



**NORTH EAST WATER**

# **LOW PRESSURE SEWERAGE SYSTEM**

**Installation Guidelines**

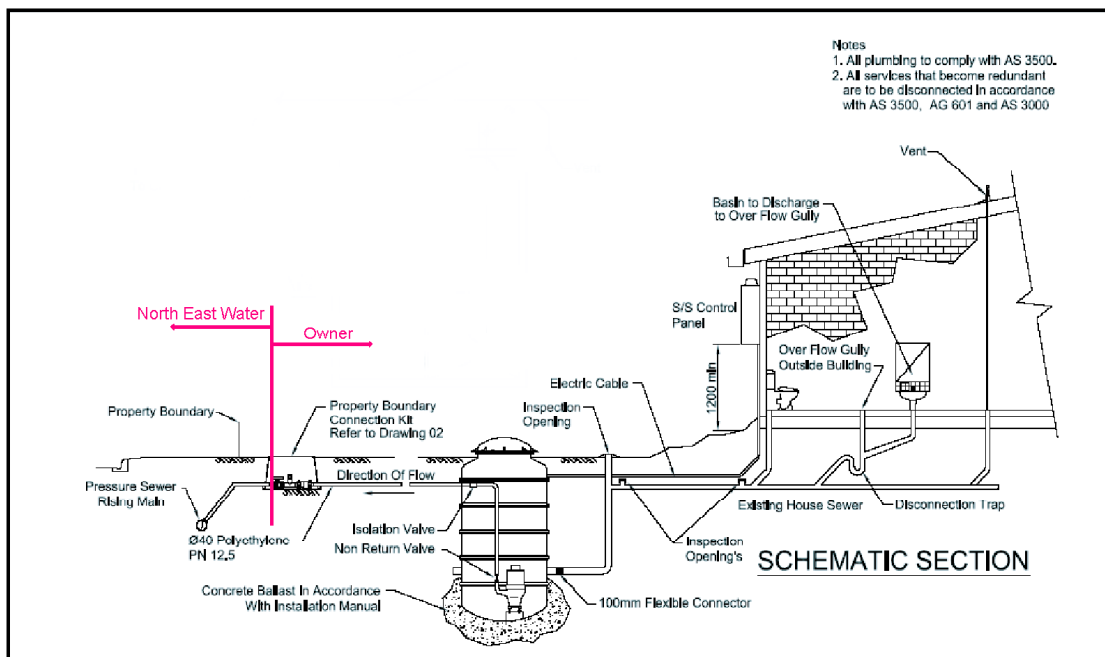
**For**

**Property Owners and Plumbers**

## Document Intent

The intent of this document is to provide North East Region Water Corporation's requirements and guidelines for the supply, installation and connection to North East Water's sewerage system of a Residential Low Pressure Sewerage System, to property owners and plumbing contractors. Low pressure sewerage systems are a cost effective system where conventional gravity systems are not viable.

These systems are a joint venture between North East Water and the property owner. North East Water is responsible for the low pressure sewerage system in the road reserve and the connection point within the property and the property owner is responsible for all of the system inside the property up to and including the property boundary kit.



## 1. General

### 1.1 The Pressure Sewerage System must consist of:

- Proprietary Brand Packaged Pump Unit.
- Conventional gravity sewer system from the dwelling to the pump unit.
- Delivery line from the pump unit to the connection point that has been provided by North East Water.

- 1.2 Prior to North East Water approving a Consent to Connect Application, the owner/agent must lodge with North East Water:
- A statement, confirming that the following are available if requested; a complete set of the manufactures specifications, detailing installation requirements, pump performance and documentation of compliance with the relevant Codes of Australian Standards.
  - A copy of the site plan lodged for building approval and endorsed by the property owner showing the proposed location of the pump station and delivery line.
  - If requested, documentation from the supplier/manufacturer of the performance and maintenance history of the pump unit used in similar situations.
  - A signed copy of North East Water's Agreement For Connection To Low Pressure Sewer Main.
- 1.3 The complete installation must comply with the requirements of North East Water, manufacturers recommendations and the relevant Australian Standards or Codes of Practice.
- 1.4 A condition of the consent to connect will include the lodgment of as constructed plans of the complete installation with North East Water.
- 1.5 Plumbing contractors licensed with the Plumbing Industry Commission of Victoria must carry out the installation.
- 1.6 At premises where at trade waste discharge is proposed, consent to connect will not be given unless an approved trade waste device is installed and a Minor Trade Waste Agreement has been signed.

## 2. Pump Well

- 2.1 Must be manufactured to comply with the relevant Australian Standard particular to the material used for construction and capable of handling raw sewage.
- 2.2 Must have a minimum holding capacity above the high level alarm of either a volume equal to 24 hours discharge OR 750 litres, whichever is the greatest, with a minimum holding capacity of 1000 litres.
- 2.3 Must be installed and provided with anti buoyancy ballast material in accordance with the manufactures recommendations.
- 2.4 Must be located in a non-trafficable area with reasonable access for maintenance purposes.
- 2.5 Must be installed to prevent entry of ground water into the system.

### 3. Pump

- 3.1 Must be a submersible or dry well positive displacement, semi positive displacement or progressing cavity grinder pump.
- 3.2 The pump performance curve shall operate within the parameters of 0.40 litres/sec @ 50 metre head to 0.80 litres/sec @ 10 meter head to ensure scouring velocity through the pipe to eliminate settling out of solids.
- 3.3 Must be protected with a pressure shut off switch or other over-pressure protection, to switch off the pump before the thermal overload is activated.
- 3.4 The over-pressure protection device must incorporate an automatic reset mechanism to restart the pump when discharge pressures have decreased.
- 3.5 Must be capable of pumping raw sewerage.
- 3.6 The outlet of the pump must be fitted with a non-return valve, isolating valve and a quick coupling for disconnection. All components must be contained within the pump well.
- 3.7 Submersible pumps must be fitted with a lifting chain and or guide rails.
- 3.8 The disconnection and removal of the pump must be possible without the need for confined space entry.
- 3.9 Must be fitted with an anti siphon device.

### 4. Alarm System

- 4.1 The pump unit must be fitted with an alarm system activated by a high-level alarm switch in the pump unit.
- 4.2 Must consist of a visual and audible alarm.
- 4.3 The visual alarm must be located so that it is visible to the property owner.
- 4.4 The audible alarm must comply with EPA requirements.

### 5. Electrical

- 5.1 All wiring must comply with AS 3000
- 5.2 The pump unit must be wired from a separate RCD circuit breaker on the property switchboard.

6. Delivery Pipe from Pump to Boundary Kit

- 6.1 Must be class PN 12.5 PE 80 HDPE pipe
- 6.2 Must be sized in accordance with the requirements of the pump unit manufacture, but shall not be greater than a nominal bore of 40mm.

7. Boundary Kit

- 7.1 Must be in accordance with the requirements of the pump unit manufacture and include a ball type isolating valve and non-return valve.
- 7.2 Must be installed in a chamber with the lid at surface level to enable access.
- 7.3 Must be installed no further than one metre from the front property boundary.

8. High Rate Discharge

- 8.1 A spa bath with an operating volume of less than 350 litres is permitted to discharge to the standard system.
- 8.2 A spa bath with an operating volume greater than 350 litres must not discharge to the system without the 750 litre storage capacity above the high level alarm being increased by an amount to equal to the operating volume of the bath that is greater than 350 litres.
- 8.3 Swimming pool backwash water must not discharge to the system without the written approval of North East Water.
- 8.4 For North East Water to grant approval to discharge swimming pool backwash, a balancing tank, sized to meet the backwash flow and volume, must be installed prior to connection to the sewerage system.
- 8.5 The discharge rate from the balancing tank must not exceed 0.5 litres per second.

9. Gravity Sewer

- 9.1 The gravity sewer from the dwelling to the pump well must comply with AS3500 and Victorian Plumbing Regulations.
- 9.2 Connection of the gravity sewer to the pump well must be in accordance with the manufacturing recommendations.

- 9.3 A flexible connection must be provided, either as part of the connection to the pump well or fitted to the gravity sewer line adjacent to the pump well.

10. Operating and Owners Manual

- 10.1 The property owner must be supplied with a Manufacturers Operating Manual at the time of installation. This operation manual should be stored in the control cabinet of the pump station. The operating manual shall include but not be restricted to:

- Operating instructions for the system.
- The procedure to follow should the alarm system be activated.
- How to turn off the audible alarm.
- The service contractor's name, business address, business phone number and after hours phone number.
- Acceptable and unacceptable discharges into the sewerage system.
- The requirements for shutting down the system when there will no discharge for a period of time, for example holidays etc. This should include the need to pump out the tank and flush with clean water before turning the power off, to avoid septicity problems.

- 10.2 The property owner must ensure that a copy of the above information is provided to any tenant in a rented property and in particular must ensure that they are aware of the procedure to follow in case of alarm activation.

11. Maintenance

- 11.1 The property owner is responsible for ensuring that an annual maintenance inspection is carried out by an appropriately trained and approved service person.