

## **MS 05: EROSION CONTROL OF DOWNSTREAM WETLAND HABITAT DUE TO DISCHARGE WATER DURING OPERATIONS**

### **DESCRIPTION OF TASKS AND SUBORDINATE ACTIONS**

*The purpose of this method statement is to describe the methods to be used for the mitigation of erosion of the downstream wetland during the operational phase of the project. The erosion of the downstream wetland habitat may occur as a result of the concentrated discharge of water from the pipe to the dam where water is released, as well as the concentrated release of bottom water from the dam to the stream below the dam.*

### **PRE-WORK REQUIRED**

Demarcation of the development footprint as per the EMPr (Section 7.10.4 of the EMPr).

Environmental awareness training as per the EMPr (Section 7.5.1 of the EMPr)

Please refer to Method Statement 04 which discusses the strategic placement of straw bales to reduce sedimentation and erosion of the wetland habitat due to increased runoff.

### **DESCRIPTION OF WORK TO BE DONE: WHAT, WHEN, WHERE AND HOW**

The following section describes the mitigation measures, as per the freshwater specialist, to reduce erosion of the downstream wetland habitat as a result of water discharge during operations:

- Promote diffuse flow at discharge areas. Diffuse flow may be promoted with the use of perforated pipes at outlets or with the use of spreaders or rip-rap mattresses at discharge points.
- If vegetation does not establish after construction, revegetate discharge areas with wetland species indigenous to the area. Vegetation will aid in dispersing concentrated flows and will decrease the velocity and erosive potential of flows. Furthermore, the roots of vegetation will aid in binding the soils thereby reducing the possibility of erosion.

### **MONITORING**

- The applicant should monitor discharge points for erosion and incision on a quarterly basis and after heavy rainfall events. Should erosion and incision be noted, immediate corrective measures must be undertaken. Rehabilitation measures may include the filling of erosion gullies and rills, and the stabilization of gullies with silt fences.

**ACCESS TO AND FROM THE SITE**

No additional access required (there is existing access to the site).

**MAINTENANCE MANAGEMENT PLAN: METHOD STATEMENT FOR IMMEDIATE AND ONGOING TASKS**

<b>Actions</b>	<b>Responsibility</b>	<b>Potential impacts of these actions</b>	<b>Severity of impacts</b>  <u>High:</u> Disturbance of area with important conservation value; destruction of rare or endangered species. No possible mitigation or mitigation is difficult, expensive, and time-consuming. <u>Medium:</u> Disturbance of area with potential conservation value or of use as a resource; complete change in species occurrence or variety. <u>Low:</u> Disturbance of degraded area with little conservation value; minor change in species occurrence or variety. Mitigation easily achieved or little required.	<b>Measures to mitigate the severity of these impacts</b>	<b>Corrective/remedial measures if mitigation measures are not properly implemented on site</b>
<b>Promote diffuse flow at discharge points</b>	Contractor	<p>By not promoting diffuse flow at discharge points erosion of the downstream wetland habitat is inevitable.</p> <p>Promoting diffuse flow at discharge points will distribute the energy of the water which will decrease erosion potential</p>	<p>Medium</p> <p>Positive impact</p>	Diffuse flow may be promoted with the use of perforated pipes at outlets/ the use of spreaders or rip-rap mattresses at discharge points.	Immediate corrective measure may include infilling of erosion gullies and rills and stabilization of gullies with silt fences

**MAINTENANCE MANAGEMENT PLAN: METHOD STATEMENT FOR IMMEDIATE AND ONGOING TASKS**

<b>Revegetate discharge areas if indigenous vegetation does not establish itself after construction</b>	<i>ECO/ trained personnel/ Botanist</i>	<p><i>Vegetation will aid in dispersing concentrated water flows and will decrease the velocity and erosive potential of flows. Roots of the vegetation will.</i></p> <p><i>Incorrect revegetation of plants or planting of plants with no soil binding capacity not aid in diffusing the water flow and velocity</i></p> <p><i>Revegetation with alien invasive plant species can lead to the imbalance of ecological processes of the natural habitat</i></p>	<p><i>Positive impact</i></p> <p><i>Medium</i></p> <p><i>Medium</i></p>	<i>Consult the Botanist appointed to conduct the Search and Rescue operation with regards to the correct revegetation methods.</i>	<i>Immediate corrective measure may include infilling of erosion gullies and rills and stabilization of gullies with silt fences and the removal of erroneously planted vegetation</i>
<b>Monitoring</b>	<i>Land owner/ reliable, trained farm worker</i>	<i>Failing to monitor discharge points for erosion and incision will increase erosion potential.</i>	<i>Medium</i>	<i>Check discharge points on a quarterly basis and after heavy rainfall events.</i>	<i>Immediate corrective measure may include infilling of erosion gullies and rills and stabilization of gullies with silt fences</i>