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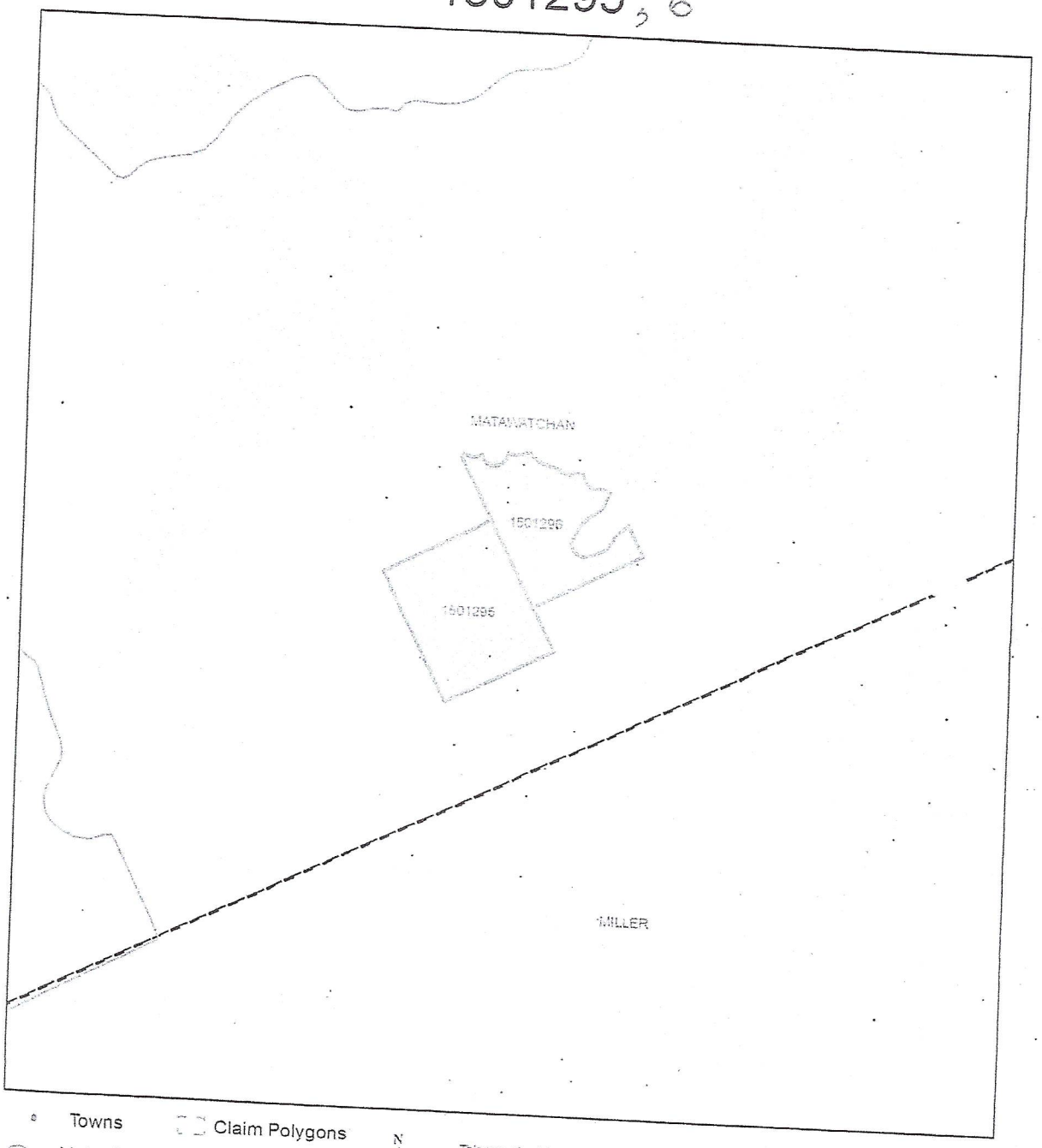

Towns
Claim Polygons
Major Roads
Rivers
Railways
Lakes

0.55 0.275 0 0.55 1.1
Kilometers

N
W E
S

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Ontario

Black Mountain Mineral Exploration **13-Sep** **2016** Prospector Jim Martin Field Notes, Reports, Maps prepared by Jim Martin P.Eng. Oct. 2, 2017 and Nov. 23, 2017

Access Determined neighbours based on research and attendance at Land Registry Office in Pembroke, Ontario.
Spoke with neighbours and received permission to park on their forest lot, cross their private land.

Field objective: determine if there is reason to stake mineral claims
Approach drove truck and parked UTM zone 18 **337243 E** **4999876 N** with farmer permisiion
estimated target to be at UTM zone 18 **338800 E** **5001000 N** approximate location of OGS graphite occurrence , only graphite occurrence on crown land
Project Unit 13-014. Geology and Mineral Potential of the Centennial Lake Area,
Northeastern Central Metasedimentary Belt, Grenville Province OFR 6313 , p. 19-1 to 19-16.
Duguet, Duparc and Mayer , OGS, 2015 (map in this OGS report p. 19-14)
counted paces, took GPS readings of sample locations and other points

Counted Paces on way to Estimated Target Location **Converted to Metres later** **Measured location, put in UTM**

	pace count	estimated metres								
			estimated 2,740 m to target area from start, based on MNDM topo map				measured on trails			
start		0	pace count, walking ATV trail, relatively easy walking			**337243 E**	**4999876 N**			parked on private land, with permission
	180		top of a hill							crossing private land, with permission
	290		top of next hill							crossing private land, with permission
	430		to where ATV trail goes southerly, kept going		easterly					crossing private land, with permission
	480		to crown land, trench across trail , outcrop							on crown land
	640	810	cross stream				1 pace =	1.27	metres	on crown land
	645		at junction, go left							on crown land
	945		at junction where trail climbs a steep hill- did not take - see on map- too soon							on crown land
	1029		veins - marble ?							on crown land
	1090		photo, more veins though small tight folds		around bend					on crown land
	1191		go to right							on crown land
	1412	1780	at T junction, go to left	to north,	outcrop just before junction		1 pace =	1.26	metres	on crown land
	1516		to fallen log							on crown land
	1550		to ATV trail turns to East							on crown land
	1635		clearing - beaver house and pond							on crown land
	1645									on crown land
	1660		stop- passing clearing							on crown land
	2180	2,740	stopped at a trail junction and took GPS				1 pace =	1.26	metres	on crown land
			338777 E **5001040 N**	this is TARGET AREA		graphite	occurrence			on crown land
			looked at SE corner - no rock ?	went further to east and then south to find outcrop						on crown land
	S0 m E		**samples taken after pacing 40 paces east on atv trail and then to outcrop 15 paces south into bush**							on crown land
	20 m S		big tree fallen, stump - use as marker- sample nearby outcrop				Discussed samples with OGS regional geologist			on crown land
			338824 E **5001056 N**	samples taken	all in lower weathered area					on crown land
	Sketch #1		**A1** outcrop 13-9-16	no visible graphite	not magnetic		not calcareous	in Rock unit 5, 13b	near RS	on crown land
			A2 outcrop 13-9-16	no visible graphite	not magnetic		not calcareous	in Rock unit 5, 13b	near RS	on crown land
	4 samples		B1 outcrop 13-9-16	no visible graphite	not magnetic		not calcareous	in Rock unit 5, 13b	near RS	on crown land
			B2 outcrop 13-9-16	no visible graphite	not magnetic		not calcareous	in Rock unit 5, 13b	near RS	on crown land
	Geology		*A1, A2, B1, B2 - all 4 quartz biotite gneiss with no visible graphite, not calcareous , not magnetic, laminated, dark mica, coarse quartz*						***Strike NE***	***Dip 80 deg SE***
			rock unit 5, 13 b on OGS MAP P 3437 Precambrian Geology Denbigh Area				*5- calcareous and micaceous shaly metasedimentary rocks*			
			13b- trondjhemite and granite - gneissic trondjhemite and minor granodiorite, with				*ougen structure and relict igneous features; laminated and metamorphic fabric*			
return		0 paces	**338777 E** **5001040 N**							on crown land
	890	934	**sample taken on trail**							on crown land
			338740 E **5000333 N**							on crown land
	1 sample		Tr S 1	13-9-17	no visible graphite	not magnetic	not calcareous	in Rock unit 13b	near 8b	on crown land
	Geology		*Tr S 1*	*quartz, biotite, mafic; no visible graphite, not calcareous, not magnetic, laminated, garnet in end*				*rock unit 13 b - described above*		
	1163		photo taken	structural : pods	contact- marble to silicic					on crown land
	1537		photo taken	crosscut on fault, displacement near 1 foot						on crown land
	1556	1634	**sample taken on trail near small lake to north of trail**				on strike with OGS occurrence =- approximated location			on crown land
			338278 E **5000010 N**							on crown land
	1 sample		TR S 2	13-9-16	visible graphite	not magnetic	calcareous	in Rock unit 5, 13b	at 13b border	on crown land
	Geology		*coarse grained calcareous, large biotite flake, medium grain size flake graphite*				*visible , possibly molydenite*			
			on strike with OGS graphite occurrence about 1 km away, this location				*and the occurrence are on the geophysical mag anomaly*			
			Peter LeBaron confirmed low grade graphite present			**about 1 to 2 %**	**in Trail Sample 2**			on crown land
										on crown land
	2618	2,740	arrive back at truck	**337243 E**	**4999876 N**		1 pace =	1.05	metres	on private land, with permission

pacing comparison:	going in	2180	20 % difference	1 pace	1.26 metres
	back	2618	getting tired ?	1 pace	1.05 metres

Summary **Though OGS occurrence not located, did find graphite bearing rock on strike with OGS occurrence area, within same mag anomaly, about 1 km away ;**
Confirmed graphite with MNDM Tweed. Staked claims. **(Later, OGS occurrence and more graphite bearing rock on strike was confirmed).**

Map 1

Ontario

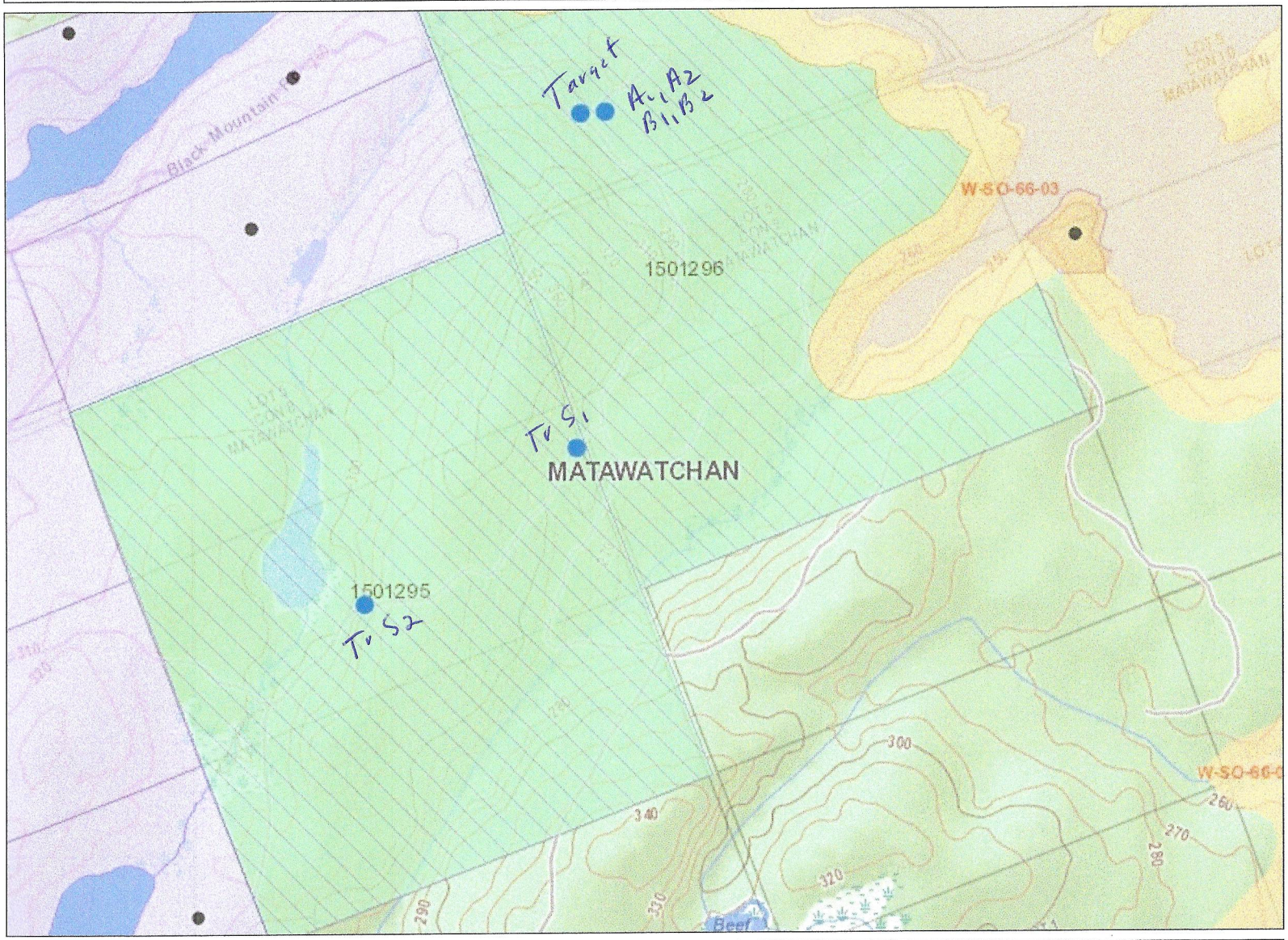
MINISTRY OF NORTHERN DEVELOPMENT AND MINES

CLAIMaps

Black Mountain Graphite Exploration Sept. 13, 2016

Notes:

Sept. 13, 2016 field work- Showing Claims, Start, Target, Sample Location for A1,A2,B1,B2 near Target and Sample Locations on Trail Tr S 1 and Tr S 2.



Legend

Administration Boundaries
- Mining Divisions
- Resident Geologist District
- Townships and Areas
- UTM Grid
- Geographic Lot Fabric
- Other Federal Land

Mineral Tenure Grid
- OMTG Tenure Grid

Alienations
- Withdrawal
- Notice

Unpatented Claim
- Active
- Reconciled
- Pending

Disposition
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Disposition Symbols
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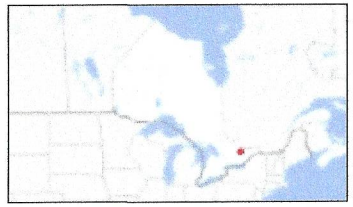
Geology Layers
- AMIS Sites
- AMIS Features
- Drill Holes
- Mineral Occurrences

Sample locations names

0 0.65 km

Projection: Web Mercator

N



Map 2

Ontario

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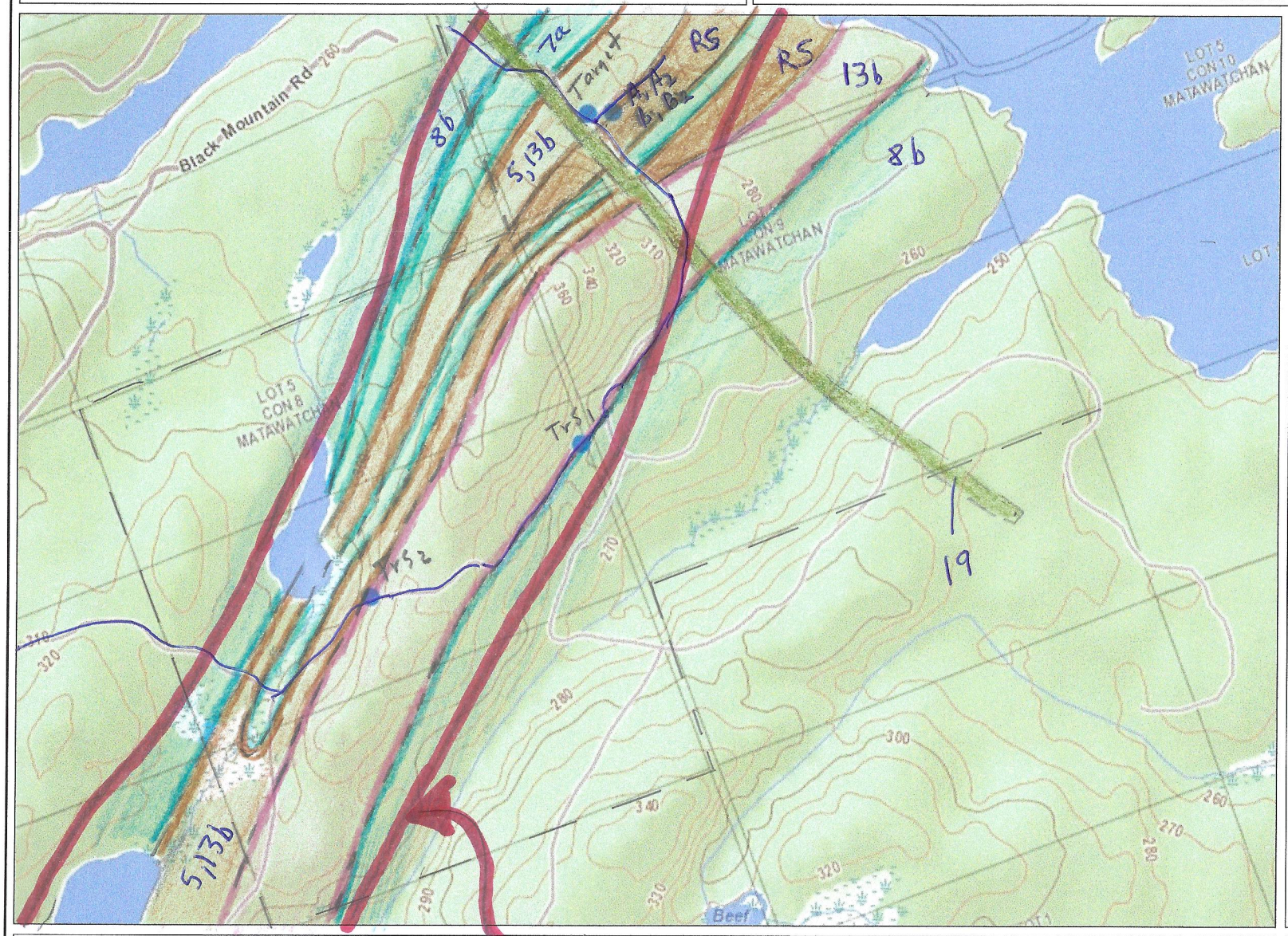

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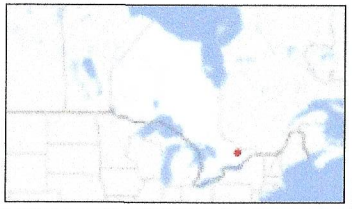
0 0.65 km

Projection: Web Mercator

N

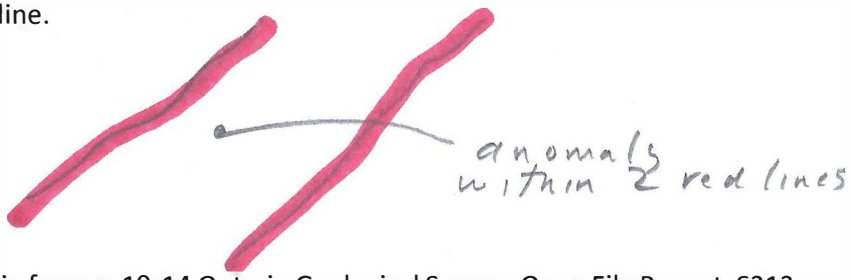


Map 2

Black Mountain Graphite Exploration Sept. 13, 2016

Geophysics

Outline of 2nd vertical derivative anomaly – total magnetic field. Anomaly of interest, caused by pyrrhotite, is delineated by red line.



Source: transposed by Jim Martin from p. 19-14 Ontario Geological Survey, Open File Report 6313. Project Unit 13-014. Geology and Mineral Potential of the Centennial Lake Area, Northeastern Central Metasedimentary Belt, Grenville Province, 2015. Authors: M. Duguet, Q. Duparc, and C. Mayer.

Geology

Precambrian Rock Units

5 Siliceous and Micaceous Shaly Metasedimentary Rocks: Intercalcated, thinly bedded, siliceous and calcareous mudstone(garnet-feldspar-biotite-quartz gneiss and schist locally containing phases rich in one or more of garnet, sillmanite, muscovite, plagioclase, potassium feldspar, scapolite, amphibole, carbonate, diopside, iron-titanium oxide minerals and pyrite), orthoquartzite, arkose, impure sanstone and siliceous marble .

Map Colour – light brown

7a Dolomitic Marble – Medium-to-coarse grained, white to greenish dolomitic marble containing up to 20% siliceous impurities; local intercalcations of tremolite-rich dolomitic marble

Map Colour – light turquoise

8b Calcitic Marble (Medium to High Metamorphic Grade) - Medium-to coarse-grained, grey to white, gneissic marble containing up to 20% siliceous impurities; locally contains thin intercalcated units of siliceous marble

Map Colour – light blue

13b Trondhjemite and Granite – Gneissic trondjhemite and minor granodiorite, with augen structure and relict igneous features; with laminated structure and a metamorphic fabric

Map Colour – light pink

19 Mafic Intrusive Rocks – tholeiitic diabase dikes

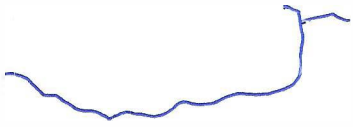
Map Colour – olive green

RS "Rusty Schist" Rusty weathering. graphitic, pyrite-and pyrrhotite-bearing schist

Map colour – darker brown

Source: transposed by Jim Martin from Lumbers, S.B. and Vertolli, V.M. 2001. Precambrian geology, Denbigh area, Ontario Geological Survey, Preliminary Map P .3437, scale 1:50 000.

Field Work



Trail

Start of Trail - Start

End of Trail - Target – approximate location of OGS graphite occurrence

Sample Sites A1,A2,B1,B2

Tr S 1

Tr S 2

Map 3

Ontario

MINISTRY OF NORTHERN DEVELOPMENT AND MINES
CLAIMaps

Black Mountain Graphite Exploration Sept. 13, 2016

Notes:
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T Target, Sample Location
Not showing Claims.

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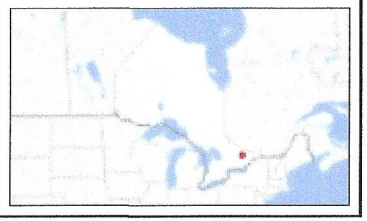
Geology Layers
- AMIS Sites
- AMIS Features
- Drill Holes
- Mineral Occurrences

0 0.32 km

Projection: Web Mercator

N



Map 4

Ontario

MINISTRY OF NORTHERN DEVELOPMENT AND MINES
CLAIMaps

Black Mountain Graphite Exploration Sept. 13, 2016

Notes:
Sept. 13, 2016 field work- Sample Locations on Trail Tr S 1 and Tr S 2. Not showing Claims.

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0 0.32 km

Projection: Web Mercator

N

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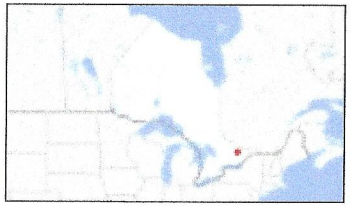

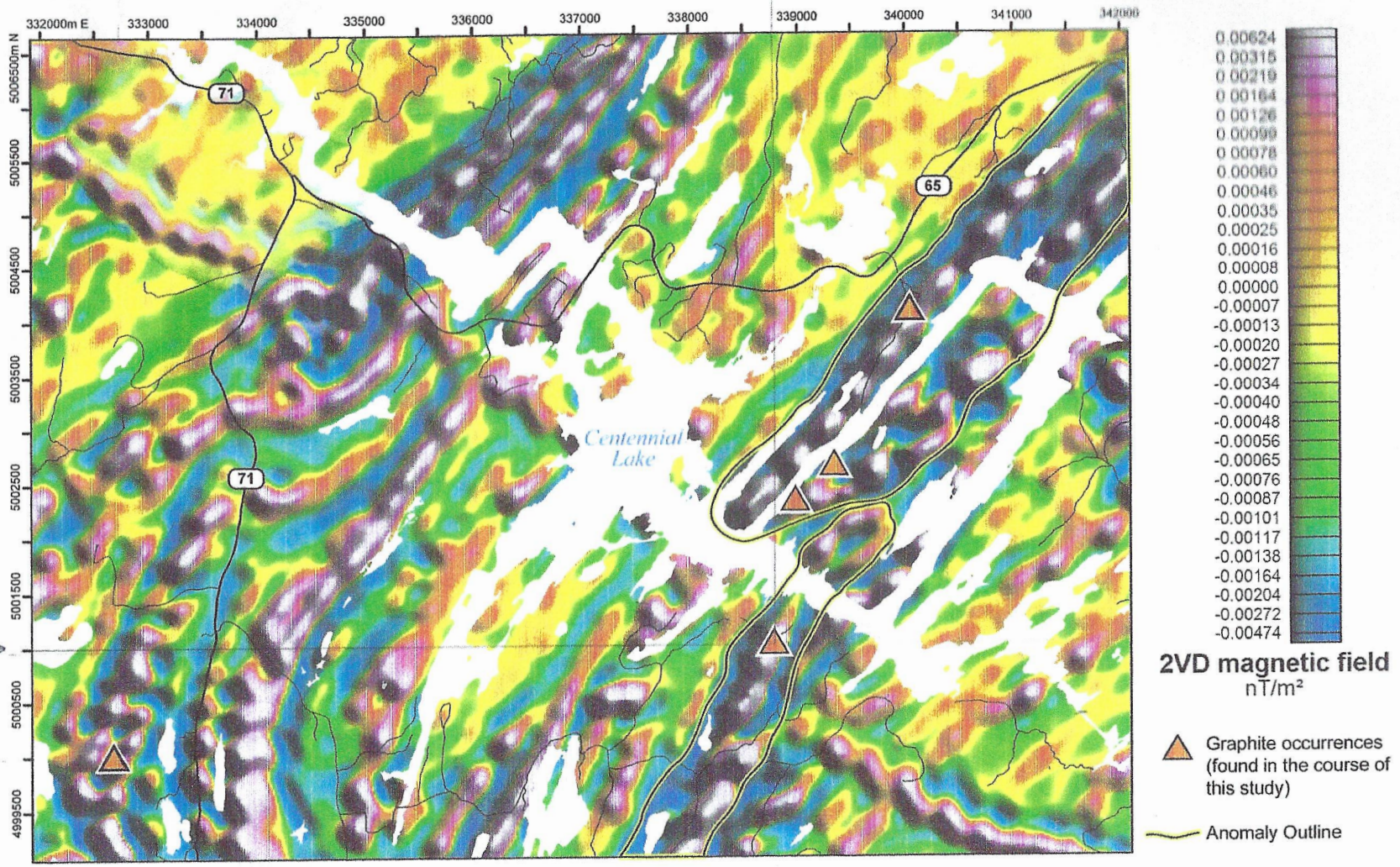

Figure 19.2. Locations of new graphite occurrences (red triangles) found during this study overlain on the second vertical derivative (2VD) of the total magnetic field (geophysics *from* Ontario Geological Survey 2014). The anomaly of interest, caused by pyrrhotite, is delineated by the thick black lines with white halo. The UTM co-ordinates provided using NAD83 in Zone 18.

19. Project Unit 13-014. Geology and Mineral Potential of the Centennial Lake Area, Northeastern Central Metasedimentary Belt, Grenville Province

M. Duguet[1], Q. Duparc[2] and C. Mayer[3]

[1]Earth Resources and Geoscience Mapping Section, Ontario Geological Survey, Sudbury, Ontario P3E 6B5
[2]Lundefuglvegen 79, 9015 Tromsø, Norway
[3]Department of Earth Sciences, Laurentian University, Sudbury, Ontario P3E 2C6

INTRODUCTION

The Centennial Lake area covers approximately 272 km^2 and is bounded by latitudes 45°7′30″N and 45°15′N and longitudes 77°00′W and 77°15′W. It includes most of Matawatchan Township and small parts of Denbigh, Lyndoch and Miller townships (NTS sheet 31 F3/NE).

Approximately 12 weeks of the 2015 field season were spent conducting mapping and sampling in the Centennial Lake area, which is located immediately west of the Black Donald Lake area mapped in 2014 (Duguet, Whitney and Ma 2014).

Until now, the Centennial Lake area had received little attention. Previous mapping in the Centennial Lake area consisted mainly of 1:100 000 scale regional mapping from the 1970s (Lumbers 1982a, 1982b). The township of Denbigh on the western edge of the Centennial Lake area was also mapped in the 1960s at 1:31 680 scale (Evans and Appleyard 1963). In conjunction with new mapping, part of the Lumbers' map (1982a) around Denbigh Township was later published at 1:50 000 scale (Lumbers and Vertolli 2001). South of the Centennial Lake area, the geology of the Black Donald and Mazinaw domains were subjected to more recent mapping and analytical work by Easton (2006a, 2006b). Mapping in 2015 also benefited from airborne geophysical data available from the Renfrew survey (magnetic and gamma-ray spectrometric) flown in 2013 (Ontario Geological Survey 2014).

This paper focusses mainly on the complex stratigraphy of the Centennial Lake area and its relationships to deformation zones and domain boundaries. Graphite occurrences found by field party personnel during the 2015 field season are also placed in their regional context.

GENERAL GEOLOGY AND STRATIGRAPHY

The map area includes supracrustal and metaplutonic rocks of the Black Donald domain, and possibly of another domain that is present on the western side of the map area (Figure 19.1). The map area is structurally very complex with a superposition of at least 2 different folding events and 2 shearing events (*see* Duguet, Whitney and Ma 2014). Moreover, rheological and geometric interaction between the metaplutonic rocks and the supracrustal rocks during the polyphase deformation created local, but nonetheless significant, variation in the regional structural pattern. The Centennial Lake area can be

Summary of Field Work and Other Activities 2015,
Ontario Geological Survey, Open File Report 6313, p.19-1 to 19-16