

41H16NW0002 63A.248 LOWER FRENCH RIVER

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BIGWOOD, Ont.

July 28, 1955

A report on the geology of 21 claims,
numbered PS-3682 to PS-E702, inclusive,
situated in the Key Harbour area of the
Parry Sound Mining Division, belonging
to Atlin-Ruffner Mines (BC) Ltd.

By W. T. Boyes.

LOCATION and ACCESS

The property is on the Pickerel River about 5 miles west of Ontario Highway 69, and of the Canadian Pacific main line from Toronto to Sudbury, which railway crosses the Pickerel about a quarter mile east of the highway bridge. The ground is 3 miles by river east of the Canadian National Railway and 1.5 south of Sudbury. Local Canadian Pacific stations are Bigwood, 2 miles north of the highway landing, and Pickerel, C.P.R., a few miles south of it. The Canadian National crosses the river at Pickerel River C.N.R.

Access is simple, from either of the railways, or from the Pickerel River Transportation Company's dock at the highway. The latter operates a boat taxi, and will transport loads by barge. The river at all points in the vicinity gives ample run-way space for aeroplanes.

OWNERSHIP

The claims belong to Atlin-Ruffner (BC) Mines, Ltd., of Suite 1105, 302 Bay St. Toronto, Ont.

DATES of SURVEY

Geological survey was made between April 27 and July 20, 1955.

SUMMARY of WORK to DATE

A 5 ton bulk sample was shipped to Union Carbide Company of

Niagara Falls, N.Y. to be assayed for Cerium and other rare earths, and for other tests. Assay results were encouraging.

Stripping exposed interesting amounts of surface mineralization and may have indicated structural suggestions that could prove significant.

Diamond Drilling is presently probing to shallow depth occurrences on claim PS-3683. Others on PS-3687 and PS-3689 are to be tested.

Base lines and picket lines were cut in conjunction with geological mapping and as an aid in relation outlying patches of mineralization investigated by geiger-counter and by stripping.

ROCK TYPES

Rocks have been treated in three general groups, viz: gneisses, syenites and syenite-like rocks, and pegmatites, the syenites and pegmatites supposedly of Killarnean age.

Gneisses: The generally common rock of the area is a grey-green to light grey quartz -- hornblende to quartz-biotite gneiss, occasionally varied to a pinkish impure quartzite. Most of the gneiss would seem to be former sediments. Attempt is not made to differentiate between orthogneisses and paragneisses. All rocks of the area have been subjected to sufficient series of disturbances as to obscure most of their original character.

Intrusives

Nepheline Syenite and Pegmatites. Bands of rock were

mapped by T.T. Quirke (Ont. Map 239A - Key Harbour Sheet) and by Quirke and Pegrum (Ont. Map 250A - Delamere sheet) as nepheline Syenite intrusives. Suggestion would seem to have been made by J. Tuzo Wilson (Transactions American Geophysical Union 29-5, pp 702-705 -- Particular reference p 703) that syenite-like texture and composition may be a result of alteration and recrystallization of lava flows or extremely altered sediments.

Observations made here would suggest that there is definite intrusion, but that following, were periods of recrystallization, with penetration by pegmatitic solutions.

There would seem to be a syenite-like rock, varying in a few places to diorite-like, that shows large albite phenocrysts, to 2 inches diameter -- largely pegmatitic, often recrystallized, other than for the phenocrysts, to an orange-pink mass, often sheared and brecciated. Some pegmatite contacts are sharp, but they are more frequently gradational. The pegmatites grade to a less pegmatitic, but similarly composed mineralogically, rock, that intrudes along planes of gneissosity and of contortion. Where the zone of intrusion is strongest, as referred to later in this section, gneisses have been either largely recrystallized to a syenite, appearing in bands to be granitized. Farther from the main intrusion, viz: to the east and to the west of it, gneisses have been injected and pegmatites appear as lit-par-lit intrusion. In character, away from the main zone, they are greyer in colour, with more plagioclase felspar content, and more quartz.

Pending return of reports on specimens sent for optic analysis, a particular cherry-pink or rosy-pink colouration of crystalline

rocks, syenitic or quartz -- syenitic in texture and composition, is assumed to indicate megascopically the reddish alteration of nepheline.

Outcrops with a more than average amount of pegmatite present are designated on the accompanying map as pegmatite. Pegmatites are considered of significance because the allanite is generally found associated with pegmatites, and because some of the pegmatites do, in themselves, give geiger-counter readings two or three times background, possibly due to other radioactive mineralization of interest.

Without doubt, pegmatite and syenite intrusions took place at interrupted intervals.

In outcrops on claim PS-3682, to the north of the east-west bay, bands of pegmatite are numerous -- short lenses of massive allanite occur with narrow widths (to 8 inches) in place and in smaller patches through loose pegmatite overburden.

One band of pegmatites and syenites extends irregularly east of south, across claims PS-3691, -3687, -3694, and -3695, and another often narrow or even lacking on surface but evident in drill-holes, more directly south, across claims PS-3683, -3684, and -3689.

On the claims to the east and west respectively, of this structure, pegmatite appears as lit-par-lit intrusion, lessening in quantity farther away, following both planes of gneissosity and planes of contortion.

Other Intrusives

Hornblende-biotite dykes (?) Bands, hornblende and biotite-rich often appear in drill-holes, and a few on the surface, to have

definite walls, to be dense, fine-grained, and crystalline, supposedly dykes.

Another group, gritty, with none of these features, seems to be darker phases of the gneiss.

Diorites: Patches to the north of the east-west bay, claim PS-3682, and to north and east of the north bay, claim PS-3687, are diorite-like and are considered a local variation of syenite.

MINERALIZATION

The mineral of interest is a massive allanite, bearing, in grab samples up to almost 10% cerium oxide, with Lanthanum, Neodymium, Gadolinium, Praseodymium, occasionally Samarium, and enough thorium, that the radioactive utilities of the mineral may be used as a guide in finding and tracing occurrences. Bulk samples assays, at present cerium-oxide prices, gave values of over \$50 a ton.

Massive allanite appears to be deposited from pegmatitic solutions. Many pegmatites seem to have been brecciated or sheared, allanite-filled, with digestion or replacement of original minerals by allanite.

On claim PS-3683, striking south-east from the east-west bay, are 2 lens-like surface exposures, each with lengths of over a hundred feet and widths to 3 and 4 feet. Other occurrences, to the south, along more or less of a line, appear in irregular fractures, that could be related to underlying lenses.

STRUCTURE

It was suggested by J.T. Wilson that an anticline follows north 20 degrees west the channel between McDougall Island and the ground to

the east of it, a syncline developing farther toward the east. This suggestion would seem to be borne out.

Ridges over the west part of the ground mapped are regular, with north 20 degrees west, strike. Ridges, also, a few miles to the east, appear from air-photographs and ground observation, as regular. The structure referred to above, beginning on claim PS-3682, extending south in two arms, would appear to be a synclinal drag-fold, pitching south at a probable angle of 25 degrees, the allanite concentrated in bands in its westerly limb and spread out across the rest of it. It may be that the primary relationship has to do with the east shape of the anticline.

CONCLUSIONS

It is reasoned that the allanite is part of a group of pegmatite solutions, injected during intense, complicated metamorphism, and that deposition is related to structural alterations.

Present observations would support evidence of intrusion, but also suggestion of recrystallization and effect of hot solutions.

To the present, structural control is obscure. Some details are known or suspected, but much must be determined before definite conclusions can be drawn.

I, William Truman Boyes, of 306 Wellington Heights, Sudbury, Ontario, was responsible for mapping of claims referred to in this report and for compilation of the report.

I am a graduate in Honour Geology of the University of Western Ontario, and I have spent more than five years occupied in geological work.

W. T. Boyes

W.T. BOYES

BRIMWOOD, Ont.
August 1st, 1955

List of men employed in connection with geological survey and mapping
of claims P.S. - 300 to P.S. 3702, inclusive.

Newton, Edward, PICKEREL, O.P.B., line-cutting and chaining, May 20 to 25 incl.,.....	6 man-days	
Newton, Wilfred, PICKEREL, O.P.B., line-cutting and chaining, (28) May 20 to June 16 incl.,.....	28	" (28)
Newton, Ernest, PICKEREL, O.P.B., line-cutting and chaining, May 26 to June 16, incl.,.....	22	"
De Pachon, Jean, Balmoral Hotel, SUDBURY, Ont., line-cutting and chaining,, May 21 to June 19 incl.,.....	30	"
Aspellin, Louis G., Balmoral Hotel, SUDBURY, Ont., chaining, June 1 to 19 incl.,.....	19	"

Total number of days line-cutting and chaining = 105

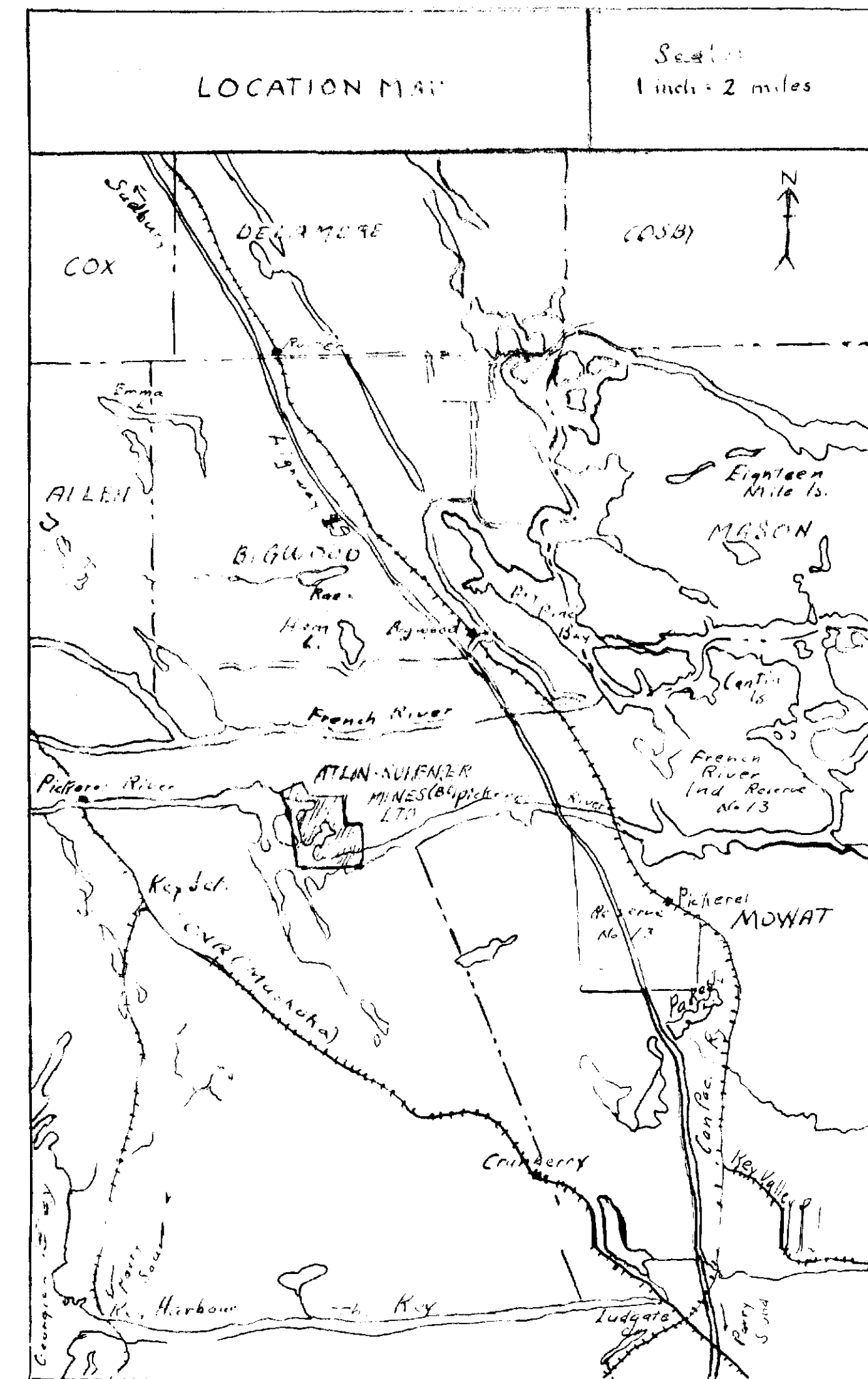
Doyes, W.T., 386 Wellington Heights, SUDBURY, Ont., traversing, mapping, drafting, preparation of report, May 1 to July 31, incl.,.....	82	"
Hulford, R.K., Room 1105, 302 Bay Street, TORONTO, Ont., traversing, mapping, locating radioactivity,.. June 1 to 23 incl.,.....	23	"

Total number of man-days used in survey.. 210
No. days credit on assessment 210 x 1/4 = 52 1/2
Owner of the 21 claims: Atlas-Suffner Mines (B.C.) Ltd.,
Suite 1105, 302 Bay St, TORONTO, Ont., License# A-29522.

I have been in charge of this geological mapping, and I vouch that
the above information is correct.

W. T. Doyes

W. T. Doyes
386 Wellington Heights
SUDBURY, Ont.



A map of the geology of 21 claims on Pickett River - Key Harbour area - Parry Sound Mining Division, belonging to:

ATLIN-RUFFNER MINES (B.C.) LIMITED

- LEGEND -**
- Key Harbour*
- P [Symbol] Permatites (Syenite and Quartz Syenite)
 - S [Symbol] Syenite-like foliated Rocks (Nephteline?)
 - G [Symbol] Gray green quartzose hornblende and biotite gneisses - a few pink impure quartzites. (Paragneisses and Orthogneisses not differentiated)
- Mineralization*
- A [Symbol] Alluvium - Muscovite
- Symbols**
- [Symbol] Strike and Dip (Foliation)
 - [Symbol] Claim Post
 - [Symbol] Claim Line
 - [Symbol] Pickett Line
 - [Symbol] Outcrop
 - [Symbol] Fault (Anticline)
 - [Symbol] Muskeg
 - [Symbol] Overburden Boulder
 - 3685 Claim Number
- Scale: 1 inch = 400 feet
 Date: July 20th, 1955
 Signed: Tom J. Boyce.