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Assessment Report
on the

Contact Bay Project

Northwestern Ontario
Kenora Mining Division
Contact Bay Area
NTS Sheet 052F10

Prepared for

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MINING LTD

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August 30, 2022

Prepared by:

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Table of Contents

1.0 SUMMARY

Heritage Mining Ltd.'s Contact Bay Project ('The Property') is located in the Kenora Mining Division of northwestern Ontario. The Property is approximately 12km south-southwest of Dryden, Ontario and 302km northwest of Thunder Bay, Ontario. The Property is situated along highway 502 just south of Dryden, ON. The Property consists of 136 single cell mining claims and 11 multi-cell mining claims (86 cells) for a total area of ~4683 hectares.

The Property lies withing the Eagle-Manitou Lakes Greenstone Belt (aka Atikwa Domain) within the Western Wabigoon Subprovince of the Superior Province.

The primary targets are greenstone-hosted gold in the north and northeast of the Property, with secondary targets of nickel-copper and platinum group metals hosted by Nabish Lake Mafic Intrusive in the south. The Property lies along the northern periphery of the Atikwa Batholith.

Although gold production was minimal in the vicinity of Eagle and Wabigoon Lakes south of Dryden, exploration between 1897 and 1930 was intense, especially in the vicinity of Larson Bay of western Wabigoon Lake. Historic work on the Property includes the old Rognon Mine, also known as Wachman Mine, located on the north side of Contact Bay. It was in production between 1916 and 1918 for 22.2 oz of gold and 0.5 oz of silver from 49 tons milled. Exploration activity varied in intensity over the next decades, with an increase in the late 1970s to early 1990s.

Historic work on the Property had been completed by companies and government, from prospecting to limited diamond drilling. No mineral resource estimate has been completed on the Property.

Prospectair Geosurveys conducted a heliborne high-resolution magnetic (MAG) and time-domain electromagnetic (TDEM) survey on the Contact Bay Property on April 9th to 16th, 2021. February 13th and 14th 2021. One survey block was flown for a total of 510 l-km.

A program of prospecting, sampling, and ground truthing of the magnetic anomalies and structural features interpreted from the magnetic survey is recommended.

2.0 INTRODUCTION

The Contact Bay Project ('The Property') lies in the Kenora Mining Division of Northwestern Ontario (Figure 1). The Report is based on published literature, Ministry of Energy Northern Development and Mines (MENDM) assessment files and work carried out on behalf of Heritage Mining Ltd. An exploration program consisting of a Heliborne Magnetic and TDEM Survey that was carried out over the property.

The Property consists of 136 single cell mining claims and 11 multi-cell mining claims (86 cells) for a total area of ~4683 hectares. The claims are listed in Table 1 and are shown in Figure 2. The claims are held 100% by Heritage Mining Ltd. The total work requirement for the property annually amounts to $88,800.

The Property lies withing the Eagle-Manitou Lakes Greenstone Belt (aka Atikwa Domain) within the Western Wabigoon Subprovince of the Superior Province.

The primary targets are greenstone-hosted gold in the north and northeast of the Property, with secondary targets of nickel-copper and platinum group metals hosted by Nabish Lake Mafic Intrusive in the south. The Property lies along the northern periphery of the Atikwa Batholith

Figure 1: Property Location Map

3.0 PROPERTY DESCRIPTION AND LOCATION

The Contact Bay Project is located in the Contact Bay Township of the Kenora Mining Division in northwestern Ontario, approximately 12 km south-southwest of the community of Dryden, ON. The UTM co-ordinates for the approximate centre of the claim block are 506711 m E, 5502380 m N (NAD 83, Zone 15) NTS Sheet 52F/10. The Property is half way between Winnipeg, MB and Thunder Bay, ON, less than 350km from each.

The Property consists of 113 single cell mining claims and 11 multi-cell mining claims (86 cells) for a total area of ~4642 hectares. The claims are listed in Table 1 and are shown in Figure 2. The claims are held 100% by Heritage Mining Ltd. The total work requirement for the property annually amounts to $88,800.

Early exploration programs are subject to the guidelines, policies and legislation of the Ontario Ministry of Energy, Northern Development and Mines ("MENDM"), Ontario Ministry of Natural Resources and Federal Department of Fisheries and Oceans regarding surface exploration, stream crossings, and work being carried out near rivers and bodies of water, drilling and sludge disposal, drill casings, capping of holes, storage of core, trenching, road construction, waste and garbage disposal.

The *Mining Act* (Ontario) requires Exploration Permits or Plans for exploration on Crown Land, which in turn are obtained from the MENDM. The processing periods are 50 days for a permit and 30 days for a plan while the documents are reviewed by MENDM and presented to the Aboriginal communities whose traditional lands may be impacted by the work. The Author recommends the company discuss the recommended exploration with the MENDM to determine the plan and/or permit required as well as the Aboriginal communities to consult.

The Government of Ontario requires expenditures of $400 per year per cell for staked claims, prior to expiry, to keep the claims in good standing for the following year. The Assessment report describing the work done by the company must be submitted by the expiry date of the claims to which the work is to be applied. There are no boundary claims related to the Property.

Table 1: Contact Bay Property Claims

TENURE NUM	TYPE	STATUS	CLAIM DUE	HOLDER	AREA (Ha)	TOWNSHIP	WORK REQUIRED
583918	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
583919	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
583920	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
583921	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
584455	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
584456	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
584457	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
584458	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
584459	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
584460	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
584461	Single Cell Mining Claim	Active	2023-04-13	(100) BOUNTY GOLD CORP.	20.9	CONTACT BAY AREA	800
538417	Multi-cell Mining Claim	Active	2023-01-07	(100) Heritage Mining Ltd.	271.86	CONTACT BAY AREA	10400
538431	Multi-cell Mining Claim	Active	2023-01-07	(100) Heritage Mining Ltd.	83.63	CONTACT BAY AREA	3200
540603	Multi-cell Mining Claim	Active	2023-02-02	(100) Heritage Mining Ltd.	250.95	CONTACT BAY AREA	9600
540604	Multi-cell Mining Claim	Active	2023-02-02	(100) Heritage Mining Ltd.	41.83	CONTACT BAY AREA	1600
540605	Multi-cell Mining Claim	Active	2023-02-02	(100) Heritage Mining Ltd.	62.73	CONTACT BAY AREA	2400
540606	Single Cell Mining Claim	Active	2023-02-02	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	800
548010	Single Cell Mining Claim	Active	2023-04-13	(100) Heritage Mining Ltd.	20.92	CONTACT BAY AREA	800
548011	Multi-cell Mining Claim	Active	2023-04-13	(100) Heritage Mining Ltd.	167.26	CONTACT BAY AREA	6400
548016	Single Cell Mining Claim	Active	2023-04-13	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	800
548017	Single Cell Mining Claim	Active	2023-04-13	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	800
548018	Single Cell Mining Claim	Active	2023-04-13	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	800
556872	Multi-cell Mining Claim	Active	2022-09-04	(100) Heritage Mining Ltd.	146.44	CONTACT BAY AREA	2800
557428	Multi-cell Mining Claim	Active	2022-09-09	(100) Heritage Mining Ltd.	209.22	CONTACT BAY AREA	4000

TENURE NUM	TYPE	STATUS	CLAIM DUE	HOLDER	AREA (Ha)	TOWNSHIP	WORK REQUIRED
557452	Multi-cell Mining Claim	Active	2022-09-09	(100) Heritage Mining Ltd.	230.09	CONTACT BAY AREA	4400
561668	Single Cell Mining Claim	Active	2022-10-14	(100) Heritage Mining Ltd.	20.92	CONTACT BAY AREA	400
561669	Single Cell Mining Claim	Active	2022-10-14	(100) Heritage Mining Ltd.	20.92	CONTACT BAY AREA	400
561716	Multi-cell Mining Claim	Active	2022-10-14	(100) Heritage Mining Ltd.	292.84	CONTACT BAY AREA	5600
584294	Single Cell Mining Claim	Active	2023-04-13	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	800
585529	Multi-cell Mining Claim	Active	2023-04-24	(100) Heritage Mining Ltd.	41.83	CONTACT BAY AREA	1600
683092	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683093	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683094	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683095	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683096	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683097	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683098	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683099	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683100	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683101	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683102	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683103	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683104	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683105	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683106	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683107	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683108	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683109	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400

TENURE NUM	TYPE	STATUS	CLAIM DUE	HOLDER	AREA (Ha)	TOWNSHIP	WORK REQUIRED
683110	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683111	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683112	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683113	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683114	Single Cell Mining Claim	Active	2023-11-02	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683137	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683138	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683139	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683140	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683141	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683142	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683143	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683144	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683145	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683146	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683147	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683148	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683149	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683150	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683151	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683152	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683153	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683154	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683155	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400

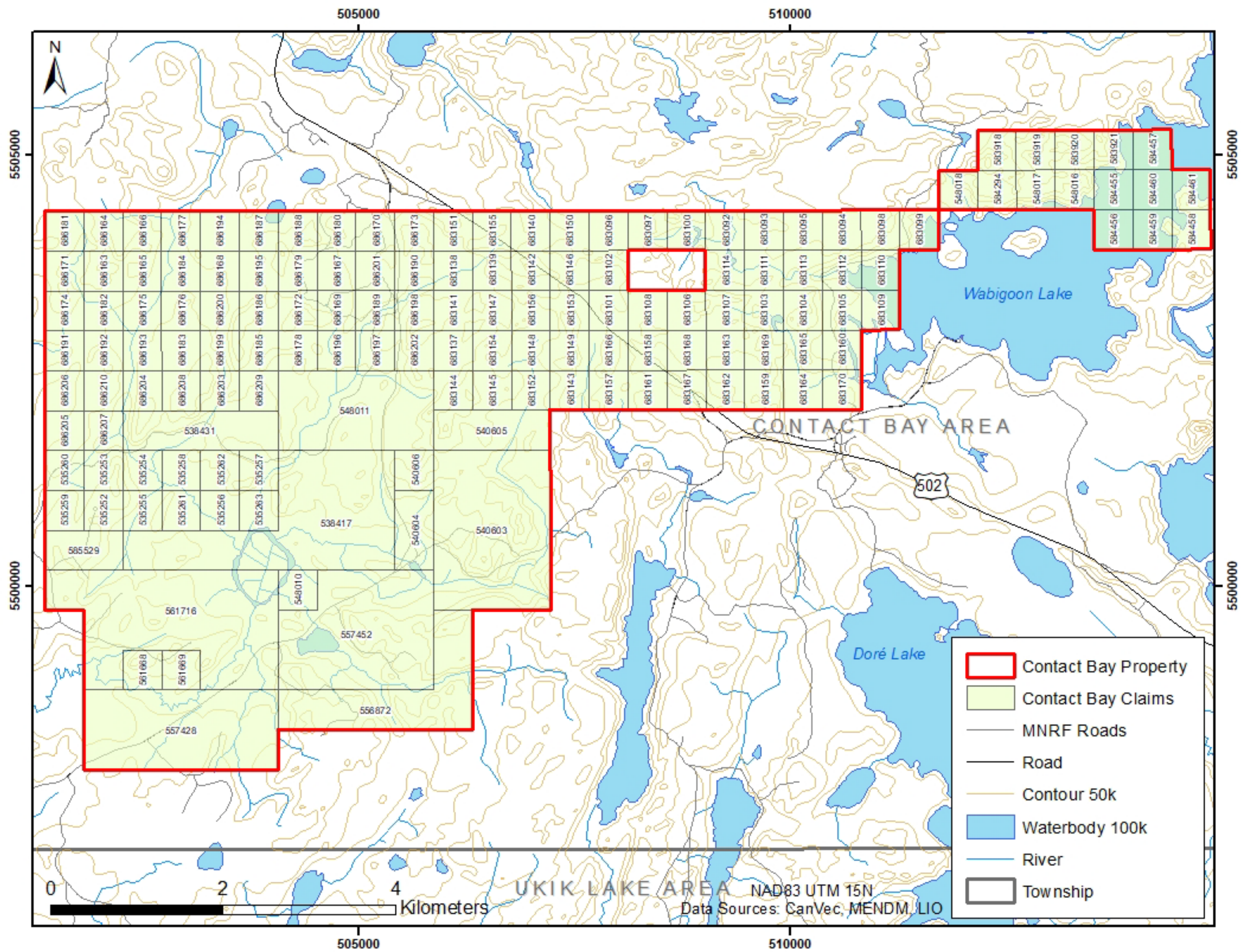
TENURE NUM	TYPE	STATUS	CLAIM DUE	HOLDER	AREA (Ha)	TOWNSHIP	WORK REQUIRED
683156	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683157	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683158	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683159	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683160	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683161	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683162	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683163	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683164	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683165	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683166	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683167	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
683168	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683169	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
683170	Single Cell Mining Claim	Active	2023-11-03	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
686163	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686164	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686165	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686166	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686167	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686168	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686169	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686170	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686171	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400

TENURE NUM	TYPE	STATUS	CLAIM DUE	HOLDER	AREA (Ha)	TOWNSHIP	WORK REQUIRED
686172	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686173	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686174	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686175	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686176	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686177	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686178	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686179	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686180	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686181	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686182	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686183	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686184	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686185	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686186	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686187	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686188	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686189	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686190	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686191	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686192	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686193	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686194	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686195	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400

TENURE NUM	TYPE	STATUS	CLAIM DUE	HOLDER	AREA (Ha)	TOWNSHIP	WORK REQUIRED
686196	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686197	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686198	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686199	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686200	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686201	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686202	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.9	CONTACT BAY AREA	400
686203	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
686204	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
686205	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
686206	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
686207	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
686208	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
686209	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
686210	Single Cell Mining Claim	Active	2023-11-16	(100) Heritage Mining Ltd.	20.91	CONTACT BAY AREA	400
535252	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535253	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535254	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535255	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535256	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535257	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400

TENURE NUM	TYPE	STATUS	CLAIM DUE	HOLDER	AREA (Ha)	TOWNSHIP	WORK REQUIRED
535258	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535259	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535260	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535261	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535262	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400
535263	Single Cell Mining Claim	Active	2022-11-20	(100) TRANSITION METALS CORP.	20.91	CONTACT BAY AREA	400

Figure 2: Property Claim Map



4.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Contact Bay Property extends from Contact Bay of Wabigoon Lake, southwest to near Osbourne Bay on Eagle Lake. Water courses crossing the Property include Burr Creel and Rice River.

Topography is gentle, with low hills underlain by bedrock, interspersed with areas of open bog and small lakes, with elevations ranging from 360 to 430 m above sea level, typical of the Canadian Shield of northwestern Ontario. Slopes are gentler in the bulk of the Property, but steepen around Contact Bay in the northeast corner.

Cover over the Property is predominantly a mix of lacustrine deposits (layered silts to sand) with drift material (till) 1-3m thick and scattered areas of outcrop, and. There is a moraine that crosses the Property diagonally on which Regional Highway 502 lies.

Vegetation is mixed forest of mostly spruce, poplar and birch, with cedar swamps and related vegetation in low-lying wet areas and along the numerous lakes, rivers and ponds, (Figure 3).

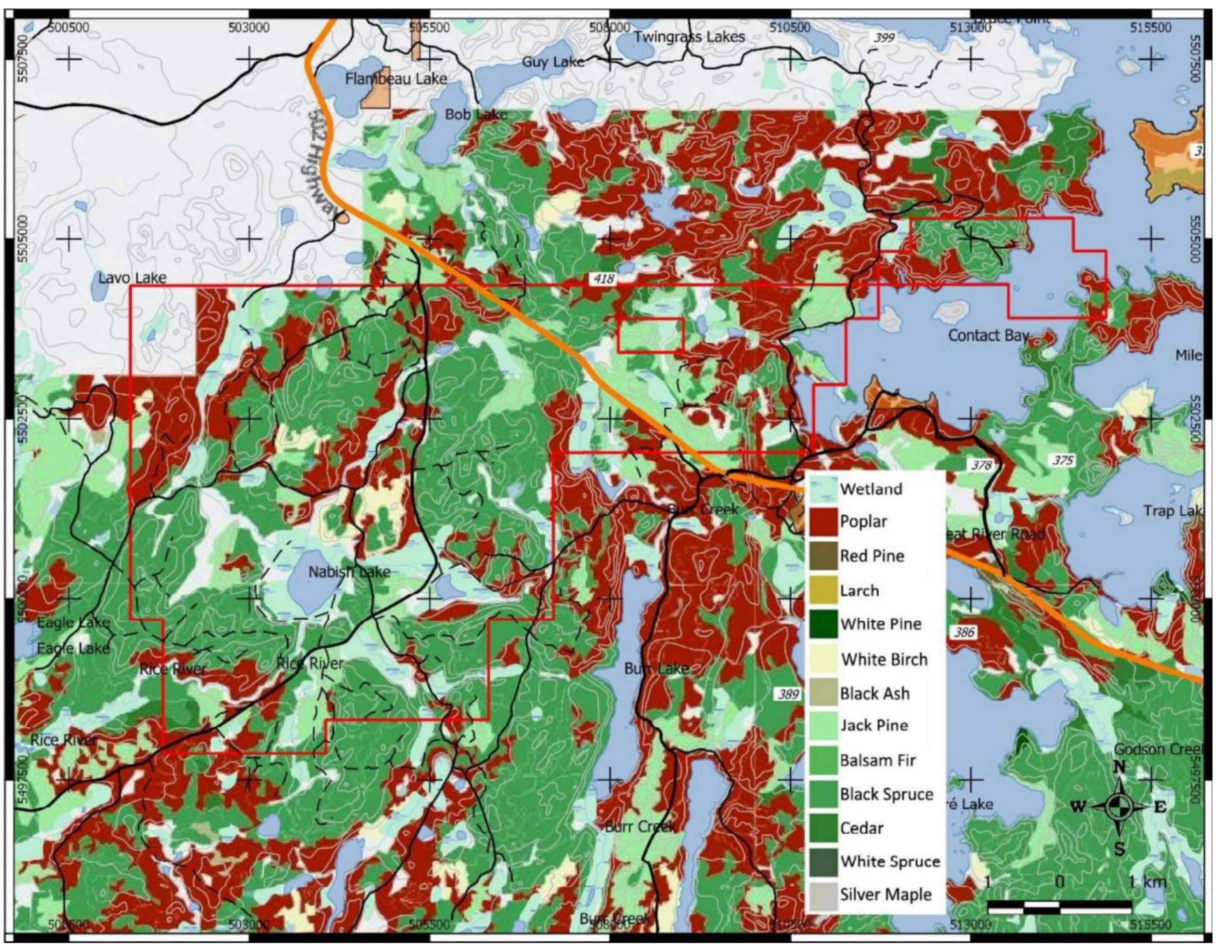


Figure 3: Vegetation coverage of the Contact Bay Property

The Property area is subject to a continental climate with long cold winters and warm humid summers. The project area is in a temperate zone with an annual precipitation exceeding 100 mm. Temperatures range between -40°C in the winter to +30°C in the summer (Table 2). Ground-based exploration requiring absence of snow can be carried out between May and October. Winter is also good in lake covered or swampy areas for exploration activities such as ground geophysical surveys and diamond drilling.

Table 2: Temperature range

Temperature	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year Total
Daily Average (°C)	-17.4	-13.4	-6.1	2.7	10.7	16.2	18.5	17.4	11.2	4.3	-5.7	-14.2	2
Record High (°C)	-12.3	-7.8	-0.2	8.8	17.1	21.8	23.7	22.6	15.7	8.1	-2.2	-9.9	7.1
Record Low (°C)	-22.5	-18.9	-11.9	-3.4	4.3	10.5	13.2	12.2	6.7	0.5	-9.1	-18.4	-3.1
Avg Precipitation (mm)	27.2	20.6	27.1	37.5	65.2	110.1	127.6	83	100.4	56.2	42.6	28.1	725.7
Avg Rainfall (mm)	0.1	1	7.5	32.2	64.7	110.1	127.6	83	99.5	46.9	14.1	0	586.8
Avg Snowfall (cm)	27.1	19.7	19.6	5.3	0.5	0	0	0	0.9	9.4	28.4	28.1	138.9

The surface rights are held by the Ontario government and any exploration, development or mining operations require regulatory approval. The Property lies within the traditional territory of the Migisi Sahgaigan (Eagle Lake First Nation) and Waabigonii Zaa Ojibway Nation).

The Property is located close to a significant regional hub, Dryden Ontario, through which the TransCanada crosses (Highway 17). All-season Regional Highway 502 crosses the Property, along with all-season logging roads. Access is by leaving Dryden, Ontario, past the Domtar Mill, west along Regional Highway 594, turning south onto Regional Highway 502 and the well maintained gravel Century Lodge Road (also called Bear Narrows Road) in the south of the Property. There are abundant logging roads of various ages over much of the Property, including all-season roads. The northeast corner of the Property lies on either side of Contact Bay, which can be reached by seasonal trails, as well as by water from multiple launches around Wabigoon Lake.

The population of Dryden is 7,388 as of 2021. Dryden is between Winnipeg, Manitoba (350 km) and Thunder Bay, Ontario (300 km). Dryden itself is a full-service community with an available workforce, contracting facilities and an airport. There are several active projects in the area, and region. Thunder Bay has abundant mining and exploration related services, including several laboratories (preparatory to full analyses), as well as being the regional transportation hub.

5.0 PROPERTY HISTORY

The Property has been explored since at least the late 1890's by a variery of companies and prospectors, with some mining in the 1910's. Given that Dryden was first founded around 1895, some exploration was most likely done earlier. Table 3 lists all known assessment reports that describe work done within the boundaries of the present Property or proximal area with similar conditions.

Table 3: Assessment Reports associated with the Contact Bay Property

AFRI_FID	YEAR	PERFORMED FOR	WORK TYPES
52F10NW0093	1956	A Lantz	DDH
52F10NW0095	1958	J R Gray	DDH
52F10NW0081	1967	Agena Mining Co Ltd	EM, Mag
52F10NW0082	1967	Latin American Mines Ltd	Mag
52F10NW0083	1969	Hollinger Mines Ltd	EM, Mag
52F10NW0096	1969	Hollinger Mines Ltd	DDH
52F10NW0097	1969	Hollinger Mines Ltd	DDH
52F10NW0086	1970	Chimo Gold Mines Ltd	DDH
52F10NW0088	1970	Chimo Gold Mines Ltd	DDH
52F10NW0100	1970	Chimo Gold Mines Ltd	DDH
52F10NW0087	1971	Lynx-Canada Exploration Ltd	DDH
52F15SE8308	1977	Hbog Mining Ltd	Airborne EM
52F10NW0076	1983	W J Sovereign	Assaying and Analyses, Other, Prospecting
52F10NW0070	1983	W J Sovereign	Assaying and Analyses, Overburden Stripping
52F10NW0059	1987	Cayuga Syndicate	EM, VLF, Geochemical, Geological, Mag
52F10NW0068	1987	St Joe Canada Inc	Geological
52F10NW0065	1988	Cayuga Syndicate	VLF, Geochemical, Geological, Mag
52F10NW0057	1990	A Glatz	VLF, Mag
52F10NW0050	1991	Société Minière Mimiska	Assaying and Analyses, Compilation and Interpretation - Ground Geophysics, DDH, Geochemical, Geological
52F10NW0053	1991	Société Minière Mimiska	VLF, Mag
52F10NW0052	1991	Société Minière Mimiska	VLF, Mag
52F10NW0055	1991	Grand Oakes Resources Corp	VLF, Geological, Mag, Other
52F10NW0056	1991	Société Minière Mimiska	Assaying and Analyses, DDH
52F10NW0055	1991	Grand Oakes Resources Corp	VLF, Geological, Mag, Other
52J02SE0007	1991	B Read, S Johnson	Assaying and Analyses, Bedrock Trenching, Geochemical, Manual Labour, Open Cutting, Overburden Stripping, Prospecting
52F10NW0009	1991	Société Minière Mimiska	Assaying and Analyses, Compilation and Interpretation - DDH, EM, VLF, Mag, Open Cutting
52F10NW0051	1992	Société Minière Mimiska	VLF, Mag

52F10NW2002	2001	Atikwa Minerals Inc	Assaying and Analyses, Geochemical, Geological, Mechanical, Overburden Stripping
52F10NW2003	2001	Atikwa Minerals Inc	Geochemical, Geological
52F10NW2005	2003	Atikwa Minerals Inc	Assaying and Analyses, Prospecting
52F10NW2006	2003	Atikwa Minerals Inc	Assaying and Analyses, Prospecting
20000003740	2008	Sedex Mining Corp	Airborne EM, Airborne Mag
20000004126	2008	Perry English, Perry Vern English	Assaying and Analyses, Prospecting
20000017167	2018	Pure Gold Mining Inc	Air Photo and Remote Imagery Interpretations, Airborne Mag, Compilation and Interpretation - Geology, DDH, Geological, Mobile Metal Ion, Rock Sampling

5.1 Historic Exploration

The area in the vicinity of Eagle and Wabigoon Lakes, south of Dryden, was second to the Manitou Lakes area as the most important location for gold exploration in the Dryden-Ignace region. Although gold production was minimal, exploration between 1897 and 1930 was intense, especially in the vicinity of Larson Bay on Wabigoon Lake. The area is pockmarked with numerous trenches, test pits, and old shafts, (Parker, 1989).

Cu-Ni mineralisation in the Dryden area was initially documented by Parsons (1911) at Meridian Bay, located at the south end of Eagle Lake, near the contact of mafic volcanics and the dioritic suite. The Kenbridge Nickel deposit was discovered in 1936, situated 24 km southwest of Muskeg Bay of Eagle Lake in the Mulcahy Lake Gabbro, (Yeomans, 1991).

The Wabigoon Lake area was mapped by J. Satterly (1943) in 1939 and 1940, as part of the Dryden-Wabigoon map sheet, while the Eagle Lake area was mapped by W. W. Moorhouse (1941), during 1938. Descriptions of various gold occurrences at Eagle and Wabigoon Lakes were made by Coleman (1898), Carter (1901), Parsons (1911), and Thomson (1917). E. L. Bruce (1925) mapped the local geology at the Bonanza and Redeemer Mines at a scale of 1 inch to 200 feet while documenting gold deposits in the Kenora and Rainy River Districts.

Base metal, iron, and uranium exploration occurred throughout the area from the 1950's to the late 1970's. Most of it being concentrated at Eagle Lake, but no significant deposits were discovered. Tungsten and rare elements have also been the focus of exploration immediately north of Dryden, in Brownridge and Zealand Townships, since the 1950's, (Parker, 1989).

A GSC aeromagnetic map for the Nabish Lake area was initially presented on Map 1154G in 1960. This survey was reflown in 1986 and presented on OGS Map 80971, utilising the GeoTerrex GeoTem airborne EM system.

Past exploration work for Ni-Cu by mining companies on the present Property included Preston East Dome Limited (ca 1956), Cooper (1962), The Mining Corporation (1968), Hollinger Mines Ltd (1969), Lynx-Canada Exploration Ltd (1970).

Preston East Dome Limited (Dome) optioned claims on the southeast side of Nabish Lake circa 1956 from Harry Byberg, W.A. Johnston and Martin Jeness, of Kenora, Ontario. This area contained the Nabish Lake-Southeast Cu-Ni (MDI52F10NW00152) and Nabish Lake Ni (MDI52F10NW00116) showings. Dome did no surface work, but drilled two short holes under the Nabish Lake-Southeast showing. Dome's engineer reported verbally to Johnston they obtained a 0.75% combined Cu-Ni assay, but no footage was given, (MDI52F10NW00152). Dome also drilled four holes on the Nabish Lake Ni Showing, and completed an EM survey was in 1960, (MDI52F10NW00116).

Several Cu-Ni surface showings with PGE values were discovered by Alex Kozowy, of Dryden, circa the late 1960s. Claims held under option by Latin American Mines Ltd from Alex Kozowy of Dryden, hosted gabbro with disseminated Ni-Cu sulphides, found during the summer of 1966, when three trenches were put down, (MDI52F10NW00152). In 1967, Agena Mining Company Ltd conducted a ground EM geophysical survey over the Nabish Lake Ni Showing. As implied by the name, these showings are near Nabish Lake in the southern areas of the current

Property. Hollinger Mines Ltd conducted ground mag and EM surveys circa 1968-1969, which lead to six conductive anomalies worthy of follow-up, (Tittley, 1969). None of these conductive anomalies displayed the characteristics of a good conductive body such as massive sulphides or graphite. Hollinger suggested they were all capable of representing bodies of disseminated sulphides, in particular pyrrhotite where the conductor was directly associated with a magnetic peak. They noted that some conductive clays have been known to be the origin of similar anomalies, (Tittley, 1969). Lynx-Canada Exploration Ltd (1970) completed ground geophysics surveys and diamond drilling again in the vicinity of the main Kozowy Ni-Cu Showing. No economic base metal intersections were obtained during these programs.

The Eagle-Wabigoon Lakes area was included in regional studies of stratigraphy and structure conducted in 1977 and 1978 (Trowell et al. 1977, 1978, 1980).

An airborne electromagnetic survey was flown in the Wabigoon Lake Area, Ontario, in 1977 by Questor Surveys Limited for Hbog Mining Ltd. Terrain clearance was maintained as close to 400 feet (122 m) as possible, with the EM Bird at approximately 150 feet (46m) above the ground, and a line-spacing of 660 feet (201 m). The aircraft was equipped with Mark VI INPUT (R) airborne EM systems and Geometries G 803 proton precession magnetometers. Location of flights lines was done with National Air Photo Library mosaic compared with flight lines film strips, using location of fiducial points 4,500 feet (1,72 m) apart. The survey centred on areas north and east of the current property, in particular over Wabigoon Lake. Hbog had a 4-unit claim block in Contact Bay, just west of the EDB 1 Prospect occurrence(Figure 4).

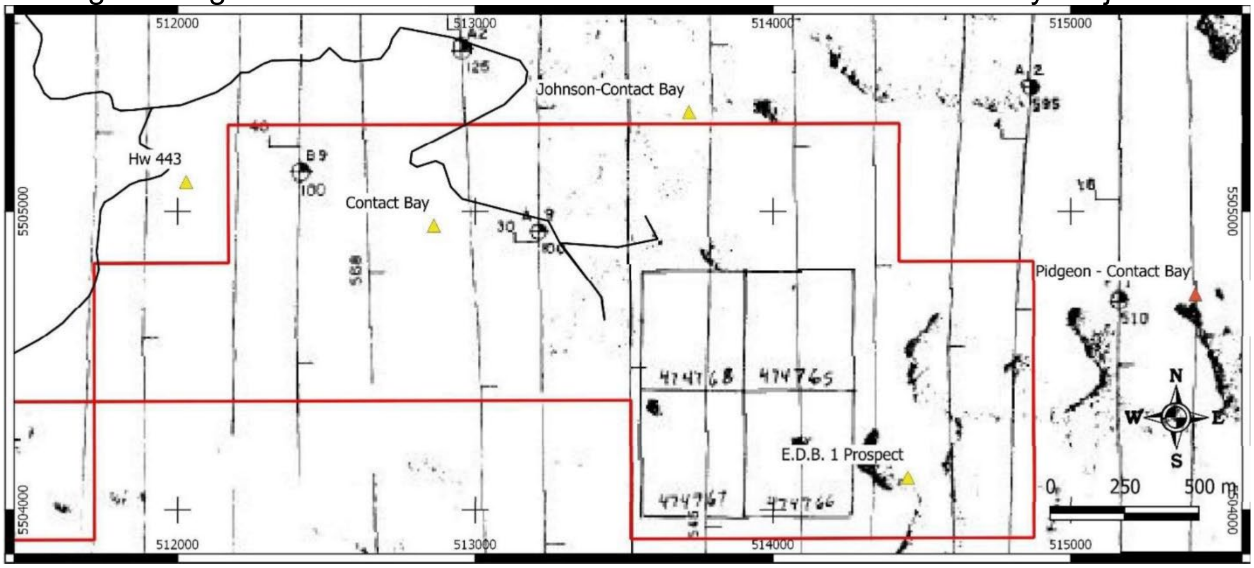


Figure 4: 1977 Hbog contact bay Airborne Geophysical Anomalies with OMI Occurrences

*Red line = Current HRM Property. Black squares = 1977 HBog claims.

Gold exploration lay dormant until a resurgence of exploration activity led by the junior mining sector in the 1980s, renewed in 1980 when Van Horne Gold Exploration Inc acquired 28 contiguous claims immediately west of Larson Bay, Wabigoon Lake. In the 1980s, the majority of activity concentrated on gold occurrences in two locations, one in the vicinity of Flambeau Lake, west of Wabigoon Lake, and the second in south-central Eagle Lake, (Parker, 1989). Van Horne Exploration, Moss Exploration and Power Exploration worked the Bonanza, Redeemer and Vanlas areas from 1981-1989, in the Lower Wabigoon Volcanics north the current Property.

During 1984, R. H. Sutcliffe (Sutcliffe and Smith 1985) mapped the Mulcahy Gabbro Intrusion southwest of Eagle Lake. Mapping was conducted by J.R. Parker for the OGS from 1985 to 1987, who carried out detailed mapping (1:4,800 or 1 inch to 400 feet) at Flambeau Lake- Larson Bay in Van Horne and Aubrey Townships (Parker and Schienbein 1988a, b) and at Hardrock and Fornieri Bays on Eagle Lake (Parker, 1989). The Eagle-Wabigoon Lakes area was included in an extensive airborne electromagnetic and magnetic survey flown over the Dryden area and published in 1987 (OGS 1987). The Van Horne area was compiled into open file map GDIF 396 during this period (OGS, 1987), subdividing volcanic rocks into mafic, intermediate and felsic composition.

A brief program was completed by Beakhouse that focused on the Wabigoon Fault from the Manitoba border to the Sioux Lookout area, including the section of the fault north of the Property (Beakhouse, 1988).

The closing of the 1980s saw the Property included in areas that were remapped (Scheinbein and Parker, 1988a), as part of a multi-Economic Geologist (Parker, 1989; Parker, 1990).

Cu-Ni exploration was continued by Alex Glatz and Alex Kozowy(1989) of Dryden, as well as Falconbridge (1990). During December 1990, Glatz and Kozowy contacted Société Minière Mimiska Inc, concerning a Cu-Ni discovery near Nabish Lake, located 16 km south-southwest of Dryden, Ontario. Surface sampling and examination of available VLF-EM-16 and magnetic data resulted with Mimiska optioning the ground. Société Minière Mimiska carried out exploration around the Kozowy-Glatz Cu-Ni showing and Nabish Lake in 1991, including prospecting, line- cutting, ground geophysics (VLF-mag) and a 2,000-foot diamond drilling program (Yeomans,1991; Glatz, 1992), (Figure 5). Falconbridge (1990) completed Max-Min and magnetic surveys over the main showing. These surveys did not identify any favourable base metal targets.

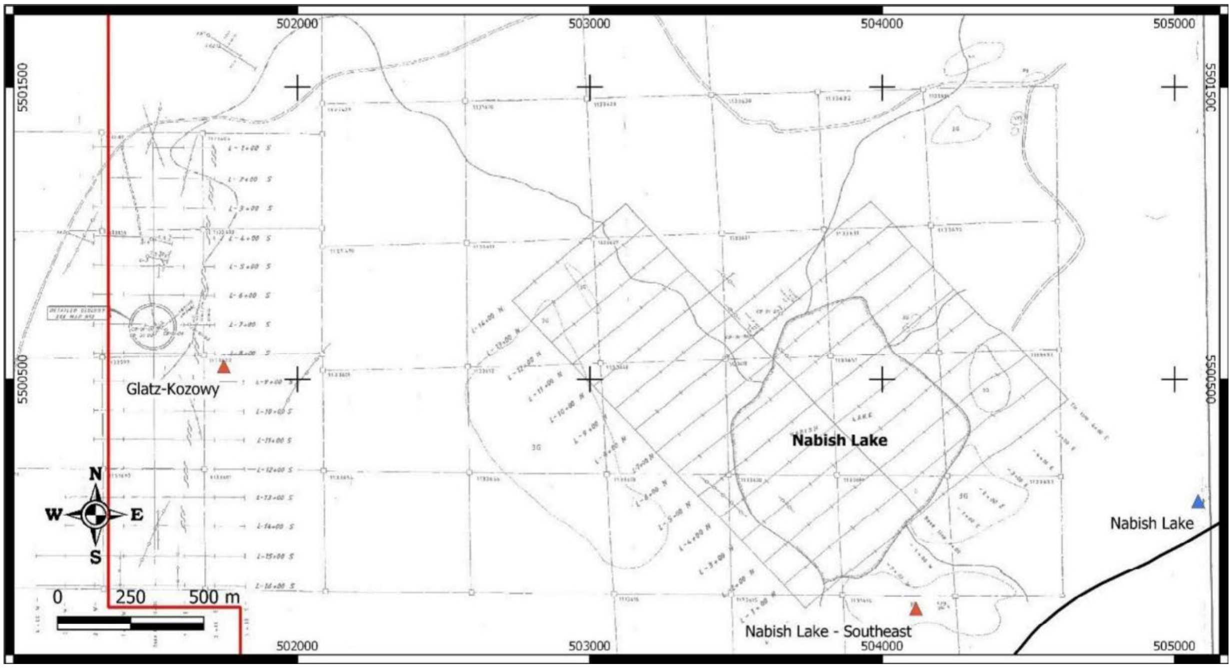


Figure 5: Societe Miniere Mimiska Inc Grids and DDH with OMI

*Red line = Current HRM Property. Black squares = SMM option claims.

A province-wide compilation of the geology of Ontario was published in 1991 that included a summary of the Wabigoon Subprovince (Blackburn et al, 1991), where descriptions were largely a repetition of earlier work (Trowell et al, 1980). While the Western Superior NATMAP program updated many areas, it did not include any work on the Lower Wabigoon Volcanic gold occurrences, nor much of the area south and west of Dryden, including the Property area.

The area has been covered by regional aeromagnetic and gravity geophysical surveys and regional lake sediment geochemical surveys by the Geological Survey of Canada. The regional geophysical surveys were augmented by provincial work and are compiled in ERLIS Geophysical Data Set 1036 (OGS, 1999).

As part of Operation Treasure Hunt geoscience initiative, a 2-year program initiated by the OGS in 1999, funded by the Ontario Government, a new airborne magnetic and electromagnetic survey (OGS, 2001 and 2002) and detailed lake sediment sampling (Russell, 2004; Felix, 2005), were completed to improve on existing regional coverage by earlier GSC programs. A large part of the arcuate

Eagle-Manitou Lakes Greenstone Belt was surveyed, including the Property, (Figure 6)

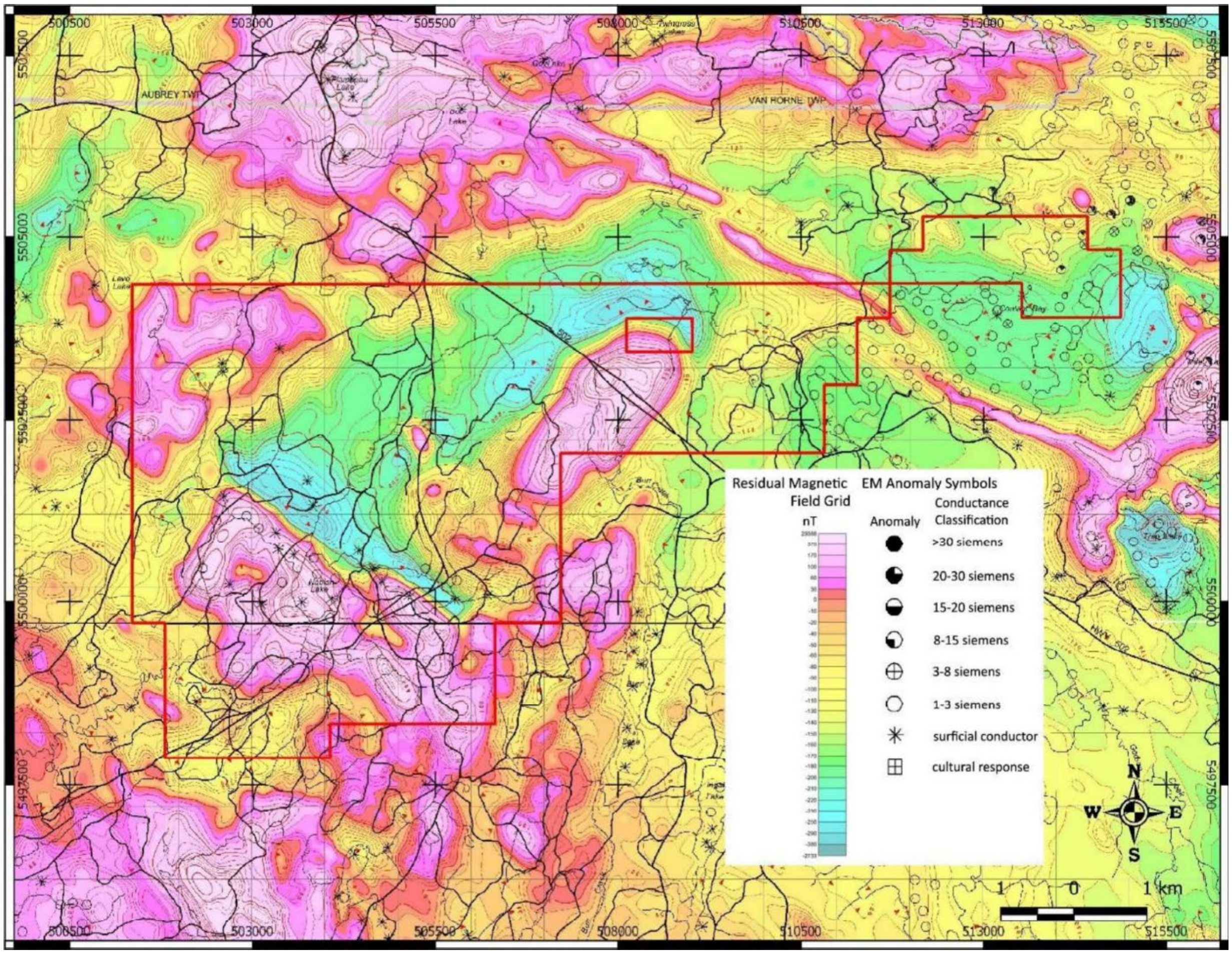


Figure 6: Property OGS Residual Magnetic Field (after OGS, 2001)

*Red line = Current HRM Property.

The survey used MEGATEM® time-domain electromagnetic (90 Hz base frequency) and magnetic systems, mounted on fixed wing platforms. It was flown by Fugro Airborne Surveys of Ottawa, Ontario, between late November 2000 and February 2001 with a nominal terrain clearance of 120 m with a 200m line spacing and the flight line direction for Block 5, covering the Property, was 054° with the control line direction 144°, as indicated on produced maps, (OGS, 2001).

The Sturgeon Lake - Wabigoon Lake Survey area was selected for a high-density lake sediment and water geochemical survey for reasons including client interest in the area, geology with favourable mineral potential and minimal geochemical exploration data for the region, (Russell, 2004). This survey included the area of the Property, (Area 5 in Figure 7). That survey lies immediately adjacent to the Eagle Lake area, (Felix, 2004), which covered areas to the north and west of the Property, (Figure 8). Sampling for these surveys was done 2001 and 2002.

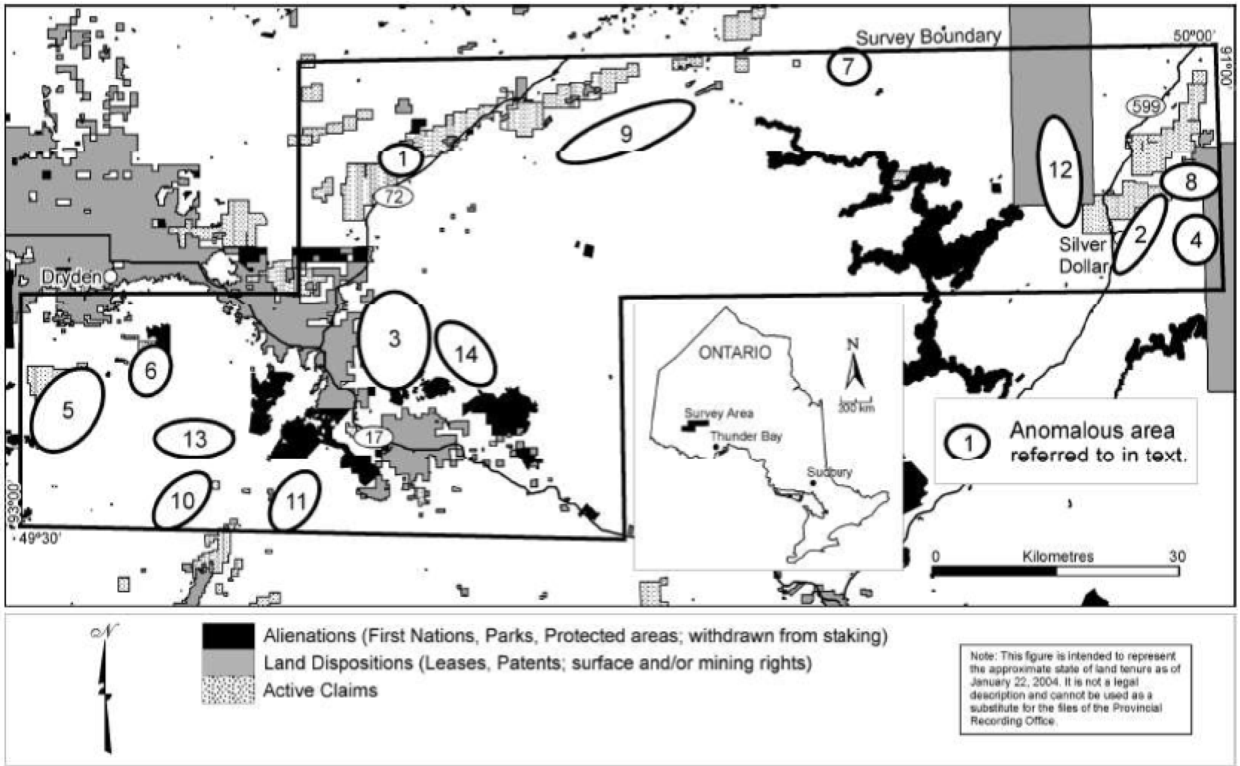


Figure 7: Sturgeon Lake - Wabigoon Lake OGS Sediment Survey (Russel, 2004)

* Current HRM Property around Area 5.

The Sturgeon Lake-Wabigoon Lake survey Area 5 (Doré Lake Osbourne Bay area) was anomalous in Ni, Cr, V, Co, and Pb, (Sites: 1373-1377, 1379, 1381, 1382, 1384, 1386-1391, 1393, 1425). This broad anomaly has a distinctly ultramafic signature, including the 4 highest Cr values in this survey, at sites 1381, 1382, 1389 and 1374. Two areas are of particular interest. In the Burr Lake area, site 1373 returned highly anomalous values for Ni (54 ppm), Cr (81 ppm) and Co (18.05 ppm), and anomalous levels of V (68 ppm) and Pb (10.66 ppm). Site1374 was highly anomalous in Ni (54 ppm), anomalous in Cr (82 ppm), V (69 ppm) and Co (17.14 ppm), and elevated in Pb (9.34 ppm). Values for both Ni and Cr were anomalous (46 ppm and 71 ppm) at site 1375, along with elevated V and Co (60 ppm and 14.73 ppm). Finally, site 1425 returned highly anomalous Ni (54 ppm), anomalous Cr (67 ppm) and elevated V and Pb (58 ppm and 13.89 ppm respectively), (Russell, 2004).

To the southwest, the most distinctive group of sites occurs in Osbourne Bay. Values for all elements listed at the beginning of this area description were highly anomalous at sites 1379, 1381 and 1382, including the 2 highest Cr values in the survey of 92 and 89 ppm at sites 1381 and 1382 respectively. Values ranged from 54 to 60 ppm Ni, 80 to 92 ppm Cr, 74 to 77 ppm V, 11.25 to 11.79 ppm Pb and 18.26 to 19.29 ppm Co, (Russell, 2004).

Across the rest of the area, several other multi-element anomalies occur. Sites 1384, 1386,1387 and 1389 yielded elevated to highly anomalous values for all elements listed at the top of this description. Site 1388 was anomalous in Ni, Cr and V, and elevated in Co. Site 1391 produced anomalous Pb values and elevated Ni and Cr. Results for Ni were anomalous at site 1377, combined with elevated values for Cr and Co. Anomalous Ni and elevated Cr were returned from site 1393 and site 1376 was anomalous with respect to V, (Russell, 2004).

Three samples from the Eagle Lake Survey, (972, 973, 974), extend this anomalous area to the southwest. Values in these samples returned 16.49-18.72 ppm Co, 75.18-89.81 ppm Cr, 39.87- 52.02 ppm Cu, 58-66 ppm Ni, 13.3-14.1 ppm Pb, 1555-1701 ppm Ti, and 71.9-76.4 ppm V.

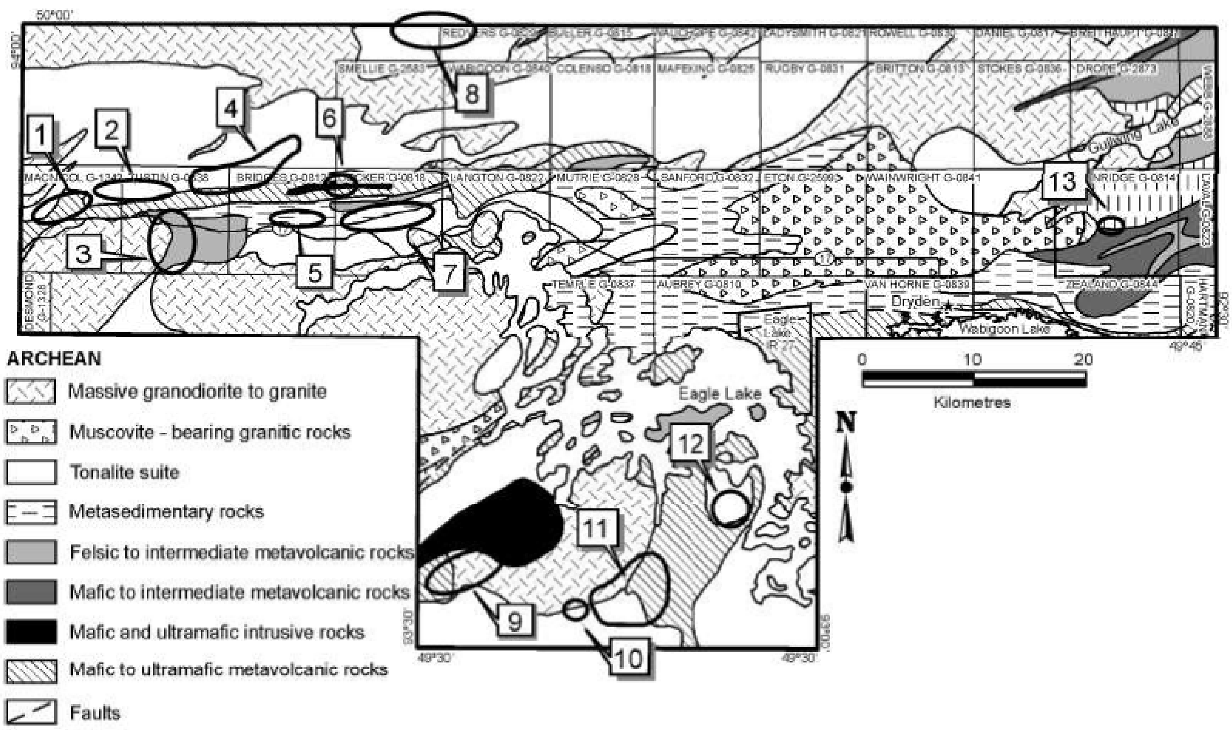


Figure 8: Eagle Lake OGS Lake Sediment Survey (Felix, 2005)

* HRM Property off map east of Area 12.

Felix noted the area South of Froghead Bay, directly west across Eagle Lake from the southern Property that was anomalous in Cu, ± Ag, ± REEs at in samples 406, 459, 461, 569, (Felix,2005). This anomalous area located northwest of Osbourne Bay, Eagle Lake, presented elevated to anomalous Cu (55 to 89 ppm) at all 4 sites. Sites 459 (0.26 ppm) and 461 (0.2 ppm) located on the same lake were anomalous for Ag. The area is underlain by felsic intrusive rocks of the Froghead Bay Stock, (Felix, 2005).

Atikwa Minerals Inc conducted exploration work in 2001 that consisted of geological mapping, reconnaissance sampling, and detailed channel sampling with a portable rock saw. They referred their project under the name Osbourne Bay Property, overlapping the south of the current Property. Mapping and sampling involved traverses over selected areas and examination of rock types. Outcrop was sampled where favourable lithologies or sulphides were encountered. Sampling was primarily reconnaissance in nature, in order to evaluate the PGE potential of the lithologies of the mafic intrusive. Subsequent work the same year involved stripping the area of showings with a backhoe and Wajax Pump. Sample results showed weakly anomalous PGE concentrations at three sites (627915 - 116 ppb Pt+Pd), 627934 -121 Pt+Pd and 627936 - 74 ppb Pt+Pd), south of Bear Narrows Road in an area of interbedded pyroxenites and gabbros, with trace to 1% sulphides. A correlation existed between Pt-Pd in these samples and elevated Cu and Ni, (Owens, 2001a).

Atikwa also had a block of claims at Contact Bay, they worked in Jun 2001, (Owens, 2001b). These work area focussed on the intrusive body in the area of Mile Lake, south of Contact Bay to the southeast of the current Property.

Atikwa2000 exploration program at Osbourne Bay Project was a continuation of work started in summer 2001. Areas of alteration, favorable geology, sulphide showings, etc. were tested by prospecting, and sampling. Rock samples were taken in all potentially mineralised areas, (Figure 9), (Owens, 2001b). Samples were generally low for Au and Ni, while widespread anomalous copper values were associated with local concentrations of chalcopyrite in a variety of rock types, (Table 4).

Table 4: 2003 Atikwa Grab samples

Sample	Location		Description			Analyses				
Number	Easting	Northing	Type	Lithology	Sulphides	Au (ppb)	Pt (ppb)	Pd (ppb)	Cu (ppm)	Ni (ppm)
60786	503,825	5,499,583	grab	gabbro	3-5% po cpy	5	<15	<10	329	211
60787	503,830	5,499,573	grab	gabbro	3-5% po cpy	6	<15	<10	308	185
60788	503,814	5,499,593	grab	gabbro	2-4% po cpy	21	<15	<10	1201	229
60789	503,962	5,499,661	grab	pyroxenite	2-4% po cpy	30	<15	<10	908	55
60790	503,851	5,499,588	grab	gabbro	2-4% po cpy	27	42	47	737	279
60791	503,855	5,499,590	grab	gabbro	2-4% po cpy	70	95	91	1962	555
60792	503,853	5,499,584	grab	pyroxenite	2-4% po cpy	35	83	117	1235	460
60793	503,852	5,499,598	grab	pyroxenite	2-4% po cpy	127	197	364	4593	1426
60794	503,854	5,499,586	grab	pyroxenite	2-4% po cpy	77	128	245	3725	989
60795	503,842	5,499,612	grab	pyroxenite	2-4% po cpy	60	123	159	1475	377
60796	503,888	5,499,579	grab	leuco-gabbro	1-2% po cpy	35	34	61	833	171
60797	503,845	5,499,583	grab	gabbro	1-2% po cpy	<5	<15	<10	86	72
60798	503,773	5,499,688	grab	pyroxenite	1-2% po cpy	7	<15	<10	333	227
60799	503,773	5,499,688	grab	pyroxenite	1-2% po cpy	10	20	<10	310	179
60800	503,785	5,499,635	grab	leuco-gabbro	1-2% po cpy	88	113	166	2402	536
13651	504,316	5,499,544	grab	gabbro	3-5% po cpy	20	72	51	640	180
13652	504,306	5,499,541	grab	gabbro	3-5% po cpy	9	75	21	546	148
13653	504,311	5,499,543	grab	gabbro	3-5% po cpy	23	40	14	902	288
13654	504,313	5,499,633	grab	gabbro	1-2% po cpy	5	<15	<10	261	144
13655	504,309	5,499,696	grab	gabbro	3-5% po cpy	80	<15	11	2392	139
13656	504,236	5,499,475	grab	gabbro	1-2% po cpy	12	17	<10	345	117

Several samples of sulphide bearing mafic intrusive rocks contained elevated PGE values. A few samples contained marginally anomalous gold values along with anomalous copper. Tabulated Atikwa grab sample locations do not match those indicated on the map, so would need to be verified, if possible.

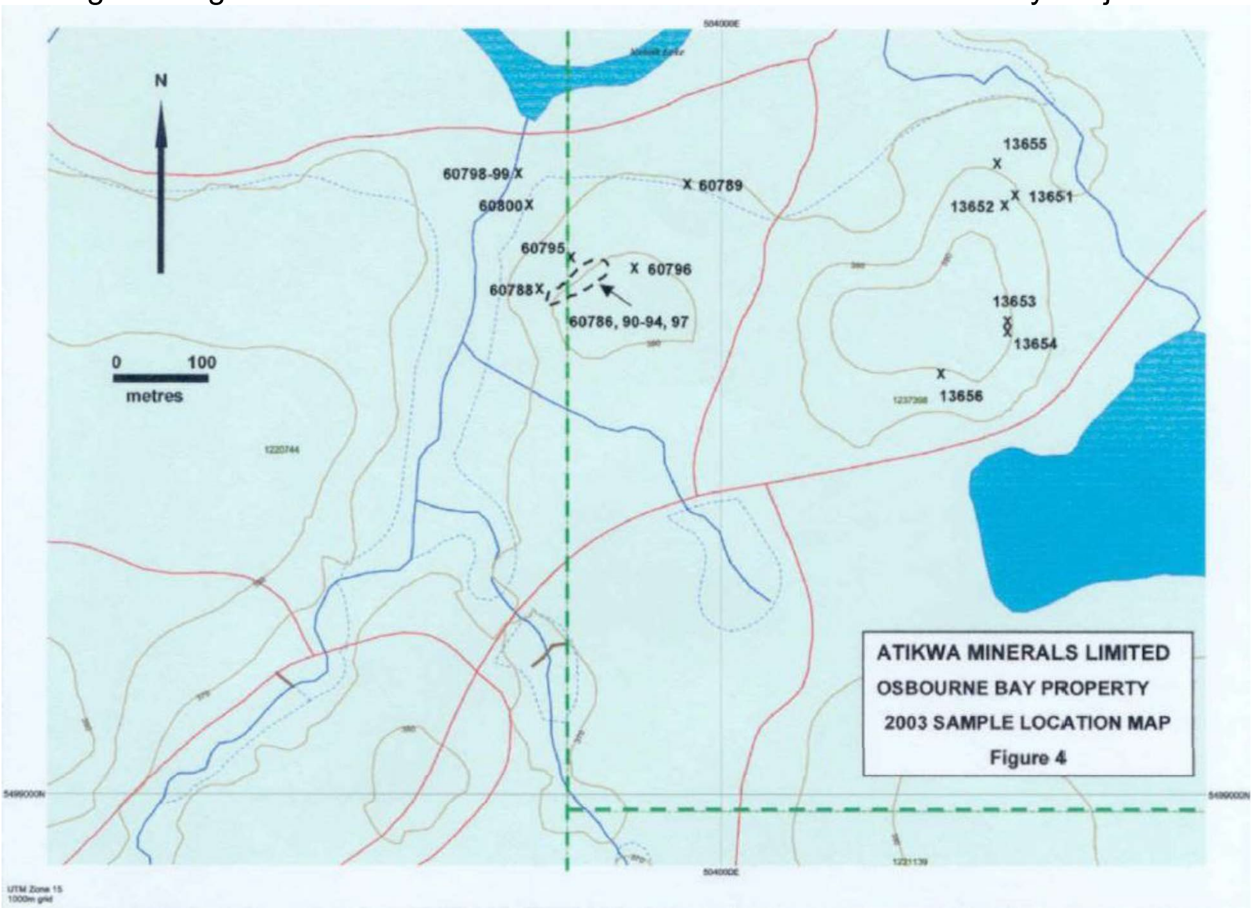


Figure 9: 2003 Atikwa Sample Locations

In 2008 and 2009, SEDEX Mining Corporation (SEDEX) conducted prospecting, soil sampling, and a VTEM survey around Nabish Lake in the south of the Property. The Nabish Lake Property at this time was optioned from Perry English.

The 542 line-km helicopter-borne versatile time domain electromagnetic (VTEM) survey was flown by Geotech Ltd in early 2008 for SEDEX. Sensors included a VTEM system and a cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. The survey block was flown at nominal traverse line-spacing of 75 m at N105°E for 502 km and an area 37.5 km². Tie lines were flown perpendicular to traverse lines at 1,000 m line-spacing at N015°E for 40 line-km. Where possible, the helicopter maintained a mean terrain clearance of 75 m, which translated into an average height of 35 m above ground for the bird-mounted VTEM system and 60 m for the magnetic sensor. Several EM anomalies were identified, and further investigation was recommended by Geotech, (Figure 10), (Orta, 2008).

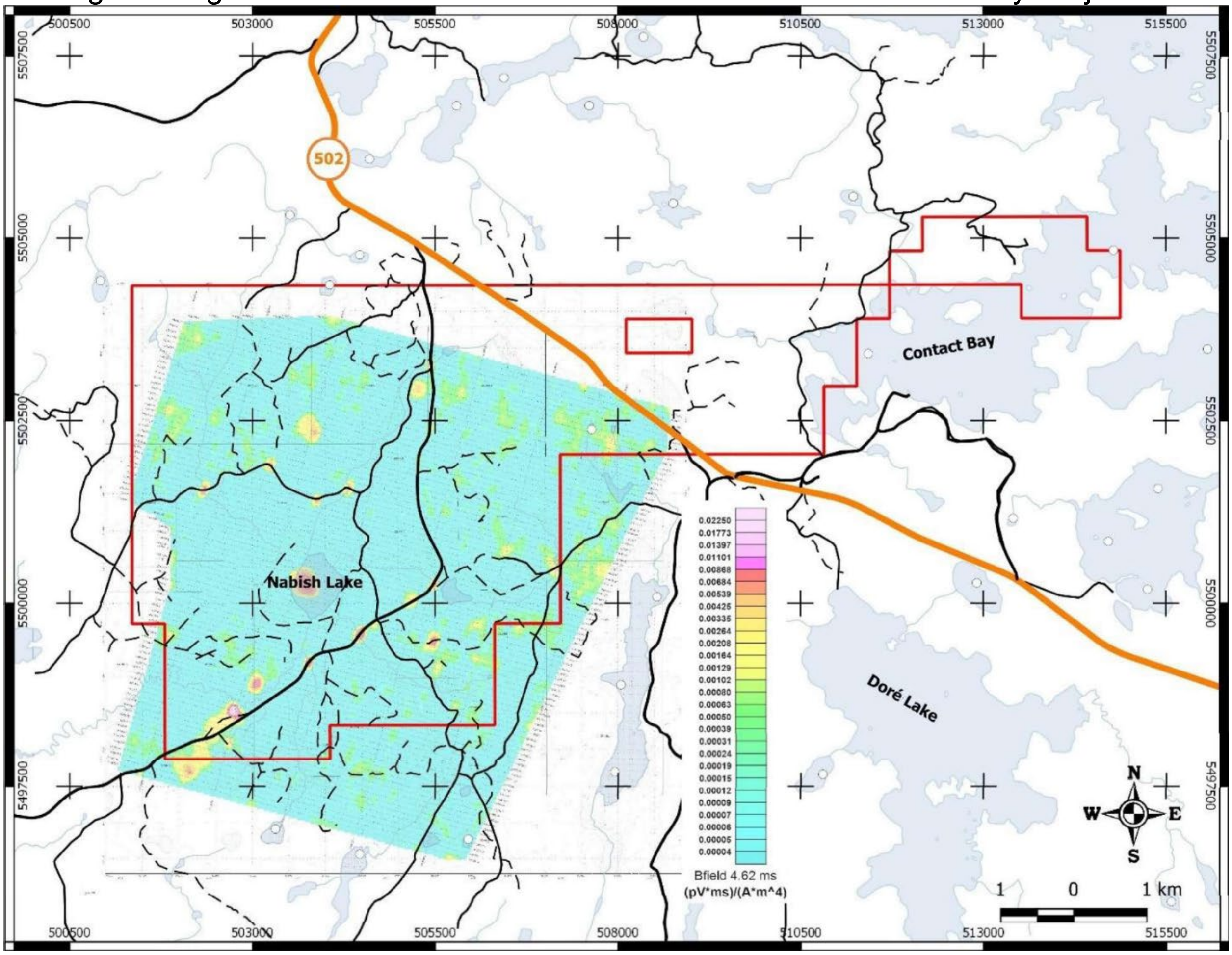


Figure 10: 2008 SEDEX VTEM B-Field EM

*Red line = Current HRM Property.

A 10-day work program of targeted prospecting and soil survey in the summer of 2008. The target areas were derived from the results of the earlier SEDEX VTEM survey. Outcrops were stripped of moss sufficient to evaluate the presence of sulphides, veins or other geologically interesting features and were systematically sampled when prospective geology was encountered. A total of 26 samples were analyzed during the prospecting program. Samples 130051 - 130066 were analyzed by a 41-element ICP-MS scan. Samples 312980 - 312 997 and 438189 - 438194 were analyzed by a 32-element ICP-MS scan. All samples were additionally analyzed for gold. Prospecting over the conductor targets failed to produce any anomalous results. Outcrops in the target areas were sparse due to a flat to rolling topography and poor drainage, (Tims, 2009).

Soil sampling was undertaken due to a paucity of outcrop in the immediate vicinity of the target areas. A single day of C-horizon soil sampling covered the outcrop-deficient area over the elongate conductive target anomaly. This anomaly is currently in the southwest corner of the Property, straddling the Century Lodge Road (also called the Bear Narrows Road). Samples were taken every 25 m using a hand soil auger, through all organic layers, with the depth below the A-B horizon interface recorded. C horizon material consisted of yellow-orange to orange-red to light-dark brown mineral soil, immediately beneath any grey oxidised horizon. Soil sampling did not pick up any base metal signature, although a weak PGE response was noted over the core of this conductor, (Tims, 2009).

5.2 Historical Drilling

Historical drilling was carried out in at least six different drill campaigns, by six companies, between 1958 and 1991. They include A Lantz in 1956, J R Gray in 1958, Hollinger Mines Ltd in 1969 (3 reports), Chimo Gold Mines Ltd in 1970 (3 reports), Lynx-Canada Exploration Ltd in 1971, and Société Minière Mimiska in 1991 (2 reports).

Circa 1956, Preston East Dome Mines drilled four holes totalling 959 feet (292.3 m) (dd #1 historic claim 26922) on the Nabish Lake Showing and two holes on the Nabish Lake-Southeast Showing.

Falconbridge Nickel Mines Ltd. drilled 6 holes near the south shore of Contact Bay just west of the Property in 1957 that intersected blue quartz-bearing gabbro, andesite and chlorite schist. Mineralisation consisted of "minor amounts" of disseminated chalcopyrite, pyrite and pyrrhotite, (Owens, 2001b).

Shallow holes were drilled with a portable coring machine summer of 1968 near the areas of known Cu-Ni mineralisation of the Nabish Lake Intrusives as reported by Hollinger, (Tittley,1969). Drill hole results by Hollinger (1969) and Lynx (1970) returned uneconomic values, though there was anomalous Cu-Ni, within the vicinity of the Glatz-Kozowy Showing.

Société Minière Mimiska drilled 7 holes between January and February 1991, where 5 were located about 2 km west of the north end of Nabish Lake at the Glatz-Kozowy Cu-Ni Showing and 2 were to the immediate northwest of the north end of Nabish Lake. Their conclusions at the time were that the Glatz-Kozowy Showing was a remobilised lens of Cu-Ni mineralisation which did not have continuity at depth. The mineralisation appeared to be fracture controlled and hosted within quartz diorite breccia. Cu-Ni values were considered subeconomic, (Table 5). They recommended that the Glatz-Kozowy Showing be completely stripped, washed, and mapped in detail, with additional mapping and prospecting carried out over areas of potential interest.

Table 5: Société Minière Mimiska 1991 Nabish Lake DDH Summary

DDH	Grid Coordinates	Az	Dip	Length (m)	Objectives	Results
CB-91-01	L7+17.5S, 0+12.4E	N030E	-50	60.96	Western Grid Trench 1	0.91% Ni with 0.52% Cu over 1.52m from a depth of 1.40m to 2.92m; 0.62% Ni with 0.39% Cu over 1.28m from a depth of 5.00m to 6.28m
CB-91-02	L7+33.0S, 0+3.5E	N030E	-45	59.74	Western Grid Trench 1	No significant values
CB-91-03	L7+00S, 117.96E	N095E	-45	91.44	Western Grid B-Conductor	No significant values
CB-91-04	L7+16S, 0+38.2E	N282S	-45	93.26	Western Grid Trench 1	No significant values
CB-91-05	L7+11.5S, 0+15.9E	Vertical	-90	75.29	Western Grid Trench 1	0.53% Ni with 0.57% Cu over 0.65m from 4.12m to 4.77m
CB-91-06	L8+00N, BL0	N054E	-55	89.92	Nabish Lake Grid	1140 ppb Ni over 1.52m from 65.83m to 67.35m
CB-91-07	LB+00N, 1+25E	N054E	-52	135.94	Nabish Lake Grid	140 ppb Pd over 0.67m from a depth of 113.93m to 114.60m

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6.0 GEOLOGICAL SETTING AND MINERALIZATION

6.1 Regional Geology

The Property lies within the Eagle-Manitou Lakes Greenstone Belt (aka Atikwa Domain). within the Western Wabigoon Subprovince of the Superior Province. The Superior Province forms the core of the Canadian Shield, formed by the successive accretion of orogenic belts in a range of tectonic environments over a period of 1.73 billion years, (Percival et al, 2012). The Superior Province is divided into 19 sub-provinces which consist of a mix of metasedimentary, metamorphic, volcano-plutonic, and plutonic domains, (Figure 11). The Wabigoon Subprovince of northwestern Ontario is a 900 km long by 150 km wide east-west trending granite greenstone belt. It comprises Meso-to-Neoarchean metavolcanic and subordinate sedimentary rocks cut by Meso- to-Neoarchean oval granitoid batholiths and gabbroic sills and stocks (Blackburn et al, 1991). It is divided into a western, isotopically juvenile, mainly Neoarchean Wabigoon Terrane and an eastern, recycled, mainly Mesoarchean Marmion Terrane (Percival, 2007 and Stone, 2010). The Wabigoon Terrane corresponds to the Western Wabigoon Region (Blackburn et al,1991). The Wabigoon Terrane comprises interconnected, inward-facing, mafic metavolcanic- dominated greenstone belts with subordinate felsic metavolcanic and sedimentary rocks wrapped around oval batholiths.

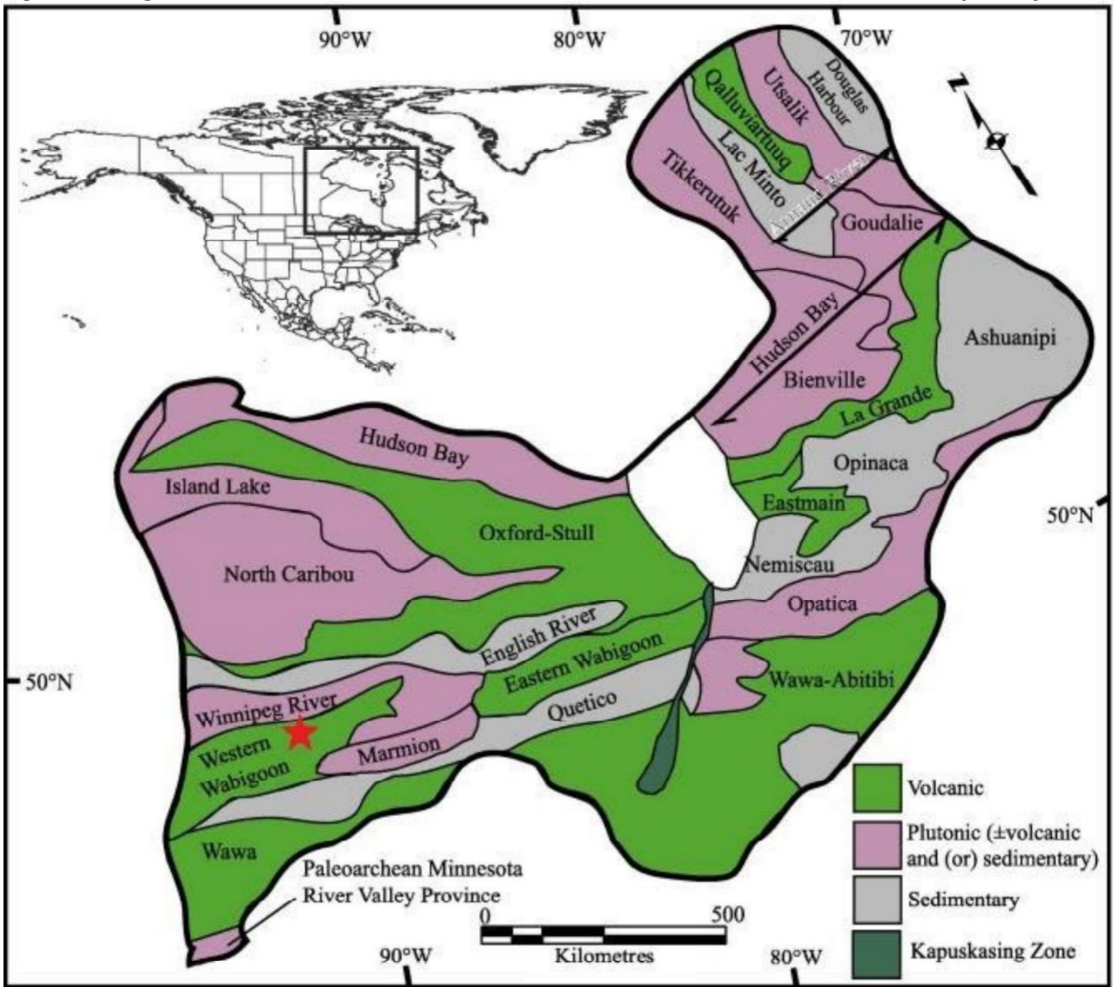


Figure 11: Superior Province and Subprovinces (Hendrickson, 2016)

*Red star = Approximate Location of Current HRM Property.

The Eagle-Manitou Lakes Greenstone Belt is more currently referred to as within the Atikwa Domain e.g., Beakhouse, (2002), which comprises the predominantly juvenile arc assemblages surrounding the Atikwa Batholith. The greenstone belt is predominantly composed of mafic, intermediate, and felsic metavolcanic flows and pyroclastics, with lesser amounts of metasedimentary rocks. It is intruded by large granitic batholiths such as the Atikwa, Basket Lake, and Revell Batholiths, and the Irene-Eltrut Lakes Batholithic Complex, (Figure 12). Various late felsic, mafic and ultramafic stocks, plugs, dykes, and sills intrude the volcanic-sedimentary assemblage (Figure 12).

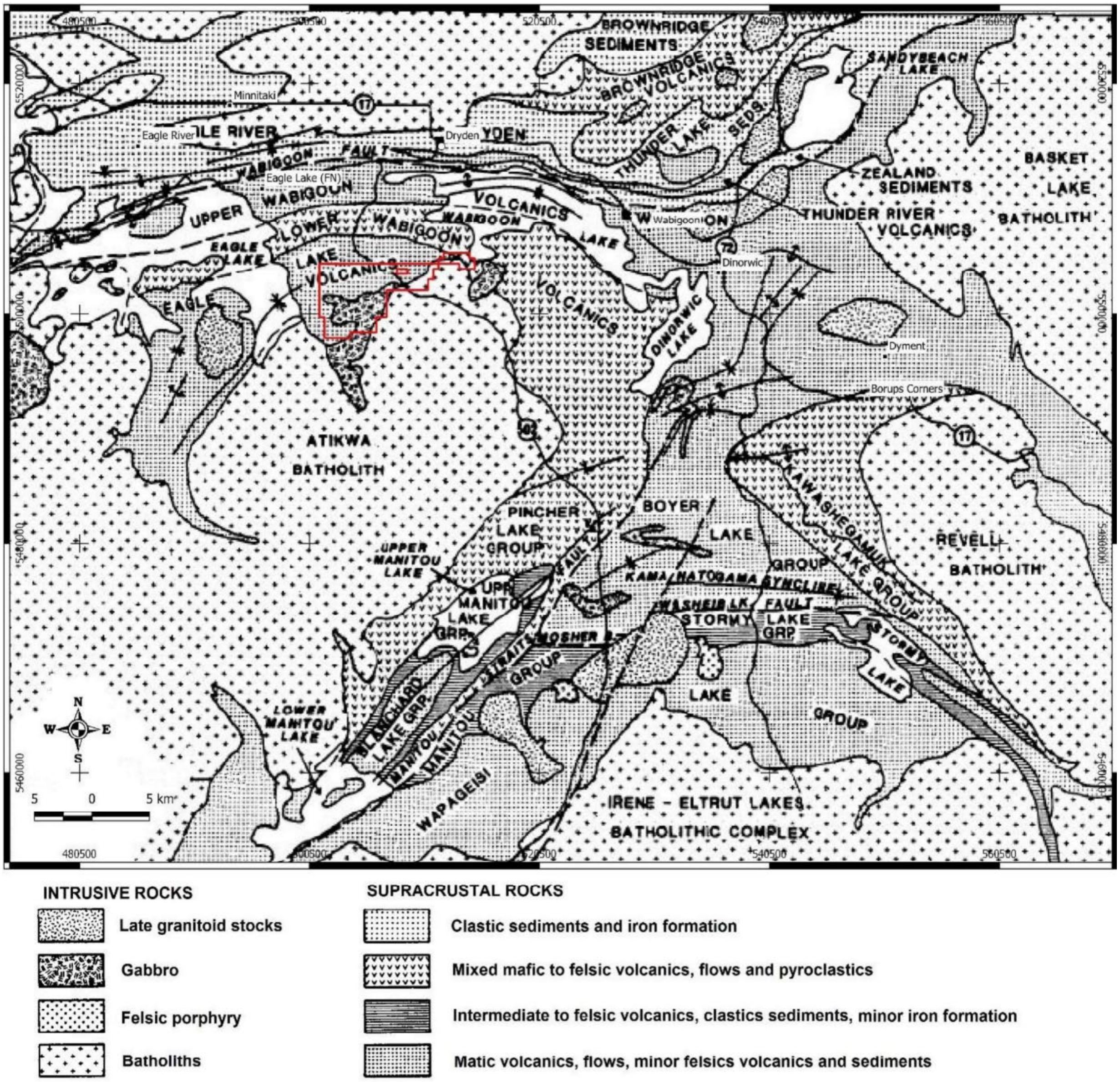


Figure 12: Geology of Eagle-Manitou Lakes Greenstone Belt (Parker, 1989)

* Red line = Current HRM Property.

With the exception of a northwesterly-trending Proterozoic diabase dyke, all of the rocks are of Archean age. Supracrustal rocks are generally metamorphosed to greenschist grade assemblages over wide areas while amphibolite grade rocks are more locally concentrated within the contact aureoles of the large granitic batholiths and smaller intrusions. Varying degree of alteration of metavolcanic rocks is common throughout the Eagle-Manitou Lakes Belt. The belt includes Eagle and Wabigoon Lakes in the west, the area where the Property is located. The metavolcanic rocks which extend from Eagle Lake to Wabigoon Lake face homoclinally northward except for tight isoclinal folding close to the Wabigoon Fault, (Parker, 1989).

Gold deposits are commonly situated within greenschist grade metavolcanic rocks and mafic to felsic intrusive rocks. The majority of gold deposits consist of gold-bearing quartz veins located within ductile shear zones and brittle fracture zones, related to the style of deformation along major faults and shear zones. Regional deformation events both preceded and accompanied the establishment of gold-associated alteration and gold deposition, (Parker, 1989).

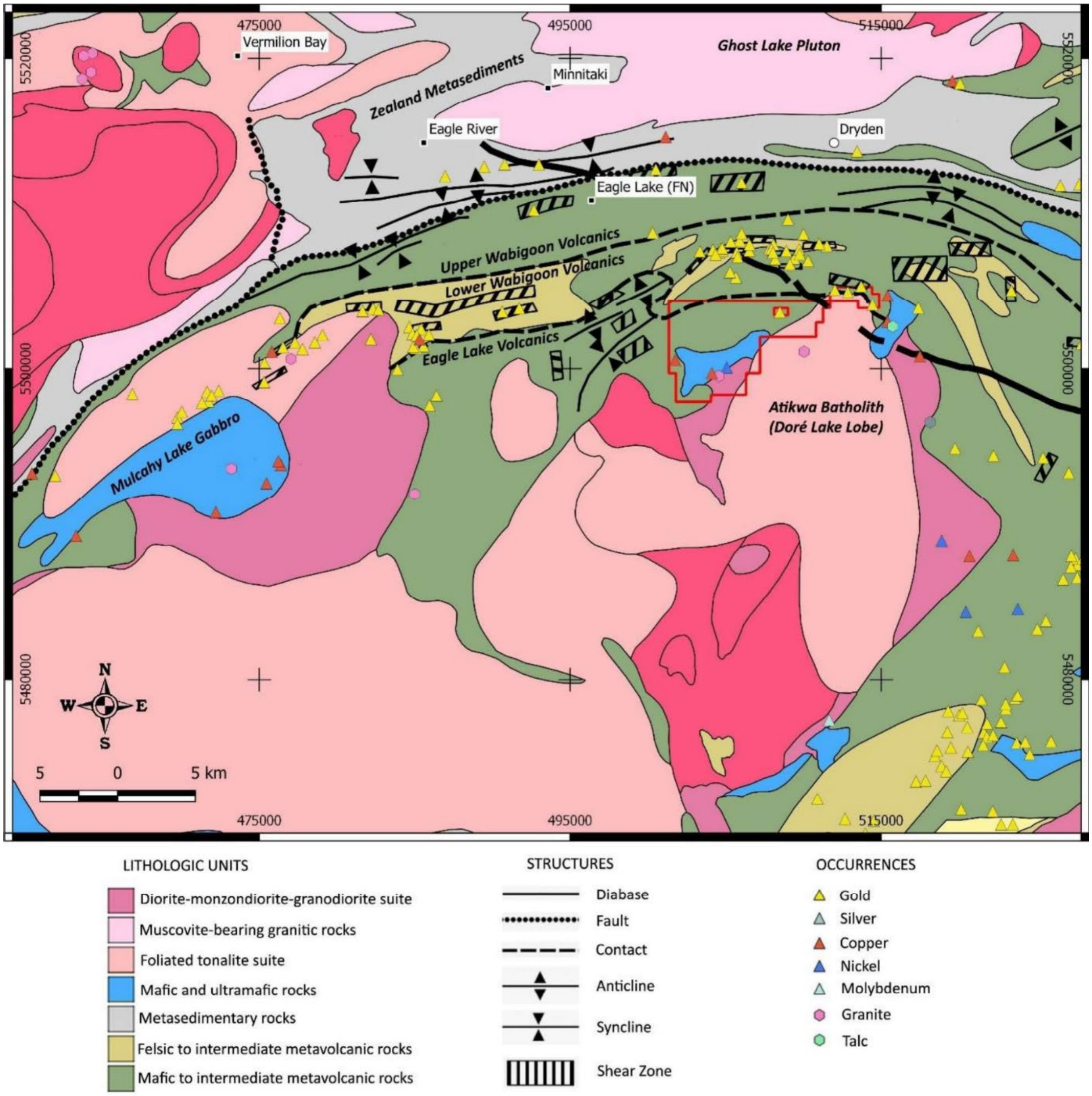


Figure 13: Geology between Eagle and Wabigoon lakes (after Parker, 1989)

*Red line = Current HRM Property.

Regional stratigraphic control of gold mineralisation characterises the Dryden-Ignace area, associated with middle or upper metavolcanic sequences of calc-alkaline or mixed tholeiitic to calc-alkaline affinity, (Figure 13). Gold is also spatially related to subvolcanic intrusions and felsic volcanic centres which occur within the mixed and calc-alkaline metavolcanic sequences, (Parker, 1989). There is a strong spatial and genetic correlation between gold mineralisation and major zones of deformation and faulting, such as the Wabigoon Fault, (Figure 13). The faults either extend along abrupt contacts between metavolcanic rocks and predominantly clastic metasedimentary successions, or bisect metavolcanic assemblages. Gold is not known to occur within the faults but is controlled by associated structures related to the style of deformation along the faults, (Parker, 1989).

6.2 Local and Property Geology

The Property includes examples of most the major regional lithologic units, including the Lower Wabigoon Volcanics, Eagle Lake Volcanics, Mafic Intrusives and Atikwa Batholith (Figure 14).

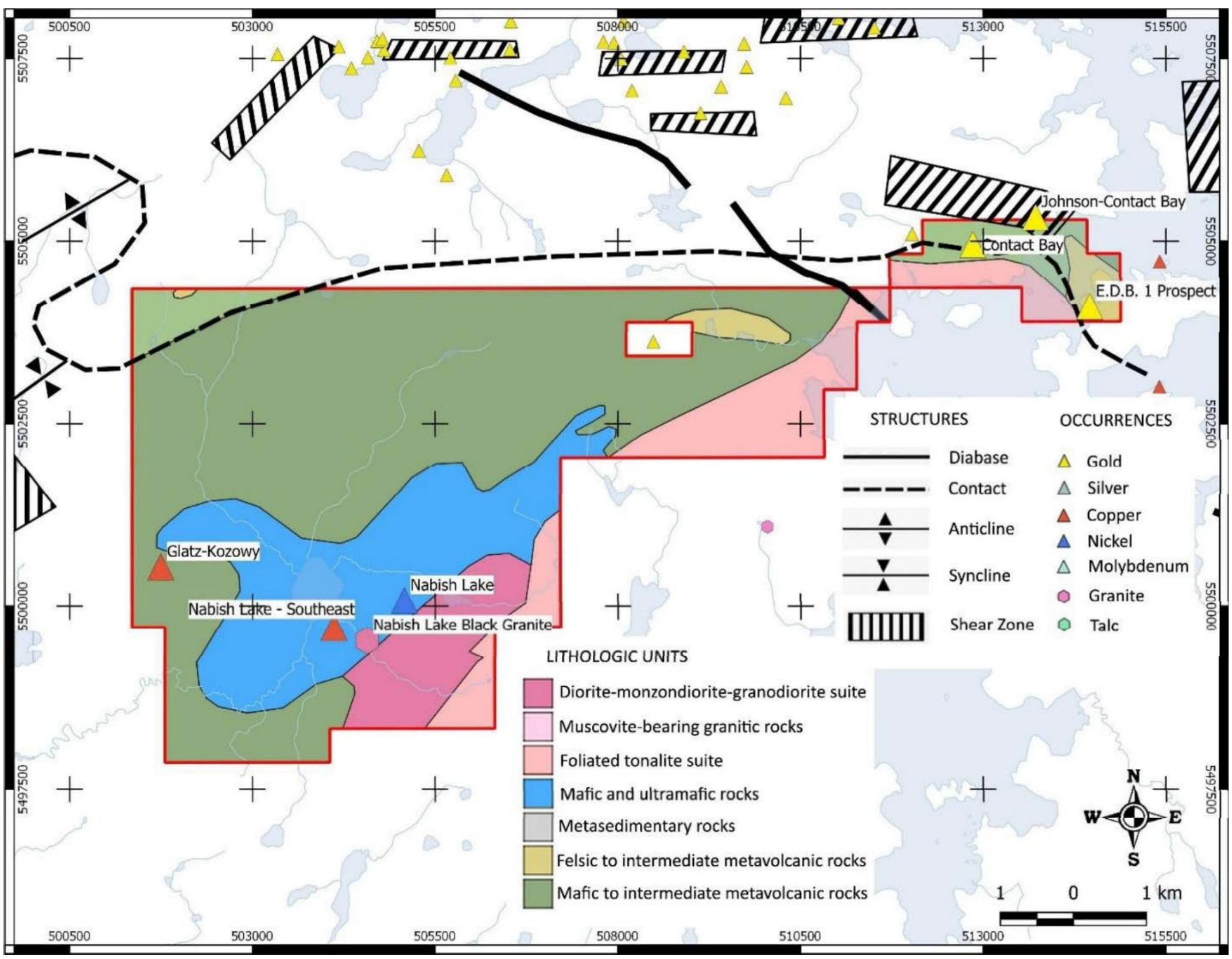


Figure 14: Property Geology

6.2.1 Greenstone Metavolcanics

The majority of known gold occurrences at Eagle and Wabigoon lakes are situated within a mixed sequence of mafic to felsic metavolcanics grouped together as the Lower Wabigoon Volcanics (LWV), (Figure 14). This package is represented in the northeast corner of the Property around Contact Bay. Current geology maps indicate that the north and east of the Property is dominated by the Eagle Lake Volcanics (ELV), a thick sequence of massive and pillowed mafic flows, which underlies the LWV, (Parker, 1989).

The Lower Wabigoon Volcanics, in the vicinity of Wabigoon Lake, dominantly consist of massive and brecciated flows intercalated with coarse heterolithic pyroclastics. Mafic, intermediate and felsic metavolcanics are commonly intimately intermixed, with many interdigitating lensoid- shaped units, (Parker, 1989). The metavolcanics are variably altered with widespread but selective iron carbonate alteration. Felsic rocks are commonly fractured, sheared, and altered to carbonate-sericite schist. Metavolcanic rocks commonly contain abundant magnetite (1-5%) and disseminated pyrite (1-3%), especially in the vicinity of Flambeau Lake and Larson Bay, (Parker, 1989).

6.2.2 Intrusions

The metavolcanics are intruded by gabbro and diorite plugs, stocks, and sills, some of which are subvolcanic and may be remnant feeder pipes. Other intrusive rocks include intermediate and mafic dykes, felsic dykes, and a late west-northwest-trending diabase dyke which crosscuts all rock types and structures, (Parker, 1989).

The southern areas of the claims overlie a portion of the Nabish Lake Mafic Intrusive (Figure 14), one of several layered mafic intrusions (ea. 2,732 Ma = NeoArchean) lying along the periphery of the Atikwa Batholith (ea. 2,730 Ma = NeoArchean), potentially important targets for Ni-Cu and PGE exploration. The Nabish Lake Intrusive is oriented north-south in long dimension, with a mushroom-shaped "cap" on the north, indicating the possibility of folding. The Property covers this northern portion of the batholith.

The mafic intrusive rocks consist of a sequence of massive to crudely layered mafic to ultramafic rocks underlying the Property. They are composed of >1-2 m thick layers of quartz gabbro, gabbronorite, hornblende gabbro, anorthositic gabbro, and pyroxenite. Layering is generally not distinct, where faint, discontinuous compositional layering on the order of centimetres can only be discerned locally. Where visible, strike of the layering is approximately 330°, and dips are steep. There appears to be an east-to-west fractionation trend, from pyroxenite-gabbro-dominated couplets on the east to gabbro-anorthositic gabbro couplets on the west. Deformation is indicated by intra-folial folds of the layering. However, the detail of this folding is unknown.

Dioritic to granodioritic rocks (of the Atikwa Batholith) form the southeastern boundary of the mafic intrusive within the claim group.

6.2.3 Felsic Intrusion

Zircon U-Pb geochronology, performed by Don Davis at the Royal Ontario Museum (Davis et al.1982), has shown that the Atikwa Batholith was emplaced at about 2,732 Ma based on two samples, taken 35 km apart from Eagle and Wabigoon Lakes, which gave identical dates within experimental error. This suggests that the time span of intrusive activity was short. A rhyolite from the Lower Wabigoon Volcanics at Wabigoon Lake, which was intruded by the batholith, was dated at 2,734.8 Ma, whereas a dacite from Eagle Lake was dated at 2,742.8 Ma. These results suggest that the felsic metavolcanics at Wabigoon Lake could be extrusive equivalents of the Atikwa Batholith, but the date from the dacite at Eagle Lake indicates that the felsic metavolcanic assemblage was erupted about 11 Ma before the intrusion of the Atikwa Batholith. The dates also indicate that the metavolcanic rocks at Eagle Lake were extruded about 8 Ma before the metavolcanics at Wabigoon Lake (Figure 14), (Parker, 1989).

6.3 Stratigraphy

The LWV underlies a pillowed mafic flow sequence occurring at the top of the volcanic succession, the Upper Wabigoon Volcanics (UWV), lying to the north off the Property, bounding the TransCanada Highway. The ELV is a thick sequence of massive and pillowed mafic flows, which underlies the LWV, (Parker, 1989). North to south, the volcanics are the UWV, then LWV and then ELV, (Figure 14). The sequences that overlie and underlie the mixed sequence are characterised by tholeiitic rocks, the upper sequence (UWV) showing a more pronounced trend toward iron enrichment (Trowell et al, 1980).

Thin, discontinuous units of tuffaceous epiclastic sediments randomly occur as interflow metasediments or interlayered with pyroclastic rocks (Parker and Schienbein 1988a, b). Sulphide and magnetite-rich interflow metasediments are common, and can be observed at Contact Bay, in the Butler Lake area, at Eagle Lake, and amongst the dominantly mafic flows in the UWV and ELV groups. The LWV at Eagle Lake are dominantly composed of intermediate and felsic pyroclastics, such as crystal tuffs and dominantly heterolithic lapilli-tuffs and tuff-breccias (Parker, 1989).

The metavolcanics are bounded by the Atikwa Batholith to the south and by the Wabigoon Fault to the north, (Figure 14).

6.4 Structural

In general, the volcanic sequences face homoclinally northward, though top reversals in pillowed mafic flows are present in the Upper Wabigoon Volcanics close to the Wabigoon Fault, defining several sub horizontal fold axes, (Figure 14). The lithologic continuity of the LWV between Eagle and Wabigoon Lakes is not certain. Macroscopic northeast-trending fold axes identified by rather poorly developed pillow facings along the eastern shoreline of Eagle Lake complicate the stratigraphy, (Parker, 1989).

Along the Wabigoon-English River boundary near Dryden, migmatitic, metasedimentary units to the north, are in contact with lower grade metavolcanic rocks to the south, along a sharp, sinuous, but predominantly east-trending contact in excess of 150 km long. Horizontal axes of isoclinal folds, in both the metasedimentary and metavolcanic suites on either side of the contact, are subparallel to and terminate at low angles against it (Figure 14). On either side of the contact there are opposing facings of sequences.

The contact is interpreted to be a fault of major proportions. North of the fault, a major dextral (right-hand) component of shear is documented by two generations of ubiquitous mesoscopic and macroscopic Z-folds with steep westerly and southwesterly plunges and by dextrally offset pegmatite and quartz veins. This style of folding is not recognised on the macroscopic scale south of the fault, where all major folds appear to have sub horizontal axes. Therefore, two components of movement appear to have operated along the fault zone. One component was compressional, with production of broad isoclinal folds with horizontal axes and anomalous younging relationships in both rock types. This was followed by late dextral movement considered to have been accommodated by Z-folding in the metasedimentary units north of the fault, which was accompanied by strike-slip movement along the fault and associated shear zones (Trowell et al, 1978).

A major component of the deformation is a dextral shear, not unique to the Wabigoon-English River Sub provincial boundary, but is present along others such as the Sydney Lake Fault, along the English River-Uchi boundary, and the Quetico and Seine River Faults along the Wabigoon- Quetico boundary. These observations are said to be important in understanding the setting of gold mineralisation at Eagle-Wabigoon Lakes, (Parker, 1989).

A number of fractures and lineaments are present in the felsic rocks (Atikwa Batholith) which may be related to the Nabish Lake mafic to ultramafic complex (Russell, 2004). The regional schistosity is variable within the Nabish Lake intrusives, ranging from a northwest to northeast direction. Major fault zones trend N025° E and N325° E. These sharply defined lineaments are recognisable on regional maps, air photos and satellite imagery, (Yeomans, 1991).

6.5 Mineralisation

The Ontario Mineral Inventory (OMI, formerly Ontario Mineral Deposit Inventory: MDI) has several mineral occurrences both on and adjacent the Property (Table 6 &7, Figure 13 & 14). The north is dominated by Au occurrences within the greenstones. The south favours Ni-Cu and PGEs in the mafic intrusions.

Table 6: Mineral Occurrences on Property

MDI	Name	Other Names	Status	1st	2nd	Long	Lat
000000000779	Contact Bay	Rognon Shaft, Wachman Mine	Occurrence	Au, Mo	Ag	-92.82	49.70
000000000922	E.D.B. 1 Prospect	S.224	Occurrence	Au		-92.80	49.69
52F10NW00042	Nabish Lake Black Granite		Discretionary Occurrence	Granite		-92.94	49.65
52F10NW00111	Glatz-Kozowy	A. Kozowy, Nabish Lake Cu-Ni	Occurrence	Cu, Ni		-92.98	49.66
52F10NW00116	Nabish Lake	Johnston-Jeness	Occurrence	Ni, Cu	Pt, Pd	-92.93	49.65
52F10NW00152	Nabish Lake - Southeast		Occurrence	Cu, Ni		-92.94	49.65

Table 7: Mineral Occurrences Proximal to Property

MDI	Name	Other Names	Status	1st	2nd	Long	Lat
52F10NW00034	Hw 443		Discretionary Occurrence	Au	Bi	-92.83	49.70
52F10NW00036	Long Lead Prospect		Occurrence	Au		-92.88	49.69
52F10NW00117	Pidgeon-Contact Bay		Occurrence	Cu, Ni		-92.79	49.69
52F10NW00139	Johnson-Contact Bay		Discretionary Occurrence	Au		-92.81	49.70

6.5.1 Shear Hosted Au

The majority of gold properties at Eagle and Wabigoon Lakes consist of mineralised quartz veins hosted by shear zones occurring in all rock types and at all rock contacts, excluding the late diabase dyke. The shears host narrow (<1m) quartz veins and stringers which may contain variable amounts of finely disseminated euhedral pyrite, chlorite, iron carbonate, calcite, black tourmaline, specular hematite and accessory sulphide minerals such as chalcopyrite and galena. Variable wall rock alteration consists of chloritization and carbonatization (either iron or calcium carbonate) which may be accompanied by pyritization, sericitization, and minor tourmalisation. The alteration is generally not extensive and is strictly confined to the sheared host. Metavolcanic rocks within the shear zones are fissile, whereas sheared granitic rocks at Eagle Lake are commonly mylonitised and porphyro-clastic due to the presence of numerous, elliptical, blue quartz "eyes" in a granular matrix. In general, gold mineralisation is restricted to the quartz veins although anomalous gold values do occur within the granitic wall rock at a few occurrences, (Parker, 1989).

At Wabigoon Lake numerous subparallel to parallel linear shear zones, hosting gold-bearing quartz veins, strike between 075-100° and vary in width (<1m-45m) and strike lengths. The overall east-west trend of the shear zones suggest that they were developed as secondary shear bands subparallel to the east-trending Wabigoon Fault. Shear zones commonly developed along lithologic contacts and are parallel or subparallel to stratigraphy. Dominant east-trending shearing in the vicinity of Larson Bay of Wabigoon Lake (north of the Property) controls all gold-bearing quartz veins, including veins at the Bonanza and Redeemer Mines, and has also controlled the intrusion of felsic quartz-feldspar porphyry and felsite dykes. Shearing is more widespread east of Larson Bay, (Parker, 1989).

At Pritchard Lake (north of the Property), situated west of Wabigoon Lake, a broad zone of moderate to intense iron and calcium carbonate alteration, associated with east-trending shearing and fracturing extends eastward from the lake. Numerous pyritic quartz veins occur throughout the zone as well as east-trending felsic dykes commonly containing variable amounts of disseminated pyrite and magnetite and hosting quartz veins. Two grab samples taken from quartz veins within the zone assayed 1,300 and 3,150 ppb gold while assays of grab samples taken from the felsic dykes gave anomalous gold values as high as 400 ppb gold. The Glatz-Pritchard Lake Occurrence and the Vanlas Prospect are situated within this zone, as well as numerous trenches and test pits, (Parker, 1989).

An exception to the generally east-west-trending shear zones occurs at the Rognon Mine and at the Wachman Prospect on the west shore of Contact Bay on Wabigoon Lake (in the northeast corner of the Property). The Rognon and Wachman shafts were sunk on a gold-bearing quartz vein striking 108° to 120° for about 1.0 km, occupying a 0.5 to 3.0 m wide shear zone. The vein varies in width from 4 cm to 1.0 m, commonly splitting into discontinuous stringers. Numerous, wide, east-trending felsic dykes occur in this area which indicates that east-trending structures also controlled the emplacement of relatively late intrusive rocks.

Studies of the gold occurrences at Eagle Lake have shown that gold-bearing quartz veins are dominantly controlled by northeast-trending shear zones in granitic rocks and by shearing and fracturing in metavolcanic rocks. Two gold occurrences northeast of Eagle Lake are situated immediately south of the Wabigoon Fault. At Hardrock Bay on Eagle Lake gold is associated with sulphide mineralisation which is stratigraphically controlled. Gold-bearing quartz veins west of Wabigoon Lake are controlled by northwest-trending tension fractures and east- and east- northeast-trending shear zones, (Parker, 1989).

At Eagle Lake, subparallel, linear shear zones striking 040° - 060° occur within granitic rocks along the northern contact of the Atikwa Batholith, where it commonly contains xenoliths of mafic metavolcanic rocks. This is the area where most of the gold occurrences at Eagle Lake are situated, west of the Property, mostly across Eagle Lake. Gold-bearing quartz veins are hosted by shears which occur in the granite and at granite/xenolith contacts. The Wabigoon Fault in this area is dominantly northeast-trending, and the shear zones may be secondary shear bands developed subparallel to the shear boundaries of the fault, (Parker, 1989).

At the Manhattan Prospect on Buchan Bay of Eagle Lake (west of the Property), gold-bearing quartz veins are controlled by a northeast-trending shear zone in a wide gabbro dyke. Iron carbonate is present in the quartz veins and wallrock, but sulphide mineralisation is sparse, (Parker, 1989).

6.5.2 Tension Fracture-Hosted Au

A few of the more promising gold occurrences at Eagle and Wabigoon lakes consist of numerous gold-bearing quartz veins controlled by tension fracture networks concentrated at Flambeau Lake, a few kilometres west of Wabigoon Lake, (north of the Property), (Parker,1989). The veins are typically narrow (1-10 m), closely spaced, and are associated with intense iron and calcium carbonate alteration, sericitization, pyritization, and weak silicification. Alteration appears to be extensive in areas of closely spaced veins but is restricted to narrow halos which occur around the quartz veins. Variable amounts (2-5%) of fine- to coarse-grained pyrite is disseminated throughout the host rocks with local concentrations up to 25%, (Parker,1989).

Gold mineralisation is typically restricted to the quartz veins, though recent discoveries at Flambeau Lake appear to have significant concentrations of gold in the pyritic wallrock. Very shallow dipping tension fracture-hosted tourmaline-bearing quartz veins trending between 110° -140° are also gold-bearing, (Parker, 1989).

Quartz veins controlled by tension fractures are hosted by all rock types, excluding the late diabase dyke, in the Wabigoon Lake area. They are typically concentrated, and attain their greatest thicknesses within competent felsic to intermediate intrusive rocks, and felsic metavolcanic rocks. Competency and susceptibility to fracturing of the host rock is the controlling influence on the concentration of the veins. At Flambeau Lake, abundant tension fracture-controlled quartz veins are hosted by quartz-diorite and diorite/gabbro intrusions. The majority of veins terminate abruptly at the contact of the quartz-diorite with adjacent mafic metavolcanic rocks, which did not respond in a brittle manner when deformed. This is due to the fact that intercalated rock types of variable composition and ductility respond differently during deformation and may show different degrees of structural disruption, (Parker, 1989).

Northwest-trending fractures control gold-bearing quartz veins elsewhere in the Wabigoon Lake area, such as at the EDB-1 Prospect (in the northeast corner of the Property) on the east shore of Contact Bay on Wabigoon Lake, where quartz veins are hosted by felsic pyroclastics. Prospecting in the late 1980s led to the "rediscovery" of the EDB-1 Prospect which consists of two shafts and some test pits. The location of the EDB-1 Prospect had never been accurately indicated on any published map before the late 1980s, (Parker, 1989).

Tension fracture-hosted quartz veins are not abundant at Eagle Lake. Some do occur within the Atikwa Batholith and at the Fornieri Bay Prospect (across Eagle Lake, east of the Property). The tension fractures which occur within the Atikwa Batholith generally trend 140° and host barren, white quartz veins. Tension fractures at the Fornieri Bay Prospect have variable trends and host white and blue-grey quartz veins and stringers containing <1% disseminated pyrrhotite, pyrite, minor chalcopyrite and chlorite. Moorhouse (1941) observed small amounts of visible gold and bismuthinite within the larger quartz veins.

6.5.3 Other Au Controlling Factors

Another controlling factor on gold deposition is the presence of abundant disseminated magnetite in many of the metavolcanic and intrusive rocks which host shear zones and tension fractures controlling gold-bearing quartz veins. Abundant magnetite within the country rocks may have served as a chemical trap for gold precipitation: sulphidation of magnetite to pyrite during the circulation of mineralised hydrothermal fluids through open fissures in the country rocks, (Parker, 1989).

At Flambeau Lake (north of the Property), gold-bearing quartz veins are hosted by magnetite- rich quartz-diorite. Magnetite is abundant where the quartz-diorite is relatively unaltered, but it is sparse or absent in the altered wall rock adjacent to the veins where it is replaced by abundant pyrite. Macdonald (1984) has suggested three processes to explain gold deposition within iron- rich rocks: crystallisation of gold from hydrothermal fluids may occur either by (1) the plating of gold upon sulphide grains, (2) by the destabilisation of gold in solution by a fall in fluid pH, caused by CO_2 loss during carbonate formation, or (3) by the destabilisation of gold in solution due to sulphur loss. Any or all of these processes may have operated in the Flambeau Lake area where abundant pyrite occurs within intensely carbonatized wall rocks, and where gold is restricted to quartz veins as visible gold or associated with sulphide mineralisation in the quartz veins and wallrock, (Parker, 1989).

6.5.4 Stratigraphically controlled Au

A stratiform unit of sulphide-rich mafic metavolcanic flows, overlying interflow metasediments, is the host for gold mineralisation at Hardrock Bay (across Eagle Lake, west of the Property). The mafic flows are no different from surrounding flows, except that they are mineralised with sulphides and gold. The underlying metasediments host anomalous levels of gold, (Parker, 1989).

Gold mineralisation is associated with dark green, massive and pillowed fine- to medium- grained mafic flows containing 5% to 50/^ disseminated pyrrhotite. Pyrrhotite is also concentrated in pillow selvages, interpillow breccias, and amygdule’s. Pyrrhotite is the most abundant sulphide mineral, and combined with chalcopyrite, makes up 90% of the sulphides in the mafic metavolcanics. Learning (1948) estimated that the ratio between pyrrhotite and chalcopyrite was 10 to 1. Minor amounts of pyrite, marcasite, and sphalerite have been identified under the microscope in polished sections of samples taken from Iron Island. The marcasite is present as colloform or concentric growths with cores of pyrrhotite (Learning 1948). Visible gold occurs as small flakes along quartz-filled hairline fractures (<3 mm) within the sulphide-rich mafic flows, and in small blebs and flakes intimately associated with the disseminated sulphides. Learning (1948) observed gold associated with chalcopyrite, and isolated amongst gangue minerals in polished sections of samples from Iron Island, (Parker, 1989).

Alteration of the mafic metavolcanics consists of epidotization, chloritization and saussuritisation of feldspars with the presence of epidote, fibrous actinolite, clinozoisite or zoisite, chlorite, and minor carbonate. The rocks are generally moderately to intensely altered. Petrographic work and whole rock analyses of the gold-bearing flows indicates the absence of secondary silicification and carbonatization. The sulphide-rich, gold-bearing flows are overlain and underlain by pillowed and massive flows which contain only minor amounts of sulphides but intensely epidotized, (Parker, 1989).

Anomalous gold mineralisation is associated with interflow metasediments situated immediately below the sulphide-rich mafic flows. Although pyrrhotite and chalcopyrite occur along hairline fractures in some of the metasediments, the higher gold values have been obtained from metasediments hosting very fine-grained, finely disseminated pyrite and thin layers of pyrite, (Parker, 1989).

The metasediments have been previously mapped and described as iron formation (Moorhouse,1948), but very minor amounts of magnetite were found by Parker in the 1980s. Although interflow metasediments can be found amongst mafic flows stratigraphically above and below the sulphide-rich flows, the majority of interflow metasediments are spatially and temporally associated with the sulphide-rich flows, (Parker, 1989).

Auriferous, pyritic, interflow metasediments may represent chemical sedimentation during hiatuses in basaltic volcanism of the Eagle Lake Volcanics, prior to felsic volcanism of the Lower Wabigoon Volcanics. Similar occurrences have been documented by Thurston (1986) in the Uchi Subprovince. It is also possible that the majority of sulphides, and possibly the gold, were deposited synvolcanically shortly before or after the deposition of the mafic flows. These flows are a discrete unit extruded at a specific stratigraphic level within the mafic metavolcanic sequence, immediately after a hiatus in basaltic volcanism. The sulphide-rich, gold-bearing mafic flows occur a few hundred metres below a phreatic vent breccia at the base of the Lower Wabigoon Volcanics. The vent breccia represents a volcanic vent, which was a centre of intense hydrothermal activity at the transition from mafic to felsic volcanism, (Parker, 1989).

6.5.5 Mafic Hosted PGE and Ni-Cu

Mineralisation encountered in the Nabish Lake Gabbro is primarily disseminated sulphides, dominated by pyrite, but including lesser chalcopyrite and pyrrhotite. Sulphide concentrations are typically less than 1%, but locally attain 2-3%. Sulphide intergrowths with silicates suggest a magmatic origin for these sulphides. Euhedral pyrite is widespread, and is suggestive of a later overprint by hydrothermal activity. Local zones of higher sulphide concentrations have been exposed in old pits, and consist of well-mineralised gabbros. Sulphides comprise up to 5-10% of the rock at these sites, and these mineralised zones range from <1m to 3-5m. Sampling at Nabish Lake Showing in 2001 returned weakly anomalous PGE concentrations (116 ppb Pt+Pd,121 Pt+Pd. and 74 ppb Pt+Pd), with highest Ni assays of 1100-1250 ppm and highest Cu assays up to 3740 ppm (0.374%).

Drilling by Hollinger Mines Ltd (1969) and Lynx-Canada Exploration Ltd (1970) at Glatz-Kozowy intersected amphibolite and feldspar porphyry dykes along with quartz diorite breccia. The zones of brecciation are widespread immediately west of the ultramafic sequence and may be structurally controlled. Cu-Ni mineralisation appears to be spatially associated with the quartz diorite breccia, (Yeomans, 1991). Biotitised fault zones containing elevated Ni and Pd values were intersected within the ultramafic complex by Société Minière Mimiska in 1991 near the northern limit of Nabish Lake, with magnetite rich sections containing up to 1,140 ppm Ni and 140 ppb Pd. (Yeomans, 1991).

In Trench 1 at the Glatz-Kozowy showing from ca 1989, up to 25% chalcopyrite and 60% pyrrhotite is present. It is reported that the sulphides appear to be remobilised and that the host diorite may have been totally replaced. Semi-massive sulphide containing blue quartz eyes and altered chloritic wallrock was also observed in Trench 1, (Yeomans, 1991).

The Mulcahy Lake Gabbro to the west-southwest across Eagle Lake has similar geology (Figure 15) and relatively has had the most success for Cu-Ni +/- PGE mineralisation in the immediate region (see References for Morrison, D A, and Sutcliffe, R H). Traces of pyrrhotite and chalcopyrite are locally observed in stratiform units of the gabbro, particularly near the lower and middle zone contact and in the troctolite layer, and these units may have potential for primary magmatic concentration of Cu, Ni, and PGE. Chalcopyrite and pyrite observed in pegmatitic gabbro suggest that these phases warrant investigation for late-stage mineralisation.

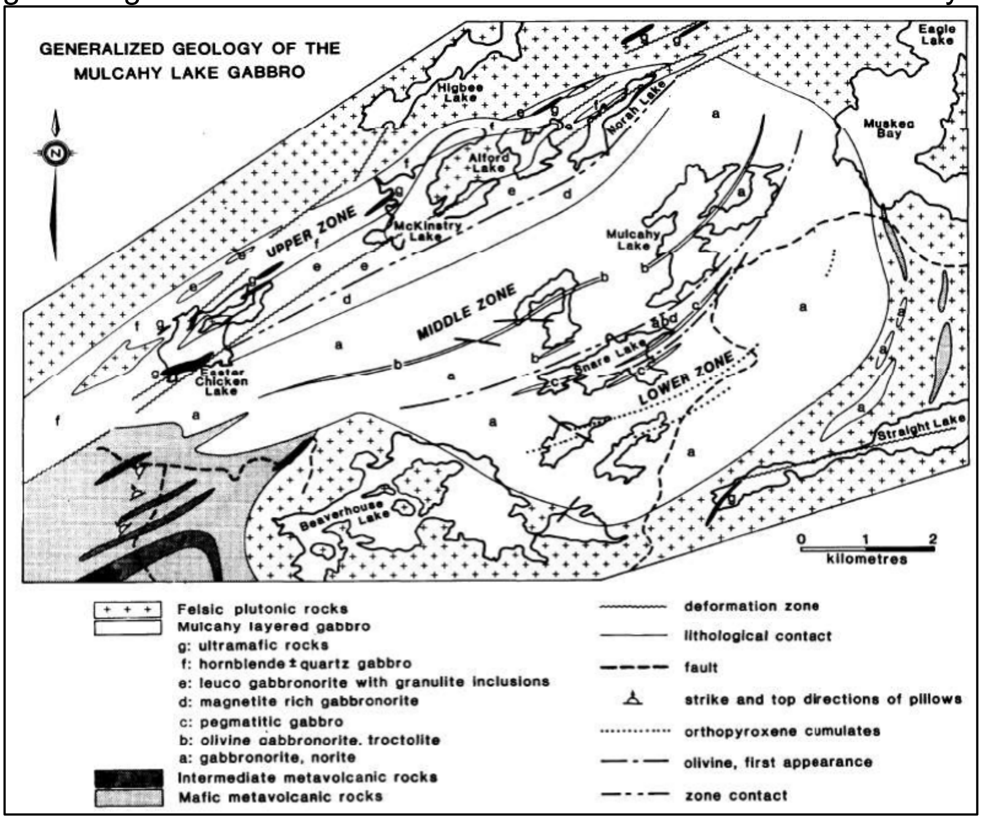


Figure 15: Generalized geology of the Mulcahy Lake Layered Gabbro (Sutcliffe, 1984a)

Also, with respect to the Mulcahy Lake Gabbro, Sutcliffe noted that the deformation zones within the intrusion are locally carbonatised and contain quartz veins and warrant investigation for Au. The major zone of deformation which extends across the Mulcahy Lake Gabbro near the middle zone-upper zone boundary is a regional structure of particular interest and is along- strike from Au mineralisation in the Eagle Lake area.

6.6 Quaternary Geology

GSC map 1774 shows the area to covered by a mix of deep-water lacustrine deposits and thin glacial drift (till) with outcrops, (Cowan and Sharpe, 1991). This is supported by ground observations and satellite imagery. Glacial lacustrine deep-water-type deposits dominate in lower elevation area. This is followed by a mix of rocky, thin cover and outcrops, along a north- south trending area of higher elevation. There is a notable ice contact deposit (moraine) crossing the Property diagonally, on which lies Regional Highway 502, (Figure 16).

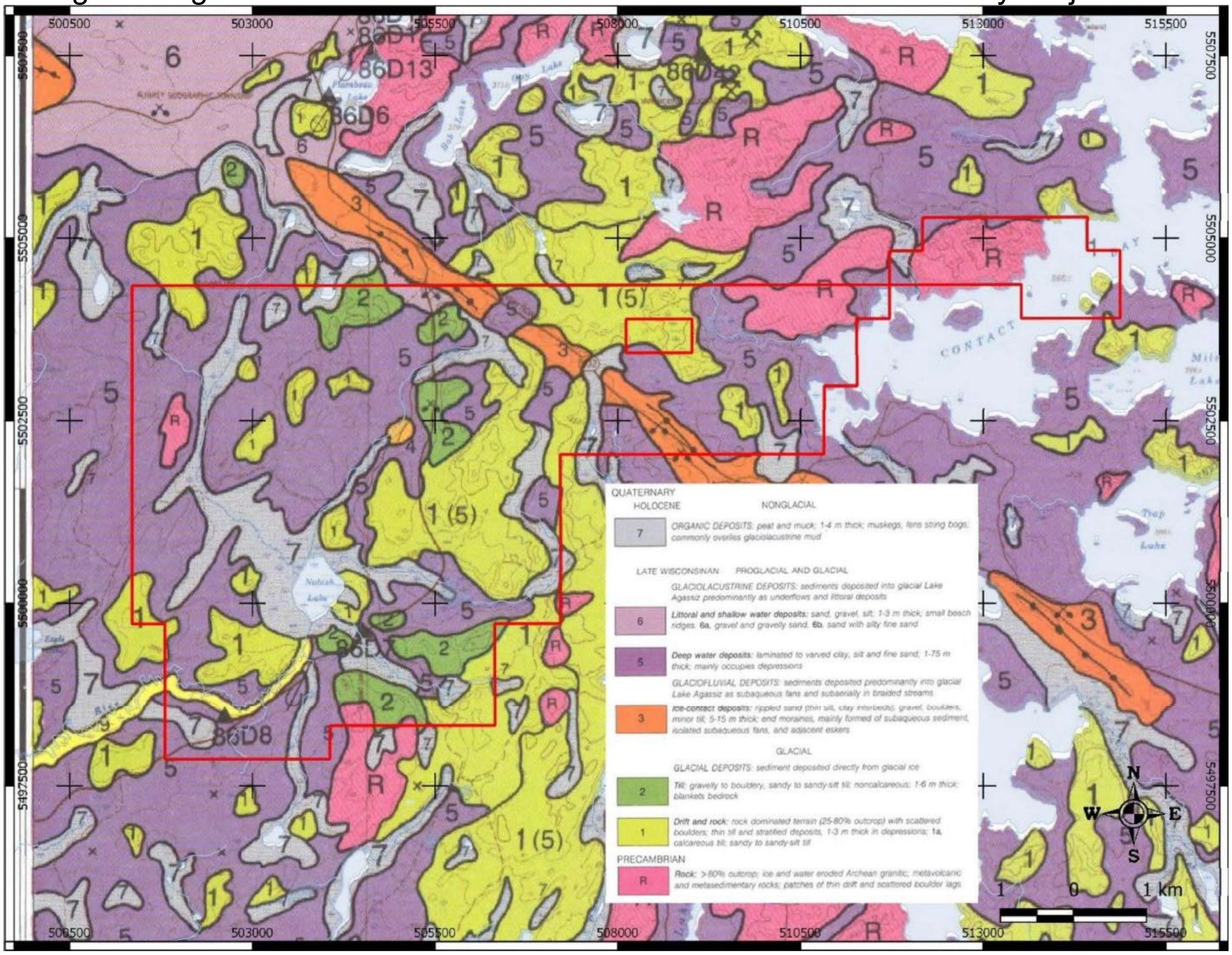


Figure 16: Surficial Geology Wabigoon Lake GSC 1774A (after Cowan and Sharpe, 1991)

*Red line = Current HRM Property.

7.0 DEPOSIT TYPES

Greenstone belts are economically important repositories for syngenetic mineralisation, e.g. VHMS, uranium, komatiite-associated nickel deposits, and epigenetic orogenic lode gold deposits, which in Canada are almost exclusively in the volcanic rocks and successor basin units of Archean greenstone belts, (Thurston, 2015; Goldfarb et al, 2005). The Property is a prospective host to more than one deposit style related to greenstone belts and mafic intrusives.

The most attractive of these are:

- \- Archean Lode Gold: Structurally-controlled gold bearing quartz veins.
- \- Magmatic Nickel-Copper (Ni-Cu): Ni-Cu mineralisation associated with magmatic sulphide or sulphide associated with late magmatic and metamorphic fluids
- \- Magmatic PGE: Platinum group elements (PGE) also have been shown to be concentrated in immiscible sulphide liquids and by late magmatic or metamorphic processes.

7.1 Archean Lode Au

Lode gold deposits are one of the most characteristic features of Archaean greenstone belts within granitoid-greenstone terranes, with major deposits situated in most major cratonic areas, (Groves & Foster, 1991). Deposits belonging to Archean orogenic lode gold mineralising systems comprise epigenetic mineralisation that formed as a result of focused fluid flow late during active deformation and metamorphism of volcano-plutonic terranes. They can occur in any lithology and formed at a range of paleocrustal levels through site-specific and local physical and chemical processes. All Archean orogenic lode gold deposits formed through broadly similar geologic processes, with the unique character of individual deposits resulting mainly from variations at the depositional site, (Hagemann & Cassidy, 2000).

The 3.1-2.6 Ga Superior Province is second only to the Witwatersrand Basin in terms of historic gold production (Goldfarb et al, 2001). Some of the largest gold deposits of the western Superior region are hosted in continental sedimentary-volcanic rock sequences, e.g., Red Lake Camp (Percival, 2007) and the Musselwhite Deposit (Gourcerol et al, 2015) with 5.4 Moz past production plus reserves and resources, circa 2012. The southern part of the craton is dominated by approximately 35 distinct 2.77-2.70 Ga greenstone belts hosting most of Canadas Largest Gold Deposits i.e., Timmins District and the 20 Moz Hemlo Deposit (Goldfarb et al, 2001).

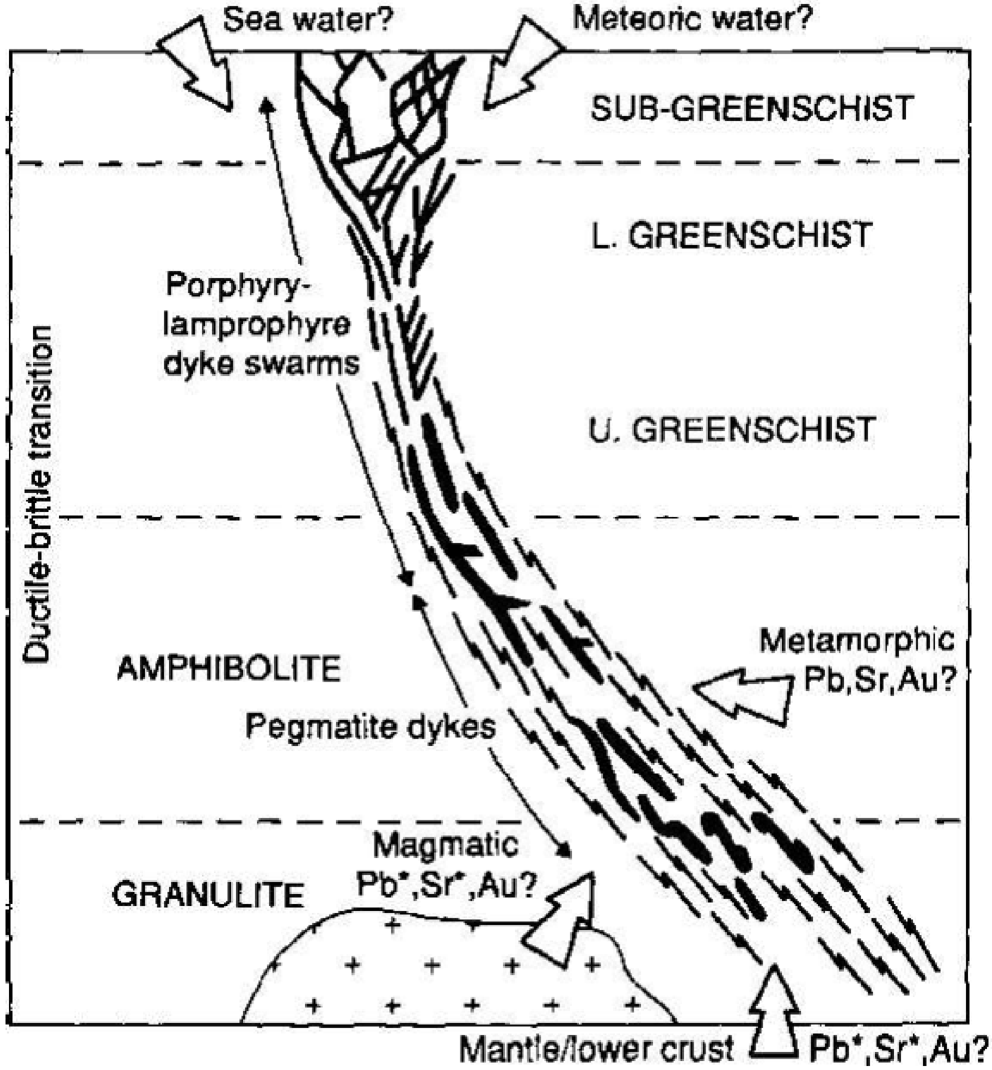


Figure 17: Schematic Crustal Profile at Time of Gold Mineralisation (Groves, 1993)

Note: Hypothetical hydrothermal system, extending over a crustal range of 20-25 km showing potential fluid and ore solute sources

7.2 Magmatic Ni-Cu-PGE-Cr-V

Magmatic Ni-Cu-PGE-Cr-V Deposits formed in a variety of geologic environments and periods. PGE-Cr-V deposits predominantly occur in large, layered intrusions emplaced during the late Archean and early Proterozoic into stabilised cratonic lithosphere. The magmas ascend through trans-lithospheric sutures characterised by limited extension and rifting. The laterally extensive ore layers (so-called reefs) formed through hydrodynamic phase sorting when the central portions of large, incompletely solidified magma chambers subsided due to crustal loading, (Maier, 2015). The bulk of global PGE-Cr-V resources occur in the largest layered intrusions, namely the Bushveld complex of South Africa, the Great Dyke of Zimbabwe, and the Stillwater complex of the USA. Due to the large size (tens of kilometres) and limited complexity of the deposits and their host intrusions, they are relatively easy to locate and delineate. As a result, the search space is relatively mature and few new discoveries have been made in the last few decades, (Maier, 2015).

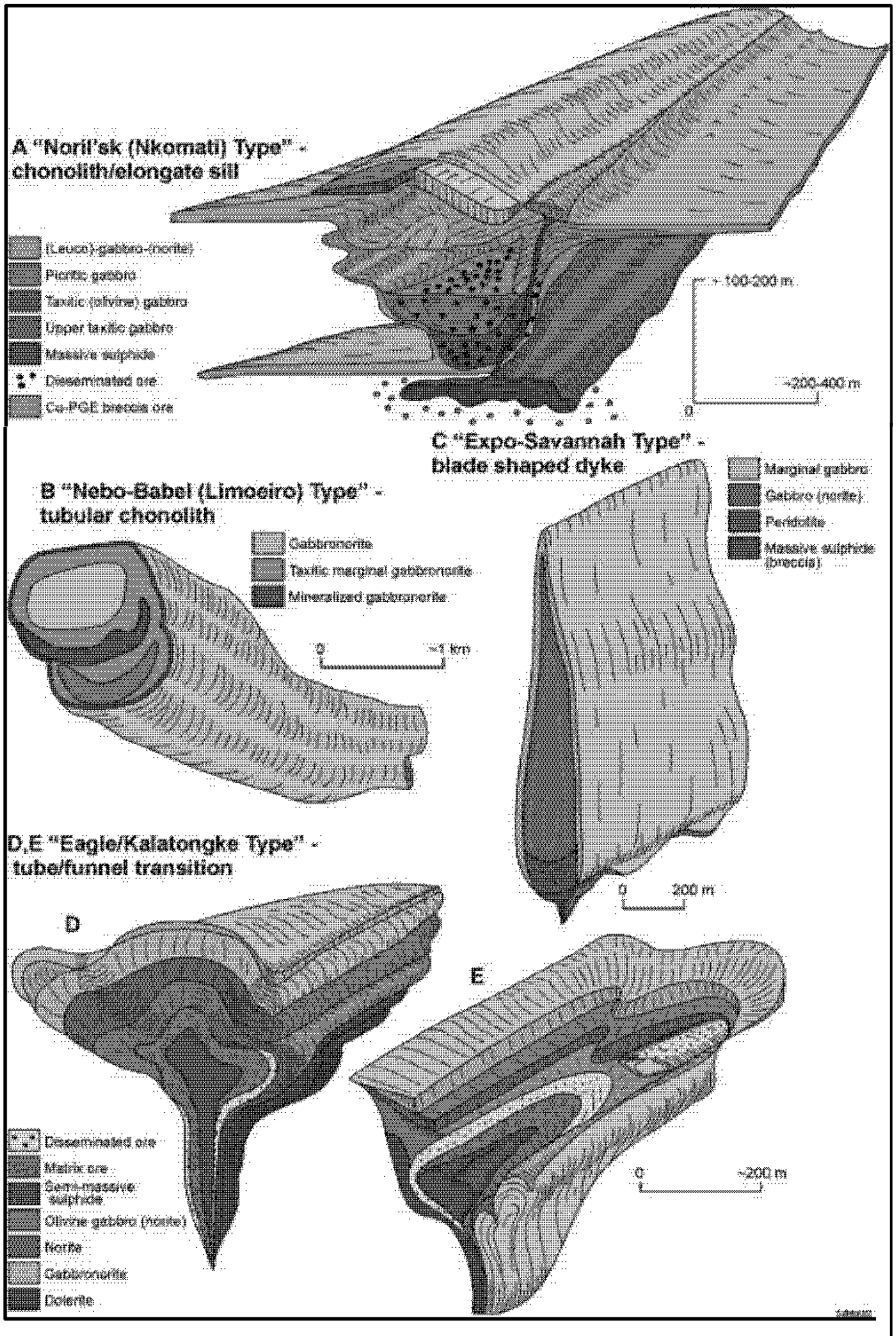


Figure 18: Ni-Cu-PGE Geometries (Barnes et al, 2016)

In contrast to PGE-Cr-V deposits, magmatic Ni-Cu sulphide deposits formed throughout geologic time, and there are many deposits that are presently mined. The ores formed under highly dynamic magma emplacement conditions within lava channels or feeder conduits. The deposits are preferentially located near craton margins where mantle magmas could ascend through trans lithospheric structures. Magma flow was focused and locally enhanced by shifting compressive-extensional tectonic regimes. Abundant S-rich crustal rocks provided an external S source that is required for the majority of deposits. The igneous bodies hosting the deposits tend to be irregular and small, 10 100s m in width and height, and are difficult to locate. As a result, the search space remains relatively immature, as indicated by the fact that significant discoveries continue to be made (e.g., Sakatti in Lapland), (Maier, 2015).

The following set of criteria are considered in targeting and evaluating Ni Cu PGE sulphide systems: 1) nature of magmatism and relationship to pre-existing cratonic architecture; 2) magmatic and structural controls on the development of protracted-flow magma conduits; 3) access to crustal S sources at some point along the pathway; 4) favourable intrusion geometry and emplacement style for deposition, reworking and upgrading of sulphide magmas, and 5) favourable structural history and erosional level for preservation and detectability. These components can be translated into mappable geological criteria, (Barnes et al, 2016).

At the predictive targeting scale, the key features are proximity to ancient cratonic boundaries and long-lived, trans-crustal structures, and relationship to voluminous mafic or ultramafic magmatism typically with high Mg and low Ti contents, but otherwise lacking distinctive characteristics. At the detection scale, there are two distinct approaches: recognition of high- volume magma pathways with prolonged flow-through operating at length scales of km based on morphological, petrological, geophysical and structural observations; and identification of the petrographic and geochemical signals of accumulation or extraction of sulphide liquid, (Barnes et al, 2016).

A possible analogous model for the Property is the Montcalm Gabbroic Complex and Ni-Cu Deposit in the Western Abitibi Subprovince of the Superior, about 50 km west-northwest of Timmins, Ontario. It is an 85 km² layered intrusion approximately 2,702 +/+ 2Ma. Montcalm Mine began operating as an underground mine in 2004, and suspended operations in early 2009, operated by Falconbridge / Xstrata Nickel. A total of 208,681 tonnes grading 1.02% Ni, 0.61% Cu and 0.041% Co were milled. The daily milling rate was 2,750 tonnes with 80% metal recovery. Mining operations were by blasthole open stope with ramp access. Surface diamond drilling amounted to 3,894 m, (Atkinson, et al, 2010).

7.3 Other

Stratigraphically-controlled gold mineralisation has been noted in Eagle Lake Volcanic Group to the west of the Property. Pyrrhotite was noted as the dominant mineral in sulphide-rich auriferous layers. Parker (1989) noted that stratigraphically controlled gold mineralisation may occur elsewhere along the contact between the felsic and mafic metavolcanics which extends for approximately 6.5 km east and 1.6 km southwest of Hardrock Bay (~16 km west of Property). Banded iron formation, chert, and fine-grained, bedded, felsic tuffs have been intersected in diamond drill holes, in the vicinity of the contact, as far east as Stanton Island at the extreme east end of Eagle Lake. Stanton Island is just over 6 km west of the Property. However, gold-bearing sulphide-rich flows, similar to those at Hardrock Bay, have not been reported to accompany the metasediments

Given the greenstone setting, Volcanogenic Hypabyssal Massive Sulphide (VHMS, formerly Volcanogenic Massive Sulphide) could be considered, but historical work has not found indications of this type.

8.0 EXPLORATION

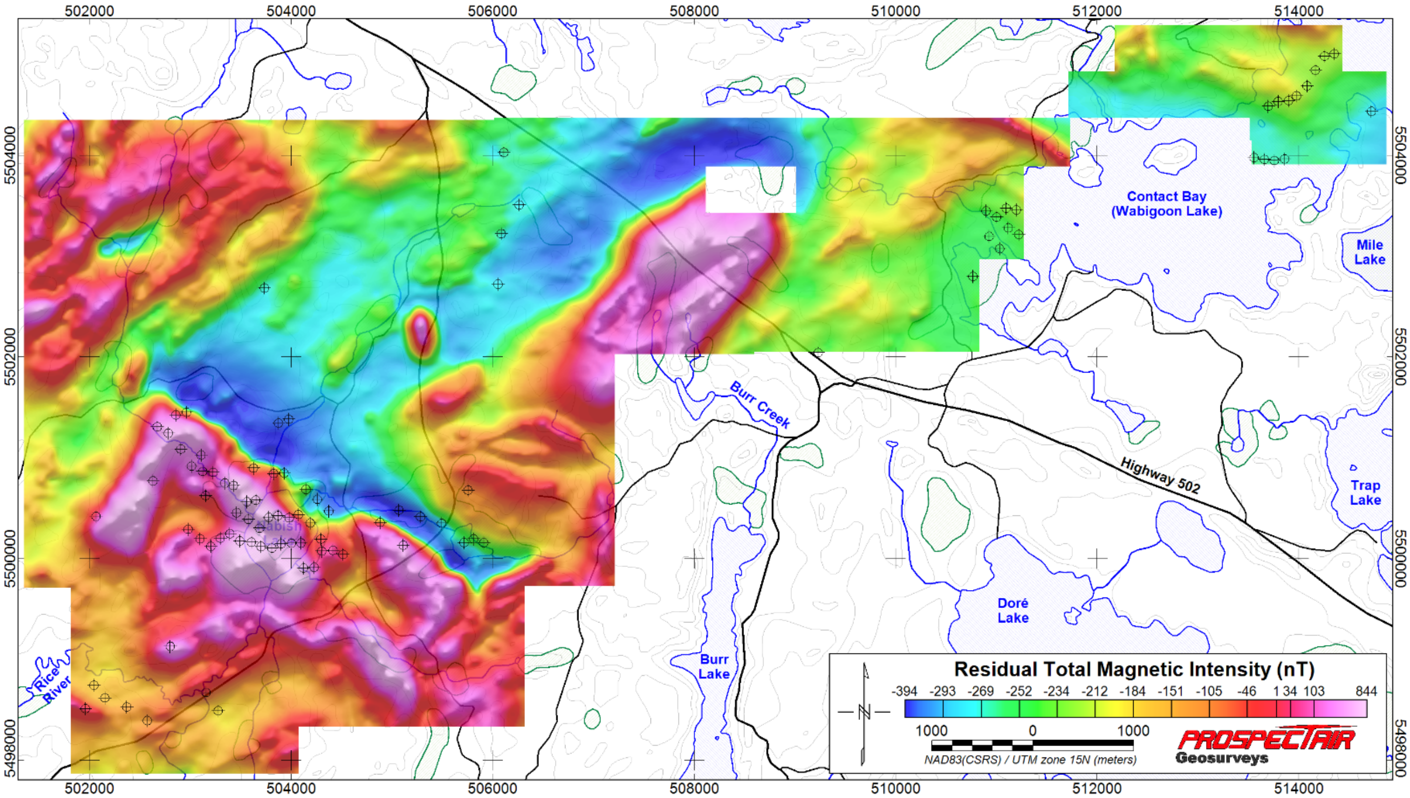
8.1 High-Resolution Heliborne Magnetic Survey and TDEM Survey

Prospectair Geosurveys conducted a heliborne high-resolution magnetic (MAG) and time domain electromagnetic TDEM survey on the Contact Bay Property from April 9 to 16, 2021. One survey block was flown for a total of 510 l-km.

The Contact Bay block was flown with traverse lines at 100m spacing and control lines spared every 1000m. The survey lines were oriented N174 and control lines were flown perpendicular to traverse lines.

Fault

Figure 19: Total Magnetic Intensity (TMI)



9.0 INTERPRETATION AND CONCLUSIONS

9.1 Magnetic Survey

The Residual Total Magnetic Intensity (TMI) of the Contact Bay block, presented in Figure 19 together with TDEM anomalies, is relatively active and varies over a range of 1,238 nT, with an average of -121 nT and a standard deviation of 187 nT.

The most prominent magnetic features found in the area are two strong magnetic anomalies depicting complex shapes, one being centered over the Nabish Lake and the other located to the north of Burr Lake and crossed by Highway 502 in its center. Although both features are locally variable in strike, the one at Nabish Lake, which depicts stronger amplitudes, is globally trending NW-SE, while the one to the north of Burr Lake is generally oriented NE-SW. These strongly magnetic features are likely related to mafic or ultramafic intrusions.

Most magnetic lineaments that seem related to rock units' schistosity are generally trending from E-W to NE-SW. Other families of lineaments striking against these dominant trends, like N-S of NW-SE, usually depict stronger magnetic amplitudes and are thus believed to relate to the mafic or ultramafic intrusions mentioned above or to other discrete and local smaller size intrusive bodies or dykes. Many lineaments appear curved locally, possibly by folding/shearing or at the contact zone with the postulated intrusions, or otherwise indicative of intrusions' internal structures.

Throughout the block, it is possible to detect structural features offsetting observed magnetic lineaments and causing abrupt interruption or changes of the magnetic response. These features are typically caused by faults, fractures and shear zones. If they are thought to be favorable structures in the exploration context of the Contact Bay project, they should be paid particular attention and should be the object of a comprehensive structural interpretation, which is beyond the scope of this report.

9.2 TDEM Survey

All of the detected anomalies on this survey are of low amplitude, of low TAU values (relating to poor quality conductors) and most are occurring over wide areas. This is typical of conductive overburden, and as a matter of fact the vast majority of identified EM anomalies are occurring in topographic depressions, along water streams and over lakes and wetlands. Four main conductive zones are observed within the block:

- A small one at the southwest tip of the survey block, along Rice River. A few of the outlined poor conductors depict positive correlation to weak magnetic anomalies

- A large one centered over the Nabish Lake and its associated watershed depressions. Many of these conductive anomalies are coincident with strong magnetic anomalies believed to relate to mafic/ultramafic intrusive rocks.

- One occurring at the west end of Contact Bay, typical of bottom lake sediments.

- Two distinct nearby conductive zones located at the east end of the survey block and also typical of bottom lake sediments, being well correlated to a large water channel of Contact Bay. The northernmost conductive lineament displays some association with a marginal magnetic lineament.

Conductive overburden tends to attenuate the response from bedrock conductors possibly located underneath it. There is therefore a possibility for some of the identified anomalies to represent the combined response of poorly conductive overburden and of weakly conductive bedrock conductors made of limited concentrations of sulphides, and this likelihood is considered stronger in cases where a correlation is found between magnetic anomalies and interpreted EM anomalies, since the magnetic signal is almost exclusively controlled by the bedrock geology.

10.0 RECOMMENDATIONS

The Contact Bay Property is an early stage exploration project. Following is a proposed two phase program of evaluation and exploration.

A compilation of all historic available data into a cohesive database and the addition of the airborne dataset collected in 2021. This will aid in prioritising target areas and interpreting the property geology.

A preliminary priority listing will be known occurrences, targets that may not have been checked in previous programs, coupled with results from the recent airborne survey. The property geology should be reinterpreted to determine extents of the different domains present on the property.

Initial fieldwork should involve checks to verify locations of historical work where possible. In addition, the locations of the MDI occurrences should be verified. Mapping and prospecting can be completed in conjunction with field checking the historic work. Structural mapping will aid in answering previous questions, such as possible fault association with mineralization in Nabish Lake Cu-Ni showing.

During this phase of work ground cover conditions can be assessed for suitability for geochemical surveys. If ground conditions are favourable geochemical sampling can aid in outlining target areas.

11.0 REFERENCES

Atkinson, B.T., Pace, A., Beauchamp, S.A., Bousquet, P., Butorac, S., Draper, D.M. and Wilson, A.C. (2010). Report of Activities 2009, Resident Geologist Program, Timmins Regional Resident Geologist Report: Timmins and Sault Ste. Marie Districts; Ontario Geological Survey, Open File Report 6247, 99p.

Barnes, S. J., Cruden, A. R., Arndt, N., Saumur, B. M. (2016). The mineral system approach applied to magmatic Ni–Cu–PGE sulphide deposits. Ore Geology Reviews. Vol 76, pp 296-316.

Barrie, C. Tucker & Naldrett, A.J. (1989). Geology and tectonic setting of the Montcalm Gabbroic Complex and Ni- Cu Deposit, Western Abitibi Subprovince, Ontario, Canada. pp 151-163.

Beakhouse, G. P. (1988). The Wabigoon-Winnipeg River Subprovince Boundary Problem: Ontario Geological Survey Miscellaneous Paper. 141, 108 –115 pp.

Beakhouse, G. P. (2001). Precambrian Geology of the Thunder Lake Segment (Project Unit 00-012): Ontario Geological Survey Open File Report 6070, pp 15 –1 to 15 –6.

Beakhouse, G. P. (2002). Precambrian Geology of the Dinorwic Area, Wabigoon Subprovince (Project Unit 99-001: Ontario Geological Survey Open File Report 6100.

Beakhouse, G. P. (2007). Structurally controlled, magmatic hydrothermal model for Archean lode gold deposits: a working hypothesis: Ontario Geological Survey Open File Report 6193, 133 pp.

Blackburn, C. (1981). "Geology of the Meggisi Lake - Boyer lake Area, District of Kenora. OGS Report 202". Contains OGS Maps 2437 and 2438. Ontario Geological Survey.

Blackburn, C.E., (1981). Kenora-Fort Frances Geological Compilation Series: Ontario Geological Survey, Map 2443.

Breaks, F. W. et al. (1975). Operation Kenora-Sydney Lake, Eagle Lake Sheet, District of Kenora, Ontario Division of Mines, Preliminary Map P.1026, Scale 1:63,360

Breaks, F. W. (1991). English River Subprovince, in General Geology of Ontario: Ontario Geological Survey, Special Volume 4, Pt. l, pp. 239-277.

Burr, S.V. (1960). Assessment report on Geology of the Emmons Lake Option, Dryden Area, Ontario, Report to New Consolidated Canadian Exploration Limited

Coates, H. J. (2004a). Assessment report on the Osbourne Bay Property, Kenora Mining District, Ontario; Claims 1220744,1237398 A 1221139. Atikwa Minerals Inc. 21 pp.

Coates, H. J. (2004b). Assessment report on the Contact Bay Property, Kenora Mining District, Ontario; Claims 1053039,1054578,1234235,1234236, 1234237,1234580 A 1234582. Atikwa Minerals Inc. 24 pp.

Cowan, W.R. and Sharpe, D.R. (1991). Surficial Geology; Wabigoon Lake, Ontario. Geological Survey of Canada. Map 1774A. Scale 1:100,000.

Davies, J.C. (1966). Atikwa Lake Area - West Half, ODM Preliminary Geology Map P.387, Scale 1:15,840

Davies, J.C. (1966). Atikwa Lake Area - East Half, ODM Preliminary Geology Map P.388, Scale 1: 15,840

Davies, J.C. (1973). Geology of the Atikwa Lake Area, District of Kenora, Ontario Department of Mines, Geological Report 111, pp. 1-58.

Davis, D.W., Blackburn, C.E., and Krogh, T.E. (1982). Zircon U-Pb Ages from the Wabigoon-Manitou Lakes Region, Wabigoon Subprovince, Northwest Ontario; Canadian Journal of Earth Sciences, Vol 19, pp. 254-266.

Davis, D.W. and Edwards, G.R. (1982). Zircon U-Pb ages from the Kakagi Lake Area, Wabigoon Subprovince, Northwest Ontario, Canadian Journal of Earth Science, Vol 19, pp. 1235-1245

Davis, D.W., Sutcliffe, R.M. and Trowell, N.F. (1988). Geochronological Constraints on the Tectonic Evolution of a Late Archean Greenstone Belt, Wabigoon Subprovince, Northwest Ontario, Canada, Precambrian Research, Vol. 39, pp. 171-191.

Felix, V.E. (2005). Eagle Lake area high-density regional lake sediment and water geochemical survey, northwestern Ontario; Ontario Geological Survey, Open File Report 6104, 79 pp. accompanies Miscellaneous Release-Data 145.

Glatz, A. (1992). Geophysical Report on Nabish Lake Property of Société Minière Mimiska Inc. Ontario Assessment Report 52F10NW0051. 16 pp.

Goldfarb, R.J., Baker, T., Dube, B., Groves, D.I., Hart, C.J.R., and Gosselin, P. (2005). Distribution, character, and genesis of gold deposits in metamorphic terranes, in Hedenquist, J.W., Thompson, J.F.H., Goldfarb, R.J., and Richards, J.P., eds. Economic Geology 100th Anniversary Volume, pp 407 –450.

Goldfarb, R.J., Groves, D.I. and Gardoll, S. (2001). Orogenic gold and geologic times: A global synthesis, Ore Geology Reviews, 18, pp 1-75.

Gourcerol, B., Thurston, P.C., Kontak, D.J., Côté-Mantha, O., and Biczok, J. (2015). Distinguishing primary and mineralisation-related signatures of chert from the banded iron-formation–hosted gold deposits at Musselwhite, Ontario and Meadowbank, Nunavut. Geological Survey of Canada. Current Research 2015-1, 21 pp.

Groves, D.I., Foster, R.P. (1991). Archaean lode gold deposits. In: Gold metallogeny and exploration. Springer, Boston, MA.

Groves, D.I. (1993). The crustal continuum model for late-Archaean lode-gold deposits of the Yilgarn Block, Western Australia. Mineralium Deposita, 28, 366-374.

Hagemann, S. G., Cassidy, K. F. (2000). Archean Orogenic Lode Gold Deposits. in Gold in 2000. Reviews in Economic Geology, vol 13, pp 9-68. eds S. Hagemann and P.E. Brown. Society of Economic Geologists.

Hendrickson, M. D. (2016). Structural analysis of aeromagnetic data from the Rainy River Block, Wabigoon subprovince, Minnesota, USA and Ontario, Canada: Strain partitioning along a Neoarchean terrane boundary and implications for mineral exploration. Precambrian Research, Vol 286, pp 20-34.

Joliffe, T.S., 1984, Report on the Geology of the Bonanza-Redeemer Property: Van Horne Exploration Inc.

King, H.L. (1971). Report on Copper-Nickel mineralisation, Mile Lake, Contact Bay Area, Kenora Mining Division, Report to File

Kremko, M. (1969). Area of Contact Bay, Report #15, Drill Logs prepared for Hollinger Mines Limited, Unpublished Assessment Report. Krisko, E., 1958, Area of Contact Bay Report #13, Unpublished Assessment Report.

Learning, S.F. (1948). Gold Deposits on Eagle Lake, Ontario. MSc Thesis, University of Toronto. 48pp.

Macdonald, A.J. (1984). Gold Mineralisation in Ontario: The Role of Banded Iron Formation; pp. 412-430 in Chibougamau-Stratigraphy and Mineralisation, edited by J, Guha and E. H. Chown, Canadian Institute of Mining and Metallurgy, Special Volume 34.

Macdonald, A. J., and Cherry, M.E. (1988). The Platinum Group of Elements in Ontario: Ontario Geological Survey, Open File Report 5681, pp. 1-279.

MacTavish, A.D. (1996). Precambrian geology, Montcalm greenstone belt. Ontario Geological Survey, Report 300, 76pp.

Maier, W.D. (2015). Chapter 3.1 - Geology and Petrogenesis of Magmatic Ni-Cu-PGE-Cr-V Deposits: An Introduction and Overview. in Mineral Deposits of Finland, eds Wolfgang D. Maier, Raimo Lahtinen, Hugh O'Brien. Elsevier. pp 73-92.

MDI000000000779. (2021). Contact Bay. Main commodity . Contact Bay Area. Ontario Geological Survey.

MDI000000000922. (2022). E.D.B. 1 Prospect. Main commodity Au-Mo. Contact Bay Area. Ontario Geological Survey.

MDI52F10NW00034. (2022). Hw 443 Occurrence. Main commodity Au. Contact Bay Area. Ontario Geological Survey.

MDI52F10NW00036. (2022). Long Lead Prospect Occurrence. Main commodity Au. Contact Bay Area. Ontario Geological Survey.

MDI52F10NW00042. (2022). Nabish Lake Black Granite. Main commodity Granite. Contact Bay Area. Ontario Geological Survey.

MDI52F10NW00111. (2022). Glatz-Kozowy Occurrence. Main commodity Cu-Ni. Contact Bay Area. Ontario Geological Survey.

MDI52F10NW00116. (2017). Nabish Lake. Main commodity Cu-Ni. Contact Bay Area. Ontario Geological Survey.

MDI52F10NW00117. (2021). Pidgeon-Contact Bay Occurrence. Main commodity Cu-Ni. Contact Bay Area. Ontario Geological Survey.

MDI52F10NW00139. (2021). Johnson-Contact Bay Occurrence. Main commodity Au. Contact Bay Area. Ontario Geological Survey.

MDI52F10NW00152. (2021). Nabish Lake-Southeast Occurrence. Main commodity Cu-Ni. Contact Bay Area. Ontario Geological Survey.

Menard, T., Cruden, A.R., Davis, D. and Robin, P.-Y., F. (2000). Himalayan-style metamorphism and tectonics between 2700 and 2650 Ma in the Winnipeg River and Wabigoon Subprovinces near Dryden, in Lithoprobe Report #63, Western Superior Transect, Third Annual Workshop, April 11-12, 1997, pp. 46-54.

Moorhouse, W.W. (1941). Geology of the Eagle Lake Area, Ontario Department of Mines, Annual report for 1939, Vol 48, Part 4.

Morrison, D.A. et al. (1985). Age of the Mulcahy Lake Intrusion, Northwest Ontario, and Implications for the Evolution of Greenstone-Granite Terrains, Earth and Planetary Science Letters, Vol. 73, Part 2, pp. 306-316

Morrison, D.A., et al. (1986). Stratigraphy and Petrology of the Mulcahy Lake Layered Gabbro: An Archean Intrusion in the Woebegone Subprovince, Ontario: Journal of Petrology, Vol. 27, pp. 303-341.

Ontario Geological Survey (1987). Geological Data Inventory Folio 396, Contact Bay Area, District of Kenora, Ontario Geological Survey, 1987, includes 1 map at 1:31,680 and tabulated historical data: Ontario Geological Survey Folio 396.

Ontario Geological Survey (1999). Single Master Gravity and Aeromagnetic Data for Ontario: Ontario Geological Survey ERLIS Data Set 1036.

Ontario Geological Survey (2001). Airborne magnetic and electromagnetic surveys, residual magnetic field and electromagnetic anomalies, Stormy Lake area; Ontario Geological Survey, Maps 82179 and 82181, scale 1:50,000. Queen's Printer for Ontario.

Ontario Geological Survey. (2002). Ontario airborne geophysical surveys, magnetic and electromagnetic data, Stormy Lake area: Ontario Geological Survey Geophysical Data Set 1107-Revised (2011).

Orta, M. (2008). Report on Helicopter-Borne Versatile Time Domain Electromagnetic (VTEM) Geophysical Survey; Nabish Lake Property, Ontario, Canada; for Sedex Mining Corp. Geotech Ltd. Ontario Assessment Report 20000003740. 37 pp.

Owens, E. O. (2001a). Assessment Report for Optioned Claims 1237398 and 1220744. Osborne Bay Area Dryden. Ontario Kenora Mining District. June 2001. Ontario Assessment Report 52F10NW2002. 26 pp.

Owens, E. O. (2001b). Assessment Report for the Contact Bay English Option, Dryden, Ontario Kenora Mining District, April November 2001. Ontario Assessment Report 52F10NW2003. 48 pp.

Parker, J.R. (1989) Geology, gold mineralisation and property visits in the area investigated by the Dryden-Ignace Economic Geologist, 1984-1987. Open File Report 5723. Ontario Geological Survey. Queen's Printer for Ontario. 306pp.

Parker, J.R. (1990). The Flambeau Lake Gold Prospect, in: Field Trip No. 2, Kenora-Rainy River Gold and Base Metals, CIM 12th Annual District Four Meeting, September 10-13, 1990, ed. Mason, J.

Percival, J.A. (2007). Geology and Metallogeny of the Superior Province, Canada, in Goodfellow, W., ed., Mineral Deposits of Canada: A Synthesis of Major Deposit Types, District Metallogeny, the Evolution of Geological Provinces and Exploration Methods. Geological Association of Canada. Mineral Deposits Division, Special Publication 5, pp 903 –928.

Percival, J.A. and Helmstaedt, H. (2006). The Western Superior Province Lithoprobe and NATMAP transects: introduction and summary, Canadian Journal of Earth Sciences, Vol 43 (2006), pp. 743-747.

Percival, J.A., Skulski, T., Sanborn-Barrie, M., Stott, G.M., Leclair, A.D., Corkery, M.T., and Boily, M. (2012). Geology and tectonic evolution of the Superior Province, Canada. Chapter 6 In Tectonic Styles in Canada: The LITHOPROBE Perspective. Edited by J.A. Percival, F.A. Cook, and R.M. Clowes. Geological Association of Canada, Special Paper 49, pp. 321 378.

Redden, J.W. (1987). Preliminary Report on the Mile Lake/Trap Lake Property, Kenora Mining Division, Ontario, Canada. Private report to Eagle Lake Resources Limited

Redden, J. W. (1988a). Report on Geological Survey of the West Part of the Mile Lake Property, Contact Bay Area, Kenora Mining Division, Ontario, Report for Eagle Lake Exploration Ltd.

Redden, J. W. (1988b). Report on Geological Survey of the East Part of the Mile Lake Property, Contact Bay Area, Kenora Mining Division, Ontario, Report for Eagle Lake Exploration Ltd.

Russell, D.F. (2004). Sturgeon Lake– Wabigoon Lake area high density regional lake sediment and water geochemical survey, northwestern Ontario; Ontario Geological Survey, Open File Report 6125, 94 pp.

Satterly, J. (1941). Geology of the Dryden-Wabigoon Area, Ontario Department of Mines, Annual Report for 1943, Vol. 50, pp. 1-67.

Satterly, J. (1943). Geology of the Dryden-Wabigoon Area. Ontario Department of Mines. Volume 50, part 2, pp. 1-57. Accompanied by Map 50e, scale 1:53,360 (1 inch to 1 mile).

Scheinbein, R., Parker, J.R. (1988a). Precambrian Geology of the Flambeau Lake-Larson Bay Area, Western Part, District of Kenora.

Scheinbein, R., Parker, J.R. (1988b). Precambrian Geology of the Flambeau Lake-Larson Bay Area, Western Part, District of Kenora.

Sutcliffe, R.H. (1984a). Geology of the Mulcahy Lake gabbro intrusion, pp 33-37. in Summary of Field Work, 1984, Ontario Geological Survey, edited by John Wood, Owen L. White, R.B. Barlow, and A.C. Colvine, Ontario Geological Survey, Miscellaneous Paper 119, 309pp.

Sutcliffe, R.H. (1984b). Precambrian Geology of the Mulcahy Lake Intrusion, Ontario Geological Survey Preliminary Map P2826, Scale 1:15,480.

Sutcliffe, R.H. (1988). Geology and PGE-Potential of Mafic Intrusions in the Western Wabigoon Subprovince, in The Platinum Group of Elements in Ontario, Ontario Geological Survey Open File Report 5681.

Sutcliffe, R.H., et al. (1991). Stratigraphy and petrology of the lower part of the Mulcahy Gabbro, northwestern Ontario: origin of reverse and normal fractionation trends and implications for tectonic setting of late Archean mafic magmatism: Can. J. Earth Sci. Vol. 28, pp. 1753-1768.

Sutcliffe, R.H., and Smith, A.R. (1985). Precambrian Geology of the Mulcahy Gabbro, District of Kenora: Ontario Geological Survey, Map P.2826.

Thomson, J.E., Fergson, S.A., Johnston, W.G.Q., Pye, E.G., Savage, W.S. (1957). Metal Resources Circular No 2: Copper, Nickel, Lead, and Zinc Deposits in Ontario. Ontario Department of Mines. Baptist Johnston. Toronto. 132 pp.

Thurston, P.C. (1986). Volcanic Cyclicity in Mineral Exploration; the Caldera Cycle and Zoned Magma Chambers; p. 104-123 in Volcanology and Mineral Deposits, edited by John Wood and Henry Wallace. Ontario Geological Survey, Miscellaneous Paper 129, 183pp.

Thurston, P.C. (1991). Archean Geology of Ontario, Introduction: in General Geology of Ontario: Ontario Geological Survey, Special Volume 4, Pt. l, pp. 73-78.

Tims, A. (2009) Prospecting and Geochemical Assessment Report on the Nabish Lake Property Contact Bay (Wabigoon Lake) Area, Kenora Mining Dis1trict. Ontario Assessment Report 20000004126. 31 pp.

Tittley, H. Z. (1969). Combined Geophysical Survey; Kozowy Option, Contact Bay Area, Dryden, Ontario; Hollinger Mines Limited. Ontario Assessment Report 52F10NW0083. 12 pp.

Trowell, C. B. (1980). Preliminary Geological Synthesis of the Savant Lake– Crow Lake Metavolcanic - Metasedimentary Belt Northwestern Ontario and its Bearing Upon Mineral Exploration. OGS Miscellaneous Publication 89. Ontario Geological Survey.

Trowell, M.F., Blackburn, C.E., Edwards, G., and Sutcliffe, R.H. (1977). Savant Lake-Crow Lake Special Project, Districts of Thunder Bay and Kenora; p. 29-50 in Summary of Field Work, 1977, by the Geological Branch, edited by V. G. Milne, Owen L. White, R. 3. Barlow, and J. A. Robertson. Ontario Geological Survey. Miscellaneous Paper 75, 202pp.

Trowell, N. F., Blackburn, C.E., and Bartlett, J.R. (1978). Savant Lake-Crow Lake Special Report, District of Thunder Bay and Kenora; p.28-44 in Summary of Field Work 1978 by Ontario Geological Survey, edited by V.G. Milne, Owen L. White, R.B. Barlow, and J. A. Robertson. Ontario Geological Survey. Miscellaneous Paper 82, 225pp.

Trowell, N. F., Blackburn, C.E., and Edwards, G.R. (1980). Preliminary Synthesis of the Savant Lake-Crow Lake Metavolcanic-metasedimentary Belt, Northwestern Ontario, and its Bearing upon Mineral Exploration. Ontario Geological Survey. Miscellaneous Paper 89, 30pp. Accompanied by Chart A.

Wagg, C. (1991). A Geological and Geophysical Reconnaissance of the Contact Bay Property, Private Report for Grand Oakes Exploration Inc.

Yeomans, W. C. (1991). Glatz - Kozowy Option, Nabish Lake Property; Contact Bay Area (G-2579), Kenora District of Northwestern, Ontario; Summary of 1991 Exploration Activities for Société Minière Mimiska. Ontario Assessment Report 52F10NW0050. 34 pp.

Yeomans, W. C. (1991). Glatz - Kozowy Option, Nabish Lake Property; Contact Bay Area (G-2579), Kenora District of Northwestern, Ontario; Summary of 1991

Exploration Activities for Société Minière Mimiska. Ontario Assessment Report 52F10NW0056.
53 pp.

12.0 CERTIFICATE OF QUALIFICATIONS

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CERTIFICATE OF QUALIFIED PERSON

I, Brent Clark, P. Geo. (#3188), do hereby certify that:

1. I am a consulting geologist with an office at 941 Cobalt Crescent, Thunder Bay, Ontario.

2. I graduated with the degree of Honours Bachelor of Earth Science (Geology) from Carleton University, Ottawa, Ontario in 2014. I have worked on gold projects in Northwestern Ontario, and Australia.

3. "Assessment Report" refers to the report titled "Assessment Report on the Contact Bay Project, Northwestern Ontario, Kenora Mining Division" dated August, 30, 2022

4. I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Ontario (#3188).

5. I have worked as a Geologist since my graduation from university.

6. I am the author of this report and responsible for all sections.

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

Dated this 30th day August 2022.

"Brent Clark"

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APPENDICES

Appendix I – Prospectair Geosurveys Report and Maps

Technical Report

Heliborne Magnetic and TDEM Survey

Contact Bay Project, Dryden Area
Kenora Mining Division, Ontario
2022

Heritage Mining Ltd.
1700-1055 West Hastings St.
Vancouver, BC, Canada, V6E 2E9

Prospectair Geosurveys

Dynamic Discovery Geoscience

Prepared by:
Joël Dubé, P.Eng.

June 2022

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Table of Contents

FIGURES

TABLES

I. INTRODUCTION

Prospectair conducted a heliborne magnetic (MAG) and time-domain electromagnetic (TDEM) survey for the mineral exploration company Heritage Mining Ltd. on its Contact Bay Property, located in the Dryden area, Kenora Mining Division, Province of Ontario (Figure 1). The survey was flown from April 9 to 16, 2022.

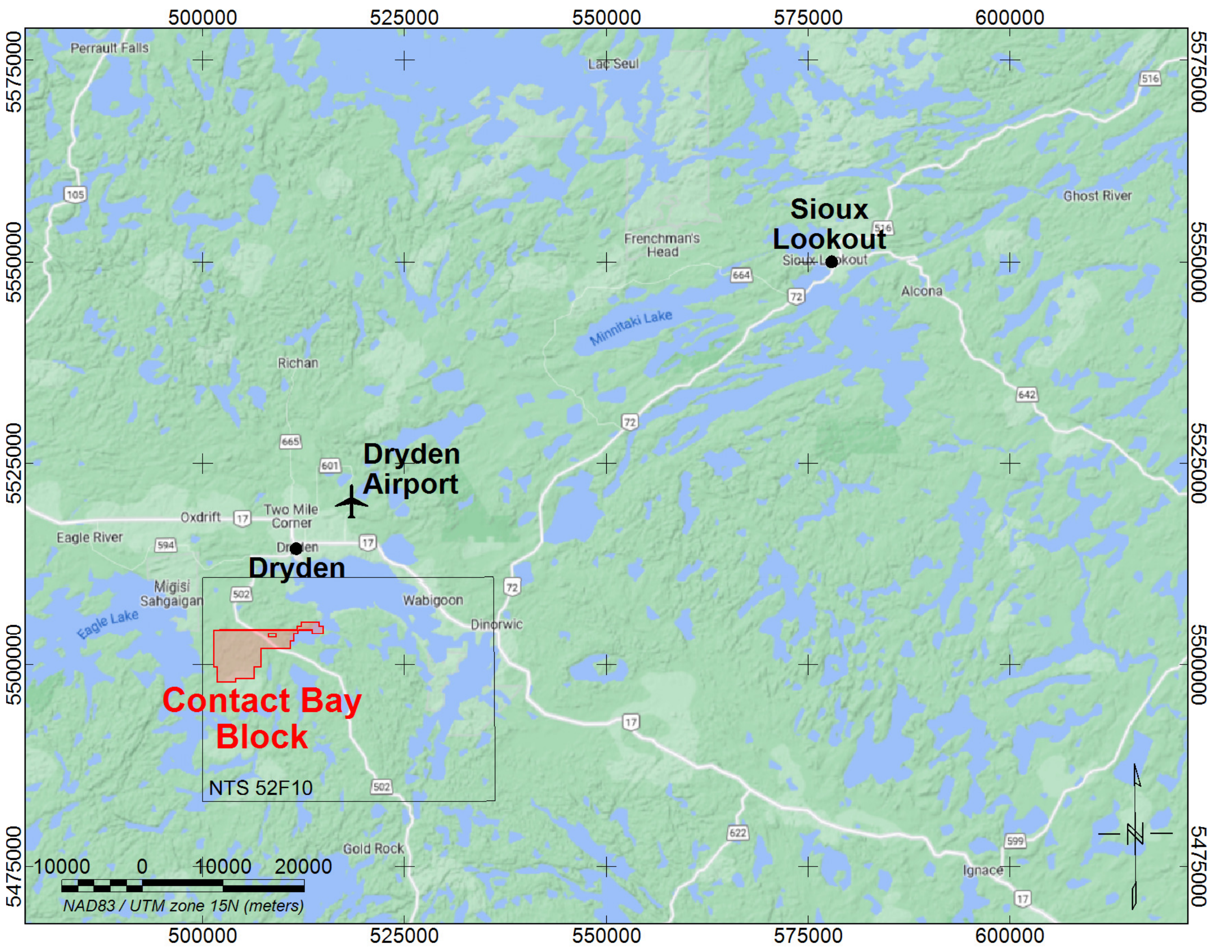
Figure 1: **General survey location**

One survey block was flown for a total of 510 l-km (Table 1). A total of 7 production flights were performed using Prospectair's Eurocopter EC120B, registration C-GEDI. The helicopter and survey crew operated out of the Dryden Airport located 20 km to the northeast of the block (Figure 2).

Table 1: **Survey block particulars**

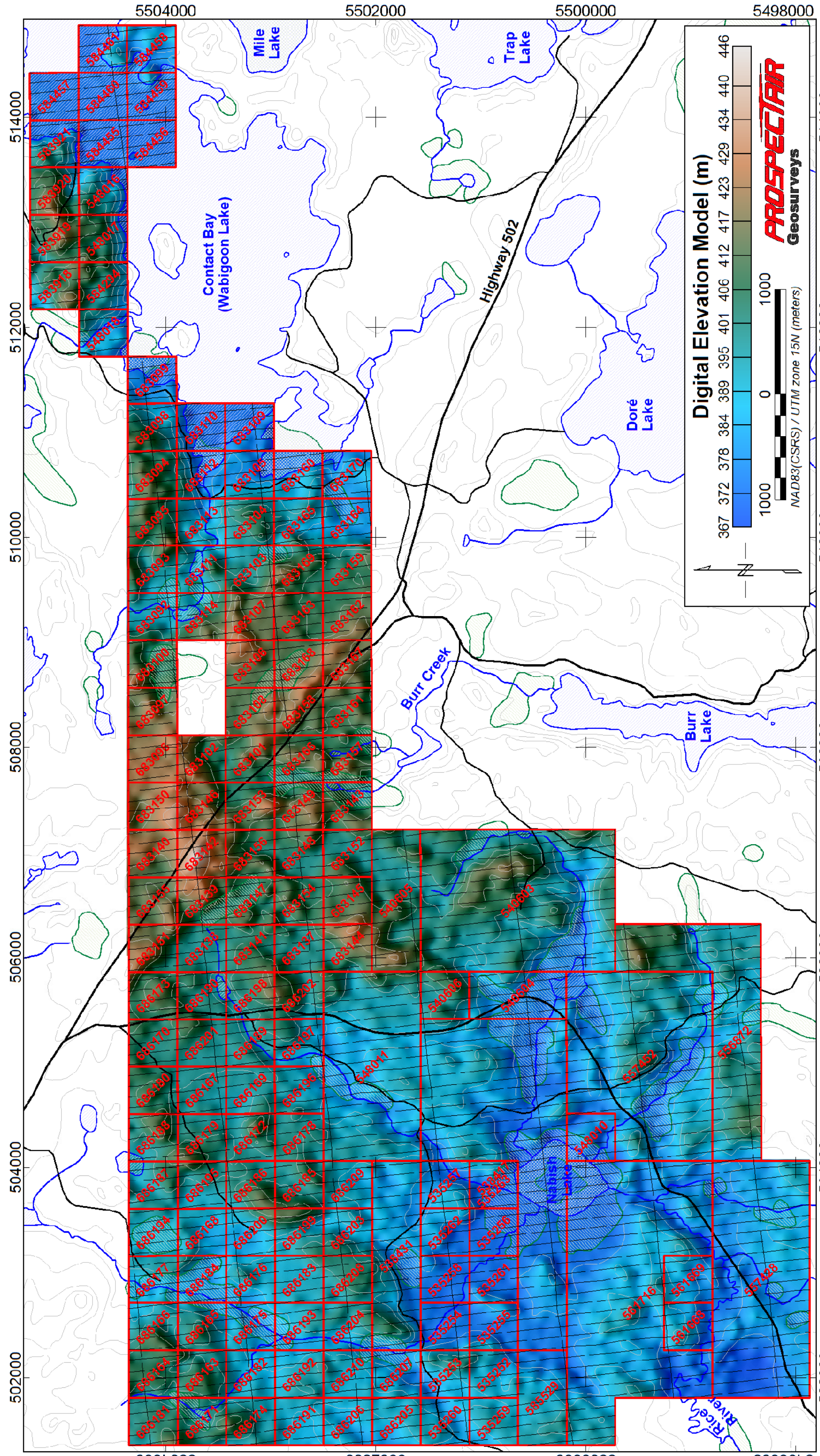
Block	NTS Mapsheets	Line-km flown	Flight numbers	Dates Flown
Contact Bay	052F10	510 l-km	Flt 1 to 7	April 9 to 16

Figure 2: **Survey location and base of operation**



The Contact Bay block was flown with traverse lines at 100 m spacing and control lines spaced every 1000 m. The survey lines were oriented N174. The control lines were oriented perpendicular to traverse lines. The average helicopter height above ground was 86 m, with the mag sensor and receiver coil at 61 m, and the transmitter loop at 36 m above the ground. The average survey flying speed (calculated equivalent ground speed) was 30.1 m/s. The survey area is covered by forest, lakes and wetlands. The topography is gently undulating, with a few low-level hills. The elevation is ranging from 367 to 446 m above mean sea level (MSL). The survey block lies approximately 10 km to the south of Dryden. From the ground, the block can be easily accessed via secondary forestry roads connecting to Highway 502, which crosses the block in its center and links the town of Dryden to Fort Frances, further to the south. The block holds its name from the Contact Bay, of the large Wabigoon Lake, covering the eastern part of the block. Coordinates outlining the survey block are given in Appendix A, with respect to NAD-83 datum, UTM projection zone 15N. The location of the Contact Bay Property claims (in red) and of the survey lines is shown on Figure 3. The Property claims numbers, as well as the approximate amount of line-km flown over each claim, are also listed in Appendix B.

Figure 3: **Survey lines and Contact Bay Property claims**



II. SURVEY EQUIPMENT

Prospectair provided the following instrumentation for this survey.

Airborne Magnetometers

Geometrics G-822A

Both the ground and heliborne systems used a non-oriented (strap-down) optically-pumped Cesium split-beam sensor. These magnetometers have a sensitivity of 0.005 nT and a range of 15,000 to 100,000 nT with a sensor noise of less than 0.02 nT. The heliborne sensor was mounted in a bird made of non-magnetic material located 25 m below the helicopter when flying. Total magnetic field measurements were recorded at 10 Hz in the aircraft. The ground system was recording magnetic data at 1 sample every second.

Time-Domain Electromagnetic Transmitter and Receiver

ProspecTEM

Prospectair Geosurveys significantly modified and improved the *Emosquito II* that was built by THEM Geophysics of Gatineau (Québec) to develop ProspecTEM. It is a powerful light-weight system adapted for small size helicopters and easy manoeuvrability enabling the system to be flown as close to the ground as safely possible and ensuring maximum data resolution. Advanced signal processing technique and a full processing package was developed in house to optimize the ProspecTEM data. The technical specifications are listed below in Table 2.

ProspecTEM system employs a transient or time-domain electromagnetic transmitter that drives an alternating current through an insulated electrical coil system. The towing bridle is constructed from a Kevlar rope and multi-paired shielded cables. It is attached to the helicopter by a weak link assembly. An onboard harness with outboard connectors mounted on a plate allows for quick disconnection or connection of the exterior elements. The system uses a 4 KW generator and a large condenser to transmit alternating 2.75-ms half sine pulses with intervening off-times of 13.916 ms electric pulse, 60 pulses per second.

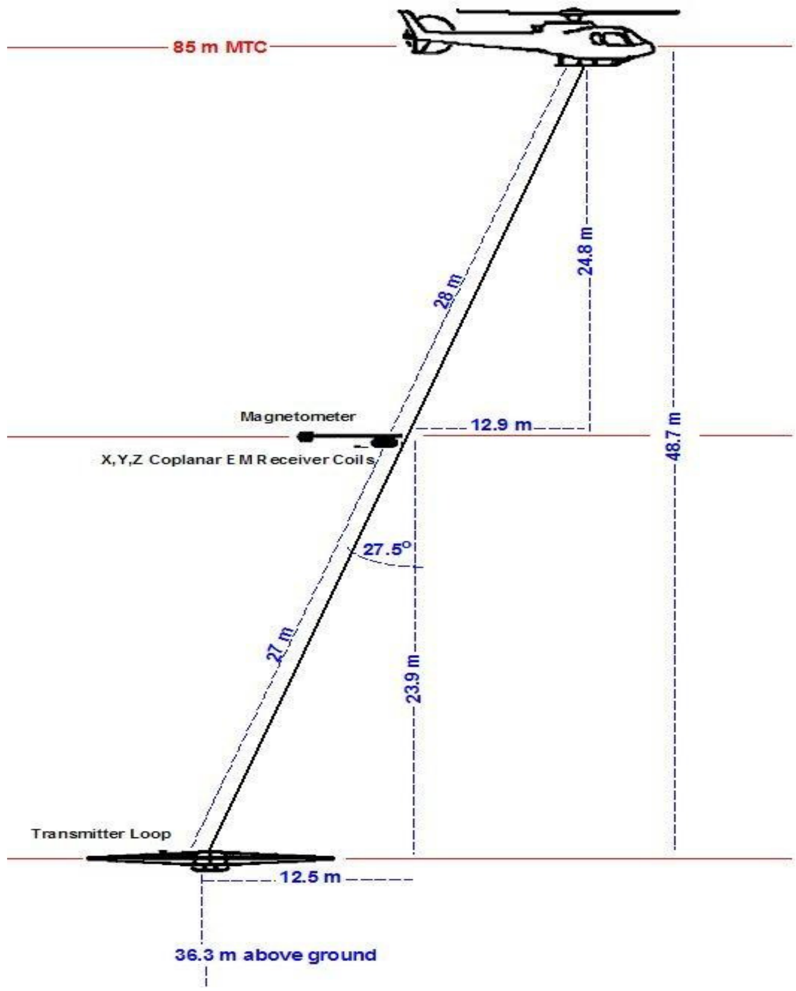
The current in the coil produces an electromagnetic field. Termination of the current flow is not instantaneous, but occurs over a very brief period of time (a few microseconds) known as the ramp time, during which the magnetic field is time-variant. The time-variant nature of the primary electromagnetic field, which propagates downward and outward into the subsurface, induces eddy currents which characteristics are governed by rocks conductivity distribution. These eddy currents generate a secondary electromagnetic field, in accordance with Faraday's Law. This secondary field immediately begins to decay in the process. Measurements of the secondary field are made only during the time-off period by a vertical component receiver located almost half way between the helicopter and the transmitter loop. It is placed with the magnetometer taped to a horizontal boom which supports the receiving coils tear-drop shape vessel at its end. The boom has an elastic suspension. A proprietary suspension system protects the orthogonal coils assembly and limits the total field excursions. The tear-drop vessel acts as a vane and maintains the mast in the line of flight.

Depth of investigation depends on the time interval after shutoff of the current, since at later times the receiver is sensing eddy currents at progressively greater depths. The intensity of the eddy currents at specific times and depths is determined by the bulk conductivity of subsurface rock units and their contained fluids.

Table 2: **Technical specifications of the ProspecTEM Time-Domain system**

Item	Specification
Transmitter:	
Loop Diameter:	5.6 meters
Current Waveform:	Half-Sine
Turns:	2
Pulse Length	2.75 ms
Frequency	30 Hz
Loop Area	25 m^2
Peak Current	3000A
Tow Cable Length	65 meters
Self-Powered	13HP Honda coupled with 28 Volts Alternator
Receiver:	
Coils axis	Z
Configuration	Coaxial (Z)
Two channels	Current and Z
Max Sampling rate	1000 points per half cycle at 90 Hz
Survey sampling rate	1000 per half cycle at 30Hz
Sampling	Full waveform
Gates	Programmable
On time signal	Recorded
Mechanical:	
Maximum survey speed:	120 km per hour
Transmitter height	30 meters AGL
Receiver height	55 meters
Weight (Total)	200 kg

Figure 4: **ProspecTEM system configuration**



Real-Time Differential GPS

Omnistar DGPS

Prospectair uses an OmniStar differential GPS navigation system to provide real-time guidance for the pilot and to position data to an absolute accuracy of better than 5 m. The *Omnistar* receiver provides real-time differential GPS for the Agis on-board navigation system. The differential correction data set was relayed to the helicopter via the appropriate Omnistar network satellite for the survey location. The receiver optimizes the corrections for the current location.

Airborne Navigation and Data Acquisition System

Pico-Envirotec AGIS-XP system

The Airborne Geophysical Information System (AGIS-XP) is advanced, software driven instrument specifically designed for mobile aerial or ground geophysical survey work. The AGIS instrumentation package includes a GPS based navigation system, real-time flight path information that is displayed over a map image of the area, and reliable data acquisition software. Thanks to simple interfacing, the radar and barometric altimeters, the TDEM system and the Geometrics magnetometer are easily integrated into the system and digitally recorded. Automatic synchronization to the GPS position and time provides very close correlation between data and geographical position. The AGIS is equipped with a software suite allowing easy maintenance, upgrades, data QC, and project and survey area layout planning.

Magnetic Base Station

GEM GSM-19

A GEM GSM-19 Overhauser magnetometer, a computer workstation and a complement of spare parts and test equipment serve as the base station. Prospectair establish the base station in a secure location with low magnetic noise. The GSM-19 magnetometer has resolution of 0.01 nT, and 0.2 nT accuracy over its operating range of 20,000- to 100,000 nT. The ground system was recording magnetic data at 1 Hz.

Altimeters

Free Flight Radar Altimeter

The Free Flight radar altimeter measures height above ground to a resolution of 0.5 m and an accuracy of 5% over a range up to 2,500 ft. The radar altimeter data is recorded and sampled at 10 Hz.

Prospectair Digital Barometric Pressure Sensor

The barometric pressure sensor measures static pressure to an accuracy of ± 4 m and resolution of 2 m over a range up to 30,000 ft above sea level. The barometric altimeter data are sampled at 10 Hz.

Survey helicopter

Eurocopter EC120B (registration C-GEDI)

The survey was flown using Prospectair's EC120B helicopter that handles efficiently the equipment load and the required survey range. Table 3 presents the EC120B technical specifications and capacity, and the aircraft is shown in Figure 5.

Table 3: **Technical specifications of the EC120B Eurocopter helicopter**

Item	Specification
Powerplant	One 376kW (504hp) Turbomeca Arrius 2F
Rate of climb	1,150 ft/min
Cruise speed	223 km/h – 120 kts
Service ceiling	17,000 ft
Range with no reserve	710 km
Empty weight	991 kg
Maximum takeoff weight	1,715 kg

Figure 5: **C-GEDI Eurocopter EC120B**

III. SURVEY SPECIFICATIONS

Data Recording

The following parameters were recorded during the course of the survey:

In the helicopter:

- GPS positional data: time, latitude, longitude, altitude, heading and accuracy (PDOP) recorded at intervals of 0.1 s.
- Total magnetic field: recorded at intervals of 0.1 s.
- Terrain clearance as measured by the radar altimeter at intervals of 0.1 s.
- Z and Current TDEM channels at 90000Hz.

At the base and remote magnetic ground stations:

- Total magnetic field: recorded at intervals of 1 s.
- GPS time recorded every 1 s to synchronize with airborne data.

Technical Specifications

The data quality control was performed on a daily basis. The following technical specifications were adhered to:

- *Height* – 85m target terrain clearance for the MAG-TDEM survey except in areas where Transport Canada regulations prevent flying at this height, or as deemed necessary by the pilot to ensure safety. Traverse lines and control lines must be flown at the same altitude at points of intersection; the altitude tolerances are limited to no more than 30 m difference between traverse lines and control lines.
- *Airborne Magnetometer Data* - The noise envelope not to be exceeded 0.5 nT more than 500 m line-length without a reflight.
- *Diurnal Specifications* – A maximum tolerance of 5.0 nT (peak to peak) deviation from a long chord of one minute at the base station.
- *EM data* – No spikes on Z channel and constant current confirmed.
- *Flying Speed* – The average ground speed for the survey aircraft shall be 120 kph. The acceptable high limit is 160 kph over flat topography.
- *Radar Altimeter* – minimal accuracy of 5%, minimum range of 0-2500 m.
- *Barometer* – Absolute air pressure to 0.1 kPa.
- *Flight Path Following* – Maximum deviation of 30% of line spacing allowed over a maximum line distance of 300 m.

IV. SYSTEM TESTS

Magnetometer System Calibration

The survey configuration using a bird towed 25 m below any magnetic piece of the helicopter allows the simplification of the magnetic calibration requirement. Consequently, heading error and aircraft movement noise was considered negligible and no correction was applied to the data.

Instrumentation Lag

The data lag is a combination of two factors: 1) the time difference between when a reading is sensed, and when that value is recorded by the acquisition system, and 2) the time taken for the sensor to arrive at the location of the GPS antenna. The second factor is defined by the physical distance between the GPS antenna and any given sensor, and the speed of the aircraft. The average total magnetic lag value for the AGIS acquisition system has been calculated to 0.46 s for this survey. The TDEM lag has been calculated to 1.28 s.

V. FIELD OPERATIONS

The survey operations were conducted out of the Dryden Airport from April 9 to 16, 2022. The MAG-TDEM data acquisition required 7 flights. At the end of each production day, the data were sent to Dynamic Discovery Geoscience's office via internet. The data were then checked for Quality Control to ensure they fulfilled contractual specifications. The full dataset was inspected prior to provide authorization for the field crew to demobilize. The GEM-19 magnetic base station was set up in a magnetically quiet area close to the airport, at latitude 49.8313845°N, longitude 92.7501006°W. The survey pilots were Mario Asselin and Christophe Chiffre, and the survey system technician was Pascal St-Denis Mercier.

Figure 6: **Example of a magnetic base station setup**

VI. DIGITAL DATA COMPILATION

Data compilation including editing and filtering, quality control, and final data processing was performed by Joël Dubé, P.Eng. Processing was performed on high performance desktop computers optimized for quick daily QC and processing tasks. Geosoft software Oasis Montaj version 2021.2.1 and Matlab R2018a were used.

Magnetometer Data

The airborne magnetometer data, recorded at 10 Hz, were plotted and checked for spikes and noise on a flight basis. An average 0.46 second lag correction was applied to all data to correct for the time delay between detection and recording of the airborne data.

Ground magnetometer data were recorded at 1 sample per second and interpolated by a spline function to 10 Hz to match airborne data. Data were inspected for cultural interference and edited where necessary. Some low-pass filtering was deemed necessary on the ground station magnetometer data to remove minor high frequency noise. The diurnal variations were removed by subtracting the ground magnetometer data to the airborne data and by adding back the average of the ground magnetometer value.

The levelling corrections were applied in several steps. First of all, a correction for altitude was applied by multiplying the First Vertical Derivative of the pre-levelled data by the difference between the actual survey altitude and the average survey altitude. Standard levelling corrections were then performed using intersection statistics from traverse and tie lines. After statistical levelling was considered satisfactory, decorrugation was applied on the data to remove any remaining subtle non-geological features oriented in the direction of the traverse lines.

Once the Total Magnetic Intensity (TMI) was gridded, its First Vertical Derivative (FVD) and Second Vertical Derivative (SVD) were calculated to enhance narrower geological features. Finally, the component of the normal Earth's magnetic field, described by the International Geomagnetic Reference Field (IGRF), has been removed from the TMI to yield the residual TMI. This ensures that the very long wavelength signal within the block is indeed originating from the local geology and not from the Earth's expected regional gradient.

In order to enhance the subtle magnetic features some more, the Tilt Angle Derivative (TILT) was also computed for this project.

It has been shown that it is possible to use the Tilt Angle Derivative to estimate both the location and depth of magnetic sources (Salem et al., 2007).

When two body of different magnetic susceptibility are in contact, the vertical and horizontal gradients along a horizontal line perpendicular to the vertical contact are governed by the following equations:

$\delta M/\delta h=2KFc(z_c/(h^2+z_c^2))$
$\delta M/\delta z=2KFc(h/(h^2+z_c^2))$

where
K = susceptibility contrast
F = magnetic field's strength
c = 1-$\cos^2$(field Inclination)$\sin^2$(field Declination)
h = location along an horizontal axis perpendicular to the contact
z_c = contact depth
$\delta M/\delta h = \text{sqrt}((\delta M/\delta x)^2+(\delta M/\delta y)^2)$

The Tilt Angle (θ) is defined as
$\theta = \tan^{-1}[(\delta M/\delta z)/(\delta M/\delta h]$

By substitution of the gradients we get
$\theta = \tan^{-1}[h/z_c]$

This has two main implications for any given anomaly:

1- The 0° angle line is located directly above the contact between a magnetic source and the surrounding rock. This allows for accurate estimation of source location.
2- The distance between the 0° and the +45° lines as well as the distance between the -45° and the 0° lines are equal to the depth of the source at the contact. This allows for a direct estimation of the depth of the source of the anomaly. The depth estimated with this method is actually the distance between the magnetic sensor and the top of the source. Knowing that the sensor was 61 m above the ground in average enables direct depth estimates.

In practice, the signal originating from multiple sources at different depth within a same area will cause convolution of the Tilt Angle values, and complicate location and depth estimation. Nevertheless, the method remains an excellent tool for rapid assessment of sources characteristics, without the need for complex assumptions to be made or heavy computer requirements, as is the case with 3D Euler deconvolution or 3D data inversions.

Radar Altimeter Data

The terrain clearance measured by the radar altimeter in metres was recorded at 10 Hz. The data were filtered to remove high frequency noise using a 1 sec low pass filter. The final data were plotted and inspected for quality.

Positional Data

Real time DGPS correction provided by Omnistar was applied to the recorded GPS positional data.

Positional data (Lat, long, UTM X, UTM Y, geoid height) were recorded at 10 Hz sampling rate and all data processing was performed in the WGS-84 datum. The delivered data are provided in X, Y locations in UTM projection zone 15 North, with respect to the NAD-83 (CSRS) datum. Altitude data were initially recorded relative to the GRS-80 ellipsoid, but are delivered as orthometric heights (MSL elevation).

Terrain Data

Terrain elevation data (also referred to as digital elevation model, or DEM) are computed from the altitude of the helicopter, given by DGPS recordings, and the radar altimeter data.

TDEM Data

The PicoEnvirotec EM Digital Acquisition System records the vertical component (Z) of the receiver coils at a sampling rate of 90000Hz. There are 30 full cycles (60 half cycles) of the full waveform (Tx ON and OFF time) every second.

The first data manipulation involves a stacking procedure where each half cycle is weighted with respect to the previous cycle (±¼), the next cycle (±¼) and its own value (± ½). The positive and negative signs of the respective multiplication coefficients are used to make positive all negative half cycles. The next step is the half cycle averaging corresponding to the desired sampling rate. In the present case, from the 60 stacked positive half cycles per second, 6 consecutive half cycles are averaged to produce one sample every 0.1 sec.

The windowing settings for the 40 different channels are presented in Table 4. Channels 1 to 11 correspond to the ON-time measurements and channels 12 to 40 correspond to the OFF-time. Channel 12 isn’t used for interpretation and mapping as some ‘ramp-off’ effects remain that alters the data quality. Each window is filtered with a median filter removing spikes and with a finite impulse response (FIR) selective filter of the 251th order improving the signal to noise ratio. An average lag correction of 1.28 sec was applied to the data after being empirically determined by flying a sharp anomaly in two opposite direction.

Table 4: **Setting used in the windowing of the full waveform**

Channel #	Starting time (msec)	Width (msec)	Pulse	Channel #	Starting time (msec)	Width (msec)	Pulse
1	0.16667	0.01667	**ON**	**21**	3.15000	0.53333	**OFF**
2	0.25000	0.01667	**ON**	**22**	3.26667	0.53333	**OFF**
3	0.33333	0.01667	**ON**	**23**	3.40000	0.53333	**OFF**
4	1.30000	0.01667	**ON**	**24**	3.40000	1.10000	**OFF**
5	1.31667	0.01667	**ON**	**25**	3.45000	1.10000	**OFF**
6	1.33333	0.01667	**ON**	**26**	3.65000	1.10000	**OFF**
7	2.58333	0.01667	**ON**	**27**	3.88333	1.10000	**OFF**
8	2.66667	0.01667	**ON**	**28**	4.13333	1.10000	**OFF**
9	2.80000	0.08333	**ON**	**29**	4.43333	1.10000	**OFF**
10	2.81667	0.08333	**ON**	**30**	4.76667	1.10000	**OFF**
11	2.83333	0.08333	**ON**	**31**	5.16667	1.10000	**OFF**
12	2.85000	0.16667	**RAMP**	**32**	5.20000	2.20000	**OFF**
13	2.86667	0.18333	**OFF**	**33**	5.55000	2.20000	**OFF**
14	2.86667	0.25000	**OFF**	**34**	6.13333	2.20000	**OFF**
15	2.86667	0.36667	**OFF**	**35**	6.78333	2.20000	**OFF**
16	2.91667	0.36667	**OFF**	**36**	7.51667	2.20000	**OFF**
17	2.91667	0.53333	**OFF**	**37**	8.36667	2.20000	**OFF**
18	2.95000	0.53333	**OFF**	**38**	9.33333	2.20000	**OFF**
19	3.00000	0.53333	**OFF**	**39**	10.4500	2.20000	**OFF**
20	3.03333	0.53333	**OFF**	**40**	11.7000	2.20000	**OFF**

As for the magnetic data, levelling corrections were applied to the TDEM data using intersection statistics from traverse and tie lines, as well as light decorrugation based on gridded information, in order to remove base line offsets. The levelled TDEM data are delivered in the database.

Gridding

The magnetic, early off-time TDEM (channel 13), mid off-time TDEM (channel 20), and late off-time TDEM (channel 27) data were interpolated onto a regular grid using a bi-directional gridding algorithm to create a two-dimensional grid equally incremented in x and y directions.

The final grids were created with 20 m grid cell size, appropriate for the survey lines spaced at 100 m. Traverse lines were used in the gridding process.

VII. RESULTS AND DISCUSSION

Magnetic data

The Residual Total Magnetic Intensity (TMI) of the Contact Bay block, presented in Figure 7 together with TDEM anomalies, is relatively active and varies over a range of 1,238 nT, with an average of -121 nT and a standard deviation of 187 nT.

The most prominent magnetic features found in the area are two strong magnetic anomalies depicting complex shapes, one being centered over the Nabish Lake and the other located to the north of Burr Lake and crossed by Highway 502 in its center. Although both features are locally variable in strike, the one at Nabish Lake, which depicts stronger amplitudes, is globally trending NW-SE, while the one to the north of Burr Lake is generally oriented NE-SW. These strongly magnetic features are likely related to mafic or ultramafic intrusions. They are best seen on Figure 8 which shows the residual TMI data with a linear color distribution. The rest of the surveyed area is affected by linear magnetic features characteristic of alternating sequences of mafic volcanic rocks with sedimentary or intermediate to felsic volcanic rocks, with possibly some intrusive stocks, sills or dykes locally. In a general sense, areas with lower background values and decreased signal variability are likely to be dominated by sedimentary or felsic intrusive/volcanic rocks. This seems to be mostly the case in the eastern half of the block, as well as to the north of the two strong magnetic anomalies discussed above.

Most magnetic lineaments that seem related to rock units' schistosity are generally trending from E-W to NE-SW. Other families of lineaments striking against these dominant trends, like N-S of NW-SE, usually depict stronger magnetic amplitudes and are thus believed to relate to the mafic or ultramafic intrusions mentioned above or to other discrete and local smaller size intrusive bodies or dykes. Many lineaments appear curved locally, possibly by folding/shearing or at the contact zone with the postulated intrusions, or otherwise indicative of intrusions' internal structures. Curved lineaments are usually attesting that the area underwent deformation events in the past. In general terms, magnetic lineaments are related to rock formations that are enriched in magnetic minerals (magnetite and/or pyrrhotite).

Throughout the block, it is possible to detect structural features offsetting observed magnetic lineaments and causing abrupt interruption or changes of the magnetic response. These features are typically caused by faults, fractures and shear zones. If they are thought to be favorable structures in the exploration context of the Contact Bay project, they should be paid particular attention and should be the object of a comprehensive structural interpretation, which is beyond the scope of this report.

Shorter wavelength anomalies are greatly enhanced on the FVD (Figure 9) and on the TILT (Figure 10) products. Since the FVD attenuates longer wavelength anomalies, and the TILT enhances very weak amplitude anomalies, they are the preferred products for structural interpretation. As well, a joint analysis of these results with the topography data (Figure 11) can help in the interpretation process of geological structures.

Figure 7: **Total magnetic intensity with equal area color distribution and TDEM anomalies**

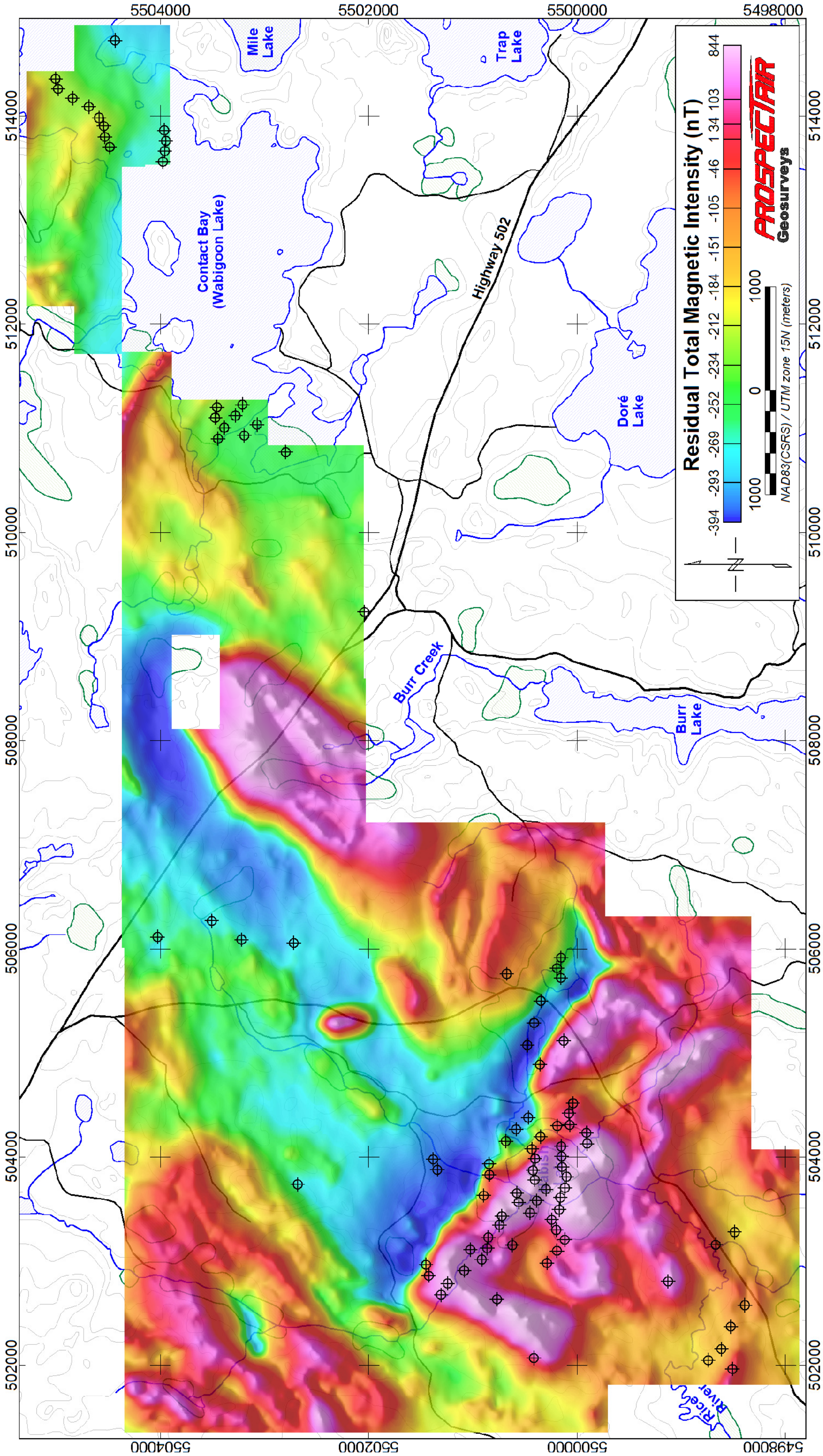


Figure 8: **Total magnetic intensity with linear color distribution and TDEM anomalies**

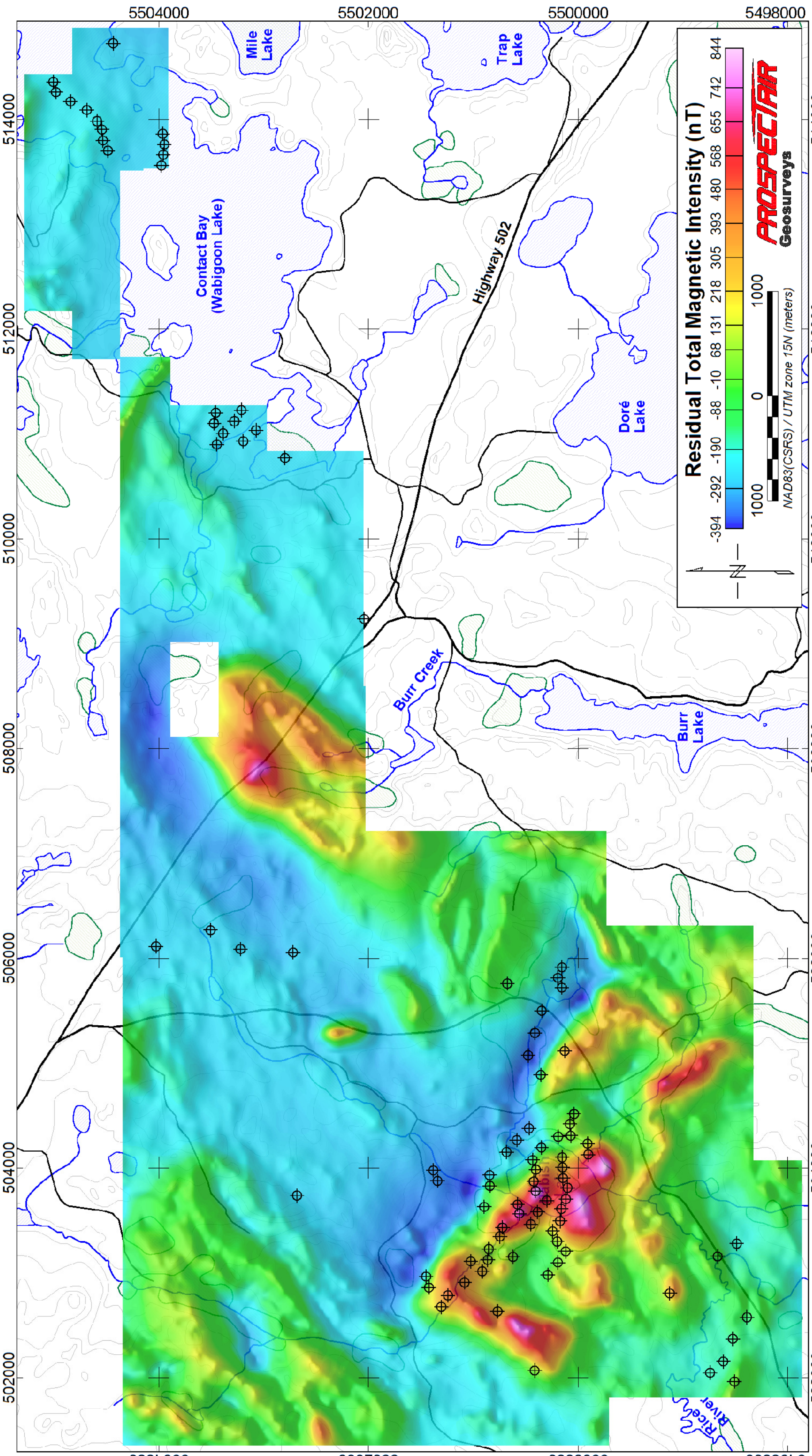


Figure 9: **First vertical derivative of TMI and TDEM anomalies**

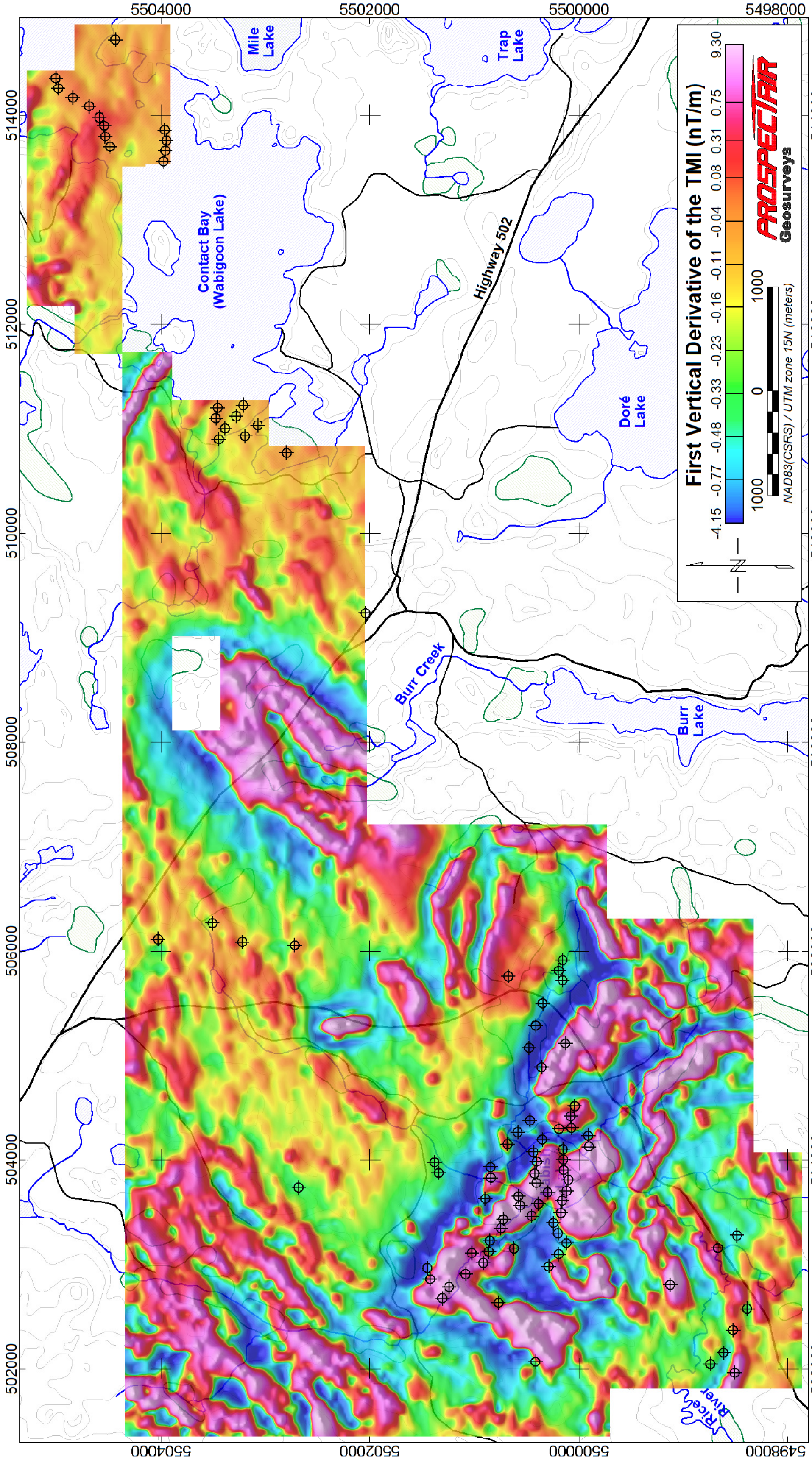


Figure 10: **Magnetic tilt angle derivative and TDEM anomalies**

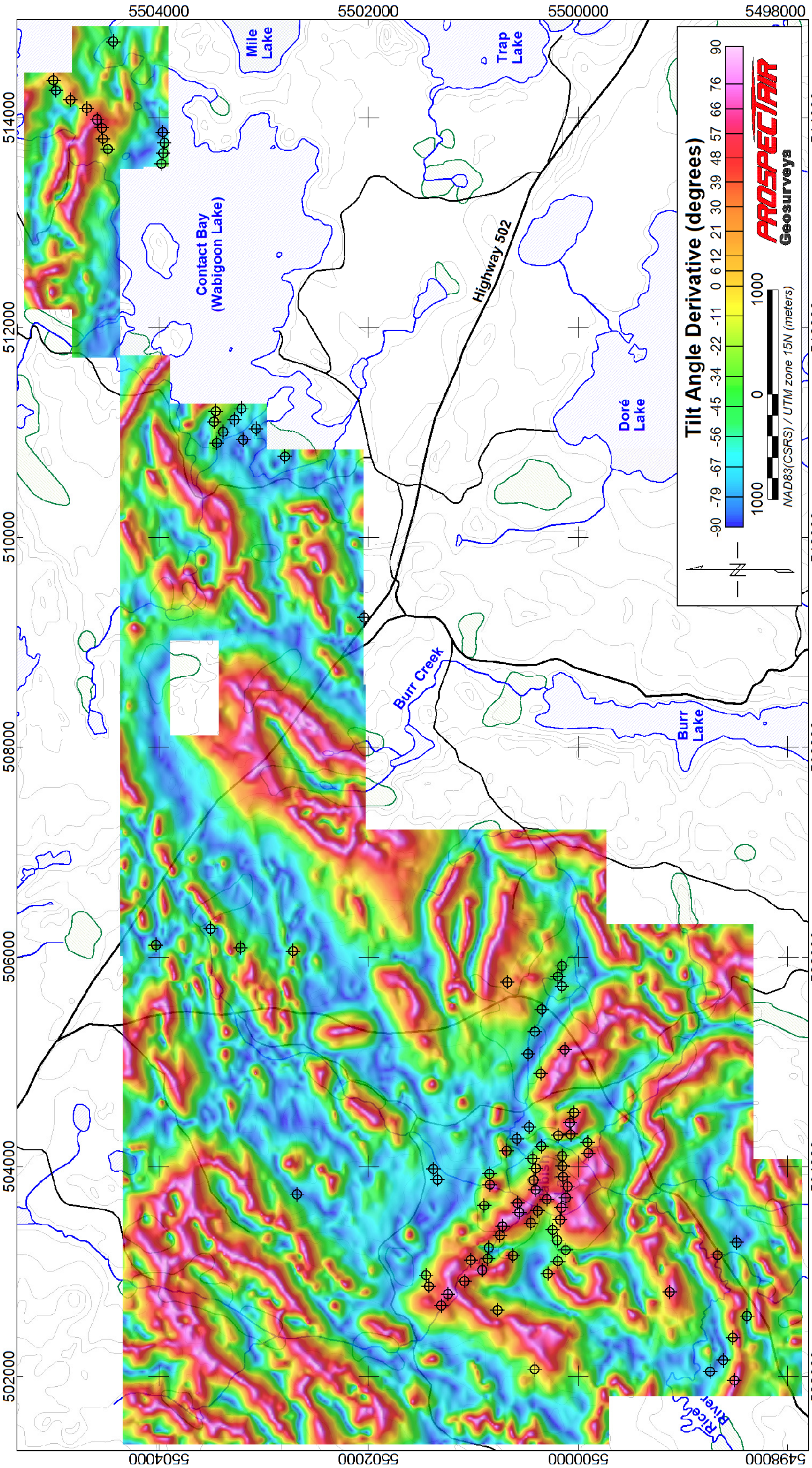
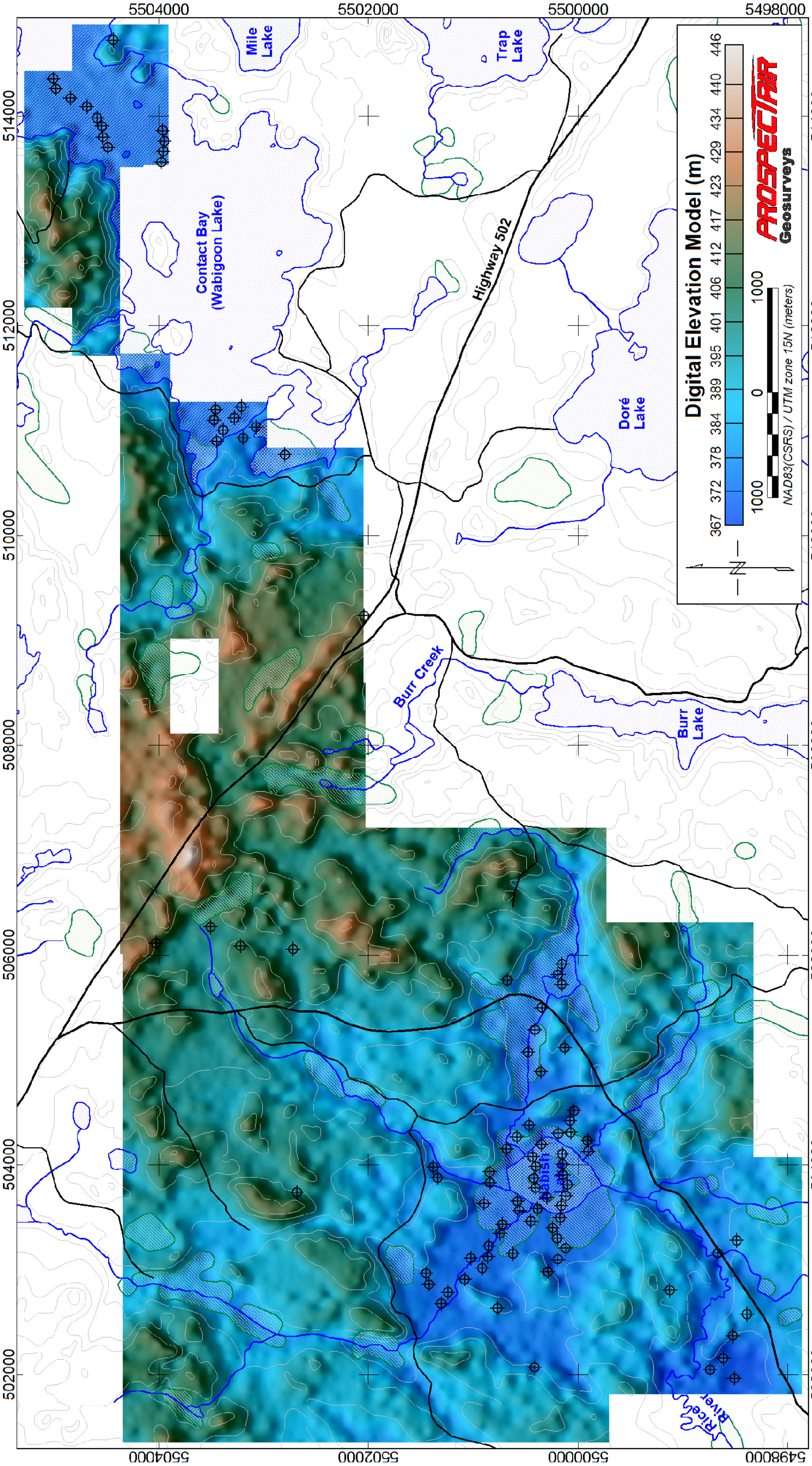


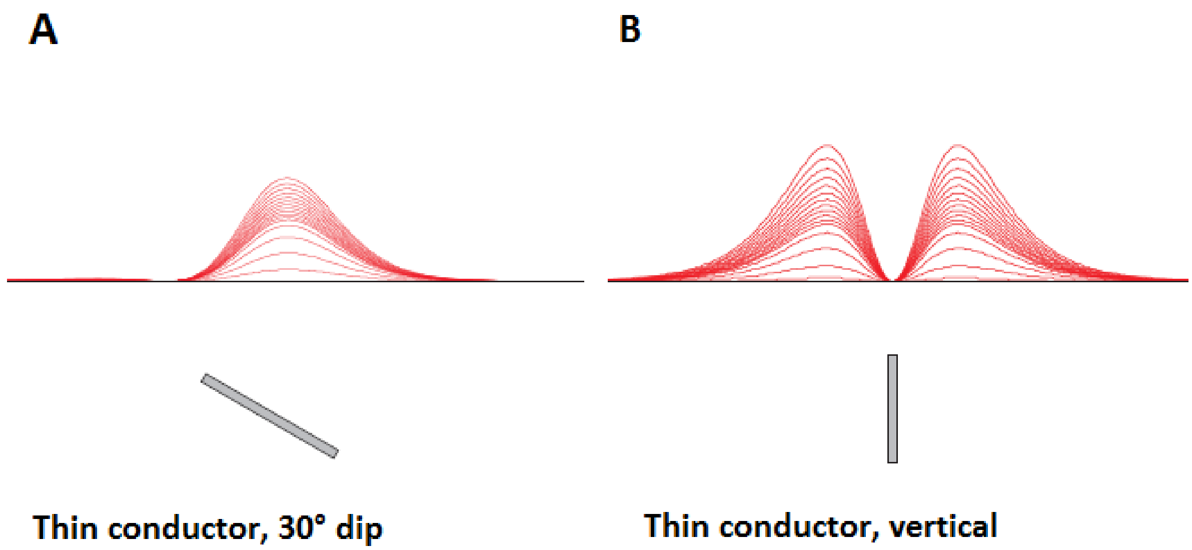
Figure 11: **Digital elevation model and TDEM anomalies**



Time-Domain Electromagnetic data

There is no automatic picking program involved in the interpretation procedures of the ProspecTEM system. Identification of the EM anomalies is made from the EM profiles. Most of the time, the location of anomalies is based on the assumption that the causative source is a somewhat thick or flat lying conductor, which would generate an anomaly mostly centered over the conductor (Figure 12, A). It is important to understand that some other conductive bodies could generate a strong EM response that is offset from the mass centre of the source. For instance, a thin conductor with a steep dip would generate an "M" shape anomaly (Figure 12, B), with the stronger shoulder on the dip side. Therefore, caution must be taken when planning work at the location of an anomaly. It is recommended to combine other available geoscientific information and to review the EM anomaly location before to investigate an anomaly of interest.

Figure 12: **Example of EM response over thin conductors**



The classification of anomalies is based on the calculated time constant (TAU). The EM time constant is a general measure of the speed of decay of the electromagnetic response and reflects the "conductance quality" of a source. The decay rate of the secondary EM field recorded by the TDEM system is a function of the conductivity and geometry of conductors detected. A weak conductor, such as shallow conductive overburden, will show rapid response decay, thus a small value of the time constant. Conversely, a good conductor, such as a graphite or sulphide orebody, will have a response decaying slowly, relating to a large TAU value. The TAU is calculated using proprietary software and is derived from the best exponential least squares fit for channels Z13 to Z27. Calculating TAU for low amplitude anomalies that have their first off-time channel (channel 13) amplitude smaller than 75 nT/s can yield unreliable results given the weak response. As well, in some rare cases, despite stronger response of the first off-time channel, noise in the mid to late channels can cause the TAU estimation to be unreliable. No best fit were tried on these noisy or low signal anomalies and an arbitrary minimal time constant of 0.10 msec was attributed. Moreover, the resulting exponential best fit of the decay curve is extrapolated to the zero delay time, which can be used to compare the amplitude of anomalies.

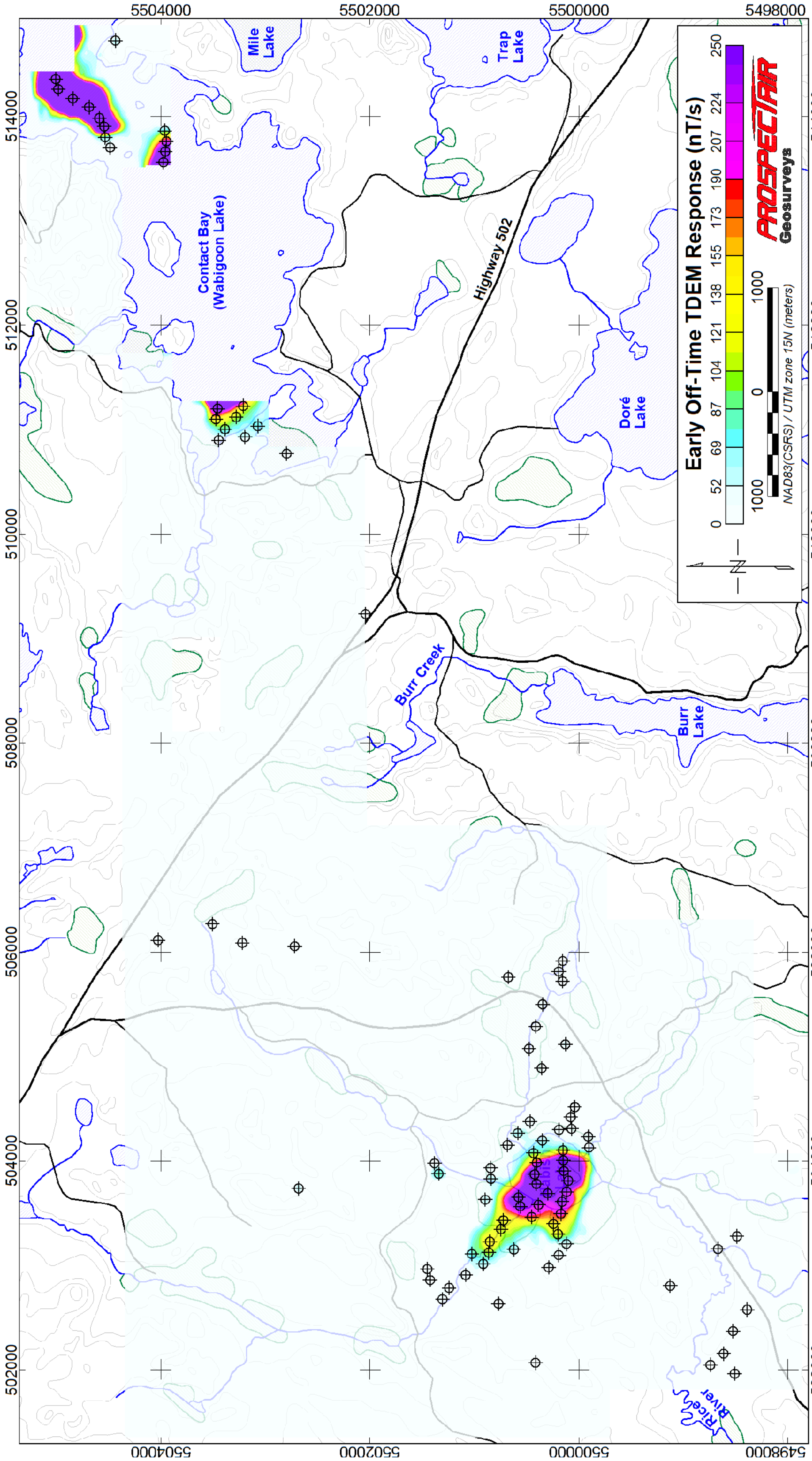
On the Contact Bay block, 95 EM anomalies are identified, classified and listed (Appendix C). All marginal/weak anomalies with TAU lower than 0.25 msec are included in a group represented by an empty circle on the anomaly map. In total, all 95 anomalies are reported in this class of poor conductors. These anomalies are plotted on all the figures of this section, and the symbols used are similar to the legend on the maps. In areas where anomalies are very continuous along flight lines, anomaly symbols have been indicated where the strongest EM signal was obtained. It is recommended to use the early off-time map (Figure 13) to see the actual extents of anomalous areas in these instances of wide conductive zones.

All of the detected anomalies on this survey are of low amplitude, of low TAU values (relating to poor quality conductors) and most are occurring over wide areas. This is typical of conductive overburden, and as a matter of fact the vast majority of identified EM anomalies are occurring in topographic depressions, along water streams and over lakes and wetlands. Four main conductive zones are observed within the block:

- A small one at the southwest tip of the survey block, along Rice River. A few of the outlined poor conductors depict positive correlation to weak magnetic anomalies
- A large one centered over the Nabish Lake and its associated watershed depressions. Many of these conductive anomalies are coincident with strong magnetic anomalies believed to relate to mafic/ultramafic intrusive rocks.
- One occurring at the west end of Contact Bay, typical of bottom lake sediments.
- Two distinct nearby conductive zones located at the east end of the survey block and also typical of bottom lake sediments, being well correlated to a large water channel of Contact Bay. The northernmost conductive lineament displays some association with a marginal magnetic lineament.

Conductive overburden tends to attenuate the response from bedrock conductors possibly located underneath it. There is therefore a possibility for some of the identified anomalies to represent the combined response of poorly conductive overburden and of weakly conductive bedrock conductors made of limited concentrations of sulphides, and this likelihood is considered stronger in cases where a correlation is found between magnetic anomalies and interpreted EM anomalies, since the magnetic signal is almost exclusively controlled by the bedrock geology.

Figure 13: **Early off-time TDEM response and anomalies**



VIII. WORK RECOMMENDATION

The discussion on the geological implication of the survey data is minimal in this report. A more general study including information regarding the local geology and all other geoscience data available in the area would be necessary to extract the full potential of the geophysical data and help to confirm and prioritize exploration targets.

EM anomalies detected by this survey are typical of conductive overburden. However, there is still possibility for some of the defined EM anomalies depicting positive correlation with magnetic anomalies to relate to low concentrations of sulphides in the bedrock. Given the expected occurrence of significant overburden cover in the area, and the poorly conductive nature of the sources detected by this survey, it is recommended to use the ground resistivity/IP technique to investigate these anomalies and possibly help define targets for stripping and/or drilling. The implementation of a geochemical soil sampling program or of a till sampling program could also help further prioritize outlined anomalies.

In addition, given the geological context that may be considered prospective for disseminated, non-conductive, sulphides mineralization, the magnetic data can also be used on its own to guide exploration efforts.

IX. FINAL PRODUCTS

Digital line data

The Geosoft database is provided with the channels detailed in Table 5.

Table 5: **MAG-TDEM line data channels**

No.	Name	Description	Units
1	UTM_X	UTM Easting, NAD-83, Zone 15N	m
2	UTM_Y	UTM Northing, NAD-83, Zone 15N	m
3	Lat_deg	Latitude in decimal degrees (WGS-84)	Deg
4	Long_deg	Longitude in decimal degrees (WGS-84)	Deg
5	GPS_Z	Helicopter altitude (w.r.t. MSL)	m
6	Gtm_sec	Second since midnight GMT	Sec
7	Radar	Ground clearance given by the radar altimeter	m
8	Terrain	Digital Elevation Model calculated from GPS and Radar	m
9	Mag_Raw	Raw magnetic data	nT
10	Mag_Lag	Lagged magnetic data	nT
11	Gnd_mag	Base station magnetic data	nT
12	Mag_Cor	Magnetic data corrected for diurnal variation	nT
13	TMI	Fully levelled Total Magnetic Intensity	nT
14	TMIres	Residual TMI (IGRF removed)	nT
15	OFF_TIME	Amplitude of Off-time channels (13 to 36)	nT/s

Maps

All maps are referred to NAD-83 in the UTM projection Zone 15 North, with coordinates in metres. Maps are at a 1:15,000 scale. They are provided in PDF, PNG, Geotiff and Geosoft MAP formats for the products detailed in Table 6.

Table 6: **Maps delivered**

No.	Name	Description
1	DEM+FlightPath_Claims	Digital Elevation Model with flight path and properties claims
2	TMI	Residual Total Magnetic Intensity
3	FVD	First Vertical Derivative of the TMI
4	TILT	Tilt Angle Derivative of the TMI
5	Early_OffTime	Early_Off-Time TDEM response (Channel 13)
6	TDEM_Profiles+Anomalies	TDEM profiles with anomalies
7	FVD +TDEM_Anomalies	First Vertical Derivative of the TMI with TDEM anomalies

Grids

All grids are referred to NAD-83 in the UTM projection Zone 15 North, with coordinates in metres. Grids are provided in Geosoft GRD format, with a 20 m grid cell size, as well as in the Geotiff format for the products listed in Table 7.

Table 7: **Grids delivered**

No.	Name	Description	Units
1	TERRAIN	Digital Elevation Model measured by helicopter	m
2	TMI	Total Magnetic Intensity	nT
3	FVD	First Vertical Derivative of TMI	nT/m
4	SVD	Second Vertical Derivative of TMI	nT/m^2
5	TMIres	Residual TMI (IGRF removed)	nT
6	TILT	Tilt Angle Derivative of the TMI	Degree
7	Early_Off-Time	Early Off-Time TDEM response (Channel 13)	nT/s
8	Mid_Off-Time	Mid Off-Time TDEM response (Channel 20)	nT/s
9	Late_Off-Time	Late Off-Time TDEM response (Channel 27)	nT/s

Project report

The report is submitted in PDF format. The anomaly table presented in annex is also provided as a separate Excel spreadsheet.

Respectfully submitted,

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Joël Dubé, P.Eng.

June 2, 2022

X. Statement of Qualifications

Joël Dubé
7977 Décarie Drive
Ottawa, ON, Canada, K1C 3K3

Phone: 819.598.8486
E-mail: jdube@ddgeoscience.ca

I, Joël Dubé, P.Eng., do hereby certify that:

1. I am a Professional Engineer specialized in geophysics, President of Dynamic Discovery Geoscience Ltd., registered in Canada.

2. I earned a Bachelor of Engineering in Geological Engineering in 1999 from the École Polytechnique de Montréal.

3. I am an Engineer registered with the Ordre des Ingénieurs du Québec, No. 122937, and a Professional Engineer with Professional Engineers Ontario, No. 100194954 (CofA No. 100219617), with the Association of Professional Engineers and Geoscientists of New Brunswick, No. L5202 (CofA No. F1853), with the Association of Professional Engineers of Nova Scotia, No. 11915 (CofC No. 51099), with Engineers Geoscientists Manitoba, No. 43414. (CofA No. 6897), with Professional Engineers & Geoscientists Newfoundland & Labrador, No. 10012 (PtoP No. N1134) and with the Northwest Territories Association of Professional Engineers & Geoscientists, No. L4447 (PtoP No. P1414).

4. I have practised my profession for 23 years in exploration geophysics.

5. I have not received and do not expect to receive a direct or indirect interest in the properties covered by this report.

Dated this 2nd day of June, 2022

____
Joël Dubé, P.Eng. #100194954

XI. Appendix A – Survey block outline

Contact Bay Block

Easting	Northing
504063	5497865
501801	5497864
501801	5499717
501350	5499717
501348	5504354
511716	5504367
511715	5504830
512166	5504831
512165	5505295
514424	5505300
514425	5504837
514876	5504838
514878	5503906
513521	5503903
513519	5504366
511721	5504362
511722	5503899
511272	5503898
511274	5502971
510823	5502970
510825	5502044
507217	5502038
507220	5499722
506317	5499720
506319	5498331
504063	5498328

XII. Appendix B – Property claims covered by the survey

Tenure number	Holder	l-km within claim
538417	(100) Heritage Mining Ltd.	29.867
538431	(100) Heritage Mining Ltd.	9.193
540603	(100) Heritage Mining Ltd.	27.579
540604	(100) Heritage Mining Ltd.	4.595
540605	(100) Heritage Mining Ltd.	6.895
540606	(100) Heritage Mining Ltd.	2.297
583918	(100) BOUNTY GOLD CORP.	2.296
583919	(100) BOUNTY GOLD CORP.	2.296
583920	(100) BOUNTY GOLD CORP.	2.296
583921	(100) BOUNTY GOLD CORP.	2.296
584455	(100) BOUNTY GOLD CORP.	2.296
584456	(100) BOUNTY GOLD CORP.	2.296
584457	(100) BOUNTY GOLD CORP.	2.296
584458	(100) BOUNTY GOLD CORP.	2.296
584459	(100) BOUNTY GOLD CORP.	2.296
584460	(100) BOUNTY GOLD CORP.	2.296
584461	(100) BOUNTY GOLD CORP.	2.296
548010	(100) Heritage Mining Ltd.	2.298
548011	(100) Heritage Mining Ltd.	18.375
548016	(100) Heritage Mining Ltd.	2.296
548017	(100) Heritage Mining Ltd.	2.296
548018	(100) Heritage Mining Ltd.	2.296
584294	(100) Heritage Mining Ltd.	2.296
585529	(100) Heritage Mining Ltd.	4.595
556872	(100) Heritage Mining Ltd.	16.088
557428	(100) Heritage Mining Ltd.	22.994
557452	(100) Heritage Mining Ltd.	25.281
561668	(100) Heritage Mining Ltd.	2.298
561669	(100) Heritage Mining Ltd.	2.298
561716	(100) Heritage Mining Ltd.	32.176
535252	(100) TRANSITION METALS CORP.	2.298
535253	(100) TRANSITION METALS CORP.	2.297
535254	(100) TRANSITION METALS CORP.	2.297
535255	(100) TRANSITION METALS CORP.	2.298
535256	(100) TRANSITION METALS CORP.	2.298
535257	(100) TRANSITION METALS CORP.	2.297
535258	(100) TRANSITION METALS CORP.	2.297
535259	(100) TRANSITION METALS CORP.	2.298
535260	(100) TRANSITION METALS CORP.	2.297
535261	(100) TRANSITION METALS CORP.	2.298
535262	(100) TRANSITION METALS CORP.	2.297
535263	(100) TRANSITION METALS CORP.	2.298
683092	(100) Heritage Mining Ltd.	2.296
683093	(100) Heritage Mining Ltd.	2.296
683094	(100) Heritage Mining Ltd.	2.296
683095	(100) Heritage Mining Ltd.	2.296
683096	(100) Heritage Mining Ltd.	2.296

Tenure number	Holder	l-km within claim
683097	(100) Heritage Mining Ltd.	2.296
683098	(100) Heritage Mining Ltd.	2.296
683099	(100) Heritage Mining Ltd.	2.296
683100	(100) Heritage Mining Ltd.	2.296
683101	(100) Heritage Mining Ltd.	2.297
683102	(100) Heritage Mining Ltd.	2.296
683103	(100) Heritage Mining Ltd.	2.297
683104	(100) Heritage Mining Ltd.	2.297
683105	(100) Heritage Mining Ltd.	2.297
683106	(100) Heritage Mining Ltd.	2.297
683107	(100) Heritage Mining Ltd.	2.297
683108	(100) Heritage Mining Ltd.	2.297
683109	(100) Heritage Mining Ltd.	2.297
683110	(100) Heritage Mining Ltd.	2.296
683111	(100) Heritage Mining Ltd.	2.296
683112	(100) Heritage Mining Ltd.	2.296
683113	(100) Heritage Mining Ltd.	2.296
683114	(100) Heritage Mining Ltd.	2.296
683137	(100) Heritage Mining Ltd.	2.297
683138	(100) Heritage Mining Ltd.	2.296
683139	(100) Heritage Mining Ltd.	2.296
683140	(100) Heritage Mining Ltd.	2.296
683141	(100) Heritage Mining Ltd.	2.297
683142	(100) Heritage Mining Ltd.	2.296
683143	(100) Heritage Mining Ltd.	2.297
683144	(100) Heritage Mining Ltd.	2.297
683145	(100) Heritage Mining Ltd.	2.297
683146	(100) Heritage Mining Ltd.	2.296
683147	(100) Heritage Mining Ltd.	2.297
683148	(100) Heritage Mining Ltd.	2.297
683149	(100) Heritage Mining Ltd.	2.297
683150	(100) Heritage Mining Ltd.	2.296
683151	(100) Heritage Mining Ltd.	2.296
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683154	(100) Heritage Mining Ltd.	2.297
683155	(100) Heritage Mining Ltd.	2.296
683156	(100) Heritage Mining Ltd.	2.297
683157	(100) Heritage Mining Ltd.	2.297
683158	(100) Heritage Mining Ltd.	2.297
683159	(100) Heritage Mining Ltd.	2.297
683160	(100) Heritage Mining Ltd.	2.297
683161	(100) Heritage Mining Ltd.	2.297
683162	(100) Heritage Mining Ltd.	2.297
683163	(100) Heritage Mining Ltd.	2.297
683164	(100) Heritage Mining Ltd.	2.297
683165	(100) Heritage Mining Ltd.	2.297
683166	(100) Heritage Mining Ltd.	2.297
683167	(100) Heritage Mining Ltd.	2.297
683168	(100) Heritage Mining Ltd.	2.297
683169	(100) Heritage Mining Ltd.	2.297

Tenure number	Holder	l-km within claim
683170	(100) Heritage Mining Ltd.	2.297
686163	(100) Heritage Mining Ltd.	2.296
686164	(100) Heritage Mining Ltd.	2.296
686165	(100) Heritage Mining Ltd.	2.296
686166	(100) Heritage Mining Ltd.	2.296
686167	(100) Heritage Mining Ltd.	2.296
686168	(100) Heritage Mining Ltd.	2.296
686169	(100) Heritage Mining Ltd.	2.297
686170	(100) Heritage Mining Ltd.	2.296
686171	(100) Heritage Mining Ltd.	2.296
686172	(100) Heritage Mining Ltd.	2.297
686173	(100) Heritage Mining Ltd.	2.296
686174	(100) Heritage Mining Ltd.	2.297
686175	(100) Heritage Mining Ltd.	2.297
686176	(100) Heritage Mining Ltd.	2.297
686177	(100) Heritage Mining Ltd.	2.296
686178	(100) Heritage Mining Ltd.	2.297
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686180	(100) Heritage Mining Ltd.	2.296
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686182	(100) Heritage Mining Ltd.	2.297
686183	(100) Heritage Mining Ltd.	2.297
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686193	(100) Heritage Mining Ltd.	2.297
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686202	(100) Heritage Mining Ltd.	2.297
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686204	(100) Heritage Mining Ltd.	2.297
686205	(100) Heritage Mining Ltd.	2.297
686206	(100) Heritage Mining Ltd.	2.297
686207	(100) Heritage Mining Ltd.	2.297
686208	(100) Heritage Mining Ltd.	2.297
686209	(100) Heritage Mining Ltd.	2.297
686210	(100) Heritage Mining Ltd.	2.297

XIII. Appendix C – Contact Bay block TDEM anomaly table

Line	UTM_X (m)	UTM_Y (m)	ID	Time Constant (msec)	Amplitude at zero delay (nT/s)
60	501958	5498511	60.01	0.10	0
70	502043	5498743	70.01	0.10	0
80	502151	5498618	80.01	0.10	0
90	502063	5500418	90.01	0.10	0
100	502368	5498528	100.01	0.10	0
121	502572	5498392	121.01	0.10	0
151	502800	5499129	151.01	0.10	0
151	502628	5500771	151.02	0.10	0
160	502671	5501308	160.01	0.10	0
170	502781	5501244	170.01	0.10	0
180	503155	5498672	180.01	0.10	0
180	502977	5500291	180.02	0.10	0
180	502905	5501086	180.03	0.10	0
180	502856	5501426	180.04	0.10	0
190	503276	5498490	190.01	0.10	0
190	503096	5500196	190.02	0.10	0
190	503011	5500917	190.03	0.10	0
190	502962	5501453	190.04	0.10	0
201	503203	5500121	201.01	0.10	0
201	503151	5500624	201.02	0.10	0
201	503122	5500865	201.03	0.21	330
201	503106	5501027	201.04	0.22	234
211	503296	5500203	211.01	0.17	506
211	503225	5500854	211.02	0.15	724
220	503392	5500247	220.01	0.21	479
220	503343	5500748	220.02	0.13	795
230	503490	5500174	230.01	0.16	989
230	503458	5500454	230.02	0.18	729
230	503428	5500725	230.03	0.13	941
240	503606	5500163	240.01	0.16	1151
240	503576	5500389	240.02	0.17	1023
240	503561	5500563	240.03	0.14	1614
250	503701	5500120	250.01	0.16	1078
250	503686	5500301	250.02	0.16	1369
250	503649	5500580	250.03	0.13	2181
250	503626	5500899	250.04	0.10	0
260	503808	5500104	260.01	0.14	2436
260	503777	5500409	260.02	0.15	1826
270	503901	5500147	270.01	0.13	3149
270	503869	5500426	270.02	0.15	1809
270	503826	5500844	270.03	0.10	0
280	504003	5500152	280.01	0.13	2233
280	503981	5500405	280.02	0.15	1089
280	503931	5500848	280.03	0.10	0
280	503874	5501344	280.04	0.19	317
280	503734	5502684	280.05	0.10	0
290	504123	5499906	290.01	0.10	0
290	504097	5500155	290.02	0.22	379
290	504073	5500437	290.03	0.19	333
290	503976	5501383	290.04	0.10	0
300	504228	5499913	300.01	0.10	0
300	504191	5500353	300.02	0.10	0
300	504147	5500686	300.03	0.10	0
310	504304	5500074	310.01	0.10	0

310	504295	5500193	310.02	0.10	0
310	504261	5500587	310.03	0.10	0
320	504415	5500081	320.01	0.10	0
320	504375	5500471	320.02	0.10	0
330	504513	5500042	330.01	0.10	0
370	504883	5500359	370.01	0.10	0
390	505113	5500131	390.01	0.10	0
390	505070	5500479	390.02	0.10	0
410	505285	5500415	410.01	0.10	0
430	505494	5500350	430.01	0.10	0
450	505716	5500158	450.01	0.10	0
460	505811	5500196	460.01	0.10	0
460	505756	5500678	460.02	0.10	0
470	505911	5500157	470.01	0.10	0
510	506054	5502722	510.01	0.10	0
520	506086	5503223	520.01	0.10	0
530	506112	5504029	530.01	0.10	0
540	506263	5503509	540.01	0.10	0
820	509232	5502044	820.01	0.10	0
980	510767	5502799	980.01	0.10	0
1000	510928	5503197	1000.01	0.10	0
1000	510897	5503449	1000.02	0.10	0
1010	511032	5503075	1010.01	0.10	0
1010	511002	5503389	1010.02	0.16	378
1020	511118	5503281	1020.01	0.19	384
1020	511098	5503476	1020.02	0.10	1595
1030	511222	5503215	1030.01	0.15	769
1030	511198	5503459	1030.02	0.13	2071
1270	513557	5503978	1270.01	0.14	2538
1280	513660	5503960	1280.01	0.12	2698
1290	513758	5503949	1290.01	0.12	1628
1290	513698	5504488	1290.02	0.10	0
1300	513860	5503965	1300.01	0.16	391
1300	513796	5504536	1300.02	0.10	0
1310	513900	5504544	1310.01	0.12	3687
1320	513979	5504591	1320.01	0.14	3033
1330	514084	5504689	1330.01	0.14	5241
1340	514166	5504845	1340.01	0.16	4184
1350	514256	5504984	1350.01	0.16	4615
1360	514353	5505008	1360.01	0.15	3833
1391	514722	5504437	1391.01	0.10	0