
**Geology of the Orangedale salt deposit,
central Cape Breton**

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Several salt deposits have recently been defined in south-central Cape Breton Island. Three wells in the vicinity of Orangedale, central Cape Breton, intersect the regionally extensive Viséan Windsor Group, host strata for the Orangedale salt deposit and neighbouring deposits.

Regional composite stratigraphy of the area was constructed from data using the Malagawatch and McIntyre Lake salt deposits. The Lower Windsor Group consists of the Macumber Limestone, an overlying anhydrite succession, and a thick salt unit containing the 'A' potash horizon. The Middle Windsor Group is dominated by salt which is interbedded with anhydrite and thin limestone units, and includes the 'B' potash horizon and the regionally distinctive 'triplet marker'. Non-marine strata comprise the primary lithologies seen in the uppermost Middle Windsor Group and throughout the Upper Windsor Group strata. The base of the Upper Windsor Group is placed at the base of the distinctive Herbert River Limestone.

Orangedale deposit cores provide a record which represents most of the regional composite section with the exception of the lowest part of the Windsor Group and the upper parts of the Upper Windsor Group. Although detailed Windsor Group stratigraphy can be readily demonstrated in each of the three Orangedale wells, structural complexity is a marked feature of the deposit.

Strata at Orangedale are folded and overturned resulting in northeast-southwest to north-south trending inclined horizontal folds. Scale of folding is best represented in hole Noranda-225-4 which drilled into 268 m of lower Middle Windsor Group and Lower Windsor Group strata before intersecting overturned Lower Windsor salt. Further downhole, but up-section, the drill encountered Middle Windsor dolomite, anhydritic dolomite, and 240 m of overturned Middle Windsor Group salt. Hole Noranda-

225-5A penetrated five fold axes, in which the Middle Windsor 'triplet marker' horizon repeated six times and 'B' potash horizon three times.

Overall, the deposit has relatively good economic potential for salt resources. The potash may be of lesser economic potential due to the structural complexity of the deposit. A more complete understanding of the geology of the Windsor Group in the Orangedale area is crucial to future exploration and development activities.