

WWDS-023G Pumping station septicity control

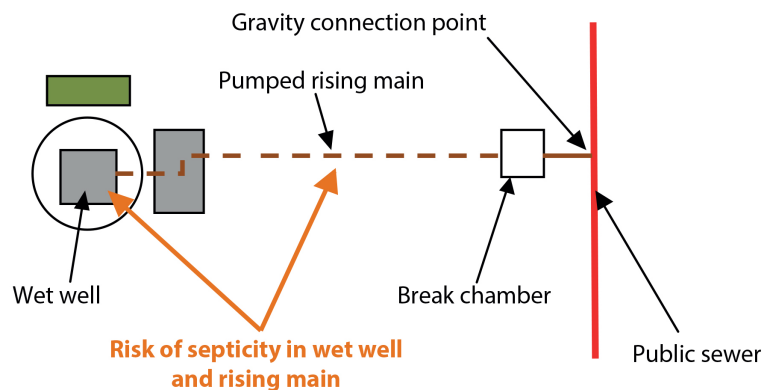
Guidance notes and procedures

These guidance notes are provided to help you fill in the pumping station septicity control form. The relevant section of the Water Industry Act 1991 is **Section 111a - provisions protecting the sewerage system**

What is septicity?

Bacteria is present in all foul sewage and therefore the sewage has an associated oxygen demand. In the absence of free oxygen, which is often the case in foul pumping stations with low flows and long retention times, the bacteria use oxygen from other compounds found in sewage, often leading to sulphide formation. This is called 'septicity' and can occur in wet wells and rising mains. Consequent formation of hydrogen sulphide gas (H_2S) can cause:

- A nuisance with its characteristic 'bad egg' smell, which leads to customer complaints.
- Lethal gas hazard during man entry into chambers.
- Reaction with moisture to form sulphuric acid. This has a corrosive effect on pipeline linings, concrete chambers and electrical fittings.



What do I need to do?

Step 1 Application

Please complete the septicity form and return it to either:

- Sewer Connections team in Bath - when connecting a private rising main to the public sewer.

Or

- Our local Developer Services office - for adoption of a proposed pumping station on a new housing development.

Contact details are at the end of these guidance notes.

Step 2 Review

Wessex Water will review your data and advise you if we consider there is a risk of septicity or not.

Step 3 Approval

If we confirm there is little or no risk of septicity from your pumping station, you can carry on with your construction.

Step 4 Advice if not approved

If we identify there is a risk of septicity, we will help with advice how to you can reduce that risk.

How does Wessex Water predict septicity?

Wessex Water carries out modelling to determine the extent of septicity, and how likely it will occur. We need data about the rising main, flows and pumps to calculate a prediction. We also take proximity to population into account.

When we have worked out the risk, we can advise whether the pumping station may have septicity problems or not.

When does a septicity form need to be submitted?

You need to fill in a septicity form when you connect a pumped rising main from a pumping station to a public sewer. The only exceptions are when the connection is from a single domestic property, or if the pumped rising main is less than 50 metres long.

What information do I need to provide?

Please fill out the pumping station septicity form. You need to provide the following information:

- A map or plan showing the location of the pumping station, the route of the rising main, where the discharge point is, and any air valves along the pipeline.
- Length, diameter and material of the rising main.
- Pumping station details – pump rate, duration and frequency.
- Wet well details – size, retention times and depth to top water level, which is the distance between bottom of wet well and position of duty/1st pump start level, set via a float or ultrasonic controller.
- Details about the properties served by the pumping station – numbers and size of houses, or general details if it's a commercial business.
- If there is a storm tank because this may affect flows during wet weather.
- Any other connections into the pumping station (if known).

What happens if septicity is identified?

If we believe septic flows will damage our sewers, we can object to the rising main connection or pumping station adoption. You will need to either improve your design, or add chemical dosing. Solutions include:

- Alter the pumping frequency or duration.
- Changes to the rising main, such as a shorter route, or twin mains for low flow/short term and high flow/long-term.
- Install a small chemical dosing kiosk next to the pumping station.
- Adoptable pumping stations, the developer will be advised one of the following options.
 - 1 **Permanent dosing required** – Installation of a dosing unit in accordance with Wessex Water Design Standard DS565 and eye wash station meeting WW DS390 including trace heating and enclosure for frost protection. Reinforced 2m x 2m pad (or bigger for large sites) flush with site surface, ducts to kiosk and wet well, duct from kiosk to position of eye wash station, 1.8m palisade fencing, speed hump to form bunded parking area and adequate access and visibility for chemical deliveries.
 - 2 **Provision for future dosing required** – Reinforced 2m x 2m pad (or bigger for large sites) flush with site surface, temporary sealed ducts to kiosk and wet well, duct from kiosk to position of eye wash station, 1.8m palisade fencing, speed hump to form bunded parking area and adequate access and visibility for chemical deliveries.
 - 3 **Temporary dosing required with provision for future dosing** – Temporary or hired dosing unit to be installed, maintained by developer during construction phases and removed before adoption. Reinforced 2m x 2m pad (or bigger for large sites) flush with site surface, temporary sealed ducts to kiosk and wet well, duct from kiosk to position of eye wash station, 1.8m palisade fencing, speed hump to form bunded parking area and adequate access and visibility for chemical deliveries.
 - 4 **Temporary dosing required** – Temporary or hired dosing unit to be installed, maintained by developer during construction phases when occupation levels are low and removed before adoption. No provision will be retained for any future dosing.
 - 5 **No dosing required** – Standard site design.

What is chemical dosing?

Septicity can be reduced by adding sodium nitrate or calcium nitrate chemicals to the flow. Package units are available, and we can help advise about size and dose rates. We will give you a copy of Wessex Water's design standard for nitrate dosing, which you will be expected to meet. You will bear the costs of supply and installation, and any operation or maintenance costs up until the day the plant is adopted as public.

How much will it cost?

There is no fee or charge for our advice. However the results may identify that you need to supply and install extra equipment and chemicals, for which you will bear the cost.

How long does the review take?

Wessex Water aims to respond within a fortnight.

Contact us

For applications when connecting a private rising main to the public sewer (Section 106) please contact:

Sewer connection team



01225 526333



sewer.connection@wessexwater.co.uk



Developer Services, Wessex Water, Claverton Down, Bath BA2 7WW5

Correspondence and liaison for a pumping station on a new housing development (Section 104) is done by your local Developer Services office (map and details given on next page).

