

# RP 561(A)

PRELIMINARY REPORT, GEOLOGY OF THE SOUTH HALF OF PERRON TOWNSHIP, ABITIBI-WEST COUNTY

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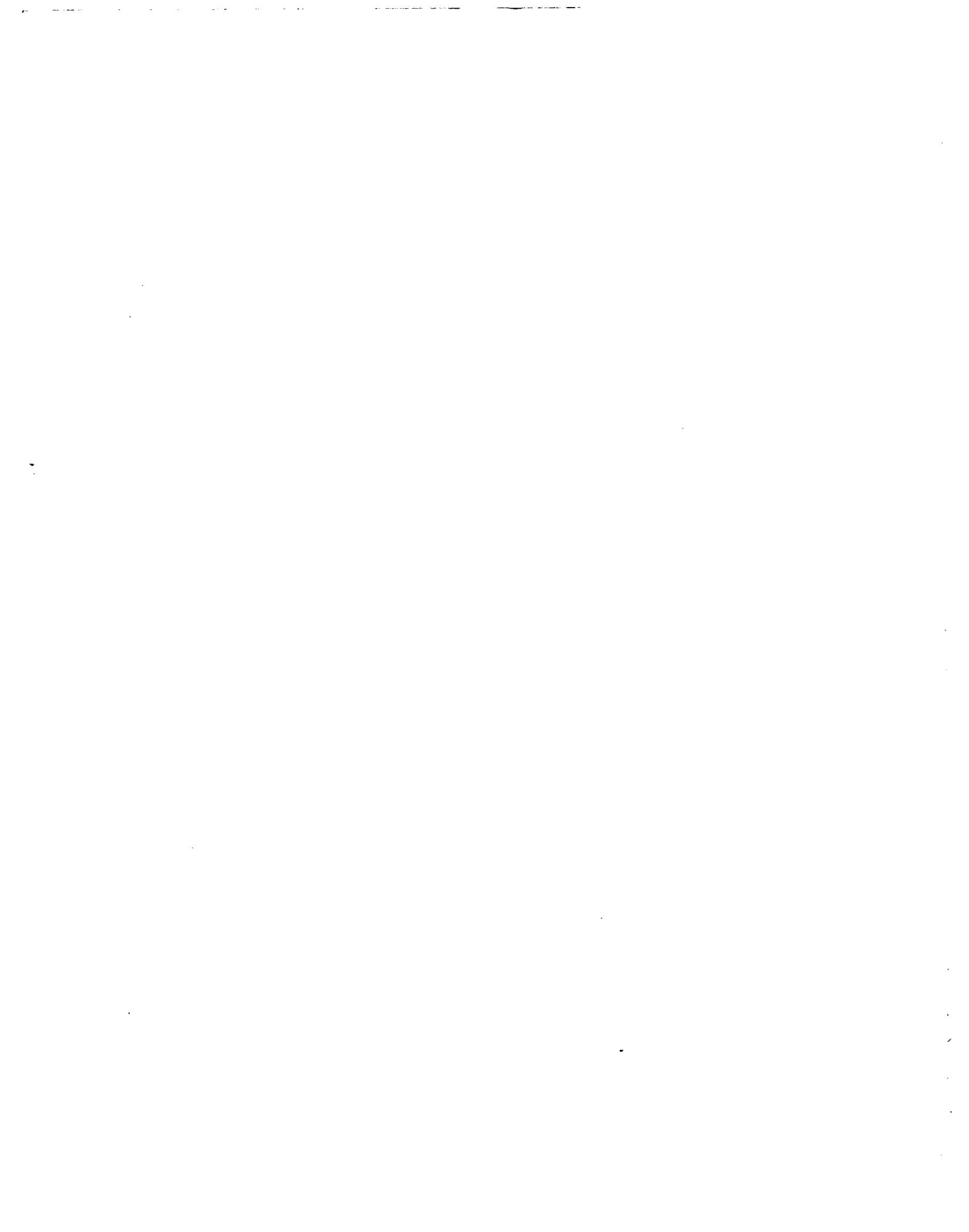
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QUEBEC DEPARTMENT OF NATURAL RESOURCES

P.R. No. 561

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GEOLOGY OF PART OF PERRON TOWNSHIP

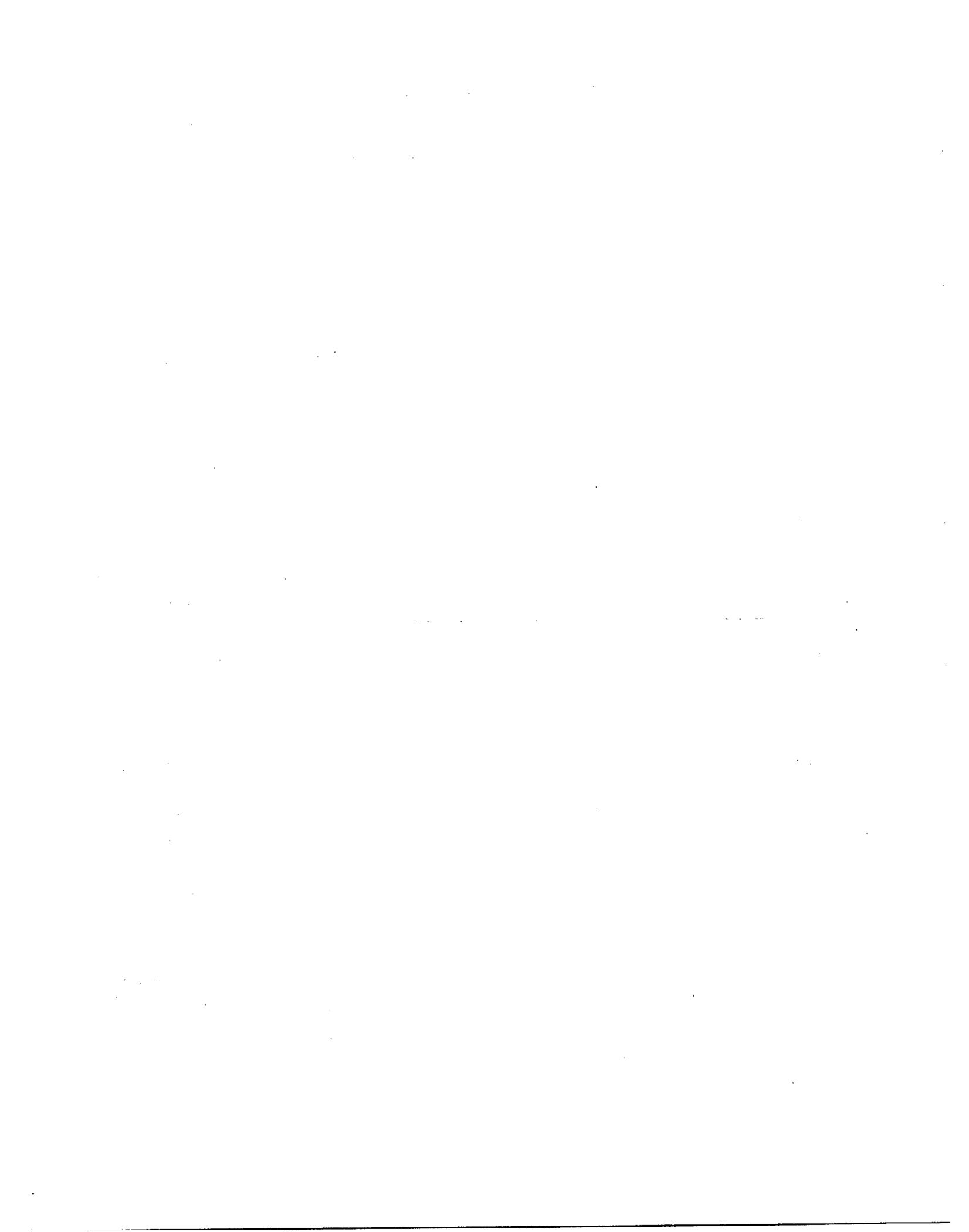
Quebec, December 12, 1967 - The Quebec Department of Natural Resources has authorized the distribution of a preliminary report entitled "Geology of the South Half of Perron Township, Abitibi-West County". The report and its accompanying map, drawn at a scale of 1,000 feet to the inch, are based on field work carried out during the summer of 1966 by Ronald Bogoch for the Mineral Deposits Service of the Department.

The map-area is 60 miles north-northwest of the cities of Rouyn and Noranda and its southern boundary is one mile north of the town of Normetal. All rocks in the area are of Precambrian age. Most of the area is underlain by a volcanic assemblage of lavas and pyroclastic rocks ranging in trend between northeast and east. The mafic volcanic rocks are overlain by dacites and rhyolites with felsic pyroclastic interbeds. Metasedimentary rocks are restricted to narrow interbeds in the volcanic rocks, to remnants in the Patten River pluton, and to a small area in the northwest corner of the map-area.

The most extensive intrusive bodies include dioritic and gabbroic plutons, the Mistawak granodiorite batholith, and the Patten River quartz-monzonite pluton. Diabase dikes cut all other rock types.

The felsic volcanic rocks of the Normetal mine extend into the area and offer favorable ground for exploration. No deposits have yet been found within the map-area. Sulfide mineralization occurs as stringers or narrow lenses in the volcanic rocks and as disseminations in the granitic rocks.

Copies of the report (P.R. No. 561), along with the accompanying maps (Nos. 1639 and 1640), may be obtained for 50 cents each from the Department of Natural Resources, Parliament Buildings, Quebec City, or from other offices of the Department situated elsewhere in the Province.



Honorable DANIEL JOHNSON  
Minister

PAUL-EMILE AUGER  
Deputy Minister

MINERAL DEPOSITS SERVICE  
ROBERT ASSAD, Director

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**Geology**  
**of the**  
**SOUTH HALF OF PERRON TOWNSHIP**  
ABITIBI-WEST COUNTY

PRELIMINARY REPORT

by

Ronald Bogoch

QUEBEC  
1967



Preliminary Report

on the

SOUTH HALF OF PERRON TOWNSHIP

Abitibi-West County

by

Ronald Bogoch

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INTRODUCTION

The south half of Perron township is in Abitibi-West county between latitudes  $49^{\circ}00'33.8''$  and  $49^{\circ}04'55.0''$ , and longitudes  $79^{\circ}17'57.4''$  and  $79^{\circ}31'04''$ . The area covers 50 square miles. Its western limit forms part of the Quebec-Ontario boundary and its center is 60 miles north-northwest of the cities of Rouyn and Noranda.

Access to the area is facilitated by a paved road from Rouyn to Normetal. Normetal lies one mile south of the south boundary of Perron township. The Quebec-Cochrane line of the Canadian National railway passes through Dupuy, 12 miles south of Normetal.

In the map-area, a gravel road extends north from Normetal between lots 48 and 49. Other motor roads, tractor roads, and trails are available.

Mapping in the summer of 1966 was carried out at a scale of 1 inch to 1,000 feet.

The map-area is included in the map by Flaherty (1936) at a scale of 1 inch to the mile. In ranges I and II, lots 32 to 61 were mapped as part of a project by Tolman (1951). The adjacent area in Ontario was mapped by Lumbers (1963).

### TOPOGRAPHY

The map-area may be roughly divided into three topographic units.

The east part of the area, which is drained by Boivin river, is generally flat and covered by swamp and muskeg. The average elevation is 950 feet above sealevel, and outcrops are scarce.

In the central portion, west- to northwest-trending ridges overlook swampy lowlands. The highest point, 1,325 feet above sealevel, is in range I.

The western part of the area is characterized by the uplands of the Abitibi hills and is more heavily wooded.

The over-all drainage of the area is of low density.

Surficial deposits are mainly clays deposited by Barlow-Ojibway glacial lake and some apparently reworked sand and gravel glacial deposits. Glacial striae trend N.20°W.

### GENERAL GEOLOGY

All rocks in the area are of Precambrian age. A volcanic assemblage of lavas and pyroclastic rocks is exposed in the south and north central regions. The mafic volcanic rocks are overlain by dacites and rhyolites with felsic pyroclastic interbeds.

Metasedimentary rocks are generally restricted to narrow interbeds in the dacites and andesites and to remnants in the Patten River pluton. Graywacke outcrops in the northwest corner of the map-area.

The volcanic rocks are metamorphosed to green-schist facies. East of Altura lake a zone of garnet-amphibolite affords evidence of higher-grade metamorphism.

Sills of rhyolitic composition, metadiabase, and epidiorite intrude the dacites in the south part of the area.

Large and small gabbroic plutons intrude the volcanic rocks, and a dioritic body is preserved as a roof pendant in the Patten River pluton west of Altura lake.

The Mistawak batholith is exposed in the east and the Patten River pluton, in the west part of the area. The latter is quartz-monzonitic and the former granodioritic in composition.

Diabase dikes cut all other rock types.

### Volcanic Rocks

#### Andesite

An andesite formation borders the Mistawak batholith in the east part of the area. In the west part, it is cut off by the Patten River pluton. The formation reaches an apparent maximum thickness of approximately 10,000 feet in the north central area.

The andesite is dark gray, dark green, or, rarely, light brown on weathered surface and dark gray to green on fresh surface.

The andesite ranges in texture from very fine-grained near its flow boundaries to coarse and amphibolitic near the centers. It is composed of gray feldspar, amphibole, biotite, and chlorite. The amygdules are granular aggregates of quartz or deformed homocrystalline plagioclase. Magnetite, pyrite, carbonate, and quartz are randomly distributed as accessory minerals.

Pillows are well exposed throughout lots 20 to 25, range III, where tops to the south are indicated. The andesite is rarely vesicular. Most exposures show schistosity in varying degrees.

An amygdaloidal variety of andesite is distinguished from the homogeneous variety. It is well exposed east

TABLE OF FORMATIONS

Cenozoic	Recent and Pleistocene		Swamp, muskeg, sand, gravel, boulders
Precambrian	Late Precambrian		Diabase
	Early Precambrian	Late felsic intrusive rocks	Patten River pluton
		-----	Mistawak batholith
		Late mafic intrusive rocks	Gabbro, diorite
		Early mafic intrusive rocks	Epidiorite, Metadiabase
		Early felsic intrusive rocks	Rhyolite dikes
	Early Precambrian	Sedimentary rocks	Metasandstone
Pyroclastic rocks		Coarse- and fine-grained tuff, agglomerate, (lapilli tuff)	
Volcanic rocks		Feldspathic lavas, rhyolite, dacite, andesite, (iron formation, chert)	

of the quartz monzonite contact near Altura lake and trends as a narrow band southeast into lot 32, range IV, where it is a good marker bed.

Narrow interbeds of iron formation and meta-sandstone are irregularly exposed throughout the andesite. Near Altura Lake andesite and sedimentary rocks are metamorphosed to garnet amphibolite.

In lots 51 to 60, range I, bleb-like inclusions of a greenish siliceous rock, possibly a late segregation, are common in the andesite. This feature is also observed to a lesser extent northwest of Domène lake.

#### Dacite and feldspathic volcanic rocks

Dacite forms two prominent bands which trend west to northwest, north and south of the acid volcanic-pyroclastic sequence. It is also intimately intercalated with the rhyolites and, to a lesser extent, the pyroclastic rocks.

The outcrops exhibit a brown-gray to greenish-gray weathered surface and are gray to light green on fresh exposures. The dacites are composed of light gray feldspar, biotite or chlorite, some amphibole, and, in places, quartz phenocrysts. The dacites are locally amygdular, as are the andesites, but this feature is not continuous along strike.

The northern band is distinguished by the presence almost everywhere of clear quartz eyes and small plates of biotite. The characteristic features of the southern band of dacite are an abundance of quartz and feldspar amygdules, the presence of iron formation interbedded with clastic sediments, and a lack of quartz phenocrysts.

Gray lavas composed almost entirely of feldspar with traces of chlorite or biotite are possibly related to the dacite. These are light green on fresh surfaces and light gray on weathered. Rare amygdaloidal bands, 1 to 2 feet thick, are found in the feldspathic lavas.

Both varieties exhibit good pillow structures, 1 to 3 feet in diameter, and some flow contacts are found where the lava is vesicular. Schistosity is equally well developed in the north and south bands.

## Rhyolite

Rhyolite within the area is commonly exposed on low, long, narrow ridges. It is very fine grained, light gray, light pink to white on weathered surface and light gray on fresh surface.

Two 2,000-foot-wide bands, one overlying and the other underlying the acid pyroclastic rocks, occur in the south and west parts of the map-area. The rhyolite is schistose and exhibits good cleavage, except where it is very siliceous. The quartz content ranges apparently from 5 to 30%. Light gray to buff-colored feldspar and sericite make up the bulk of the constituents. The northern band contains opalescent blue ovoids (locally euhedral) of quartz which are continuous along strike. The southern band has a more siliceous groundmass, possibly owing to later silica residue in the magma following a period of explosive activity. The pink, more 'classic' variety occurs in the southern band with facies gradation into the light gray feldspathic or silicic varieties. Pyrite, biotite, and, rarely, magnetite are accessory minerals.

Small, highly deformed pillows are exposed in the southeast part of the sequence, but other primary structures are generally lacking. The two bands are conformable with the pyroclastic units.

Dikes of rhyolitic composition intrude feldspathic and dacite flows in lot 36, range II.

## Pyroclastic Rocks

Felsic pyroclastic rocks, which strike N.60°W. across the southern part of the area, make up the central 3,000 feet of the rhyolitic unit.

Three types of pyroclastic rocks with similar composition were differentiated on the map on the basis of grain size. They are now almost entirely feldspar-sericite-quartz schists, with local cherty variations. The first type consists of fine-grained ash (tuff) deposits which include pyroclastic rocks with relict-clastic textures. The second type, a coarser tuff which contains visible mineral fragments 1-3 mm. in diameter, covers relatively small areas. The last type may be described as a felsic agglomerate or lapilli tuff. Bombs 6 inches to 2 feet in length are widely scattered in a fine-grained

schistose matrix. The schistosity bends around the bombs. The bulk of this unit, however, is composed of smaller lapilli in a similar matrix.

All types, except the agglomerate, exhibit good banding generally with a differentially weathered light gray-white to light brown surface. The cementing agents in lithification were probably mainly quartz with some carbonate. Carbonate and, more rarely, chlorite locally occur as thin stringers parallel to the bands.

Minor flow breccia and tuff of dacitic composition are interbedded with the dacite flows and to a lesser extent the felsic pyroclastic rocks. Andesitic tuff is found as 1- to 5-foot-wide bands in lot 24, range III, and as one 20-foot-wide outcrop in lot 57, range I.

#### Iron Formation and Chert

Magnetite iron formation is widely distributed throughout the northern andesites and in the southern dacites. In lot 27, range I, 1- to 5-foot-wide bands of iron formation are interlayered with fine-grained clastic sedimentary rocks over a thickness of 60 feet.

The iron formation is composed of 20 to 50% magnetite finely interbedded with granular quartz. A chlorite-rich schistose rock is commonly associated with the iron formation in the andesites.

In lots 20 to 22, range II, a 70-foot layer of bedded chert is well exposed. The felsic pyroclastic rocks on both sides of the band are cherty, but the contact is distinct.

#### Sedimentary Rocks

Clastic sedimentary rocks are found interbedded with the volcanic rocks of the area as several narrow bands. They are generally metasandstones of a quartzitic nature. Clastic remnants are easily recognized in hand specimen.

Near Altura lake, an original composition closer to that of graywacke is probable. Here, the rock weathers light brown and is gray on fresh surface.

In lots 3 to 5, range V, quartzite outcrops on a large, somewhat-rounded hill. Both the fresh and weathered surfaces of the quartzite are light brown. Relict bedding is well exhibited and grain-sized gradations indicate tops to the south.

The sedimentary rocks adjacent to the diorite in range V are light gray. Thin flakes of biotite in a quartzite are well aligned.

### Intrusive Rocks

#### Epidiorite and metadiabase

Strongly-foliated epidiorite sills intrude the dacite and rhyolitic lavas in lot 21 of range II and lots 18 and 27 of range I. They exhibit a gray-green weathered surface and are pale brown on fresh surface. The mineral components are plagioclase, chlorite, amphibole, and a minor amount of biotite and alkali feldspars. The plagioclase is altered to epidote and chlorite. Contacts with the surrounding rocks are generally sharp and concordant, but locally cross-cutting relationships occur.

Two metadiabase sills outcrop in lot 27, range I, and are foliated parallel to the regional trend. The weathered surface is brown and the fresh surface is dark green. The rock is composed of amphibole and plagioclase, both of which are partially saussuritized.

#### Gabbro

Three areas of gabbroic intrusion are found in the south half of Perron township. In lots 56-59, range II, the gabbro intrudes andesite and is in turn cut by the Mistawak granodiorite. The gabbro is dark green on both weathered and fresh surfaces and is composed essentially of amphibole porphyroblasts, plagioclase, and minor quantities of pyroxene and biotite. The rock is medium to coarse grained with better foliation in the medium-grained varieties. Lamprophyre dikes, possibly genetically related to the gabbro, cut the andesite.

Northeast and east of Altura lake, small irregularly shaped bodies and dikes of coarse-grained porphyroblastic gabbro

intrude both the andesite and the sedimentary rocks. Geophysical evidence also suggests the presence of two large, round plutonic bodies (gabbro ?) underlying the sedimentary-volcanic sequence. These intrusions were possibly the cause of the garnet-amphibole metamorphism of the country rock.

### Diorite

A large dioritic roof pendant in the Patten River pluton outcrops in lots 13 to 15, range V. It exhibits a dark gray fresh surface where medium grained, but the pegmatitic variety is light gray-cream to buff. Both weather to a medium gray color. The medium-grained facies is more common than that of the pegmatite, which occurs as veins, dikes, and irregularly shaped masses. Contacts between the two facies are sharp. Coarse-grained, light gray monzonite dikes, 2-10 feet in width, intrude the diorite. Small inclusions of andesite occur in the pendant. Widespread jointing in a variety of directions is characteristic of the rock.

The diorite is apparently composed of equal amounts of pyroxene and light gray feldspar. Foliation is weak in the medium-grained phase and is non-existent in the pegmatite. Traces of pyrite and chalcopyrite occur locally.

### Mistawak batholith

Rocks of the Mistawak batholith, which consists mainly of coarse-grained gray, biotitic to leucocratic granodiorite, occupy a large portion of the east and northeast parts of the area. Other varieties of rocks include a medium-grained biotite granodiorite of apparently younger age, ubiquitous dikes of pink aplite, rare pegmatites, and, in lot 48 of range V, a coarse-grained muscovite granodiorite.

Plagioclase, quartz, and potash feldspar appear to be the major over-all constituents, with some biotite and accessory minerals. The plagioclase is saussuritized, particularly near the contact with diabase dikes. Epidote is the most common product of this alteration. Quartz is commonly a pale blue opalescent variety, but is always euhedral, unlike that in the rhyolite. Pyrite, as small euhedral crystals in quantities always less than 1% of the rock, is a common accessory mineral.

The granodiorite is amphibolitized, and the quartz is considerably less abundant than in the normal rock near its intrusive contact with andesite.

The contact with andesite near Pajégasque lake shows intimate interfingering. An isolated patch of migmatite outcrops in lot 53, range V.

The only observed pegmatite exposure covers 25 square feet and is in lot 43, range IV. The pegmatite is composed of alkali feldspar, whose grain size averages 2 cm., and quartz.

Aplite dikes intrude the granodiorite, andesite, and gabbro, but rarely extend more than 100 feet away from the granodiorite mass.

Both the coarse- and medium-grained biotite granodiorite are foliated throughout. The foliation, which is absent in the leucocratic facies, is exhibited by an alignment of biotite. Much of the jointing parallels this foliation.

#### Patten River pluton

The bulk of the Patten River pluton is in the west part of the map-area. Only two facies of the pluton outcrop in this region: a massive, homogeneous medium- to coarse-grained variety occurs in the central part, and in the southeast a more leucocratic variety parallels the border of the intrusion.

A granodiorite composition was reported by Lumbers (1963) for the adjacent area in Ontario. However, potash feldspar appears to make up 20 to 30% of the rock in Perron township. The presence of potash feldspar in that proportion would lead the writer to classify the rock as a quartz monzonite. The orthoclase increases with a decrease in biotite towards the borders of the pluton. Along the contact in the southwest part of the intrusion, a foliated coarse-grained biotite quartz monzonite is present.

Slight amphibolitization occurs in the rock near the diorite, but virtually no significant alteration was noted at the volcanic contacts. Biotite is locally and rarely altered to chlorite, and epidotization of the plagioclase occurs throughout. Epidote may also be present as a primary constituent.

Aplite dikes are common near the edge of the pluton and intrude the andesite. In lot 9 of range III south of the contact, an acid tuff-monzonite migmatite is present.

### Quartz veins

Quartz veins are abundant in the felsic pluton but are ubiquitous in all units. Most veins are no more than 2 feet wide and probably average 8 inches. The most abundant exposures of quartz veins occur in the granodiorite in lot 42, range IV. No significant mineralization was encountered in these veins.

### Diabase dikes

Diabase dikes with two prominent trends, north-south and northeast-southwest, traverse the area throughout. Outcrops are generally rounded and form hills 25 to 100 feet above the surrounding terrain. The northeast-trending dikes are more magnetic.

Four types of dike compositions were observed: quartz diabase, olivine diabase, epidote diabase, and diabase. A quartz diabase dike (Abana dike) outcrops near Lot-line 45-46, range I. Only traces of quartz were observed, such as was the case in the north-south-trending dikes in the west half of the area. An east-west dike having a 125-foot width (lots 43 to 45, range I) contains olivine. No other dikes of similar composition were observed. Epidote is a constituent of the dike located in lot 57, across Range-line IV and V. The large 200- to 300-foot-wide dike in ranges I and II contains light gray siliceous material which cuts the dike in two locations.

All the dikes weather brown and have greenish gray fresh surfaces. They are characterized by chilled margins. The northeast-trending dikes may be younger, but evidence to suggest this is scant.

## STRUCTURAL GEOLOGY

The volcanic assemblage of the map-area is part of a northwest-trending greenstone belt which is more than one hundred miles along strike. The southern tip of the Mistawak batholithic complex extends into the northeast corner of the area and is generally foliated parallel to the direction of schistosity in the adjacent volcanic rocks.

All the volcanic and sedimentary rocks are schistose to a greater or lesser degree. They exhibit at least two cleavages, which are generally within 30 degrees of the observed bedding.

Determinations based on pillows and vesicular flow contacts indicate tops to the south. Locally, vertical isoclinal folding is apparent.

The upper volcanic rocks (in the south) trend N.65°W. throughout and dip vertically or steeply to the north. Underlying flows have a large basin-like shape concave to the north, which may be due partly to structure and partly to topography.

It appears that the pyroclastic rocks are part of a broad homocline, which is internally isoclinally folded with axes parallel to the bedding and then refolded into a N.30°E. to N.70°E. trend. Schistosity, which might be a result of the cross-folding, is strongest in the volcanic rocks north of Poison lake. The other plane of schistosity, where visible in these rocks, parallels the N.65°W. to east-west trend of the major cleavage in the upper flows.

Schistosity, trending N.65°W. is developed in the upper volcanic and pyroclastic zone across a width of 500 feet.

Two parallel transcurrent faults strike N.25°W. across the west half of the area. The observed horizontal left-hand displacement is 500 feet. A north-south diabase dike apparently is cut off by the westernmost fault.

An apparent thrust fault trending N.60°W. is located in the south part of lots 8 to 11, range III. South of it in range II, a N.45°E.-trending fault is postulated; the assumption is based on a change in lithology and cleavage directions.

#### ECONOMIC GEOLOGY

Exploration in the area began after the discovery of the Normetal orebody in 1925. No deposits of significance have as yet been discovered within the map-area..

Sulfide mineralization occurs as stringers or narrow lenses in the volcanic rocks and as disseminations in the granitic rocks.

An abundance of tuffaceous and siliceous volcanic rocks of the type commonly associated with massive sulfide deposits in Normetal and the Rouyn-Noranda area offers considerable encouragement for exploration in the south half of the area.

#### Mineralized Areas

1) NE. corner, lot 47, range I:- Three trenches in a highly schistose andesite outcrop contain lenses of massive pyrite with some pyrrhotite. A three-foot sill of amphibolite is parallel to the sulfide zone from which gold is reported. Ref.: P.R. 330, p. 74

2) N. half, lot 52, range I:- Small, 1- to 3-inch lenses of pyrite with traces of chalcopyrite and pyrrhotite are found in andesite adjacent to a diabase dike.

3) Lot 38, range II:- Immediately north of the range line, pyrite and pyrrhotite mineralization was noted in an 80-foot band of pyroclastic rock adjacent to the large north-east-trending diabase dike. The minerals are disseminated in a very siliceous fine-grained tuff.

4) Lot 45, range IV:- A pyritiferous quartz vein in the granodiorite contains 0.001 ounce of gold per ton. Similar quartz veins in the granitic rocks of the Mistawak Batholith were not assayed.

5) Center of lot 28, range V:- A pit and several trenches were developed on the former property of Norcopper and Metals Corp. Pyrite, pyrrhotite, chalcopyrite, and sphalerite were encountered in a garnetiferous andesite and interlayered quartzites. Samples assayed 0.03% copper. Ref.: P.R. 390, p. 67

6) Lot 20-21 boundary, range III:- Just north of the range line, massive pyrite mineralization was observed in a rhyolite flow. Two trenches were excavated within fifty feet of the north-south diabase dike. Traces of copper and gold were determined in an assay submitted by the writer.

7) South half, lot 16, range IV:- Small (3 to 6 inches) pyrite and pyrrhotite lenses were observed in a large andesite xenolith, in the Patten River pluton. Traces of gold, copper, and zinc were determined by assay.

8) Lot 47, range V:- A drill-hole on the shore of Pajégasque lake (Dept. of Agriculture and Colonization) encountered 2 feet of pyrrhotite and chalcopyrite mineralization at a depth of 80 feet, in the altered andesite.

9) Lots 3 to 4, range V:- Pyrite and pyrrhotite lenses are associated with the iron formation in the graywacke outcrops.

### Description of Mining Properties

#### Beaupré Base Metals

(Radnor, Harrison Claims, Bellevue Gold Mines Ltd. and Donmaque Gold Mines Ltd.)

Ref.: Que. Bur. Mines. Summary Rept. Part C. 1928

Canadian Mines Handbook to 1955

Q.D.M. P.R. 330, p. 73

The Perron property of Beaupré Base Metals includes the south half of lots 8 to 10, range III, the north half of lots 8 to 12, and of lots 15 and 16, range II, and lots 17 and 18, range II.

The area is underlain by feldspathic lavas and felsic pyroclastic rocks, with some granite to the north.

Nearly 15,000 feet of diamond drilling was done in the early 1950's on the actual property and on adjoining ground formerly held by Beaupré Base Metals. Most drill-holes in the siliceous tuffaceous units yielded pyrite.

The area was optioned for one year by Mining Corp. in 1955, and since that time no work has been reported.

New Metalore Mining Co. Ltd.

(Arnoth Prospecting Syndicate, Metalore Mining Co.)

Ref.: Q.B.M. Min. Oper. 1928, pp. 108-9

Q.D.M. Min. Ind. 1943, p. 91  
1944, p. 61

P.R. 374, p. 12

The New Metalore Mining Co. has holdings in ranges I and II. These include the south half of lots 8 to 16 of range II, lots 21 to 31 of range II, the north half of lot 25 of range I, lots 26 to 30 of range I, the south half of lots 38 to 42 of range I, and the north half of lot 40 of range I.

Since 1943, Metalore and New Metalore have completed 36,000 feet of diamond drilling in areas underlain by felsic pyroclastic rocks, rhyolite, and some dacite. A north-south diabase dike traverses the property in lot 21, range II. Traces of copper associated with pyrite were observed in the cores of several drill-holes. Over-all results, however, have been inconclusive.

Normetal Mining Corp.

The Normetal Mining Corp. holds lots 31 to 37, range I, the north half of lots 38 to 40, range I, the south half of lots 42 to 54, range II, the north half of lot 41, range I, and lots 42 to 61, range I.

Line cutting for geophysical work is in progress on the eastern property.

A 14-inch-long lens of pyrite was observed in the agglomerate in lot 35, range I. Smaller lenses and stringers of pyrite are widespread on this outcrop.

GEOCHEMISTRY

Samples of stream sediments were taken during the course of geological mapping and the results of analyses are shown on the accompanying maps. Wherever a river was crossed, two samples were taken a few feet from each other in the active river bed.

No attempts to interpret the results have been made.

REFERENCES

- Tolman, C. (1951) - Normetal Mine Area; Que. Dept. Mines Geol. Rept. No. 34.
- Gilman, W.F. (1961) - Desmeloizes Township; Que. Dept. Nat. Res., Preliminary Rept. No. 462.
- Flaherty, C.F. (1936) - Map No. 483A, Perron-Rousseau Sheet, West Half, one inch equals one mile; Geol. Sur. Can.
- Lumbers, S.B. (1963) - South Patten River Area; Ont. Dept. Mines, Geol. Rept. No. 14.