

C2 Measures to Prevent Unintended Discharge

2.1 EXISTING MEASURES TO PREVENT UNINTENDED DISCHARGES

Technologies

Techniques

A Performance Management System (PMS) is in place at the Boherbue Wastewater Treatment Plant. This PMS was developed by the Water Services National Training Group (WSNTG). The PMS provides a uniform approach to dealing with all relevant performance management issues, including Independent Compliance Audits, Management of Change, Dispute Resolution, Public Relations, Emergency Procedures and Reporting Procedures.

The current operator is contractually obliged to perform the Operation of the WWTP in accordance with the Performance Management System and to maintain the design performance capability of the existing treatment plant. Further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused.

Prevention of Pollution

Any alteration / upgrading of the existing infrastructure undertaken by the operator shall not increase the potential to cause pollution in the environment. In particular, any alterations to the wastewater treatment plant will be designed to enable any operator of the facility to prevent pollution of the environment by the following potential contaminants:

- Surface water run-off.
- Spillages.
- Solid Waste.

Toxic Substances

The current operator is to ensure that any modification or alterations to the plant do not increase the impact by any toxic substances. All chemicals and dangerous substances must be always stored safely, and all appropriate safety measures must be taken to ensure against leakage and spillage in accordance with the relevant health and Safety Legislation. These measures apply at the treatment plant operated by the current operator and not to the network or pump stations. As part of the operator's contract, failure to meet specified final effluent quality standards results in financial penalties due to non-compliance. The penalties vary depending on the severity of the pollution caused.

2.2 PROPOSED MEASURES TO PREVENT UNINTENDED DISCHARGES

The Wastewater Discharge Authorisation (WWDA) Licence (Ref. D0437-01) granted by the EPA sets stringent discharge Emission Limit Values (ELV). Condition 5.1 of the WWDA licence for Boherbue requires that IW carry out improvement works to ensure compliance with the ELVs set out in the Licence. The proposed upgrade at Boherbue WwTP is to provide additional capacity and shall contribute towards achieving “High” status of Brogeen River, whilst ensuring there is no environmental risk posed to the receiving water.

The proposed upgrade works are designed to meet the proposed ELVs and is an activated sludge type plant consisting of:

- New Storm Water Overflow Chamber, upstream of Inlet Works (SW004).
- New Inlet Works complete with combined Screens and Grit Plant.
- New FFT / Storm Overflow Pumping Station.
- New Storm Water Holding Tank, including overflow (SW005).
- New Biological Process Units including a Selector Tank, Anoxic Tanks and Aeration Tanks.
- New Final Settlement Tanks.
- New Sludge Pumping Station.
- New Sludge Drying Reed Beds.
- New Return Liquors (RAS) Pumping Station.
- New Tertiary Solids Removal Plant, complete with feed pumping station.
- New Wash Water Pumping Station.
- New Ferric Sulphate Dosing Plant.
- New Control Building.
- New ESB Sub-Station.

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The normal operation of the proposed development will be fully automated. Boherbue WWTP will have its own automation control center, where the plant’s operation will be monitored. Telemetry/Alarms will also be available remotely to the operator when not present at the WWTP.

Alarms and telemetry will be used on plant equipment to ensure the plant is operating within specified limits. Operators will be automatically notified if such limits are exceeded.

Standby equipment and provisions in the event of the power supply being interrupted, such as portable generators and equipment with automatic switchover will be provided at the proposed WwTP.

Mitigation measures to reduce the risk of plant spillages resulting in untreated effluent entering the Brogeen River have been considered throughout the design stages of the project. The potential for overflow has been minimised at each stage of the treatment process by applying appropriate control

measures to reduce the likelihood of such an event occurring. The design features employed to minimise the risk of unintended discharges associated with overflow or spillages are described below.

RAS is transferred directly from the FST's into the RAS pumping station. The direct link between the two systems reduces the likelihood of a spillage in comparison to that which would be present if multiple interconnecting chambers were used.

The risk of sewer flooding upstream of the treatment plant is minimal. Even in the event of a complete power failure, in addition to the on-site portable generator failing to start and flows continuing to be received at the WwTP, all flows will still be screened prior to discharge.

The emergency overflow is designed for use only when flows back-up and exceed FFT. At standard plant inlet flows, this would only occur if inlet pumps were to fail, which would rely on power supply to the plant failing, in addition provision has been made for connection of a portable generator. The pumping station to tertiary treatment is fitted with an overflow system which connects to the discharge location in the Brogeen River via flow through the existing constructed wetlands. This will only discharge in the event of the power supply to the plant being cut and subsequent failure where required of a portable generator.

The potential for an unintended release of chemicals is minimal. All chemicals are stored in bunded containers, while chemical deliveries are received in a contained area equipped to collect spillages.

The upgraded WwTP at Boherbue has been designed to achieve a high level of hydraulic safety, and therefore presents minimal risk for unintentional spills to occur. Methods employed at individual steps in the overall process to reduce the risk of such overflows are described below.

Flows gravitate from to inlet works, the potential for overflow at this point is considered by the presence of an SWO chamber. The WwTP is designed to handle any flow that can be pumped to it from the pumping station on the main road. In the event of the plant receiving flows greater than FFT, excess wastewater will pass through inlet screens into a settling tank prior to discharge to the Brogeen River.

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