



STRUCTURAL MATERIAL INVESTIGATION

TEXADA ISLAND LIMESTONE

By Z. D. Hora and K. J. Sharman

Detailed geological mapping of limestone deposits near Davie Bay and Anderson Bay on Texada Island was carried on during June, July, and August of 1979.

The Davie Bay deposit is an elongate northwest-southeast trending body of grey fine to cryptocrystalline limestone with minor dolomite and is exposed on the southwestern slopes of Texada Island above Davie and Mouat Bays. In 1955 and 1956 British Columbia Cement Company Limited (now owned by Genstar Limited) did some exploration work on its land holdings covering the southeastern part of the deposit. Land in the central part of the limestone body has been held by Lafarge Canada Ltd.'s claims since 1970 and an extensive drilling program was carried out between 1972 and 1976.

Areas with best bedrock exposures are mainly in the southeastern end and along the northeastern edge of the deposit, mainly on the steeper slopes. The middle of the limestone body has small ridges (or ribs) of limestone separated by overburden while the southwest side and the northwest part are extensively covered. Most of the overburden is a silty clayey till with rounded cobbles and boulders of volcanic and granitic rocks. Small areas indicate the presence of Quadra sand on the surface.

The limestones of Davie Bay have been correlated by McConnell (1914) with similar limestones of the Marble Bay Formation on the north end of the island. In both areas the limestones conformably overlie amygdaloidal and pillow andesites and basalts of the Texada Formation. The age of both Marble Bay and Texada Formations is considered to be Triassic. The limestone is generally medium grey in colour with local areas being light grey. Outcrops weather a distinctive blue-grey colour and show extensive solution scalloping along irregular fractures and joints. Karst features are evident along the northeast contact with the volcanic rocks, where a small cave can be viewed and a series of six conical depressions some 35 metres in diameter and up to 15 metres deep are present.

Calcite veinlets less than 1 millimetre wide are present in most samples and a few up to 5 millimetres wide were found. General observations indicate that coarser grained limestones occur in areas with a high density of secondary veinlets which stand out on weathered surfaces.

No stratification has been observed in the limestone belt and the only evidence of structure are contacts with underlying volcanic rocks and limestone lenses embedded in the volcanic rocks. It is expected that *chemical compositions and particularly the magnesium contents from samples collected during fieldwork* will help to outline a more detailed stratigraphic subdivision, similar to the Marble Bay Formation in the northern part of the island. While the northeastern contact of limestones is a stratigraphic one, there are indications that an entirely obscured contact to the southwest is tectonic, perhaps due to a northwest-southeast fault.

The Anderson Bay marble deposit is a layer of crinoidal limestone embedded in volcanic rocks and volcanogenic sedimentary rocks of the Anderson Bay Formation (stratigraphically below Texada Formation) at the southern end of Texada Island. Two small quarries were operated near Anderson Bay at the beginning of

the century, and the stone has been used for interior decoration of some of the public buildings in Victoria, Vancouver, and Nanaimo.

The exposed width of the limestone varies from 20 metres to 71 metres and, in part, the limestone bed in the southern half of the island is entirely missing. This band of limestone extends for about 1.5 kilometres south of Anderson Bay, then pinches out to reappear for a short distance near the southwest coast. It strikes north to northeast and dips between 30 degrees and 60 degrees to the west. Although the principal rock type, coarse-grained crinoidal limestone, is much the same along its length viewed in the northern exposures, it exhibits a variety of colours from white to deep red. These colour variations, represented by lenticular bands, cannot be correlated from section to section. The limestone outcrops on the western coast are fine to medium-grained uniformly grey rock lacking the colour variations of the northern exposures. The limestone bed is underlain by volcanic breccias, slightly metamorphosed grey argillites, and aphanitic grey volcanic rocks. This contact is sharp where exposed and the abrupt change from massive lava and volcanoclastics to relatively pure carbonates indicates a sudden change in depositional environment. Five sections with measured true thickness have been described in the northern segment of the limestone band and one section on the west coast of the island. They are numbered from north to south and numbers 1 to 5 are approximately between 200 and 400 metres apart.

Section 1

Base	grey fine-grained argillite
0— 6.7 metres	massive whitish coarse crinoidal limestone, joint spacing 20 to 50 centimetres
6.7— 9.2 metres	pinkish coarse crinoidal limestone with argillaceous laminae, joint spacing 10 to 20 centimetres
9.2—16.0 metres	yellowish white coarse crinoidal limestone, joint spacing 20 centimetres
16.0—20.0 metres	white to very light grey coarse crinoidal limestone, joint spacing 20 to 30 centimetres
20.0—23.0 metres	light pinkish coarse crinoidal limestone, joint spacing 20 to 30 centimetres
23.0—30.8 metres	whitish to pale orange coarse crinoidal limestone, joint spacing 30 centimetres
Top	medium grey calcareous argillite

Section 2

Base	volcanic breccia
0— 6.7 metres	banded red coarse crinoidal limestone with argillaceous partings and white calcite veining, joint spacing 30 to 40 centimetres
6.7—11.0 metres	orange-white coarse crinoidal limestone, stylolites, joint spacing 5 to 20 centimetres
11.0—26.0 metres	light pink coarse crinoidal limestone, stylolites, joint spacing 20 to 30 centimetres
26.0—35.0 metres	pink, orange, and white coarse crinoidal limestone, joint spacing 20 centimetres
Top	grey argillite

Section 3

Base	volcanic breccias
0— 6.2 metres	light pink and red limestone, argillaceous partings, joint spacing 25 centimetres
6.2—11.8 metres	white to orange-white crinoidal limestone, joint spacing 30 centimetres
11.8—15.5 metres	grey white to pinkish limestone, quartz veins locally, joint spacing 20 centimetres
15.5—20.0 metres	covered interval — road
Top	grey argillite

Section 4

Base	volcanic breccia
0— 6.0 metres	reddish crinoidal limestone, white calcite patches and veins, argillaceous laminae, joint spacing 20 centimetres

Section 4 (continued)

6.0–13.4 metres	white to greyish white coarse limestone, joint spacing 20 centimetres
13.4–21.6 metres	pinkish banded limestone, argillaceous laminae; joint spacing 20 centimetres
21.6–31.8 metres	whitish orange limestone, joint spacing 30 centimetres
31.8–59.6 metres	greyish white coarse crinoidal limestone, joint spacing 30 centimetres, lens-like body of argillite breccia from 45.0 to 49.0 metres
59.6–71.0 metres	white and white-orange coarse crinoidal limestone, joint spacing 10 to 30 centimetres, jasper lenses up to 15 centimetres thick
Top	rusty weathering grey argillite

Section 5

Base	grey argillite
0– 1.5 metres	pinkish argillaceous limestone, joint spacing 20 centimetres
1.5–16.4 metres	orange-white coarse limestone, joint spacing 20 to 30 centimetres
Top	covered interval – road

Section 6

Base	medium grey aphanitic volcanic rocks
0–15.0 metres	medium grey, medium-grained crinoidal limestone, joint spacing 5 to 20 centimetres
15.0–21.0 metres	medium grey, medium to fine-grained crinoidal limestone, bands and patches of calcite and jasper replacing fossils, joint spacing 10 to 20 centimetres
21.0–43.4 metres	light grey, coarse to medium-grained crinoidal limestone, joint spacing 10 to 30 centimetres
Top	grey aphanitic volcanic rocks (Texada Formation)

REFERENCES

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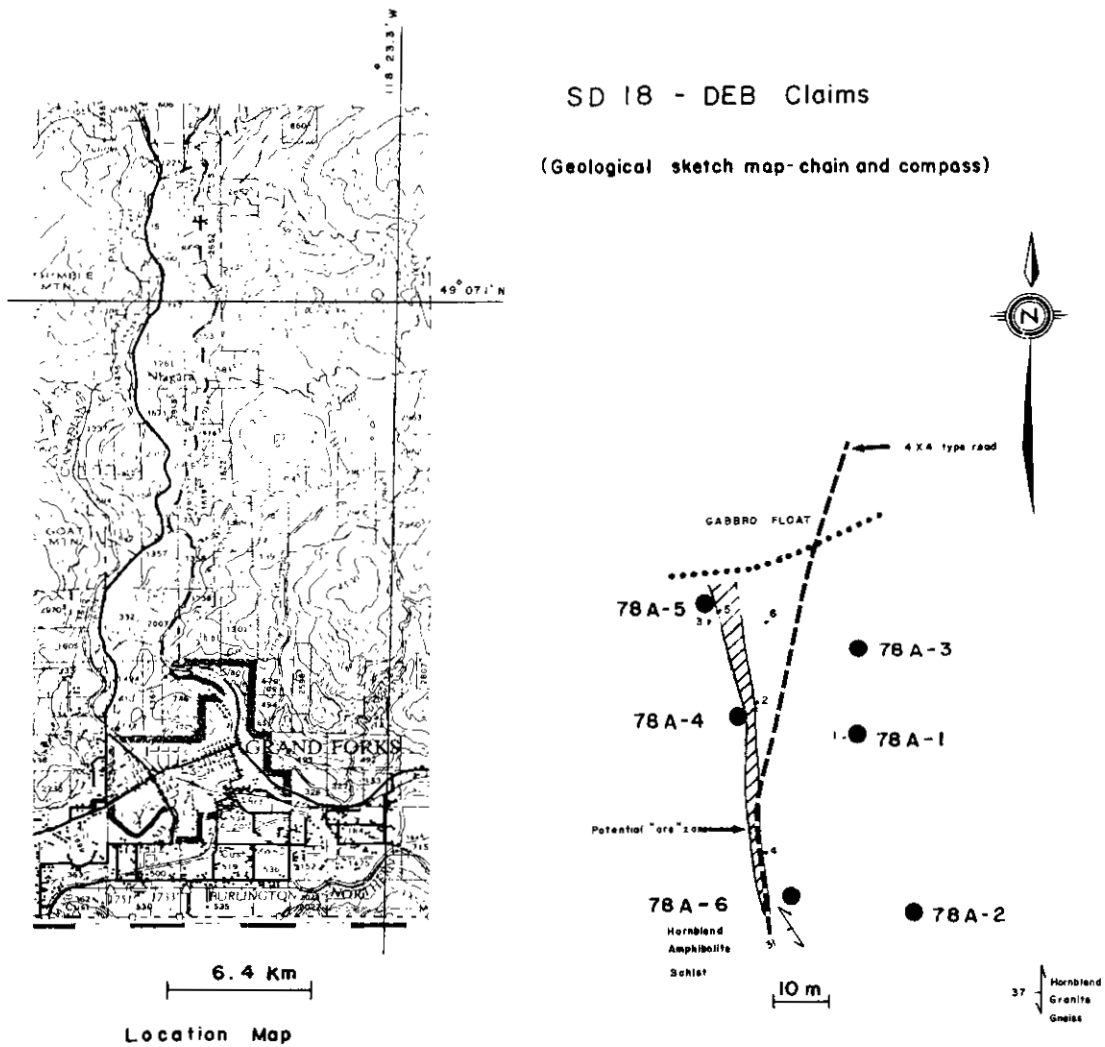


Figure 35. Geological sketch map, DEB (SD 18) claim.