

Environmental Guidance Note – Minor Civil Works - Dewatering

HSE DOCUMENT

Discharge and Dirty Water

Dewatering may be required when excavations are affected by rainwater or groundwater. When undertaking minor civil/excavation works in existing switchyards, *premises* or tower sites, dewatering is generally only required for small quantities of dirty water (>2m³).

Dewatering must be undertaken so that discharge doesn't:

- Cause pollution or erosion, and/or
- Create any safety hazards.

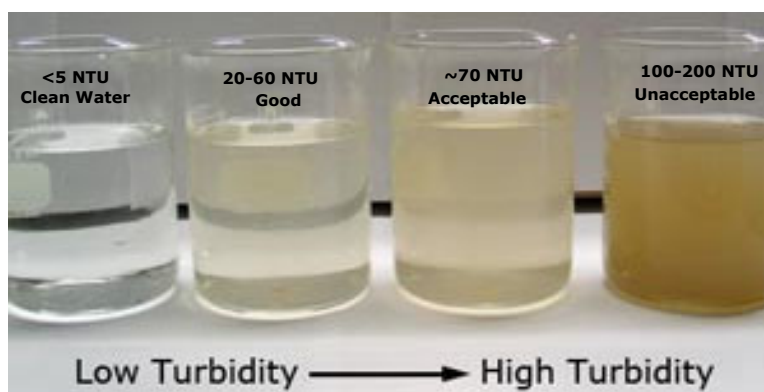
Any water discharged must meet the following criteria (as a minimum) before it enters any creeks or stormwater:

1. pH between 6.5-8.5;
2. TSS <50mg/L (generally correlates to field turbidity of less than 70 NTU); and
3. No visible oil and grease.

For guidance on methods to test for the above, contact your Environmental Business Partner.

What is 'dirty' water?

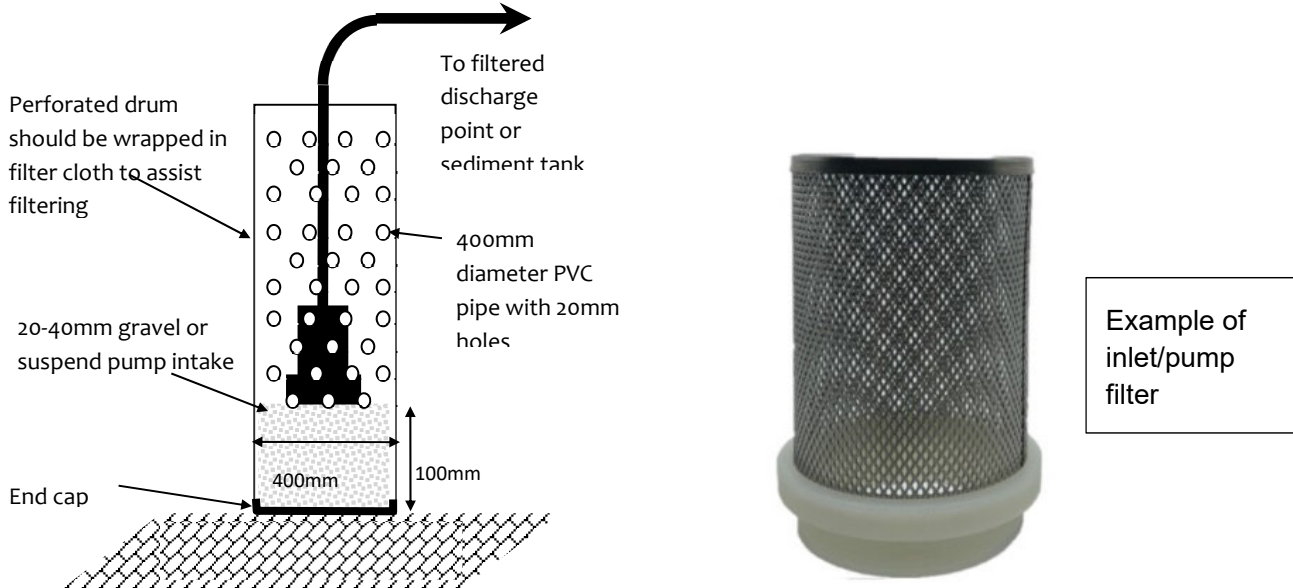
Sediment in water is measured as total suspended solids (TSS) or turbidity (NTU). The diagram below gives a representation of turbidity in terms of the discharge water quality you should aim for.



Pumping from excavations

When pumping from sumps, pits or any excavation the pump intake **must** be separated from the bottom to avoid drawing up settled sediment or mud into the pump.

The diagram below shows a suggested set up for pumping out 'dirty water'.



Pump intake must set approx. 100mm above the base of the excavation or sediment/sludge level. A sump may be required. Pump the cleanest water on top first, and then gradually lower the intake.

Maintenance Considerations:

- Check filter cloth for damage and blockages
- Keep intake off base of excavation

Discharging water containing TYPE C (Coarse/Sandy Soils) using Vegetated Filter Strips/Buffers

Vegetated areas where water can be discharged, filtered by vegetation and infiltrate into the soil are known as buffer strips, they can be used as a primary filter for coarse (Type C/Sandy) soils.

Buffer strips must be managed:

- So the vegetation buffer is wider as slope increases.
- So water is discharged as a sheet.
- So they do not cause erosion, flooding/inundation or damage.



Maintenance Considerations:

- Check discharge sheets the water,
- Discharge does not cause erosion, flooding or safety issues.

Discharging water containing TYPE F and D (Fine and Dispersible/Clay Soils) – Using Filter Bags, Tubes/Silt Socks

- Filter bags and socks are made of geotextile and water is pumped through at very low pressure to filter sediment.
- They must be used for F and D soils even where filtered water is discharged on to vegetation buffers (see above).
- Locate them away from drainage lines to allow for water to infiltrate soil or through vegetation,
- Ensure collection of sediment from bags is considered.
- Useful for 2 stage dewatering where water is discharged on to a vegetated filter strip or through secondary filter.
- Can be placed in a skip or bunded area to make clean-up easier.



Maintenance Considerations:

- Do not move or disturb filter bags when operational as the filter crust will be broken
- Generally one use only but can be cleaned for reuse when dry