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PRELIMINARY REPORT ON NORTHEAST PART ON DUPRAT TOWNSHIP, ROUYN-NORANDA COUNTY

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PROVINCE OF QUEBEC, CANADA
DEPARTMENT OF MINES
MINERAL DEPOSITS BRANCH

PRELIMINARY REPORT

ON

NORTHEAST PART OF DUPRAT TOWNSHIP

ROUYN-NORANDA COUNTY

BY

R. L. L'ESPÉRANCE



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PRELIMINARY REPORT

ON

NORTHEAST PART OF DUPRAT TOWNSHIP

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INTRODUCTION

Duprat township is in the mining district of Western Quebec. Its southeastern corner is about 5 miles northwest of the city of Noranda.

The area investigated by the writer during the field season of 1949 includes, from north to south, ranges X to V, and from west to east, lots 32 to 62. On the north, the area is bounded by the Duparquet-Duprat township line at very nearly latitude $48^{\circ}26'N$. and on the east by the Duprat-Dufresnoy township line at very nearly the meridian $79^{\circ}05'W$. The west boundary is the Duprat township centre line. The southeast corner of the area is partly included in the 'Waite Area' Duprat and Dufresnoy townships. (1)

Roads, from the Macamic highway on the east provide easy access to within 3 miles of any point in the area. The Canadian National Railways spur to the Waite Amulet mine comes, at one point, within 1,000 feet of the area. The streams are too small to serve as water routes of any importance.

Geological mapping on a scale of 1 inch equals 1,000 feet was carried out during the 1949 field season with the aid of aerial photographs on the same scale. Ground control was maintained by original survey and staking lines, which are for the most part recognizable. A forest fire during the latter part of the summer obliterated survey lines in a few places and exposed some more bedrock, which should be accessible to prospectors for three or four years.

Some of the highest relief in the Clay Belt of the Laurentian plateau occurs in the southeast part of the area, where some elevations rise in excess of 350 feet above low-lying swampy tracts. The watershed between Hudson Bay and the Ottawa Valley system crosses the area in a general north-east direction.

GENERAL GEOLOGY

With the possible exception of the later diabase dykes, all the consolidated rocks are of Precambrian age. Field identification permits division of a Keewatin type sequence into rhyolite, trachyte, andesite and possibly dacite, flow breccia, agglomerate and some tuffs; with a few of their highly altered equivalents. Small dykes and sills, mostly of dioritic composition, thick sills of diorite and gabbro, and a few rhyolitic dykes intrude the lava flows and are probably closely related to them in time.

(1) Wilson, M.E., Noranda District, Quebec; Geol. Surv. Can. Mem. 229 (1941) and Map 455A, (1939).

Larger intrusive masses of later age are 'diorite' sills which vary considerably in texture and composition, and granite with associated lamprophyres. All are cut by diorite and quartz diorite dykes.

A post-granite fault, marked by a zone of altered rock, is believed to cross the area. Numerous small faults are associated with this, and intrusions of quartz-feldspar porphyry may be of this age. The stratigraphy and structural history as determined in the area is summarized in the following table:

TABLE OF FORMATIONS

	Recent and Pleistocene	Muskeg, forest loam, gravel, sand, boulder clay, silt, clay
Great Unconformity		
Precambrian	Algoman ?	Mineralization - minor faulting Porphyries of quartz and feldspar
		Major Faulting, Intrusive contact, some folding
	Post Keewatin	Lamprophyre, aplite, andesite granite Diorite and gabbro (probably post-folding)
	Folding - Intrusive Contact - Unconformity	
	Keewatin (Type)	Gabbro, diabase, and some diorite Andesite, and rhyolite dykes Chert Rhyolite, trachyte, dacite, andesite, tuff, agglomerate, flow breccia

KEEWATIN-TYPE LAVAS

Andesites

The principal exposures of rocks mapped as andesite occur in the syncline in range IX and X, and north of Nora lake. In the southeast quarter of the area, in ranges V and VI, they occur in belts which alternate with more acidic flow rocks. The andesites are mildly altered rocks, reddish to greyish brown on the weathered surface, and green to greenish black on the fresh surface. Grain size is fine to aphanitic and is consistent within particular horizons. A few porphyritic flows are present. Numerous narrow bands of chert and cherty tuff are interbedded with the flows, but nowhere are they conspicuous features. Massive sections of a few flows are coarse grained, and the maximum grain size occurs nearer to the bottom.

Pillows of varying size are common, and rims may be thick or thin. Fine radial cracks, and other cracks parallel to the rims, filled with quartz ('hairy' or 'concentric lamination') are common in some of the horizons of coarse pillows. Between pillows there is generally a little scoriaceous breccia. Rims are commonly spherulitic, and radial variolites grading from specks up to 3 inches or more in diameter occur in a few flows. Pyroclastic horizons occur in a few places, but few are sufficiently continuous for representation on the accompanying map. A few basalts, differing mainly in darker color, softer weathering surface, and higher density, occur among the andesites.

A curious feature of the andesites in the syncline in ranges IX and X is the presence of color-banding on the weathered surface. Dark reddish brown bands up to 6 inches wide alternate with light-colored bands up to 1 foot wide. The bands are parallel to strike and flow contacts. The andesites south of the syncline differ from those in the syncline in having a darker fresh surface of bluish grey, fewer pillows, and less flow breccia.

Dacite and Dacite Breccia

Rocks mapped as dacite outcrop in a belt less than $\frac{1}{4}$ mile wide. The dacite has an aphanitic texture and the fresh surface is light olive-green to whitish grey. On the weathered surface, the rock resembles andesite. However, the fracture is much smoother than in the andesites. A few horizons of small and irregular shaped pillows are present, and in the northwest corner of the area the rock is commonly spherulitic. Pillow rims are thin and rusty. Breccia horizons have a rough stratification and fragments are sub-angular, suggesting pyroclastics. Many of the bands, however, are discontinuous, and the presence of sinuous, elongated, and curly fragments, which must represent crusts of lavas engulfed in flows, suggests flow breccia. Included in the dacitic band are a few trachytes and rocks of more siliceous composition.

Numerous narrow dykes of diorite, striking N.40°W., intrude the ~~diorites.~~ *dacites.*

Trachyte

Some trachytic flows are included in the rhyolitic and dacitic belts on the accompanying map. The rock weathers green to light reddish brown. The fresh surface has a conchoidal fracture and is light grey. Pillow structure is common, and the rock is occasionally spherulitic. The texture is porphyritic for the most part, and feldspars up to 2.5 mm. long can be distinguished in an aphanitic groundmass.

Rhyolite

Rhyolitic rocks are abundant and comprise nearly one half of the total exposures. They occupy most of ranges VII and VIII, and are interbedded with andesites in the southeast part of the area. More fragmental rocks occur within the rhyolite belts than in the others, but the extreme irregularity of their distribution within the massive rhyolites permits only a few generalized zones to be indicated on the map.

Massive rhyolite has a powdery white weathered surface, and a dark glassy blue to green interior. The structures visible on the weathered surface are widely varied, and include pitting, scoria, very finely spherulitic rhyolite, "ribbon rhyolite" and rhyolite breccia. Porphyritic texture is common through not persistent for long distances either along or across the strike.

Breccias containing abundant white rhyolite fragments in greenish matrices are common, though discontinuous, and they are intermingled with the more massive rhyolite. The angularity of the fragments and lack of stratification in the breccia suggest flow rather than pyroclastic breccia. Frequently a fine flow banding is observable in the matrix of breccia as well as in the massive rhyolite. Whereas the width of the rhyolite flow breccias is exaggerated by the low dip of the acidic lavas in this area, such breccias nevertheless form a considerable, if not the major proportion of, the rhyolite belts. Fragments in the breccias may be long and thin; some extend over lengths of five feet or more.

Curious rocks which are tentatively included within the rhyolitic assemblage outcrop along the VIII - IX range line, from lot 43 to lot 47. One variety weathers white and has a massive, medium-grained, light green, fresh surface, on which opalescent quartz and altered feldspars up to 4 mm. in diameter are visible. Another variety, closely associated with the massive rock on poorly exposed outcrops, has a white weathered surface with brecciated appearance, and a bluish fresh surface with dark streaks. The constituents are extremely variable over distances as small as a few inches. The broken surface indicates that the rock consists at least in part of small quartz fragments, bluish opalescent grains of quartz and flakes of feldspar. The relation of these rocks to others in the area is not known. They are possibly rhyolitic tuffs.

Keewatin-Type intrusive rocks

Intruding the lavas are numerous narrow dykes and sills of rhyolite and more basic rocks, with dense, chilled margins. They weather either dark green or white. The rhyolite dykes cannot be distinguished from the flows. The basic rocks occur as diabase, diorite, and gabbro dykes. The texture is occasionally porphyritic, but more commonly diabasic. Their close association with the lavas suggests that they represent feeders and sills genetically related to the flows.

Post-Keewatin Diorite and Gabbro

Isolated small bodies of diorite, probably forming parts of larger masses, are numerous in the area, and comprise about one-quarter of the exposed rocks. The larger continuous diorite sills and dykes outcrop in the southeast part of the area. Their textures, structures, and field relations have been amply described by Wilson (1). For the most part, the bodies of diorite show intrusive relationships to the adjacent rocks, but exposures exist where there is a continuous gradation from andesite to diorite. The accompanying map shows both the concordant and cross-cutting nature of the larger dioritic masses. Where the overburden is heavy and outcrops are scattered, it has not been possible to separate the various dioritic intrusions from one another, or from the adjacent basic volcanic rocks.

(1) Wilson, M.E., Work cited (Ref. No. 1) pp. 26-32.

In the southern part of the area, the diorite is widely variable in grain size and contains numerous pegmatitic phases. The rock is fairly fresh, and consists of about equal amounts of partly altered feldspar and pyroxene. Darker gabbroic phases are present, and a little quartz is occasionally visible. In the northern part of the area, the diorite exhibits different relations. The grain size is much more regular, ranging from 1 cm. to 1 mm. Clusters of feldspar and pyroxene give the rock a glomeroporphyritic appearance, and a mottled reddish brown weathered surface. Within several individual sills, most of which are completely concordant with the andesite lavas, the rock, as indicated by the color of the fresh surface, varies systematically across the strike from a very light-colored diorite to a dark greenish or black gabbro. In places sills of diorite and gabbro are separated by narrow bands of andesite flow breccia or pillow andesite. Along the top of one well displayed pillowed flow the diorite is seen to be filling in between pillows and chilled against them. Most of this diorite appears much more altered than that to the south. Compositional banding of light and dark constituents, apparently resulting from differentiation, is sporadic in occurrence.

Granite

A mass of medium grained to coarse granite outcrops on lots 32 to 41 in range V and the southern part of range VI, from the southeast shore of Nora lake to about lot 44. This rock as observed in the field varies from almost white to very pinkish, and is seen to consist essentially of quartz and alkali feldspar with occasional grains of altered hornblende. Along the eastern margin of the granite the amphibole content is considerably higher, and where the granite adjoins andesite, rounded basic masses resembling digested inclusions of lava are distributed throughout the granite. The largest of these masses observed was about 12 feet long. At several points within the granite mass the rock is very mafic, over areas a quarter of a mile or more in diameter, and contains pink feldspar, quartz and numerous amphibole prisms up to 14 mm. long.

Later Basic Dykes

Many andesitic dykes and sills in the area are later than the diorite intrusion. Several ages may be represented. These dykes form only a very insignificant part of the intrusives, and are for the most part massive, fine-grained rocks with very dense margins. The dykes are rarely more than 2 or 3 feet wide. A few wider ones have coarser grain and are seen to consist of greenish feldspar and altered pyroxene in about equal amount. Some varieties are porphyritic and the feldspars are waxy yellow. In and along those that cut the rhyolitic rock an unusual amount of pyrite is present and the rhyolites are silicified. One fine-grained dyke was seen cutting the granite.

'Diabase dykes' with ophitic-textured margins are the youngest rocks in the area. The granite mass south of Nora lake is cut by four such dykes with an aggregate width of about 800 feet. These strike N.30°E. and may be traced for distances up to $\frac{1}{2}$ mile. Widths range from 50 to 400 feet. East of Nora lake another dyke of quartz-bearing diabase has been located on three isolated outcrops and assumed to strike N.30°E. A very regular-trending diabase dyke striking N.15°W. has been traced through lot 44, range X, and is observed to die out in the diorite sills.

Porphyry

Near the Nora lake fault, and elsewhere in the area, are small bodies of a white-weathering, coarsely porphyritic rock consisting of grains of feldspar and quartz. The age of these intrusives is not known closely. Most of those near the fault are sheared, and are chloritic, pink- to rusty-weathered, and distinguishable as porphyries only by their clean-cut contacts with the volcanic rocks and occasional quartz phenocrysts. As they cannot be distinguished in the field from intrusive rhyolite, thought to be genetically connected with rhyolite flows, the discrimination of two ages of intrusive porphyry might be erroneous. However, their proximity to the post-granite fault, as well as their resemblance to a small body of quartz-feldspar porphyry cutting diorite in the southern part of the area, suggests that they may be of later age.

Alteration

Alteration of pre-granite rocks in the area is generally of low grade, and with the exception of the porphyry, the younger rocks have hardly been affected. In the lavas, alteration is marked by the formation of chlorite along slip planes and as extensive spots disseminated throughout the rock. There is notably little shearing in the area except near the Nora lake fault. Here most of the rocks are spotted with carbonate, some chlorite and rusty weathered pyrite. A distinctive spotted type of alteration, noteworthy only in the basic lavas, is mentioned under Economic Geology.

STRUCTURE

Folding

A closed syncline, overturned in part to the north, and striking about N.60°W., can be traced from the east boundary of the area to about lot 44 in ranges IX and X, where scarcity of flows precludes placement of its position with any certainty. The flows on the north limb have a vertical attitude, and on the south are either vertical or overturned, dipping as low as 70° south. A gentle plunge to the east is suggested by convergence of horizons westward. However, it is possible that the syncline has been subjected to later cross-warping, producing a wide variation in the strike of the axial plane.

The close folding in the northern part of the area contrasts strongly with the broad, gently dipping, gently folded lava belts elsewhere in the area. South of the syncline the strike changes gradually from N.40°W. in the east to more nearly north in the west, north of Nora lake. Dips are as low as 42° in the west, and tops face north, so that the lava belts are on the north limb of a broad, open anticline. South of the Nora lake fault, from the evidence afforded by lava belt trends and pillowed flows, the strike is consistently about N.20°E. over an extent of two miles to the east of the granite mass. In the southwest corner of the area, the strike varies from about N.10°E. to N.15°W. in gentle curves from south to north. The nose of a minor flexure, known as the Quebec Copper Anticline (Waite Anticline) is believed to lie on a northwest axis north of Waite lake.

Faulting and Shearing

Two sets of faults have been recognized in the area. A minor set of steep dislocations, striking about N.10°E. and N.10°W., has been seen to offset a few formations. Little shearing, fracturing or alteration is associated with these movements, and they are believed to be younger than, though possibly structural complements of, an older set of faults striking about N.50°E. to N.75°E. One of these has apparently offset the rhyolitic formation in lots 50 and 51, range VI.

A fault which may be a major dislocation has been traced from Nora lake northeastward for a few miles on direct and indirect evidence. The fault contact, as observed on the larger island in Nora lake, is a sharp, vertical dislocation, an inch or more wide, marked by a few stringers of quartz. The dark green volcanic rock to the north appears to be irregularly silicified. A little pyrite is present. The granite to the south of the contact is little affected. A mile to the east the faulted contact of granite and highly schistose flow rock has been encountered in a diamond-drill hole (1), at a depth of about 300 feet. From this point eastward the fault has not been located, but is believed to cross the area, passing a few hundred feet south of the small pond in lot 57, range VII. Along its course the rhyolite and rhyolite breccia are more or less schistose and rusty in part, and are broken up and otherwise altered. The considerable variance in trends of the lavas to the south and north of the projection of the fault along the line of its strike suggests its eastward extension.

ECONOMIC GEOLOGY

Up to the present no mineral has been produced economically within the area. However, the important copper-zinc mineralization immediately to the south suggests that this region may be of considerable interest.

Metallic sulphides, chiefly pyrite, disseminated as small grains or in stringers, are found within basic intrusions, along flow contacts, at places within the various diorite intrusions, and at the junctions of dykes and flows. The attendant silicification suggests sulphide replacement, which is characteristic of the Noranda region. Prospectors in the area have paid particular attention to these occurrences. Grab samples taken by the writer failed to indicate any interesting values in copper or gold. While the dykes may be important structural elements in determining the localization of pyrite and other sulphides, the possible sterility of these zones should be borne in mind when prospecting in this area.

Many of the intrusive rhyolites and porphyries are speckled with fine points of rust resulting from the oxidation of metallic sulphides, and a few contain stringers of chalcopyrite up to $\frac{1}{2}$ inch wide. The undeformed and the brecciated porphyries contain disseminated sulphides.

Sulphides of zinc and copper occur in the volcanic series, related to spotted alteration. The alteration consists of spots, clusters, and refilled amygdules containing chlorite, quartz, carbonate, chalcopyrite,

(1) Que. Dept. Mines, Office records.

pyrite, sphalerite, and occasionally pyrrhotite. In places, sulphides, mostly pyrite and sphalerite, occur as fine stringers cutting both the altered and the unaltered portions of the rock. While the spotty replacement has filled amygdules in numerous instances, mild degrees of spotted alteration are apparently unrelated to original volcanic structures. So far as is known, the rocks affected by this type of alteration are chiefly the andesite and its associated breccias in the southern part of the area. The alteration resembles that around the Waite-Amulet mine, but it must be emphasized, however, that from field examination this alteration is not identical with the dalmatianite (spotted dog), and undue optimism must not be exercised in its exploration. The most extensive occurrence is in the basic lavas on lots 50 and 51, ranges V and VI, but it is also found in the north part of lot 35, range VII, parallel to a thin band or rhyolitic agglomerate which appears to be in faulted contact with the basic lavas. Another occurrence is in the north part of range VI, near the 40-41 lot line in rhyolitic breccia adjoining diorite.

It has been found that this type of replacement proceeds more easily through brecciated rocks and massive lava sections that have developed grid fracture patterns, especially near fault zones. These indications should be important guides for prospectors in their search for mineralization. The spotted alteration, whether on the surface or in the interior as nodules, is not necessarily accompanied by mineralization. On the other hand, sulphide mineralization in silicified breccia is general, though not marked, in many parts of the area. A random sample, taken by the writer from one outcrop on lot 44, range VIII, gave 0.05 per cent copper and 0.10 per cent zinc, which is an indication of the general prevalence of weak mineralization.

Extensive deposits of dune sand, suitable for road ballast, mask much of the area and have been used in road construction by timber companies. A long north-south trending gravel ridge extending the length of the area, over a width of 200 feet, appears to contain suitable amounts of road material.

PROPERTIES

Lépine Lake Gold Mines Ltd.

This company holds claims comprising lots 42 to 45, range V, and 43 to 48, range VI, inclusive, Duprat township. A good truck road, connecting with the Macamic highway, leads both to the north and south parts of the property.

Most of the property lies on the west side of the long gravel ridge trending north-south through the middle of this quarter of the township, and little bedrock is exposed. The scattered outcrops consist of granite on the west in contact with silicified andesite, rhyolitic rocks, diorite, diabase, and quartz-feldspar porphyry. In the north, minor north-south faulting and east-west shearing have disturbed the acidic pyroclastic rocks, but little alteration or mineralization is seen on the surface. The assumed extension of the Nora lake fault passes through the northern boundary of the property.

Three holes totalling 1610 feet were drilled in the autumn of 1949 to test magnetic anomalies located by a magnetometer survey during the summer. Massive feldspar porphyry over 50 feet in width was intersected by

one hole. Minor pyrite mineralization occurs locally in the diorite and rhyolitic rocks. William Beaton is in charge of the property.

Decoeur-Garon Property (Noranda Mines Ltd.)

Noranda Mines Ltd. holds lots 46 to 53, inclusive, range V, and the south half of lots 50 to 53, range VI, Duprat township. Secondary automobile roads from the Macamic highway lead to all parts of the property.

The property is underlain by a series of acidic and basic lavas striking a little east of north, and dipping at low angles to the east. They form the westernmost extension of the Waite hills. Faults, striking a little north of east, and diorite masses, interrupt the continuity of the lava belts. In the south part of range V mildly rusty rhyolite, massive and brecciated, outcrops over a length of $\frac{1}{2}$ mile. Closely associated with the rhyolite is rhyolite porphyry which may be in part intrusive. The basic members of the lava series are characterized by spotted alteration. The breccia zones contain many fractures healed with silicious material.

Early work by former owners consisted of trenching in the north part of lot 50, range V, and the south part of lot 50, range VI. The claims have been mapped on a scale of 1 inch equals 100 feet by the company, and a magnetic geophysical survey was conducted during the winter of 1948-49. A total of 18 holes aggregating 13,000 feet were drilled during the summer and fall of 1949 to test the geophysical anomalies.

Mineralization has been encountered in the trenches. Spotted, massive andesite (metadiabase) contains ovoids and amygdule fillings of pyrite, pyrrhotite, chalcopyrite and some sphalerite. The sulphides also occur in small discontinuous stringers filling fractures in the volcanic breccia, or in the fractured massive volcanic rocks. Surface mineralization associated with spotted alteration is confined to two occurrences with definite widths of about 100 feet and trends parallel to the strike of the lavas, but, so far as present drilling indicates, mineralization occurs to a varying degree without intense spotted alteration or structural trend. Much of the sulphide encountered in drilling is finely disseminated in altered lavas, mostly basic, having dark chloritic spots and opalescent quartz in various stages of replacement by sphalerite, chalcopyrite, pyrrhotite and pyrite. A north-south trending zone of mineralization having a width of about 700 feet and a length of 2,800 feet was partially outlined by the drilling. The bottom of the zone of mineralization is unknown. Copper and zinc assays ranging from 0.10 per cent to 0.70 per cent were obtained.

Abitibi Ventures Ltd.

Abitibi Ventures Ltd. holds claims covering north half-lots 50 to 55 and lots 56 and 57, range VII and lot 50, range VIII. A truck road passes through the south and west part of the property.

The north part of the property is extensively drift-covered. Scattered outcrops of rhyolite, dacite and fragmental rhyolite are intruded by narrow dioritic dykes. The centre part of the property straddles the assumed eastward extension of the Nora lake fault and is marked by rusty rhyolites and altered fragmental flows. The south part of the property is rocky, and outcrops are well exposed over considerable areas. They consist

of alternating rhyolite and andesite bands, trending N.10°E., intruded by sills and masses of diorite of great thickness.

The property was explored by magnetic and self-potential surveys during the summer of 1947. Following the geophysical surveys three holes totalling 957 feet were drilled in the spring of 1949, in conjunction with Québec Explorers Ltd. Numerous small dykes of rhyolite were intersected in drilling. Rhyolitic sections in drill holes are locally spotted with pyrite, mildly carbonated, and contain chlorite occasionally in slip planes, and a few small seams of chalcopyrite.

Paul d'Aragon is in charge of the property.

Québec Explorers Ltd.

This company holds claims comprising lot 58, and most of lots 59 to 61, range VII, and 53 to 56 and south half-lots 57 to 62, range VIII, as well as claims in Dufresnoy township to the east. A truck road provides access to the northwest part of the property.

The general geology in the southern half of the property is similar to that on the property of Abitibi Ventures Ltd. In range IX, the principal exposures consist of andesite flows and breccia, lying on the south limb of a closed syncline, with nearly vertical dip. The volcanic assemblage is intruded by rocks of the post-Keewatin diorite group.

Following magnetic and self potential surveys during the summer of 1947, three holes totalling 1,460 feet were drilled, two of which were drilled jointly with Abitibi Ventures Ltd.

Paul d'Aragon is in charge of the property.

Vauze Dufault Mines Ltd.

The company holds lot 62, range VIII, Duprat township, as well as claims in Dufresnoy township to the east. Outcrops in Duprat township consist of rusty, mildly sheared, spotted rhyolite and massive diorite. Drilling exploration consisted of three holes totalling 1,500 feet in the rhyolite on lot 62, range VIII, near the township boundary. Work was discontinued in December 1946.

The mineralization encountered consists of pyrite, generally disseminated in rhyolite and rhyolite breccia, and occasional stringers containing chalcopyrite and sphalerite. Values of 8.54 per cent copper, 2.74 per cent zinc and 1.07 ounces of silver per ton over a width of 6 inches were reported in one case. Stringers are infrequent and gold values are low or absent.

No recent work has been done on this property.

Stadacona Mines (1944) Ltd.

This company holds claim-blocks 106, 107, 108 and 109, in the east part of ranges VI and VII, Duprat township, west and north of Waite lake. The nearest road lies $\frac{1}{2}$ mile to the southwest of the southern claims.

The property lies for the most part in the highest part of the Waite hills, and outcrops are bare and rocky, consisting of lava belts, predominantly rhyolitic. The coarse-grained diorite near Waite lake intrudes the andesites and rhyolites. Little surface mineralization or shearing is visible on the property.

Blocks 107, 108 and 109 were surveyed by magnetometer in 1948, and plans call for drilling in the future to test magnetic anomalies obtained.