

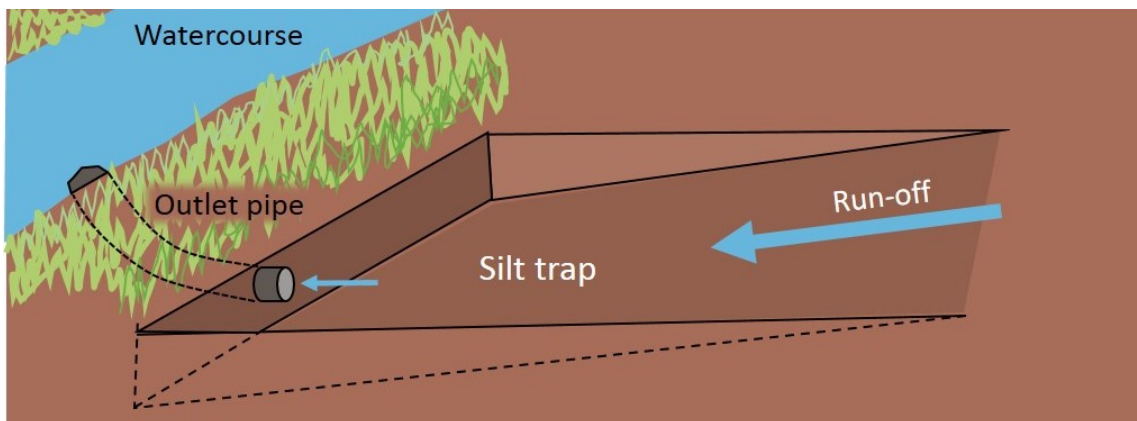
## What is silt trap and how does it work?

- A silt trap is an area, like a shallow trench, where run-off from fields or tracks is detained.
- When field run-off reaches the silt trap, it is slowed down which enables:
  - Settlement of sediment (silt) so it is not lost to culverts, watercourses or highways
  - Nutrients attached to the sediment are trapped, which could otherwise cause ecological problems in receiving water courses
  - Infiltration of water into the soil
- Sediment that accumulates in the silt trap should be dug out and spread back onto nearby fields. The silt is likely to be high in nutrients and therefore of value to you
- Note that silt traps do not reduce erosion within the field. Speak to our advisers about soil husbandry to avoid erosion and run-off (*See H2L Information Sheet on Soil Husbandry Advice*).

## Site Selection

The best site to install silt traps are:

- Where run-off pathways can be intercepted (FWAG has maps for this)
- Areas of low productivity
- Areas with easy access for maintenance where compaction can be avoided
- Where outflow of the silt trap is not likely to cause further erosion

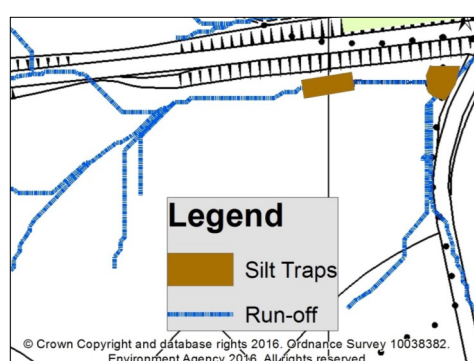


*Silt trap design with a pipe as outflow. Use a non-return valve if discharging to a watercourse.*

## Constructing a silt trap

- Size and shape: generally, a larger silt trap will be more effective at trapping sediment. However soil type, run-off volumes and the amount of required sediment removal need to be considered. FWAG SW can calculate the upslope catchment area to advise on silt trap sizes)
- The shape may be determined by the direction(s) of flow pathways to be intercepted (FWAG SW has maps for this)
- If the silt trap acts as pre-treatment to a leaky pond, it should be able to hold approximately 20% of the pond volume

- Slopes and bunds:
  - Gently sloping to a deeper area where the outflow pipe should sit
  - Slopes without stabilisation should not exceed 1:3
  - Use excess soil from construction to create a bund or spread across the land
  - If the design includes a bund, it should allow sufficient freeboard but be no higher than 1.3 m without reinforcement. Extend the bund beyond the edges of the silt trap to ensure no water flows around the outside of the bund, missing the silt trap.
- Outflow options
  - Pipe dug into the bund at the deepest place. If discharging to a watercourse, use a non-return valve
  - Freeboard at the top of the bund to allow overflow when the silt trap is full with run-off
- Best practice: Plant the surrounding area with vegetation to help 'slow the flow' of water into the silt trap and encourage uptake of water



*(Left) Map showing the run-off in an arable fields and where silt traps were constructed. (Middle) One of the silt traps constructed in the mapped field. (Right) Silt trap collecting run-off off a long farm track.*

## Managing silt traps

Check silt levels regularly (especially after rainfall events) and de-silt the trench and outlet pipe to maintain capacity and drainage (frequency of maintenance will vary depending on soil type and soil husbandry). Spread the dug-out silt across the land. The lifespan of a sediment trap depends on the frequency of sediment removal.

## Silt traps and your farm business

Silt traps provide great benefits to your farm business, whilst having almost no impact the your day-to-day management of your farm. They are often placed in field corners with low crop productivity, where soil usually accumulates. Instead of losing the soil and attached nutrients to roads or watercourses, it can be recycled back on the field.

## Consent and Licences

Land Drainage Consent may also be needed if the silt trap is connected to a watercourse. A waste exemption (U10) from the Environment Agency may be required when spreading silt. An EA Discharge Licence may be required. You may need consent from Natural England if the land is designated as a SSSI or in an agri-environment agreement. FWAG SW can give site specific advice on this.