

**Table 11.10-1: Mitigation Measures, Net Effects and Monitoring**

Environmental Component	In-Design Mitigation Measures	Best Management Practices	Net Effects	Effects Monitoring
<p><b>Atmosphere</b></p>	<ul style="list-style-type: none"> <li>■ Minimize need for use of back-up alarms</li> <li>■ Paved roads in the northern part of the Site</li> <li>■ Berms to attenuate noise as required and verification of vacant land use annually</li> <li>■ Use of equipment that complies with appropriate emission standards</li> <li>■ Truck waiting area inside the Site</li> <li>■ Maintain existing vegetation in buffer around Site perimeter or, where required construct perimeter screening berms with plantings on top</li> <li>■ Receipt of organics and materials at the MRF and C&amp;D facilities within buildings</li> <li>■ Biofilters on the exhaust of air from within the organics processing and PHC contaminated soil treatment facilities</li> <li>■ Dust collection system from the MRF and C&amp;D processing buildings</li> <li>■ Low permeability cover of organics primary reactor cells and PHC contaminated soil treatment cells</li> <li>■ Flare</li> <li>■ LFG collection system</li> <li>■ Truck tire wash</li> </ul>	<p><u>Air Quality</u></p> <ul style="list-style-type: none"> <li>■ Place compacted granular materials, and, if required, surface sealing on regularly used Site construction roads</li> <li>■ Use of typical best management practices for dust suppression</li> <li>■ Minimize idling of vehicles on-Site</li> </ul> <p><u>Noise</u></p> <ul style="list-style-type: none"> <li>■ Restrict the use of heavy equipment to daytime hours as best possible</li> <li>■ Maintain vehicles and equipment and ensure they have noise suppression equipment</li> <li>■ Control speed limit for traffic on-Site</li> </ul> <p><u>Odour</u></p> <ul style="list-style-type: none"> <li>■ Control odours associated with organics processing in accordance with the Odour Management Plan</li> <li>■ Manage the working face of the landfill effectively</li> <li>■ Apply appropriate daily cover on landfill</li> <li>■ Minimize the area of uncovered waste</li> <li>■ Placement of final cover progressively on completed landfill areas</li> <li>■ Implement odour control measures for leachate holding and treated effluent ponds, if required, i.e., aeration system, cover, misting system, chemical addition</li> </ul>	<p><u>Air Quality and Odour</u> Predicted air quality at property boundary and off-Site sensitive receptors meets MOECC criteria.</p> <p><u>Noise</u> Noise from the landfill and diversion facilities meets MOECC criteria. While predicted noise increases from Site-related traffic along the approximate 800 metres of Boundary Road from Highway 417 to the Site would be noticeable, the assessment of noise effects has not identified the need for additional mitigation measures.</p>	<p><u>Noise and dust monitoring is proposed as described in Section 14.1.1.</u></p> <p>The proposed noise monitoring program includes monitoring noise levels once per year during operations for an initial period of 3 years after operational start up. The noise monitors, placed at or near POR02 and POR03, as defined in Section 8.4.1, will log acoustic data every hour for the duration of the monitoring period.</p> <p>The proposed dust monitoring program is annual property line dust monitoring after operational start up during the summer season for two summer seasons.</p>
<p><b>Geology and Hydrogeology (Groundwater and Geotechnical)</b></p>	<ul style="list-style-type: none"> <li>■ Engineered leachate/liquid containment for the landfill, leachate ponds and organics processing and PHC treatment</li> <li>■ Perimeter liner system cut-off for the landfill, together with leachate collection system</li> <li>■ Buffer between landfill component and property boundary</li> </ul>	<ul style="list-style-type: none"> <li>■ Provide construction quality control on all liner and collection system installations</li> <li>■ Provide monitoring and maintenance of leachate collection system components</li> <li>■ Inspect construction and operating equipment regularly and repair promptly if found to be leaking</li> <li>■ Geotechnical monitoring of landfill settlement</li> </ul>	<p>The natural clay deposit and the proposed engineered leachate collection system and management systems will contain and control landfill leachate at the Site. The landfill will not adversely affect off-Site groundwater quality. Other sources such as leachate management ponds</p>	<p><u>Groundwater and geotechnical monitoring are proposed as described in Section 14.1.2.</u></p> <p>The existing and proposed groundwater monitoring locations for the processing and treatment facilities north of the Simpson Drain and for</p>

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			<p>or organics primary reactor and soil treatment cells are lined and always accessible for repair. The Site is predicted to remain in compliance with groundwater protection requirements in both the short term and long term. In addition, the CRRRC is not predicted to adversely affect the quantity of groundwater available to any shallow dug wells in the vicinity of the Site.</p>	<p>the landfill south of the Simpson drain are shown on Figure 14.1.2-1. Leachate samples are proposed to be collected from the connection to the leachate pre-treatment facility and at three locations within the landfill, while leachate levels will be measured in each leachate sump in the landfill (as they are constructed). The groundwater and leachate monitoring will occur three times per year with groundwater analysis for parameters outlined in O.Reg. 232/98 (MOE, 1998a) with some additions. In addition, water wells within 500 metres of the Site will be sampled, with consent from the owner, one time prior to operations starting at the facility.</p> <p>The proposed geotechnical monitoring includes subgrade settlement monitoring, unit weight of the as-placed waste, inclinometers and surface survey points/monuments to monitor lateral displacements of the silty clay beneath the perimeter berm of the landfill, and vibrating wire piezometers to monitor the porewater pressure dissipation below the landfill.</p>
<p><b>Surface Water</b></p>	<ul style="list-style-type: none"> <li>▪ Design surface water management systems to separate leachate and liquids from processing from clean surface water runoff</li> </ul>	<p><u>Surface Water Quality</u></p> <ul style="list-style-type: none"> <li>▪ Implementation of a sediment and erosion control plan during construction and operations</li> <li>▪ Re-vegetate final landfill cover</li> </ul>	<p>The CRRRC has been designed to not adversely affect surface water quality on-Site or surface water quantity off-Site. .</p>	<p><u>Surface water monitoring is proposed as described in Section 14.1.3.</u></p>

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	<ul style="list-style-type: none"> <li>■ Divert clean runoff to swales, ditches and ponds</li> <li>■ Design ditch systems to convey design storm flows</li> <li>■ Control post-development discharge flows to match pre-development conditions as close as possible</li> <li>■ Enhanced sediment removal in SWM system design</li> <li>■ Sedimentation and erosion control measures</li> <li>■ Design and construct the component liners and leachate/liquid collection systems to safeguard surface water resources</li> </ul>	<ul style="list-style-type: none"> <li>■ Provide monitoring and maintenance of stormwater ponds; provide valve(s) on ponds, where necessary depending on ongoing water quality monitoring</li> <li>■ Provide monitoring and maintenance of leachate /liquid collection systems</li> <li>■ Use standard best management practices for erosion control until vegetation cover is established</li> </ul> <p><u>Surface Water Quantity</u></p> <ul style="list-style-type: none"> <li>■ Manage surface water on-Site; control off-Site stormwater discharge</li> </ul> <p><u>Accidental Spills</u></p> <ul style="list-style-type: none"> <li>■ Operate, store and maintain all equipment and associated materials in an area away from surface water features in a manner that minimizes the potential for the entry of any deleterious substance into water bodies</li> <li>■ Inspect construction and operating equipment regularly and repair promptly if found to be leaking</li> <li>■ Develop a spill response plan</li> </ul>		<p>The proposed surface water sampling locations, as shown on Figure 14.1.2-1, are the three discharge points from the Site at the eastern property boundary as well as Simpson Drain as it enters the Site at the western property boundary. Surface water samples and estimates of flow will be collected four times per year. Samples will be analyzed for the list of parameters as outlined in O. Reg. 232/98 (MOE, 1998a).</p>
<p><b>Biology</b></p>	<ul style="list-style-type: none"> <li>■ Maintain existing perimeter vegetative buffers where possible</li> </ul>	<ul style="list-style-type: none"> <li>■ Remove vegetative cover progressively in sequence with Site development</li> <li>■ Stabilize and re-vegetate areas of soil disturbed/exposed during construction</li> <li>■ Apply best management practices in applying chemical dust suppressants,</li> </ul>	<p>No ecologically significant effects predicted as a result of construction and operation of the CRRRC.</p>	<p><u>Benthic monitoring is proposed as described in Section 14.1.4.</u></p> <p>Benthic and sediment monitoring will occur on a bi-annual basis at sampling stations B5, B6, B8, B9 and downstream of B5 and B7 as shown on Figure 8.7-1. Monitoring for barn swallow</p>

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		<p>fertilizers, pesticides and herbicides and minimize their use to the extent possible</p> <ul style="list-style-type: none"> <li>■ Conduct all vegetation clearing activities outside the breeding bird season where possible</li> <li>■ To the extent practical, limit the extent of disturbed areas and soil stockpiles, control their orientation , and for piles to be left in place for a prolonged period of time seed to establish vegetation</li> <li>■ Schedule construction activities to minimize area and duration of soil exposure, to the extent practical</li> <li>■ Worker awareness program to avoid harm to milksnake (a species of concern), if they are in the Site-vicinity</li> <li>■ Manage waste effectively to avoid attracting nuisance wildlife and pests, control the nuisance wildlife populations as permitted and required, and conduct periodic inspections to monitor effectiveness of the pest control</li> </ul>		<p>will be conducted for a period of three years. _Ongoing review of conditions of revegetation and maintenance is proposed. Surface water monitoring is also proposed as set out in this table.</p>
<p><b>Land Use &amp; Socio-economic and Agriculture</b></p>	<ul style="list-style-type: none"> <li>■ Maintain appropriate buffer between proposed on-Site activities and off-Site land uses</li> <li>■ Maintain perimeter vegetative buffers where possible; construct screening features where there is not already a significant stand of trees</li> <li>■ Provide Property Value Protection Plan</li> </ul>	<ul style="list-style-type: none"> <li>■ Control off-Site nuisance emissions</li> <li>■ Purchase goods and services locally as best possible</li> <li>■ Prevent the on-Site generation and accumulation of litter</li> <li>■ Use litter fencing to control windborne trash from leaving Site</li> <li>■ Regularly clean up litter both on-Site and in the Site-vicinity</li> <li>■ Establish procedure to register and address complaints</li> <li>■ Use best efforts to establish a community liaison committee</li> </ul>	<p><u>Land use &amp; Socio-economic</u> No material adverse effects identified. Several positive economic effects.</p> <p><u>Agriculture</u> Limited on-Site agricultural use will be eliminated. No impacts on off-Site agricultural use or production identified.</p>	<p>To help mitigate and monitor potential nuisance or perception-related effects, a communication plan, including a telephone number and email address, will be prepared to allow and encourage farmers in the Site-vicinity to report any concerns, and to pose questions related to Site operations. In addition, a Community Liaison Committee will be established assuming there are interested volunteers in the community, to assist in the community monitoring CRRRC operations.</p>

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				Environmental monitoring for other components set out in this table.
<b>Culture and Heritage Resources</b>	<ul style="list-style-type: none"> <li>■ N/A since low potential for on-Site archaeological resources</li> </ul>	<ul style="list-style-type: none"> <li>■ Should any archaeological resources be discovered, cease all alteration of the Site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork</li> <li>■ Should any human remains be discovered, the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services must be notified</li> <li>■ If during the process of development any archaeological resources or human remains of potential Aboriginal interest are encountered, the Algonquins of Ontario Consultation Office will be contacted</li> </ul>	No registered archaeological sites within the Site and Site-vicinity. The on-Site lands contain no or low archaeological potential; no Stage 2 assessment required. Five pre-1973 properties within 250 metres of the Site identified as potential cultural resources did not demonstrate cultural heritage value or interest, and are therefore not eligible for designation under the <i>Ontario Heritage Act</i> .	No monitoring proposed.
<b>Traffic</b>	<ul style="list-style-type: none"> <li>■ Provide required intersection improvements at the Site access location off Boundary Road</li> <li>■ Provide on-Site queuing area of sufficient capacity to avoid truck queuing on Boundary Road</li> </ul>		All of the intersections evaluated would operate at an acceptable Level of Service during the weekday peak AM and PM hours of Site operations, with no intersections requiring modifications due to the CRRRC truck trips. The proposed lane configuration at the Site access includes an exclusive left turn lane on southbound Boundary Road.	Record number of CRRRC site-related truck trips, compare to that assumed in the traffic study and report in the annual Site monitoring report. This would be done until such time that the receipt of waste materials at the CRRRC reaches the maximum annual capacity of 450,000 tonnes per year.