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**QUARRY SITE AT FLAGSTAFF HILL,
MUNICIPALITY OF CLARENCE**

by W. N. MacLeod.

The Clarence Municipal Commission proposes to open a large quarry on the eastern shore for general requirements of road metal, rock fill, &c., and a site has been selected on the western flank of Flagstaff Hill near the northern termination of the Flagstaff Gully

Road. The site was examined on November 23rd, 1961 in company with Mr. D. Hurburgh who has contracted for the construction of the Flagstaff Gully reservoir, and who will open the quarry to obtain rock fill for the retaining wall of the reservoir.

The site selected for quarrying lies on the steep lower slopes of Flagstaff Hill. The valley floor to the west is underlain by Permian mudstone of the Ferntree Group. The mudstone extends a short distance up the hill where it is abruptly terminated by a dolerite intrusion which forms the upper slopes and summit of the hill. The contact between dolerite and mudstone can be clearly traced by differences in soil type and the nature of the scree. This contact is steeply dipping and trends in a general N-S direction. The steep attitude can be inferred from topographical relationships.

Near the contact with the dolerite the mudstone has been indurated and recrystallized over a width of at least 50 feet and assumes the texture of a finely granular chert. The dolerite is much finer-grained than normal near the contact and carries inclusions of indurated mudstone. This is a normal intrusive contact and no faulting is apparent.

The cherty mudstone near the contact should provide satisfactory material for road surfacing, but its usefulness in this regard diminishes with increasing distance from the contact as the rock which has been unaffected by the dolerite is soft and friable and liable to produce a great deal of dust under traffic. However, both the chert and softer mudstone should provide a reasonably impermeable rock fill for the retaining wall of the dam if an admixture of finely crushed and coarser blocks were used. Crushing of the chert from near the contact may be severe on crusher jaws and the possible hazard of silica dust should be borne in mind.

A virtually unlimited yardage of dolerite is available for quarrying on the steeper hill slopes above the contact. The hillside rises in a natural alternation of steeper pitches separated by flat benches, which features could be advantageously used in the development of successive quarry benches. It appears unlikely that there are any zones of deep weathering. The cover of soil and scree is rarely more than a foot deep, although deeper scree accumulations can be expected in the gullies.

Away from the contact the dolerite is fine to medium grained and closely jointed on three steeply-dipping systems. Surface exposures show a tendency to slabbing but this feature is not likely to continue at depth. It is concluded that the selected site is satisfactory as to yardage of dolerite available and its suitability for quarrying. The site possesses the additional advantage in combining accessibility without scenic or residential detriment.