

CHAPTER 4. DIAMOND DRILLING

Preliminary diamond drilling was carried out during the late 1960s in Colchester and Halifax Counties to further assess limestone and dolomite occurrences which were of particular interest.

Plans and sections are included in this Chapter which locate drillholes and detail the lithology. Appendix 1 includes the drill logs and analyses.

There has been significant drilling since this report was written. Some selected analyses from Levaque *et al.* (1988) have been included in Appendix 1.

Chapter 4 and Appendix 1 are not intended to be a comprehensive compilation of drilling completed in Colchester and Halifax Counties, but rather a compilation of the drilling completed by the author at the time of the study to help delineate prospective deposits.

COLCHESTER COUNTY

BEAVER BROOK AREA (BB-1-1, BB-2-1)

Lafarge Canada Inc. drilled six holes containing a combined thickness of 45.4 m limestone (Fig. 5) in the Beaver Brook area (Levaque *et al.*, 1988). They estimated a tonnage of 250 000 t of high calcium limestone approximately 11.6 m below the surface in a bed approximately 7.5 m thick.

Chemical analyses for two of these holes are given in Appendix 1.

BLACK ROCK AREA (BR-1-1)

Six holes totalling 185 m were drilled by Lafarge Canada Inc. in 1988 (Levaque *et al.*, 1988) (Fig. 5). The Macumber limestone is highly folded and dips steeply to the south. The mineable tonnage was estimated to be 78 000 t assuming an average thickness of 7.5 m and a width of 50 m (Levaque *et al.*, 1988).

Chemical analyses were done on samples from three of the drillholes. Average for each of these holes as well as the averages and standard deviations for the combined drillholes are given in Appendix 1.

HILDEN AREA (Hi-1-1) (Hi-1-2)

One drillhole was drilled at the Hilden occurrence south of Irwins Lake (Figs. 5, 65 and 66).

Approximately 10 m of dense, massive, very fossiliferous Windsor Group dolomite were drilled followed by approximately 5 m of hard Windsor Group anhydrite. The hole ended in anhydrite. There was <1 m of overburden. See Appendix 1 for the drill log and analyses.

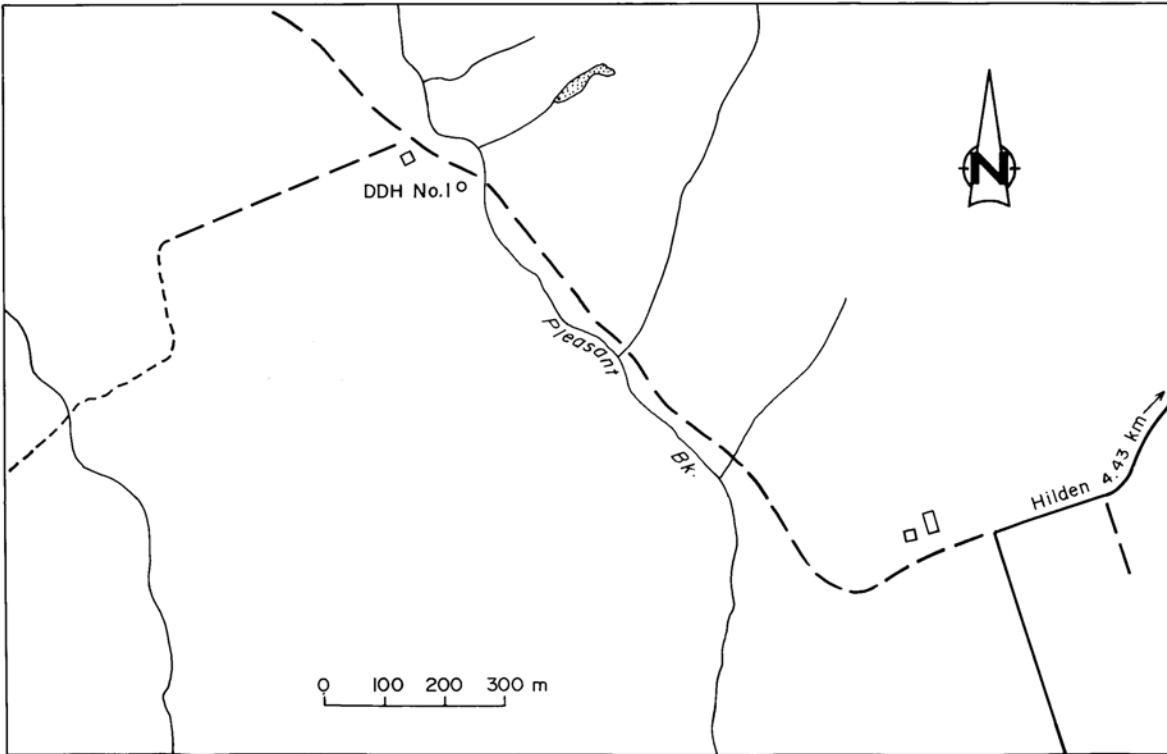


Figure 65. Location map for diamond-drill hole number 1, Hilden area, Colchester County (Fig. 5; Hi-1-1, Hi-1-2).

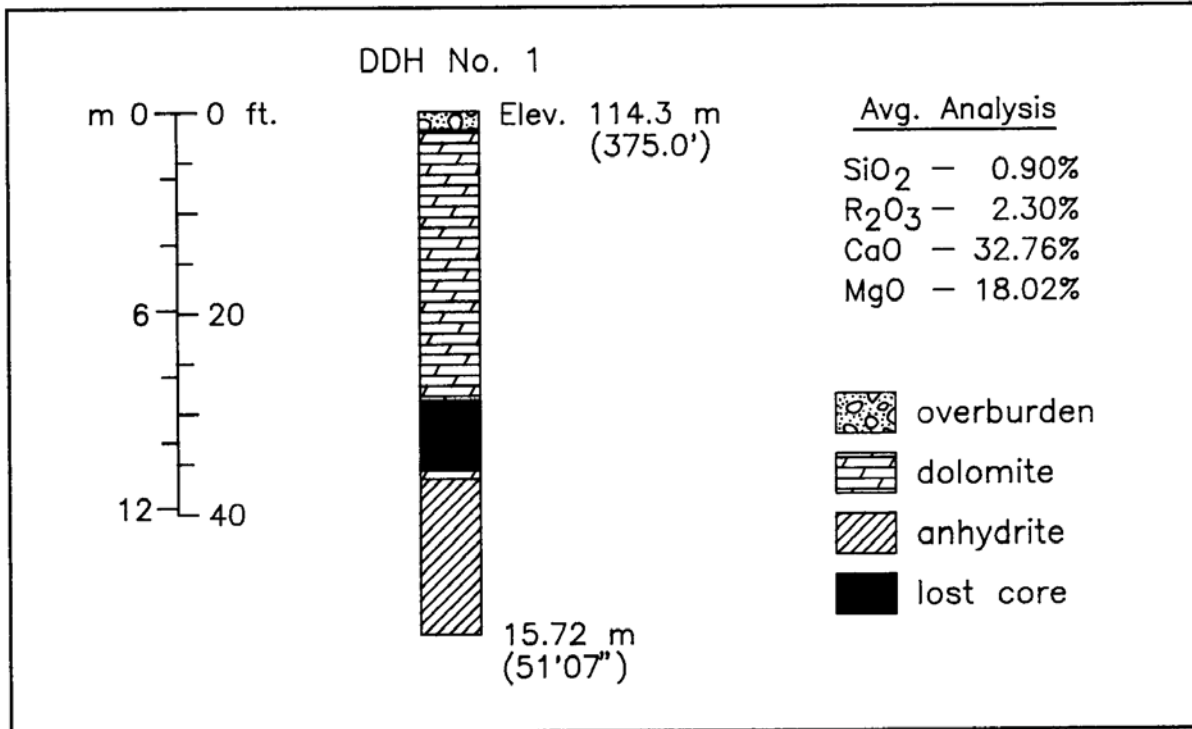


Figure 66. Profile of diamond-drill hole number 1, Hilden area, Colchester County, November 1968.

PEMBROKE RIVER AREA (Pb-6-1)

Two drillholes were put down to test a high-calcium limestone, low in silica and other impurities, in the vicinity of Glenbervie. The limestone horizon belongs to the B Subzone of the Windsor Group and is underlain by gypsum. It varies in colour from light to dark greyish, very hard and fossiliferous. The limestone is highly fractured and brecciated and holds blebs and seams of galena (Figs. 11, 67 and 68). See Appendix 1 for diamond-drill logs and analyses.

PENNY MOUNTAIN AREA (PM-2-1)

Lafarge Canada Inc. drilled 17 drillholes during 1984 and 1985 (Fig. 22). Conservative estimates of reserves from this drilling suggested approximately 500 000 t of high calcium limestone with little overburden (Lafrenière and Clark, 1986). See Appendix 1 for chemical analyses.

HALIFAX COUNTY**DOLLAR LAKE AREA (DL-1-1)**

Four diamond-drill holes were completed to check the physical and chemical characteristics of the carbonate member of the Windsor Group in the vicinity of Dollar Lake (Figs. 44, 69 and 70). Two of the drillholes intersected limestone and dolomite. The dolomite is brownish in colour, hard, dense and belongs to the B Subzone. The basal part of the carbonate member is greyish in colour, very argillaceous and holds some small fragments of the underlying slate formation. Numerous thin seams of black carbonaceous material exist throughout the basal 1.5 m section. No bedding was observed and a few brachiopods occur in the dolomite. More drilling is justified to determine the extent of the dolomite in the vicinity of drillholes 1 and 2. The chemical analyses indicate a good quality dolomite rock. See Appendix 1 for diamond-drill logs and analyses.

GAYS RIVER AREA (COOKS BROOK) (GR-3-2)(GR-3-3)

Seven drillholes were completed to gain information on a dolomite deposit at Cooks Brook (Figs. 50 and 71-73). A possible 500 000 t of dolomite is indicated in this area by preliminary drilling. The deposit consists of a narrow band of dolomite stretching along the Windsor-Meguma contact for a distance of 609.6 m. It averages 30.5 m in width and is 9.1 m thick. The area is 11.3 km from the Canadian National Railway at Milford Station and should be easy to quarry. Chemical data are available for four of the drillholes. See Appendix 1 for diamond-drill logs and analyses.

MEAGHERS GRANT AREA (MG-5-1)

One drillhole was completed at occurrence MG-5-1 (Figs. 46, 74 and 75). There was 1.5 m of overburden, followed by 3 m of hard, dense, medium grained Windsor Group dolomite. The hole ended in Goldenville Formation quartzite (3 m). See Appendix 1 for the drill log.

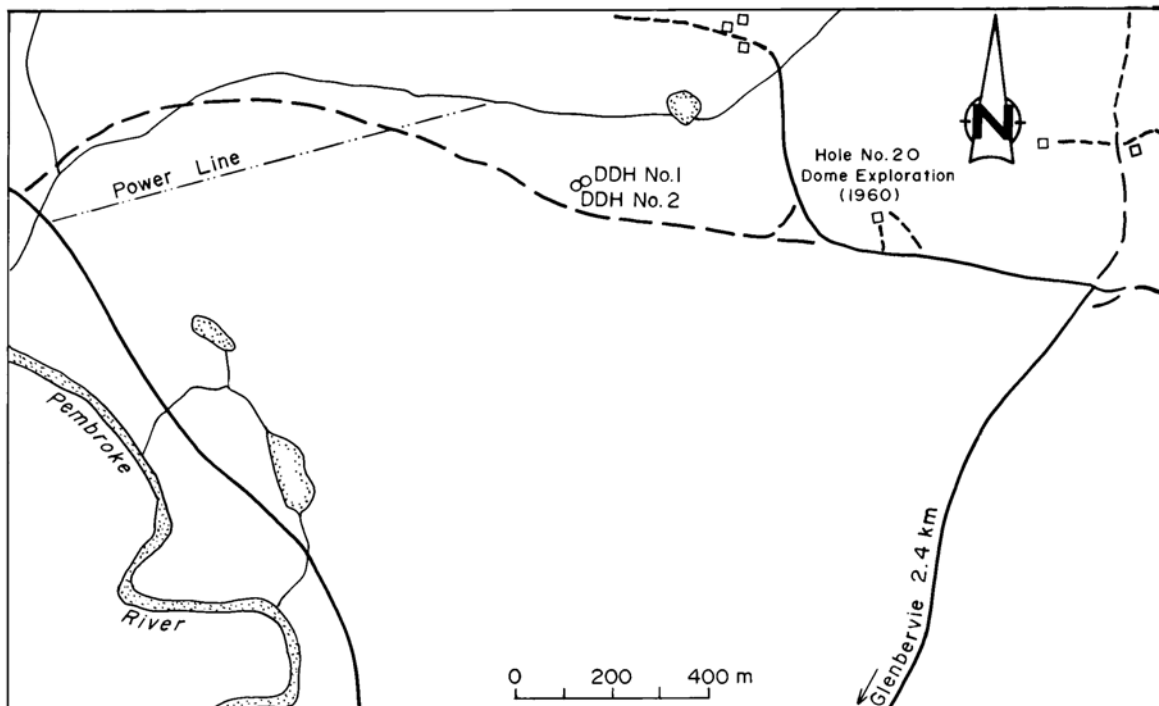


Figure 67. Location map for diamond-drill holes numbers 1 and 2, Pembroke River area, Colchester County, 1968 (Fig. 11; Pb-6-1).

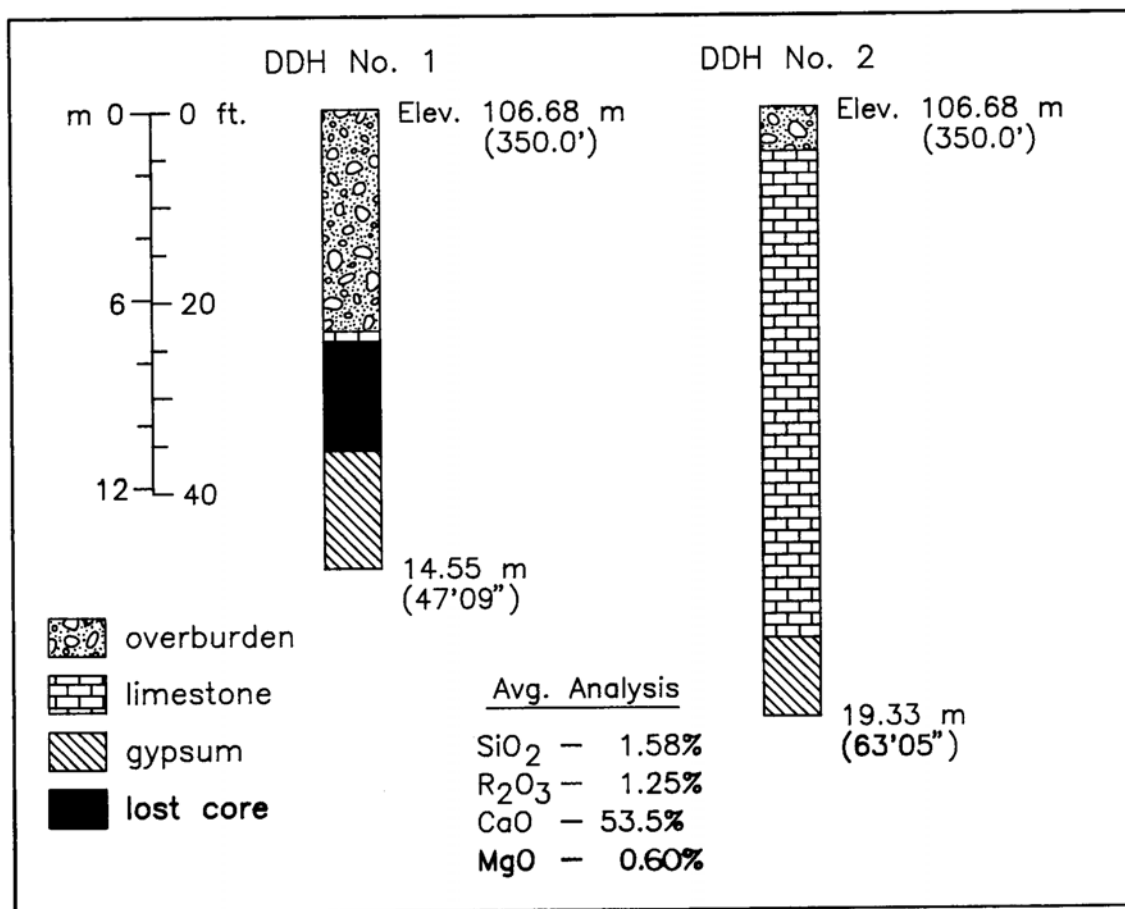


Figure 68. Profiles of diamond-drill holes numbers 1 and 2, Pembroke River area, Colchester County, November 1968.

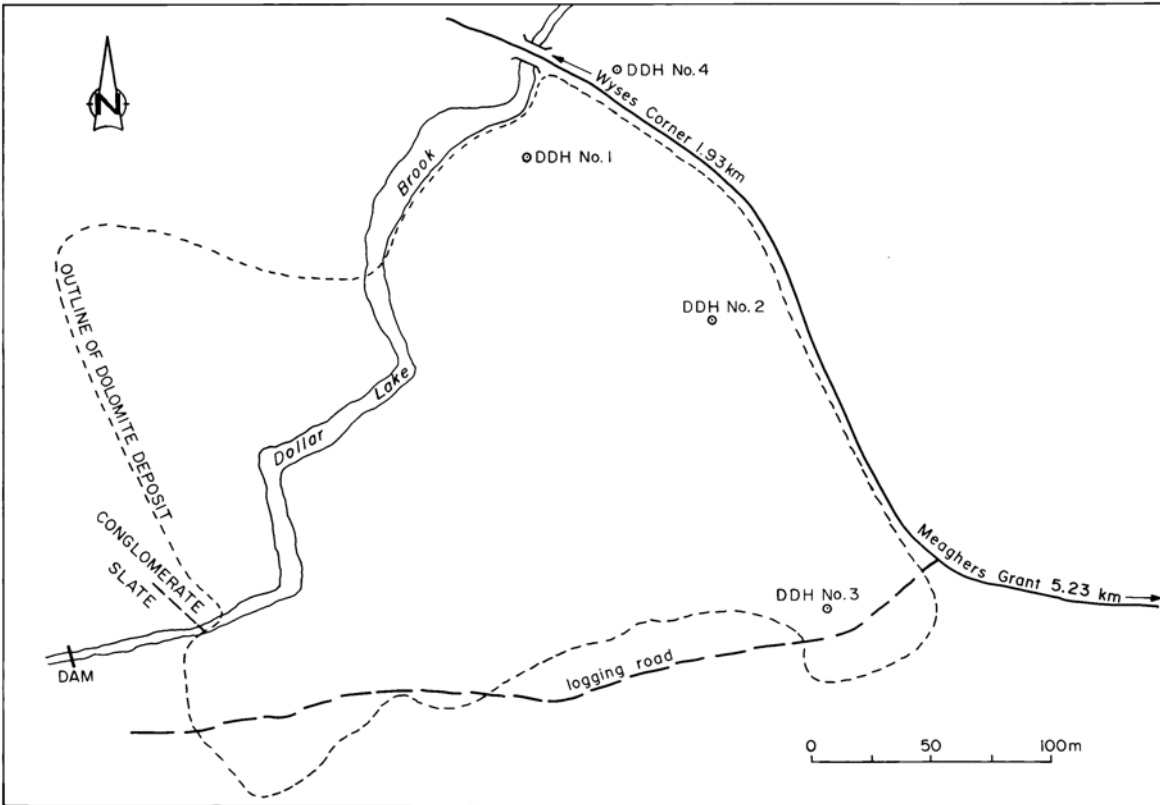


Figure 69. Location map for diamond-drill holes numbers 1-4, Dollar Lake area, Halifax County (Fig. 44; DL-1-1).

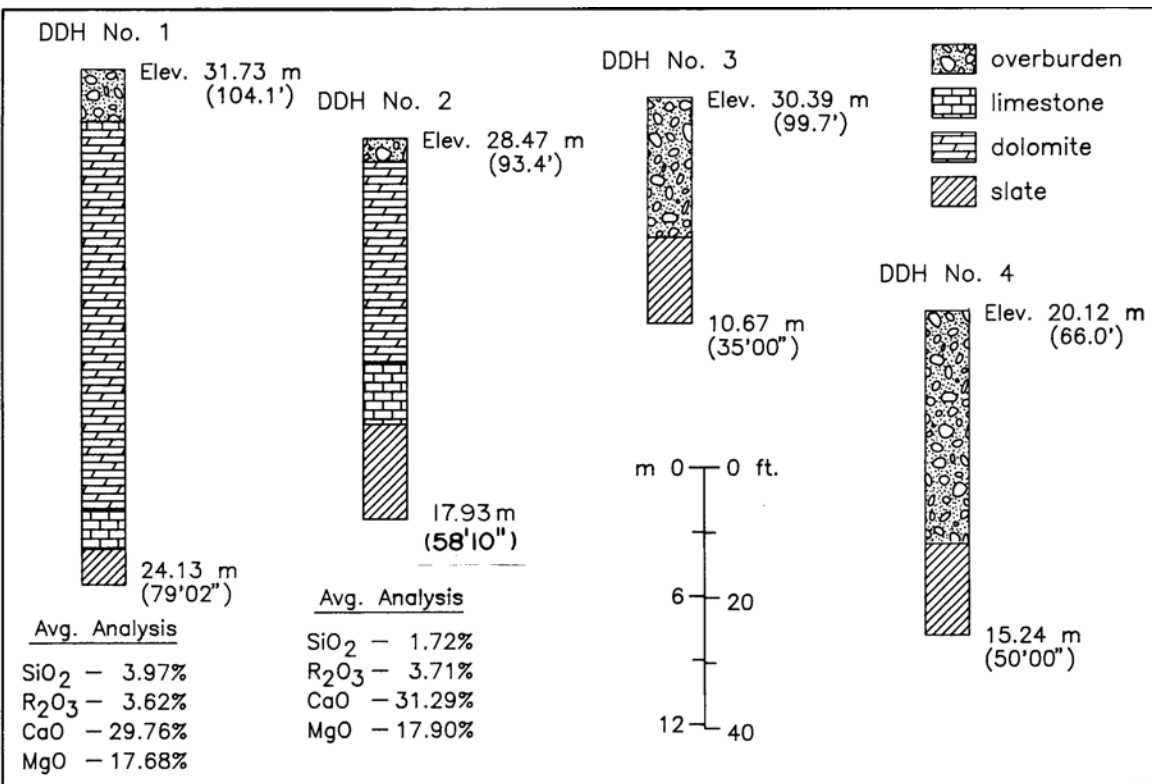


Figure 70. Profile of diamond-drill holes numbers 1-4, Dollar Lake area, Halifax County, 1968.

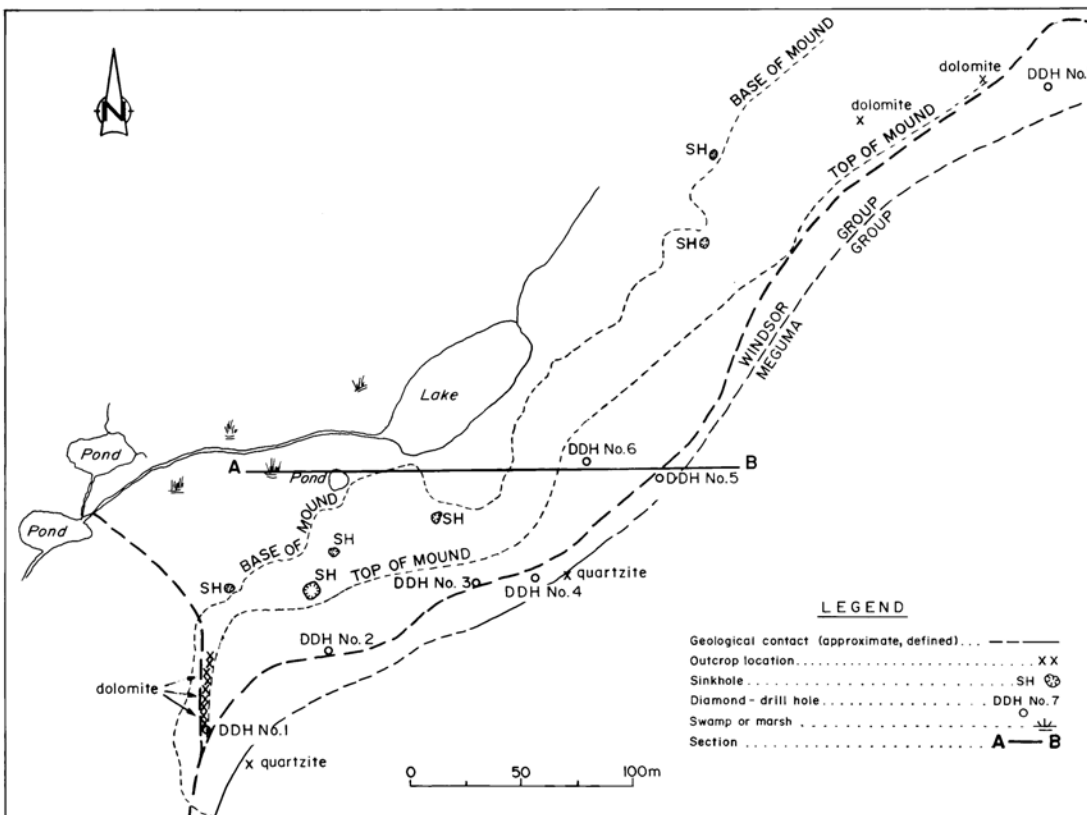


Figure 71. Location map for diamond-drill holes number 1-7, Gays River area, Cooks Brook, Halifax County, December 1969 (Fig. 50; GR-3-2, GR-3-3).

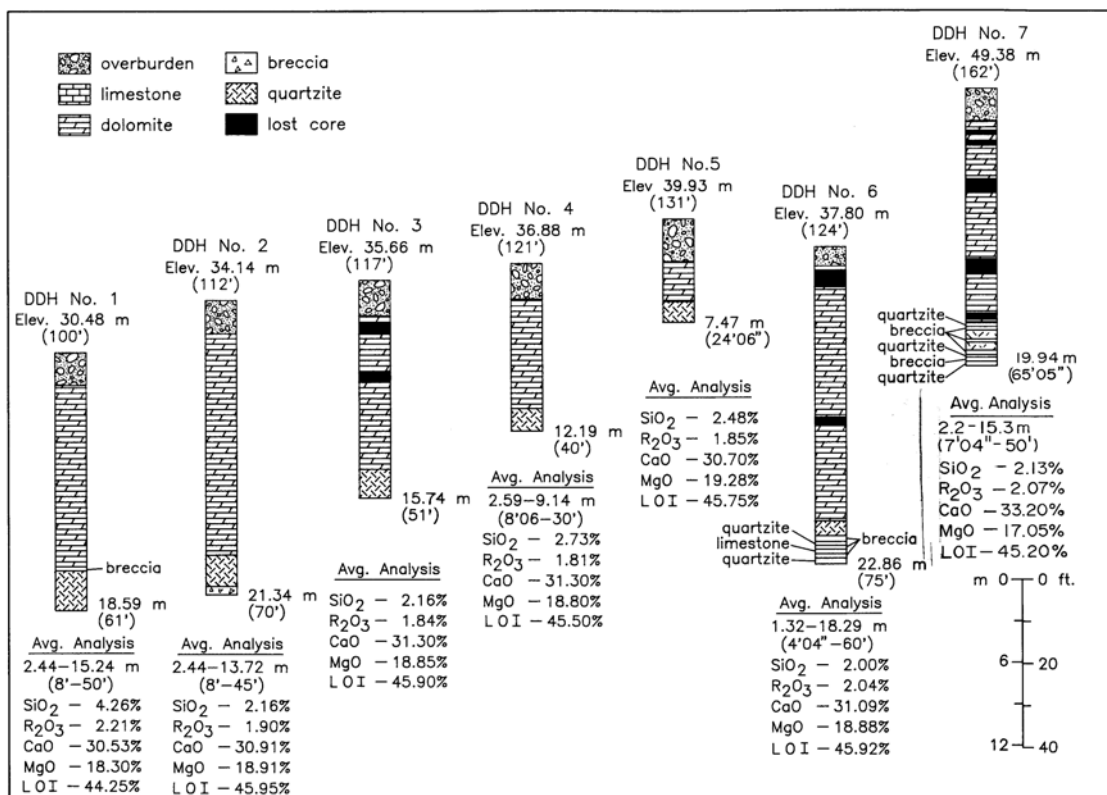


Figure 72. Profile of diamond-drill holes numbers 1-7, Gays River area, Cooks Brook, Halifax County, December 1969.

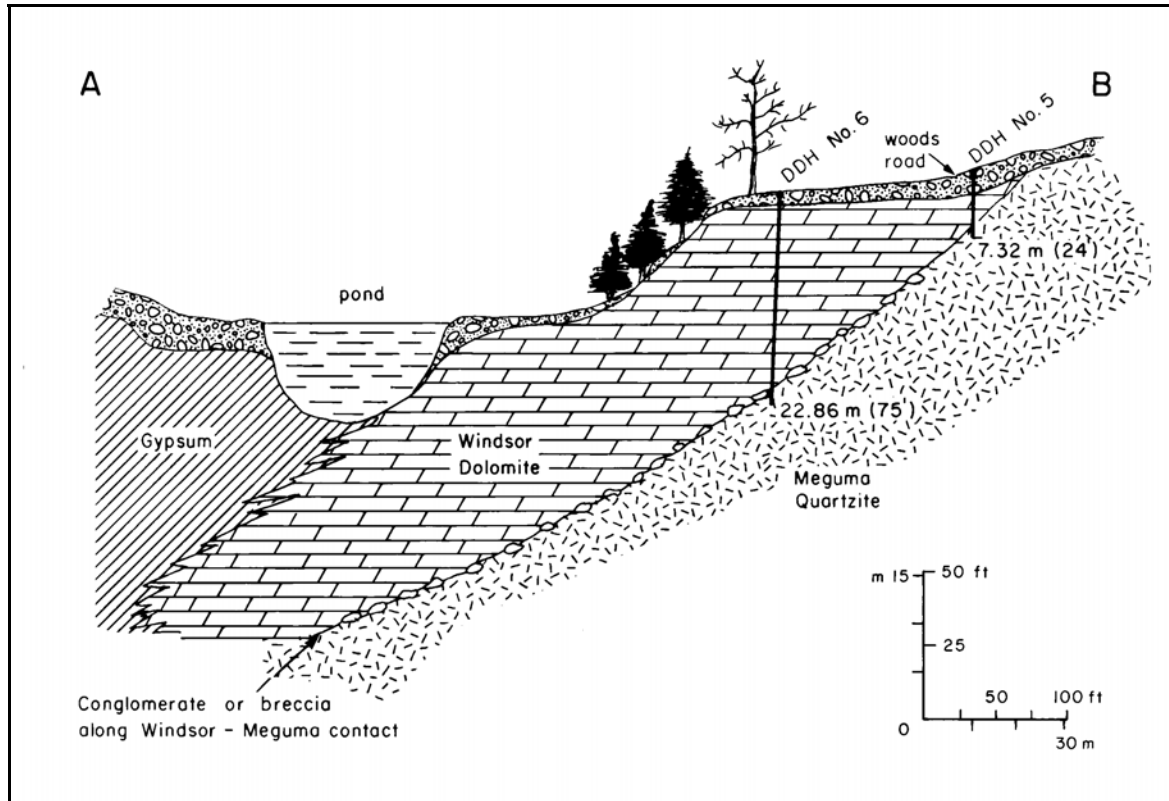


Figure 73. Section A-B, through drillholes 5 and 6, Gays River area, Cooks Brook, Halifax County.

MIDDLE MUSQUODOBOIT AREA (Mo-2-1)

The magnesium limestone intersected in the drillhole drilled in this area is brownish in colour, hard, slightly porous, medium grained and belongs to the Upper Windsor Group. It is siliceous with small bands of clayey and arenaceous material and is underlain by conglomerate (Figs. 45, 76 and 77). See Appendix 1 for diamond-drill log and analyses.

MIDDLE MUSQUODOBOIT AREA (MURCHYVILLE) (Mo-10-1)

The dolomite is good quality. It occurs as a narrow band along a ridge and is underlain by slate of the Halifax Formation (Figs. 45, 78 and 79). The areal extent of the deposit is not extensive and tonnage available is not sufficient for an economic operation. See Appendix 1 for diamond-drill logs and analyses.

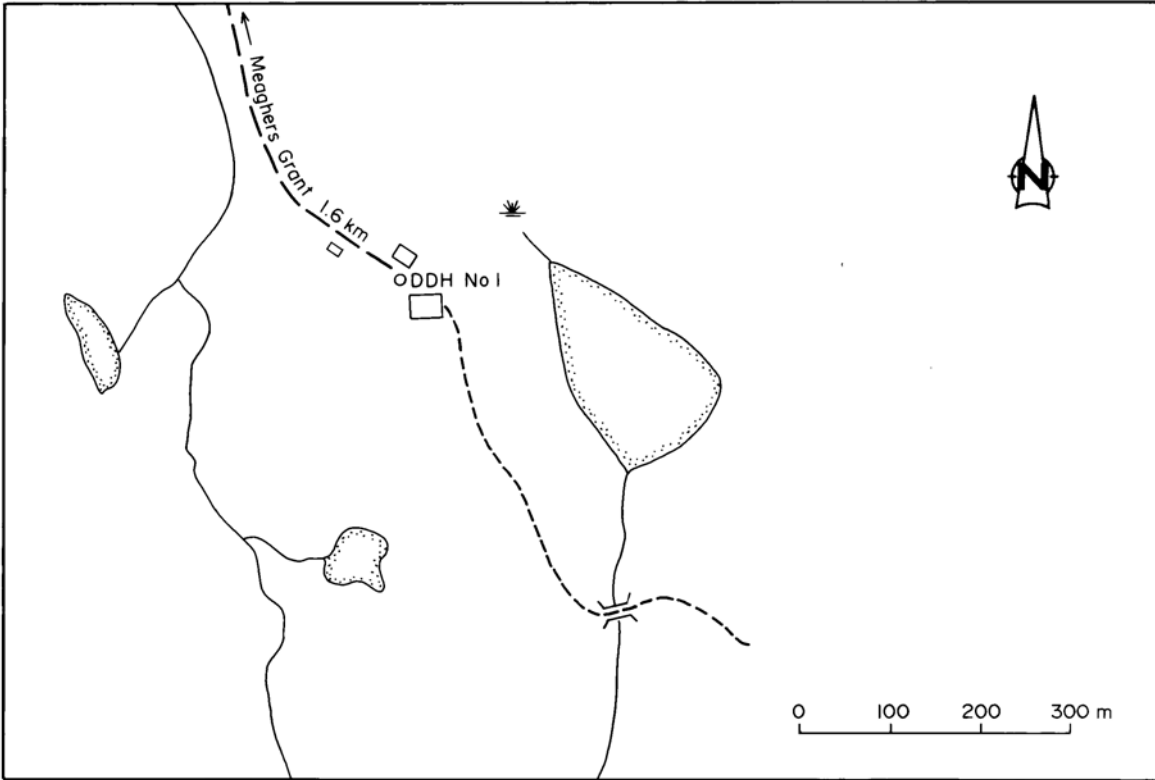


Figure 74. Location map for diamond-drill hole number 1, Meaghers Grant area, Halifax County, October 1969 (Fig. 46; MG-5-1).

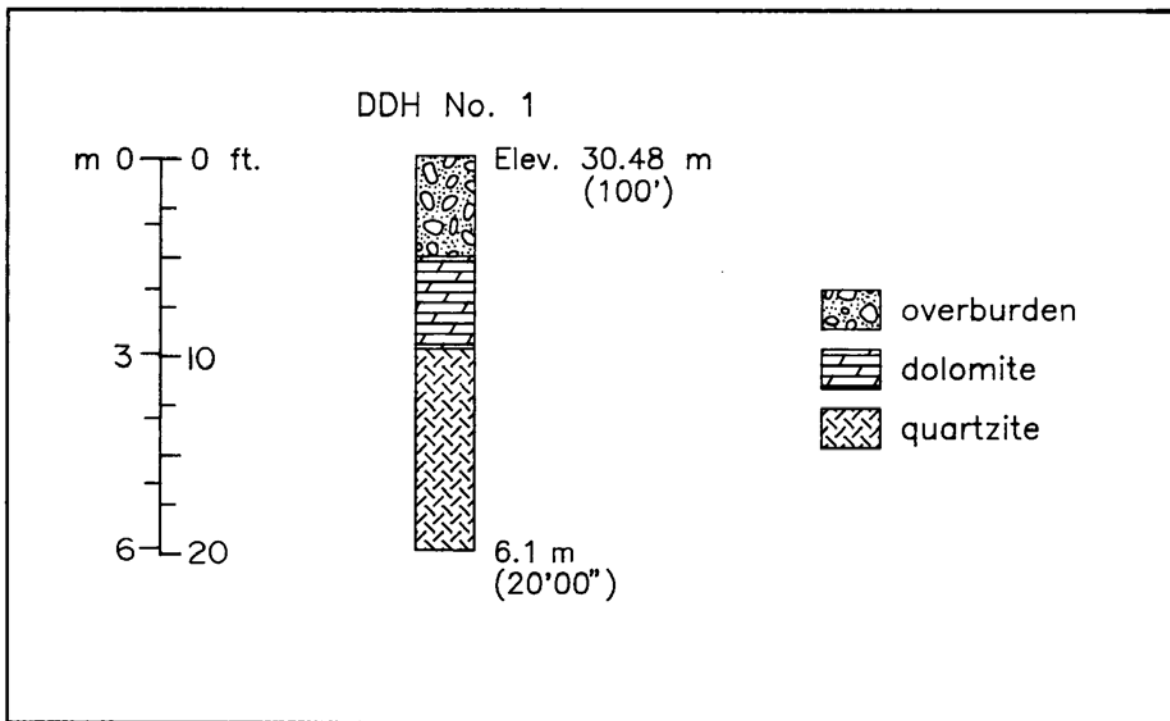


Figure 75. Profile of diamond-drill hole number 1, Meaghers Grant area, Halifax County, October 1969.

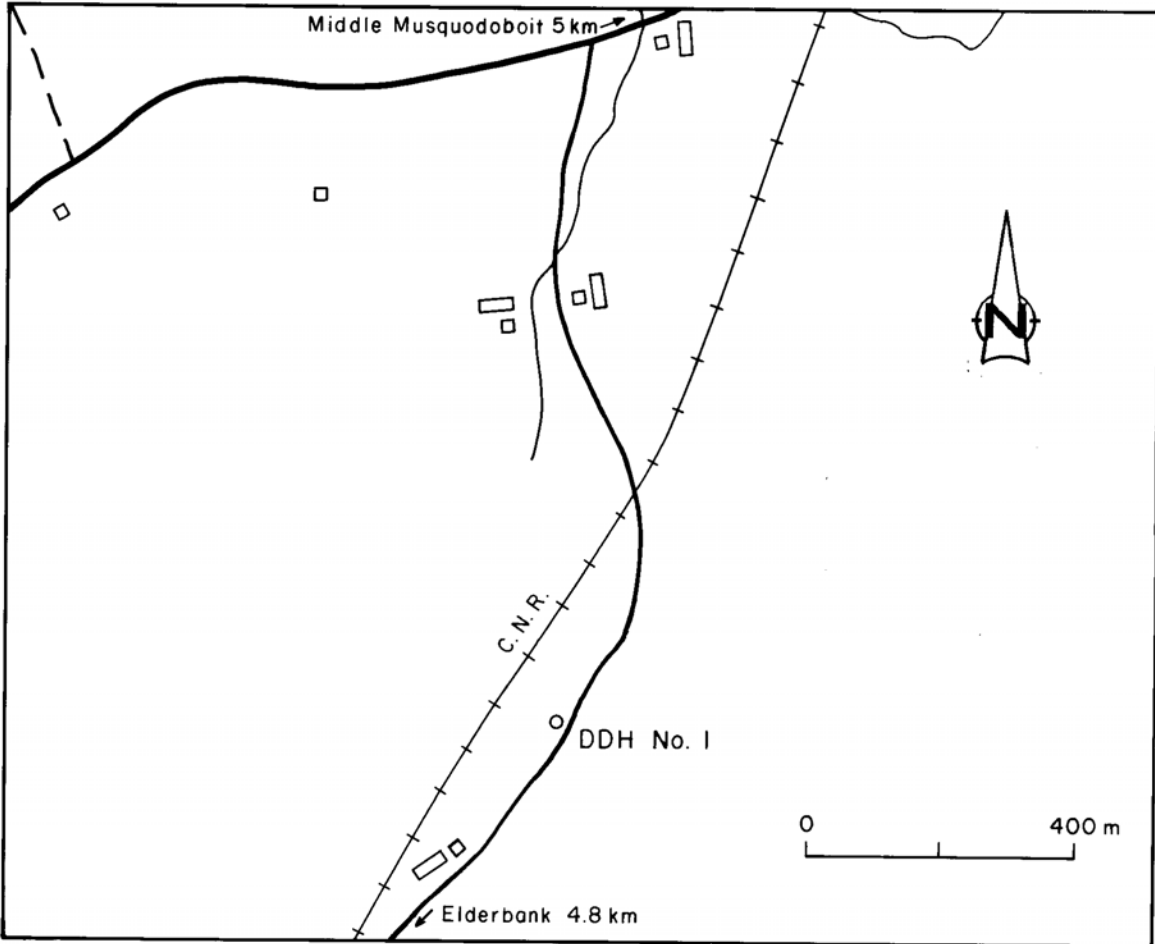


Figure 76. Location map for diamond-drill hole number 1, Middle Musquodoboit area, Halifax County, November 1968 (Fig. 45; Mo-2-1).

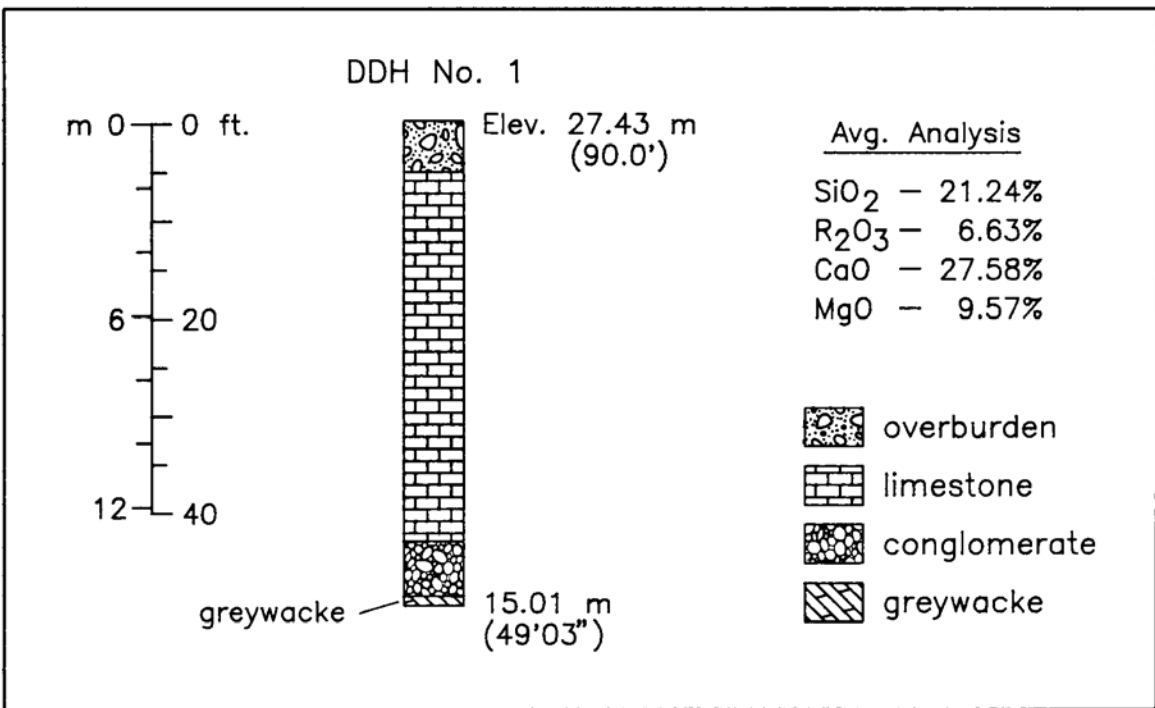


Figure 77. Profile of diamond-drill hole number 1, Middle Musquodoboit area, Halifax County, November 1968.

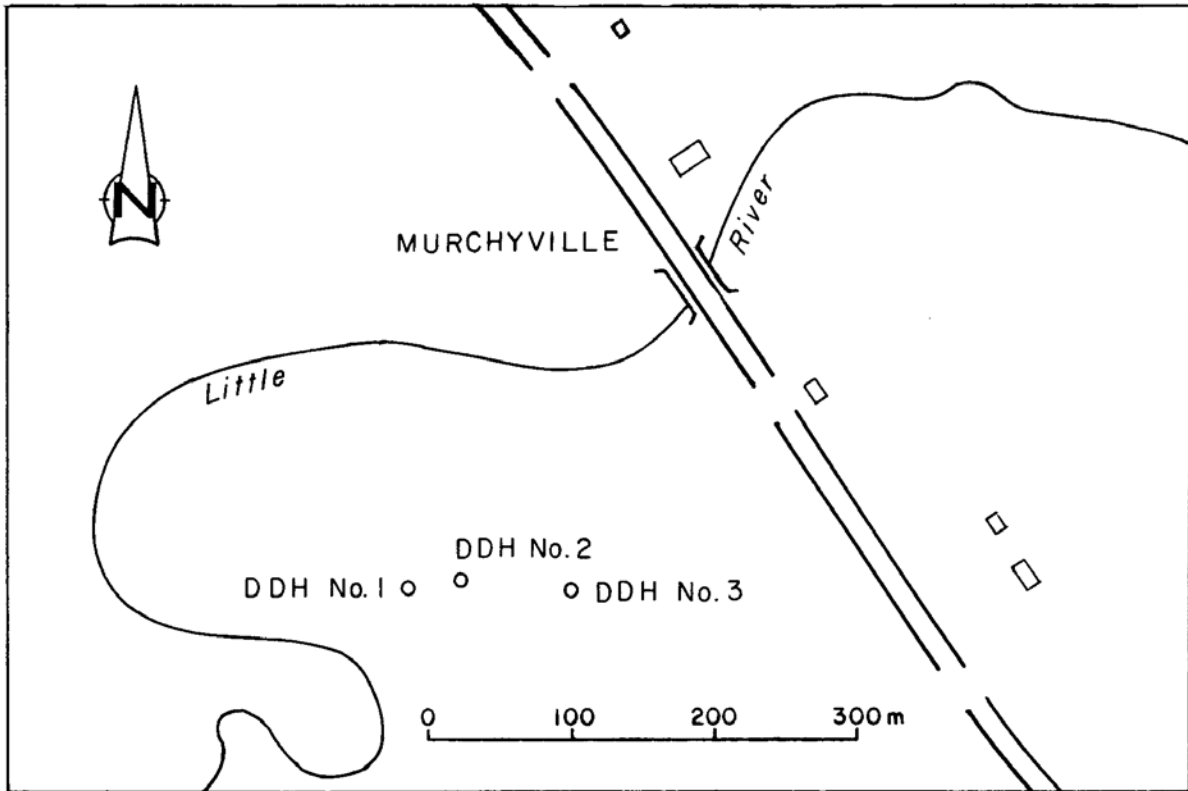


Figure 78. Location map for diamond-drill holes numbers 1-3, Middle Musquodoboit area, Murchyville, Halifax County, October 1969 (Fig. 45; Mo-10-1).

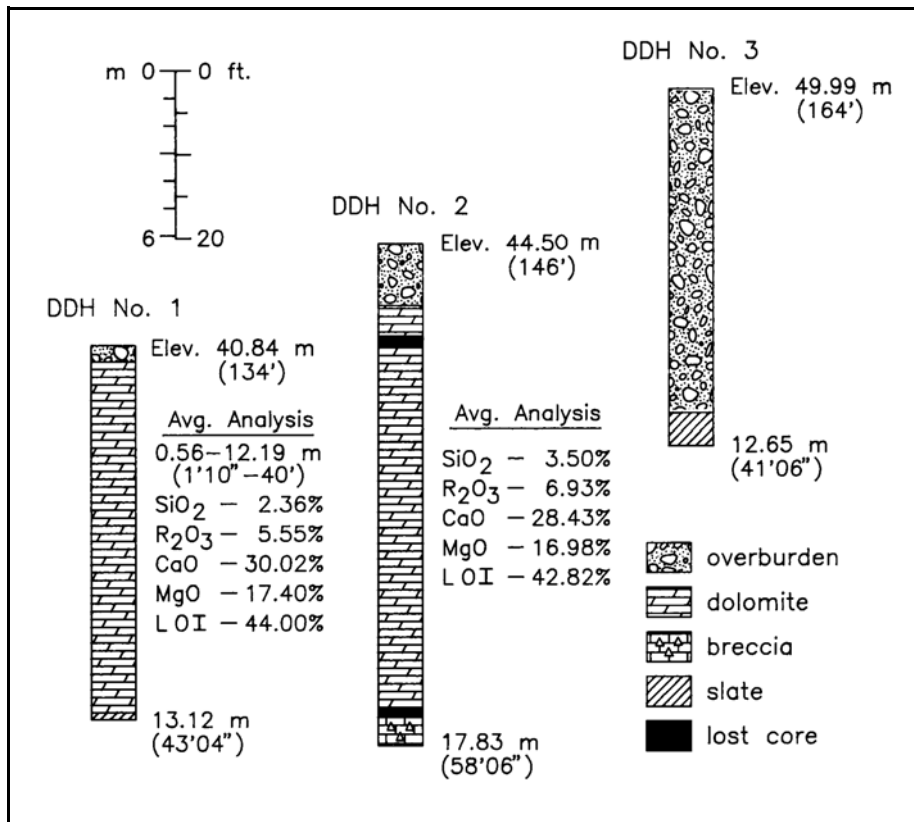


Figure 79. Profiles of diamond-drill holes numbers 1-3, Middle Musquodoboit area, Murchyville, Halifax County, October 1969.

MIDDLE MUSQUODOBOIT AREA (BROOKVALE) (Mo-11-1) (Mo-21-1) (Mo-12-1)

Seven holes were drilled to test a dolomite horizon southeast of Middle Musquodoboit (Figs. 56, 80 and 81). The dolomite covers an extensive area and in places a good thickness is indicated. The dolomite is of good quality and with additional drilling a large tonnage of high magnesium stone could no doubt be developed. See Appendix 1 for diamond-drill logs and analyses.

Four of the drillholes did not intersect dolomite. They were put down primarily to define the limits of the dolomite horizon and in no way detract from the possibilities of establishing a large tonnage of good quality dolomite in this area.

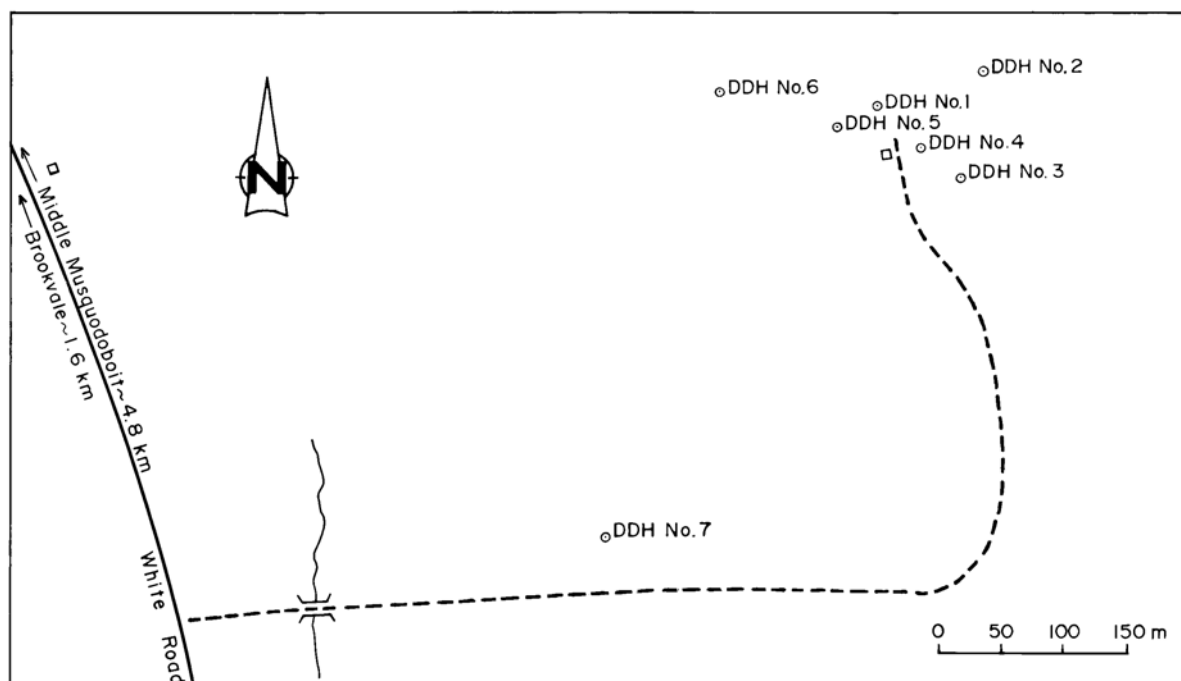


Figure 80. Location map for diamond-drill holes numbers 1-7, Brookvale, Middle Musquodoboit area, Halifax County, October 1969 (Fig. 56; Mo-11-1, Mo-21-1, Mo-12-1).

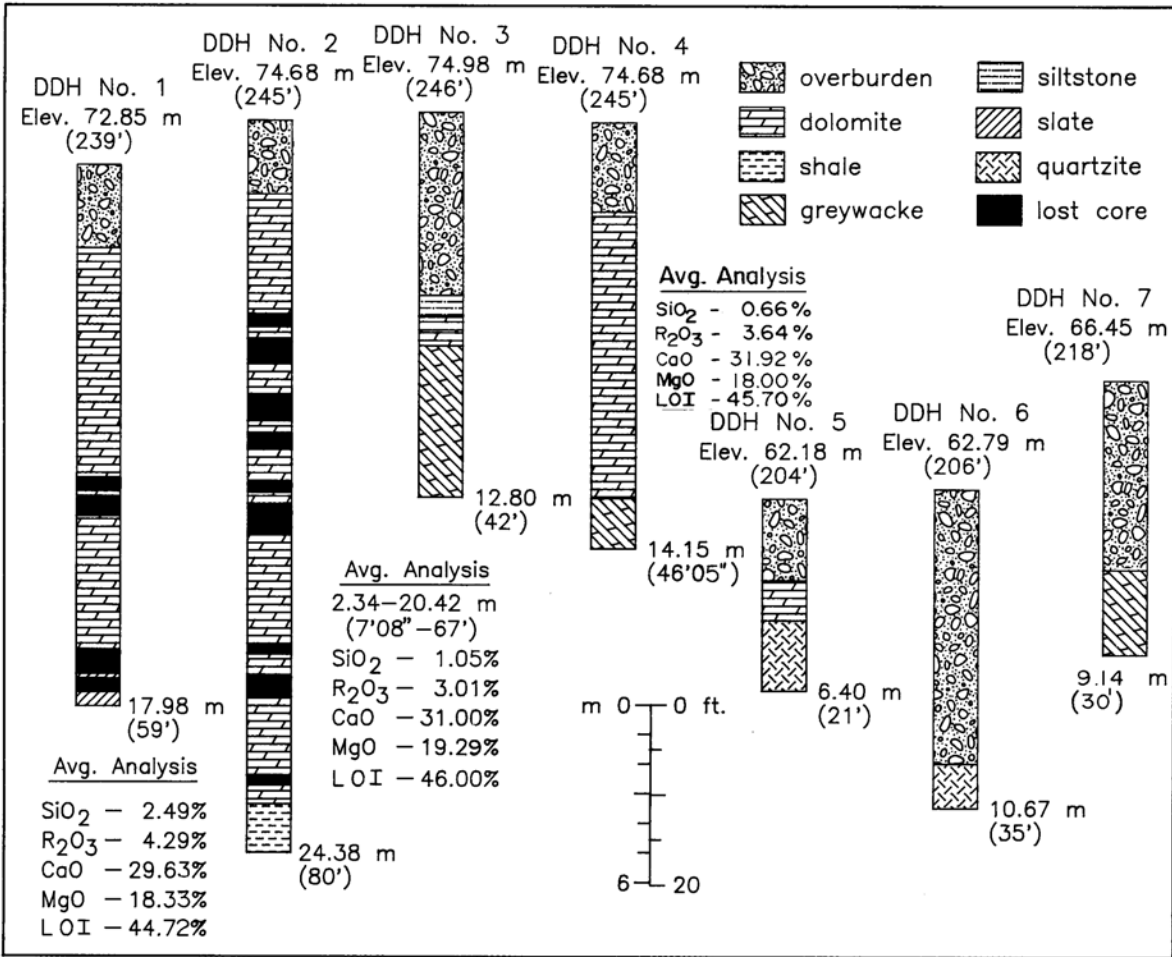


Figure 81. Profiles of diamond-drill holes numbers 1-7, Brookvale, Middle Musquodoboit area, Halifax County, October 1969.