

RP 275(A)

PRELIMINARY REPORT ON DALEMBERT RIVER - DUFRESNOY LAKE AREA, DUPARQUET AND DESTOR TOWNSHIPS, ABITIBI-EAST COUNTIES

Documents complémentaires

Additional Files



Licence



License

Cette première page a été ajoutée
au document et ne fait pas partie du
rapport tel que soumis par les auteurs.

Énergie et Ressources
naturelles

Québec 

PROVINCE OF QUEBEC, CANADA
DEPARTMENT OF MINES
MINERAL DEPOSITS BRANCH

PRELIMINARY REPORT

ON

DALEMBERT RIVER - DUFRESNOY LAKE AREA

DUPARQUET AND DESTOR TOWNSHIPS

ABITIBI-WEST COUNTY

BY

R. L. L'ESPÉRANCE



QUEBEC
1952

P. R. No. 275

PRELIMINARY REPORT

ON

DALEMBERT RIVER - DUFRESNOY LAKE AREA

Duparquet and Destor Townships

Abitibi-West County

by

R.L. L'Espérance

I N T R O D U C T I O N

The geology of the Dalembert River-Dufresnoy Lake area was mapped by the writer during the 1950 field season. The mapping was done on a scale of 1 inch equals 1,000 feet. A set of aerial photographs of the area, on the same scale, was a valuable aid. In Destor township original survey lines were used for ground control. In the southeast part of Duparquet township, which is unsurveyed, east-west base lines were run at approximately 1, 2 and 3 miles north of the south boundary of the township.

Location and Accessibility

The area mapped includes the east half of ranges I to IV, Duparquet township and the west half of ranges I to III, Destor township. The geology is shown on Preliminary map No. 886, which accompanies this report.

The southeast corner of Duparquet township can be reached from a road which runs west off the Macamic road. The northern part of the area in Duparquet township is accessible from a water route extending from Destor lake to Dugros lake in the northwest corner of the area. This route includes portages with a total length of 3,000 feet. The southwestern part of the area is best reached from Duparquet lake by way of the Dalembert river. All parts of Destor township included in the map are easily accessible by automobile roads and the abandoned Beattie railway.

Most of the Dalembert River-Dufresnoy Lake area is covered by a thick mantle of clay and drift cut by gullies to depths of 30 feet or more. Some swampy tracts occur in the centre of the area.

GENERAL GEOLOGY

All the consolidated rock in the area up to, and probably including, the later diabase dikes, is of Precambrian age. The oldest rocks are graywacke, overlain conformably by a volcanic sequence of trachyte and pyroclastic rocks, with minor dacite, andesite and rhyolite. These are intruded by minor dikes and sills considered to be genetically related to the volcanic rocks.

Scattered bodies of diorite, with some gabbro, forming thick sills, intrude the volcanic rocks. The northern part of the area is crossed by a major break known as the Porcupine Deseor fault. Prior to the major faulting all the rocks have been involved in close folding along axes generally bearing south of east. Bodies of quartz-feldspar porphyry, partly later than the faulting movements, are intruded along zones of dislocation. They are in turn displaced by minor faults trending northwest and northeast.

The stratigraphical and structural history deduced from the rocks in the area is summarized in the following table:

Table of Formations

Pleistocene	Post-Glacial Glacial	Loam, stream and swamp deposits, sand Lacustrine clay, gravel, drift, till
Great unconformity		
Proterozoic(?)		Diabase and gabbro dikes
Archaean	Unconformity? minor faulting, mineralization	
	Post Keewatin-type	Quartz porphyry, feldspar porphyry and quartz-feldspar porphyry
		Intrusive contact major faulting and folding
		Diorite, quartz diorite, gabbro, (Pos- sibly post folding) porphyritic diorite and amphibolite (age uncertain)
	Intrusive contact	
Abitibi Series	Rhyolite, trachyte, dacite, andesite, tuff, agglomerate, related chlorite and sericite schists, and minor re- lated intrusives	
Keewatin-type	Graywacke, with a little argillite (Clericy sediments)	

Abitibi Series

Clericy Sediments

Sedimentary rocks consisting mostly of graywacke, with interbanded thin beds of argillite, outcrop only in two places in the area. The easterly exposure, on lot 30, range III, Destor township, just north of the road, is fairly well sheared. Due to the disturbance, and the irregular nature of the sediments, grain gradation is unreliable, and cross bedding is not well preserved. One top determination from cross bedding suggests that the sediments face north, in the same direction as the pillow lava in the outcrop on lot 27, range III. On lot 26, range west of Macamic road, however, they face south and underlie the volcanic rocks.

Keewatin-type Volcanic Rocks

The volcanic sequence consists principally of trachytic flows and a partly bedded agglomerate in about equal amounts, with subordinate andesite, dacite, rhyolite with their related feeder dikes and sills, and minor beds of Clericy sediments. Structural relations, though not entirely clear, suggest that the sediments underlie interbedded Keewatin-type lavas and pyroclastic rocks. As all these rocks appear to form a conformable sequence, they form part of the Abitibi series recently defined by Wilson (1) (pp. 124-25 and 134-36).

Rhyolite.- A band of rhyolite outcrops on the north side of Dufresnoy lake. It is 4,000 feet wide east of Dufresnoy lake; it tapers westward and disappears in lot 19, range west of Macamic road. Other smaller outcrops of rhyolite, with east-west elongation, form a chain across the southern part of the area.

The rhyolite is a light-weathering rock which breaks with a conchoidal to flaky fracture having a greasy appearance. Flow brecciated, massive, and porphyritic rhyolite occur in about equal amounts.

A body of uniformly porphyritic, yellowish-weathering sericitic rhyolite, containing phenocrysts of quartz up to 1/8 inch in diameter, outcrops at the west end of Dufresnoy lake. It has a width of 1,000 feet and a length of 4,000 feet along the strike. The absence of flow lines or breccia suggests that this rhyolite may be intrusive. However, a body of white-weathering porphyritic rhyolite with a dark grey greasy interior showing pinheads of quartz, which outcrops east of Dufresnoy lake, contains occasional amygdules, numerous discontinuous broken flow lines and round cherty fragments, all of which are characteristic of effusive rhyolite. It is possible, therefore, that the uniform, coarsely porphyritic rhyolite may also be a flow rock.

Sheared, flow brecciated rhyolite, weathering a dirty green, outcrops near fold axes in the southeast corner of the area. The interior shows porphyritic black glassy rhyolite in a dark green vitreous matrix. Massive, intensely sheared rhyolite along the shore of Dufresnoy lake in lot 24, range I, Destor township, is flaky and sericitic and contains coarse cubes of pyrite.

Trachyte and Dacite.- Trachytic rocks predominate among the effusive rocks. They form a board easterly trending band flanking the pyroclastic rocks on the north.

The trachyte commonly weathers white to pale buff. The fracture is subconchoidal and the fresh surface appears greasy in places. Rarely it is bluish grey or sea green and waxy.

The grain is so fine that no minerals can be discerned on the grey, flaky interior. Porphyritic trachyte is rare. Many of the flows are pillowed; the interiors of the pillows are marked by hairy, radial and concentric quartz-filled cracks. A characteristic band consists mostly of medium-sized pillows with rusty brown rims and extremely vesicular interiors, which on the broken surface are sea green and vitreous. Alteration of the interiors has given rise to a core-studded with white amygdules of quartz that weather emerald green, and fades to white toward the pillow rim.

Some of the grey trachytic rocks northeast of Destor lake appear to contain some quartz and should properly be classed as dacite. As they do not form continuous bands they are included with the trachyte on the accompanying map. More normal dacite, which weathers like andesite, but has a very pale green interior, outcrops in the swamps south of Dugros lake and Dugros river.

Andesite.- Andesitic rocks make up less than one third of the outcrops of volcanic rock. The broadest band, consisting of vertically dipping lava, lies northeast of Dufresnoy lake. Other bands occur in Duparquet township, along the north and south margins of the map. The andesite weathers greenish to reddish brown. The broken surface is granular where not sheared and is usually dark green. It is spotted with vesicles or amygdules filled with pinkish quartz and carbonates. Porphyritic andesite is rare. One very vesicular porphyritic band outcrops on lot 23, range east of Macamic road, Destor township. Most of the andesite is pillowed, many pillows having rims 3 inches thick. Ellipsoids range from 4 to 24 feet long, and bun types are most common. In numerous places they contain pipe vesicles radiating from the centres, and concentric lamination.

Schist.- Sericite and chlorite schist derived from the volcanic rocks form only a small part of the rock outcrops. Sericite schist occurs in many places in the southern part of the area near the assumed position of the axis of folding. The rock weathers a dirty blue green to greyish white. The soft yellowish-blue interior breaks into very thin laminae. Its rhyolitic origin is recognized by the cracked eyes of quartz visible in a few places.

Chlorite schist forms part of the hills near the fault in range III, Destor township. The rock appears more massive than the sericitic schist and weathers a very dark brown. Ghosts of highly distorted pillow structure are visible on the surface in a few localities.

Pyroclastic Rocks.- Fragmental rocks, in part stratified, form the major part of the volcanic sequence in the area. The principal rock type is a tuffaceous agglomerate of intermediate composition. On the west side of the area it is intercalated with pillowed flows and contains narrow bands of chert every few feet, but elsewhere, though bedded, it contains no intercalated sedimentary rock. From a distance the rock appears lighter in colour than the diorite. In the hand specimen it is a uniform yellowish brown. White-weathering pitted cobbles, in rows usually a few feet apart, alternate with finer, angular material of varied colours in a fine matrix. With few exceptions the fragments are the same size over the entire area; also, they seem to vary little in composition. They consist

principally of white-weathering grey fragments studded with quartz amygdules and subordinately of a dull grey-green feldspathic tuff dotted with altered feldspar crystals.

A less abundant pyroclastic rock is fine tuff, which in some places is cross bedded. Lithic and crystal feldspathic tuff are present but the former is more common. Both rocks weather a pale greenish brown. Feldspathic tuffs containing large amounts of crystals are best developed in a lens in range I, Duparquet township. The surface bears elliptical pits in places where pea-sized fragments have weathered out.

A coarse agglomerate outcrops in the extreme north of lot 1, range III, Destor township. It consists of closely packed, angular fragments of all types of volcanic rocks and some intermediate intrusive rocks ranging in size from several inches up to 12 feet. Where the agglomerate is adjacent to acidic porphyry, the rock has been altered so that fragments are barely distinguishable on the weathered surface, and the interior is dark blue and has a porphyroblastic texture.

Minor Intrusives.- The lava and agglomerate are cut by dikes and more generally sills, principally of intermediate composition, up to 75 feet wide. Andesite, dacite or fine-grained quartz diorite are all common. The intermediate intrusive rocks all weather brown to light buff. Small crystals of pyroxene are visible on some broken surfaces having sub-ophitic texture. The surface is either bossy or pitted from the weathering of ferromagnesian minerals. These intrusive rocks may be distinguished from the diorite next described by the general fineness of grain, the ophitic texture, the absence of pegmatitic stringers and the small size of the bodies. The similarity of these rocks to massive members of the volcanic series suggests that they are all genetically related to different types of lava. Porphyritic types were observed at many places.

Acidic rocks of this group are rare and outcrops are small. The only one shown on the map consists of a light-weathering porphyritic rhyolite, with dark blue interior, outcropping south of Destor creek, range west of Macamic road. A highly aphanitic green rhyolite intrudes rhyolite in lot 22, range I, Destor township.

Post Keewatin-type Intrusive Rocks

Diorite, Quartz Diorite and Gabbro.- The major post Keewatin-type intrusion consists chiefly of massive reddish brown weathering diorite and gabbro in sills of considerable thickness. In the western part of Duparquet township the intrusive rocks are drag folded with the pyroclastic rocks. Multiple intrusion of slightly different phases, the one chilled against the other, has been noted. The dioritic varieties consist of quartz and equal amounts of feldspar and amphibole. Gabbroic varieties are generally darker green, and consist of equi-granular pyroxene, some amphibole, and feldspar. The amount of feldspar varies from 20 to 50 per cent. Finer-grained margins are sub-ophitic. Grain aggregation in coarse diorite results in a bumpy weathered surface. Gabbro and diorite generally grade into one another in the larger sills, but just beyond the eastern limit of the area, in lot 32, range III, Destor township, a gabbroic phase seems to be cut by diorite. The contacts of the gabbro against the lava are chilled and sharp, but are not

well defined against the finer pyroclastic rocks. At the contact on the large hill west of the lake in range II, Duparquet township, there is a gradational zone several feet wide. Here well developed banding, due to alternation of feldspathic and amphibolitic laminae, extends over widths of 50 feet or more.

The diorite on the shore of Dufresnoy lake and on the islands in the lake weathers much darker. It is more altered and consists, in large part, of epidotized yellowish feldspar and chlorite or amphibole.

Amphibolite.- In the northern part of lots 26 and 27, range I, Destor township, a highly variable amphibolitic rock, showing two intrusive contacts against sheared rhyolite, outcrops over a width of 500 feet. The rock weathers a uniform dark grey. Quartz, pinkish yellow feldspar and dark shiny amphibole can be seen on the fresh surface. Within a few feet the amphibolite grades to quartz diorite, and even to one patch, ten feet across, of white granite with little or no feldspar mineral. Near the south limit included masses of volcanic rock have been altered to a dark green rock consisting of prismatic shiny amphibole and lesser amounts of feldspar and quartz.

Porphyritic Diorite.- A mass of light grey weathering diorite outcrops over a length of several hundred feet on lot 26, range I, Destor township, a short distance north of the shore of Dufresnoy lake. The rock consists of closely packed phenocrysts of feldspar in a fine green groundmass. A similar but smaller mass cuts rhyolite in lot 19, range III, and lot 18, range west of Macamic road. Several brownish-weathering dikes, up to 15 feet wide, intrude rhyolite in the southern part of the area. They have a fine dioritic groundmass and sparse phenocrysts of feldspar 0.10 inches in diameter.

All the known porphyritic diorite in the area intrudes only rhyolitic rocks. The reason for this relation is not clear. Individual narrow dikes both follow and cut across folded rhyolite bands, suggesting that they are later than the folding, but some schistosity is developed in the dikes parallel to the fold axes.

Quartz-feldspar Porphyry.- Acidic porphyritic rocks, in part sheared, and generally similar to those described by Bannerman (2) (pp. 11-12) and Graham (3) (pp. 11-13), (4) (pp. 12-13) in areas farther north, outcrop in the northern part of the area along the course of the main fault zones. These are white- to slightly brownish-weathering rocks that commonly intrude older formations as irregular bodies and discontinuous lenses along the strike. One variety has a sea green, flaky, siliceous fresh surface in which phenocrysts of glassy quartz ranging from pin heads to $\frac{1}{4}$ inch are visible. The other has a slaty dark blue interior and contains numerous feldspar phenocrysts. Composition in parts of the same mass varies, and grades from quartz-rich to feldspar-rich phases.

The agglomerate adjacent to contacts with the porphyry has a porphyritic appearance. Ghosts of fragments may be discerned on the weathered surface, but the interior is similar in colour to the porphyry, and $\frac{1}{4}$ inch crystals of feldspar are visible.

The porphyry in several of the narrow bodies has an aphanitic texture. The position of these bodies in relation to the faulting suggests they are later

in age. In a few places, as on lot 1, range III, Destor township, the porphyry is brecciated, but sulphide mineralization is sparse.

STRUCTURAL GEOLOGY

Folding

Keewatin-type rocks have been tightly folded into several easterly trending isoclinal folds.

The most prominent fold is a syncline, developed mainly in the pyroclastic rocks. Due to the wide distances between tops of structures facing in opposite directions, the axis cannot be placed closer than within 1,000 feet, especially around Dufresnoy lake. The widespread evidence afforded by pillow tops, cross bedding and graded bedding indicate that dips near the axis are very steep or vertical. Structures on islands south of the axis have some dips as low as 78°. Over most of its length the axis of the fold coincides with range-line I-II. At lot 20, in Destor township, the direction changes to southeast. In the western part of the area the attitudes of the pyroclastic rocks suggest that the axis has itself been drag folded along a steeply plunging axis trending a little north of east. Rhyolite and rhyolite breccia near the axis shows a distinct fracture cleavage, and minor faulting is present. Shearing is not conspicuous in the tuffaceous agglomerate. The syncline may partly have been disturbed by dioritic intrusions. It is likely that the main syncline, on the west margin of the map, is the continuation of that outlined by Graham (5) (pp. 13-14) eastward as far as islands in the middle of Duparquet lake.

In Destor township, about the middle of range I, an anticline extends west from Dufresnoy lake, dying out near the Macamic road in intensely foliated porphyritic rhyolite and agglomerate. It seems to reappear near the west margin of the map in the same position relative to the syncline.

In the southwest corner of the map there is a northwesterly trending syncline which is the extension of one previously mapped by the author in ranges IX and X, Duprat township (6) (p. 6).

Faulting

Major faulting, closely related in time to the intrusion of the acidic porphyritic rocks, has disturbed many older rocks in the northern part of the area. Of these the Porcupine-Destor break, trending southeast along the course of the abandoned Beattie railway, is the most prominent. Several well defined shear zones trending N.70°E. in the schistose chloritized volcanic rocks north of the break are probably offshoots from the main break. Subsidiary parallel shear zones cross the rocks in lots 1 to 7, range III, Destor township.

Immediately south of Mackay lake and the ponds to the west of it, lies a zone of shattered trachyte that has been intersected in drill holes.

There has been some later minor faulting, consisting of northeast and north sets, which cuts across and offsets schistose formations produced by movements

parallel to the Porcupine-Destor break. A minor fault with more pronounced movement appears to have dislocated the band of pyroclastic rocks in lot 1, range west of Macamic road.

In addition to slippage parallel to the strike, faulting also seems to have occurred along and near the axis of the anticline west of Dufresnoy lake. Here northwesterly trending fraction cleavage in the rhyolite has been thrown into minute crumples and drag folds with a radius of a few inches; these generally plunge east and are flexed in a sense that suggests faulting with a left strike separation.

ECONOMIC GEOLOGY

So far no mineralization discovered in the area has been exploited. Immediately to the north, the gold-producing Duquesne mine on the Porcupine-Destor break suggests that the area under study may have considerable interest if similar conditions for mineralization exist. Experience of producing properties to the north indicates that the most favourable location for gold deposition is in silicified breccia or finely disseminated sulphides in the immediate vicinity of porphyry.

South of the break, quartz veins in sheared lava, disseminated sulphides in tuff and massive sulphide replacement in amphibolite have been encountered. White quartz veins up to 10 feet wide cut sheared rhyolite, andesite and trachyte around Dufresnoy lake. They are for the most part parallel to the schistosity and do not appear to contain any minerals of value. Gold assays of samples taken by the writer indicate that the veins are barren. Some trenching has been done in a brown oxidized zone about 50 feet wide in pillowed trachyte on the side of a hill 800 feet east of the Duparquet-Destor township line and 1,700 feet south of Destor lake. Small stringers of pyrite, a little sphalerite and some pyrrhotite were found. Small amounts of pyrite and pyrrhotite, mostly filling amygdules in pillowed trachyte, were also found in shallow prospect pits 2,200 feet south of the narrows in Mackay lake. Similar mineralization with quartz in stringers was found in prospect pits west of the power line in range II, Duparquet township. Fine sulphides in tuff were noted on the centre line of Duparquet township 1,700 feet north of Dalember river, close to the faulted contact of tuffaceous agglomerate and quartz diorite. They contain no gold. A similar occurrence 2,700 feet east of the centre line and 3,300 feet north of the river contains pyrite and some chalcopyrite. Pits sunk in a gossan zone in epidotized rhyolite in lot 28, range II, Destor township, revealed massive fine-grained pyrite and calcite. Assays of samples from the most southerly pit gave traces of copper and no values in zinc and gold. To the north, a shaft 15 feet deep in amphibolitized volcanic rock exposed stringers and small blebs of pyrite and some pyrrhotite.

The presence of copper sulphides in pyroclastic rocks suggests this rock may be a favourable host for ore solutions rising along later faults.

DESCRIPTIONS OF MINING PROPERTIES

Destor Valley Gold Mines Limited

Ref.: Que. Dept. Mines, Min. Ind. 1945, p. 66.

This company holds claims comprising the south halves of lots 35 and 36 and the north halves of lots 29 to 38 range II, and lots 29 to 38, range III, Destor township. The Destor road off the Macamic road cuts across the middle of the property. It is also accessible by the abandoned Beattie railway and by numerous trails.

Within the limit of the area, the part of the property lying in range II is low, swampy, and mostly devoid of outcrop. Northward the terrain rises with marked relief beyond the Porcupine-Destor break, which crosses the property parallel to the Beattie railway. Rock exposures consist principally of pillowed carbonated andesite and chlorite schist in the north, and intensely sheared, sericitized Clericy sediments farther south, intruded by diorite dikes and small masses of quartz-feldspar porphyry.

Up to the autumn of 1945 the property had been explored by 29 diamond-drill holes totalling 14,274 feet. Four of these holes are within the map-area. Chlorite, talc and sericite schists near the main fault, and sheared pyroclastic and sedimentary rocks and porphyry were intersected. Fine pyrite mineralization carried low gold values. According to company records 27 inches of solid sulphides and quartz were intersected in two holes 2,000 feet apart. No assays were available.

On lot line 28 - 29, range III, 2,800 feet north of the Destor road, a trench 4 feet by 2 feet by 2 feet deep was excavated in rusty porphyry cutting andesite. No mineralization was visible in the trench. Another trench 20 feet by 4 feet by 3 feet deep across the contact is mostly filled with debris. The porphyry in the trench is highly carbonated, and contains specular hematite in veinlets and small pods.

A third trench along the contact of a quartz vein 1 foot wide cutting chloritic andesite on lot line 26 - 27, range III, 1,800 feet south of the range-line, contains brown carbonates in quartz. A sample taken from this trench by the writer contained less than 0.01 ounces of gold per ton.

The property has been inactive since 1947.

Dukel Gold Mines Limited

Dukel Gold Mines Ltd. holds, in Duparquet township, C. 15794, claims 1 to 5, C. 16533 claims 1 to 5, C. 16534, claims 1 to 5, C. 16535, claims 1 to 5, and C. 21194, claim 1. The claims lie between Mackay lake and Dugros lake.

The property is accessible from the Macamic road by a lumber road leading to Destor lake, and thence by water and portage to Mackay lake, or by the transmission line pathway to the portage. It may also be reached from the Duparquet road by a road leading to Dugros creek, and thence by water, or by the transmission line pathway.

The low relief is characterized by easterly trending ridges and smaller outcrops rising like islands from flat deeply gullied tracts of clay and drift. Most of the property is underlain by trachytic pillow lava and one pyroclastic band. These rocks are intruded by quartz diorite and massive fine-grained andesite sills. A strong fault trending a little south of east appears to follow the course of the creek draining Mackay lake, and to pass near the strongly jointed rocks immediately south of the lake.

The fault zone was explored in the winter of 1945-46 by 10 diamond-drill holes having a total length of 6,162 feet. Narrow shear zones were observed in trachyte, tuffaceous agglomerate and flow breccia. In a few holes small stringers of quartz and carbonate with minor chalcopyrite and pyrrhotite mineralization were observed. They contained no gold.

This property has been inactive since 1947.

REFERENCES

- 1.- Wilson, M.E., The Early Precambrian Succession in Western Quebec; Roy. Soc. Can. Trans., vol. 37, sec. IV, 1943, pp. 119-138.
 - 2.- Bannerman, H.M., Lepine Lake Area; Que. Bur. Mines, Geol. Rept. No. 4 (1940).
 - 3.- Graham, R.B., Lanaudière River Map-Area, East part of Duparquet Township, Abitibi-West County; Que. Dept. Mines, P.R. No. 193 (1946).
 - 4.- Graham, R.B., Duparquet Lake Map-Area, West part of Duparquet Township, Abitibi-West County; Que. Dept. Mines, P.R. No. 206 (1947).
 - 5.- Graham, R.B., Hébécourt Lake Map-Area, East part of Hébécourt Township, Abitibi-West County; Que. Dept. Mines, P.R. No. 216 (1948).
 - 6.- L'Espérance, R.L., Northeast Part of Duprat Township, Rouyn-Noranda County; Que. Dept. Mines, P.R. No. 241 (1950).
-