

## **SECTION 180**

### **UNWATERING INCIDENTAL TO WORK**

The term "Unwatering" shall mean the removal or keeping out of water from the site that would impede the construction of the permanent structure (culvert, retaining walls, etc.), in order that work may be carried out in accordance with the specifications. Unwatering shall be undertaken by any means including, but not limited to, pumping, temporary watertight structures, cofferdams and settling ponds as appropriate.

Where unwatering is not a pay item, but is required in order to carry out the Work, then the Contractor shall provide such necessary unwatering. The Contractor shall provide such temporary watertight structures and pumps as are required for unwatering, and then after completion of the work, remove the unwatering facilities and clean-up and trim the site to slightly proportions, all at their own expense.

The term "settling pond" refers to any open air, water containment structure used to manage the suspended solids or to control the discharge rate of pumped or flowing water. Other terms such as, but not limited to, dewatering basin, unwatering basin, retention ponds, etc. must meet the requirements of "settling ponds".

The term "cofferdam" refers to any enclosure built within a body of water from which water is pumped out to expose the bed of a body of water to allow construction activities to be performed in the dry. Cofferdams are typically constructed of earth however; portable cofferdams may also be employed depending on the environmental conditions at the site.

Earthen cofferdams when used shall be constructed with suitable materials to render the cofferdam non-erodible and non-polluting. Earthen cofferdams shall be faced with plastic sheeting followed by sand bags, or equivalent if approved by the Owner's Representative. The purpose of the plastic is to produce a dam that produces the least amount of infiltration.

Should silt fences be required in connection with the unwatering operation, then the silt fences shall be incidental to the cost of unwatering.

#### **Unwatering Operations**

The Contractor shall carry out all work necessary to ensure the area remains dewatered to allow the work to be completed in the dry and to prevent disturbance to the foundation. The Contractor shall develop and implement all measures necessary in order to achieve the necessary unwatering to suit the situation.

Loose fill shall not be used to construct any unwatering structures; all fill shall be contained in sandbags or another method to allow for minimal disruption when removed from the water.

Effluent from an unwatering operation shall not be disposed of directly into a watercourse or waterbody. Effluent shall be discharged to a vegetated area that will cause the water to flow through a minimum of 50 metres of established vegetation between the discharge and watercourse. As vegetation becomes inundated with sediment, the Contractor shall relocate the discharge point into a new vegetated area as required to prevent sediment from reaching a watercourse.

If appropriate vegetated areas are not available, the Contractor shall employ other suitable means of sedimentation removal, such as sediment traps, to ensure effluent has been suitable cleaned of sediment before discharging to a watercourse.

Unless otherwise specified, all temporary unwatering and support structures shall remain the property of the Contractor and shall be removed from the job site when no longer required.

All earth or rock fill used in unwatering shall be removed from the watercourse upon completion of dewatering. Contractors shall incorporate necessary measures to limit sedimentation of the watercourse during this removal.

Any damage to the permanent structure due to any failure of the unwatering measures implemented as part of the Work shall be remedied at the expense of the Contractor to the satisfaction of the Department, up to and including, the removal and replacement of the permanent structure.

### **Turbidity Limits and Measurements**

The upstream and downstream turbidity may be monitored and measured by the Owner's Representative during all in-water or near water activities, including but not limited to, the construction, operation, and removal of unwatering systems. During construction, turbidity shall not increase more than 10 NTUs between the upstream and downstream measurements without prior approval by the Owner's Representative.

Measurement of turbidity will be by the turbidity tube method or another Department accepted alternative. Measurements shall be taken a minimum of 50 metres upstream and 25 metres downstream from the project site. Upstream sampling shall capture a representative sample of water not impacted by construction activities while the downstream sampling shall capture the highest turbidity due to construction run-off.

Turbidity measurement systems shall be provided by the Contractor and available on-site at all times. Failure to have turbidity-measuring instruments on-site while unwatering systems are being constructed, installed, or operational, regardless of whether a turbidity

event has occurred or not, will result in the application of liquidated damages equivalent to the rate stipulated in the contract documents for each day the instruments are not available on site.

Furthermore, failure of the Contractor to address any sedimentation event that exceeds the limits outlined above may result in the assessment of liquidated damages at the rate specified in the contract documents.

Work on the entire project may be halted by the Department should the Contractor fail to adequately address any sedimentation event during the unwatering operation.

The Contractor shall be fully liable for all costs and/or consequences resulting from the implementation or failure of the unwatering plan including any charges levied by any regulatory agency.