

## Diversions and De-watering Activities

Unless the plans indicate otherwise, the ESPCP does not contain approved diversion plans or approved methods to de-water. The use of mechanical pumps to divert State waters/streams or to de-water areas within the project shall require the submission of a plan for review by the Engineer prior to commencing.

### De-watering

Any pumped flow associated with de-watering from within the site, i.e., pumping from a cofferdam, excavation, vertical sag area, etc which consist of removing; pooled, ponded, standing groundwater, intermittent groundwater flows or otherwise collected stormwater shall either be pumped into an equal or greater volume excavated sump area for infiltration, a suitable container for recycling, (e.g. water truck for dust control and watering of vegetation), or routed through a properly designed, installed and maintained sediment basin, silt filter bag, filter ring or rock filter dam onto stabilized or natural ground.

Increased visual monitoring is required when pumped discharges will not be captured for containment or reuse. Discharges shall be reviewed as often as necessary to ensure increased water “discoloration” or increased water “cloudiness” do not exist following passage through the above BMPs. The purpose of the intake and outflow comparison is to detect degradation in water clarity and trigger a reevaluation of the pumping plan. Detection of increased water discoloration or cloudiness requires the pumping operation cease until an evaluation of the plan occurs and appropriate additional structural BMP measures or pumping alterations are implemented. Documentation of these actions and installation of additional plan measures will aid in the application of a “BMP defense” should turbid discharges continue to occur following plan improvements. Failure to monitor, amend and clearly document a pumping plan may result in DNR enforcement action being taken.

If the pumped flow will discharge into State waters the Contractor shall ensure the post BMP treated discharge results in sheet flow. Failure to create sheet flow and/or the observation of post BMP discharges that are visibly less clear than the receiving State water, shall require the Contractor to perform water quality sampling of their pumped discharges. If water quality sampling is necessary, the contractor shall also prepare and execute sampling plans per the current GAR100002 NPDES permit utilizing a Certified Design Professional as defined within the same permit. No additional payment will be made for water quality sampling of pumped discharges.

### Diversions

Excluding temporary stream channel diversions performed in strict adherence to the details contained in the GSWCC Manual for Erosion and Sediment Control and, if detailed, any diversions included in the approved ESPCP plans, all State water/stream diversions require plan preparation by the Contractor utilizing a GAR100002 defined Certified Design Professional. The Department recommends the Contractor work closely with the Design Professional preparing the plan to coordinate and consider work area, access, delivery needs, terrain and diversion length with respect to the practice of minimizing any temporary stream impacts.

The following suggested alternatives are offered for consideration in the development of site specific diversion plans. Alternatives are not limited to the examples presented below, nor do these suggestions imply or confer a Design Professional's seal of approval.

Diversion Alternate #1: The normal stream flow of non-trout water streams flowing on uniform beds having a grade of less than 2%, being between 1' and 6' wide across the water surface by no more than 1' deep at the stream's deepest depth in this location may be temporarily stopped while work is taking place in the channel by placing temporary sand bags in the channel upstream of the work area. Monitoring of the stopped inflow to prevent damage to private property or create safety concerns shall dictate the ability to continue operations. At a minimum of once per every 8 hours the stoppage shall be removed to allow for normal stream flow to resume for a minimum duration of 1 hour. Under no conditions shall the stoppage continue uninterrupted for more than 8 hours. Release of impounded water shall occur following the removal of all construction debris and the stabilization of all bare areas exposed by excavation or other construction activities.

Diversion Alternate #2: A diversion pump may be used as necessary to convey stream flow around the work area. The pump intake must be situated in manner that prevents ingestion of streambed materials. The pump outlet must be discharged onto a stable, non-erodible material such as rip rap downstream of the work area.

Diversion Alternate #3: Temporary Sand bags may be placed as necessary in the channel to divert the stream flow into one barrel of a multi-barrel box culvert thereby allowing work to take place on one side of the channel or culvert. The flow scenario can be reversed to allow work on the opposite side as necessary.

Regardless of diversion implemented, if the flow downstream of the diversion and work area appears visually discolored or exhibiting increased "cloudiness" in comparison to the stream flow upstream of the work area, all work must cease while the cause of the discoloration is evaluated, and corrected resulting in no visible difference between the upstream and downstream flows.

#### Design Considerations;

If flow seepage continues from the work area where a box culvert is being constructed, a Rock Filter Dam shall be placed across the channel below the outlet of the culvert. Accumulated sediments shall be removed daily and before restoring normal stream flow through the work area. Porous bags filled with 57 stone may be used as an alternate to the stone filter berm.

If rain or storm flows are expected all construction in the channel/streambed shall be stopped. All loose soils, material and debris shall be removed from the channel and culvert work area. The stream banks shall be temporarily stabilized as necessary with plastic sheeting, mats or sand bags as necessary.

#### De-watering the work area when a Diversion is in place

De-watering of the work area shall be considered during the Diversion plan preparation and included when anticipated or added to the plan by amendment if conditions prove it necessary.

Generally, a mechanical pump and silt filter bag may be used to de-water the work area. The pump intake must be situated in manner that prevents ingestion of streambed materials. The volume of the silt filter bag shall be commensurate with the anticipated pumping rate and volume. (Adhere to manufacturer guidelines to avoid containment failure.) The silt filter bag should be placed on a bed of 57 stone with a berm and surrounded by two rows of Type C Silt Fence and one run of hay bales. It is also common to route the pumped flow into a sediment basin. If however the pumped flow will discharge into State water, the Contractor shall ensure the post BMP treated discharge results in sheet flow. Failure to create sheet flow and/or the observation of post BMP discharges that are visibly less clear than the receiving State water, shall require the Contractor to review and amend their pumping plan and perform water quality sampling of their pumped discharges. If water quality sampling is necessary, the contractor shall also prepare and execute sampling plans per the current GAR100002 NPDES permit utilizing a Certified Design Professional as defined within the same permit. No additional payment will be made for water quality sampling of pumped discharges.

## Notification

A requirement of either activity is the notification of the Engineer if reduced water clarity develops as a result of de-watering or diversion activities so that he/she may contact our Environmental Compliance Bureau.