The Colony has its own fire truck (2,400-gallon capacity). Supplemental firefighting support, if required, will be provided by the Fire Department in Miami, Manitoba (cf. Section 3.5.3.1). RCMP and the Miami First Response Unit will provide any other emergency services (i.e., police and ambulance, respectively (cf. Section 3.5.3.1) required in an emergency situation.

2.7 PROCESS-EFFICIENCY OPTIMIZATION

During the bench-scale testing, both the sulphide oxidation and chrome precipitation worked well within the acceptable parameters. Furthermore, the waste generated was deemed to be well within the acceptable limits for waste disposal. Further testing during initial tannery commissioning (i.e., production of first few batches of 200 hides) is planned to confirm these positive results.

Post-commissioning monitoring is also planned by the Colony to optimize process efficiency. This will be a longer (i.e., multiple-years) process than the initial system-commissioning activities and will involve:

- Monitoring the tannery equipment and the lined lagoon to ensure their proper functioning and the appropriate handling of wastes.
- Process and formula refinements (e.g., to reduce wastes).
- Possibly, the installation of additional equipment.

Deer hair is hollow and an effective insulator (Pierce II and Wiggers 1997) and is accordingly a potentially valuable commodity (e.g., used for watercolour art brushes, for embroidery and insulation in moccasins, for premium fishing lures, etc.). Moving to a "hair-save" process from the "hair-burn" process in the unhairing step (cf. Section 2.3.1.4) would involve the introduction of new processing steps and some new equipment (McConnell *pers. comm.* 2005). If the Colony located an interested buyer, such a process change could be undertaken, adding value to tannery operations.

Records documenting process-efficiency optimization activities (e.g., changes to the process or formulations used) will be maintained on site.

2.8 ENVIRONMENTAL MONITORING DURING TANNERY OPERATIONS

As previously indicated (e.g., Section 2.4.1.2 and 2.6), area groundwater and surface-water quality will be monitored during normal operations and compared to benchmark data collected prior to system commissioning. Periodic monitoring of the various steps in the tanning process (e.g., Section 2.4.2.1 and 2.4.2.3) will also be conducted during normal operations (200 hides/batch) to:

- Optimize waste-management, particularly the distribution of treated wastes to the Colony's own agricultural lands in a way that most effectively distributes trace contaminants (e.g., chromium and salt [i.e., sodium, chloride, pH and conductivity]).
- Ensure adherence to all applicable environmental regulations (and therefore lack of effect [i.e., nuisance]).

The activities noted above will specifically include the periodic monitoring of raw-water quality entering, and effluent quality exiting, the lined lagoon; and the concentrations of contaminants in solid wastes. The environmental monitoring activities will be the responsibility of the on-site Environmental Inspector (cf. Section 2.8.1). Records documenting the environmental monitoring activities will be maintained on site.

2.8.1 Environmental Inspector

An Environmental Inspector for the proposed facility will be appointed by the Colony and will be responsible for ensuring:

- Proper use and functioning of all equipment used in the tanning process.
- Proper use and handling of all chemicals used in the tanning process.
- Proper handling and disposal of all wastes created during the tanning process (including proper use and functioning of the lined lagoon and appropriate land application of wastes).
- Proper (and up-to-date) Worker Health and Safety training of all employees (cf. Section 2.5).

The Environmental Inspector will also be responsible for the periodic environmental monitoring of area groundwater and surface-water quality, and any of the 4,400 acres of Colony agricultural lands onto which sludge has been spread.

Equipment maintenance, chemical supply, waste manifests, monitoring and training records will be kept by the Environmental Inspector at the tannery.

3.0 EXISTING ENVIRONMENT

3.1 PHYSICAL ENVIRONMENT

3.1.1 Study Area

The regional study area for the proposed tannery development is delineated by the Aspen Parkland and Lake Manitoba Plain Ecoregions located within the Prairie Ecozone of Manitoba (Figure 3-1). On a finer scale, the Project site consists of approximately 13 km^2 of land owned by Miami Colony Farms Ltd. located 4.8 km (3 miles) south of Miami, Manitoba in the Manitou and Winkler Ecodistricts (cf. Figure 3-1). As indicated in Sections 1 and 2.2, construction of the proposed tannery facility and lined lagoon would occur within the Colony itself (cf. "Colony Site" on Figure 1-2).

3.1.2 Physiography and Topography

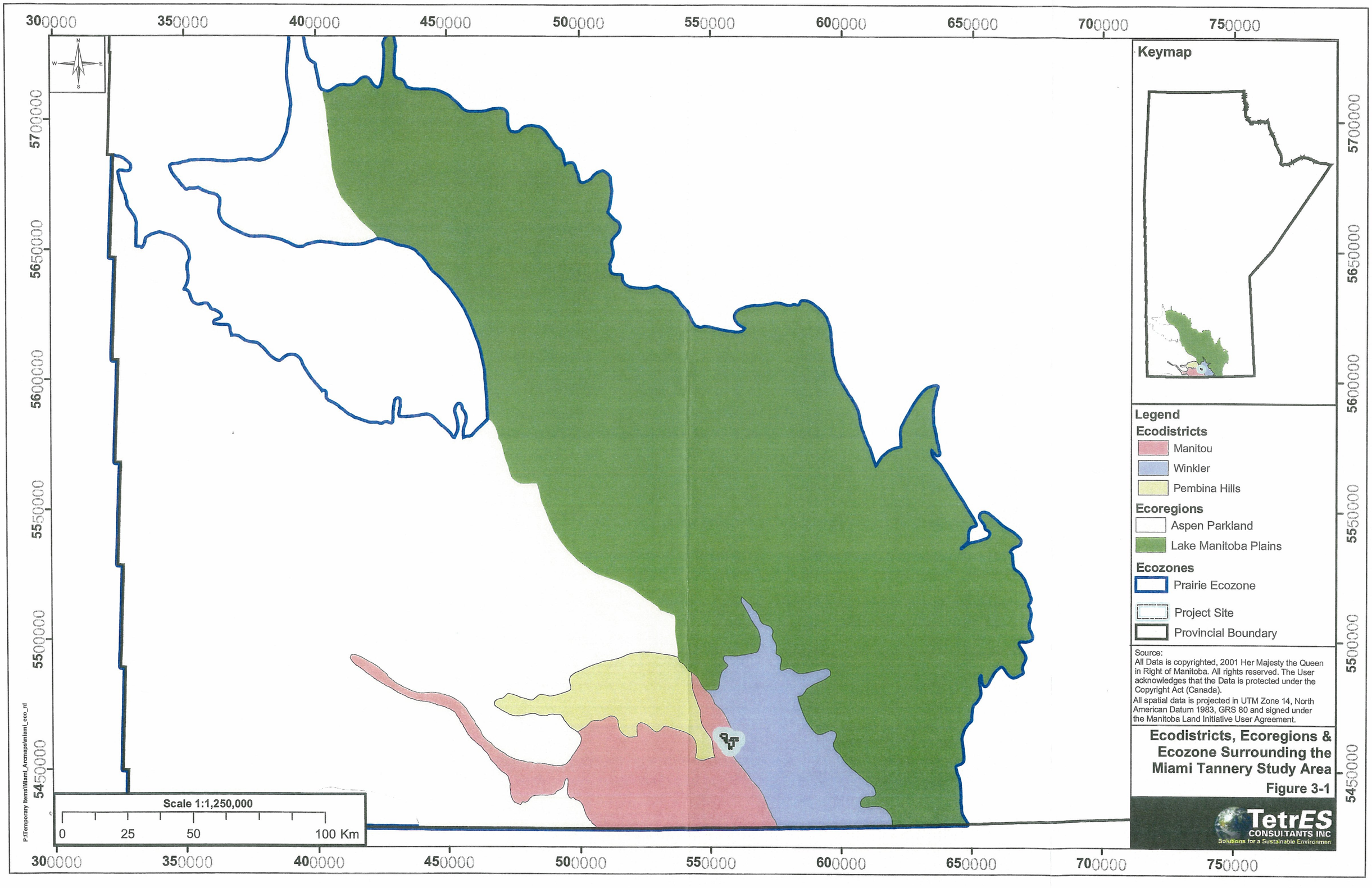
Topography within the Manitou Ecodistrict consists of level areas and moderate local relief of approximately 30 m, whereas the Winkler Ecodistrict is characterized by a level to very gently sloping glaciolacustrine plain containing relief of 1-3 m in areas with meandering creeks. The Project site occurs within a low-lying flat region dominated by agriculture (Figure 3-2). Wetlands and creeks are not common, although one intermittent creek containing treed banks meanders through the site (cf. Section 3.2). Creeks within the regional study area drain in a north-easterly direction towards the Red River watershed (Figure 3-3).

3.1.3 Soil Quality

Situated in a well to imperfectly drained region of the Manitou and Winkler Ecodistricts, the Project site retains very little surface water. Predominant soils (Figure 3-4) within these Ecodistricts include well drained (22% of the area) and imperfectly drained (72% of the area; Figure 3-5) Black Chernozemic soils developed on both clayey glaciolacustrine sediments and strongly calcareous glacial till. Soils formed on glacial tills are derived from bedrock shale and limestone and granitic rock. Common soil types within the study area include Black Chernozems and vertisols, regosols formed on alluvium, as well as loamy lacustrines and areas of sand and gravel (cf. Figure 3-4). The medium-textured soils, characteristic of this region, are well suited to crop (cereals and oil seed) production.

3.1.4 Geology

Examination of bedrock and surficial geology maps for the Province of Manitoba indicate the surficial geology of the Project site consists of glaciolacustrine deposits (i.e., clay, silt, sand and minor gravel) that are 1 to 30 m thick and reflect the underlying topography. Areas of wave-washed till and exposed bedrock are also present. The surficial geology is dominantly underlain



Ecodistricts, Ecoregions & Ecozone Surrounding the Miami Tannery Study Area

Figure 3-1

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Photographs illustrating the Physiography and Topography of the Project Site

Figure 3-2

photos; mxl\010760