

PRELIMINARY REPORT N 1/2 LA RONDE TOWNSHIP,
ABITIBI-EST

Ministère des Richesses Naturelles, Québec

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INTRODUCTION

The north 1/2 of La Ronde Township is bounded by latitudes $49^{\circ} 30'$ and $49^{\circ} 35'$ and longitudes $75^{\circ} 30'$ and $75^{\circ} 45'$. It comprises a 50 square mile area in the Abitibi-Est electoral district, about 50 miles SW of Chibougamau.

The area was previously mapped by Shaw in 1937 at a scale of 1 inch to 1 mile (G.S.C. map 555a).

The area is best reached by automobile along the Chibougamau-Senneterre Highway to mile post 124.3 and turning off to Kruger Pulp and Paper Company's Lac Relique Camp. Extensive lumbering in the northern 1/4 of La Ronde Township enables easy access to this portion of the map-area. The lakes and rivers in the area give access to the other portions by canoe.

GENERAL GEOLOGY

All consolidated rocks in the north 1/2 of La Ronde Township are Precambrian in age. They have for the most part been regionally metamorphosed to the Greenschist Facies. Seven major rock types have been identified. Meta-basalts, volcanoclastics, and tuffs are the oldest rocks exposed. These meta-volcanics have been intruded by the Opawica River Complex, a layered intrusion, similar to the Dore Lake Complex in Chibougamau and the Bell River Complex in Mattagami. The Opawica River Complex has been subdivided into two main units: a lower Anorthosite Zone and an upper Gabbro and Ferropyroxenite Zone. The Opawica River Complex was intruded by a biotite trondhjemite to tonalite (Opawica River Pluton). A porphyritic hornblende granite intrudes the volcanics and the Opawica River Complex in the northeast. Two other granitic plutons are

exposed in the southwest portion of the area. However, their relationship to the other rocks is obscured by Pleistocene gravels and sands.

PLEISTOCENE and RECENT		Boulders, gravel, sand silt and clay
PRECAMBRIAN	Acidic Intrusive Rocks	Biotite Granite Hornblende Granodiorite Porphyritic Hornblende Granite Foliated Biotite Tronhjemite
	Basic Intrusive Rocks	Opawica River Complex
	Keewatin Type Rocks	Volcaniclastics, tuffs and meta-basalts

The meta-basalts outcrop in a limited area in the northern portion of La Ronde Township. They consist mainly of pillowed basalts occasionally exhibiting scoriaceous flow tops. Massive basalts have also been observed. These basalts have been intruded by the Opawica River Complex, Opawica River Pluton and the La Ronde Lake Pluton.

The meta-basalts are green on the fresh surface and greyish green on the weathered surface. They consist of plagioclase, actinolite, and chlorite.

VOLCANICLASTICS AND TUFTS

The volcaniclastics and tufts outcrop in the southcentral portion of the study area. These rocks are well bedded and generally crenulated and vary in composition from felsic to mafic. The felsic beds are pale greyish green to buff in color whereas the mafic beds are green.

OPAWICA RIVER COMPLEX

The Opawica River Complex is a layered complex similar to the Dore Lake Complex in Chibougamau and the Bell River Complex in Mattagami. The Opawica River Complex can be divided into two zones: a basal zone made up of gabbroic anorthosite and an upper zone consisting of gabbro and ferroproxenite.

Anorthosite Zone: The Anorthosite Zone is the basal portion of the Opawica River Complex and underlies the northern portion of the study area. The major rock type of the Anorthosite Zone is gabbroic anorthosite with minor amounts of interlayered gabbro. The gabbroic anorthosite consists of 75-90 % plagioclase and 10-25 percent amphibole and chlorite. The plagioclase consists of rounded to ellipsoidal grains varying in size from 2 centimeters to 20 centimeters in diameter that form cumulus grains. Fresh plagioclase has a grey color whereas the altered plagioclase is milky white. The amphibole and chlorite form intercumulus grains that are generally much smaller than the plagioclase. However, large blastopikilitic amphiboles occur locally. The amphibole and chlorite

replace original pyroxene.

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Gabbro and Ferroproxenite: The gabbro is a medium grained greenish black to pale green rock depending on the amount of plagioclase present. The plagioclase forms cumulus grains generally not more than 1 centimeter in length. Amphibole, chlorite, and magnetite form intercumulus grains. The ferroproxenite is a fine-grained greenish black rock that generally forms low rounded outcrops. The ferroproxenite is distinguished from the meta-basalts ~~from~~^{by} the lack of volcanic features and abundance of fine disseminated magnetite.

OPAWICA RIVER PLUTON

The Opawica River Pluton is a foliated biotite trondhjemite to tonalite. The foliation is defined by the alignment of biotite and muscovite. The rock is grey in color and consists of quartz, biotite, muscovite and zoned plagioclase. Chlorite is common locally due to the alteration of biotite.

LA RONDE LAKE PLUTON

The La Ronde Lake Pluton is a zoned granitic stock. Three distinct zones can be mapped in La Ronde Township. The outermost zone is a medium-grained pink syenite consisting of perthite, plagioclase, and hornblende. A zone of pink hornblende granite consisting of perthite, plagioclase, quartz, and hornblende is the next rock type. The core of the intrusion is a pink porphyritic hornblende granite. The rock consists of 2 centimeter long perthite phenocrysts in a medium grained groundmass of quartz, plagioclase, and hornblende.

BIOTITE GRANITE

A grey biotite granite outcrops in a small area in the westcentral part of the area. Its age relationship to the other rocks is obscured by Pleistocene sands and gravels. The rock consists of biotite, quartz, and biotite.

HORNBLLENDE GRANODIORITE

A speckled hornblende granodiorite is exposed in the south central portion of the study area. The rock consists of hornblende, quartz, plagioclase and

minor biotite. Its age relationship is also obscured by Pliocene sands and gravels

STRUCTURAL GEOLOGY

The pillow basalts in the northern part of the map-area strike almost E-W and dip steeply to the north. The volcanoclastics in the southern part of the area strike N60W and dip steeply to the south. Graded bedding in these rocks indicate tops to the south. The Opawica River Complex is generally massive. Locally a primary igneous layering is developed. The Opawica River Pluton is well foliated with the foliation trending N70W. The foliation is defined by biotite and muscovite.

These rocks have been folded to form an east-west trending anticline. The Opawica River Pluton defines the axial zone of the anticline. Two faults with left lateral movement striking N20E to N30E cut across the eastern portion of the study area.

ECONOMIC GEOLOGY

No evidence of mineralization has been observed within the study area. However, similarities in the geology of La Ronde Township and the Chibougamau and Mattagami areas should not be overlooked. In the Chibougamau and Mattagami camps mineralization is associated with layered intrusions and associated volcanic rocks. These layered intrusions (The Dore Lake Complex in Chibougamau and the Bell River Complex in Mattagami) could indicate centers of volcanism. The mineralization in the Chibougamau-Chapais region is associated with mafic sills. The one exception is the new Patino copper-zinc deposit in Lemoine Township which is associated with end of the cycle acid volcanics and is probably a stratiform volcanogenic deposit. The mineralization in the Mattagami area is associated with end of the cycle acid volcanics and thought to be the stratiform type volcanogenic deposits. The La Ronde Township area is similar to the Chibougamau and Mattagami areas in that a layered intrusion, the Opawica River Complex, is associated with large volumes of volcanic rocks. These volcanic rocks are exposed in La Roncière Township to the north, Guercheville Township to the east and to the west in Gand and

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Lesperance Townships. If there is a link between layered intrusions and mineralization, then exploration in the previously mentioned townships might prove profitable. in the search for stratiform volcanogenic deposits associated with end of the cycle acid volcanics. Within the Opawica River Complex, as in the Dore Lake Complex in Chibougamau, mineralized shear zones could be expected but we have observed no traces of intense alteration or mineralization within the complex. One must remember that a large portion of the map-area is drift and lake covered and the proportion of observed outcrops is very small.

REFERENCES

- Shaw G., 1937, Geological Map of the Lewis Lake area (scale 1:63,360). Geological Survey of Canada, Map 555A.