



14.0 GROUNDWATER AND SURFACE WATER CONTINGENCY MEASURE

The findings of the predictive modelling indicate that the CRRRC landfill will not adversely affect groundwater and surface water. However, in the event that the results of the proposed monitoring program demonstrate unacceptable levels of contaminants in the groundwater at the points of compliance, or unexpected impacts to surface water, remedial actions will be implemented as required, in consultation with the MOECC. The contingency measures presented in this section are considered the most feasible options to reduce landfill leachate impacts to groundwater and surface water resources at the Site.

14.1 Groundwater

In the event that monitoring results suggest leachate is unexpectedly getting into the groundwater system on-Site, the following contingency measures could be implemented. The intercepted leachate-impacted groundwater collected from the surficial silty sand layer in the LDSCS could be pumped for treatment and act as the secondary containment system for the landfill. At this time, additional groundwater monitoring wells could be installed between the sentinel monitoring wells (P1 series and P2 series) and the property boundary to evaluate site compliance.

Alternatively, or additionally, a series of purge wells through the cover of the landfill and into the granular blanket of the leachate collection system could be installed and leachate removal by pumping to leachate treatment. Typically, this type of a contingency is triggered by premature failure of the leachate collection system, such that a mound is formed within the landfill. The benefit of having purge wells installed in the leachate collection system is that leachate is contained within the landfill and collected prior to getting diluted with non-leachate-impacted groundwater. Details regarding purge well installation, such as the number and spacing, would be determined based on the area and level of leachate mound control required.

If, despite the presence of the LDSCS, it is necessary to cut off flow through any or all of the perimeter berm, surficial silty sand layer or silty layer, a low permeability cut-off barrier could be constructed. Options available for the barrier include a soil-bentonite wall constructed using the slurry trench method or an interlocking sheet pile wall (steel or PVC sheet piling). This would contain the groundwater within/close to the landfill on-Site, which would then continue to be removed from the leachate collection system.

MOECC approval to implement the contingency measures would be obtained.

In the event that the liner systems associated with ponds in the leachate pre-treatment facility and primary reactor cells in the organics processing facility are compromised, materials would be removed and the liner repaired or replaced.

14.2 Surface Water

In the event that leachate-impacted water was to reach either stormwater management ponds or ditches, the source of the impact would be determined and then intercepted, as required. If necessary, the affected pond and/or ditches could then be emptied through a temporary pumping operation and the pumped water could be combined with the leachate and directed to the leachate treatment facility.