

RP 154(A)

ADVANCE REPORT ON BOURLAMAQUE TOWNSHIP, SOUTHEAST PART, ABITIBI COUNTY

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Énergie et Ressources
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Québec 

ADVANCE REPORT
ON
BOURLAMAQUE TOWNSHIP, SOUTHEAST PART
ABITIBI COUNTY

Province of Quebec, Canada

DEPARTMENT OF LABOUR, MINES AND MARITIME FISHERIES

Honourable Edgar Rochette, Minister L.-A. Richard, Deputy-Minister

BUREAU OF MINES

A.-O. Dufresne, Director

DIVISION OF MINERAL DEPOSITS

Bertrand-T. Denis, Chief

ADVANCE REPORT

ON

BOURLAMAQUE TOWNSHIP, SOUTHEAST PART

ABITIBI COUNTY

by

F.-E. Auger

QUEBEC

1940

P.R. No. 154

BOURLAMAQUE TOWNSHIP, SOUTHEAST PART

ABITIBI COUNTY

by

P.-E. Auger

The area examined by the writer during the summer of 1940 lies in the southeastern part of Bourlamaque township. It extends six miles westward from the Bourlamaque-Louvicourt boundary line and three and three-quarters miles southward from the east-west centre line of Bourlamaque.

The provincial highway from Val d'Or to Mont-Laurier passes $1\frac{1}{2}$ miles north of the map-area. The principal water routes within the region are Bourlamaque and Sabourin rivers, which are easily navigable, although the last named is very narrow and meandering.

GENERAL GEOLOGY

All the rocks within the map-area are Precambrian in age. Keewatin-type volcanics underlie the northern half, Temiscamian-type sediments the southern. Intruding both formations are dykes of various composition, from diabase to diorite and granite. All the rocks are highly deformed and, as a consequence, the structure in places is very complex.

Keewatin-Type Volcanics

The volcanic rocks of the area range from basic to acidic types. Immediately north of the sedimentary rocks that occupy the southern half of the map-area is a band of lavas, approximately 2,500 foot wide, which strikes east-west in its western part, changing to N.75°E. as it is followed toward the east. It consists mainly of flows of andesitic composition, but rarely there are associated basalts and also acidic flows, the latter particularly in the eastern part of the band. Interbedded with these in numerous places are narrow cherty layers. The regularity of the banding within these cherty layers suggests that they are highly silicified tuffs, but it is possible they represent a series of very thin rhyolite flows. There are, however, definite volcanic breccias and fragmental beds within the band. Some of the basic flows exhibit ellipsoidal structure.

Farther north, in a band that extends in a north-westerly direction on the Goldore property, fragmental and acid amygdaloidal volcanics are more abundant. The rocks in this band include coarse acid breccias, nodular types, and acid vesicular lavas which, in the main, have supplied the fragments for the breccias.

Beyond this band, the northern portion of the map-area is underlain by coarse to medium grained acidic-flows, highly schistose in places and with an abundance of associated fine fragmental beds.

Témiscamian-Type Sediments

The sedimentary rocks that occupy the southern part of the map-area consist almost entirely of greywacke. In the more southerly outcrops, the beds are richer in biotite and somewhat coarser than those farther north, and in the vicinity of their contact with the volcanics to the north of them the original character of the beds is considerably obscured by alteration and schistosity. Otherwise, throughout its area of outcrop, the greywacke is fairly uniform in character. In places, the rock displays a conspicuous banding in alternating light and dark beds, and locally the gradation both in grain and composition is sufficiently well marked to permit determination of the attitude of the beds.

The greywacke is cut by a "younger diabase" dyke, referred to later, and it was observed that, adjacent to the dyke, the greywacke is richer in iron than elsewhere and more altered along the bedding planes.

Keewatin-Type and Post-Keewatin-Type Intrusives

Numerous dykes are found cutting the volcanic rocks in the northern part of the area. The most common type is a coarse, relatively basic, hornblende-rich diorite ("older diorite"), which forms large masses rather than clean-cut dykes. In some of its occurrences, the diorite has the characteristics of a volcanic rock and it is possible that, in part at least, it may be genetically related to the Keewatin-type volcanics with which it is associated, or that it may, itself, be volcanic and not intrusive.

The volcanics are also cut by a variety of porphyritic dykes, of which the most common type is a coarse acid-feldspar (albite) porphyry. Sill-like bodies of finer-grained porphyry, highly schistose, follow cherty bands in the volcanics on the Robitaille claims. In the northwest corner of the map-area there is an extrusive body, rather than a dyke, of green acid-feldspar porphyry (Ab96) which itself is cut by one large basic dyke and numerous granitic dykes. A geophysical survey carried out by Theo. Foulomzine, has shown that this body of porphyry and associated granite extends northward beyond the limit of the present map-area nearly to the southern margin of the Bourlamaque granodiorite batholith. This suggests that there may be a genetic relationship between the latter and the granitic dykes cutting the green feldspar porphyry.

No acidic intrusives were observed cutting the sedimentary rocks in the southern part of the area, although such dykes are found farther west, in Fournière township. As already noted, however, the greywacke is cut by a dyke of "younger diabase".

This dyke is about 100 feet wide and it has a length of approximately $4\frac{1}{2}$ miles. The strike is almost true east-west. In the vicinity of this dyke are numerous small diorite dykes which are believed to be satellitic to the major dyke.

STRUCTURE

In general, both the sedimentary and the volcanic rocks are much deformed. In the sediments, the average strike of the bedding is $N.74^{\circ}W.$ and the dip is vertical or south about 80° . The volcanic-sedimentary contact has approximately the same strike, and possibly this is also the average strike of the volcanics.

According to a large number of observations, fracture cleavage in the sediments is close to east-west, which would indicate that the tops of the beds face south. On the other hand, an equally large number of determinations of grain gradation and compositional variation, indicate that the tops of the beds face north. In the volcanics, the schistosity is approximately east-west, or slightly north of east, and all determinations show that the tops of the flows face south.

Numerous drag-folds were noted in both sediments and volcanics. They all plunge 50° to 55° to the west, with their axes striking about $N.30^{\circ}E.$

West of Sabourin river, the large east-west "younger diabase" dyke, to which reference was made above, is cut by a north-south fault, with a relative displacement of the west side southward for a distance of about 2,000 feet.

ECONOMIC GEOLOGY

There are no operating mines in the map-area, but the Lamaque and Sigma mines, both important gold producers, are about four miles to the northwest. The Quebec Manitou, Fleming, and Beaucourt mines, at present none productive, are two to three miles to the north and northeast. All these properties are within, or at a short distance south of, the Bourlamaque granodiorite batholith.

In the present area, gold has been found in the volcanic rocks at several localities. Numerous claims have been staked, and on some of the properties a considerable amount of exploration work, including some diamond drilling, has been carried out. Although this work has failed to reveal any gold deposit of commercial importance, there are numerous geological features which justify continuation of prospecting activity in the area.

These include (1) the presence of gold, (2) the presence of such favourable structural features as strong shear-zones and faults, (3) the variety of rock types in the volcanic formations, (4) the variety of intrusives, and (5) the major volcanic-sedimentary contact which traverses the whole area. The following paragraphs give brief descriptions of properties in the area.

Orenada Gold Mines, Limited

This property comprises 47 claims in Bourlamaque township. Extensive surface work and some diamond drilling were carried out in 1939 and 1940, under option agreement, by Noranda Mines, Limited, with Siscoe Gold Mines participating.

The Company records of exploration to date may be summarized as follows: About 4,200 feet west of Sabourin river, silicified zones in the older diorite are gold-bearing, with free gold reported in places. Approximately 7,000 feet west of here, and about 250 feet south of the assumed volcanic-sedimentary contact, in a marked shear-zone in the sediments, there are narrow gold-bearing, quartz veins. Still farther west, 500 to 600 feet, in what is known as No. 2 zone, diamond drilling indicated the presence of two small gold-bearing quartz veins in the sediments close to, or at, their contact with diorite, at a point where there are numerous dykes of syenite porphyry. Core intersections gave assays ranging from \$1.00 to \$8.40 in gold per ton. Farther west, outside of the map-area, in No. 4 zone, the north contact between the sediments and a body tentatively classed as "older diorite" is occupied by a dyke of quartz porphyry and a smaller dyke of syenite porphyry. Assays of approximately \$16.00 in gold per ton have been reported from samples taken both in and near these dykes.

The results of the diamond drilling in No. 2 and No. 4 zones suggest that the diorite extends into the sediments.

Goldore Development, Limited

The claims belonging to this Company are in the northeast section of the map-area. Extensive surface work, including a geophysical survey, has been carried out. The ground is underlain mainly by Keewatin-type volcanics intruded by a large mass or dyke of "older diorite" which has a northeasterly trend. Several persistent shear-zones traverse both the diorite and the volcanics. Free gold was found in a narrow, flat quartz vein 30 feet north of the main shear along the northern margin of the mass of "older diorite". Material from the shear-zone at the western end of the diorite body is reported to have assayed up to about \$80.00 in gold per ton. The general strike of the shear is N.73°E., with dip at about 60° south, and the width varies from 2 to 6 feet. The zone consists of sheared, chloritized diorite with a silicified portion either in the centre or at one side or other. Locally, the zone is composed of massive, sugary quartz containing fine pyrite. No gold has been reported from the other shear-zones.

Valdoro Extension, Limited

These claims are in the northeastern corner of the map-area. Surface work and diamond drilling have been confined mainly to one large outcrop, the northerly part of which consists of "older diorite". A prominent shear-zone in this diorite strikes approximately N.75°W., dips steeply to the south, and is 20 feet

wide in places. It contains some quartz and a large quantity of iron carbonate. No high gold assays have been reported in this zone. At about 80 feet and 150 feet north of this main "break", two minor shear-zones strike respectively N.51°E. and E.-W. and between them are three known tension fractures striking N.16°W. and dipping about 50°S. These are filled with white, glassy quartz containing tourmaline and some pyrite, assays of which are reported to average around \$21.00 in gold per ton. The central of the three veins contains abundant rusty material, a grab-sample of which, taken by the writer, assayed \$6.23 in gold per ton.

Four inclined diamond-drill holes were put down along the north cliff of the outcrop, three of them directed southward, and the fourth toward the east to intersect the tension fracture system.

The cores reveal that most of the rock is slightly mineralized and that several quartz veins and shear zones were cut but at the time of the writer's visit drilling was still in progress and assay results were not yet available.

Central Mining Corporation

This Company holds a large group of claims in the northwestern part of the map-area. An extensive programme of geophysical prospecting and surface work was being carried on at the time of the writer's visit to the property. Earlier diamond drilling did not disclose any important ore intersections.

Robitaille Claims

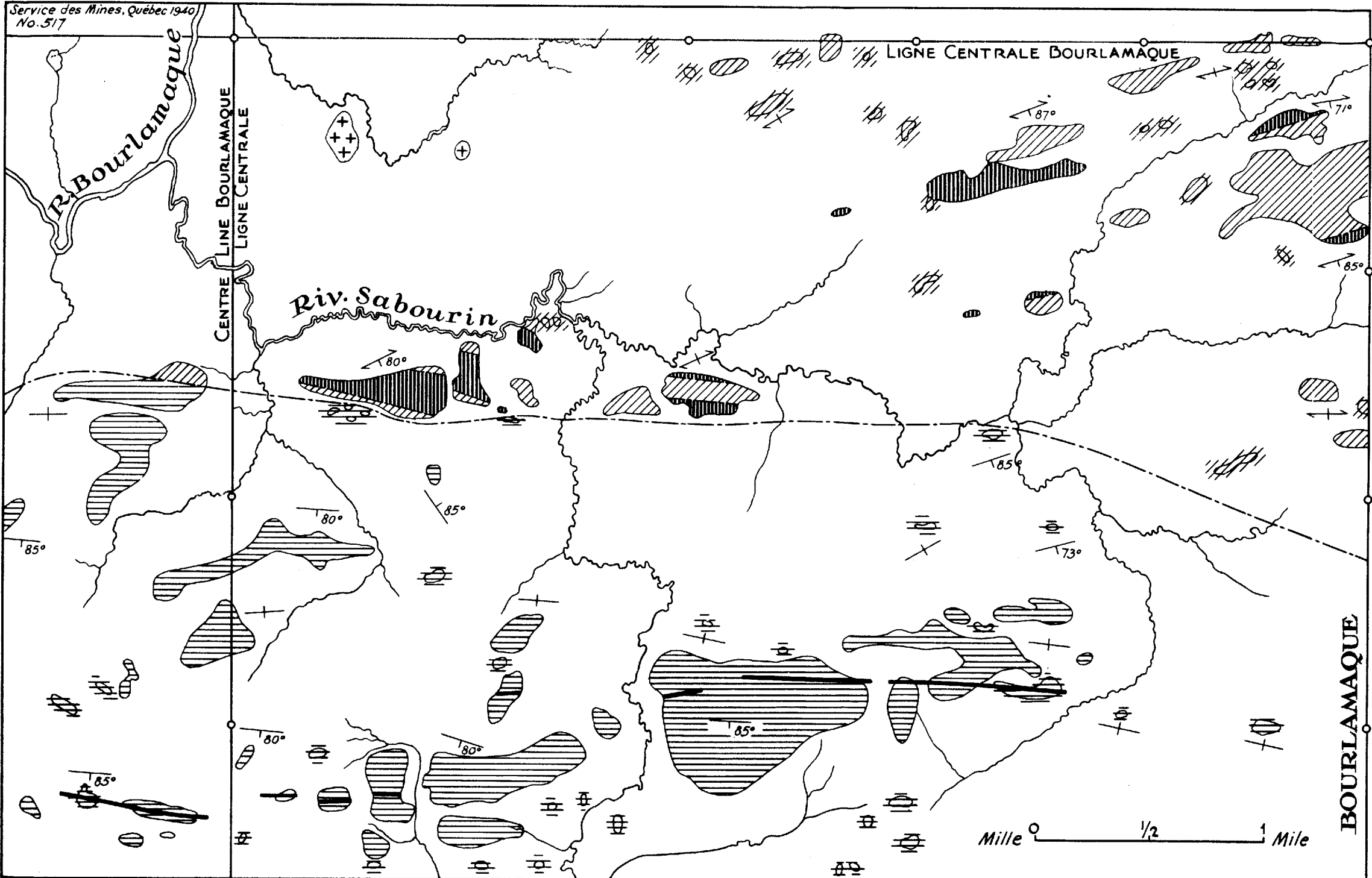
These claims are east of Sabourin river and just north of the volcanic-sedimentary contact. The volcanic rocks by which they are mainly underlain include east-west bands of silicified tuff or rhyolite and are cut by approximately north-south lenticular veins of quartz. It is in these bands and veins that the mineralization occurs. Assays of grab-samples taken by the writer from two of the showings yielded negligible gold values.

James Sullivan Mines, Limited

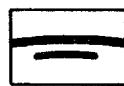
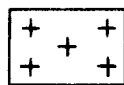


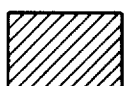
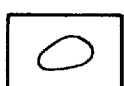
This property, formerly owned by Valmac Gold Mines, Limited, is in the southern half of the map-area, just east of the township centre-line.

The claims are underlain by sedimentary rocks and extensive stripping and trenching have revealed several east-west shear-zones, with numerous narrow quartz veins. Up to the present, however, no deposit of economic importance has been discovered.

Service des Mines, Québec 1940
No. 517



LEGEND - LÉGENDE

-  Younger diabase
Diabase plus récente
-  Green feldspar porphyry
Porphyre feldspathique vert
-  Temiscamian-type sediments
Roches sédimentaires, type Témiscamien
-  Older diorite, possibly volcanic
Diorite plus ancienne, peut-être volcanique
-  Keewatin-type volcanics
Roches volcaniques, type Keewatin
-  Group of outcrops
Groupe d'affleurements.

CANTON DE BOURLAMAQUE
PARTIE SUD-EST

BOURLAMAQUE TOWNSHIP
SOUTH-EAST PART