Beresford Lake
809A
524/13

CANADA

DEPARTMENT OF MINES AND RESOURCES

MINES AND GEOLOGY BRANCH

BUREAU OF GEOLOGY AND TOPOGRAPHY

GEOLOGICAL SURVEY

LEGEND

ARCHÆAN (EARLY PRECAMBRIAN)

RICE LAKE GROUP

- 9 — Quartz diorite, granodiorite, albite-microcline granite, albite-microcline syenite
- 8 — Quartz diorite, albite granite
- 7 — Gabbro, hornblendite, quartz diorite
- 6 — Meta-gabbro, meta-diorite, quartz diorite
- 5 — Sedimentary gneiss and schist, cut by many dykes of granite and pegmatite
- 4 — Quartzite; minor greywacke, conglomerate, iron formation, slate, arkose, dolomite, and sedimentary gneiss and schist
- 3 — Rhyolite, trachyte, porphyritic trachyte, porphyritic trachyte breccia, porphyritic andesite; agglomerate; arkose, tuff, iron formation
- 2 — Arkose, tuff, chert, breccia
- 1 — Andesite, basalt, hornblende schist, chlorite schist, agglomerate

Area within which dykes of feldspar porphyry and quartz-feldspar porphyry are numerous

Drift-covered area

Small rock outcrop

Bedding (inclined, vertical, overturned)

Bedding (direction of dip known, upper side of bed unknown)

Fault or shear zone, generally carrying vein quartz

Anticlinal axis

Synclinal axis

Glacial striæ

Road and buildings

Road not well travelled

Winter road or trail

Portage

Transmission line

Post Office

Shaft

Interprovincial boundary

Township boundary (surveyed)

Stream (position approximate)

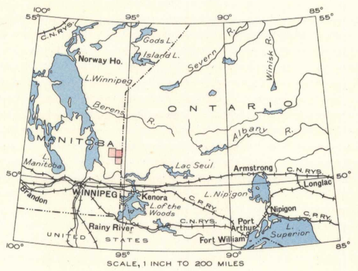
Fall and rapid

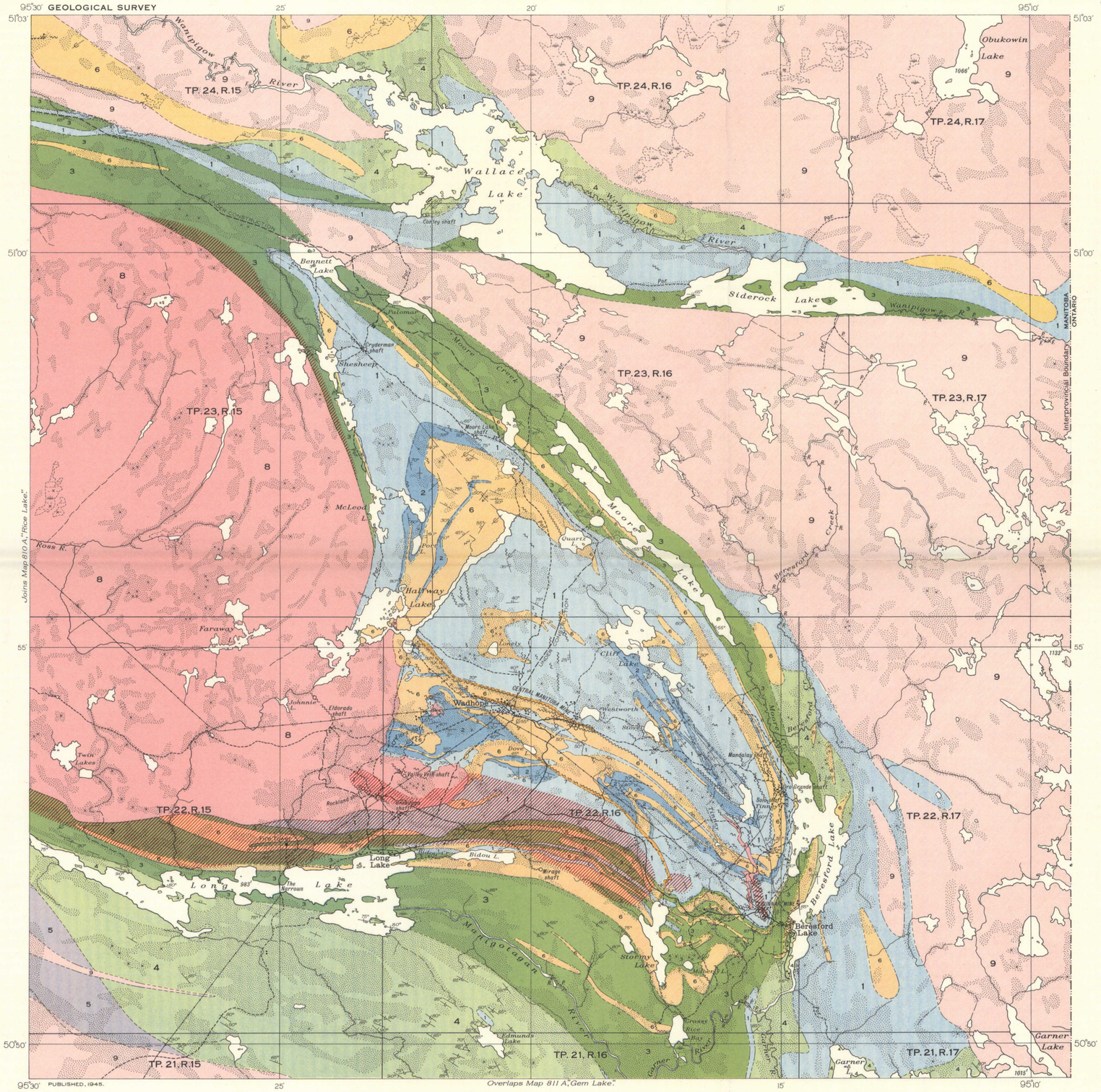
Marsh

Height in feet above mean sea-level

Geology by C. H. Stockwell, 1938, and from published maps of the Geological Survey.

Base-map compiled by the Topographical Survey, 1943, from air photographs taken in October 1934, and from published Federal Government maps and from information supplied by the Department of Mines and Natural Resources, Manitoba. Cartography by the Drafting and Reproducing Division, 1944.





PUBLISHED, 1945.

MAP 809A

BERESFORD LAKE

EAST OF PRINCIPAL MERIDIAN

MANITOBA

Scale, ~~63360~~ or 1 Inch to 1 Mile

Miles 1 0 2 3

Approximate magnetic declination, 7°30' East.

DESCRIPTIVE NOTES

The andesite and basalt (1) of the Rice Lake group are green to black flows that vary from massive to schistose and, at some localities, are pillowed and amygdaloidal. Inter-layered with them are bands of agglomerate. Where highly sheared the lavas have been altered to chlorite schist, and near large bodies of granite they are commonly altered to hornblende schist. Bands of arkose, tuff, chert, and volcanic breccia (2) are interlayered with the lavas (1). In many places they are too thin to map, but their occurrence is indicated by bedding symbols. Much of the tuff is thinly bedded and shows textural gradations from coarse, gritty material at the base of each bed to fine at the top. The andesite and basalt (1) occur at various horizons within the Rice Lake group. They overlie sedimentary rocks (4) east of Beresford Lake, but the main body, outcropping in the central part of the map-area, underlies other volcanic and sedimentary rocks (3) and forms the lowest exposed member of a broad, northwesterly-striking anticline. This structure is complicated by many minor folds and its southwest limb is overturned.

An assemblage of chiefly acidic to intermediate lavas and pyroclastic rocks (3) outcrops on the limbs of the anticline and, except where cut off by granite, completely surrounds the main body of andesite and basalt (1). Agglomerate fragments are up to 2 feet in diameter and are angular to rounded or are drawn out into elliptical or rod-like masses. The assemblage varies from 1,000 to possibly 8,000 feet thick. It is thinnest along the northeast limb of the anticline where the rocks are highly sheared to sericite, biotite, and hornblende schists.

A thick series of sedimentary strata (4) rests conformably on volcanic and sedimentary rocks (3) as exposed along the southwest limb of the anticline; around the axial region in the adjacent Gem Lake map-area to the south; and part way along the northeast limb. Impure quartzite predominates. Beds are 1 to 3 feet thick or form thin laminae showing grain variation from coarse on the bottom to fine at the top. South and southwest of Long Lake the grain variation indicates that the rocks have been folded into a succession of closely compressed isoclinal folds with the southwest limbs overturned. A few thin bands of black slate are interlayered with the quartzite. Conglomerate occurs at the base of the series just west of Garner River and was noted elsewhere at other horizons. Boulders consist of granite, rhyolite, andesite, slate, and vein quartz. Iron formation occurs chiefly north and east of Beresford Lake, where beds up to 5 feet thick consist of interlaminated magnetite and chert. Arkose is developed chiefly on the west side of Wallace Lake. A little brown-weathering, fine-grained dolomite occurs along the contact between arkose and andesite in the southwest part of Wallace Lake and at a point 1.5 miles west of the lake. Near some of the large granitic bodies the quartzite, greywacke, and arkose are recrystallized to quartz-plagioclase-biotite-muscovite gneiss. At the northwest end of Wallace Lake many layers are garnetiferous. In the southwest corner of the area the sedimentary rocks (4) have been altered to sedimentary gneiss and schist cut by many dykes of granite and pegmatite (5).

Meta-gabbro, meta-diorite, and quartz diorite (6) occur chiefly as sills and have been folded with the enclosing volcanic and sedimentary rocks. Dyke-like bodies of gabbro, hornblende, and quartz diorite (7) are younger and follow shear zones and faults. Batholithic and smaller bodies of granitic rocks comprise a sodic type (8) and a potassic type (9). Their age relations are unknown. In the sodic type the feldspar varies from oligoclase to albite. Some of the rock carries phenocrysts of plagioclase feldspar or conspicuous eyes of quartz. In the potassic type, microcline is also commonly present. Dykes of pegmatite are common in and near bodies of the potassic type but are rare in the sodic type. The latter is, however, the source of innumerable dykes of feldspar and quartz-feldspar porphyries. Areas within which they are abundant are indicated on the map. A few dykes of lamprophyre cut the granitic intrusions, porphyry dykes, and older rocks.

Vein quartz has been deposited along shear zones and faults that either parallel or cross the trend of enclosing rock formations. The deposits are found in virtually all rock types of the map-area and there is evidence to indicate that they are genetically related to the sodic intrusions (8). Minerals noted in the quartz include gold, pyrite, chalcopyrite, pyrrhotite, sphalerite, galena, arsenopyrite, carbonate, chlorite, albite, and tourmaline. Gold production has been chiefly from the Central Manitoba and Gunnar mines, with smaller amounts from the Beresford Lake (Oro Grande) and Ogama-Rockland mines and a few other properties. Central Manitoba Mines, Limited, reports that gold, and a little silver, to the value of $4,106,970 were produced during 10 years operation before the mine closed down in 1937. Production came from sixteen ore-bodies in eight veins crossing meta-diorite, tuff, and gabbro. Workings attained a depth of 675 feet but almost no ore was found below 875 feet. Most ore-bodies were much longer horizontally than vertically. Gunnar Gold Mines, Limited, reports that gold, and a little silver, to the value of $3,719,942 were produced during 6 years operation before milling operations ceased in May, 1942. Production was from six veins in andesite. Ore-bodies were longer vertically than horizontally. Workings extend to a depth of 2,000 feet but very little ore was found in the lower 600 feet.

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