



# Dubbo City Council

## Operational Environmental Management Plans

### Sewer

April 2016

# Executive summary

Dubbo City Council (Council) provides sewage reticulation and treatment services to 32,537 Dubbo residents and 687 Wongarbron residents. Sewage is transferred from the residential properties, through a series of pipelines and pump stations to the Dubbo and Wongarbron Sewage Treatment Plants (STP).

This OEMP has been prepared to document the following:

- Regulatory requirements
- Management system components including reporting, document control, training, complaints and review, and
- Environmental risk identification, monitoring and management strategies associated with the sewer operations.

The OEMP aims to complement existing Council management plans, policies and Standard Operating Procedures.

In managing the environmental impacts of the sewer operations Council aim to:

- Comply with relevant legislative requirements including the Environment Protection Licence
- Identify aspects of the sewer operations that have the potential to negatively impact on the environment
- Provide guiding environmental control measures, monitoring and reporting requirements
- Allocate responsibilities for the implementation of the nominated control measures.

Implementation and maintenance of the OEMP is the responsibility of the Water Operations Engineer. Plant Operators are responsible for ensuring the plant is operating effectively, undertaking day to day environmental monitoring and management. Reticulation Team Members are responsible for maintaining the reticulation infrastructure and responding to incidents of sewer main breaks and pump station overflows.

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# 1. Background

## 1.1 Sewage Operations Overview

Dubbo City Council (Council) provides sewage reticulation and treatment services to 32,537 Dubbo residents and 687 Wongarbron residents. Sewage is transferred from the residential properties, through a series of pipelines and pump stations to the Dubbo and Wongarbron Sewage Treatment Plants (STP). Maps of the sewer reticulation network and the STPs are provided in Appendix C. The Dubbo STP has the following components:

- Inlet works – fine screening, pressing and bagging, grit removal and classification, wet weather flow shedding and flow monitoring
- Biological reactor – carbonaceous removal and biological nitrification/denitrification
- Clarification – two circular clarifiers
- UV – disinfection
- Sludge stabilisation – waste accumulated sludge (WAS) is transferred to five sludge lagoons for stabilisation, thickening and storage
- Effluent storage – treated effluent is transferred to two large storage ponds prior to pumping to the reuse farms.

The Dubbo STP has recently undergone an upgrade to provide sufficient capacity for the future growth of the Dubbo population. This upgrade has duplicated the abovementioned processes and added in-line chemical dosing for additional disinfection with chlorine (where required), pH adjustment (where required) and alum dosing for phosphorus removal where treated effluent is being discharged to the Macquarie River.

The Wongarbron STP receives raw sewage from the residents of Wongarbron via gravity reticulation pipelines, rising mains and pump stations. The STP has the following components:

- Inlet works – receipt of sewage flows, flow monitoring and distribution to oxidation ponds
- Oxidation ponds – primary treatment
- Maturation pond – disinfection
- Wastewater storage pond – treated effluent is transferred to a pond prior to pumping to the reuse farm.

## 1.2 OEMP Context

The *Best Practice Management of Water Supply and Sewerage Guidelines*, NSW Department of Water and Energy (2007) encourage the development of environmental management plans to address and manage environmental issues, and continually improve performance of water and sewer operations.

This OEMP has been prepared to document environmental monitoring and mitigation strategies associated with specific aspects of the sewer operations. The OEMP aims to integrate with Council's existing management plans and strategies and, where relevant, makes reference to existing procedures to manage specific aspects of the operations that have the potential to impact on the environment.

### 1.3 OEMP Objectives

The following objectives apply to managing the environmental impacts of the sewer operations:

- Comply with relevant legislative requirements including the Environment Protection Licence (EPL # 3850)
- Identify aspects of the sewer operations that have the potential to negatively impact on the environment
- Provide guiding environmental control measures, monitoring and reporting requirements
- Allocate responsibilities for the implementation of the nominated control measures.

### 1.4 Environment Policy

Council's mission for sewage services is *to provide environmentally responsible sewerage services which maintain the health of the Dubbo community, are cost effective, customer focussed and cater for the sustainable growth of the city.*

Council have developed an environmental policy to guide the management of environmental issues associated with water and sewer operations, this is included as Appendix A. This policy sets objectives for improving the performance of water supply and sewerage operations. Council will set quantifiable targets against these objectives where relevant.

### 1.5 Related Plans and Strategies

A number of other corporate plans and strategies have been developed that relate to managing environmental risks associated with Council operations. These are summarised in Table 1 including their purpose and relationship to sewer reticulation and treatment operations and specifically the OEMP.

Table 1 Relationship to other Plans and Strategies

Strategy / Plan	Purpose	Relationship to Sewer OEMP
Dubbo ALIVE	Overarching environmental management plan focussing Council environmental initiatives on its priorities in the areas of energy, water, waste, salinity, biodiversity and pollution.	Dubbo ALIVE includes objectives and targets for management of water and pollution that relate to the sewer operations.  The OEMP contributes to achieving these targets through monitoring, complaints and incident response, maintenance programs, auditing and reporting.
Water and Sewer Strategic Business Plan	Principal planning tool for water supply and sewage operations that includes a review of the operating environment, asset management plan, customer service levels, resourcing and financial plan.	As the principal planning tool, the Water and Sewer Strategic Business Plan provides the overarching framework for delivery of sewer services including levels of service, budgets and asset management.  The OEMP must be achievable within the program budget and take into account the stated levels of service and asset management priorities.
Integrated Water Cycle Management Plan	Framework for delivery of water supply, stormwater and sewage services within a holistic framework. The IWCM strategy identifies water management problems and responses.	The OEMP incorporates relevant issues identified within the IWCM and provides measures to manage these issues.
Business Continuity Plan	Guide for coordinated management and logistical arrangements in the event of major interruptions to delivery of sewage services.	The BCP provides notification, resourcing, logistics and management responses to catastrophic incidents associated with the sewer operations that are beyond the scope of the incident response procedures included in Section 0 of the OEMP.
Dubbo 2036 Community Strategic Plan (CSP)	Communities vision for Dubbo including a strong focus on considering environmental, economic and social values in all decisions.	One of the key themes of the CSP is infrastructure which includes water supply and sewage services. Actions' arising from the CSP including ensuring the sewage system has the capacity to handle future growth and effective management of

Strategy / Plan	Purpose	Relationship to Sewer OEMP
		the sewage system and effluent reuse are consistent with the OEMP.
Education for Sustainability Strategy	Coordinated and strategic approach to sustainability education programs for the community.	<p>The strategy includes a range of strategies to meet the environmental sustainability goals of Council including incorporating the principles of ecologically sustainable development, reducing the environmental impacts associated its operations, and communication with stakeholders and the community.</p> <p>The OEMP contributes to achieving these strategies through the emphasis on monitoring, complaints and incident response, maintenance programs, auditing and reporting.</p>
Sustainable Development Policy	Ensuring that all Council developments are undertaken in a sustainable manner which reduces environmental impacts, improves amenity, reduces risk, liability and operating costs.	<p>The policy includes a checklist of items to be reviewed by the Project Manager during the planning phase of any Council development and includes requirements for water conservation and metering.</p> <p>The OEMP includes a program of auditing sewer operations to identify any environmental issues including ensuring that Council policies and procedures are adhered to.</p>
Urban Salinity Management Strategy and Implementation Plan	Minimising the current and future impacts of land degradation, inappropriate land use practices and climate change on production and the environmental and Aboriginal heritage values of the region.	The OEMP addresses management measures for and monitoring of treated effluent prior to transfer offsite for reuse as irrigation.
Greywater Reuse Policy	Management of greywater reuse in the LGA to ensure regulatory requirements are met, adverse environmental and health impacts are avoided and demand on drinking water supplies for purposes other than drinking is	The policy aims to ensure that greywater reuse doesn't impact on the local environment, public health and Council assets. These objectives are consistent with the Sewer OEMP.



Strategy / Plan	Purpose	Relationship to Sewer OEMP
	reduced.	
Liquid Trade Waste Policy	Regulation of sewerage and trade waste discharges into the sewer system.	Unauthorised discharges into the sewer system can increase the likelihood of incidences of sewer overflows or odour complaints, and has the potential to reduce the effectiveness of treatment at the STPs. In regulating discharges, this policy aims to ensure that new discharges into the sewer system will not have an adverse environmental impact on sewer operations.
Onsite Sewage Management Strategy (OSMS)	Regulation of the installation and operation of onsite sewage management systems to manage environmental and public health risks.	The objectives of the OSMS of protection of public health and the local environment are consistent with the OEMP. Relevant monitoring requirements from the OSMS are included as mitigation measures in the OEMP.
Greengrove OEMP	Management of environmental and public health risks associated with the operation of the Wongarbron Effluent Reuse Scheme.	The Greengrove Effluent Reuse Scheme forms part of the Dubbo Sewage System. The Sewer OEMP includes appropriate management and monitoring measures to ensure that the quality of effluent reuse water supplied to Greengrove is suitable.
Wongarbron OEMP	Management of environmental and public health risks associated with the operation of the Wongarbron Effluent Reuse Scheme.	The Wongarbron Effluent Reuse Scheme forms part of the Dubbo Sewage System. The Sewer OEMP includes appropriate management and monitoring measures to ensure that the quality of effluent reuse water is suitable.
Planning Documents <i>Review of Environmental Factors (REF), Statement of Environmental Effects (SEE) and Environmental Impact Statement (EIS)</i>	Prepared during the planning phase of new works as determined by the consent authority, to assess the potential impacts during construction and operation. Developed in accordance with the Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000.	On commissioning of new sewer assets, the Sewer OEMP should be reviewed and updated where required to include any conditions of consent associated with new works.

## 2. Environmental Management

### 2.1 Environmental Management Structure and Responsibility

Figure 1 details the management structure of sewer reticulation and treatment including the management of the Dubbo and Wongarbron STPs.

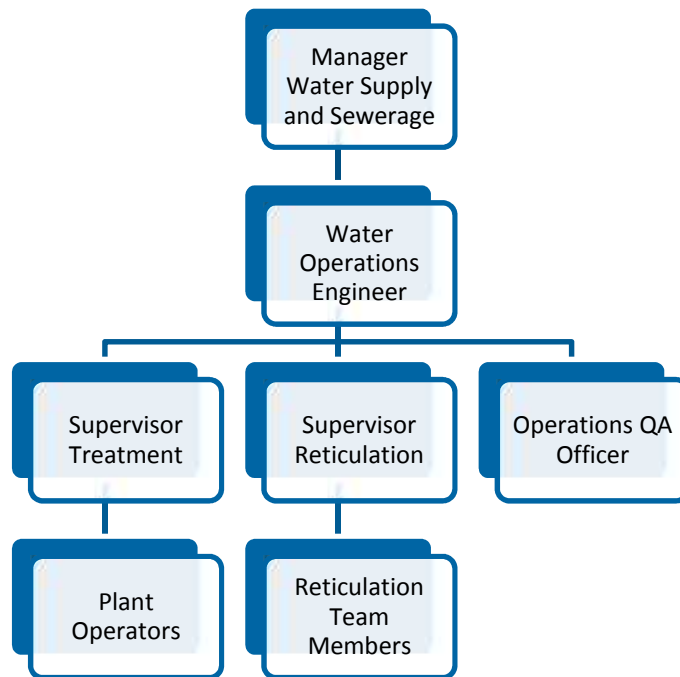


Figure 1 Sewer Operations Environmental Management Structure

The Water Operations Engineer is responsible for the implementation and maintenance of the OEMP. The key staff involved in day-to-day implementation of the OEMP are the Treatment/Reticulation Supervisors and the Plant Operators/Reticulation Team Members.

The Plant Operators are responsible for ensuring the plant is operating effectively, monitoring the quality of treated water in accordance with licence requirements and managing biosolids in accordance with the biosolids guidelines.

The Reticulation Team Members are responsible for maintaining the infrastructure required to transfer sewerage to the STP including responding to incidents of sewer main breaks and pump station overflows.

Table 2 provides a summary of the responsibilities for each role nominated in this OEMP.

Table 2 Roles and Responsibilities Summary

Role	Responsibilities
<p>Manager – Water Supply and Sewerage (MWS)</p>	<ul style="list-style-type: none"> <li data-bbox="662 264 1310 297">) Approve and endorse the OEMP and any reviews.</li> <li data-bbox="662 315 1390 349">) Provide resources to implement and maintain the OEMP.</li> <li data-bbox="662 367 1225 400">) Monitor overall compliance with the OEMP.</li> </ul>
<p>Water Operations Engineer (WOE)</p>	<ul style="list-style-type: none"> <li data-bbox="662 436 1214 470">) Oversee the implementation of the OEMP.</li> <li data-bbox="662 488 1230 521">) Allocate resources to implement the OEMP.</li> <li data-bbox="662 539 1422 607">) Lead the review of the OEMP including risk assessments in consultation with site staff.</li> <li data-bbox="662 624 1394 692">) Monitor compliance with regulatory requirements and any licence / permitting conditions.</li> <li data-bbox="662 710 1426 777">) Notify required regulators and stakeholders in the event of a notifiable incident.</li> <li data-bbox="662 795 1358 862">) Ensure all personnel have the appropriate training and competencies to implement the OEMP.</li> </ul>
<p>Supervisor Treatment (WOST) Supervisor Distribution (WOSD)</p>	<ul style="list-style-type: none"> <li data-bbox="662 913 1219 947">) Implement the requirements of this OEMP.</li> <li data-bbox="662 965 1437 1032">) Participate in environmental risk assessment reviews and the assessment of new site activities.</li> <li data-bbox="662 1050 1406 1084">) Deliver environmental training to site staff and contractors.</li> <li data-bbox="662 1102 1390 1169">) Ensure environmental monitoring requirements are being fulfilled.</li> <li data-bbox="662 1187 1358 1220">) Prepare environmental reports required by this OEMP.</li> <li data-bbox="662 1238 1366 1272">) Maintain environmental records required by the OEMP.</li> <li data-bbox="662 1290 1422 1357">) Stop work immediately if a particular activity is carried out in an environmentally unsatisfactory manner.</li> <li data-bbox="662 1375 1358 1408">) Respond to environmental incidents and emergencies.</li> <li data-bbox="662 1426 1398 1494">) Lead incident investigations and ensure corrective actions are carried out.</li> <li data-bbox="662 1512 1402 1545">) Lead internal environmental audits required by the OEMP.</li> <li data-bbox="662 1563 1350 1630">) Regularly review the OEMP to incorporate changes in operations and the environmental risk profile.</li> </ul>
<p>Plant Operators Reticulation Team Members</p>	<ul style="list-style-type: none"> <li data-bbox="662 1697 1426 1765">) Undertake any monitoring, reporting and maintenance tasks required by this OEMP or delegated by the relevant supervisor.</li> <li data-bbox="662 1783 1370 1850">) Report any environment incidents or near misses to the relevant supervisor.</li> <li data-bbox="662 1868 1378 1935">) Participate in incident investigations and the close out of corrective actions.</li> </ul>

Role	Responsibilities
Contractors / Consultants	<ul style="list-style-type: none"> <li>) Undertake all works in accordance with the OEMP and under instruction from the relevant supervisor.</li> <li>) Report any environment incidents or near misses to the relevant supervisor.</li> </ul>
Operations QA Officer (WOQA)	<ul style="list-style-type: none"> <li>) Maintain environmental records required by the OEMP in TRIM.</li> <li>) Maintain environmental documents in KMS including document control, reviews and updates.</li> <li>) Prioritise and allocate resources to respond to customer complaints, and monitor response to complaints.</li> </ul>

## 2.2 Approvals and Legislative Requirements

Sewage activities are operated under the legislation, licences and guidelines detailed in Table 3.

Table 3 Approvals and Legislative Requirements

Title	Summary	Applicability
<i>Protection of the Environment Operations Act 1997</i>	Regulates pollution in NSW through providing a system for licensing polluting activities, issuing environment protection notices and penalty notices.	The notification of pollution incidents causing or threatening material harm to the environment is required under this Act.
EPL #3850	Environmental Protection Licences are issued under the POEO Act to regulate pollution in NSW.	The Dubbo STP undertakes the fee based activity <i>Sewage treatment processing by small plants</i> . The licence covers the sewer reticulation, discharge of treated effluent to waterways, effluent reuse and production and management of biosolids.
Australian Code for the Transport of Dangerous Goods by Road and Rail, National Transport Commission 2014	Provides the requirements for land transport of dangerous goods including classification, packaging, marking and placarding, segregation, transfer of bulk dangerous goods, documentation, safety equipment and emergency procedures.	The STPs store and use dangerous goods including sodium hypochlorite, aluminium sulfate and sodium hydroxide.

Title	Summary	Applicability
AS1940 – The Storage and Handling of Flammable and Combustible Liquids	Provides the requirements and recommendations for the safe storage and handling of dangerous goods.	The STPs store and use small quantities of flammable and combustible liquids including fuels and oils.
AS3780 – The Storage and Handling of Corrosive Substances	Provides the requirements and recommendations for the safe storage and handling of corrosive substances.	The STPs store and use corrosive substances including sodium hypochlorite, aluminium sulfate and sodium hydroxide.
Approved methods for sampling and analysis of water pollutants in NSW	Outlines the acceptable methods for sampling and analysis of water quality, volume, depth or flow in complying with a requirement of an EPL.	The Dubbo STP is required to sample and analyse the quality of treated wastewater transferred to the effluent reuse farms and discharged to waterways.
Best Practice Management of Water Supply and Sewerage Guidelines, NSW Department of Water and Energy 2007	Provides guidance to encourage the effective and efficient delivery of sewer services.	Council have made a commitment to the guidelines for operation of the STP and sewer reticulation system. This includes preparation and implementation of this OEMP.
Environmental Guideline – Use and Disposal of Biosolids, NSW EPA 1997	Establishes the requirements for the beneficial use and disposal of biosolids products to land in NSW.	Biosolids must be classified prior to disposal / application to land in accordance with the guidelines.
Australian Guidelines for Water Recycling – Managing Health and Environmental Risks, 2006	Provides a framework for management of recycled water quality and use, and guidance on the use of treated effluent.	The STP provides treated effluent for reuse as irrigation of pastures and crops.
Environmental Guidelines - Use of Effluent by Irrigation NSW EPA 2004	Provides the framework, principles and objectives that should be considered when establishing an irrigation system that uses effluent (effluent irrigation system).	Effluent irrigation is undertaken offsite. Effluent water quality is monitored in accordance with the guidelines.
Liquid Trade Waste Regulation Guidelines, 2009	Provides the framework for regulation of sewerage and liquid trade waste in non-metropolitan NSW.	The Dubbo STP accepts liquid trade waste discharges under Liquid Trade Waste Approvals or Agreements

## 2.3 Reporting

The sewer operations regulatory environmental reporting requirements are outlined in Table 4. A range of other environmental reports are prepared for the sewer operations as listed in Table 5.

Table 4 Regulatory Reporting Requirements

Report Name	Report Recipient / Administering Authority	Due Date	Responsibility
EPL 3850 Annual Return	NSW Environment Protection Authority (EPA)	60 days from anniversary date of licence 1 December	WOE WOQA
Incident Report (See section 2.7 for further details)	NSW EPA NSW Public Health WorkCover Fire and Rescue	Verbal: Immediately Written: If requested by the EPA.	WOE All sewer operation Field Staff
National Performance Report	NSW Office of Water (NOW)	15 September	WOE WOQA
EPL Monthly Website Report <i>Water quality monitoring – weekly during discharge to the Macquarie River, and monthly to the effluent reuse farms.</i>	NSW EPA	14 days from sampling date	WOE WOQA
National Pollutant Inventory Report	Commonwealth Department of Environment	30 September	WOE WOQA
State of the Environment Report	NSW EPA	31 July	WOE

Table 5 Internal Reporting Requirements

Report Name	Frequency	Responsibility
Incident Report <i>Pollution Incident Reporting Form</i>	Verbal: immediate to Customer Service Centre Written: at completion of incident	WOE All sewer operation Field Staff
Groundwater Monitoring Report – Dubbo STP, Wongarbon and Ballimore	Quarterly	WOE
Public Works Site Inspection Report	Quarterly	WAPE
Effluent Reuse Farm Reports – Greengrove and Wongarbon	Annual	WOE WOQA
Report to Council meeting Call outs for sewer operations incidents	Monthly	WOE WOQA
Community Environmental Report	Annual	MWS
Biosolids Pre-application Report	Each transport of Biosolids to Greengrove	WOE / Farm Management Contractor
Biosolids Annual Report	Annual	Farm Management Contractor

## 2.4 Environmental Training

Training is provided to Sewer Operations personnel, contractors and visitors as described in Table 6. Training records are maintained in the Human Resources Training Register or TRIM depending on the nature of the training.

Table 6 Environmental Training Requirements

Type of Training	Content Outline	Target Role	Frequency
<b>Site-Based General Training</b>			
Employee / Contractor induction	<ul style="list-style-type: none"> <li>Site induction</li> <li>General environmental awareness</li> <li>Emergency response</li> <li>Dangerous goods</li> <li>Requirements of the OEMP related to their role</li> </ul>	All employees	<ul style="list-style-type: none"> <li>New employees</li> <li>Refresher – updated procedures, updated OEMP</li> </ul>
Visitor induction	<ul style="list-style-type: none"> <li>Site induction</li> <li>General environmental awareness</li> </ul>	All visitors	Each visit to site
Incident response	<ul style="list-style-type: none"> <li>PIRMP</li> <li>Use of spill response equipment and PPE</li> </ul>	All personnel	
PIRMP simulation	Conduct a simulation exercise for a potential environmental incident at the JGWTP or in the reticulation network	Key Plant Operators or Reticulation Team Members as determined by the scenario	Annual
Water quality sampling and analysis	<ul style="list-style-type: none"> <li>On-the-job training</li> <li>Collecting, handling and transporting samples</li> <li>Use and calibration of site water quality analysis equipment</li> </ul>	Plant Operators	<ul style="list-style-type: none"> <li>New employees</li> <li>Refresher – change to SOP</li> </ul>
<b>Certified Training</b>			
Water Industry Operations certificates	As delivered by NSW Office of Water (NOW)	Plant Operators	<ul style="list-style-type: none"> <li>New employees</li> <li>As required by NOW</li> </ul>

Type of Training	Content Outline	Target Role	Frequency
Dangerous goods/chemical handling	As delivered by external training provider	Plant Operators	New employees Refresher – as required by the training provider
Confined space	As delivered by external training provider	Reticulation Team Members	New employees Refresher – as required by the training provider

## 2.5 Document Control and Records Management

Document control is maintained through version numbers and the online Knowledge Management System (KMS). Any document that is printed is considered uncontrolled.

Records are maintained TRIM. The following documents and records will be maintained and made available on site to demonstrate compliance with the OEMP:

- Copies of all licences, permits and approvals
- Site induction and training records
- Site environmental reports (as per Table 5)
- Completed inspection and monitoring checklists
- Site diaries with daily activities
- Environmental monitoring records (as per section 4.1)
- Biosolids pre-application reports and annual reports
- Customer Request Management Forms (CRMs) and Maintenance Action Response Sheets (MARS)
- Environmental incident reports
- Pollution Incident Response Management Plan (PIRMP)
- Internal and external environmental audit reports, and
- Dangerous goods manifest and Safety Data Sheets (SDSs).

## 2.6 Complaints

Complaints, along with incidents and general queries, are received by the Customer Service Centre. Customer Service Representatives collect information on the issue in a CRM and forward the CRM to the Operations QA Officer and/or Relevant Branch Supervisor for prioritisation and actioning of the issue. After-hours calls are managed through LINK paging, an after-hours paging service, where calls are forwarded to the On-Call Duty Officer, who determines the nature of the problem, undertakes first response, completes a MARS and escalates the issue where necessary.

A new Works Management System is currently under development for managing sewer complaints, incidents and general queries. When the WOQA receives the CRM, they will generate a Works Management Order (WMO) to track response actions and close out of complaints, incidents and queries. Completed WMOs will be sent to the WOQA for review and close out.



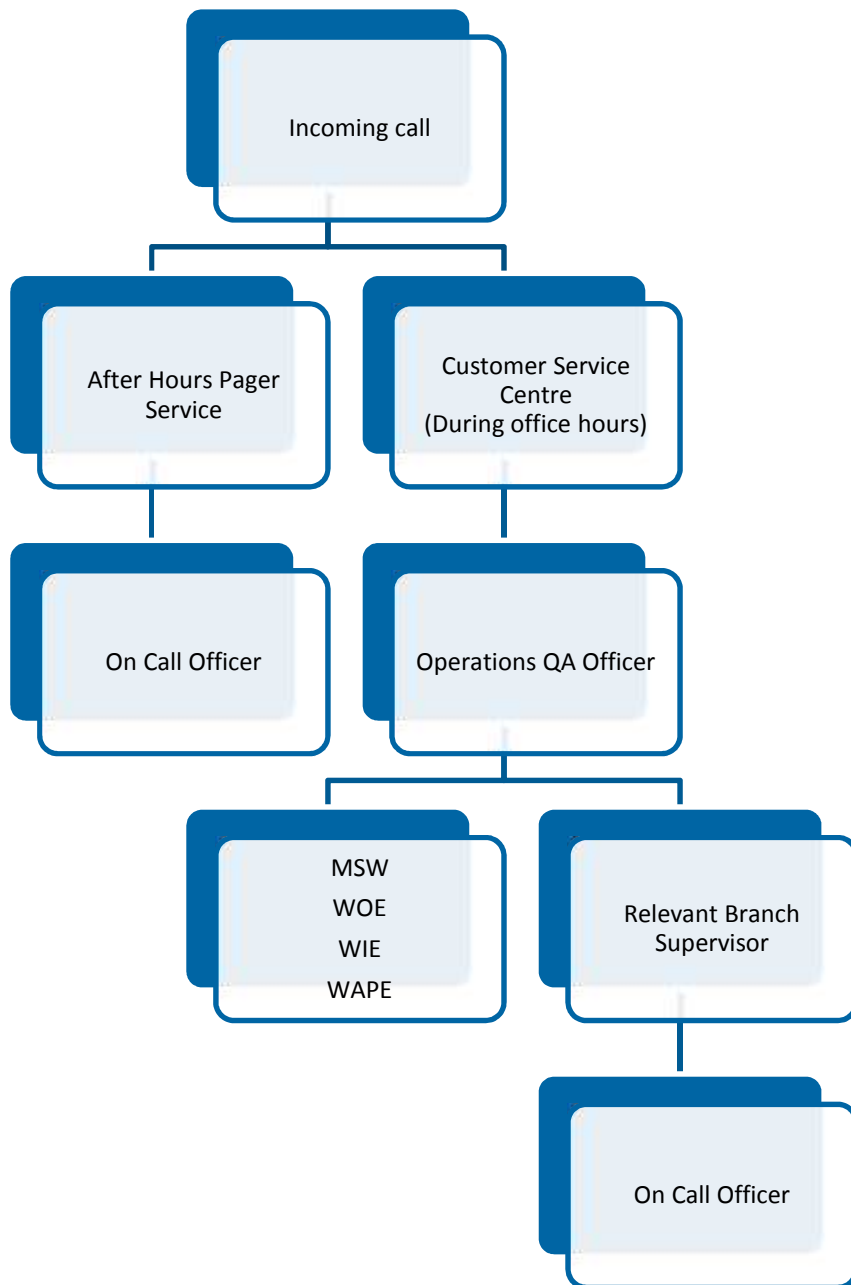


Figure 2 Complaints handling workflow

## 2.7 Incident Response

For the purposes of the sewer operations, an incident is defined as an actual or imminent occurrence which:

- Endangers, or threatens to endanger, the safety or health of persons, or
- Destroys or damages, or threatens to destroy or damage, property or the environment.

Incidents are likely to include but are not limited to:

- Wet weather overflow
- Dry weather overflow
- Wet weather bypass at the STP
- Dry weather bypass at the STP
- Pond failure at the STP
- Mechanical failure at the STP
- Inadequate chemical storage
- Acts of vandalism or target of terrorist activity at the STP
- Discharge pipeline breakage
- Exceed EPL discharge limits to the Macquarie River
- Significant adverse environmental impact due to irrigation with treated effluent.

A Pollution Incident Response Management Plan (PIRMP) is maintained for operations at the Dubbo STP (Appendix B). The PIRMP is triggered where a pollution incident risks material harm to the environment as defined by section 147 of the Protection of the Environment Operations Act 1997. The following standard operating procedures (SOPs) are available for responding to environmental incidents. Electronic copies of SOPs are available on the Knowledge Management System (KMS).

- OPSOP DSTP 150 - Treated Effluent Releases Into Macquarie River
- OPSOP DSTP 404 - Algal Bloom Management
- OPSOP DSTP 550 - Environment Incident Procedure, and
- OPSOP RET 125 - Repair Of Sewage Rising Main.

Maps of the sewer reticulation network and Dubbo STP are provided in Appendix C.

Council maintain additional emergency response strategies and procedures that should be considered in the management of water and sewer incidents.

### 2.7.1 Emergency Response Contact Details

Emergency response contacts are maintained as outlined in Table 7 for Council contacts and regulatory authority contacts. Refer to the PIRMP for incident notification protocols.

Table 7 Emergency Contacts

Contact	Number
Stephen Carter WOE	0429 443 657
Glen Clifford WOST	0400 435 542
Paul Meredith WOSD	0419 217 887
Duty Plant Operator	0419 141 130
Environmental Services Emergency Contact	02 6801 4000
Emergency Services	000
Dubbo EPA Office Incident Hotline	02 6883 5330 131 555
Dubbo NSW Ministry of Health Office Public Health Officer	02 6841 5569 0418 866 397
Workcover NSW	131 050
Dubbo Rural Fire Service	02 6881 3900

## 2.8 Other Initiatives

Council manage a fleet of vehicles to operate and maintain the sewer operations. As part of Council's ongoing commitment to an environmentally sustainable bottom line, Council have had a longstanding program of offsetting vehicle emissions, originally through a partnership with GreenFleet and since 2011, through a Council developed program 'Neutral Drive'.

Council is a large landholder in the local government area and an opportunity was identified for Council to develop its own carbon sequestration planting program in line with the (at the time) newly released Carbon Farming Initiative guidelines. To date, Regand Park has been identified as the Neutral Drive planting site. The trees planted through the program will be managed by Parks and Landcare.

## 3. Implementation

### 3.1 Risk Assessment

Risks associated with the sewage reticulation and treatment operations have been identified through the development of the PIRMP. In developing the OEMP, the PIRMP risk register was reviewed and expanded into a Sewer Operations Environmental Aspects and Impacts Register (Appendix D). This includes:

- ) Primary tasks undertaken as part of regular site operations
- ) Potential or actual risks arising from the task
- ) Mitigation measures implemented to minimise the environmental impacts of the task, and
- ) The risk ratings for each identified task.

### 3.2 Standard Operating Procedures

A number of SOPs are available on the KMS that manage environmental aspects of water treatment and reticulation operations. SOPs relevant to each activity are referenced in the Aspects and Impacts Register.

### 3.3 Environmental Improvement Register

The environmental improvement register documents actions to improve environmental management and performance associated with the sewer and water business in line with Council's commitment to continual improvement. The register will be updated as actions are completed and to include any new initiatives that arise during normal operations. A template register is provided in Appendix E.

## 4. Monitoring and Review

### 4.1 Monitoring

A range of environmental monitoring is undertaken as part of sewage treatment. This monitoring ensures that operations are being conducted within licence conditions, data is gathered to satisfy reporting requirements and water discharged to the river and supplied for effluent reuse is within licence conditions. Monitoring includes:

- River height
- Flow – through the STP, transfers to effluent reuse farms and discharges to the Macquarie River
- Water quality – STP influent, points throughout the STP, transfers to effluent reuse farms and discharge to the Macquarie River (dissolved oxygen, pH, EC, biological oxygen demand, total phosphorus, total nitrogen, ammonia nitrogen, total suspended solids, oil and grease, sludge settleability and faecal coliforms), and
- Biosolids – quality data for classification and quantity data for transportation to Greengrove for beneficial reuse.

Council also undertakes a range of additional monitoring as part of its annual reporting. Parameters monitored include:

- Tonnes of hay produced at Greengrove
- Quantities of sewage treatment chemicals used e.g. sodium hypochlorite, sodium hydroxide and aluminium sulphate
- Electricity consumption
- Greenhouse emissions generated from sewage reticulation and treatment
- Volume of sewage lost in reticulation, and
- Number of trade waste discharges.

Annual reporting parameters will be reviewed after five years to establish targets for each of the parameters moving forward.

SOPs detail the requirements for conducting the above environmental monitoring including timing and detailed monitoring procedures, refer to section 4.1.2.

#### 4.1.1 Calibration

Equipment for conducting water quality analysis is periodically calibrated according to manufacturer's requirements to ensure that the equipment is operating within acceptable limits. SOPs detail the requirements for calibration including timing and detailed calibration procedures, see section 4.1.2.

#### 4.1.2 SOPs

A number of SOPs are available in KMS that address sampling, calibration and analysis activities at the STPs:

- OPSOP DSTP 310 – Sampling
- OPSOP DSTP 309 – Testing - Discharge Points
- OPSOP DSTP 301 – Testing – pH

- OPSOP DSTP 303 - Testing – Suspended Solids
- OPSOP DSTP 304 - Testing – Sludge Settleability
- OPSOP DSTP 306 - Testing – Nitrate
- OPSOP DSTP 307 - Testing – Ammonia
- OPSOP DSTP 308 - Testing – Phosphorus
- OPSOP DSTP 201 - Calibration of pH Meter
- OPSOP DSTP 032 – Biosolids Sample/Classification.

## 4.2 Auditing

Environmental audits will be conducted by a suitably qualified auditor every three years in conjunction with the National Performance Report audits.

The audits shall:

- Be carried out in accordance with ISO 19011:2002 – Guidelines for Quality and/or Environmental Management System Auditing
- Assess compliance with the requirements of the OEMP, EPL and other legal requirements, and
- Review the implementation of the OEMP.

Audit findings shall be documented in an audit report to be provided to Council by the auditor and tracked as described in section 4.3.

## 4.3 Corrective and Preventive Action

The following issues may require an investigation into the cause and impact, and the generation of corrective actions (where relevant) to prevent these instances reoccurring:

- Failure to adhere to OEMP or SOPs
- Complaints
- Exceedance of EPL water quality concentration limits
- Incidents requiring notification to EPA, and
- Findings from audits and inspections.

Corrective actions will be reported and tracked using the Corrective Action Register (Appendix F).

## 4.4 OEMP Review

The OEMP will be reviewed and updated when there is a material change to operations including but not limited to:

- Changes to legislation
- Adverse findings from audits
- Incident investigation, or
- Changes to site infrastructure / operations.

The review will assess compliance with the requirements of the OEMP and determine the effectiveness of the environmental management of the sewer reticulation and treatment operations.

An update of the OEMP would trigger all staff and any contractors to undergo refresher induction training as detailed in Table 6.

# Appendices



# Appendix A – Water and Sewer Environment Policy

## Dubbo City Council Water and Sewer Environmental Policy

Council's mission for water supply services is *to provide a safe, reliable, and cost-effective drinking water quality water supply which is customer focussed, environmentally responsible and supports the sustainable growth of served communities.*

Council's mission for sewage services is *to provide environmentally responsible sewerage services which maintain the health of the served communities, are cost effective, customer focussed and supports sustainable growth of the served communities.*

Council's Environmental Policy for the Operation of Water and Sewerage Services is as follows:

Council will operate in accordance with its Missions and will:

- J Ensure that its operations are effective in avoiding adverse environmental outcomes in receiving environments
- J Minimise the use of natural resources such as water and chemicals
- J Minimise waste generation
- J Minimise the use of electricity and the generation of green house gases
- J Respond promptly to any emergency that may create adverse environmental outcomes in receiving environments.

# Appendix B – Pollution Incident Response Management Plan

**POLLUTION INCIDENT RESPONSE  
MANAGEMENT PLAN  
SUPPORTING STATEMENT**  
DUBBO SEWAGE TREATMENT SYSTEM

PREPARED FOR:

**DUBBO CITY COUNCIL**

AUGUST 2012

<b>Report Title:</b>	<i>Pollution Incident Response Management Plan Supporting Statement</i>
<b>Project:</b>	<i>Dubbo Sewage Treatment System</i>
<b>Client:</b>	<i>Dubbo City Council</i>
<b>Report Ref.:</b>	<i>212120_PIRMP_001_Dubbo_STP.docx</i>
<b>Status:</b>	<i>Final</i>
<b>Issued:</b>	<i>22 August 2012</i>

Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All information contained within this report is prepared for the exclusive use of Dubbo City Council to accompany this report for the land described herein and is not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

Geolyse Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from any person or entity using the plans or information in this study for purposes other than those stated above.

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- Drawing 01A\_EV02 – Site Plan
- Drawing 01A\_EV03 – Utilisation Area Plan

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**APPENDIX A**

*Pollution Incident Response Management Plan*

# Foreword

This is the Supporting Statement for the Pollution Incident Response Management Plan (PIRMP). The PIRMP is a functional document. It is designed to assist personnel at the Dubbo Sewage Treatment System (DSTS) to correctly identify pollution incidents and detail the procedures for the response and reporting of a pollution incident.

The structure and scope of this Supporting Statement and PIRMP reflects the requirements of the Environmental Protection Authority's *Guidelines: Preparation of pollution incident response management plans, March 2012* and in doing so embodies the principles of best practice environmental management.

Utilisation of this PIRMP aims to improve, monitor and demonstrate environmental performance. If you have any suggestions for amendments, additions or improvements, please discuss these with your supervisor.

.....  
**Dubbo City Council**  
Water Operations Engineer

Date: .....



# Introduction

## 1.1 PURPOSE

This Supporting Statement and PIRMP have been prepared in accordance with the *Protection of the Environment Legislation Amendment Act 2011 (POELA Act)* and reflects the requirements specified in the Environment Protection Authority's (EPA's) *Guidelines: Preparation of pollution incident response management plans, March 2012*.

The PIRMP details:

- Procedures for notifying a pollution incident to relevant persons;
- Actions to be taken to reduce and/or control pollution; and
- Procedures for co-ordinating those notified and any action taken in combating the pollution.

## 1.2 DEFINITION OF POLLUTION INCIDENT

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act 1997:

- “(a) *harm to the environment is material if:*
- i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
  - ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and*
- (b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.”*

## 1.3 IDENTIFIED POLLUTION INCIDENT RISKS

The primary potential hazards to human health or the environment associated with the activity undertaken at this site – i.e. 'Pollution Incidents' - include the following:

- Wet Weather Overflow from the reticulation system during wet weather;
- Dry Weather Overflow from the reticulation system during dry weather;
- Wet Weather Bypass at the sewage treatment plant (STP) and is when untreated sewage bypasses the sewage treatment process and discharges to the Macquarie River during wet weather;
- Dry Weather Bypass at the STP and is when untreated sewage bypasses the sewage treatment process and discharges to the Macquarie River during dry weather;
- Pond failure at the STP;
- Mechanical failure at the STP results in discharge of untreated sewage;
- Mechanical failure at the STP results in offensive odour from the premises;
- Inadequate chemical storage;
- Acts of vandalism or target of terrorist activity at the STP;
- Discharge pipeline breakage;
- Exceed Environment Protection Licence (EPL) discharge limits to the Macquarie River; or
- Significant adverse environmental impact from irrigation in utilisation areas.

# Site Overview

## 2.1 SITE OVERVIEW

The Dubbo Sewage Treatment System (DSTS) includes the Dubbo Sewage Treatment Plant (STP or the 'facility') and all associated components of the reticulation system under Council's management or control. The STP is zoned SP2 Infrastructure (Sewerage System) under *Dubbo City Council's Local Environmental Plan 2011*.

The Environment Protection Authority (EPA) has issued Environment Protection Licence 3850 in accordance with *Section 5.7 of the Protection of the Environment Operations Act 1997*. The licence requires that the total load limit for suspended solids (Enclosed Water) discharged from the premises must not exceed 100,000 kg tonnes per annum.

The objectives of the licence are to:

- (a) *prevent as far as practicable sewage overflows and sewage treatment plant bypasses;*
- (b) *require proper and efficient management of the system to minimise harm to the environment and public health; and*
- (c) *require practical measures to be taken to protect the environment and public health from sewage overflows and sewage treatment plant effluent.*

As a condition of the licence, a *PRP 100 Sewer Overflow Investigations Report* was prepared, which details the reporting conditions for the DSTS to meet the relevant Environmental Goals specified in the *Environment Protection Authority's Licensing Guidelines for Sewage Treatment Systems, 2003*.

Furthermore, as specified in the EPL, a PRP 101 Incident Notification Protocol was prepared which details the procedures, defines the notification events and lists the organisations to be contacted.

## 2.2 SITE CHARACTERISTICS

The DSTS services the City of Dubbo. The Macquarie River passes through the west side of the catchment. The DSTS is approximately 300km in length, with a catchment area of approximately 20 square kilometres and serving a connected population of approximately 35,000. There are 9 sewage pump stations (SPS) located throughout the city. All sewage from the city is transferred to the STP via a gravity main from the Troy Gully SPS and a rising main from the Bunglegumbie SPS.

The STP is located approximately 5 km north of Dubbo (see Drawing **01A\_EV01**). It comprises DP 754308(Lots 201, 202, 203 & 210) and DP 1073902 (Lot 1).

The STP is an extended aeration treatment plant that disposes of most of its highly treated effluent (approximately 3,100 ML per annum) by irrigation belonging to Fletchers International Pty Ltd, Polldale or Council's Greengrove Effluent Irrigation Facility north of Brocklehurst (see Drawing **01A\_EV03**). The facility has a current licence to discharge treated effluent to the Macquarie River of up to 9.5 megalitres (ML) per day. Treated biosolids from the STP site are used as soil conditioner off-site.

Treated effluent is disinfected at the STP using an ultraviolet unit before being stored in holding ponds for reuse. The effluent storage ponds at the STP can hold up to 1,090 ML and permit the storage of effluent over winter until it can be taken up by the spring and summer irrigation of crops. Holding Ponds No.1 and No.2 hold 540ML and 550ML respectively of treated effluent, and balance effluent production with irrigation demands. Holding Pond No.1 also receives direct inflow from the Dubbo Regional Livestock Markets first flush system.

Detention Ponds 1 and 2 are no longer used for effluent disinfection. These ponds remain empty most of the time and are used to temporarily store excess sewage during wet weather for later treatment.

The area surrounding the facility to the west, north and north-east is predominantly rural cropping land. The land immediately to the south is commercial and industrial use, and further to the east is predominantly rural residential development (hobby farms). The Talbragar River, a tributary of the Macquarie River flows approximately 500m to the north.

The nearest residential property to the facility is located within the site boundary approximately 400m north of Holding Pond No.2. Further details of neighbouring properties (residential, commercial and industrial categories) are provided in Drawing **01A\_EV02**.

Access to the STP is via Boothenba Road, turning east off the Newell Highway. Boothenba Road is a two lane sealed road. From Boothenba Road the facility is accessed by a primary sealed road. Within the site, sealed roads and formed gravel access roads lead to the various holding ponds and plant equipment.

The southern portion of the site adjacent to the main entrance contains the site office, maintenance sheds, chemical store and UV System Building. This area is fenced along the southern, northern eastern and western boundaries with 2.4m man-proof security fence. The rest of the site containing the sludge ponds, bio-solids store, detention ponds and holding ponds is accessed via this secure area and a set of lockable gates. The boundary of this larger area is protected with 1m stock proof fencing.

The concentration of pollutants discharged is required to be monitored by the EPL at two locations in the STP (see drawing **01A\_EV02**).

The sludge ponds, detention ponds and holding ponds have altered the local topography significantly, creating numerous rises, as such, the current site no longer retains the natural topography but is designed to channel surface water and minimise off site impact of the STP operations.

The site topography and drainage have been engineered to ensure that there is negligible stormwater runoff into and out of the site, thus minimising any off-site impact. Site generated surface water at operations near to the site entrance is channelled through the centre of the premises via a stormwater drain towards Holding Pond No.1. A drainage channel for surface water also runs between Holding Pond No.1 and No.2 which allows surface water in the south-western part of the site to drain off-site and filter over cropping land before joining the Talbragar River approximately 500m to the north (see Drawing **01A\_EV02**).

## **2.3 SITE SUPERVISION AND CONTROL**

The STP is open to Council staff and associated contractors (but not the public) between 07:00 am and 3:00pm Monday to Friday. The STP is not supervised at all times. Instead the entire facility generally runs automatically. Access to the site outside these hours (e.g. for special circumstances) is subject to the approval of the Water Operations Engineer.

During normal working hours the facility is staffed by qualified and experienced personnel. These include a Site Supervisor and up to two Site Operators. Two site Operators are generally present during normal working hours. The operators' responsibilities include response to alarms, fault identification, trouble shooting and determination of critical control set-points. Site Operators carry out a site inspection at least once a working day to check the STP is operating effectively and efficiently.

Automatic security gates are in place at the main access point to the facility which ensures entry is only possible with Council authorisation and supervision. There is also a lockable gate between the southern portion of the site containing office and maintenance buildings and the main part of the site containing the sludge ponds, bio-solids store, detention ponds and holding ponds. All gates are locked outside of normal working hours except for when approved by the Water Operations Engineer in special circumstances. The site is also monitored by CCTV with one camera on the site office looking towards the site entrance at Boothenba Road, and also motion censored lighting on the site office, maintenance shed and chemical store to prevent vandalism. Council maintains the access roads around the facility and Council staff are to be responsible for internal traffic control.

The STP consists of the following elements:

- Inlet Works;
- Biological Reactor;
- Clarification;
- Sludge Stabilisation; and
- Effluent Disinfection and Re-use.

The inlet works is designed to protect the secondary treatment facility. It includes fine screening, pressing and bagging, grit removal and classification, wet weather flow shedding and flow monitoring.

The biological reactor consists of a single (four pass) carousel fitted with horizontal shaft surface aerators. The biological reactor provides carbonaceous removal and biological nitrification/denitrification. Rudimentary biological phosphorous removal occurs but advanced phosphorous removal (chemical or biological) is not currently required or practised due to re-use and the negligible impact on the environment.

Mixed liquor from the carousel is split at an overflow splitter box to be evenly distributed between two circular clarifiers.

Waste accumulated sludge (WAS) is wasted to one of two sludge lagoons. The lagoons further stabilise the WAS as well as thickening and storing the digested solids. These lagoons are periodically dewatered with the use of mobile dewatering equipment.

Effluent from the clarifiers gravitates to a pump station where it is lifted up into re-use storage ponds or alternatively discharged into the Macquarie River. These storage ponds provide disinfection due to combined effects of retention and natural UV disinfection. Disinfected water is then lifted to a re-use reservoir for buffer storage. Here it can be drawn on in a variety of re-use customers.

A Daily Checklist for monitoring, recording activities and incidents that occur during operation of the facility is kept by the Site Supervisor.

## **2.4 SITE SAFETY EQUIPMENT**

The STP buildings are protected from fire by several hose reels, fire extinguishers and hydrants.

To manage leaks, chemicals such as diesel fuel are kept on mobile self-bundled trolleys to allow their safe use in less well protected areas of the site. In the event of a chemical spill, PPE is provided for on-site staff which consists of overalls, rubber boots, chemical goggles, face shields, safety shoes, elbow-length impervious gloves, splash aprons and air supplied respirators.

# Risk Management and Pre-emptive Actions

## 3.1 INTRODUCTION

The following section outlines current operational procedures and design intended to minimise and manage risk. Members of staff working on site are responsible for being aware and notifying the Site Supervisor of any potential pollution incidents on the premises.

## 3.2 PRE-EMPTIVE ACTIONS

### 3.2.1 FIRES AT THE STP

The potential for fires to occur at the site are controlled by:

- A security fence to prevent unauthorised access and acts of vandalism;
- Maintaining machinery in good working order to minimise risk of sparks; and
- Access to on-site fire fighting equipment.

### 3.2.2 MECHANICAL FAILURE OF STP

Site Operators carry out inspections at least once a working day to ensure plant and equipment are operating effectively and efficiently.

### 3.2.3 ACTS OF VANDALISM OR TARGET OF TERRORIST ACTIVITY

Automatic security gates are in place at the main access point to the facility which ensures entry is only possible with Council authorisation and supervision. The boundary road fence along Boothenba Road limits unauthorised access outside operational hours. CCTV and motion censored lighting is installed as a deterrent. All staff are required to be vigilant and aware that the site is a potential target for vandalism, particularly by arsonists.

## 3.3 INVENTORY OF MAINTENANCE POLLUTANTS

The following pollutants can be stored on site in quantities required for routine maintenance necessary for operations at the facility:

- ZETAG 8185 – Flocculation agent;
- Actizyme G – Drain cleaner;
- Actizyme Liquid G – Drain cleaner;
- For Earth Bio – Probiotic waste water treatment and odour control;
- For Earth Bio Plus – Probiotic waste water treatment and odour control;
- Sodium Hypochloride Solution (10-15% available chlorine) – Sanitising agent;
- Unleaded Petrol;
- Syn Machine Oil 150;
- Machine Oil 680;
- Valcomp 100;
- Lubricants;

- Actizyme Pellets; and
- Saniwipe.

Enclosed site plan **01A\_EV02** provides details of where these chemicals are stored on the premises as well as those on banded palettes.

### 3.4 POTENTIAL POLLUTION INCIDENTS

The potential main hazards to human health or the environment – i.e. ‘*Pollution Incidents*’ - associated with the activity undertaken at this site include the following:

- Wet Weather Overflow from the reticulation system during wet weather;
- Dry Weather Overflow from the reticulation system during dry weather;
- Wet Weather Bypass at the STP and is when untreated sewage bypasses the sewage treatment process and discharges to the Macquarie River during wet weather;
- Dry Weather Bypass at the STP and is when untreated sewage bypasses the sewage treatment process and discharges to the Macquarie River during dry weather;
- Pond failure at the STP;
- Mechanical failure at the STP results in discharge of untreated sewage;
- Mechanical failure at the STP results in offensive odour from the premises;
- Inadequate chemical storage;
- Acts of vandalism or target of terrorist activity at the STP;
- Discharge pipeline breakage;
- Exceed EPL discharge limits to the Macquarie River; or
- Significant adverse environmental impact from irrigation in utilisation areas.

### 3.5 LIKELIHOOD, IMPACT AND CONTRIBUTING FACTORS TO POLLUTION INCIDENTS OCCURRING

Incidents can be classified as being of low, medium or high risk of occurring (likelihood) based on the past history of the facility, an assessment of management procedures, staff training and site layout.

The impact of an incident can be classed as low, medium or high based on the potential extent of off-site harm to humans and/or the environment.

The following assessment of potential pollution incidents detailed below is summarised in **Table 1.1** of **Appendix A**.

#### 3.5.1 WET WEATHER OVERFLOW FROM THE RETICULATION SYSTEM DURING WET WEATHER

**Likelihood** – refer to Sections 5 and 7 of the *PRP 100 Sewer Overflow Investigations Report, December 2006* for details.

**Impact** – refer to Section 6 of the *PRP 100 Sewer Overflow Investigations Report, December 2006* for details.

**Contributing Factors** – refer to Section 5.1 of the *PRP 100 Sewer Overflow Investigations Report, December 2006* for details.

### 3.5.2 DRY WEATHER OVERFLOW FROM THE RETICULATION SYSTEM DURING DRY WEATHER

**Likelihood** – refer to Sections 5 and 7 of the *PRP 100 Sewer Overflow Investigations Report, December 2006* for details.

**Impact** – refer to Section 6 of the *PRP 100 Sewer Overflow Investigations Report, December 2006* for details.

**Contributing Factors** – refer to Section 5.1 of the *PRP 100 Sewer Overflow Investigations Report, December 2006* for details.

### 3.5.3 WET WEATHER BYPASS AT THE STP

**Low Likelihood** – Bypass of the STP is extremely unlikely to occur. This is because the plant has the capacity to divert excess flow (during wet weather or during plant malfunction) to the stormwater detentions ponds. This is then returned back to the head of the works for treatment.

**High Impact** – The site has significant and advanced environmental protection measures and monitoring equipment which should alert operators to the incident well before there is potential for impact outside the site. Any pollutants which reach the nearby Talbragar and Macquarie Rivers could cause considerable harm to properties and environmental habitats for some distance downstream.

**Contributing Factors** – Increased risk during prolonged periods of heavy rain, lack of pond and site maintenance and/or a mechanical failure of plant and equipment.

### 3.5.4 DRY WEATHER BYPASS AT THE STP

**Low Likelihood** – Bypass of the STP is extremely unlikely to occur. This is because the plant has the capacity to divert excess flow during plant malfunction to the stormwater detentions ponds. This is then returned back to the head of the works for treatment.

**High Impact** – The site has significant and advanced environmental protection measures and monitoring equipment which should alert operators to the incident well before there is potential for impact outside the site. Any pollutants which reach the nearby Talbragar and Macquarie Rivers could cause considerable harm to properties and environmental habitats for some distance downstream.

**Contributing Factors** – lack of pond and site maintenance and/or a mechanical failure of plant and equipment.

### 3.5.5 POND FAILURE AT THE STP

**Low Likelihood** – The site has significant and advanced environmental protection measures and monitoring equipment which would alert operators to the incident.

**Low Impact** – The impact is considered to be low as any effluent inadvertently discharged into the neighbouring environment will have been at the very least partially treated, and during normal operating conditions the effluent would have been fully treated.

**Contributing Factors** -Increased risk during prolonged periods of heavy rain, lack of pond and site maintenance and/or a mechanical failure of plant and equipment.

### 3.5.6 MECHANICAL FAILURE AT THE STP RESULTS IN DISCHARGE OF UNTREATED SEWAGE

**Low Likelihood** – The site has significant and advanced environmental protection measures and monitoring equipment which would alert operators to the incident.

**High Impact** – The site has significant and advanced environmental protection measures and monitoring equipment which should alert operators to the incident well before there is potential for impact outside the site. Any pollutants which reach the nearby Talbragar and Macquarie Rivers could cause considerable harm to properties and environmental habitats for some distance downstream.

**Contributing Factors** -Fire damage or poor maintenance of plant and equipment. Prolonged periods of heavy rain.

### **3.5.7 MECHANICAL FAILURE AT THE STP RESULTS IN OFFENSIVE ODOUR FROM THE PREMISES**

**Low Likelihood** – The site has significant and advanced environmental protection measures and monitoring equipment which would alert operators to the incident. An unpleasant odour generated in the event of mechanical failure (such as failure of the UV system) can be readily controlled by operators manually applying appropriate chemicals to the effluent such as chlorine stored within the UV System building.

**Low Impact** –The impact is considered low as there are no close receptors to the site.

**Contributing Factors** -Fire damage or poor maintenance of plant and equipment.

### **3.5.8 INADEQUATE CHEMICAL STORAGE**

**Low Likelihood** – The storage of potential accelerants such as maintenance chemicals and fuels is undertaken on-site, however as these are located in secure and bunded facilities and only utilised by trained staff, the risk of chemical leaks and fire caused by chemicals is considered minimal.

**Medium Impact** – If a fire were to initiate within the chemical storage areas there is a medium risk of spread off-site and to susceptible surrounding cropping land and nearby residential properties.

**Contributing Factors** -Human error. Factors which may increase chemical fire risk include high winds, dry weather, prolonged periods of high temperatures and low humidity.

### **3.5.9 ACTS OF VANDALISM OR TARGET OF TERRORIST ACTIVITY**

**Low Likelihood** – The site is enclosed by secure fencing, protected by motion-censored lighting and monitored by CCTV. Although the site is of limited strategic value as a potential target for terrorism, the premises may prove attractive to arsonists as it is isolated from habited areas and stores and uses often highly combustible chemicals.

**Medium Impact** – the site is surrounded by a cropping land and there are nearby residential properties susceptible to fire.

**Contributing Factors** -Increased vandalism risk during hours of closure and increased fire risk during sustained periods of hot and dry weather.

### **3.5.10 DISCHARGE PIPELINE BREAKAGE**

**Low Likelihood** – The site has significant and advanced environmental protection measures and monitoring equipment which would alert operators to the incident.

**Low Impact** – The impact is considered to be low as any effluent inadvertently discharged into the neighbouring environment will have been at the very least partially treated, and during normal operating conditions the effluent would have been fully treated.

**Contributing Factors** – Poor maintenance of plant and equipment. Flows exceeding pipe and pump capacity.



### 3.5.11 EXCEED EPL DISCHARGE LIMITS TO THE MACQUARIE RIVER

**Low Likelihood** – The site has two detention ponds which are generally sufficient to hold excess sewage when the City of Dubbo experiences prolonged periods of heavy rain.

**Low Impact** – The impact on environmental habits and adjacent properties of the Macquarie River is considered to be low as the effluent discharged into the river will have been at the very least partially treated, and during normal operating conditions the effluent would have been fully treated.

**Contributing Factors** – Prolonged periods of heavy rain and mechanical failure of plant and equipment.

### 3.5.12 SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACT FROM IRRIGATION IN UTILISATION AREAS

**Low Likelihood** – The likelihood of significant adverse environmental impact is considered to be low as the effluent discharged and used for irrigation purposes at the utilisation areas will have been at the very least partially treated, and during normal operating conditions the effluent would have been fully treated.

**Low Impact** – The environmental impact is considered to be low as the effluent discharged and used for irrigation purposes at the utilisation areas will have been at the very least partially treated, and during normal operating conditions the effluent would have been fully treated.

**Contributing Factors** – Human error allowing the effluent to be discharged onto utilisation areas during inappropriate times when the land and farm animals are more susceptible to harm. Lack of control and/or monitoring. Prolonged periods of heavy rain.

# PIRMP

## 4.1 DEFINITION OF POLLUTION INCIDENT

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the *POEO Act 1997*:

- “(a) *harm to the environment is material if:*
- i) *it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
  - ii) *it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and*
- (b) *loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.”*

## 4.2 NOTIFICATION OF POLLUTION INCIDENT

### 4.2.1 NOTIFICATION SPEED OF RESPONSE

The requirement for notification of a pollution incident has changed from 'as soon as practicable' to 'immediately'. In short, 'immediately' means 'promptly without delay', but it does not mean undertaking notification ahead of doing what is necessary to make safe.

### 4.2.2 NOTIFICATION OF RELEVANT AUTHORITIES

If the pollution incident is a wet weather overflow, dry weather overflow, wet weather bypass or dry weather bypass procedures need to be followed in Council's *PRP 101 Incident Notification Protocol, August 2012*.

In all other pollution incident cases and where the pollution incident causes or threatens material harm to the environment or human health, all the following authorities must be notified by the Site Supervisor:

#### 1. Emergency Call Services

- Emergency Hotline Number (24 hours) 000\*

\*The Site Supervisor should call 000 if the incident presents an immediate threat to human health and/or property and a combat agency is required (i.e. NSW Fire and Rescue, NSW Ambulance Service, NSW Police Force) and then notify all other parties below including NSW Fire and Rescue via a local telephone number.

#### 2. Dubbo City Council

- Dubbo City Council Environmental Services 02 6801 4000  
(24 hour Emergency Hotline Number)

#### 3. The Environment Protection Authority (EPA)

- Dubbo Regional Office 02 6883 5330
- Emergency Hotline Number (24 hours) 131 555

**4. The Ministry of Health (via Public Health Units)**

- Dubbo Regional Office 02 6841 5569
- Public Health Officer on Call (24 hours) 0418 866 397

**5. WorkCover NSW**

- Hotline Number 13 10 50

**6. Fire and Rescue NSW**

- Dubbo Rural Fire Service 02 68813900\*\*

\*\*If there is no immediate threat to human health and/or property i.e. a combat agency is not required, then the site supervisor is still required to follow that outlined above except for dialling 000.

A summary of the above pollution incident notification procedure is provided in **Document A** – Pollution Incident Decision Flow Chart in **Appendix A**.

**4.2.3 INFORMATION TO BE NOTIFIED**

Under section 150 of the *POEO Act 1997*, the information about a pollution incident that must be notified to relevant authorities is:

- The time, date, nature, duration and location of the incident;
- The location of the place where pollution is occurring or is likely to occur;
- The nature, the estimated quantity or volume and the concentration of any pollutants involved, if known;
- The circumstances in which the incident occurred, including the cause of the incident, if known;
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known; and
- Other information prescribed by the regulations.

Notification is required by the Site Supervisor immediately after a pollution incident becomes known. Any information required that is not known at the time the incident is notified must be provided when it becomes known.

A Pollution Incident Reporting Form is produced in **Appendix A** to assist the Site Supervisor in correctly recording and notifying the relevant authorities as detailed in **Section 4.2.2** above.

**4.3 ACTIONS TO BE TAKEN DURING OR IMMEDIATELY AFTER A POLLUTION INCIDENT**

All site personnel with relevant training must make every effort to contain the pollution incident on site, without putting themselves at risk of harm.

In the case of a fire and where safe, attempts must be made to extinguish or contain the fire immediately. This could be through the use of a fire extinguisher or fire hose.

In the event of a chemical spill that is not contained by bunding, Spill Sorb (or similar) must be used to restrict the spread of the chemical.

## 4.4 MINIMISING HARM TO PERSONS ON THE PREMISES

In the event of a pollution incident occurring all site contractors and other Council staff will be mustered by Council site staff to the Emergency Assembly Point adjacent to the site entrance (identified on Site Plan **01A\_EV02**), after which they will be safely evacuated from site where appropriate. It is a condition of entry that in the event of an emergency, both site contractors and staff must adhere to directions given by the Site Supervisor.

## 4.5 EPA POWERS OF DIRECTION & NOTIFICATION OF NEIGHBOURS

Where the pollution incident causes or threatens material harm to the environment or human health, the EPA is notified in accordance with **Section 4.2**.

Once the EPA is notified, it is then for the EPA to determine whether commercial, industrial and residential neighbours of the site need to be contacted by Council and informed of the circumstances of the incident and what action is being taken in response to it. If deemed necessary, the EPA then has powers to formally direct Council to notify the neighbours of the site.

Irrespective of whether the EPA directs Council to notify neighbours and depending on the circumstances of the particular pollution incident, Council may at their own discretion voluntarily choose to notify neighbours.

Council would notify neighbours by making a telephone call to every neighbouring property of the STP as detailed in **Table 2.1** below and as identified on enclosed Site Plan **01A\_EV02**. A summary of the neighbour notification procedure is provided in **Document A – Pollution Incident Decision Flow Chart** in **Appendix A**.

**Table 2.1 – List of Neighbours to be Notified**

Contact Name	Property Address	Contact	Comments
T. Somerville	32 Boothenba Road	Tel: 0429 964 593	
T. Bye	33 Boothenba Road	N/A	Door Knock
Western Memorial Park	11 Boothenba Road	Tel: 02 6885 3340	
R. Holmes Transport	6 Boothenba Road	Tel: 02 6884 4866	
DCC Sale Yards	Boothenba Road	Tel: 041727 2844	
Neil's Parts	14 Boothenba Road	Tel: 02 6882 9699	
DCC Animal Shelter	189 Boothenba Road	Tel: 02 6882 1934	
Fletchers International	29 Boothenba Road	Tel: 02 6884 5833	
M. O'Brien's	5 Old Gilgandra Road	Tel: 02 6845 3089	
Bungaribee Homestead	Boothenba Road	N/A	Door Knock

## 4.6 IDENTIFICATION OF NEIGHBOURS

To assist the EPA in its decision as to whether it needs to direct Council to notify neighbours and to assist Council in visiting all the local neighbours, enclosed is aerial plan **01A\_EV02** which identifies the commercial, industrial and residential properties adjacent to the STP site boundary.

## 4.7 SEWAGE TREATMENT SYSTEM COUNCIL CONTACT DETAILS

The following Council officers are directly responsible for the overall management of the DSTS and, if considered necessary, can be contacted by relevant authorities in the event of a pollution incident:

- Stephen Carter, Water Operations Engineer, Dubbo City Council 0429 443 657
- Glen Clifford, Supervisor Treatment, Dubbo City Council 0400 435 542
- Paul Meredith, Supervisor Retic, Dubbo City Council 0419 217 887

# Implementation

## 5.1 STATUS OF THE PIRMP

The PIRMP and this Supporting Statement are standalone documents designed to assist personnel at the DSTS to correctly identify pollution incidents and detail the procedures for the response and reporting of a pollution incident. It complements and should be read in conjunction with *PRP 100 Sewer Overflow Investigations Report for the Dubbo Sewerage System, December 2006* and *PRP 101 Incident Notification Protocol, August 2012*.

## 5.2 STAFF TRAINING

New members of staff at the facility should be inducted. This induction must cover the purpose, requirements and responsibilities detailed in this PIRMP.

All staff should receive sufficient training to enable them to carry out their assigned duties in a competent and safe manner. In particular:

- Staff must be capable of using the fire-fighting equipment;
- Staff must be capable of identifying potential pollution incidents; and
- Staff must be familiar with the requirements and procedures contained within this PIRMP.

Staff competency will be monitored through audits, public complaints and pollution incident reports.

At least once every year staff should undertake a simulated pollution incident response exercise, including with emergency services, to familiarise site personnel with the requirements of this management plan. A register of staff training can be found in **Appendix A** and must be kept on site and updated regularly.

Regular site briefings and toolbox meetings should be held when considered appropriate to draw attention to potential pollution incidents and identify improvements to on-site safety procedures.

## 5.3 REVIEW AND UPDATE PIRMP

The PIRMP is a living document required to be reviewed and updated at least once every 12 months to ensure accuracy and effectiveness. A review must also be undertaken within one month of any pollution incident occurring.

For these reasons, document control is an important part of the environmental management system. It is critical that PIRMP storage locations are made known to all relevant staff members and that only the latest version is in use. Details of the version and date of issue are recorded on each page of the PIRMP in the bottom left hand corner.

Revised and updated versions of the PIRMP will always be issued with a covering memo summarising the changes. When a new PIRMP is received the old version is replaced in its entirety. A register for updating and testing the PIRMP can be found in **Appendix A** and must be kept on site and updated regularly.

Seven copies of any new PIRMP will need to be produced. They are to be distributed to the following:

- Water Operations Engineer, Dubbo City Council;
- Supervisor Treatment, Dubbo City Council;
- Supervisor Retic, Dubbo City Council;

- Manager Water Supply, Dubbo City Council;
- Technical Services Director, Dubbo City Council;
- Administration Manager, Dubbo City Council; and
- Geolyse Pty Ltd, Orange.

# References

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***Dubbo Local Environmental Plan 2011, November 2011*** - prepared by Dubbo City Council

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***Environmental Guidelines: Preparation of Pollution Incident Response Management Plans, March 2012*** – prepared by Environment Protection Agency

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***Environment Protection Licence 3850, 16 January 2012*** – prepared by Environment Protection Agency

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***Licensing Guidelines for Sewage Treatment Systems, July 2003*** – prepared by Environment Protection Agency

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***PRP 100 Sewer Overflow Investigations Report for the Dubbo Sewerage System – Final, December 2006*** – prepared by Dubbo City Council

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***PRP 101 Incident Notification Protocol – Version 2, August 2012*** – prepared by Dubbo City Council

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## **Drawings**

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# **Appendix A**

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## **POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN**

**POLLUTION INCIDENT RESPONSE  
MANAGEMENT PLAN**

DUBBO SEWAGE TREATMENT SYSTEM

PREPARED FOR:

**DUBBO CITY COUNCIL**

AUGUST 2012

<b>Report Title:</b>	<i>Pollution Incident Response Management Plan</i>
<b>Project:</b>	<i>Dubbo Sewage Treatment System</i>
<b>Client:</b>	<i>Dubbo City Council</i>
<b>Report Ref.:</b>	<i>212120_PIRMP_002_Dubbo_STP.docx</i>
<b>Status:</b>	<i>Final</i>
<b>Issued:</b>	<i>22 August 2012</i>

Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All information contained within this report is prepared for the exclusive use of Dubbo City Council to accompany this report for the land described herein and is not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

Geolyse Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from any person or entity using the plans or information in this study for purposes other than those stated above.

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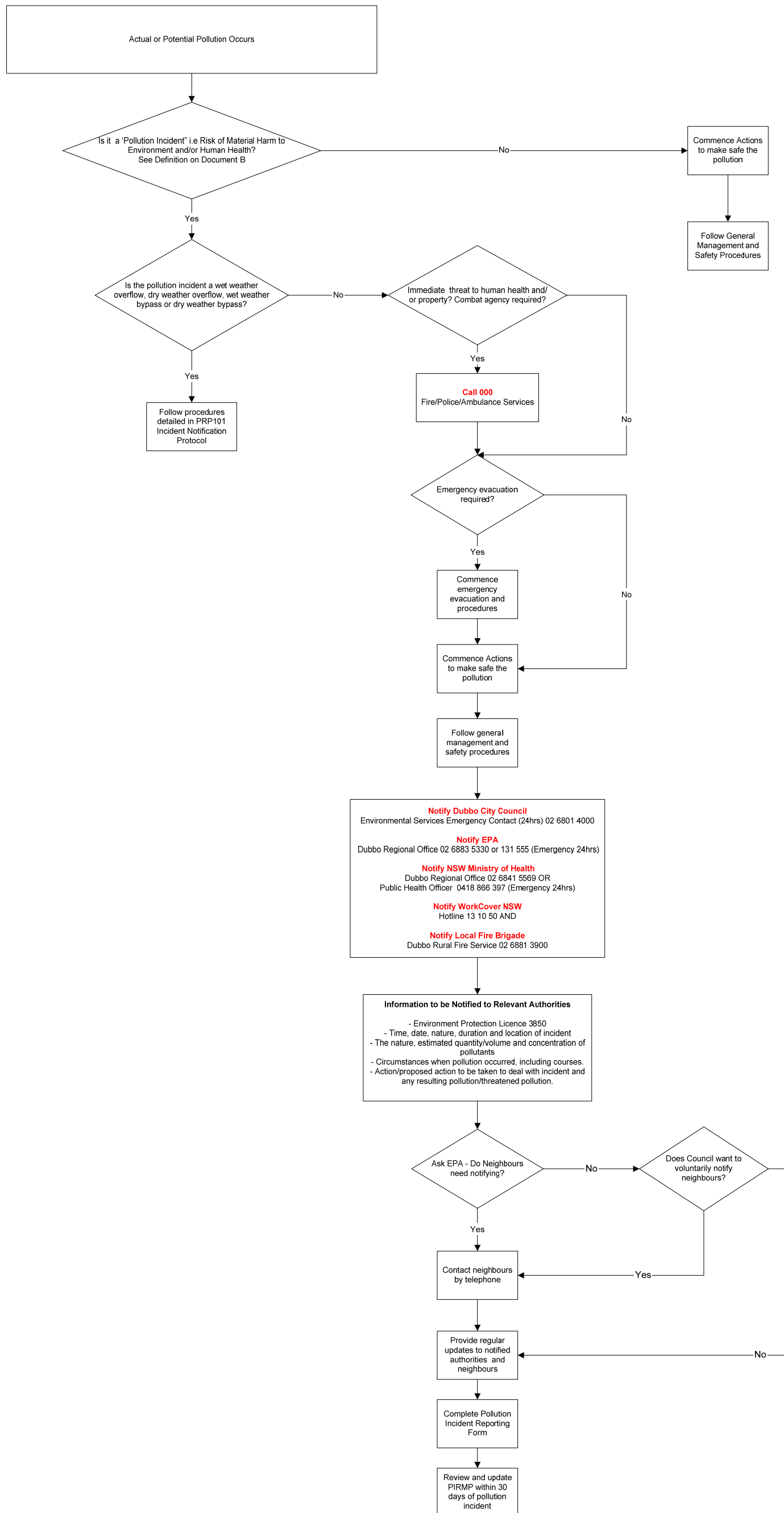
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## 1.0 POLLUTION INCIDENT CLASSIFICATION, RISK ASSESSMENT AND CONTRIBUTING FACTORS

**Table 1.1 – Pollution Incident Classification, Risk Assessment and Contributing Factors**

Description of Pollution Incident	Likelihood	Impact	Contributing Factors
Wet Weather Overflow from the reticulation system during wet weather.	refer to PRP 100 Sewer Overflow Investigations Report (Sections 5 & 7)	refer to PRP 100 Sewer Overflow Investigations Report (Section 6)	refer to PRP 100 Sewer Overflow Investigations Report (Section 5.1)
Dry Weather Overflow from the reticulation system during dry weather.	refer to PRP 100 Sewer Overflow Investigations Report (Sections 5 & 7)	refer to PRP 100 Sewer Overflow Investigations Report (Section 6)	refer to PRP 100 Sewer Overflow Investigations Report (Section 5.1)
Wet Weather Bypass at the sewage treatment plant (STP) and is when untreated sewage bypasses the sewage treatment process and discharges to the Macquarie River during wet weather.	Low	High	Prolonged periods of heavy rain, lack of pond and site maintenance and/or a mechanical failure of plant and equipment.
Dry Weather Bypass at the STP and is when untreated sewage bypasses the sewage treatment process and discharges to the Macquarie River during dry weather.	Low	High	Lack of pond and site maintenance and/or a mechanical failure of plant and equipment.
Pond failure at the STP;	Low	Low	Prolonged periods of heavy rain, lack of pond and site maintenance and/or a mechanical failure of plant and equipment.
Mechanical failure at the STP results in discharge of untreated sewage.	Low	High	Fire damage or poor maintenance of plant and equipment. Prolonged periods of heavy rain.
Mechanical failure at the STP results in offensive odour from the premises.	Low	Low	Fire damage or poor maintenance of plant and equipment.
Inadequate chemical storage.	Low	Medium	Human error. Chemical fire accelerated by high winds, dry weather, prolonged periods of high temperatures and low humidity.
Acts of vandalism or target of terrorist activity at the STP.	Low	Medium	Increased risk during hours of closure
Discharge pipeline breakage.	Low	Low	Poor maintenance of plant and equipment. Flows exceeding pipe and pump capacity
Exceed Environment Protection Licence (EPL) discharge limits to the Macquarie River.	Low	Low	Prolonged periods of heavy rain and mechanical failure of plant and equipment
Significant adverse environmental impact from irrigation in utilisation areas.	Low	Low	Human error. Lack of control and/or monitoring. Prolonged periods of heavy rain.

## 2.0 DOCUMENT A - POLLUTION INCIDENT DECISION FLOW CHART



## **3.0 DOCUMENT B – POLLUTION INCIDENT EMERGENCY CONTACT DETAILS**

### **3.1 DEFINITION OF POLLUTION INCIDENT**

A pollution incident is required to be notified if there is a risk of ‘material harm to the environment’, which is defined in section 147 of the *POEO Act 1997*:

- “(a) *harm to the environment is material if:*
- i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
  - ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, and*
- (b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.”*

### **3.2 NOTIFICATION OF POLLUTION INCIDENT**

#### **3.2.1 Notification Speed of Response**

The requirement for notification of a pollution incident has changed from ‘as soon as practicable’ to ‘immediately’. In short, ‘immediately’ means ‘promptly without delay’, but it does not mean undertaking notification ahead of doing what is necessary to make safe.

#### **3.2.2 Notification of Relevant Authorities**

If the pollution incident is a wet weather overflow, dry weather overflow, wet weather bypass or dry weather bypass procedures need to be followed in Council’s *PRP 101 Incident Notification Protocol, August 2012*.

In all other pollution incident cases and where the pollution incident causes or threatens material harm to the environment or human health, all the following authorities must be notified by the Site Supervisor:



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**Notification of Relevant Authorities**

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**1. Emergency Call Services**

- **Emergency Hotline Number (24 hours)** **000\***

\*The Site Supervisor should call 000 if the incident presents an immediate threat to human health and/or property and a combat agency is required (i.e. NSW Fire and Rescue, NSW Ambulance Service, NSW Police Force) and then notify all other parties below including NSW Fire and Rescue via a local telephone number.

**2. Dubbo City Council**

- Dubbo City Council Environmental Services (24 hour Emergency Hotline Number) 02 6801 4000

**3. The Environment Protection Authority (EPA)**

- Dubbo Regional Office 02 6883 5330
- Emergency Hotline Number (24 hours) 131 555

**4. NSW Ministry of Health (via Public Health Units)**

- Dubbo Regional Office 02 6841 5569
- Public Health Officer on Call (24 hours) 0418 866 397

**5. WorkCover NSW**

- Hotline Number 13 10 50

**6. Fire and Rescue NSW**

- Dubbo Rural Fire Service 02 6881 3900\*\*

If there is no immediate threat to human health and/or property i.e. a combat agency is not required, then the Site Supervisor is still required to follow that outlined above except for dialling 000.

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### 3.2.3 Information to be Notified

Under section 150 of the *POEO Act 1997*, the information about a pollution incident that must be notified to relevant authorities is:

- The time, date, nature, duration and location of the incident;
- The location of the place where pollution is occurring or is likely to occur;
- The nature, the estimated quantity or volume and the concentration of any pollutants involved, if known;
- The circumstances in which the incident occurred, including the cause of the incident, if known;
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known; and
- Other information prescribed by the regulations.

Notification is required by the Site Supervisor immediately after a pollution incident becomes known. Any information required that is not known at the time the incident is notified must be provided when it becomes known.

### 3.2.4 EPA Powers of Direction & Notification of Neighbours

Where the pollution incident causes or threatens material harm to the environment or human health, the EPA is notified in accordance with **Section 3.2.2**.

Once the EPA is notified, it is then for the EPA to determine whether commercial, industrial and residential neighbours of the site need to be contacted by Council and informed of the circumstances of the incident and what action is being taken in response to it. If deemed necessary, the EPA then has powers to formally direct Council to notify the neighbours of the site.

Irrespective of whether the EPA directs Council to notify neighbours and depending on the circumstances of the particular pollution incident, Council may at their own discretion voluntarily choose to notify neighbours.

Council would notify neighbours by making a telephone call to every neighbouring property of the STP as detailed in **Table 2.1** below and as identified on enclosed Site Plan **01A\_EV02**. A summary of the neighbour notification procedure is provided in **Document A – Pollution Incident Decision Flow Chart**.

**Table 2.1 – List of Neighbours to be Notified**

Contact Name	Property Address	Contact	Comments
T. Somerville	32 Boothenba Road	Tel: 0429 964 593	
T. Bye	33 Boothenba Road	N/A	Door Knock
Western Memorial Park	11 Boothenba Road	Tel: 02 6885 3340	
R. Holmes Transport	6 Boothenba Road	Tel: 02 6884 4866	
DCC Sale Yards	Boothenba Road	Tel: 041727 2844	
Neil's Parts	14 Boothenba Road	Tel: 02 6882 9699	
DCC Animal Shelter	189 Boothenba Road	Tel: 02 6882 1934	
Fletchers International	29 Boothenba Road	Tel: 02 6884 5833	
M. O'Brien's	5 Old Gilgandra Road	Tel: 02 6845 3089	
Bungaribee Homestead	Boothenba Road	N/A	Door Knock

### 3.2.5 Sewage Treatment System Council Contact Details

The following Council officers are directly responsible for the overall management of the DSTS and, if considered necessary, can be contacted by relevant authorities in the event of a pollution incident:

- Stephen Carter, Water Operations Engineer, Dubbo City Council                      0429 443 657
- Glen Clifford, Supervisor Treatment, Dubbo City Council                              0400 435 542
- Paul Meredith, Supervisor Retic, Dubbo City Council                                      0419 217 887

## 4.0 POLLUTION INCIDENT REPORTING FORM

INCIDENT No:	TIME:
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DATE:	DURATION OF INCIDENT:
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<b>NATURE OF INCIDENT:</b>

<b>WEATHER CONDITIONS:</b>

<b>THE LOCATION OF THE PLACE WHERE POLLUTION IS OCCURRING OR IS LIKELY TO OCCUR:</b>

<b>THE NATURE, THE ESTIMATED QUANTITY OR VOLUME AND THE CONCENTRATION OF ANY POLLUTANTS INVOLVED (IF KNOWN):</b>

<b>THE CIRCUMSTANCES IN WHICH THE INCIDENT OCCURRED, INCLUDING THE CAUSE OF THE INCIDENT (IF KNOWN):</b>

<b>THE CORRECTIVE ACTION TAKEN OR PROPOSED TO BE TAKEN TO DEAL WITH THE INCIDENT AND ANY RESULTING POLLUTION OR THREATENED POLLUTION (IF KNOWN):</b>

<b>HAS COUNCIL BEEN NOTIFIED?</b>	YES	NO
<b>HAS ENVIRONMENT PROTECTION AUTHORITY (EPA) BEEN NOTIFIED?</b>	YES	NO
<b>HAS NSW MINISTRY OF HEALTH (VIA PUBLIC HEALTH UNITS) BEEN NOTIFIED?</b>	YES	NO
<b>HAS WORKCOVER NSW BEEN NOTIFIED?</b>	YES	NO
<b>HAS LOCAL FIRE AND RESCUE NSW BEEN NOTIFIED?</b>	YES	NO

<b>HAS EPA DIRECTED COUNCIL TO NOTIFY NEIGHBOURS?</b>	YES	NO
<b>IF NOT, HAS COUNCIL VOLUNTARILY NOTIFIED NEIGHBOURS?</b>	YES	NO

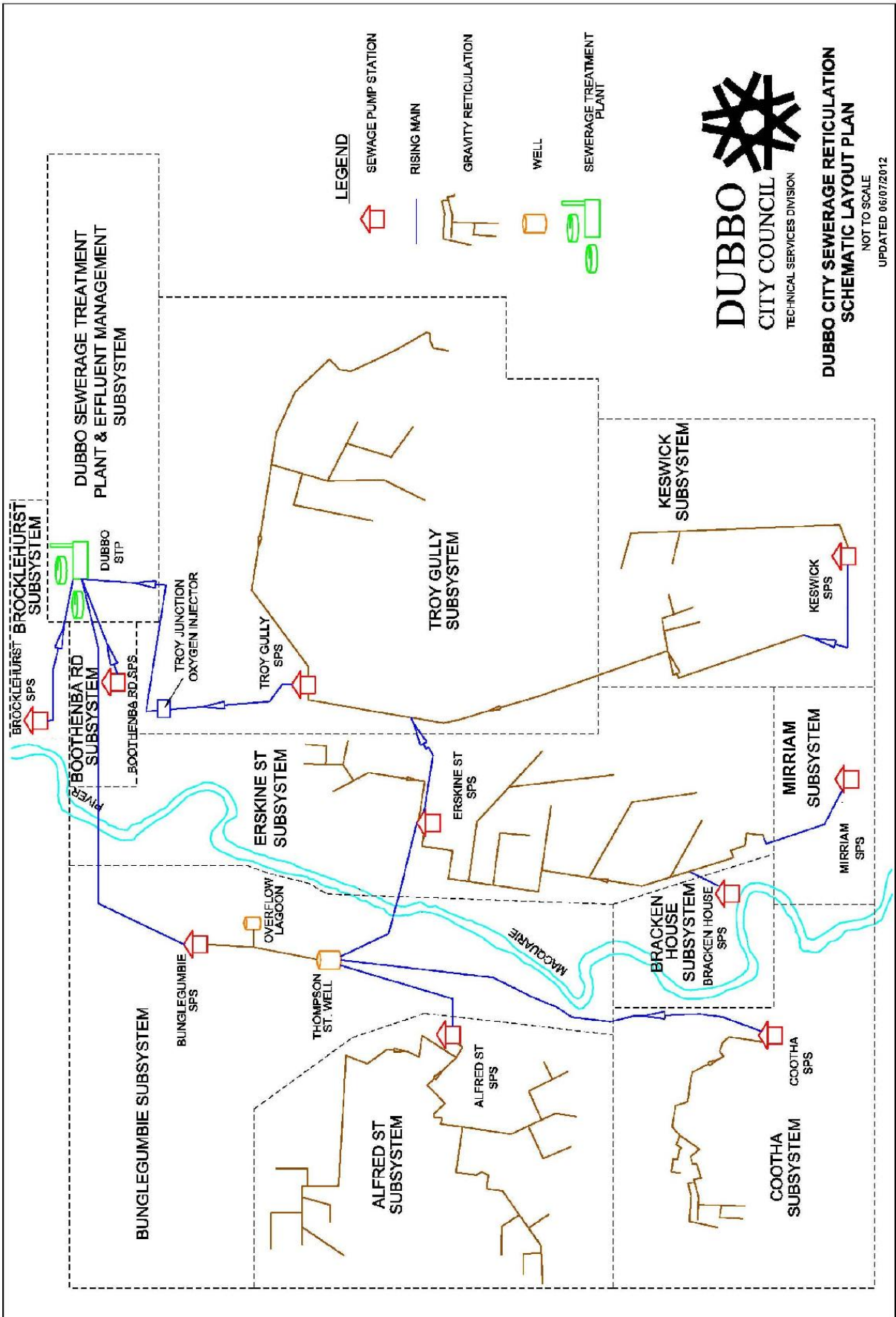
<b>Signature:</b> .....	<b>Date:</b> .....
<b>Site Supervisor, Dubbo City Council</b>	
<b>Signature:</b> .....	<b>Date:</b> .....
<b>Water Operations Engineer, Dubbo City Council</b>	

## 5.0 PIRMP TESTING & UPDATE REGISTER

Date	Routine Testing	Routine Update	Post Incident Updates	7 New Copies Distributed?



# Appendix C – Maps of Sewer Reticulation Network



**DUBBO CITY SEWERAGE RETICULATION SCHEMATIC LAYOUT PLAN**

NOT TO SCALE  
UPDATED 06/07/2012



# Appendix D – Environmental Aspects and Impacts Register

Dubbo City Council  
Water and Sewer Operations  
Environmental aspects and impacts register

Activity	Sub-activity	Comment / Observation	Aspect	Impact	Risk Scenario	Control Measures	Document Reference	Likelihood	Consequence	Risk Rating
Sewer reticulation			Accidental leaks and spills	Contamination of soil, land and water	Spill of untreated sewage from sewer choke (manhole overflow) near a sensitive receptor	Annual mains cleaning program Localised environmental controls (sand bags over stormwater drains) On the job training for reticulation personnel SOP for sewer overflows PIRMP developed to manage response to sewer overflows Reporting of overflows to EPA	OPSOP RET 005 OPSOP RET 125 OPSOP RET 135 PIRMP	4	2	Medium
			Contamination (soil)	Degradation of soil	Spill of untreated sewage from break in sewer main onto ground	Reticulation personnel trained in emergency response including use of sediment and erosion controls PIRMP developed to manage response to sewer main breaks Daily duties include inspections of infrastructure	OPSOP RET 125 OPSOP RET 135 PIRMP	4	1	Medium
			Odour nuisance	Odour	Blockage in system near vent causing odour complaints / pumping from sewer pump station into sewer mains generates odour that disturbs neighbours	CRM system manages complaints Chemical dosing at pump stations to reduce odour Daily / weekly duties include regular maintenance and cleaning Multiple SOPs for the inspection and repair of retic infrastructure - pipes, valves, hydrants Odour control beds / tanks at pump stations	Retic inspection and repair SOPs	4	1	Medium
Pump station and reticulation	Response to breakages	Reputational risk.	Housekeeping	Increased risk of environmental incidents	Inadequate staff resources to undertake maintenance / capital works program	Asset replacement program Asset register / condition assessment		4	2	Medium
Pump stations	Odour control		Accidental leaks and spills	Contamination of soil, land and water	Spill of bulk chemicals during delivery	Spill kit on truck Supply of sewage treatment chemicals in bulk Chemical unloading areas are hardstand		1	1	Low
	General operation		Accidental leaks and spills	Contamination of soil, land and water	Spill of untreated sewage from pump failure or overflow from the overflow tank	Designated overflow constructed at each pump station SCADA monitoring Storage capacity within overflow tanks EPA reporting Sewer overflow modelling and investigations Reporting to the EPA	Annual Returns SCADA SOP PIRMP	1	1	Low
			Noise nuisance	Noise pollution	Generation of noise from operation of pump or pump failure disturbs neighbours	Weekly inspection and cleaning program Cleaning SOP Confined space SOP	OPSOP DSTP 001 - Operational Duties OPSOP DSTP 002 - Weekly Operating Duties Cleaning SOP Confined space SOP	1	1	Low
Sewage Treatment Plant	General operation		Odour nuisance	Odour	Emission of odour from sludge lagoons and inlet structures	Maintenance and housekeeping Online odour monitoring Sealing of inlet structure with extraction fan and odour control unit Weekly hosing down of infrastructure Weekly plant performance testing Monthly cleaning program Constant removal of solids waste generated at STP	OPSOP DSTP 001 - Operational Duties OPSOP DSTP 002 - Weekly Operating Duties Multiple testing SOPs.	2	1	Low
	Solids removal	Approximately 3 x 2.5 m <sup>3</sup> skip bins (2 grit and 1 fibrous) removed from STP per week Dubbo landfill has extensive capacity to cope with STP waste	Waste (management)	Degradation of land	Generation of waste materials filling landfill	Biosolids beneficially reused where possible (e.g. at Greengrove farm)		1	1	Low
		Compliance issue with regard to discharge limits.	Accidental leaks and spills	Contamination (river)	Discharge of treated effluent to river exceeds licence limits	EPL limits SCADA monitoring PIRMP		3	1	Low

Activity	Sub-activity	Comment / Observation	Aspect	Impact	Risk Scenario	Control Measures	Document Reference	Likelihood	Consequence	Risk Rating
	Storage ponds		Accidental leaks and spills	Contamination of soil, land	Failure of storage pond banks releases treated effluent to retention basins	SCADA level control Daily visual inspection of banks Driving on pond walls generally prohibited to prevent damage to clay core Reporting to EPA in annual return	OPSOP DSTP 020 OPSOP DSTP 001 - Operational Duties	1	2	Low
	STP bypass/overflow		Contamination (river)	Degradation of river	Failure of sewage treatment operations results in bypass of plant and discharge of untreated effluent to storage pond	Daily duties include inspections of infrastructure PIRMP for response and notification of STP incidents 8 days storage in retention basins	OPSOP DSTP 001 OPSOP DSTP 550 PIRMP	1	3	Low
Chemical storage		Council to review chemical compatibility	Accidental leaks and spills	Contamination of soil, land and water	Inappropriate bunding of chemical storage shed results in spill of chemicals outside of storage	Shed secured Pallet bunds		2	1	Low
			Accidental leaks and spills	Contamination of soil, land and water	Spill of treatment chemicals due to hose failure during bulk delivery	Chemical delivery on hardstand No onsite stormwater Procedures for testing / calibrating chemical delivery methods Procedure for chemical handling / delivery management Procedures for spill response for all chemicals used SOP / SWMS PIRMP developed to manage response to any spills Spill kits on trucks	PIRMP New SOPs for upgraded STP to be included once developed	3	1	Low
			Accidental leaks and spills	Contamination of soil, land and water	Failure of chemical storage tank and bund results in spill	Drainage directed to retention basins Daily checks on STP equipment Procedures to respond to chemical spills	New SOPs for upgraded STP to be included once developed	1	1	Low
Biosolids	Storage		Accidental leaks and spills	Contamination of land	Rainfall deposits biosolids outside designated storage area	Biosolids stored on large hardstand area Biosolids storage area drains to retention basins		1	1	Low

## Risk Matrix

### Likelihood Descriptors

Category	Description
Almost Certain - 5	The risk scenario will occur in most instances and is unavoidable due to site activities. OR The risk scenario occurs in most instances.
Likely - 4	The risk scenario is likely to occur and is a consequence of site activities. OR The risk scenario occurs frequently.
Possible - 3	The risk scenario may occur. OR The risk scenario has occurred multiple times previously.
Unlikely - 2	The risk scenario is unlikely to occur and site activities may contribute to the risk scenario. OR The risk scenario has occurred once.
Rare - 1	The risk scenario will rarely occur and site activities do not normally contribute to the risk scenario. OR The risk scenario has never occurred.

### Consequence Descriptors

Category	Description	
	Environment	Reputation
Severe - 4	Critical long term environmental harm or catastrophic irreversible environmental harm. OR Major scale damage or loss in a medium sensitive environment, or large scale damage or loss in a highly sensitive environment.	Demand for government inquiry
Major - 3	Serious medium term environmental harm. OR Major scale damage or loss in a low sensitive environment, or large scale damage or loss in a medium sensitive environment, or moderate scale damage or loss in a highly sensitive environment.	Adverse and extended national media coverage
Moderate - 2	Significant short term environmental harm. OR Large scale damage or loss in a low sensitive environment, or moderate scale damage or loss in a medium sensitive environment, or minor scale damage or loss in a medium sensitive environment.	Adverse State media coverage
Minor - 1	Unreasonable short term impacts or interference with no lasting detrimental effects. OR Moderate scale damage or loss in a low sensitive environment, or minor scale damage or loss in a medium sensitive environment.	Adverse local media coverage only

### Risk Matrix

Likelihood	Consequence			
	Severe	Major	Moderate	Minor
Almost Certain 5	VH	H	H	M
Likely 4	H	H	M	M
Possible 3	H	M	M	L
Unlikely 2	M	M	M	L
Rare 1	M	L	L	L





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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
A	D. Scott M. Morton	A. Robinson	A. Robinson	A. Robinson	A. Robinson	17/07/15
B	D Scott	A. Robinson	A. Robinson	A. Robinson	A. Robinson	20/08/15
0	D. Scott	A. Robinson	A. Robinson	A. Robinson	A. Robinson	4/11/15
1	D. Scott	A. Robinson	A. Robinson	A. Robinson	A. Robinson	18/03/2016
2	D. Scott	A. Robinson		A. Robinson		19/04/2016

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