PUMPED SEWAGE

Background

As detailed in the Icon Water publication *STD-SPE-P-003 Trade Waste Approval and Compliance Requirements*, activities that generate liquid trade waste for discharge into Icon Water's Sewerage Network ***must*** comply with specific requirements.

Any capitalised terms used and not defined in this guide note has the same meaning as in Icon Water publication *STD-SPE-P-003 Trade Waste Approval and Compliance Requirements*.

Purpose

The purpose of this guide note is to provide detail on the specific requirements for liquid trade waste generated from pumped sewage so that compliant waste can be approved for ongoing acceptance into Icon Water's Sewerage Network.

Compliance

The Trade Waste Customer remains responsible and liable for ensuring compliance with this guide note even if the occupier of the premises is another party or entity.

In the event the Trade Waste Customer or the occupier of the premises fails to comply with this guide note, Icon Water may take any and all corrective actions as specified in the Icon Water publication *STD-SPE-P-003 Trade Waste Approval and Compliance Requirements* and the Liquid Trade Waste Negotiated Contract.

Guidance

This Guide Note details requirements for Liquid Trade Waste Categories A, B and C.

Sewage stored for periods in a pump well or rising main is susceptible to rapid depletion of oxygen, thus becoming anaerobic. Anaerobic waste is defined as waste containing less than 1mg/litre of dissolved oxygen and is corrosive and damaging to the network mains. Anaerobic waste may also cause unpleasant and unwanted odours to be emitted from network vents. For these reasons, domestic sewage is deemed to be trade waste once it is pumped or detained in a pit or well.

Waste becomes anaerobic due to bacteria feeding on nutrients in the waste and using up the available dissolved oxygen. Once this occurs bacteria scavenge oxygen from other sources including sulphur compounds. This process liberates the sulphur and allows the formation of hydrogen sulphide gas (H_2S), which is given off to the surrounding air. A concentration of H_2S greater than 10ppm in air may present an occupational health and safety hazard. High levels can be fatal. H_2S can also oxidise to form sulphuric acid and cause corrosion, particularly to the concrete structures such as pipes and manholes.

Design

Persons making application to discharge pumped sewage to Icon Water's Sewerage Network must demonstrate that the various elements of the designed pumped sewage system will not contribute to the discharge of anaerobic waste. The dilution of pumped sewage using drinking water is not permitted as a means of meeting the acceptance limits.

Sewage should be detained in the pump well and rising main for the minimum practicable time possible. The detention of fresh sewage for a period of up to two hours should not present a problem however, for liquid trade waste and sewage with low oxygen content or at elevated temperatures, problems may develop even with detention times of less than one hour.

Designers should bear in mind that the waste from fixtures accepting human waste such as toilets and urinals, food waste such as kitchen sinks and dishwashers or some liquid trade waste discharges will be

susceptible to becoming anaerobic. By comparison condensate or wastewater from fixtures such as cooling towers, boilers, silt traps in car parks and garbage compounds etc has less chance of becoming anaerobic.

Parameters on which the generation of H_2S depends include:

- Temperature
- Biochemical oxygen demand (BOD)
- Sulphate availability
- Detention time in the pump well and rising main
- Velocity and turbulence conditions
- pH
- Ventilation within the collection system and pump well.

Some measures that may be employed to avoid the discharge of anaerobic waste include:

- reducing the quantity of sewage discharging to the pump well
- restricting the type of fixtures discharging to the pump well
- reducing the volume contained in the rising main
- reducing the length of time wastewater is detained in the pump well and rising main
- reducing the volume of wastewater remaining in the pump well following a pumping phase
- ensuring a slime stripping velocity (at least 1m/sec) of flow through the rising main
- flushing the pump well and rising main with clean or relatively clean water
- aerating the wastewater in the pump well and/or rising main
- chemical dosing of the wastewater in the pump well and/or rising main with oxidising agents such as hydrogen peroxide, chlorine or other proprietary sewage conditioning agents.

Assessment

The various elements of the design should be compiled in a list and attached to the application along with details and dimensions signed off by the designing Engineer/Consultant, for the approving officer to make a proper assessment of the proposed system. The attached information should at least detail the following information:

- the rising main dimensions and volume;
- the designed velocity and flow rate of the rising main and pump combination;
- the volume of wastewater that will remain in the pump well following a pumping phase;
- the volume of wastewater that will be contained in the pump well when the pumps switch on;
- the maximum period likely to occur between pumping phases (provide reasoning).

Approval

We will not approve designs for pump systems but will accept the waste from systems that are capable of meeting our acceptance criteria. We reserve the right to take samples from time to time to test the discharge for compliance. Failure to meet acceptance criteria will result in a re-evaluation of the Liquid Trade Waste Negotiated Customer Contract.

In all cases it is the Trade Waste Customer's responsibility to ensure that their pump systems are designed, operated and maintained to ensure that anaerobic waste is not discharged to Icon Water's Sewerage Network.

Compliance management

Record keeping

Trade Waste Customers must:

- keep documentation relating to inspection and servicing of all pre-treatment systems at the premises for at least two (2) years and make this documentation available to Icon Water upon request.
- maintain appropriate records to demonstrate compliance with the Liquid Trade Waste Negotiated Contract at all times.

Site inspection

Icon Water's personnel may attend the premises to conduct site inspections to verify compliance with the Liquid Trade Waste Negotiated Customer Contract. The indicative frequency of site inspections is detailed in Section 9.12 of Icon Water publication *STD-SPE-P-003 Trade Waste Approval and Compliance Requirements*.

References

- *STD-SPE-P-003 Trade Waste Approval and Compliance Requirements*

Issue	Date	Reason for Revision	By
A	10/06/2025	Initial issue for internal review	S. Chappell