

DEWATERING



4.3.10 Dewatering

Filtration is the separation of sediment from a fluid by passing the fluid through a permeable medium that will trap a high percentage of the particles. This is not a new concept; it has been employed in all types of industries, for various type of liquids, including water. The equipment necessary for filtration applications associated with water containing sediment would be weir tanks, gravity boxes, non-contained sediment bags, sand media filtration, and bag/cartridge chambers. There are two types of filtration systems, gravity and pressure.

Advantages

- Excellent for utility work such as repairs, replacements, or new installations.
- Depending upon the choice of filtration systems, can remove small particles of silt and clays.
- Can be used as an alternate to sediment trap/basin on smaller sites
- Can hold large amounts of sediment which reduces overall maintenance.
- Can be used in conjunction with other types of filters as a pre-filter.
- Can be easily mobilized from site to site.

Disadvantage

- Limited storage capacity depending upon the site.
- Have limitations in removing silts and clays, depending upon selection.
- May require heavy equipment to load and unload system.
- May be cost inhibitive.

Design Criteria

- Determine soil type prior to selecting type of Dewatering system.
- Select an appropriate location that will reduce overall impacts.
- Weir tanks, Filter Boxes are effective for removal of large particles such as sand
- Sand Media Filters effective for removal of smaller particles such as sand and silt.
- Filter bags can remove large particles until fabric pores start to fill in or cake over then filter capacity increases to smaller sand and silt.
- Filter bags should be placed in a heavily vegetated area to increase there efficiency.
- Cartridge Filter Units will remove smaller particles such as silt and clay
- Rock Berms, Bio-filter Bags, or Sediment Fence shaped in a half circle and stages in a series of three can be installed as an alternate, or in conjunction with other systems.

CHAPTER 4: EROSION AND SEDIMENT CONTROL MEASURES AND BMP'S

Inspection & Maintenance

- Ongoing inspection is necessary in order to detect any malfunctions or operation of equipment.
- Periodic inspection of discharge areas.
- Remove sediment when it reaches 1/3 capacity of a sediment barrier.
- Material must be placed in an approved location on site or exported from site.