



Pressure Sewer Manual for Council Dedicated Pressure Sewer Areas

It is strongly recommended that you read this Manual and keep it in a safe, readily accessible place. You should re-familiarise yourself with it each year. If the property is rented, the manual should be provided to the tenant along with instructions for them to familiarise themselves with the document. This document is available from Council's website: www.dubbo.nsw.gov.au

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A Quick Guide to Emergency Procedures

1. If the alarm on your pressure sewerage system sounds, turn off the audible alarm (refer to [Figure 2.1: Location of audible alarm silencing switch](#)). Note: The alarm light will remain on until the cause of the alarm is rectified.
2. Contact Council on (02) 6801 4000 to report the pump failure (refer to [Step 3 – Report the alarm to Council](#) for a guide on what to report to the operator). Note: The above phone number is also located on the alarm/control panel.
3. If the alarm has occurred following a power failure, turn off the alarm and wait approximately one hour. If the alarm has not cleared itself in that time (i.e. the light remains on) contact Council, as per point 2 above.
4. Minimise the amount of water you are discharging to the sewerage system until repairs are carried out, or the alarm clears itself (refer to [Step 5 – Minimise wastewater generation until unit is repaired](#)).

**The alarm sounding does not mean that you cannot use your sewerage system.
Please minimise water usage until the unit is repaired.**

5. Turn off the power to the pump as well as the house if you are preparing to evacuate your property, such as in the case of floods. The pump is on a separate circuit to the rest of the house (refer to [Pressure Sewerage Systems in Floodplain Areas](#) for details on what to do in the case of flood).
6. Contact Council immediately on (02) 6801 4000 and advise the operator if there is a burst pressure sewerage main.

General enquiries with respect to Council's dedicated pressure sewerage areas and pressure sewerage systems can be made, during normal business hours, on (02) 6801 4000.

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1. Pressure Sewerage Manual

1.0 About your pressure sewerage system

Your property's sewerage service is provided by a pressure sewerage pumping unit discharging into a dedicated pressure sewerage system. The pumping unit, the line connecting it to Council's mains and the boundary valve (boundary kit) are the property of Dubbo Regional Council (Council) and must not be interfered with in any way, unless identified as appropriate in this Manual.

This technology has been in use for over 30 years, and has become more common in Australia since 2000. It is, however, stressed that whilst different in nature these pressure sewerage services are nevertheless the equivalent of the more traditional sewerage systems and they are typically used where conventional gravity systems are cost prohibitive. Additionally, these systems also have unique advantages such as:

- a. Negligible ingress of stormwater into sewers, which often leads to overflows.
- b. Negligible entry of tree roots into sewers leading to less pipe blockages.
- c. Installation of the pressure system results in minimal disturbance to existing areas, when compared with other more traditional sewerage technologies.
- d. An alarm system is included in the pumping unit to warn the occupant of a problem, thus there is the opportunity to correct it before an overflow from the on-property system occurs.
- e. Modifications such as home extensions, swimming pools, etc. can be easier to accommodate with these pressure systems.
- f. Systems can (with appropriate precautions) still be operated under light flooding conditions, hence they are better suited to service properties located within the 1 in 100 year floodplain.

This system should require minimal work compared to a conventional sewerage system, apart from the occupant requested to contact Council if the alarm sounds, and this should seldom occur. Indeed, if the international experience is repeated in Australia, alarms sounding to warn of the need for repairs should only occur on average every eight to 10 years per property. There is no preventative maintenance required therefore there will not be any Council presence before repairs are required.

This Manual has been created to assist in the operation of pressure sewerage systems, and assist if things do go wrong and how it may impact you when planning modifications to your home.

More details on pressure sewerage systems can be found in: [Appendices 1 - How a pressure sewerage system works](#)

1.1. Critical operating rules

There are a few 'critical' rules pertaining to the operation of pressure sewerage systems that occupants need to be aware of, and comply with at all times.

These are as follows:

- a. Do not attempt to repair the unit yourself. Council owns, and will maintain the pumping unit on your behalf (as part of your overall sewer rates). Note: Your actions may void the warranties attached to the system.

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- b. The inside of the pumping unit represents a confined space working environment that could be lethal without the appropriate training and equipment. Potential damage to the unit and associated warranty problems may be incurred if you remove the lid, or you go into the pumping unit.
 - c. Do not discharge any prohibited substances into the pressure sewerage system as set out in: [1.3 What should not be discharged into the sewerage system](#)
 - d. Do not connect your roof or yard drains to the pressure sewerage system, as the system is not designed to accommodate these additional flows.
 - e. When going on holiday, flush the pressure sewerage system by filling the bathtub and releasing it.
 - f. Do not turn off the power to the pumping unit if turning off the power to your house.
 - g. Turn off all power if evacuating due to an emergency, including the power to the pumping unit.
 - h. When in doubt about your sewerage system ask Council for advice on what to do.
 - i. If the pump's serial number does not match Council's records, the occupant may be charged for a new pump, as well as fined for interfering with Council property.

1.2 What is a pressure sewerage system?

The pressure sewerage system on a typical property is as set out in: [Figure A1 – Typical on property pressure sewerage installation](#)

The property layout essentially comprises three main elements:

- a. Boundary valves, which ensures no flow from the reticulation system can enter back onto the property, and which allows the property to be isolated from the reticulation system for repair purposes if required. These valves are contained in a valve box located near the property boundary. This is often referred to as the 'Boundary Kit'.
- b. The pumping unit, which comprises the pump, storage vessel, pressure switches, alarms etc. is buried in the ground so that only the top of the unit should be showing.
- c. A property delivery line connects the pumping unit to the boundary valves and ultimately to the Council reticulation mains.

The pumping unit comprises a small positive displacement pump in a leak proof shell. The pump replaces the need for gravity to move the sewerage off the property and allows the pipelines to be laid at a minimum depth, rather than on a grade. The pumping unit also includes an audible alarm and a warning light.

The alarm will activate when sewage in the storage vessel reaches a set level. With careful minimisation of any wastewater discharges into the storage vessel, there is still almost one days' emergency storage above the alarm level.

The pumping unit has been designed so that you should not experience any major problems during what is considered a 'normal power outage'. If the area is subject to unexpected prolonged delays, other provisions can be made.

The pumping unit is wired into the property's switchboard and will be on a separate clearly labelled circuit. The occupant will meet the power costs associated with the operation of the pumping unit.

1.3 What should NOT be discharged into the sewerage system

The pumping unit has a grinder unit, and it is this grinder that allows the smaller pipelines to be used in pressure sewerage systems. For example, the property's discharge line is only 32 mm (internal diameter) therefore, the following substances must not be discharged into your pressure sewerage system to avoid blockages or damage to the pump and/or grinder.

- Glass
- Metal
- Gravel, sand etc.
- Seafood shells
- Goldfish stone (aquarium gravel)
- Nappies, sock, rags or cloths
- Strong chemicals
- Sanitary napkins or tampons
- Kitty litter
- Explosives
- Flammable materials
- Lubricating oil and/or grease
- Plastic objects
- Petrol/diesel

Likewise, these substances must not be discharged into any other form of sewerage system. In all other aspects, the pressure sewerage system should perform and accept the same materials as a conventional sewerage system. If the occupant is in any doubt about any substances entering the sewerage system, they should call Council on (02) 6801 4000. Similarly, the system is not designed to cater for roof or yard water, and these must be excluded from the system. They will, at a minimum, result in the constant generation of alarms and will cost the occupant more in terms of running costs for the pumping unit. These inflows and infiltration also add very significantly to the overall sewerage system operating costs.

1.4 What if the pump breaks down?

If the pumping unit breaks down, the alarm will sound to warn that the pumping unit is not working. When this occurs, you should turn off the audible alarm and contact Council, who will organise repairs to the pumping unit. There is essentially nothing more for the occupant to do, other than to ensure that Council's repair officer/s can easily access the site.

Section 2 [What to do if an Alarm Sounds](#) addresses what needs to occur if an alarm does sound. However, some of the key maintenance aspects that the occupant needs to be aware of include:

- a. The sounding of this alarm does not mean that you can no longer use your sewerage system. The pumping unit has approximately 400 litres of storage above the level where the alarm is generated, it is this emergency storage in the system (with some limits) that is one of the main advantages of pressure sewerage systems over other sewerage systems. However, some precautions must also be adopted to achieve this additional time before an overflow will occur.
- b. Your sewerage rates allows for normal operational repairs carried out by Council, including the eventual replacement of the pump. However, your sewerage rates do not cover incidents where the occupants' lack of care leads to repairs such as digging up the property delivery line.
- c. If your neighbours' alarms sounds, and you believe your neighbour is absent from their property, you should notify Council. Note: Repairs are covered by a common pressure sewer rate.
- d. If a breakdown occurs after normal business hours, you should report it immediately so that the works can be scheduled for the following day.
- e. If repairs cannot be made onsite, the pump will be replaced and the old pump used for spare parts.
- f. Council will attend to an overflow from the overflow relief gully immediately.

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- g. Every pump has a unique serial number. Should a pump be replaced Council will updated their records with the new serial number.
 - h. You are not required to be present when repairs are undertaken, except if the pumping unit is located in a secured yard.
 - i. The light on the alarm panel will no longer be illuminated if repairs have been completed. A card will be placed in your letterbox confirming that repairs have been undertaken, however check the alarm panel before resuming normal operation.
 - j. Like a water meter, the pumping unit is Council's property. The occupant is not to attempt to repair the unit. Your repair efforts could void any warranty; you may also be liable for any damages to the unit and be fined for interference with Council property on top of repair costs.
 - k. Importantly, the pumping station represents a confined space environment that could be extremely hazardous to human health. Access to the pump station should be by appropriately trained, and suitably equipped, personnel.

1.5 Council access to the pressure system

The pump weighs around 40 to 50 kg, a travelling device (trolley) and a lifting frame may be required to carry the pump from the underground storage vessel to Council's vehicle to undertake repairs.

Please ensure Council's repair officer/s has access to the pumping unit by way of a clear pathway, to enable the pump to be carried to a vehicle if necessary. Occupants that restrict access will be responsible for any additional costs incurred and if additional equipment, such as a crane etc. is required, Council will not be held to next day repairs/responses.

2. What to do if an Alarm Sounds

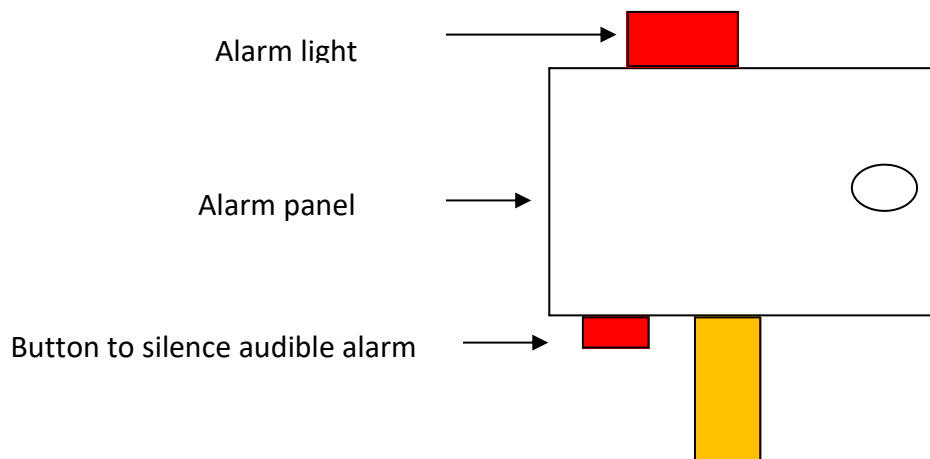
Note: The alarm sounding does not indicate that the system cannot be used, rather that precautions need to be taken until the unit is fully repaired. The most likely repair will be to replace the pump. This type of repair will generally take less than an hour once Council officer/s are onsite. The replacement pump will be placed in the pumping unit. The defective pump will be repaired and placed in Council's pool of spare units.

An alarm sounds to indicate that the system requires repairs and occupants should follow Step 1 to 6 below:

Step 1: Turn off the audible alarm

The audible alarm attached to the pump can be 'turned off' by pressing the button on the underside of the alarm panel (refer to [Figure 2.1: Location of audible alarm silencing switch](#) below). This panel should be mounted on the wall of the house, shed, garage, etc. or on a standalone post, if located away from the house.

The audible alarm is to bring to the occupants' attention that the alarm has been activated. When operating normally the panel should be locked. You do not need to go into the alarm panel to turn the alarm off.



[Figure 2.1: Location of audible alarm silencing switch](#)

The alarm light will no longer be illuminated once the repairs are complete and the pumping unit is back to normal operation. Note: The alarm light cannot be turned off by the occupant.

If the alarm sounds and the light goes out shortly afterwards, your system has had a short-term build-up of material and has now cleared itself. This might typically occur if a swimming pool backwash has temporarily exceeded the alarm level in the storage vessel. The occupant should investigate and if this appears to be the case, you do not need to follow the steps 2 to 5 below, as the unit has cleared itself. However, if this happens again you should report the occurrence to Council as below. Where such an incident occurs, Council suggests you keep an eye on the overflow relief gully for the remainder of the day to ensure that there is no sewage overflow.

If the alarm sounds each time there is significant rain, it probably means that water is gaining access through the house drains. Contact your plumber to investigate and stop these illegal discharges into the system. If there is no logical reason for this infrequent operation, Council will investigate the cause of this unusual behaviour of the alarm.

[Step 2: Determine if there has been a power blackout](#)

If the alarm sounds immediately after a power failure (on a town/suburb wide basis), wait for one hour before contacting Council. The alarm could activate when power is restored, due to the storage that has accumulated during the 'power off' period. This will automatically clear itself when it is able, as there could be a number of units trying to pump at the same time. The system will limit the number of units that can pump at the same time, and as such, it might take a while for these units to clear themselves, hence the reason for the one hour delay in contacting Council.

When the unit does clear itself, the light will automatically turn off, however during this period occupants should minimise their wastewater generation, as per [Step 5 – Minimise wastewater generation until unit is repaired](#). If the light fails to turn off after one hour contact Council and report the fault.

Step 3: Report the alarm to Council

Prior to reporting the alarm, you should investigate the following:

- a. Is there any sewage coming from the overflow relief gully? Note: An inspection opening just upstream of the pumping unit will normally have a small grate on it.
- b. Are there any discharges coming from the ground (where the pipeline is/or should be)?
- c. Are there any perceptible odour problems at the home that might be coming from the sewerage system?
- d. Has there been a power failure? Have you waited the suggested one hour before contacting Council (as per Step 2 above)?
- e. Is the pump making any unusual noises?

To report the alarm contact Council's 24 hour' service on (02) 6801 4000. The operator will ask these questions when you call, as well as ask for the nearest cross street for reference purposes. Please advise the operator if you have a secured yard and a Council officer/s will contact you to arrange to meet onsite.

Step 4: Agree with Council on the appropriate time for repairs to be carried out

When you are speaking to Council's Service Operator, you need to confirm if there is an urgent need for the repairs to be carried out. The normal procedure is to undertake repairs the following morning, for the following reasons:

- a. The unit has emergency storage provisions in excess of 400 litres and as such the occupant is not without their service, albeit some limitations on that service might be required for a short time.
- b. To minimise the inconvenience to the occupants and neighbours, who probably do not want wish to be disturbed late at night.
- c. To minimise any potential damage to their property (particularly the landscaping) as the repair officer/s will be able see better in daylight hours.
- d. It keeps overall system operational costs down by avoiding costly after hours call outs, which assists Council to keep the sewerage rates for these pressure sewerage systems lower.

If however, you have unique constraints, then you may ask for the repairs to be carried out that evening and these will be discussed with you when Council repair officer/s contacts you.

Step 5: Minimise wastewater generation until unit is repaired

In the period between when the alarm sounds and when it is repaired, you should minimise the overall volumes of wastewater being generated. This can be achieved by doing the following:

- a. Not turning on any clothes washing machines whilst the alarm is active.
- b. Not turning on any automated dishwashers whilst the alarm is active.
- c. Keep showers that need to be taken brief, or if possible avoid them until the unit is fixed.
- d. If the occupant wants to take a bath, or use a large washbasin, such as the laundry sink, leave the plug in until after the alarm has been cancelled or bucket the water onto the lawn.
- e. Switch off any drainage backwashing etc. (automated or not) from swimming pools, spas, etc. until the unit has been repaired.
- f. Practice good water savings techniques at the property such as not leaving taps running etc.

In short, this step is about avoiding any unnecessary wastewater generation until the unit is repaired.

Step 6: Ensure the Council repair officer/s have access to the pumping unit

Ensure Council officer/s have access to the pumping unit when they arrive onsite. The officer/s might need to place a lifting frame above the pumping unit to lift out the pump and possibly repair it onsite. A clear pathway may be required from the Council vehicle to the pumping station as it may be necessary to carry the pump on a trolley. Therefore, the occupant should take the following actions whilst they are waiting for the repair officer/s to arrive onsite:

- a. Ensure any gate/s between the road and the pumping unit are unlocked and accessible.
- b. Ensure the driveway/pathway leading to the gates are clear to allow access. Note: The pumping unit is not to be buried, paved/concreted over, nor permanently covered in any manner.
- c. The unit must be accessible when Council's repair officer/s arrive to undertake repairs. Note: If Council's officer/s are unable to locate the unit because it has been covered, Council may refuse to carry out repairs until the unit is exposed. In addition, Council may charge the occupant a service call, even if the unit is not repaired. At a minimum, Council may pass on to the occupant any costs to locate and uncover the pumping unit and may also choose to impose the fines under Section 635 of the Local Government Act (1993) where it has been covered in a more permanent nature.
- d. Council officer/s may refuse to enter the property and carry out any repair works where they cannot contact the occupant to secure pets if required. In these instances, Council will not be held liable for repairs not being carried out and may elect to send a service call invoice to the occupant.
- e. Access from any gate/s to the pumping unit for a trolley device will be required (refer to [1.5 Council access to the pressure system](#)).
- f. Residents with secured properties must be present to allow the Council repair officer/s access to the yard at an agreed time, based upon arrangements made when the resident contacts Council to notify of the system failure.

Note: Pumps weigh 40 to 50 kg and might drip a small amount of raw sewage when being moved, hence these access requirements need to be considered.

Step 7: Confirm the pumping unit is repaired before operating

Council officer/s will inform the occupant before leaving the site that all repairs have been carried out and the unit is operating again. If you were not onsite whilst repairs were carried out, prior to resuming normal operation of the pressure sewage system, determine the alarm light is no longer illuminated and check the power as a precaution.

3. What to do if the Discharge Pipeline Breaks

The pipeline from the pumping station on the property to Council's sewerage reticulation mains is:

- a. Black polyethylene pipe or pipe with a cream stripe.
- b. Buried at a depth of 450 mm.
- c. Operating under pressure.

The most likely cause of pipe breaks will be a result of digging near the pipeline and accidentally striking the main. Occupants must ensure they are aware of the pipeline's location before commencing any digging. Being a sealed pipe system there are no, or few, joints that might allow tree root ingress, nor should the pipeline break as a result of ground movement.

In the unlikely event that a line should break, it will appear that a water main is broken and might become visible as a large wet spot on the ground, or as water bubbling up from the ground. The occupant is responsible for the water main, however Council will undertake repairs for the sewer main. Thus, if you notice a wet spot, or water coming from the ground you should take the following steps:

Step 1: Try to determine if the broken pipe is a water main or a sewer main. Guides to determine the broken pipe is a sewer main are:

- a. Smell.
- b. Colour of the pipeline (black or black with a cream stripe).
- c. Location of the main (is it where you expected the sewer main to be and not the water main).
- d. Pulsing of flows as the sewage is pumped, which will stop once the storage vessel has been emptied. The water main will flow constantly until isolated.

If the above steps are inconclusive, turn off the property's water main or the sewer pumps and check if this makes a difference where the water is bubbling up.

Step 2: If you believe it is a broken sewer pipeline, turn off the power to the pumps at the switchboard. These pumps have a separate circuit, which will be separately labelled and will not impact the remainder of the house if they are turned off. The sewage will then be stored in that unit until the line is repaired.

Step 3: Report the broken main to Council immediately (as per [Step 3 – Report the alarm to Council](#)) and advise that the pumps have been switched off.

Step 4: Minimise the amount of wastewater discharged into the sewerage system until repairs are carried out.

Step 5: Once Council advises repairs to the main are complete and the alarm light has gone out recommence normal operation.

4. General Operation and Maintenance for the Pressure Sewerage System

This section outlines the general arrangements in respect to pressure sewerage systems operation and explains what is required of the occupant.

4.1 General arrangements

The following arrangements are in place in relation to pressure sewerage systems:

- a. The pumping unit operates automatically, turning itself off and on, based upon the level of sewage in the storage vessel. The occupants need do nothing in relation to the normal operation of the pumping unit.

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- a. An alarm will warn occupants if automatic operation fails, however will still provide sufficient time for repairs to be undertaken before it becomes a significant problem.
 - b. The pump has protection mechanisms that might result in the pump stopping shortly after it begins the pumping cycle. This is normal and provides protection for the pump if there are too many units in the system trying to pump at the same time. The pump will automatically restart after a few minutes, however it might cycle like this a few times before it begins to normal operation.
 - c. The pump should only operate for small periods, as the pump is difficult to hear under normal operation, you will probably not detect this.
 - d. Council will require access to the pumping unit at all times.
 - e. The unit is to be connected to the property's power board with its own circuit. The pump is not metered separately and the occupant will be responsible for power costs.
 - f. It is possible to walk on the pumping station lid, however this action is not advised on a regular basis.

4.2 The occupant's role in the operation and maintenance of the unit

The occupant is expected to carry out the following in relation to the operation of the pressure sewerage systems:

- a. Contact Council if the alarm sounds, except if the alarm is a result of a power failure and automatically clears itself. Occupants are requested to follow the steps in Section 2.0: [What to do if an Alarm Sounds](#)
- b. Ensure that the property's drains are appropriately maintained and that no roof or yard water is allowed into the pressure sewerage system.
- b. Ensure the venting into the pumping station remains clear at all times, to allow it to function properly.
- c. Do not touch the valves in the boundary kit.
- d. Do not turn off the power supply to the pumps except in an emergency, or in response to a broken pressure sewerage pipe.
- e. Flush the system before going on holiday/away (refer to [Going on holiday?](#) for details).
- f. Familiarise yourself with the location of the property delivery line, and avoid damage to the pipeline and pumping unit when carrying out any property modifications.
- g. Do not attempt to undertake repairs or enter the pumping unit.
- h. Ensure that Council officer/s have easy access to the pumping unit. Follow the steps in [Step 6 – Ensure the Council repair officer/s have access to the pumping unit](#) in relation to this.
- i. Do not discharge into the system any of the substances identified in: [1.3 What should not be discharged into the sewerage system](#)

4.3 Council's role in the operation and maintenance of the unit

Council will not monitor the pumping unit, nor carry out any routine maintenance, however if odour complaints are received Council will contact the occupant.

Council will normally enter a property in response to an occupant's call for assistance and will maintain, and if necessary replace the pump. In most cases, Council should be onsite in less than one hour. Should the pump be replaced, the new pump will remain in service and Council records/serial number will be amended.

The occupant will have a formal service agreement, or a positive covenant, placed on the property title to set out these maintenance requirements relating to pressure sewerage systems.

4.4 Going on holiday?

Where the occupants are going on holidays, including a weekend away, and there is no one at home, the pumping unit needs to be flushed out before departing the property. This is to ensure the storage vessel does not become a potential source of odours. To achieve this the following is suggested:

- a. Run clean water into the pumping unit until the pump activates and runs for approximately 30 seconds. After that time, turn off the water and allow the pump to run until it shuts off automatically. Reasonably filling the bathtub, discharging that water will achieve such a flush, then turn off the water and allow the pump to run until it shuts off automatically.
- b. If you have a duplex unit, special attention must be taken to ensure that both pumps turn on when clean water is added to the tank and supplemental taps may need to be turned on to achieve this. Note: Normally these units are not installed on residential properties.
- c. If you are turning off the power to the house, do not turn off the power to the pumping unit in case there are any leaking taps, which might fill the storage vessel to overflowing, whilst you are away and there will be no alarm to warn neighbours. When occupants fail to clean their systems before going on holidays and Council are required to respond to complaints, Council may choose to invoice the occupant for the costs to carry out flushing of the unit.

4.5 Repair personnel on your property

The occupant should be aware that the pumping unit does not require preventative maintenance and repairs will only be in response to an occupant's request for maintenance. All repair personnel that are required to enter the property will be identified by appropriate Council photographic identification.

Should anyone attempt to carry out maintenance without this identification, or not in response to an alarm raised to Council, do not allow these individuals access to your property and immediately report the incident to the Police and Council.

4.6 Noise

The pump should be almost inaudible under normal operation (immediately above the pumping unit with the lid on), and should not be audible when inside the house. A slight noise may be audible if something finds its way into the grinder that should not be in the system. If the pump continues to make a noise, notify Council as soon as practicable.

4.7 Odours

There should not be any noticeable odours under normal operation of the pressure sewerage systems. Some odours might occur if sewage has been held in the pumping station and it has not been flushed for some time. Simply add water through the overflow relief gully or turn on an internal tap and the odours should soon disappear once the pump has operated to clear any water in the storage vessel.

Note: Tanks should be flushed regularly. If the odours persist after a few operational cycles of the pump, contact Council who will investigate.

4.8 Wet spots

Both the pumping unit and the pipeline should be totally sealed. As a result there should be no noticeable wet spots in close proximity to the pumping unit or along the pipeline route. If you should sight wet spots, when there has not been any recent rain, you should report these to Council.

4.9 Roof water

These pumping units have not been designed to accommodate rainwater, which should never be put into a sewerage system. Not only will this increase the costs of pumping to the occupant, it will in more significant rainfall, lead to alarms being tripped and the pumping unit possibly overflowing. If you notice the alarm regularly coming on during storms, contact your plumber to investigate where rainfall is getting into the system.

4.10 Loading on pumping station lids

The pumping station lid should be capable of withstanding all foot traffic and ride-on mowers. However, in the case of the latter, it is strongly advised that no turning be done on the lid and that all traffic should avoid travelling on the lid. Vehicular traffic generally should be kept off the lid.

The lid contains venting arrangements for the unit and these might contain a stand with the vent piping above any flood levels. These vents must not be interfered with and should one become dislodged the occupant should notify Council immediately.

4.11 Neighbours' sewerage systems

If your neighbours' alarm sounds and you believe them to be away then you should contact Council, who will investigate. This should be an extremely rare event and is only likely to occur if a tap has been left on.

If you note any flows entering your property that you suspect might also be the neighbours' sewage, report these to Council and your neighbour, as they may be the result of a broken main.

5. Modifications/Landscaping

5.1 Can I cover the pumping station?

The occupant should not cover the lid of the pumping station with mulch or pot plants (or any other moveable material) to hide the pumping station lid. However, the occupant may use screening pot plants adjacent to the lid. To provide clear and visible access, pot plants or objects screening the pumping station are to be moved prior to Council's repair officers' attendance. Council will not be responsible for any repairs to landscaped areas; however will take as much care as reasonably possible during the repair process.

The occupant is not to cover the unit with paving, concrete, soil or any other non-portable material. Note: Contact Council if you are unable to locate your pumping unit.

5.2 Extensions to the home

The property's delivery line may be able to be relocated to accommodate extensions to the dwelling on the property. As this is a pressure line, it may be able to be re-laid without major cost or gradient impediments. When contemplating any modifications to the property, owner/s should contact Council to provide advice and a quote to carry out such work/s.

The mains upstream of the pumping unit are gravity dependant. Due to the nature of the property's topography, Council will advise the occupant as to whether the extensions involve moving the pumping station. Note: There can be no building over the pumping unit itself and access to the unit must always be provided.

5.3 Thinking of installing a spa

The size/volume contained in the spa will essentially determine what is required to discharge from the spa without setting off the high-level alarm in the control panel, generating overflows from the overflow relief gully or the upstream inspection opening.

Spas with less than 250 litres in normal operating volume: Require no special provisions, and as such, they can be treated as a standard household water-using appliance.

Spas between 250 litres and 700 litres capacity in normal operating volume: Require some additional measures be fitted to the pressure system to avoid system alarms annoying neighbours unnecessarily. Typically these could involve the following and will be dealt with on a case-by-case basis, with the occupant to be advised by Council's staff on what is the preferred option:

- a. Time delays to the alarm switch.
- b. Restricting the discharge rate of the spa into the pressure unit.
- c. Other.

Prior to installation, occupants should contact Council and indicate the likely discharge volume and the size of discharge outlet.

Spas with a normal operating volume in excess of 700 litres: These could require differing flow restriction devices be added to the system. Typically these will involve the following, however will be dealt with on a case-by-case basis. Council's staff will advise the occupant/s of the preferred alternative, which might include:

- a. Providing some form of upstream storage with a limited discharge rate to more closely match that of the pressure sewerage unit.
- b. Providing a larger pressure sewerage storage unit.
- c. Time delays on the alarm.
- d. Other.

The occupant/s should provide details of the proposed spa to Council.

Spas with a backwash facility: These will be dealt with the same as for a swimming pool. An alternative might be to regulate the outlet of the spa, limiting the flow rate that can be discharged. Where such an arrangement is permanently installed it may overcome the need for any of the actions above, however it will mean that the spa will take longer to empty. The occupant can pursue this option with Council.

5.4 Thinking of installing a swimming pool

The intention will be to provide sufficient additional storage where the discharge from the pool backwash pump exceeds 0.45l/s, and the pump operates for sufficient time to fill the pressure sewerage pumping station to a level, where an alarm might be generated. Thus, this will be reviewed on a case-by-case basis, where it is determined that an alarm may be generated. In these instances, additional storage with a controlled discharge of less than 0.45l/s will be placed between the pool's discharge pump and the sewerage pumping station.

The interconnection of the swimming pool into the property system will be designed on a case-by-case basis, however all property owners will be required to provide the following information to Council to allow that design to be carried out:

- a. Pump backwash/discharge rate in litres/second.
- b. Duration the backwash is operated.
- c. Arrangements the owner makes to empty the pool, if it ever becomes necessary to do so.

An alternative to the above might be to install a cartridge filter to the pool. However, the proposal needs to be discussed in detail with Council.

5.5 Granny flats or other second dwelling on the property

It might be possible to service granny flats or other second dwellings (where permitted) from a single pumping unit on the property. However, this will depend on the nature of the land, where homes are in respect to the pumping unit in terms of the general layout of the property. The property owner/s should seek Council's advice on what will be required in the planning stages of the developments.

5.6 Community title

Where a Community Title is involved, it may be possible to service a number of dwellings with more than one unit. These will be addressed on a case-by-case basis with proponents required to demonstrate their designer has some experience of these multiple dwelling connections, the basis of their design and where this design have been carried out before.

5.7 Landscaping

Landscaping over the home service line is permitted, although if the nature of the landscaping is such that it is easier to replace the pipeline, this may be carried out at the occupants' cost when/if repairs are required.

5.8 Garages, car parks and garden shed

In general, it is not a good idea to build these over the property delivery line. However, it might be possible to do so, with any repairs to be conducted on the basis that the main is to be re-laid at the occupants' cost. Note: Council's advice should be sought prior to construct commencing.

6. Pressure Sewerage Systems in Floodplain Areas

6.1 Planning for installation on the floodplain

If you are constructing, or have purchased a home, within the 1 in 100 year floodplain the following provisions will have been made in relation to the installation of a pressure pumping unit:

- a. The alarm panel will be located a minimum of 400 mm above the 1 in 100 year flood level.
- b. The venting for the pumping station will also be raised above the 1 in 100 year flood level.
- c. The over flow relief gully will be located 150 mm below the floor level and will assist if the floor level has been raised to above this flood level.
- d. A cap will be required for the overflow relief gully if it has not been raised above this flood level.

6.2 When it floods

If as flood is predicted, occupants will need to make a decision as to whether to stay in the home or to evacuate. If you are evacuating refer to: [6.3 Evacuating the Home](#)

It is expected that only those occupants whose homes have floors that have been raised above the flood level will stay. In this instance, the occupant may continue using the pressure sewerage system if the following steps are taken:

- a. The overflow relief gully is sealed-off using the cap if it is below the flood level.
- b. Power continues to be available to the area.

If however, the alarm sounds or there is a power failure then you should discontinue using the pressure sewerage system. During the flood event every effort should be made to minimise the amount of waste water generated.

Whilst the overflow relief gully is capped it is possible, but highly unlikely, that there could be a surcharge back into the home from the property's usage of sewerage or just a failure to clear the system, as this overflow capability has been removed. Therefore, remove the cap to ensure the property's protection, once the flood begins to recede and the water level is below the overflow relief gully.

6.3 Evacuating the home

Before evacuating the home the occupant is requested to take the following steps:

- Cap off the overflow relief gully.
- Turn off the power to the pumps.

6.4 After the flood

After the flood peak has passed the occupant should:

- a. Remove the cap over the overflow relief gully if it is no longer covered by water.
- b. Before turning the power on, ensure that water has not entered any of the electrical connections.
- c. When the power is restored ensure that the pump starts. It is possible that it may start in alarm mode if there has been some leakage through the cap. Observe the pump for a period of time to determine if it is able to clear itself. If after an one hour the alarm remains on, contact Council on (02) 6801 4000 as per Section 2 of this document: [What to do if an Alarm Sounds](#)
- d. Where the pump is working satisfactorily, fill the bathtub twice and release it to assist with flushing out any mud that might have entered the system as a result of the flood.

7. Miscellaneous

7.1 Pressure sewer manual

Copies of this document and the shorter Pressure Sewer Manual can be obtained from Council's website at www.dubbo.nsw.gov.au and the relevant information downloaded.

7.2 Service diagrams

Copies of the service diagram showing the location of the pumping unit and the route of the property delivery line etc. can be obtained from Council. When contemplating any work these diagrams should be referenced to ensure the service lines are not damaged. When in doubt, refer the matter to Council.

7.3 Operational costs

Operational costs for the pressure sewerage systems will be aggregated across all Council pressure sewerage systems, and occupants with a pressure sewerage system will be charged a standard rate in a similar manner to those properties serviced by other sewerage services. These fees and charges will be set as part of Council's fees and charges processes.

Appendices 1 - How a pressure sewerage system works

What is a pressure sewerage system?

Each property within the area serviced by a pressure sewerage system will have its own pumping unit installed. This pumping unit will collect all household sewage and discharge that wastewater into a centralised reticulation system that operates under pressure. The typical property layout is shown in Figure A1.

The reticulation pipe work is laid at a minimum depth, not on grade and the pipelines are smaller in diameter than more conventional sewerage systems. As such, pressure sewerage is generally favoured in areas where:

- The overall topography is flat as these individual pumping stations eliminate the costs of the 'system' pumping stations and deep pipelines.
- The reticulation lines are in rock, unstable sand or water charged ground.
- The terrain is difficult to traverse with traditional systems.
- The system is to be installed in extremely sensitive areas (from environmental perspective) as this system can be directionally drilled without the need for surface breaking excavation.
- Where inflow and infiltration problems need to be eliminated.
- There is significant distance between properties to be serviced.

The pumping unit is connected to a boundary valve arrangement by the property delivery line, comprising of:

- An isolation valve.
- Flow direction valve.
- Inspection opening.

The property delivery line is typically 32 mm internal diameter and is black polyethylene pipe class PN160.

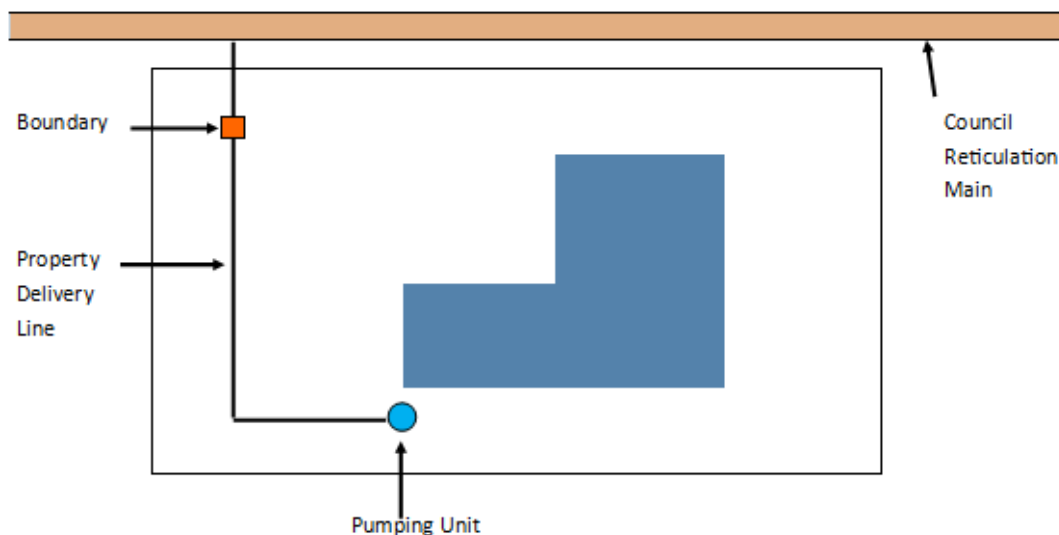


Figure A1 – Typical on property pressure sewerage installation

The pumping unit

The pumping unit comprises of the following key elements:

- a. **A dedicated submersible sewerage pump;** which can be a positive displacement pump or a centrifugal pump (the Dubbo applications are based upon positive displacement pumps).
- b. The discharge head and flow rate will depend upon the pump chosen, but for the Dubbo applications the head will be of the order of 45 m and this will be at discharge rate of 0.45l/s to 0.5l/s.
- c. **A leak proof storage vessel** that is round in shape and made of lightweight materials. The round shape allows installation by auger and the lightweight materials eliminate the need for lifting equipment.
- d. **Anti-buoyancy measures** to prevent the tank floating out of the ground. This is typically some form of concrete ring beam.
- e. **An alarm system** that warns if the pump has failed and storage volumes in the pumping unit is increasing.
- f. **A grinder unit** to reduce all of the incoming sewage to a watery slurry capable of being passed through the smaller diameter pipelines.
- g. **Pump protection devices** to guard against overheating, overpressure or no flow conditions.

How the pumping unit works

The system operates in the following manner:

- a. The leak proof storage vessel will continue to store sewage until the top water level reaches a level simply referred to as the 'pump-on' level. Here the pump will automatically turn on and pump the volume down to a pre-set level, when the pump will automatically switch off.
- b. Typically pumping will take one to two minutes a cycle and there will be several cycles per day.
- c. Sometimes the unit will power up to start pumping but will cease, almost immediately. This is not a system fault, but rather the pump's overpressure protection will sense that there are several other pumping units discharging and the pump will try again in a few minutes when there is a reduced head for the unit to pump against. The pump might thus cycle a couple of times before commencing to pump.
- d. If the pump fails to operate then the level of sewage will continue to increase until it reaches an 'alarm level' where an audible and visual alarm will automatically be operated.
- e. The alarm may also be activated as a result of a power blackout, or due to sudden impact loading from swimming pool discharges or from large spas. The alarm will automatically shut off when the storage level drops below the alarm level.
- f. The storage vessel has a minimum capacity in excess of 600 litres and when combined with the household drains should give in excess of 750 litres of total storage and as such should mean that no overflow will occur with reasonable care on the occupant's part.
- g. If repairs are required to the reticulation pipelines then there is sufficient emergency storage in the storage vessel to avoid problems whilst still using the sewerage system in a careful manner. However, occupants should minimise the production of this wastewater until repairs are conducted.

If the pumping unit requires significant repairs a replacement pump will be installed in the storage vessel. This arrangement will take a maximum one hour to complete. The unit will not be re-installed, it will be repaired and kept for spare parts. The pumping unit is setup with a quick coupling arrangement to assist this rapid removal and reinstallation process.

Primary advantages of pressure sewer systems

These units have been installed as they are the most economically viable option, or are the only technically feasible option, to service your property with a reticulated sewerage service. However, pressure sewerage systems also offer the following advantages, some of which may have also been factored into the choice to install a pressure sewerage system on your property:

- a. Pipelines are generally polyethylene and are in long rolls with all joints sealed. As such, there is negligible tree root penetration into the system.
- b. The sealed pipe work also reduces infiltration into the pipes, whilst the on-property alarms eliminate any significant inflow. It is the only sewerage technology to address on-property Infiltration and Inflow (I/I) problems.
- c. The one-way valves on the boundary eliminate the possibility of upstream properties causing an overflow if there is a systems blockage. The only potential cause for an overflow are the occupants themselves.
- d. The system can be used in floodplain applications with some care. More conventional sewerage systems necessitate the evacuation of the village and can lead to extensive problems at the sewage treatment plant.
- e. The system will readily allow persons dumping illegal substances into system to be detected.
- f. The system can, with appropriate design, reduce diurnal peaks and minimal I/I will assist the treatment plant operation.
- g. These are easy assets to replace at a subsequent date.