OPEN FILE REPORT 93-005

FIGURE 3. DETAILED PLOT OF NOVA SCOTIA DEPARTMENT OF NATURAL RESOURCES DIAMOND-DRILL HOLE PE 83-1, POINT EDWARD, SYDNEY BASIN, CAPE BRETON COUNTY, NOVA SCOTIA.

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NOVA SCOTIA DEPARTMENT OF NATURAL RESOURCES

HONOURABLE JOHN G. LEEFE, MINISTER

Halifax, Nova Scotia
1993

DRILLHOLE: PE 83-1 **BY:** NOVA SCOTIA DEPARTMENT OF MINES AND ENERGY

LOCATION: POINT EDWARD, CAPE BRETON COUNTY (Figure 2) **NTS:**11K/01

LATITUDE: 46 09 42 **LONGITUDE:** 60 15 38

ELEVATION: 132.5 FEET (40.4 m) **INCLINATION:** VERTICAL

TOTAL DEPTH: 761.3 m **DATE DRILLED:** November 1983 to February 1984

DRILLED BY: NSDNR; J. Hayes, G. MacLeod and P. Hiltz

CASING: TEMPORARY DIAMOND-DRILL CASING WAS REMOVED AND THE HOLE CEMENTED FROM 464.9 m TO SURFACE

CORE SIZE: HQ 22.45-214.3 m, NQ 214.3-464.9 m, and BQ 464.9-761.3 m

DRILL FLUID: WATER

DEVIATION SURVEY: TWO TROPARI TESTS: AZIMUTH 269 DEGREES/ INCLINATION 88 DEGREES AT 214 m, AND 143 DEGREES/ INCLINATION 89 DEGREES AT 760 m

GEOPHYSICAL LOGS: GAMMA AND DENSITY LOGS WERE RUN THROUGH THE DRILLSTRING INCLUDING CASING BY THE NOVA SCOTIA RESEARCH FOUNDATION (Figure 7, in pocket).

0.0 to -2.45: NOT CORED: debris including overburden of the limestone quarry, broken limestone recovered.
NOTE: ALL LOG DEPTHS ARE IN METRES

2.45 to 4.1: LIMESTONE: limestone, light grey to grey brown, dense hard and crystalline, massive, stylolitic, with abundant fragmental oncolites up to 3 cm in the intervals 2.45-3.05 and 3.35-3.85, few oncolites and abundant grains between 3.05-3.35 m, 3.35-4.05m has up to 15% interbedded red siltstone, dips 85 degrees CA.

4.1 to 4.55: LIMESTONE: limestone, light grey to grey brown, interbedded with red siltstone, dips 85 degrees CA.

4.55 to 4.70: SANDSTONE: sandstone, medium to coarse grained, calcareous, medium red.

4.70 to 4.72: SHALE: shale, medium to dark grey, laminations 85 degrees CA.

4.72 to 6.25: SANDSTONE: sandstone, light grey, medium to coarse grained, irregular laminated, calcareous in lower part, especially 6.15-6.25 very calcareous, bedding 85 degrees CA.

6.25 to 6.5: LIMESTONE: limestone, red mottled light grey to white, clayey at top, irregular stylolitic and massive.

6.5 to 7.3: SILTSTONE: siltstone to fine sandstone, locally gritty at top, light grey green at top and red to mottled toward base with scattered irregular nodular limestone.

7.3 to 7.6: LIMESTONE: limestone, light grey brown, dense hard and crystalline, arenaceous.

7.6 to 9.3: SILTSTONE: siltstone to fine sandstone, locally gritty, red with scattered irregular nodular limestone and green silt reduction patches.

9.3 to 9.5: SILTSTONE: siltstone to fine sandstone, grey green, thin bedded.

9.5 to 11.3: SANDSTONE: sandstone, light to medium red, medium to coarse grained, two fining upwards cycles with basal conglomerate (8 cm max. clast) irregular laminated, bedding 85 degrees CA.

11.3 to 12.2: SANDSTONE: sandstone, light to medium red, minor green, fine grained, bedding 85 degrees CA.

12.2 to 12.55: LIMESTONE: limestone, light grey to white, nodular, with pale red mottle and silty stringers.

12.55 to 22.5: SANDSTONE: sandstone, light to medium red, minor green, fine grained, with scattered white limestone nodules.

22.5 to 23.8: LIMESTONE: limestone, light grey brown, nodular, gradational with red siltstone.

23.8 to 29.45: SILTSTONE: siltstone and shale, red with limestone nodules, one interbed of sheared medium to dark grey shale at 25.15-25.4

29.45 to 32.0: SANDSTONE: sandstone, light to medium red, minor green, coarse grained, gritty, conglomeratic at base.

32.0 to 36.1: SANDSTONE: sandstone and siltstone, light to medium red, minor green, coarse grained, gritty, conglomeratic at base, fines upward to red siltstone with white limestone nodules.

36.1 to 41.25: SANDSTONE: sandstone and siltstone, light to medium red, minor green, coarse grained, gritty, polymictic conglomerate (5 cm max) at base, fines upward to red siltstone with white limestone nodules.

41.25 to 66.5: SANDSTONE: sandstone and siltstone, interbedded fining upward cycles, light to medium red, minor green, coarse grained, gritty, polymictic conglomerate (10 cm max) at base, fines upward to red siltstone with white limestone nodules.

66.5 to 99.8: CONGLOMERATE: conglomerate and sandstone, medium red, clasts are poorly sorted, subangular to subrounded, metavolcanics, vein quartz and minor granitoids, cycles appear to fine upwards with sharp bases and also some sections coarsen upwards, maximum clast size is 10 cm with 4 to 5 cm typical, numerous fining upward cycles 30 to 100 cm thick.

99.8 to 155.3: SANDSTONE: sandstone, conglomerate and pebbly sandstone, interbedded, medium red, clasts are poorly sorted, subangular to subrounded, cycles appear to fine upwards, maximum clast size is 10 cm with 4 to 5 cm typical, numerous fining upward cycles 30 to 100 cm thick, pebbly sandstone is gritty with green reduction patches and limestone nodules with green envelopes.

155.3 to 173.8: SANDSTONE: sandstone, conglomerate and pebbly sandstone, interbedded, medium red, clasts are poorly sorted, subangular to subrounded, cycles appear to fine upwards, maximum clast size is 7 cm with 2 to 5 cm typical, several fining upward cycles 30 to 100 cm thick, pebbly sandstone is gritty with green reduction patches and limestone nodules with green envelopes.

173.8 to 174.8: SANDSTONE: sandstone, light to medium red, coarse grained, gritty, cross bedded.

174.8 to 193.2: SANDSTONE: sandstone, conglomerate and pebbly sandstone, interbedded, medium red, clasts are poorly sorted, subangular to subrounded, cycles appear to fine upwards, maximum clast size is 6 cm, several fining upward cycles 30 to 100 cm thick, pebbly sandstone is gritty with green reduction patches and limestone nodules with green envelopes.

193.2 to 193.5: LIMESTONE: limestone, white, nodular, gradational with green siltstone.

193.5 to 226.4: SANDSTONE: sandstone, conglomerate and pebbly sandstone, interbedded, medium red, clasts are poorly sorted, subangular to subrounded, cycles appear to fine upwards, maximum clast size is 5 cm, numerous fining upward cycles 30 to 100 cm thick, pebbly sandstone is gritty with green reduction patches and limestone nodules with green envelopes.

226.4 to 230.5: SILTSTONE: siltstone to mudstone, dark red with scattered irregular nodular limestone and green silt grit interbeds.

230.5 to 241.95: SANDSTONE: sandstone, siltstone and shale, interbedded, light grey toe red, medium to coarse grained, locally conglomeratic, convoluted bedding locally, bedding 80 degrees CA.

241.95 to 258.55: SILTSTONE: siltstone and shale, grey, scattered fine rippled sandstone interbeds, few high angle shears, limestone nodule bed at base, one interbed of red siltstone at 254.35-255.05, dips 80 degrees CA. BASE OF WINDSOR GROUP

258.55 to 349.8: CONGLOMERATE: conglomerate and pebbly sandstone, interbedded, medium red, clasts are poorly sorted, polymictic, subangular to subrounded, cycles appear to fine upwards, maximum clast size is 8 to 10 cm, locally up to 20 cm, pebbly sandstone is gritty with green reduction patches and limestone nodules with green envelopes (e. g. 343.9-343.95).

349.8 to 570.0: CONGLOMERATE: conglomerate and pebbly sandstone, interbedded, medium red, clasts are poorly sorted, subangular to subrounded, cycles appear to fine upwards, sometimes to sandstone, maximum clast size is 8 to 10 cm, locally up to 20 cm, numerous fining upward cycles, pebbly sandstone is gritty with green reduction patches and limestone nodules with green envelopes (e. g. 343.9-343.95), local thin sections with calcite cement, scattered high angle fractures.

570.0 to 761.3: CONGLOMERATE: conglomerate and pebbly sandstone, interbedded, medium red, clasts are poorly sorted, subangular to subrounded, cycles appear to fine upwards, sometimes to sandstone, maximum clast size is 8 to 10 cm, locally up to 15 cm, numerous fining upward cycles, lower 60 metres has well developed interbeds of conglomerate and sandstone in cycles 3 to 8 m thick, pebbly sandstone is gritty with green reduction patches and limestone nodules with green envelopes (e. g. 343.9-343.95), local thin sections with calcite cement.
END OF HOLE, TOTAL DEPTH: 761.3 m