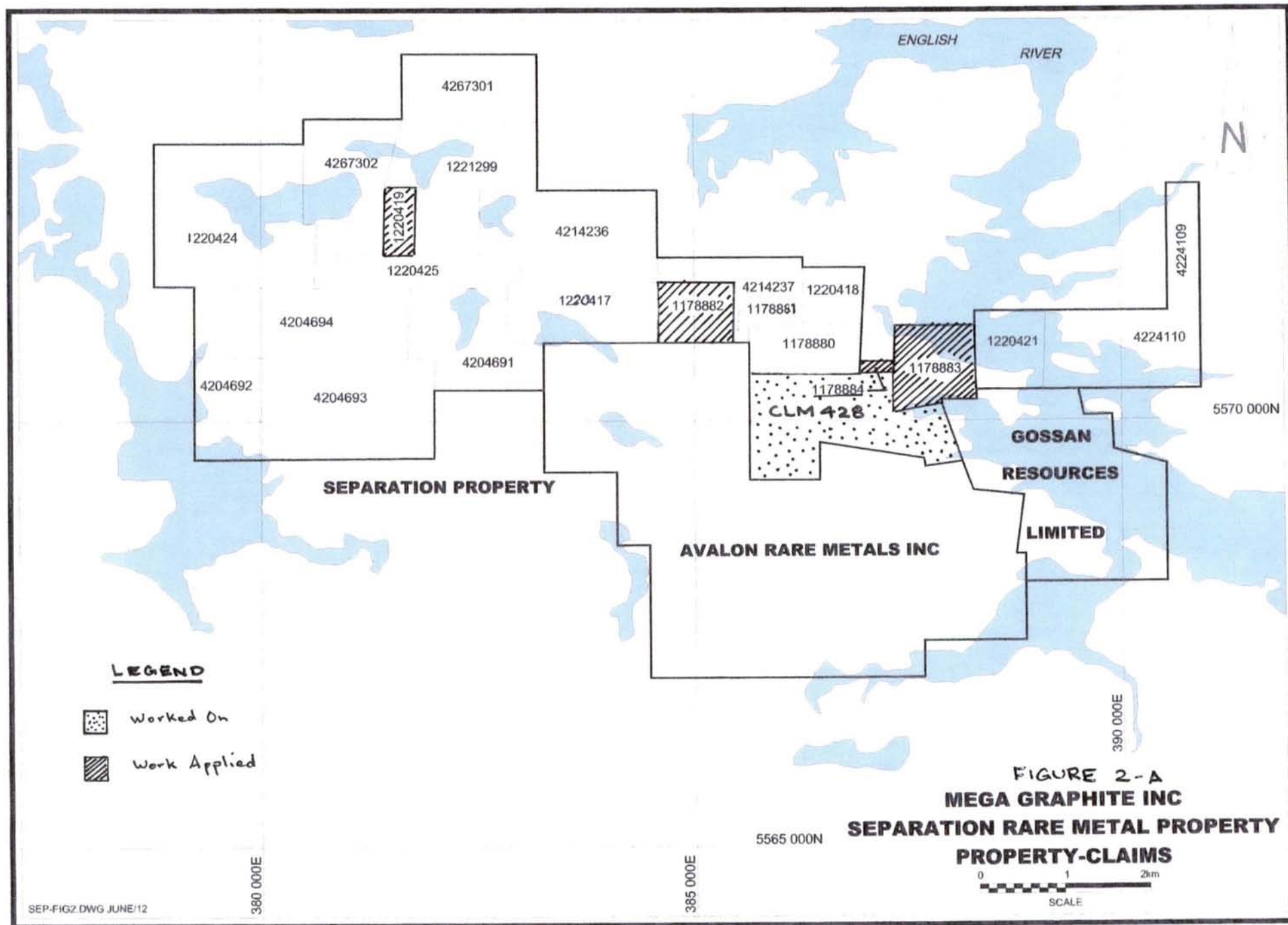


FIGURE 2-A  
**MEGA GRAPHITE INC**  
**SEPARATION RARE METAL PROPERTY**  
**PROPERTY-CLAIMS**

# MEGA GRAPHITE Inc. - Separation Rare Metal Property

ONTARIO  
CANADA

MINISTRY OF NORTHERN  
DEVELOPMENT AND MINES  
PROVINCIAL MINING  
REGISTRAR'S OFFICE

Mining Land Tenure  
Map

Date / Time of Issue: Sun Jun 27 14:34:30 EDT 2013

TOWNSHIP / AREA  
**PATERSON LAKE AREA**

PLAN  
**G-2634**

### ADMINISTRATIVE DISTRICTS / DIVISIONS

Mining Division: Kenora  
Land Titles/Registry Division: KENORA  
Ministry of Natural Resources District: KENORA

### TOPOGRAPHIC

TOPOGRAPHIC	Land Tenure
Administrative Boundary	Freehold Patent
Boundary	Surface And Mining Rights
Concession Line	Surface Rights Only
Historical Parcels	Mining Rights Only
Water Features	Leasehold Patent
Oil Pip & Pile	Surface And Mining Rights
Contour	Surface Rights Only
Min. Shaft	Mining Rights Only
Min. Hoistway	Leases of Occupancy
Road	Open Pit Operation
Rail	Surface And Mining Rights
Natural Gas Piping	Surface Rights Only
Utility	Mining Rights Only
Fence	Land Use Plans
	Open Pit Operation (not open for mining)
	Water Power Lease Agreement
	Mining Claim
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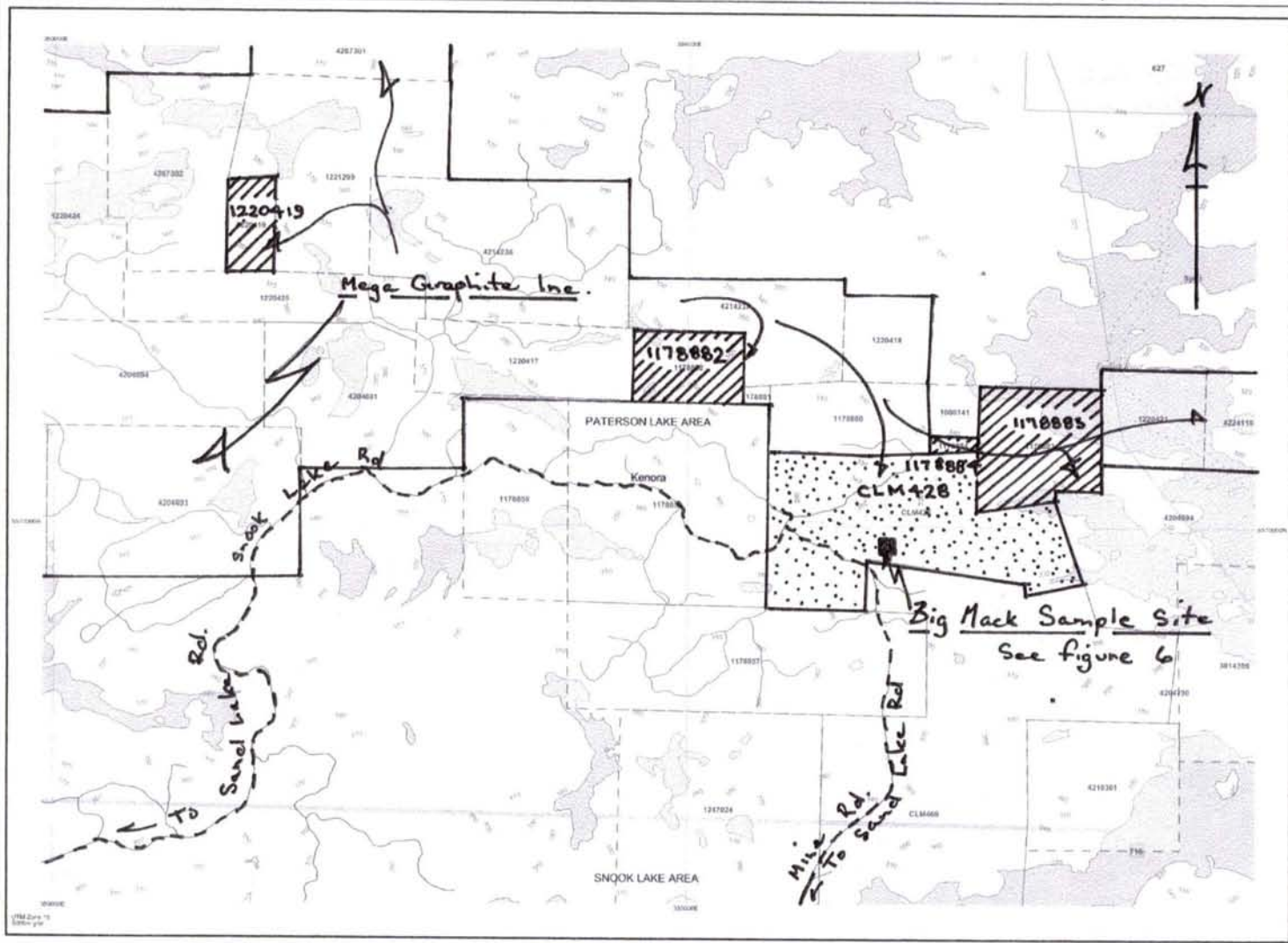
### LAND TENURE WITHDRAWAL DESCRIPTIONS (list may not be complete)

Identifer	Type	Date	Description
427	Free	Jan 1, 2001	AREA WITHDRAWN FROM STARBUCK FILES 3417046, 2, 9637
710	Free	Jan 1, 2001	FLUORINE H.E.P.C. ELUVATION 106877 FILE 34115 FILE 34117 H.E.P.C.
App.Perm	App permit	Sep 22, 2008	Category 11 Aggregate Permit

### IMPORTANT NOTICES

Areas under which specific regulations, conditions or covenants exist that affect normal prospecting, mining or mineral development activities.

**CLAIM MAP FIG. 2-B**



These mining claims should consult with the Provincial Mining Registrar's Office of the Ministry of Northern Development and Mines for additional information on the status of the lands shown herein. This map is not intended for navigational, survey or land title identification purposes as the information shown on this map is extracted from various sources. Completeness and accuracy are not guaranteed. Additional information may also be obtained through the local Land Titles or Registry Office, or the Ministry of Natural Resources.

The information shown is abstract from digital data available in the Provincial Mining Registrar's Office at the time of publishing from the Ministry of Northern Development and Mines web site.

**General Information and Limitations**  
 Contact Information:  
 Provincial Mining Registrar's Office  
 3000 Queen Mary Centre 633 Neeley Lake Road  
 Sudbury ON P3C 5S5  
 Home Page: www.mndm.gov.on.ca/MNR/M3MS/LANDS/index.aspx

Tel: Free 1 (888) 415-9845 ext 524  
 Tel: 1 (888) 415-9845 ext 524  
 Fax: 1 (877) 870-1444

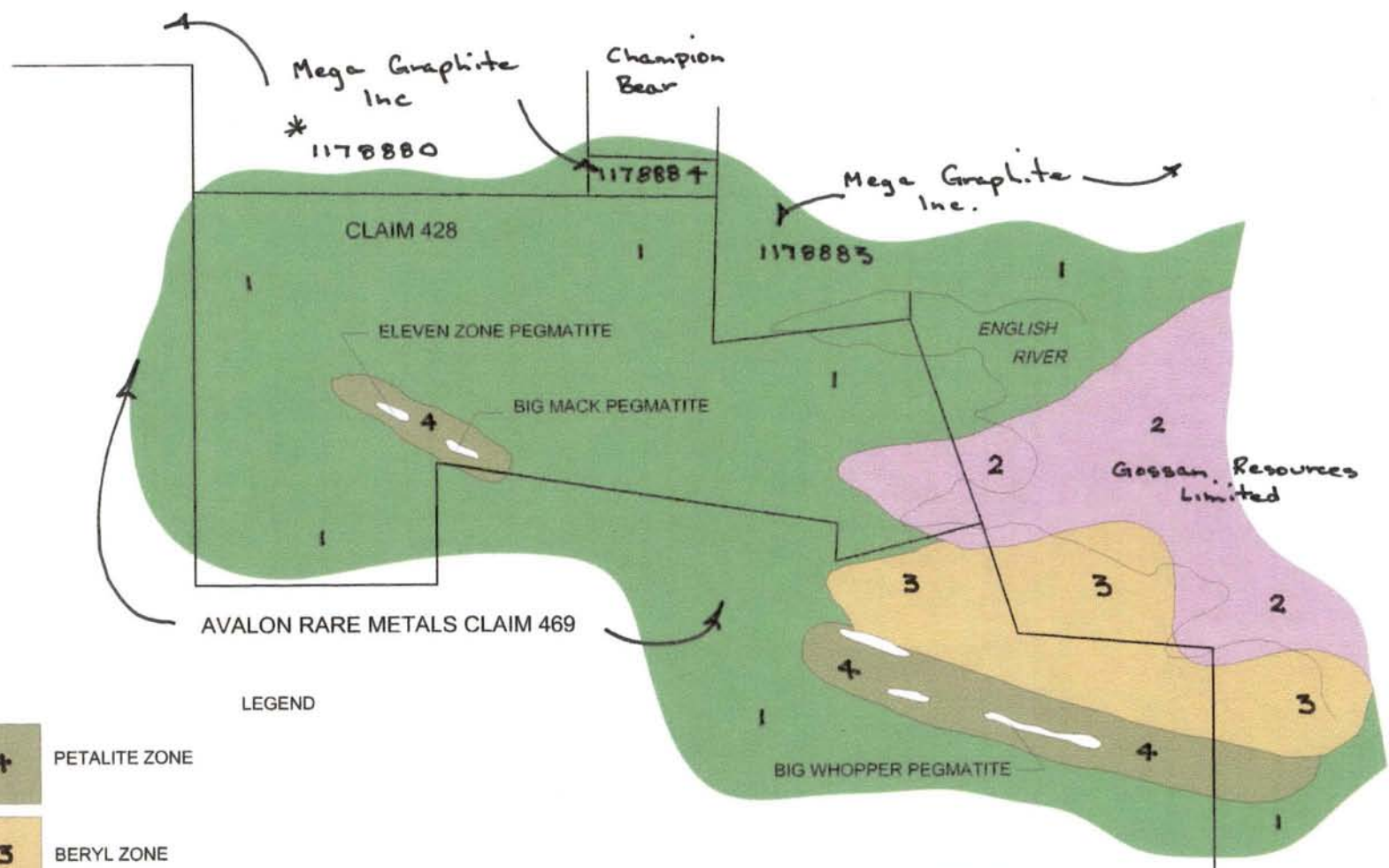
Map Edition: 1603-03  
 Projection: UTM 83  
 Datum: NAD 83  
 Topographic Data Source: Land Information Ontario  
 Mining Land Tenure Source: Provincial Mining Registrar's Office

This map may not show unregistered land tenure and interests in land including certain patents, leases, easements, right of ways, standing rights, licenses, or other forms of disposition of rights and interest from the Crown. Also certain land tenures and land areas that require or prohibit use entry to these mining claims may not be published.

**NOTE : Claim CLM 428 worked on. Work distributed & applied to claims 1220419, 1178882, 1178883 & 1178884.**

AJMP



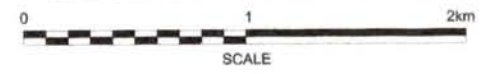


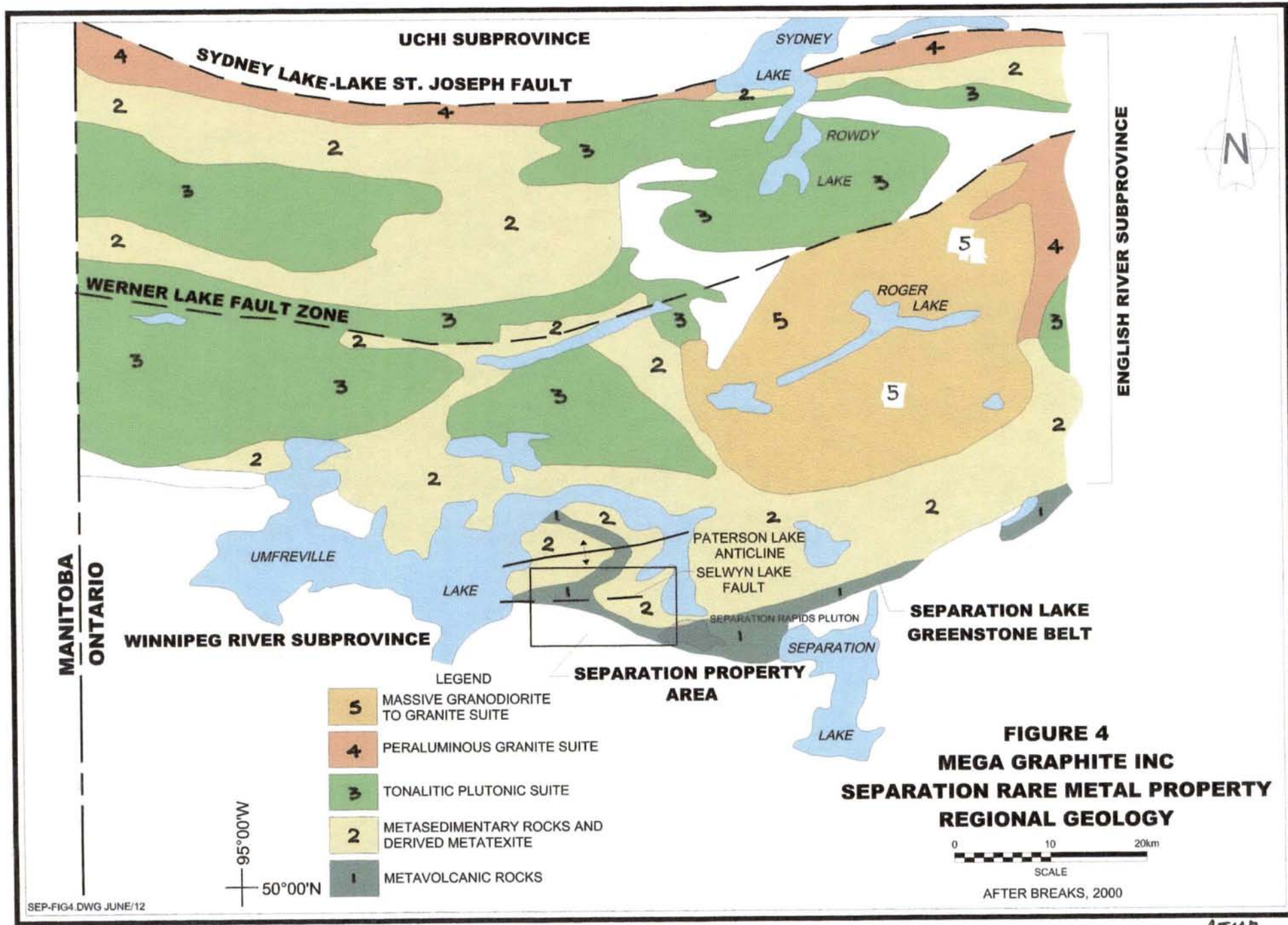
LEGEND

- 4 PETALITE ZONE
- 3 BERYL ZONE
- 2 SEPARATION RAPIDS GRANITOID PLUTON
- 1 SEPARATION LAKE GREENSTONE BELT, MAFIC METAVOLCANICS

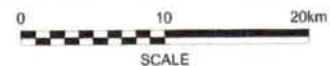
\* Mining Claim 1178880

**FIGURE 3  
MEGA GRAPHITE INC  
SEPARATION RARE METAL PROPERTY  
MAIN PEGMATITE AREAS**



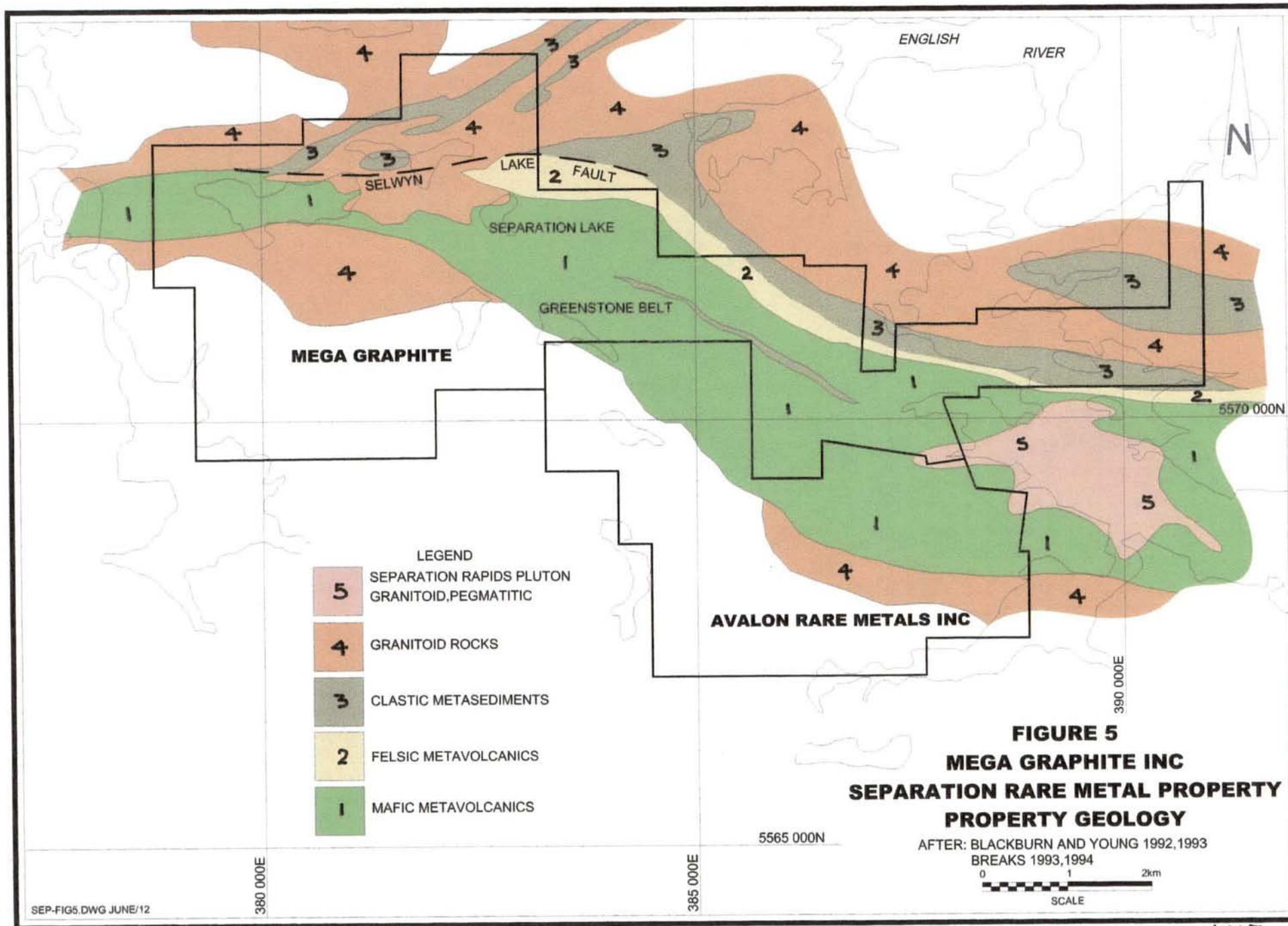


**FIGURE 4**  
**MEGA GRAPHITE INC**  
**SEPARATION RARE METAL PROPERTY**  
**REGIONAL GEOLOGY**



AFTER BREAKS, 2000





# MEGA GRAPHITE Inc. - Separation Rare Metal Property

ONTARIO  
CANADA

MINISTRY OF NORTHERN  
DEVELOPMENT AND SKILLS  
PROVINCIAL MINING  
REGISTRATION DIVISION

Mining Land Tenure  
Map

Date / Time of Issue: Tue Jan 20 13:44:22 EST 2015

TOWNSHIP / AREA  
PATERSON LAKE AREA

PLAN  
G-2634

### ADMINISTRATIVE DISTRICTS / DIVISIONS

Mining Division: Kenora  
Land Titles/Registry Division: KENORA  
Ministry of Natural Resources District: KENORA

### TOPOGRAPHIC

Administrative Boundaries

Thematic

Concession Lot

Provisional Plan

Water Feature

CR, H/L & P/L

Control

Other Details

Area Headlines

Hydro

Road

Foot

Other

Special Use Planning

Utilities

Stream

### LAND TENURE

Priority Rights

Surface and Mining Rights

Surface Rights Only

Mining Rights Only

Leasable Pattern

Surface and Mining Rights

Surface Rights Only

Mining Rights Only

Leasable or Occupied

Open for Operation

Surface and Mining Rights

Surface Rights Only

Mining Rights Only

Land Use Plans

User to Contact (Not open for Mining)

Water Power Lease Agreement

Mining Claim

Final City Mining Claim

LAND TENURE WITHDRAWALS

1234 Area Withdrawn from Operation

Mining Claim Withdrawal

1234 Surface and Mining Rights Withdrawal

1234 Surface Rights Only Withdrawal

1234 Mining Rights Only Withdrawal

1234 Other to Contact (Withdrawal Types)

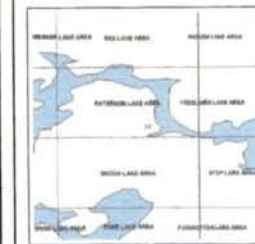
1234 Surface and Mining Rights Withdrawal

1234 Surface Rights Only Withdrawal

1234 Mining Rights Only Withdrawal

1234 No

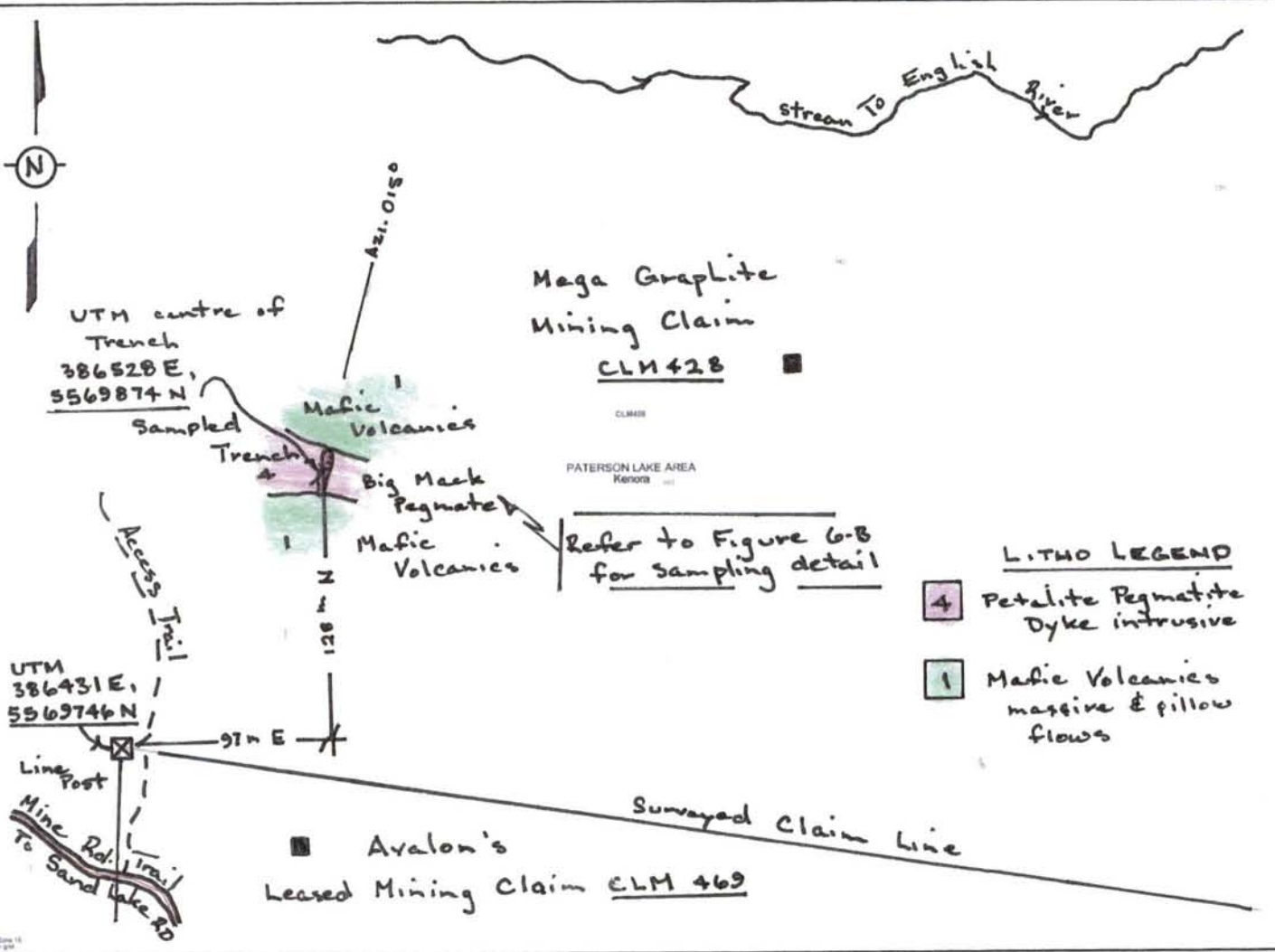
IMPORTANT NOTICES



### IMPORTANT NOTICES

Users under special regulation, conditions or controls that affect normal prospecting, mining and mineral development activities.

Refer to figures 2 & 6-B for location & sampling details



### LITHO LEGEND

- 4 Petalite Pegmatite Dyke intrusive
- 1 Mafic Volcanics massive & pillow flows

These mining or stake mining claims should consult with the Provincial Mining Registrar's Office of the Ministry of Northern Development and Mines for additional information on the status of the lands shown on this map. This map is not intended for navigational, survey, or land title information purposes as the information shown on this map is extracted from various sources. Computations and accuracy are not guaranteed. Additional information may also be obtained through the local Land Titles or Registry Office, in the Ministry of Natural Resources.

General Information and Locations  
Contact Information  
Provincial Mining Registrar's Office  
9500 Green Mile, Suite 513, Ramsey Lake Road  
Sudbury, ON P3B 5B5  
Home Page: [www.mrdn.gov.on.ca/ENR/MINING/LANDS/homepage.htm](http://www.mrdn.gov.on.ca/ENR/MINING/LANDS/homepage.htm)

Toll Free: 1 (800) 415-6845 or 1 (800) 374-6666  
Tel: 1 (800) 415-6845 or 1 (800) 374-6666  
Fax: 1 (877) 675-7443  
Map Datum: NAD 83  
Projection: UTM (Zone 18N)  
Geographic Data Source: Land Information Ontario  
Mining Land Tenure Source: Provincial Mining Registrar's Office

This map does not show unregistered land tenure that results in legal including certain patents, leases, waterworks, right of ways, floating rights, interests, or other forms of acquisition of rights and interests from the Crown. Also, certain land tenure and land uses that restrict or prohibit the entry to stake mining claims may not be illustrated.

Figure: 6-A Location of Trench & Sampling Referenced to Common Line Post of Surveyed Mining Claim Leases of Mega Graphite CLM 428 & Avalon CLM 469

ASJM



Centre of Sampled Trench is +/- 97m E from Line Post # 128m N from same.



East from Line Post UTM 386431E, 5569746 N

GRAB SAMPLES AND ASSAYS			Sample Location	
SAMPLE	LENGTH(m)	ASSAY (% Li <sub>2</sub> O)	UTM Co-Ordinates	
91557	6.5	1.46	386530 m E, 5569880 m N	
91558	6.5	0.39	386528 m E, 5569874 m N	
91559	6.5	1.74	386526 m E, 5569880 m N	
91560	20	1.27	386526 m E, 55698860 m N	
			386530 m E, 5569880 m N	

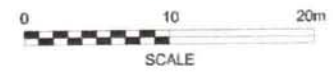
**LITHO LEGEND**

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Note: Refer. to Figures 2 & 6-A for sampling location.

"DETAIL"

**FIGURE 6-B**  
**MEGA GRAPHITE INC**  
**SEPARATION RARE METAL PROPERTY**  
**BIG MACK TRENCH SAMPLING - 2012**



ASMP