

REPORT
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Helicopter Reconnaissance

~~Gordon Davis~~

← Frances River Syndicate

← August - September 1962

Quartz Lake

Introduction

During the period August 8 to August 12 sixteen hours were spent doing reconnaissance with helicopter out of a base at Quartz Lake. The purpose of this work was to obtain a rough geological map of the surrounding area and determine areas to be prospected and mapped on the ground. The area covered was approximately 1500 square miles.

Geology

Sedimentary and low grade metamorphic rocks are dominant over most of the area. To the northwest between the Hylard and Green Rivers the higher areas are mostly intrusive rock of quartz diorite or granodiorite composition. This area and one further north on the Flat River Spur was the only extensive intrusive area encountered. A smaller body of quartz diorite is found 8 miles northeast of Quartz Lake on both sides of the Coal River.

The highest grade metamorphic rocks occur across the eastern spur of ridge 5483 16 miles northeast of Quartz Lake. These are garnet and staurolite schists with interbedded marble, quartzite and meta-conglomerate. Most of the rest of this ridge appears to be quartzite.

Quartzite, greywacke and quartzite are the main ridge forming formations. This is particularly true south, north and northeast of Quartz Lake. The rocks in the lower areas and particularly in the Hylard, Coal and Green River valleys are limestone and shale. The area between the Coal and Rock Rivers southeast of Quartz Lake is underlain mostly by limestone with

lesser amounts of quartz sediment. Outcrop is very scarce in this area.

The north and north-northeast trend of the ridge reflect the strike of the strata. Local changes in structural trend and divergence of strike around intrusives is not uncommon.

Areas Recommended For Further Prospecting and Mapping.

Three criteria emerge when defining areas for prospecting and more detailed geological mapping based on aerial reconnaissance. 1) Anomalous changes in structural trend. 2) Favourable rock types or combination of rock types such as granite-limestone contacts or higher grade metamorphic rocks. 3) Rust zones.

The area northeast of Quartz Lake near the Coal River and further north-northeast presents an interesting combination of intrusive rock, a higher grade of metamorphism than is common over the region and a sharp change in structural trend. This area should be prospected and mapped on the ground in addition to extending aerial reconnaissance mapping to the northeast.

Reconnaissance coverage should be extended to the north in the area between the Hyland and West Coal Rivers particularly along the eastern contact of the intrusive rock.

Rust zones and a magnetite bearing stream that was checked on the ground make the intrusive-limestone contact between the Coal and West Coal Rivers ~~and~~ an area worthy of further investigation.

Helicopter reconnaissance coverage should be extended in this area and ground prospecting seriously considered.

Rust is widespread in both limestone and quartz sediments. All rust zones checked on the ground were apparently due to finely disseminated pyrite. An area of darker

brown rust and possible intrusive dykes was found 14 miles southeast of Quartz Lake. This was not checked on the ground because of the absence of a nearby landing spot but the area warrants further investigation.

Gusty Lakes

Introduction

Between September 1 and September 3 ten hours of helicopter reconnaissance were flown in the Gusty Lakes area of the Coal River Sheet. Approximately 600 square miles were mapped.

Geology

Sedimentary rocks, mostly well bedded limestone are the most common rocks in the area. Quartzite makes up the higher area to the northwest around peak 5314 and also outcrops on ridges to the east and south of Gusty Lakes. The quartzite is more highly metamorphosed than that found in the Quartz Lake area. Black shale and slate outcrop in the lower areas north of Toolally Lakes and on Spruce Creek.

Large areas of basaltic and andesitic lavas overlie the sedimentary rocks to the north, east and south of Gusty Lakes.

The only intrusive rock was found in an area of little relief and spruce outcrops 3 miles northeast of Gusty Lakes. It is a dioritic intrusion of unestimatable size because of the general lack of outcrop.

To the west of Gusty Lakes formational trends are mostly northwest. To the east of Gusty Lakes strikes are north with anomalous easterly strikes occurring along the Beaver River 8 miles north of Toolally

Lakes.

Areas Recommended For Further Prospecting and Mapping.

Seventeen mineral claims were staked by the Syndicate on limonite sands just north and northwest of peak 5314. This area should be mapped and prospected in greater detail than was possible this past season. The value of geochemical sampling on both detailed and reconnaissance scale should be determined.

A similar rust zone was located on the steep west slope of a south tributary of the Beaver River north of Toolally Lake. This as well as other rust zones on the Beaver River 8 miles north of Gusty Lake should be checked on the ground.

The area to the north, east and southeast of Gusty Lake composed of volcanic, sedimentary and intrusive rock should be prospected and mapped.

Respectfully Submitted

Gordon Davis

R. E. Gordon Davis

Appendix I

Description of Rock Types

Quartz Lake.

Limestone. In this area there are two distinct types of limestone. One is a light grey, white weathering, coarsely jointed crystalline limestone usually found as a ridge forming member. The other type is that found along the river valleys. It is well bedded and interbedded with shale. The weathered surface is usually white or rusty, the fresh surface black or dark grey with irregular rusty patches.

Quartz sediments. Most of this unit is granular quartzite or meta-quartz - greywacke. The fresh rock is usually light grey or brownish and may be slightly rusty. Grain size is variable. Narrow bands of brown siltstone and shale are common. In outcrop this rock is massive and light brown or grey weathering. Siltstone and shale horizons are useful in revealing the attitude of the formation.

Shale - This is black or dark grey silty shale, well bedded and usually associated with black limestone in lower areas. Usually black or dark grey in outcrop.

Schist - The schist in the area varies from chlorite to staurolite ~~in~~ in grade. It is well foliated in outcrops that are normally well rounded, light to medium grey in colour. Associated with crystalline limestone and quartzite.

Intrusive rock - Usually coarse grained quartz diorite or granodiorite. A very massive rock, coarsely jointed normally occurring in higher areas.

Gusty Lakes

Limestone - Most of the limestone is well ~~bedded~~ bedded, fine grained and light grey in color. It may be siliceous and buff colored. In outcrop it is light to medium grey. Interbedded shale is rare. It is found in both high and low areas.

Quartz sediments - This rock is massive, often showing no distinct granularity. The color varies from dark grey to pale pink on fresh surfaces. The weathered surface is usually medium to light grey or brownish. Bedding is only apparent where fine grained clastic sediments are interbedded with the quartzite.

Shale and slate - Varies from white weathering dark grey shale to dark weathering, rusty black slate. Usually found in lower areas.

Intrusive rocks - A dark grey dioritic rock, fine to medium grained composed of over 40% mafic minerals. In outcrop it is dark grey and coarsely jointed, found in an area of little relief.

Volcanic rocks - A variety of flows of basaltic and andesitic composition. They are often amygdaloidal, less commonly porphyritic. The color is usually dark grey or black with greenish or purplish tints common. In outcrop these rocks are black to dark grey and coarsely jointed. Bedding is sometimes identified.