



OBERON SEWERAGE TREATMENT PLANT

Environmental Management System (EMS)

November 2023

Document Control

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V2.0	Beca Hunter H2O			

Forward

This Environmental Management System (EMS) has been prepared by Beca Hunter H2O together with Oberon Council.

This EMS has been prepared to conform to the international standard (as adopted by Australia) for Environmental Management Systems, AS/NZS ISO 14001:2016 (SAI Global Limited, 2016).

This document has also been prepared with reference to Environmental Management Systems Guidelines (NSW EPA, 2019); and Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004). However, it is worth noting the Guideline for the Preparation of Environmental Management Plans was based on the previous, now superseded version of ISO 14001.

Hunter H2O Document History and Status

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Environmental Policy

Oberon Council provides water, sewerage and trade waste services to a population of approximately 3,300 people, in the town of Oberon and surrounding villages, in New South Wales. Council is committed to providing these services in an environmentally responsible manner, and to a standard that exceeds government and customer expectations.

To achieve this aim Council will:

- Establish and maintain an Environmental Management System in accordance with the International Standard ISO 14001.
- Pro-actively manage the significant environmental impacts of Council’s operations and activities by preventing and reducing pollution.
- Regularly set and review environmental objectives and targets to achieve continuous improvement in our environmental performance.
- Communicate progress on environmental performance to the community, the Environment Protection Authority (EPA), industry and other stakeholders via an annual Environmental Report.
- Comply with relevant environmental laws and regulations and other requirements to which Council subscribes.
- Provide adequate training to all employees to ensure that they are aware of and committed to Council’s Environmental Policy and the requirements of the Environmental Management System.
- Require contractors to demonstrate awareness of Council’s Environmental Policy, and the requirements of the Environmental Management System.
- Integrate consideration of environmental factors into Council’s operations and activities.
- Display the Environmental Policy at all work places and make it available to the public.

General Manager

Date

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1 Introduction

Oberon Council own and operate Oberon Sewerage Treatment Plant (STP). Oberon Council has made a commitment to establish and maintain an environmental management system (EMS) for Oberon Sewerage Treatment Plant (STP) that conforms to the international standard (as adopted by Australia) for Environmental Management Systems, AS/NZS ISO 14001:2016 (SAI Global Limited, 2016).

This EMS outlines the core components of the Council's EMS and provides direction to enable staff to locate relevant EMS documentation such as procedures, registers and records.

This document is not a means to provide detailed information on environmental activities of the Council. It is a "road map" and reference document to guide the Council's staff in the implementation and operation of the EMS.

1.1 Aims of the EMS

Organisations of all kinds are increasingly concerned with achieving and demonstrating sound environmental performance by controlling the impact of their activities, products or services on the environment. They do so in the context of increasingly stringent legislation, the development of economic policies and other measures to foster environmental protection.

A means of achieving this performance is through the development of a structured management system commonly referred to as an Environmental Management System (EMS).

An EMS is a structured framework for identifying, evaluating and managing the environmental impacts of an organisation's operations and activities.

There is currently an International Standard for development of Environmental Management Systems approved for use in Australia by Standards Australia AS/NZS ISO 14001:2016 (SAI Global Limited, 2016). Note this document has superseded the previous international standards ISO 14001:2004 and ISO 14001:1996.

The primary aim of an EMS is to provide an organisation with a structured, integrated and systematic framework for:

- Protecting the environment by preventing or mitigating adverse environmental impacts
- Mitigating the potential adverse effect of environmental conditions on the organisation
- Assisting the organisation in the fulfilment of compliance obligations
- Enhancing environmental performance
- Controlling or influencing the way the organisation's products and services are designed, manufactured, distributed, consumed and disposed by using a life cycle perspective that can prevent environmental impacts from being unintentionally shifted elsewhere within the life cycle
- Achieving financial and operational benefits that can result from implementing environmentally sound alternatives that strengthen the organisations the organisation's market position
- Communicating environmental information to relevant parties

The EMS provides a framework to bring together, and supplement where necessary, the existing operational procedures and work practices of the organisation into a structured management system. The EMS is designed to formalise and link together these procedures and practices, and assist in setting priorities, allocation of resources and performance of daily work activities.

1.2 Key Reference Documents

This EMS has been prepared to document environmental monitoring and mitigation strategies associated with the aspects of the operations at Oberon STP. The EMS 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.

Documents that interconnect with this EMS are listed in Table 1-1. Reference documents are stored on the Council server.

Table 1-1 Reference Documents for this EMS

Document Title
Oberon Council Environmental Policy
Oberon STP EPL (No. 1644) (licence anniversary date of 1 April) (NSW EPA, 2015)
Oberon STP and Collection System Pollution Incident Response Management Plan (PIRMP) (Oberon Council, 2023) – Updated annually. Most recent update March 2023.
Standard Operating Procedures: Oberon Sewerage Treatment Plant (STP) (Oberon Council, 2023)
Standard Operating Procedure - Water: Receipt of Chemical Deliveries Doc No. S010 (Oberon Council, 2020)
Oberon STP Site Evacuation Plan (Chubb Fire & Security, 2021)

1.3 Implementation of a Successful EMS

Key factors in the development and implementation of an effective EMS are:

- Making the environment a key Council value
- Building environmental management into all aspects of Council's activities
- Ensuring the EMS is simple and understandable
- Involving staff at all levels in the development of the EMS to ensure it is well targeted and user-friendly for the people who must implement it.

The focus of the EMS is on continual improvement, which includes improving the system itself. Council should therefore look positively at any issues that are raised with the EMS and view these as opportunities for improvement.

1.4 Continuous Improvement Approach

The EMS approach underlying the international EMS standard (AS/NZS ISO 14001:2016) is based on the concept of Plan-Do-Check-Act (PDCA). The iterative process provided by the PDCA model enables continual improvement. The model can be applied to the environmental management system and to each of its comprising components, as described below:

PLAN Establish environmental objectives and processes necessary to delivery results in accordance with Council's environmental policy. This involves risk identification and assessment process where the environmental impacts are

identified and prioritised, then objectives, targets and programs for improvement are developed for implementation.

- DO** Implement the processes as planned. This involves putting in place procedures, controls, and work practices to address the environmental impacts that were identified in the planning phase.
- CHECK** Monitor and measure processes against the environmental policy. This involves monitoring the procedures and controls that have been implemented to ensure that the objectives and targets set in the planning phase are being met.
- ACT** Take actions to continually improve. This involves periodic review and auditing of the EMS to assess whether the system is being effective and make any necessary changes to ensure compliance with the EMS standard.

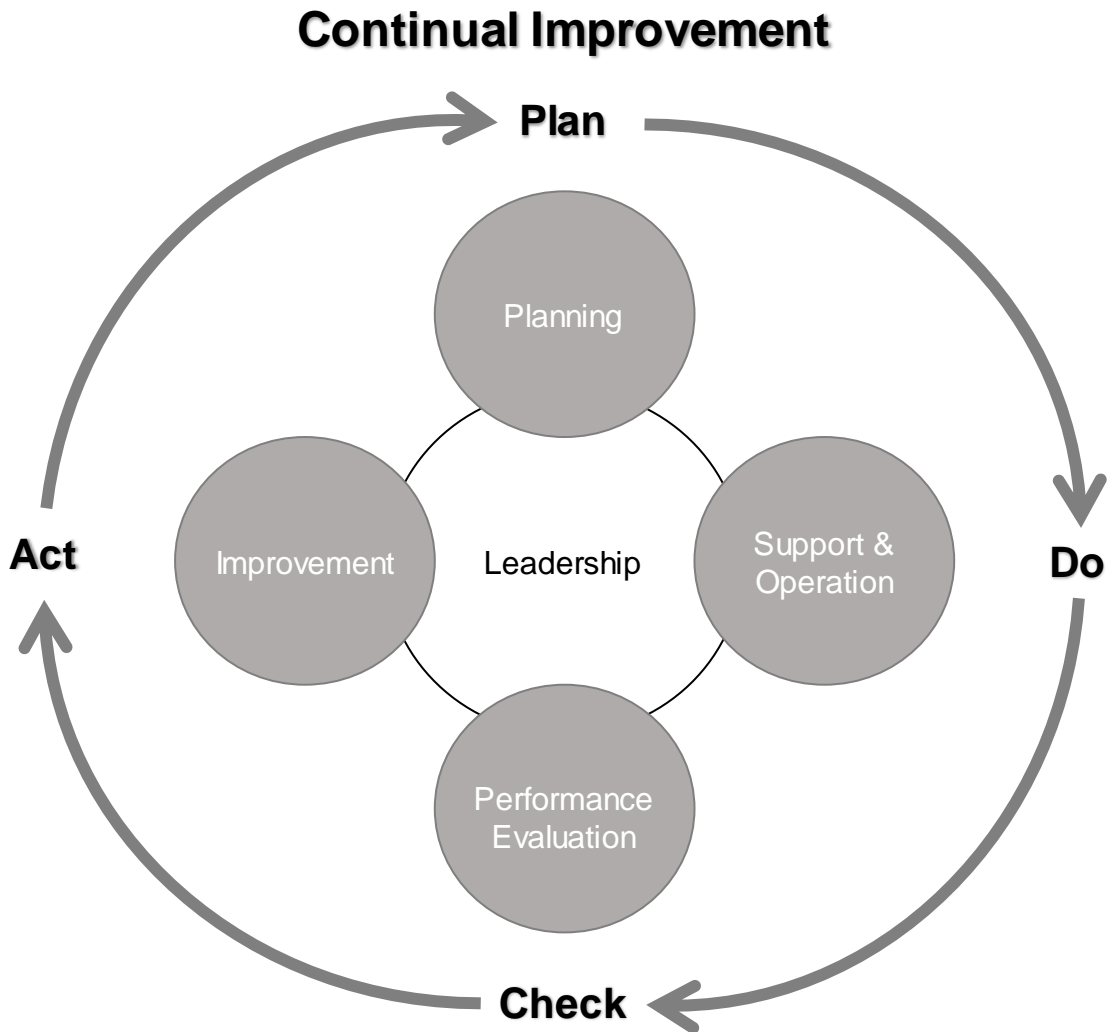


Figure 1-1 Relationship between the Plan-Do-Check-Act model and the EMS framework

1.5 Structure of this EMS Document

The international standard AS/NZS ISO 14001:2016 requires the EMS to include documented information as required by the standard, as well as, documented information determined by the organisation as being necessary for the effectiveness of the environmental management system.

The structure of this EMS is based on these requirements, the key components are:

- Background and Context
- Environmental Objectives & Compliance Obligations
- Environmental Operational Processes, Controls and Monitoring, including
 - Emergency Preparedness and Response
- Environmental Hazard Assessment, including
 - Identification of Environmental Aspects, Hazards and Assessment of Impacts
 - Determination of Significant Environmental Aspects
 - Identifications of Risk & Opportunities
- Environmental Competence and Training
- Internal and External Communication
- Performance Evaluation and Auditing
- Improvement Plan

2 Background and Context

2.1 Scope of this EMS

The scope of this EMS covers Oberon STP including activities undertaken and products produced onsite. Oberon Council (Council) are the organisation that own and operate Oberon STP.

2.2 STP Site Background

2.2.1 Site Location

Oberon STP provides sewerage treatment for sewerage collected from the Oberon township. The STP site is located off Fairfax Street, to the South East of the main Oberon township (Figure 2-1).



Figure 2-1 Location of Oberon STP

Key features of the STP site include:

- The site is surrounded by farm land
- Access to Oberon STP is via Fairfax Street within a residential area
- The site is bordered to south east by Fish River, the effluent ponds are located close by this natural waterway
- The plant boundary is approximately 250 m from the closest residential property

- Residual areas are to the west/north of the STP site
- Trees to the south/west of the main STP infrastructure are used for screening, reducing the risk of visual amenity issues arising in the township.

2.2.2 Site Services

Site Drainage

There is no dedicated site drainage.

The site is sloped such that run off for the main STP area is collected into sludge lagoon 1. Behind sludge lagoon 1 is old drainage channel which will direct drainage to effluent pond 1. This channel is not currently maintained (has long grass growing).

There is no dedicated drainage for the biosolids drying area, run off drains to effluent pond 2. However, the drying bed is surrounded by a soil embankment to minimise run off, biosolids are known to dry quickly and use of the drying area is infrequent (once very >3 years).

Site Amenities

The onsite amenities /office / laboratory building is located adjacent to the sedimentation tanks.

Site Sewerage

Site sewerage is fed into the treatment plant and treated onsite with the rest of the town sewerage.

Service Water System

Potable water is utilised onsite as service water.

Potable Water Supply

Potable water is supplied by the potable water network via a break tank.

2.2.3 Operations Staff

Oberon STP is generally serviced by two (2) full-time operators. A third operator (trainee) will commence training and working on a full-time basis in Jan 2024.

Typical serviced hours at the STP are weekdays 06:45 to 16:00. An operator is on call 24-7 for emergency situations. The operator on-call alternates between the operations staff on a weekly basis.

2.2.4 Process Description

The STP is a convention trickling filter plant. Oberon STP was constructed in 1965 with the last major capacity upgrade at the plant was completed in 1988. The plant is estimated to have an average dry weather flow of 1,160 kL/d.

Sewerage generated within Oberon STP serviced area is collected by pump stations and discharged to the STP mostly via gravity mains. Sewerage pump station No.1, located to the north-west of the plant (Figure 2-1), pumps directly to the plant.

The STP does currently accept septic waste.

Oberon STP includes the following key processes:

- A balance (equalisation) tank
- Inlet works with grit channel, flow measuring flume and mechanical spiral screen
- Two (2) sedimentation tanks (2,600 EP)

- Two (2) trickling filters (3,800 EP)
- One (1) “aeration” (alum mixing) tank
- One (1) clarifier (6,000 EP)
- Two (2) sludge digesters (4,000 EP)
- Alum dosing facility
- Three (3) sludge lagoons (7,000 EP) with supernatant return pumping station
- Sludge drying bed (1,000 EP)
- Four (4) effluent ponds
- Solar powered chlorine dosing unit at Effluent Pond 2 (used seasonally as required).

A description of the treatment process is provided below.

Raw sewerage from Oberon STP service area and accepted septic waste enters the STP through a balance (equalisation) tank. The balance tank acts to balance inflows and so as not to overload the treatment processes during times of high flow. Wet weather flows in excess of the capacity of the plant are bypassed to the maturation (effluent) ponds.

Sewerage from the balance tank is fed into the inlet works where the sewerage is screened and de-gritted. A flow measuring flume located between the grit channel and screen, measures the inflow to be treated by the plant as per licence conditions.

The screened and de-gritted sewerage is then directed to two sedimentation tanks and onto two trickling filters operating in parallel. These units provide primary sedimentation and secondary biological treatment.

Treated sewerage from the trickling filters is transferred via gravity to the “aeration” tank. There is no aeration equipment within the tank, however as the effluent from the trickling filter is gravity fed to the “aeration” tank it draws air with it which creates a gentle mixing effect. Liquid alum is dosed to the “aeration” tank for chemical phosphorus removal. From the “aeration” tank effluent flows under gravity to the clarifier for secondary clarification.

There are two anaerobic digesters providing primary and secondary digestion. Solids collected in the bottom of the primary sedimentation tanks are transferred to the aerobic digesters. Secondary sludge collected in the clarifier is pumped back to the head of works (balance tank) or, at regular intervals throughout the day, wasted to the anaerobic digesters.

Once digested, the wasted sludge is transferred to the sludge lagoon 1 for further stabilisation. Supernatant from sludge lagoon 1 overflows into sludge lagoon 2. Sludge lagoon 2 supernatant overflows in the sludge lagoon 3. Supernatant from sludge lagoon 3 overflows into a collection pit, supernatant in the collection pit is pumped to the balance tank.

After a stabilisation period of at least two-three months, sludge from sludge lagoon 1 is transferred to the sludge drying area for further drying. The sludge drying area is surrounded by a soil embankment to prevent run off entering the drying area. There is no dedicated subnatant return associated with the drying area.

Biosolids is excavated using suitable hired equipment and transported to Council’s waste facility by Council using suitably equipped trucks.

Grit and screenings produced from the process are dried on raised beds in the grit and screenings drying area (2-3 days drying) and then taken to the waste facility for disposal.

Treated effluent from the clarifier transferred to four maturation (effluent) ponds which act in series. Effluent detention allows for natural UV disinfection to occur via sunlight. Typically effluent runs though all four ponds in series, providing approximately 20 days of detention time, before discharge to Fish River through the main licenced discharge point (Figure 3-1).

As the warm weather approaches, discharge may be manually enabled from Ponds 1 and 2 to Fish Creek through an alternative discharge point (Figure 3-1). This is enabled to avoid effluent

water quality issues associated with algae growth in Ponds 3 and 4. A solar power chlorine dosing unit has been installed at Effluent Pond 2 and is used seasonally as required to disinfect effluent before discharge to the alternative discharge point.

Treated effluent has been licenced for discharge into Fish River.

In rare cases where the wet weather flows are greater than the process design capacity, the balance tank overflows to effluent pond 1.

The SPS1 is fitted with telemetry that monitors the system and provides alarming to the STP.

A process flow diagram and site layout of Oberon STP are provided in Figure 2-2 and Figure 2-3.

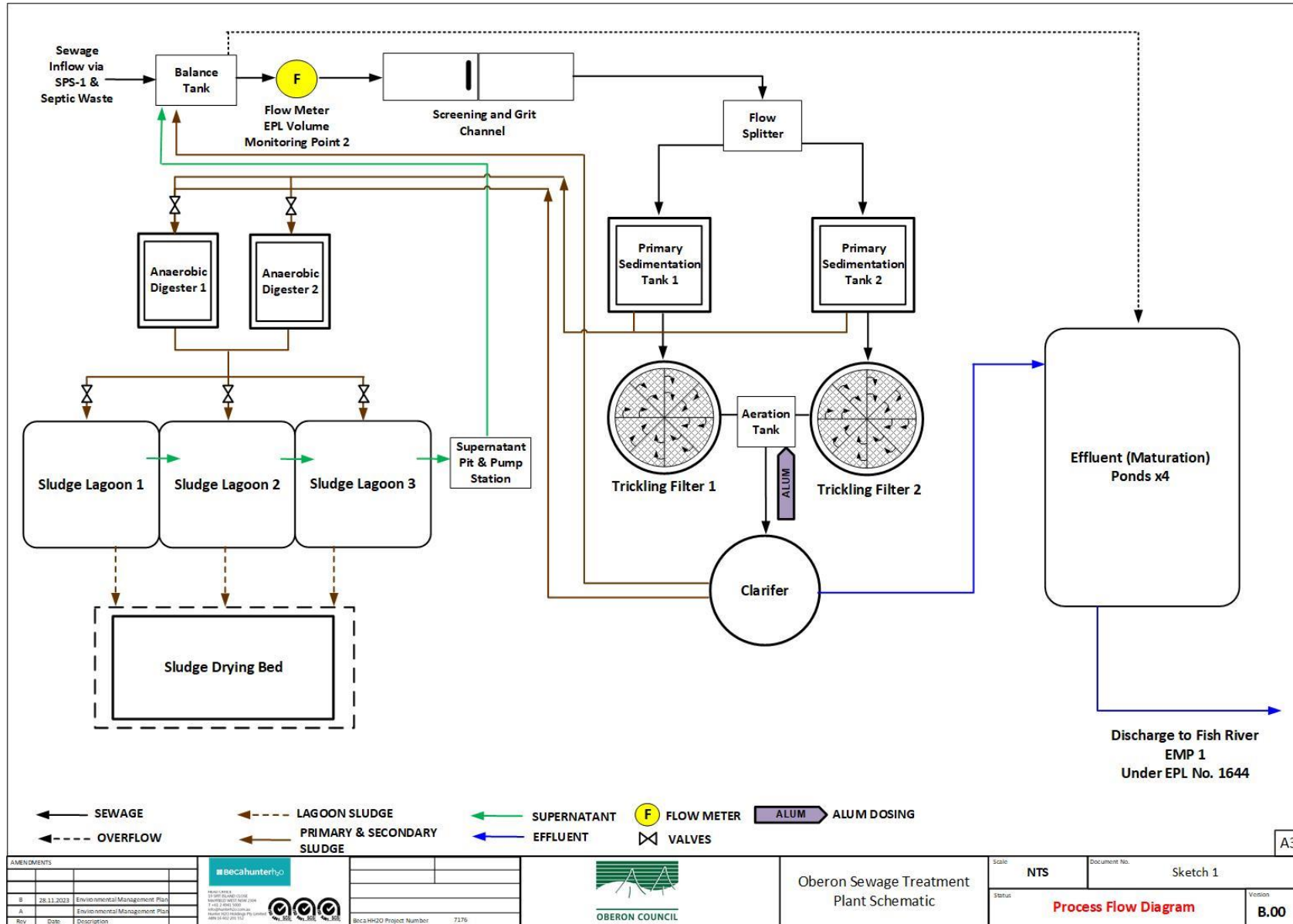


Figure 2-2: Oberon STP Process Flow Diagram



Figure 2-3 Oberon STP Site Layout

2.2.5 Chemical Stored Onsite

The PIRMP contains a list of chemicals and chemicals stored onsite. This information includes the amount stored and use of the chemicals.

Hard copies of current Safety Data Sheets (SDS) for each chemical stored onsite are kept in a folder in the STP office.

2.2.6 Planned Sewerage Treatment Plant (STP) Renewal

An STP renewal project is currently underway. This project will include the replacement of the existing STP with a new STP process. The location earmarked for the new STP infrastructure is adjacent to the existing sludge drying beds (location is labelled in Figure 2-3).

The proposed delivery timeframe for the new STP is in the next 3-5 years (i.e. planned delivery between 2026 and 2028). Council is planning to go to tender for construction before the end of 2023.

3 Environmental Objectives & Compliance Obligations

3.1 Environmental Policy

The Environmental Policy sets the broad directions and commitments made by Council's executive management in relation to environmental performance and compliance with legal requirements. The policy is the driver for implementation of the EMS.

Council's current Environmental Policy forms a key component of this EMS and is included as the first page in this document. The environmental policy is to be displayed at Head Office and each depot, and communicated by management to all staff. The Environmental Policy shall also be made available to the public.

3.2 Compliance Obligations

3.2.1 Protection of Environment Operators (POEO) Act 1997 (NSW)

Protection of the environment throughout NSW is governed by the *Protection of Environment Operations (POEO) Act 1997 (NSW)* which became effective on 1 July 1999.

The POEO Act provides that the EPA is the Appropriate Regulatory Authority (ARA) for most activities, unless noted otherwise.

Chapter 5 of the POEO Act deals specifically with environment protection offences and the penalties that may be incurred. There are three classifications (Tiers) of offences:

1. Tier 1 offences are the most serious, including the wilful or negligent disposal of waste causing or likely to cause harm to the environment, or wilfully or negligently causing a substance to leak, spill or otherwise escape;
2. Tier 2 offences are other offences under the Act or regulations, including water, air and noise pollution; and
3. Tier 3 offences are Tier 2 type offences which may be dealt with by way of penalty notices and fines.

With the possibility of significant penalties and imprisonment terms for some offences under the POEO Act, it is prudent for organisations to develop environmental disaster response plans and/or environmental management plans to address the possibility of any potential problems which may contravene the Act and any licences held under the Act. The existence of such plans is not an automatic defence against liability under the POEO Act, although it may be considered as evidence of due diligence during prosecution or penalty determination.

Organisations also need to be aware of their responsibility regarding the notification of pollution incidents under the POEO Act, as summarised in Attachment 1 of this appendix. Failure to adequately notify the appropriate regulatory authority of certain pollution events is an offence under the Act.

Further information about the Act can be obtained from the EPA website

<https://www.epa.nsw.gov.au/licensing-and-regulation/legislation-and-compliance/about-the-poeo-act>

3.2.2 Environment Protection Licence (EPL)

Oberon STP operates under an Environment Protection Licence, Number 1644, which is issued by the NSW EPA under the provision of Section 55 of the POEO Act.

Effluent quality limitations for discharge into Fish River are stipulated in Oberon STP’s Environmental Protection Licence (EPL) (No. 1644, licence anniversary date of 01 April, version date 22 May 2015).

Effluent discharge to Fish River is limited to 3000 kL per day.

Effluent discharge load limits for assessable pollutants have been summarised in Table 3-1.

Table 3-1 Effluent Pollutant Load Limits Under EPL No. 1644.

Pollutant	Unit	Load Limit
Biological Oxygen Demand (BOD)	kg	1950.00
Nitrogen (total)	kg	4750.00
Oil and Grease	kg	1150.00
Phosphorus (total)	kg	1200.00
Total Suspended Solids	kg	6150.00

Effluent quality limits for discharge into the river are summarised in Table 3-2.

Table 3-2 Effluent Quality Limits (for EPA Point 1,5,6) Under EPL No. 1644.

Pollutant	Units	50 Percentile Concentration Limit	80 Percentile Concentration Limit	90 Percentile Concentration Limit	100 Percentile Concentration Limit
EPA Points 1,5,6					
Biological Oxygen Demand (BOD)	mg/L	15	-	20	30
Faecal Coliforms	CFU/100mL	-	200	-	600
Nitrogen (total)	mg/L	-	-	15	20
Oil & Grease	mg/L	-	-	-	10
pH	pH	-	-	-	6.5-8.5
Phosphorous (total)	mg/L	-	-	1	2
Total Suspended Solids (TSS)	mg/L	20	-	25	30
EPA Point 6					
Chlorine (total residual)	mg/L	-	-	-	0.5

Reference: Oberon STP EPL (No. 1644) (NSW EPA, 2015)

Six EPA monitoring points (EMPs) are specified in the Oberon STP EPL. The location of EPA monitoring points are labelled in Figure 3-1.



Figure 3-1 Location of Oberon STP EPA monitoring points (EMP) 1-6.

Point 1 is located at the main effluent discharge point from Effluent Pond 4 to Fish River. Effluent discharge at this point through a pipeline. Effluent quality monitoring is undertaken at this point.

Point 2 is located at the inlet of the plant and is used for total volume monitoring.

Points 3 and 4 are located upstream and downstream of the main discharge point (EPA point 1), respectively. These points are used for environmental monitoring.

Point 5 is marked as alternative discharge point from Effluent Pond 3 to Fish River. This alternative discharge point is labelled onsite by signage but is not currently in use. Future use of this alternative discharge point would require discharge infrastructure be established onsite (there is currently no discharge pipeline from Effluent Pond 3 to this point). Effluent quality monitoring would need to be undertaken at this point if discharge resumed.

Point 6 is located at the alternative discharge point from Effluent Pond 2 to Fish River. Discharge from Pond 2 to Fish River is via a channel with a gate shut off valve. The stem piece for the shut off valve is kept in the STP office to mitigate risk of accidental discharge through the alternative point.

Effluent quality monitoring at points 1, 5 and 6 is required during discharge.

Photos of the onsite signage erected at discharge and monitoring locations of Points 5 and 6 have been provided below.



Figure 3-2 Photos of the Oberon STP EPA Monitoring Points. Left: EPA Discharge and Sample Point 5 (the main effluent discharge point); Centre: EPA Discharge Point 6 (the alternative discharge point – not in use) with the solar powered chlorine dosing system for seasonal disinfection of effluent from Effluent Pond 2 also captured; Right: EPA Sampling Point 6 (the sampling site for the alternative discharge – not in use).

The frequency of monitoring required at each monitoring point are summarised in Table 3-3.

Table 3-3 Monitoring Required for Each EPA Monitoring Point Under EPL No. 1644

Parameter	POINT 1,5	POINT 3	POINT 4	POINT 6
Biological Oxygen Demand (BOD)	Monthly*	-	-	Monthly*
Faecal Coliforms	Monthly*	-	-	Monthly*
Nitrogen (ammonia)	Monthly*	-	-	Monthly*
Nitrogen (total)	Monthly*	Monthly ⁺	Monthly ⁺	Monthly*
Nitrogen (ammonia)	Monthly*	-	-	Monthly*
Oil and Grease	Monthly*	-	-	Monthly*
pH	Monthly*	Monthly ⁺	Monthly ⁺	Monthly*
Phosphorous (total)	Monthly*	Monthly ⁺	Monthly ⁺	Monthly*
Total Suspended Solids (TSS)	Monthly*	-	-	Monthly*

* During discharge

+ Minimum frequency every 4 weeks

Reference: Oberon STP EPL (No. 1644) (NSW EPA, 2015)

3.2.3 Other Key Legislations and Guidelines

Sewerage activities are operated under the legislation, licences and guidelines. These legislation, licences and guidelines along with the corresponding authority are summarised in Table 3-4.

Note that while relevant legislation and its implications are broadly summarised in this document, this should not be used as a substitute for the legislation or legal advice. It will be the responsibility of Council, and their nominated contractors, to ensure that the relevant provisions of the following legislation and guidelines are complied with when carrying out work. This EMS document will need to be updated to reflect any legislative changes.

Table 3-4 Key Legislations and Guidelines.

Environmental Aspect	Title	Applicability	Interested Party / Authority
General	Environmental Planning and Assessment Act 1979 (NSW Government, 1979)	Assessment of proposed operation of scheme	NSW Department of Planning and Environment (DPE)
	Environmental Planning and Assessment Regulation 2021 (NSW Government, 2021)	Assessment of proposed operation of scheme	DPE
	State Environmental Planning Policy (Infrastructure) 2007 (NSW Government, 2007)	Any new assessment of proposed operation of scheme	DPE
	State Environmental Planning Policy (Biodiversity & Conservation) 2021 (NSW Government, 2021)	Any new assessment of proposed operation of scheme	DPE
Approvals	Local Government Act 1993 (S60) (NSW Government, 1993)	Approval to operate sewerage scheme	DPE
	Protection of the Environment Operations Act 1997 (NSW Government, 1997)	Licensing of the scheme and any variations to the existing licence Operational conditions (i.e. load limits and monitoring) for the operation of the scheme	NSW Environment Protection Authority (NSW EPA)
	Protection of the Environment Operations (General) Regulation 2022	Administration of environment protection licences	NSW EPA
Monitoring	Approved Methods for Sampling and Analysis of Water Pollutants in New South Wales (NSW EPA, 2004)	The Oberon STP is required to sample and analyse the quality of treated wastewater discharged to waterways.	NSW EPA
Discharge Licence	Oberon STP EPL (No. 1633) (NSW EPA, 2015)	The Oberon STP undertakes the fee based activity Sewerage treatment processing by small plants. The licence covers the sewer reticulation, discharge of treated effluent to	NSW EPA

		Fish River and production and onsite management / storage of biosolids	
	Load Calculation Protocol (EPA, June 2009)	For use by holders of NSW environment protection licences when calculating assessable pollutant loads	NSW EPA
	Guideline: Pollution Incident Response Management Plans (EPA, 2022)	This guideline provides assistance to holders of an environment protection licence to comply with their pollution incident response management plan (PIRMP) obligations. It sets out the requirements for preparing, keeping, testing and implementing PIRMPs under the Protection of the Environment Operations Act 1997	NSW EPA
Biosolids Reuse / Disposal	Environmental Guideline – Use and Disposal of Biosolids, NSW EPA 1997 (NSW EPA, 1997)	Biosolids must be classified prior to disposal / application to land in accordance with the guidelines	NSW EPA
Erosion / Sediment Control	Soil Conservation Act (NSW Government, 1938)	Soil erosion and sediment control at STP site	DPE
Waste	Waste Avoidance and Resource Recovery Act 2001 (NSW Government, 2001)	Waste handling on STP site	NSW EPA
	Protection of the Environment Operations Act 1997 (NSW Government, 1997)	Pollution prevention for STP	NSW EPA
Noise	Protection of the Environment Operations (Noise Control) Regulation 2017 (NSW Government, 2017)	Equipment noise from raw sewerage reticulation system, SPS and STP	NSW EPA
	Noise Policy for Industry 2017 (NSW EPA, 2017)	Equipment noise from raw sewerage reticulation system, SPS and STP	NSW EPA

Air Quality	Protection of the Environment Operations Act 1997 (NSW Government, 1997)	Odours from raw sewerage reticulation system, SPS and STP	NSW EPA
Work Health and Safety (WHS)	Workplace Health and Safety Act 2011 (NSW Government, 2011)	Employee work health and safety	SafeWork NSW
	Workplace Health and Safety Regulation 2017 (NSW Government, 2011)	Employee work health and safety	SafeWork NSW
Public Health	Public Health Act 2010 (NSW Government, 2010)	Employee / public safety	NSW Ministry of Health (NSW Health)
	Public Health (General) Regulation 2022 (NSW Government, 2022)	Employee / public safety	NSW Health

3.3 Environmental Objectives

A requirement of the development of an EMS is the establishment of Environmental Objectives. The following Environmental Objectives, as per the Environmental Policy have been agreed by Council:

- Establish and maintain an Environmental Management System in accordance with the current International Standard ISO 14001 Environmental Management Systems – Requirements with guidance for use.
- Pro-actively manage the significant environmental impacts of Council's operations and activities by preventing and reducing pollution.
- Regularly set and review environmental objectives and targets to achieve continuous improvement in our environmental performance.
- Communicate progress on environmental performance to the community, the Environment Protection Authority (EPA), industry and other stakeholders via an annual Environmental Report.
- Comply with relevant environmental laws and regulations and other requirements to which Council subscribes.
- Provide adequate training to all employees to ensure that they are aware of and committed to Council's Environmental Policy and the requirements of the Environmental Management System.
- Require contractors to demonstrate awareness of Council's Environmental Policy, and the requirements of the Environmental Management System.
- Integrate consideration of environmental factors into Council's operations and activities.
- Display the Environmental Policy at all work places and make it available to the public.
- Meet all compliance obligations, including those associated with the POEO Act.

These Environmental objectives have been developed based on the Environmental Policy, with the last objective developed to meet the ISO14001 requirements for meeting compliance obligations.

4 Environmental Operational Processes, Controls and Monitoring

4.1 Environmental Controls, Practices and Procedures

The following practices and procedures are established as environmental controls at Oberon STP.

Table 4-1 List of Procedures & Practices at Oberon STP as Environmental Controls

Procedure/Practice Description	Document Title	Location of Document/s
<ul style="list-style-type: none"> ▪ Site Inspections/Checks (daily, weekly) ▪ Plant Maintenance Activities (daily, weekly, monthly) ▪ Sampling & Testing (daily, weekly, monthly) ▪ Results recorded on sewer spreadsheet ▪ Vegetation Management Activities 	Standard Operating Procedures: Oberon Sewerage Treatment Plant (STP)	Council Server
<ul style="list-style-type: none"> ▪ Procedure for Chemical Deliveries (used both for the water treatment plant and sewerage treatment plan) 	Standard Operating Procedure - Water: Receipt of Chemical Deliveries Doc No. S010	Council Server

4.2 Monitoring

4.2.1 Effluent Monitoring

The effluent monitoring program follows the requirements of the Oberon STP's Environment Protection Licence No. 1644 (NSW EPA, 2015).

The EPL monitoring requirements are detailed in Section 3.2.1.

Samples required for EPL monitoring are sent to Australian Laboratory Services (ALS) for testing.

Forensic and Analytical Science Services (FASS) microbiological testing is undertaken weekly.

Data is recorded in a data spreadsheet titled "Sewer Spreadsheet" and stored on the Council server (as per the *Standard Operating Procedures – Oberon Sewerage Treatment Plant (STP)*).

4.2.2 Operational Monitoring

Operational sampling and testing is undertaken as per the *Standard Operating Procedures – Oberon Sewerage Treatment Plant (STP)*. These results are recorded on the sewer spreadsheet in accordance with the required fields and procedure.

As of the time of writing this sampling includes the following. Please refer to the *Standard Operating Procedures – Oberon Sewerage Treatment Plant (STP)* for the current list.

Daily Testing /Checks (~08:30):

- Measure pH and Temperature in
 - Balance tank
 - Sedimentation (Sed) tanks
 - Trickling filters
 - "Aeration" tank
 - Clarifier
 - Digester No. 1.
- Atmospheric temperature and rainfall:
 - Maximum and Minimum
- Chemical system checks:
 - Digester No. 1: Record the number of soda ash bags used
 - Alum Tank: level of alum
- Gas meter reading
- Pump station daily stop / start and hour readings
- Overflow (if any from balance tank).

Weekly Effluent Quality Testing (every Tuesday):

- Measure the following parameters:
 - pH
 - Temperature
 - Ammonia
 - Nitrate
 - Phosphate
 - Colour
- From samples collected at the following locations:
 - Clarifier
 - Channel from based of trickling filter
 - Pond 4 outlet to Fish River Creek.

4.2.3 Biosolids Quality Monitoring

There is no biosolids quality monitoring currently undertaken.

4.2.4 Environmental Monitoring

4.2.4.1 Fish River

Oberon STP is licenced to discharge treated effluent into Fish River.

Fish River borders the STP site and is located close by the effluent lagoons and roadways around the effluent lagoons.

EPL No. 1644 (NSW EPA, 2015) requires monitoring of Fish River upstream and downstream of the STP discharge point. Environmental monitoring requirements of the EPL are summarised in Section 3.2.2 and are included in the *Standard Operating Procedure – Oberon Sewerage Treatment Plant (STP)*.

Samples required for EPL monitoring are sent to ALS for testing.

4.2.5 Goundwater Monitoring

No groundwater monitoring is currently undertaken at the STP site.

4.2.6 Soil Monitoring

No soil monitoring is currently undertaken at the STP site.

4.3 Activities / Controls

4.3.1 Site Inspections / Checks

Daily and weekly inspections of the site are undertaken by operators as per the *Standard Operating Procedure – Oberon Sewerage Treatment Plant (STP)*.

This includes checking for any visible leaks, overflows or malfunctioning equipment.

This also includes inspecting the banks of the bottom effluent ponds, adjacent to Fish River, to check for any erosion.

4.3.2 Pest Controls

The following activities are undertaken as per the *Standard Operating Procedures – Oberon Sewerage Treatment Plant (STP)* to assist with control of pests:

- Weekly sweeping and moping of floors in lab, amenity and office
- Weekly removal of rubbish and otto bins to waste facility.

4.3.3 Vegetation Controls

Practices / activities to control vegetation are undertaken as per the *Standard Operating Procedures – Oberon Sewerage Treatment Plant (STP)*. Activities are undertaken on an “as required” basis.

These activities include:

- Grass mowing
- Spraying for weeds
- Trimming of tree branches around / above access roads (for truck access).

4.4 Emergency Preparedness and Response

4.4.1 Pollution Incident Response

The Oberon Sewerage Treatment Plant and Collection System Pollution Incident Response Management Plan (PIRMP) (Oberon Council, 2023) outlines the required procedures for the management of pollution incidents at the Oberon STP and the sewerage collection system, including:

- Protocols for communication and actions to be undertaken during and following the occurrence of a pollution incident
- Preventative actions to be undertaken to control/minimise the risk of a pollution incident occurring.

4.4.2 Emergency Response

A list of emergency contact details are provided in the PIRMP (Oberon Council, 2023).

Council has an emergency plan. Oberon STP Site Evacuation Plan is to be displayed at the STP premisses as per the Emergency Plan directions and in line with the legislative requirements.

5 Environmental Hazard Assessment

A preliminary desktop environmental aspects risk assessment was undertaken by Hunter H2O in 2020. The preliminary environmental aspects risk assessment was reviewed by key Council staff, including the lead STP operator, and Hunter H2O during a teleconference workshop held 24 March 2020.

A more recent teleconference workshop was held on 6 September 2023 to review the risk assessment for currency and update where required. This workshop was also attended by key Council staff including the operations and management staff. The attendance sheet is provided in Table 5-1.

Table 5-1 Environmental hazard assessment review teleconference workshop

Attendee Name	Affiliation / Role
Samdani Golam	Oberon Council – Project Engineer (Roads & Infrastructure)
Andrew Krol	Oberon Council – STP Operator
Emily Hyde	Beca Hunter H2O – Senior Process Engineer & Project Manager
Lisa Procter	Beca Hunter H2O – Principal Process Engineer

The assessment has been undertaken using information provided by Council at the time of writing. As part of an ongoing improvement process, Council is committed to formalising this preliminary hazard identification & assessment process by undertaking an environmental risk assessment workshop involving key Council staff at a later date following the construction of the planned new STP.

5.1 Identification of Environmental Aspects and Impacts

A desktop assessment of the activities and operations undertaken at Oberon STP has been undertaken to identify environmental aspects that have the potential to cause environmental impacts.

5.1.1 Specific Environmental Aspects for Oberon STP

Oberon STP involves the treatment of sewerage, discharge of effluent into Fish River and production / storage of screenings / grit and biosolids / storage of chemicals (soda ash, alum, petrol, oil). Failure of any part of the system has the potential to cause an environmental incident.

Environmental aspects/hazards associated with the operation and maintenance of the Oberon STP are summarised below.

5.1.1.1 Water & Soil Contamination

Pollution of soil, groundwater and/ or surface water at or near the STP site could potentially be caused by:

- Discharge of effluent with excess pollutants that could damage the environment, due to poor treatment, mechanical failure, extended power outages, emergency situation, overloading of process
- Release or leakage of poor quality effluent from the effluent lagoons
- Overflows or leaks of sewerage or sludge streams due to stormwater inflows, extended power outages, emergency situation, overloading of process, loss of containment.
- Inadequate treatment due to sabotage of the STP
- Contaminated run off water from site draining into natural waterway
- Chemical leaks or spills (alum, soda ash, petrol, oil)
- Malfunctioning of mechanical equipment leading to oil or fuel leaks
- Poorly sited drying area for sludge/biosolids leading to run off.
- Poorly sited drying area for screenings & grit leading to run off.
- Biosolids / screenings / grit spillages during transport to disposal to waste facility.
- Application / use of biosolids that fail to meet Biosolids guidelines for application.

STP raw sewerage, sludge, supernatant and effluent may contain harmful microbes, traces of toxic metals and organic compounds, or compounds associated with chemical dosing.

Design should ensure that any spills of wastewater (untreated / partially treated) or chemicals cannot enter the environment or the stormwater system by means of bunding etc.

5.1.1.2 Noise / Vibration

Noise / vibrations may be generated at the STP and due to plant activities by:

- Mechanical equipment noise / vibrations:
 - Sewerage Pump Station 1
 - Motorised valves and mixers
 - Dosing pump/s
 - Supernatant return pump.
- Traffic – Delivery, biosolids / waste transportation vehicles accessing the site through residential area.

There is not mention of noise in Oberon STP's EPL. Therefore, Council will adopt the noise level restrictions imposed by the Protection of the Environment Operations (Noise Control) Regulation 2017 (NSW Government, 2017).

Council have indicated they have not received any STP noise complaints in recent times.

5.1.1.3 Air Quality (Odours, Dust and Gases)

Air quality problems arising at a STP may be associated with:

- General plant process
- Odours from biosolids and/or solids handling process
- Dust off the biosolid storage area due to high winds and/or traffic
- Odours from algae in the effluent lagoons.

Odour problems in the sewerage treatment and solids handling streams may be increased by the presence of algae or other organic compounds.

Odours may become a problem when surrounding residences that are close to the STP. For this reason, STPs are generally located away from residential areas in accordance with Department of Planning guidelines.

The Oberon STP boundary is approximately 250 m from the closest residential property.

Council have indicated they have not received any STP odour / air quality complaints in recent times.

5.1.1.4 Other Environmental Impacts

Other potential environmental impacts that may be associated with operation of Oberon STP include:

- Flora & fauna impacts:
 - Plant operations attracting pests, e.g. rodents, insects.
 - Overgrowth of site impacting process and assets.
- Erosion and sedimentation:
 - Erosion damage to the banks of the river caused by plant operations. Note the banks adjacent to the Effluent Ponds are well vegetated and built up by approximately 3 m.

5.1.1.5 Summary

Table 5-2 summarises potential environmental incidents and their causes.

Table 5-2 Identified Potential Environmental Incidents for Oberon STP

Potential Environmental Incident	Possible Cause
Water and Soil Contamination	<ul style="list-style-type: none"> ▪ Poor treatment, mechanical failure, trade waste discharge, extended power outages, emergency situation, overloading of process ▪ Release or leakage of poor quality effluent from the effluent lagoons ▪ Overflows or leaks of sewerage or sludge streams due to stormwater inflows, extended power outages, emergency situation, overloading of process, excess grit overloading process units, loss of containment. ▪ Inadequate treatment due to sabotage of the STP ▪ Contaminated run off water from site draining into natural waterway ▪ Chemical leaks or spills (alum, soda ash, petrol, oil) ▪ Malfunctioning of mechanical equipment leading to oil or fuel leaks ▪ Poorly sited drying area for sludge/biosolids leading to run off. ▪ Poorly sited drying area for screenings & grit leading to run off. ▪ Biosolids / screenings / grit spillages during transport to disposal to waste facility. ▪ Application / use of biosolids that fail to meet Biosolids guidelines for application.
Noise	<ul style="list-style-type: none"> ▪ Mechanical equipment noise / vibrations: <ul style="list-style-type: none"> ○ Sewerage Pump Station 1 ○ Motorised valves and mixers ○ Dosing pump/s

Potential Environmental Incident	Possible Cause
	<ul style="list-style-type: none"> ○ Supernatant return pump ▪ Traffic – Delivery, biosolids / waste transportation vehicles accessing the site through residential area.
Odours and Gases	<ul style="list-style-type: none"> ▪ General plant process ▪ Odours from biosolids and/or solids handling process ▪ Dust off the biosolid storage area due to high winds and/or traffic ▪ Odours from algae in the effluent lagoons.
Flora & Fauna	<ul style="list-style-type: none"> ▪ Plant operations attracting pests, e.g. rodents, insects. ▪ Overgrowth of site impacting process and assets.
Erosion and Sedimentation	<ul style="list-style-type: none"> ▪ Erosion damage to the banks of the river caused by plant operations. Note the banks adjacent to the Effluent Ponds are well vegetated and built up by approximately 3 m.

5.2 Criteria for Assessment of Environmental Aspects

A numerical assessment process, where each identified hazard is assigned a 'risk score', has been used to determine which environmental aspects are significant and need to be addressed. The 'risk score' of a hazard is a function of the likelihood of the hazard occurring and the environmental impacts that may result from the hazard. The 'likelihood' and 'impact' of each hazard is assigned using the numerical rating systems given in Table 5-3 and Table 5-4, respectively. The level of uncertainty for each hazard was also scored via the criteria in Table 5-5. In keeping with accepted conservative risk management principals, the worst case 'likelihood' and 'impact' was assumed for hazards with a high level of uncertainty.

Table 5-3 Criteria for Assessment - Likelihood

Level	Likelihood	Description
5	Almost certain	The event is expected to occur often (several times per year)
4	Likely	The event will probably occur often (once every 1-3 years)
3	Possible	The event might occur at some time (once every 3 to 10 years)
2	Unlikely	The event could occur at some time (once every 20 years)
1	Rare	The event may occur only in exceptional circumstances (once every 100 years)

Table 5-4 Criteria for Assessment - Impacts

Level	Classification	Example Definition Environment (including scale, severity & duration)
1	Insignificant	No detectable environmental impact.
2	Minor	Localised, short term, minor environmental impact.
3	Moderate	Localised, medium term, moderate environmental impact.
4	Major	Severe, long term, large scale environmental impact.
5	Catastrophic	Severe, permanent, large scale environmental impact.

Table 5-5 Score for the Level of Uncertainty

Uncertainty Rank / Score	Water Quality Data Verification	Anecdotal Observation	Scientific Validation
High	Water quality data indicates no clear trend on risk.	No reports from staff on risk occurring, but suspect risk occurs.	Some small-scale scientific studies nationally or internationally.
Medium	Water quality data indicates some sporadic trends in risk.	Occasional reports from staff on risk occurring.	Risk confirmed through national or state-based research.
Low	Water quality data indicates a statistically significant trend of the risk.	Numerous reports from staff on risk occurring.	Risk confirmed through national or state-based research and/or local research studies.

Once the likelihood and consequence of a hazard are assigned, the 'risk score' is determined using the risk matrix. Council risk matrix (Table 5-6) assigns a qualitative 'risk score'. An adapted risk matrix has been developed to provide a numerical 'risk score'. The 'risk score' helps prioritise hazards and identify significant environmental aspects. The hazard score is represented by the words very high, high, medium, low and insignificant.

Table 5-6 Criteria for Assessment – Qualitative Risk Score

Likelihood	Impacts				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Almost Certain – 5	Low	Moderate	High	Very High	Very High
Likely – 4	Low	Moderate	High	Very High	Very High
Possible – 3	Low	Moderate	Moderate	High	Very High
Unlikely – 2	Low	Low	Moderate	High	Very High
Rare – 1	Low	Low	Low	Moderate	High

Table 5-7 Criteria for Assessment – Numerical Risk Score

Likelihood	Impacts				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (6)	Catastrophic (20)
Almost Certain – 5	5	10	15	30	100
Likely – 4	4	8	12	24	80
Possible – 3	3	6	9	18	60
Unlikely – 2	2	4	6	12	40
Rare – 1	1	2	3	6	20

5.3 Environmental Hazard Risk Assessment

The outcomes of the environmental risk assessment were recorded in the worksheet provided as Table 5-8.

Table 5-8 Oberon STP Desktop Environmental Aspects Risk Assessment

Environmental Aspect	Hazard / Issue	Impact	Baseline Likelihood	Baseline Consequence	Baseline Risk Score	Baseline Numerical Risk Score	Uncertainty	Control Measures	Recommendations / Investigations / Planned Future Control Measures
Water & Soil Contamination (Effluent / Sewerage / site drainage)	Discharge of effluent with excess pollutants that could damage the environment. Issue could be due to poor treatment, mechanical failure, extended power outages, emergency situation, overloading of process.	Waterway contamination Health effects Regulatory Action	Almost Certain	Moderate	HIGH	15	Medium	<p>PIRMP EPA effluent quality monitoring and records Breach of EPA quality limits are reported to the EPA (notification protocols in PIRMP) Operational monitoring of effluent Telemetry system for SPS1 On-call operator On-call contractors Reliable power system (long power outages are usually planned) Process units will still provide some treatment in power outage.</p>	Council is planning to upgrade Oberon STP to meet demand and quality targets - Public Works engaged for Design and Construct. New STP Upgrade currently in design stage, planned for completion in 3-5 years (~2026/2028). New STP expected to provide better nutrient treatment compared with the existing plant (i.e. expected to be aerated biological treatment). Upgrade will also include additional controls and alarming for STP. Develop an Emergency Plan for the Oberon STP site. Complete - Emergency Plan developed by Chubb in 2021.
	Release or leakage of poor quality effluent from the effluent ponds. Could be due to damage to containment infrastructure, storm event.	Contaminated water leaking into the environment. Especially the nearby Fish River.	Possible	Major	HIGH	18	High	<p>Monthly report - EPA monitoring points in river monthly upstream/ downstream of STP Visual monitoring of the levels of the effluent ponds and pipe discharge flow Operator inspection of the pond banks, incl. looking for evidence of breach, undertaken weekly. Earthen bank of 3 m around ponds</p>	Council to update STP SOP to include weekly inspection of pond banks. Council to implement solar powered dosing into the ponds for chlorination and pH rectification. Complete. Solar powered chlorine dosing installed for seasonal dosing Activated mainly in summer, to disinfect effluent discharged from Effluent Pond 2 to the alternative discharge point in Fish River. Operators can

Environmental Aspect	Hazard / Issue	Impact	Baseline Likelihood	Baseline Consequence	Baseline Risk Score	Baseline Numerical Risk Score	Uncertainty	Control Measures	Recommendations / Investigations / Planned Future Control Measures
									also manually dose citric acid in Effluent Pond 4 as required over summer.
	Overflows or leaks of sewage streams. Could be due to stormwater inflows, extended power outages, emergency situation, overloading of process, damage to containment infrastructure.	Land contamination Waterway contamination Health effects Regulatory Action	Unlikely	Moderate	MODERATE	6	High	PIRMP STP designed for peak wet weather flows (PWWF) STP overflow from balance tank (very rare) is transferred to effluent pond 1 and through the ponds - highly dilute WW. Monitoring flow meter on overflow line - checked daily and recorded on sewer spreadsheet Slope of main STP site directs drainage/spills to the sludge lagoons. Old drainage pipes located on the other side of the sludge lagoons will direct drainage to effluent pond 1. Telemetry system for SPS1 Icing up has never been seen to be an issue - raw water ~9-10C in middle of winter On-call operator On-call contractors Reliable power system (long outages are usually planned and very rare) Process units will still provide some treatment in power outages.	Planned Oberon STP upgrade to meet demand and quality targets. Outlet to the creek flow monitoring to be installed.
	Inadequate treatment due to sabotage of plant	Land contamination Waterway contamination Health effects Regulatory Action	Rare	Moderate	LOW	3	High	Electric locked gate. Fencings around STP, including two gates. Security cameras at the STP and SPS. Warning signage around STP. Locked building. STP off the main road Telemetry system for SPS1.	Consider installing security cameras. Complete. Installed 2020 Develop an Emergency Plan for Oberon STP. Complete. Emergency Plan developed by Chubb in 2021.

Environmental Aspect	Hazard / Issue	Impact	Baseline Likelihood	Baseline Consequence	Baseline Risk Score	Baseline Numerical Risk Score	Uncertainty	Control Measures	Recommendations / Investigations / Planned Future Control Measures
	Overflows or leaks of sludge streams	Land contamination Waterway contamination Health effects Regulatory Action	Unlikely	Moderate	MODERATE	6	High	EPA monitoring points in river upstream/downstream of STP Slope of main STP site directs drainage/spills to the sludge lagoons. Old drainage channel located on the other side of the sludge lagoons on the other side of the road which will direct drainage to effluent pond 1. Digester overflow will be directed into the sludge lagoons, contained onsite. 200 mm bunded wall in square section between trickling filters, overflow from trickling filters would go there and then drain to sludge lagoons. Leak from the humus sludge pumps will drain into the clarifier, contained onsite.	Update site drainage / improve the old drainage system behind the sludge lagoons. Planned for 2024.
Water & Soil Contamination (Site drainage)	Contaminated run off water from site draining into natural waterway	Contaminated water draining into the environment.	Possible	Major	HIGH	18	High	EPA monitoring points in river upstream/downstream of STP Slope of main STP site directs drainage/spills to the sludge lagoons. Old drainage channel located on the other side of the sludge lagoons will direct drainage to effluent pond 1.	Update site drainage / improve the old drainage system behind the sludge lagoons. Planned for 2024.
Water & Soil Contamination (Hazardous Materials)	Chemical spill due to infrastructure failure, during delivery, or due to damaged pipework. Alum, soda ash (powder), sodium hypochlorite (chlorine) (at Pond 2), citric acid, petrol may be stored onsite. Worst case, alum spill from delivery truck.	Land contamination Waterway/groundwater contamination Health effects Regulatory Action	Possible	Moderate	MODERATE	9	Medium	Alum storage area is bunded, fill point inside bunding. Very few deliveries, alum delivered only 2 times per year. Leak on truck delivery side, would drain to Sludge Lagoon 2, over grassed area. Soda ash is in 20 kg bags. Small amount of Liquid sodium hypochlorite stored nearby Effluent Pond 2 for seasonal chlorine dosing. Small amount of citric acid stored onsite for manual dosing to the effluent ponds for seasonal pH control. Small amount of petrol stored onsite (~20L). SDS for chemicals kept onsite.	Consider to establishing and implementing an asset management and renewals program once the new STP is installed. Establish and enforce an induction process for delivery contractors/visitors. Complete. Council ais planning to upgrade Oberon STP to meet demand and quality targets. Upgrade will also include additional controls and alarming

Environmental Aspect	Hazard / Issue	Impact	Baseline Likelihood	Baseline Consequence	Baseline Risk Score	Baseline Numerical Risk Score	Uncertainty	Control Measures	Recommendations / Investigations / Planned Future Control Measures
								Operators conduct daily inspections of site - Standard Operating Procedures: Oberon Sewerage Treatment Plant (STP) - 2023. Operator onsite during deliveries. Gates locked otherwise. Delivery drivers have their own SWMS for chemical delivery. Delivery drivers conduct their own inspections of pipework & equipment, have their own procedures, any identified issues will be communicated to Council. Competent truck delivery drivers who are familiar with the site are used. Ongoing inspections of pipework & equipment.	for STP. Operations team to review design of new STP for operational safety, for example chemical delivery bunding, consider monitoring/alarming in bund to alert for leakage and contingencies in the case of leakage (pump out point etc). Complete: Council to modify chemical delivery SOP to include Alum delivery at STP.
	Chemicals used for spraying getting released into the environment due to poor spraying practices.	Land contamination Waterway/groundwater contamination Health effects Damage to flora in unintended areas	Likely	Moderate	HIGH	12	Medium	Operators have chemical spraying tickets (renewed every 5 years). Operators chose time and equipment to ensure spray doesn't enter the environment / water.	
	Malfunctioning of mechanical equipment (ride on mower, pumps) leading to oil or fuel leaks	Land contamination Waterway/groundwater contamination Health effects Regulatory Action	Possible	Minor	MODERATE	4	Medium	Daily inspections (SOP: Oberon STP). Monitoring by operators when in used. All onsite pumps in pits Small amount of petrol kept onsite (~20L)	Council to update STP SOP to include: lawn mower inspection before use and rectification of any issues identified. Consider to establishing and implementing an asset management and renewals program with cyclic reminders once the new STP is installed.
Water & Soil Contamination (Waste / Biosolids)	Poorly sited storage of dried sludge - leading to run off.	Run-off - Land/Waterway/Groundwater contamination Health effects Regulatory Action	Possible	Moderate	MODERATE	9	High	Embankment around drying area. Sludge drying hasn't been used in 2 years. Run off from sludge lagoon would end up in Effluent Pond 2. Very rare occurrence.	Council is planning to upgrade Oberon STP to meet demand and quality targets. Consideration is to be given to suitable dewatering of biosolids

Environmental Aspect	Hazard / Issue	Impact	Baseline Likelihood	Baseline Consequence	Baseline Risk Score	Baseline Numerical Risk Score	Uncertainty	Control Measures	Recommendations / Investigations / Planned Future Control Measures
								Pipe underground goes to sludge drying bed. Site is fenced.	(i.e. new drying beds or contract dewatering) for the new plant (Oberon STP Concept Design Report, Hunter H2O, 2018). Council to have involvement in final design and review its environmental suitability. Next time sludge drying beds are to be used, Operation staff to inspect embarkment.
	Poorly sited drying area for screenings & grit leading to run off	Run-off - Land/Waterway/Groundwater contamination Health effects Regulatory Action	Likely	Moderate	HIGH	12	High	Drying area is a raised bed Composed mainly of grit and dries quickly (2-3 days). Run off through grass, run off contained onsite. Regularly removed and disposed of (taken to Council tip)	Council is planning to upgrade Oberon STP to meet demand and quality targets. Council to have input into STP upgrade design and review design of screening/grit disposal system to make sure it is environmentally appropriate.
	Biosolids / screenings / grit spillages during transport to disposal to waste facility	Contamination of Land/ Waterways/ groundwater Illegal application of biosolids outside of guidelines	Possible	Moderate	MODERATE	9	High	Biosolids dried before transport. Trucks are appropriate for use and have covering for loads. Sludge lagoons are slow to fill, and biosolid transport is needed infrequently (>3 years was the last time). Council to conduct biosolids testing next time they send biosolids to landfill as directed by EPA.	Develop a SWMS / procedure for transport of biosolids following the installation of the STP upgrade. (Note biosolids are rarely transported last time was more than 3 years ago).

Environmental Aspect	Hazard / Issue	Impact	Baseline Likelihood	Baseline Consequence	Baseline Risk Score	Baseline Numerical Risk Score	Uncertainty	Control Measures	Recommendations / Investigations / Planned Future Control Measures
	Application / use of biosolids that fail to meet Biosolids guidelines for application. On rare occasions, Kangaroos been known to jump the fence get in to the STP site. In drought conditions, a nearby Farmer has been allowed into the STP site to let his cows graze, but livestock was carefully watched and not allowed near the drying beds. No longer happens.	Failure to meet Biosolids guidelines	Likely	Minor	MODERATE	8	High	Embankment around drying area. Embankment is regularly maintained. Site is fenced.	Consider developing a procedure around allowing cattle onto site to formalise the controls around not allowing them to consume grasses grow on untested biosolids, if this is to be allowed again. No longer an issue.
Noise / Vibration / Vehicle Movement	Mechanical equipment noise / vibrations: - Sewage Pump Station 1 - Motorised valves and mixers - Dosing pump/s - Supernatant return pump	Complaints Unacceptable emissions that do not comply with POEO Act and NSW EPA noise guidelines	Unlikely	Minor	LOW	4	Medium	Buffer distance between plant & residences. New STP will increase buffer zone. Quiet pumping stations. Daily operator inspections of site and pump stations - Oberon STP SOP. No complaints have been received in recent memory.	
	Traffic - Delivery / Biosolids transportation vehicles noise / movement (access to plant is through residential area)	Complaints Unacceptable emissions that do not comply with POEO Act and NSW EPA noise guidelines	Unlikely	Minor	LOW	4	Medium	No truck deliveries outside of hours (earliest 7 am). Deliveries are infrequent. 2 times per year for alum. Screening / grit once per year. Drying bed biosolids >3 years. Excavator hired occasionally for vegetation control around ponds. Tractor used for slashing. Turning circle for truck outside STP.	
Air Quality	General plant process.	Complaints by residents. Unacceptable emissions that do not comply with POEO Act	Unlikely	Minor	LOW	4	Medium	Buffer distance between plant & residences. Residences located to the west of the STP. Some vegetation screening. No complaints have been received in recent memory. Digesters kept at 33-34C so they don't sour / smell.	

Environmental Aspect	Hazard / Issue	Impact	Baseline Likelihood	Baseline Consequence	Baseline Risk Score	Baseline Numerical Risk Score	Uncertainty	Control Measures	Recommendations / Investigations / Planned Future Control Measures
	Odours from biosolids - solids handling process	Complaints by residents Unacceptable emissions that do not comply with POEO Act	Unlikely	Minor	LOW	4	Medium	Buffer distance between plant & residences. Pasture all around, nearest farm 0.5 km. Residences located to the west of the STP. Some vegetation screening. No complaints have been received in recent memory. The process produces stable biosolids Biosolids dried prior to storage	
	Dust off biosolids due to high winds and traffic.	Complaints by residents Unacceptable emissions that do not comply with POEO Act Health effects	Unlikely	Minor	LOW	4	Medium	Buffer distance between plant & residences. Residences located to the west of the STP. Some vegetation screening. No complaints have been received in recent memory. Embankment around drying area.	
	Odours from algae in the effluent lagoons	Complaints by residents Unacceptable emissions that do not comply with POEO Act	Unlikely	Minor	LOW	4	Medium	Buffer distance between plant & residences. Residences located to the west of the STP. Some vegetation screening. No complaints have been received in recent memory. Operators manage ponds so that algae growth doesn't occur. Monitoring pH and visual, opening pond 2 to discharge to EMP 6.	Council to update STP SOP to include pond management for algae control in summer.
Flora and Fauna	Plant operations attracting pests, e.g. rodents.	Impact on native species WHS/health impacts Asset damage, i.e. rats chewing through cables.	Almost Certain	Insignificant	LOW	5	High	Building onsite are locked. Visual inspection, evidence of pests, manage with electronic rat traps and rat sack, as needed. Weekly sweep/mop of lab/amenity/office (Oberon STP SOP) Weekly removal of rubbish to waste facility (Oberon STP SOP) Sewerage pump station has electronic traps and rat sack, sealed up conduits.	Council to update STP SOP to include a statement on keeping an eye out for evidence of vermin and act accordingly to manage pests.

Environmental Aspect	Hazard / Issue	Impact	Baseline Likelihood	Baseline Consequence	Baseline Risk Score	Baseline Numerical Risk Score	Uncertainty	Control Measures	Recommendations / Investigations / Planned Future Control Measures
	Overgrowth of site	Impact on process and assets WHS/health impacts Snakes in long grass Aeration issues if vegetation not maintained around trickling filter, sludge lagoons, effluent lagoon.	Almost Certain	Moderate	HIGH	15	High	All operators have chemical certificates and undertake regular spraying for weeds (Oberon STP SOP). Operators maintain grounds when necessary, incl. mowing around STP site, trimming of trees above access road for truck access (Oberon STP SOP). Operators undertake slashing around effluent pond roads when necessary to keep grass down. Operators have chemical spraying tickets (renewed every 5 years). Vegetation managed around Trickling filter beds. Trim trees / remove blackberry trees	Develop a vegetation management plan for the site. Complete. Actions included SOP.
Heritage	Impact of plant operations on site of indigenous or non-indigenous heritage.	Heritage/cultural impacts	Rare	Major	MODERATE	6	Low	Inspection has been undertaken as part of the development of the REF by cultural heritage officer. There has been no indication of any indigenous or non-indigenous heritage identified onsite. REF (2020) has been completed for new STP and no heritage concerns/issues onsite.	REF to be undertaken as part of planning for the Oberon STP upgrade. Complete in 2020.
Erosion and Sedimentation	Erosion damage to the banks of the river caused by plant operations. During high rainfall, has happened at the SPS.	Contamination of local water ways	Likely	Moderate	HIGH	12	High	EPA monitoring of river water quality (upstream/downstream) Operator site inspections include inspection of the banks of the bottom ponds adjacent to Fish River (SOP: Oberon STP). Banks built up (~3m) where effluent pond roads are located. Banks in STP site are heavily vegetated. Cultivate grass on banks to stabilise. There is no driving on the pond banks.	SPS is being considered for upgrade with the STP.

5.4 Significant Environmental Aspects

Hazards that were determined to have a risk score of High or Very High (i.e. a numerical risk score of greater than 10) were labelled as a significant environmental aspect.

Through the Environmental Hazard Risk Assessment process, a number of hazards and their corresponding environmental aspects were identified as significant (Table 5-8). This list of significant environmental aspects is provided below:

- Discharge of effluent with excess pollutants that could damage the environment. Issue could be due to poor treatment, mechanical failure, extended power outages, emergency situation, overloading of process.
- Release or leakage of poor quality effluent from the effluent ponds. Could be due to damage to containment infrastructure, storm event.
- Contaminated run off water from site draining into natural waterway
- Chemicals used for spraying getting released into the environment due to poor spraying practices.
- Contaminated run off water from site draining into natural waterway
- Poorly sited drying area for screenings & grit leading to run off
- Overgrowth of site
- Erosion damage to the banks of the river caused by plant operations. During high rainfall, has happened at the SPS.

5.5 Risks and Opportunities

The Environmental Hazard Risk Assessment process identified 12 improvement actions that could be taken to reduce the risk of environmental hazards, summarised in Table 5-9.

Table 5-9 Recommendations, Investigations and Planned Future Control Measures

Recommendations, Investigations and Planned Future Control Measures	
1	Council are planning to upgrade Oberon STP to meet demand and quality targets. Public Works engaged for Design and Construct. New STP Upgrade currently in design stage, planned for completion in 3-5years (~2026/2028).
2	Council will have input into the design of the upgraded STP and review the following items to make sure they are environmentally suitable: -Level of nutrient removal provided by treatment process (expected to an aerated system providing better nutrient removal than existing plant). -Additional controls and alarming for STP. -Operational safety features and control, for example including chemical delivery bunding and considering monitoring/alarming in bund to alert for leakage and contingencies in the case of leakage (pump out point etc). -Biosolids dewatering system (e.g. new drying beds or contract dewatering). -Screening/grit disposal system.
3	Develop an Emergency Plan for the Oberon STP site. Oberon STP Site Evacuation Plan was developed by Chubb Fire & Security in 2021 and has been sighted by Beca Hunter H2O.
4	Council to update STP SOP to include weekly inspection of pond banks.

5	COMPLETE. Council to implement solar powered dosing into the ponds for chlorination and pH rectification. Complete. Solar powered chlorine dosing installed in Effluent Pond 2. Activated mainly in summer, to disinfect effluent discharged from Effluent Pond 2 to the alternative discharge point to Fish River. Operators can also manually dose citric acid in Effluent Pond 4 as required over summer.
6	Outlet to the creek flow monitoring to be installed.
7	COMPLETE. Consider installing security cameras. Complete. Installed 2020.
8	Update site drainage / improve the old drainage system behind the sludge lagoons. Planned for 2024.
9	Consider to establishing and implementing a asset management and renewals program with cyclic reminders once the new STP is installed.
10	COMPLETE. Establish and enforce an induction process for delivery contractors/ visitors. Complete.
11	COMPLETE. Council to modify chemical delivery SOP to include Alum delivery at STP.
12	Council to update STP SOP to include: lawn mower inspection before use and rectification of any issues identified.
13	Next time sludge drying beds are to be used, Operation staff to inspect embarkment.
14	Develop a SWMS / procedure for transport of biosolids following the installation of the STP upgrade. (Note biosolids are rarely transported last time was more than 3 years ago).
15	REMOVED, not relevant. Consider developing a procedure around allowing cattle onto site to formalise the controls around not allowing them to consume grasses grow on untested biosolids, if this is to be allowed again. No longer an issue.
16	Council to update STP SOP to include pond management for algae control in summer.
17	Council to update STP SOP to include a statement on keeping an eye out for evidence of vermin and act accordingly to manage pests.
18	REMOVED, not relevant. Develop a vegetation management plan for the site – main actions included SOP.
19	COMPLETE. REF to be undertaken as part of planning for the Oberon STP upgrade. Complete in 2020.
20	SPS is being considered for upgrade with the STP.

These improvement actions have been compiled into an EMS Improvement Plan (Section 9).

The EMS Improvement Plan will include actions arising from the Environmental Hazard Risk Assessment process alongside improvements to the EMS identified in the initial compiling of the EMS document and in subsequent audits/reviews of the EMS.

6 Environmental Competence and Training

6.1 Environmental Management Structure

6.1.1 Roles and Responsibilities

The roles and responsibilities under this EMS of relevant council staff are provided in Table 6-1.

Table 6-1 Roles and Responsibilities under the EMS

Role	Responsibilities
Water & Sewer Manager / Sewer Coordinator / Engineer	<ul style="list-style-type: none"> ▪ Undertake the management review ▪ Sign off on updates / revisions to the EMS ▪ Communicate any changes to EMS relevant staff ▪ Sign off on the annual environmental report ▪ Ensure Council staff receive relevant EMS training ▪ Retain accountability for the effectiveness of the EMS ▪ Ensure the environmental policy and environmental objectives are established and are compatible with the strategic direction and context of the organisation ▪ Ensure the integration of the environmental management system requirements into the organisation's business processes ▪ Ensure that the resources needed for the environmental management system are available ▪ Communicate the importance of effective environmental management and of conforming to the environmental management system requirements ▪ Promote continual improvement ▪ Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.
Sewer Coordinator / Engineer	<ul style="list-style-type: none"> ▪ Compile the annual environmental report ▪ Organise annual third party audits of EMS documentation ▪ Conduct internal audit of the EMS as per Section 8.1 ▪ Implement any changes recommended by EMS audits ▪ Distribute annual environmental report once approved ▪ Participate in Environmental Risk Assessment Workshop/s
STP Operator	<ul style="list-style-type: none"> ▪ Enact all protocols / controls specified in this EMS and associated documentation (i.e. Standard Operating Procedures, PIRMP) ▪ Ensure visitors and contractors receive EMS induction and sign the onsite register ▪ Provide contractors with relevant sections of the EMS if requested or required ▪ Participate in Environmental Risk Assessment Workshop/s
Contactors / Visitors	<ul style="list-style-type: none"> ▪ Have undertaken an EMS site induction as per Section 6.2 ▪ Be aware of Council's Environmental Policy ▪ Discuss with Council staff any work that may impact or pose a risk to the environment.

6.2 Training / Competency Requirements

Council Staff

Council staff operating and managing Oberon STP are trained in the implementation of this EMS as part of their staff induction process. Renewal of training in the EMS will be conducted every three years.

Any changes made to the EMS between training renewals will be communicated to Council staff.

Following the induction process or training renewal, staff will be required to demonstrate competency in:

- Understanding the documented environmental practices, procedures and systems.
- Understanding of their role and responsibilities within the EMS
- Understanding of the potential impacts their work activities may have on the environment
- Understanding how to respond to environmental issues

Additional training requirements will be assessed by Council.

Contractors / Visitors

Contractors and visitors to site are required to undertake site inductions.

During the site induction the inductee will be:

- Shown the location of the hard copy of the Environmental Policy and this EMS document available in the STP office
- Directed to read Council's Environmental Policy.

Where contractors are required to conduct work that has the potential to impact on the environment, the contractors must undertake an extended induction on the EMS which will include:

- Discussion of the potential impacts their work activities may have on the environment and any controls / procedures outlined in the EMS relevant to that work
- Information how to respond to environmental issues as per the EMS.

It is the responsibility of the Council that these requirements are discussed with the contractor and providing the relevant sections of the EMS to the contractor as required or requested.

6.3 Training / Competency Records

Council is required to keep evidence of competence (including training records) of all relevant onsite persons. Training is reviewed and kept up to date.

Records of staff qualifications are kept by Council. Training records of employees are maintained on Council's server.

Induction records for all persons attending site, including contractors and visitors, are kept as an attendance register at the STP site.

Training records and needs will be reviewed as part of the EMS internal review process (Section 8.1).

7 Internal and External Communication

7.1 Communication of the EMS

Council's Environmental Policy will be displayed as a hard copy in STP Office.

This EMS document will be made available to all employees on the Council's server.

7.2 Annual Environmental Report

Council will produce an annual environmental report to communicate across the organisation and to other relevant stakeholders, as per Council's Environmental Policy.

Council's Annual Environmental Report template has been provided in Appendix A.

7.3 Communication Protocols

Any changes to the EMS should be communicated to relevant staff, contractors and visitors.

The PIRMP should be consulted for internal/external communication during a pollution incident. The PIRMP (Oberon Council, 2023) includes:

- Contact details key internal / external stakeholders in the event of a pollution incident
- Communication protocols for communication with neighbours and the community following a pollution incident
- The notification process following a pollution incident.

8 Performance Evaluation and Auditing

8.1 EMS Internal Review

The controlled master copy of the EMS document will be retained on the Council server. Information on version control is contained at the start of this document.

The EMS should be reviewed and updated:

- When there is a change in the scope, e.g. a plant upgrade or change in licence conditions
- Following significant environmental incidents
- When there is a need to improve performance in an area of environmental impact
- At the completion of environmental audits.
- Every 3 years.

The Sewer Coordinator / Engineer is responsible for reviewing the EMS and updating the document as needed. This review is to include:

- Review and update to the environmental hazard assessment
- Review of the legal requirements related to the environmental aspects of the STP operation and update as required
- Review of the environmental procedures
- Review of the training records to ensure they are current
- Review of the training needs of staff to ensure they are sufficient
- Review and update of the improvement plan, including adding information on progress made and adding new action items as required.

The requests for changes will be reviewed and approved by the Manager Water and Sewer before the master document can be amended.

It will be the responsibility of the Manager, Water and Sewer Services to redistribute the EMS to all relevant personnel following any changes. Once updated, the EMS will require redistribution to all relevant staff.

8.1.1 Management Review

The Manager Water and Sewer is responsible for reviewing and approving all requests for changes to the EMS document before the master document can be amended.

The Manager Water and Sewer is also responsible for reviewing the EMS every 3 years to ensure its continuing suitability, adequacy and effectiveness.

The outputs of the management review will include:

- Conclusions on the continuing suitability, adequacy and effectiveness of the EMS
- Decisions related to continual improvement opportunities
- Decisions related to any need for changes to the EMS, including resourcing
- Additional actions required if environmental objectives have not been achieved
- Opportunities to improve integration of the EMS with other business processes / procedures
- Any implications to the strategic direction of the organisation.

Improvements to the EMS will be immediately implemented were possible. Where immediate implication of an identified improvement is not possible, the improvement action will be added to the improvement plan.

8.2 External Auditing

The EPA Risk-based Licensing: Environmental Management Systems Guidelines (NSW EPA, 2019) Annual Return Question Item 9, requires **an annual, third party audit** of the documented environmental practices, procedures and systems in place during the Annual Return period.

A third party auditing program is yet to be established. This is an item in the EMS improvement plan.

Improvements recommended by the third party audit will be immediately implemented where possible. Where immediate implementation of an identified improvement is not possible, the improvement action will be added to the improvement plan.

8.3 Audit and Review Records

Details for all EMS audits and reviews undertaken will be recorded at the front of this document in the Document Control section.

9 Improvement Plan

An improvement plan has been developed to align with the underlying continuous improvement approaches as outlined in ISO14001 and summarised in Section 1.4. The improvement plan has been designed to capture commitments for EMS improvement as improvement plan action items.

Improvement plan action items have been, and will continue to be, identified by the following undertakings:

- Preliminary desktop environmental hazard risk assessment (Section 5)
- Environmental risk assessment workshop (to be undertaken by Council at a later date)
- Ongoing performance evaluations and audits of the plan (Section 8).

For each of the improvement plan action items, a target completion date has been assigned.

The improvement plan will be reviewed during internal / external audits of the EMS. This will include a review of the status of each of the action items.

Contingency arrangements will be determined for action items that have not been completed/progressed by the target completion date timeframe.

Table 9-1 Improvement Plan

ID No.	Action Item	Environmental Aspect	Target Completion Date	Status / Progress
I	Undertake a formal Environmental Risk Assessment workshop with key stakeholders to review and revise the preliminary risk assessment	All	Following installation of Upgraded STP Completion estimated in 3-5 years (~2026/2028)	
II	Develop and establish an annual, third party auditing schedule as per Section 8.2.	All	Oct 2024	
III	Establish and enforce a Council Staff EMS training renewal program as per Section 6.2. Staff should receive training when first inducted and every three years.	All	Following installation of Upgraded STP Completion estimated in 3-5 years (~2026-2028)	
1	Council is planning to upgrade Oberon STP to meet demand and quality targets. Public Works engaged for Design and Construct. New STP Upgrade currently in design stage, planned for completion in 3-5 years (~2026/2028).	Water & Soil Contamination	Following installation of Upgraded STP Completion estimated in 3-5 years (~2026/2028)	Public Works engaged for Design and Construct. New STP Upgrade currently in design stage, planned for completion in 3-5 years (~2026/2028).
2	Council will have input into the design of the upgraded STP and review the following items to make sure they are environmentally suitable: -Level of nutrient removal provided by treatment process (expected to an aerated system providing better nutrient removal than existing plant). -Additional controls and alarming for STP. -Operational safety features and control, for example including chemical delivery bunding and considering monitoring/alarming in bund to alert for leakage and contingencies in the case of leakage (pump out point etc). -Biosolids dewatering system (e.g. new drying beds or contract	Water & Soil Contamination	Following installation of Upgraded STP Completion estimated in 3-5 years (~2026/2028)	In progress (see ID 1 for details)

	dewatering). -Screening/grit disposal system.			
3	Develop an Emergency Plan for the Oberon STP site.	Water & Soil Contamination		Complete. Council have an Emergency Plan, including a Oberon STP Site Evacuation Plan developed by Chubb Fire & Security in 2021.
4	Council to update STP SOP to include weekly inspection of pond banks.	Water & Soil Contamination	Dec 2023	In progress.
5	Council to implement solar powered dosing into the ponds for chlorination and pH rectification.	Water & Soil Contamination		Complete. Solar powered chlorine dosing installed in Effluent Pond 2. Activated mainly in summer, to disinfect effluent discharged from Effluent Pond 2 to the alternative discharge point to Fish River. Operators can also manually dose citric acid in Effluent Pond 4 as required over summer.
6	Outlet to the creek flow monitoring to be installed.	Water & Soil Contamination	Following installation of Upgraded STP Completion estimated in 3-5 years (~2026/2028)	
7	Consider installing security cameras.	Water & Soil Contamination		Complete. Installed 2020.
8	Update site drainage / improve the old drainage system behind the sludge lagoons.	Water & Soil Contamination	Jun 2024	

9	Consider to establishing and implementing an asset management and renewals program with cyclic reminders once the new STP is installed.	Water & Soil Contamination	Following installation of Upgraded STP Completion estimated in 3-5 years (~2026/2028)	
10	Establish and enforce an induction process for delivery contractors/visitors.	Water & Soil Contamination		Establishment complete. Ongoing enforcement.
11	Council to modify chemical delivery SOP to include Alum delivery at STP.	Water & Soil Contamination		Complete. Updated Sept 2023.
12	Council to update STP SOP to include: lawn mower inspection before use and rectification of any issues identified.	Water & Soil Contamination	Dec 2023	In progress.
13	Next time sludge drying beds are to be used, Operation staff to inspect embarkment.	Water & Soil Contamination	Next time sludge drying beds used.	
14	Develop a SWMS / procedure for transport of biosolids following the installation of the STP upgrade. (Note biosolids are rarely transported last time was more than 3 years ago).	Water & Soil Contamination	Following installation of Upgraded STP Completion estimated in 3-5 years (~2026/2028)	
15	Consider developing a procedure around allowing cattle onto site to formalise the controls around not allowing them to consume grasses grow on untested biosolids, if this is to be allowed again.	Water & Soil Contamination		Removed, not relevant. No longer an issue.
16	Council to update STP SOP to include pond management for algae control in summer.	Air Quality	Dec 2023	In progress.
17	Council to update STP SOP to include a statement on keeping an eye out for evidence of vermin and act accordingly to manage pests.	Flora and Fauna	Dec 2023	In progress.
18	Develop a vegetation management plan for the site.	Flora and Fauna		Removed, not relevant. Vegetation management actions included SOP.
19	REF to be undertaken as part of planning for the Oberon STP upgrade.	Heritage; Flora and Fauna		Complete in 2020.

20	SPS is being considered for upgrade with the STP.	Erosion and Sedimentation	Upgraded STP planned for completion in 3-5 years (~2026/2028)	
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10 References

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Appendix A: Annual Environmental Report Template



Oberon Council: Oberon Sewerage Treatment Plant (STP) Annual Environmental Report 20##

Authored by: NAME/POSITION

Approved by: NAME/POSITION

Date: DATE

Background

Council is committed to providing these services in an environmentally responsible manner, and to a standard that exceeds government and customer expectations as per Council's Environmental Policy.

As part of this commitment, Council issues an Annual Environmental Report to communicate progress on environmental performance to relevant internal and external stakeholders and the community.

Environmental Compliance Obligations

As per the conditions of the Oberon STP Environmental Protection Licence, Oberon Council are required to submit an annual report to the EPA.

Council have met their annual compliance obligations through the submission of their Annual EPA Report on DATE.

Environmental Management System Improvement Plan

Council's environmental management system (EMS) improvement plan captures planned actions and investigations to enact Council's commitment to continuous improvement of Oberon STP's environmental management systems.

Council have completed ## action items this year.

An additional ## action items have been progressed.

Moreover, ## action items have been added to the improvement plan for future action.

EMS Audit

The EPA Risk-based Licensing: Environmental Management Systems Guidelines (NSW EPA, 2019) Annual Return Question Item 9, requires an annual, third party audit of the documented environmental practices, procedures and systems in place during the Annual Return period.

Council engaged a third party to undertake an EMS audit on **DATE** to satisfy this requirement.

Improvements recommended by the third party audit were immediately implemented where possible. Where immediate implication of an identified improvement was not possible, the improvement action was added to the improvement plan.

Additional Comments

Add additional comments or state "Nil".