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5.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

5.1 AREA GEOGRAPHY, TERRAIN, AND GEOLOGY

5.1.1 Area Geography

The proposed MIT is located in the Guysborough Highlands in Middle Melford, Guysborough County, approximately 10km southeast of Mulgrave, Nova Scotia and adjacent to the Strait of Canso and Chedabucto Bay. The proposed site lies on a lower elevation coastal zone that gently/moderately slopes from east to west from approximately 5 metres above sea level (masl) to 100 masl.

The rail and transmission corridors extend from the proposed Logistics Park footprint approximately 34 km northwest to connect to the existing CBCNS railway (Figure 5.1-1). The terrain adjacent to and along this corridor consists of a very steep forested slope between 9% and 30%, from sea level to 150 mbsl (NS Atlas, 2001). The slope remains consistent, extending along the coastline from the northwest to the southeast (Figure 5.1-1).

Under the classification system for theme regions in Nova Scotia, this area is designated as the Sedimentary Lowlands sub-unit (#860) of the Atlantic Coast (#800) (Davis and Browne 1996a and b).

5.1.2 Terrain

The origin and shape of Chedabucto Bay is derived from the position of the Chedabucto Fault that extends across central Nova Scotia from the Bay of Fundy to the Canso peninsula (Davis and Browne 1996b). This fault line, the Strait of Canso, and Chedabucto Bay were probably part of a major river system which rose on the continental shelf and flowed northwards into the Gulf of St. Lawrence during the Triassic and Cretaceous periods. Later tilting and submergence drowned the valley of this river, creating both the bay and the Strait (Davis and Browne 1996a and b). Drumlins are entirely absent on the northwest side of the bay and along the coast; marine erosion provides abundant coastal sediment for numerous small gravel beaches that often enclose small lagoons or salt marshes (Davis and Browne 1996b).

The footprint for the proposed Project, including the rail and transmission corridors, is located in the Avalon Zone (Rolland, 1982) on the Strait of Canso. The area is generally underlain by a Lower to Upper Carboniferous siltstone/sandstone, with evidence of thin bands of limestone beneath glacial outwash deposits. The Melford area is forested for the most part with softwood to mixed wood stands. Drainage in and around the proposed Project footprint and the rail corridor is via small watercourses (i.e., streams) east to the Strait of Canso. Additionally, along the rail corridor there are saline marshes and ponds that receive some drainage from the adjacent highland areas.

5.1.3 Geology

5.1.3.1 Bedrock Geology

Chedabucto Bay lies immediately to the east of the Horton sandstone Rolling Upland of the Carboniferous Lowlands and is dominated by sedimentary rocks (Davis and Browne 1996b).

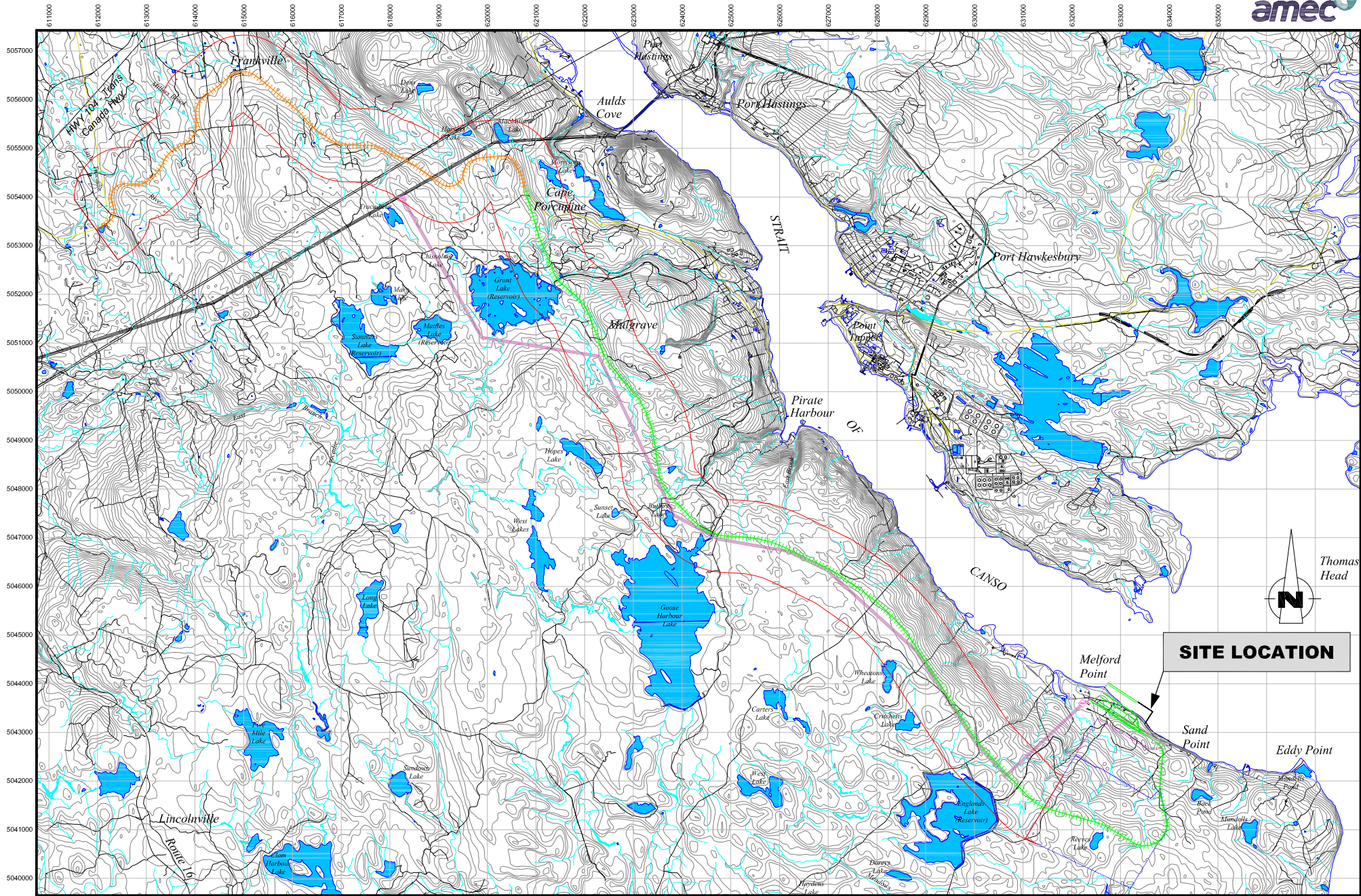
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Rock deposits include salts (Windsor Group), reddish siltstones (Canso Group), and fine sandstones (Riversdale Group), all of which are relatively soft and erodable, and have formed a rolling lowland that slopes towards Chedabucto Bay and the Strait of Canso (Davis and Browne 1996b).

Bedrock underlying the larger portion of the Project footprint is derived from the undivided Windsor and Canso Groups, consisting of siltstone, sandstone with shale, and mudstone. This formation is also known for some occurrences of laminated grey limestone and gypsum (White and Barr, 1998). An earlier study undertaken in the Mulgrave area defined the bedrock geology in the Project footprint area as being derived solely from the Canso Group (Ferguson 1949) thus reducing the potential for gypsum to occur in the Project footprint area. The remainder of the proposed footprint and corridors are underlain by quartz arenite, varied colours of siltstone, arkose and conglomerate derived from the Upper Horton Group within the Clam Harbour Formation, as well as the Tracadie Road Formation and the Caledonia Mills Formation (White and Barr 1998) (Figure 5.1-2).

5.1.3.2 Surficial Geology

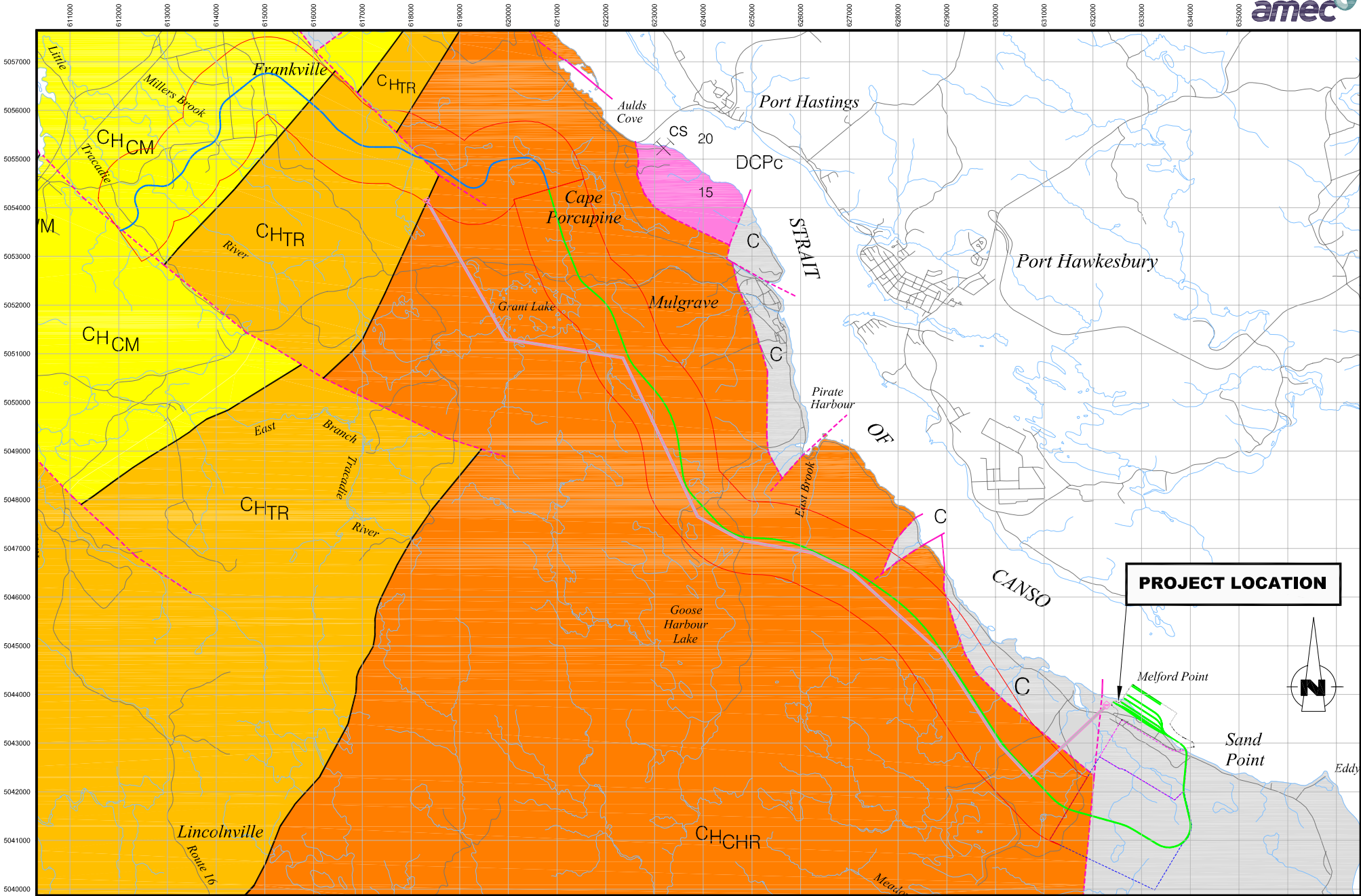
The surficial geology of the project area and vicinity consists of glacial deposits of the Lawrencetown and Upland tills with varying composition and thickness. The proposed Project footprint is in an area where Lawrencetown Till dominates, giving a nearly even proportion of sand, clay, and silt to depths up to 35m with an average of approximately 8m. Although this type of soil is known in other areas of the province for its agricultural value, agriculture in this area is represented by less than 10 percent of the land area (Coote et al. 1992). The rail and transmission line corridors are dominated more by the Upland Till with a cobbly consistency which is found at more shallow depths (average 3m) and is looser (Figures 5.1-3 and 5.1-4).



- LEGEND:**
- Proposed Melford Rail Track
 - Proposed Melford Rail Track (On Existing Rail Bed)
 - Existing Route 344
 - Road Network
 - Proposed Melford International Terminal
 - Initial Logistics Park
 - Future Logistics Park Expansion
 - Proposed NSPI Easement

Figure 5.1-1
 Melford International Terminal
 Topographical Map
 July 2008

Source:
 Nova Scotia Atlas, 5th Edition, 2001. Service
 Nova Scotia and Municipal Relations. Nova Scotia Geomatics Centre



LEGEND:

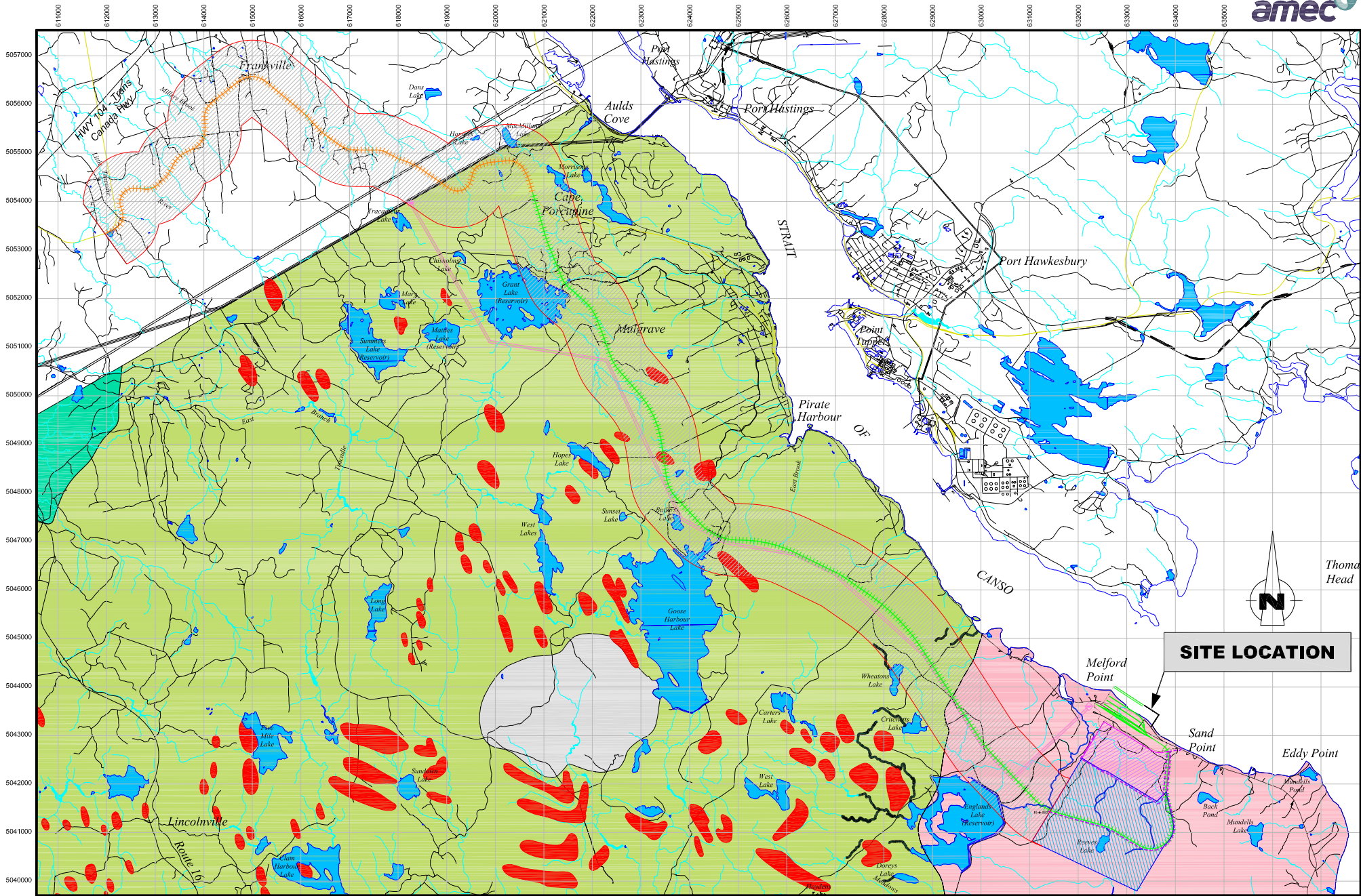
- Proposed Melford Rail Track
- Proposed Melford Rail Track (On Existing Rail Bed)
- Proposed NSPI Easement
- Undivided Windsor and Canso groups (C)
- Clam Harbour River Formation (undivided) (CHCHR)
- Tracadie Road Formation (CHTR)
- Cape Porcupine complex (DCPc)
- Caledonia Mills Formation (CHCM)
- Fault (approximate)

Source:
 Nova Scotia Department of Natural Resources, Minerals and Energy Branch
 Open File Map 1998-001
 Preliminary geological map of GUYSBOROUGH, RICHMOND AND ANTIGONISH COUNTIES
 (Parts of NTS SHEETS 11E/08, 11F/05, 06, 10, 11, 12 and 15)
 NOVA SCOTIA
 C.E. White and S.M. Barr
 Scale 1 : 100 000

PROJECT LOCATION



Figure 5.1-2
 Melford International Terminal
 Bedrock Geology
 July 2008



Source: Nova Scotia Department of Mines, Pleistocene Geology, Eastern Shore Region, Nova Scotia, 1979.

LEGEND:

- Proposed Melford Rail Track
- Proposed Melford Rail Track (On Existing Rail Bed)
- Existing Route 344
- Road Network
- Proposed Melford International Terminal
- Environmental Baseline Study Corridor
- Initial Logistics Park
- Future Logistics Park Expansion
- Proposed NSPI Easement
- Bedrock of Bedrock with Thin Till Cover
- Lawrencetown Till (Ablation)
- Lawrencetown Till
- Quartzite Till
- Drumlin (Idealized form, Tail Points Down Ice)

SITE LOCATION

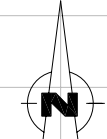
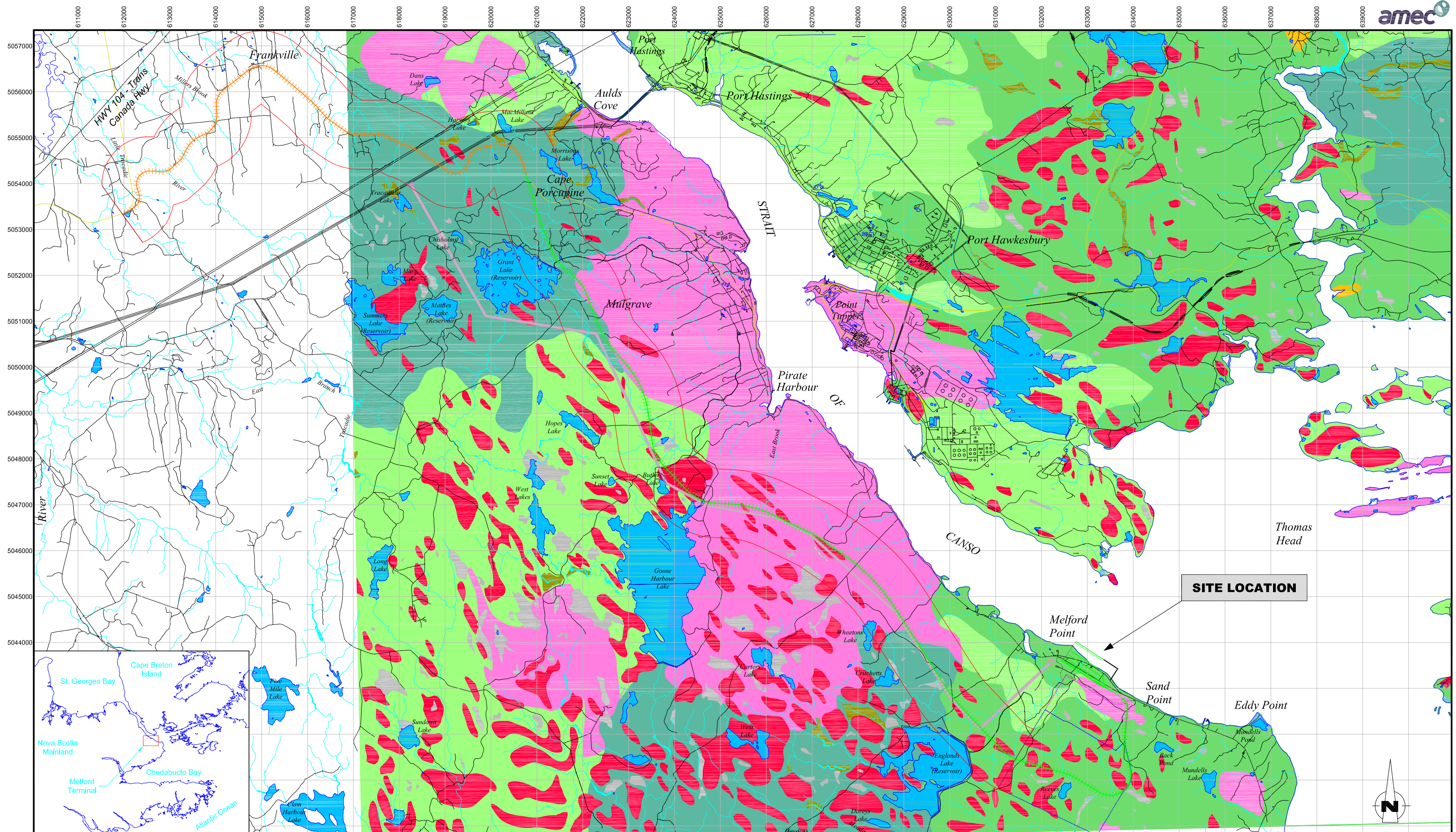


Figure 5.1-3
Melford International Terminal
 Pleistocene Geology
 July 2008



LEGEND:		<ul style="list-style-type: none"> Proposed Melford International Terminal Environmental Baseline Study Corridor Proposed Melford Rail Track (On Existing Rail Bed) Existing Route 344 Road Network Initial Logistics Park Future Logistics Park Expansion Proposed NSPI Easement 		<ul style="list-style-type: none"> Bedrock Colluvial Deposits Cover Moraine Drumlins Fluvial Deposits Marine Deposits Kame Fields And Terraces Glaciolacustrine Lake Bottom Deposits Organic Deposits Outwash Fans And Valley Trains Paraglacial Alluvial Fan Deposits Silty Till Plain Stony Till Plain And Ribbed Moraine 	
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Figure 5.1-4
 Surficial Geology (Port Hawkesbury Area)
 Melford International Terminal
 Environmental Assessment Services
 July 2008

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5.1.4 References

Davis, D.S. and S. Browne, 1996. *The Natural History of Nova Scotia: Topics and Habitats*. Volume I. Nimbus Publishing. 518 pp.

Davis, D.S. and S. Browne, 1996. *The Natural History of Nova Scotia: Theme Regions*. Volume II. Nimbus Publishing. 304pp.

Coote, D.R.; R. Gordon; D.R. Langille; H.W. Rees; and C. Veer. 1992. Water erosion risk, Maritime Provinces. Canadian Soil Inventory. Centre for Land and Biological Resources Research, Research Branch, Agriculture Canada. Contribution Number 91-10.

Ferguson. 1949. Mulgrave, Nova Scotia Map 995A. Geological Survey of Canada, Department of Mines Technical Surveys.

Nova Scotia Atlas, 5th Edition, 2001. Service Nova Scotia and Municipal Relations. Nova Scotia Geomatics Centre.

Nova Scotia Department of Mines. Pleistocene Geology, Eastern Shore Region, Nova Scotia, 1979.

Roland, A.E. 1982: *Geological Background and Physiography of Nova Scotia*; Nova Scotian Institute of Science, Ford Publishing Co.

Stea, R.R., 2004. NSDNR Open File Map ME 2004-2, Surficial Geology Map of Port Hawkesbury Area (NTS 11F/11), Inverness, Richmond, Guysborough and Antigonish Counties, Nova Scotia. Website: <http://gov.ns.ca/natr/meb/download/dp060.htm>

White, C.E. and Barr, SM. 1998: Preliminary Geological Map of Guysborough, Richmond, and Antigonish Counties, Nova Scotia (parts of NTS sheets 11E/08, 11F/05, 06,10, 11, 12 and 15); Nova Scotia Department of Natural Resources, Minerals and Energy Branch, Open File Map 1998-001, Scale 1:100 000.