

Environmental Assessment
Report
TasWater
**Selfs Point Wastewater
Treatment Plant
Upgrade**
New Town

July 2024



ENVIRONMENT PROTECTION AUTHORITY

Environmental Assessment Report

Proponent	Tasmanian Water & Sewerage Corporation Pty Ltd, trading as TasWater
Proposal	Selfs Point Wastewater Treatment Plant expansion
Location	10 Selfs Point Road, New Town, TAS 7008
Class of Assessment	2B
PCE no.	I0507
Permit Application No.	PLN-23-746 (Hobart City Council)
myDAS Folder No.	EN-EM-EV-DE-261952-001
myDAS Document No.	D24-164250

Assessment Process Milestones

Date	Milestone
10 August 2020	Notice of Intent lodged
25 September 2020	Guidelines Issued
22 December 2023	Permit Application submitted to Council
8 January 2024	Referral received by the Board
9 May 2024	Start of public consultation period
6 June 2024	End of public consultation period
9 July 2024	Date draft conditions issued to proponent
6 August 2024	Statutory period for assessment ends

Glossary/Acronyms

Term	Detail
ADWF	Average Dry Weather Flow
Air EPP	<i>Environment Protection Policy (Air Quality) 2004</i>
ASS	Acid sulfate soils
BBO	Blinking Billy Outfall
Board	Board of the Environment Protection Authority
BOD	Biochemical oxygen demand
BPEM	Best practice environmental management
CAS	Conservation Assessments, NRE
CEMP	Construction Environmental Management Plan
CSM	conceptual site model
CNMP	Construction Noise Management Plan
DEP	Derwent Estuary Program
DGV	Default guideline value
EIA	Environmental impact assessment
EIS	Environmental Impact Statement
ELG	Emission Limit Guidelines
EMPCA	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental management and pollution control system
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
I&I	Inflow and infiltration
kL	kilolitre
LGRA	landfill gas risk assessment
L/s	Litres per second
LUPAA	<i>Land Use Planning and Approvals Act 1993</i>
MAST	Marine and Safety Tasmania
ML	megalitre
NCA	<i>Nature Conservation Act 2002</i>
NOI	Notice of Intent
NRE	Department of Natural Resources and Environment Tasmania
OCS	Odour control system
OU	Odour unit
PAH	polycyclic aromatic hydrocarbons
PEV	Protected Environmental Value
PFOS	Perfluorooctanesulfonic acid
RMPS	Resource Management and Planning System of Tasmania
RSRA	Rapid screening risk assessment
SCADA	Supervisory control and data acquisition

SD	Sustainable development
SPLO	Selfs Point local outfall
SPS	Sewage pumping station
SPWQM	<i>State Policy on Water Quality Management 1997</i>
TasWater	The Tasmanian Water and Sewerage Corporation
TPH	Total petroleum hydrocarbons
TSPA	<i>Threatened Species Protection Act 1995</i>
UST	Underground storage tank
WWTP	Wastewater Treatment Plant

Report Summary

This report provides an environmental assessment of the proposed upgrade and expansion of Selfs Point Wastewater Treatment Plant by the Tasmanian Water and Sewerage Corporation Pty Ltd (TasWater).

Selfs Point Wastewater Treatment Plant (WWTP) is an existing level 2 wastewater treatment works. The proposal is for a new larger WWTP to accommodate predicted flows from both the existing Selfs Point WWTP and those currently treated by Macquarie Point WWTP. The treatment capacity of Selfs Point WWTP will be increased from 10.4 megalitres (ML)/day to 24.9 ML/day to provide adequate treatment capacity for anticipated catchment growth over the next 30 years. Discharge from the upgraded Selfs Point WWTP will be predominantly through the existing long outfall located at Blinking Billy Point. During high intensity wet weather events and other abnormal operating scenarios, discharge will occur via a new outfall at Selfs Point at the mouth of New Town Bay.

This report has been prepared based on information provided in the permit application and Environmental Impact Statement (EIS). Relevant government agencies and the public were consulted, and their submissions considered as part of the assessment.

Appendix 1 contains details of matters raised by referral agencies during the consultation process.

Appendix 2 contains a table of the proponent's proposed management measures.

Appendix 3 contains the environmental permit conditions.

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I. Approval Process

The Board of the Environment Protection Authority (the Board) received a Notice of Intent for this proposal on 10 August 2020.

An application for a permit under the *Land Use Planning and Approvals Act 1993* (LUPAA) was submitted to Hobart City Council on 22 December 2023.

The proposal is defined as a 'level 2 activity' under clause 3(a), Schedule 2 of the *Environmental Management and Pollution Control Act 1994* (EMPCA), being a wastewater treatment plant.

Section 25(1) of EMPCA required Council to refer the application to the Board of the Environment Protection Authority (the Board) for assessment under the Act. The application was received by the Board on 8 January 2024.

The Board required that information to support the proposal be provided in the form of an Environmental Impact Statement (EIS), prepared in accordance with the Guidelines issued by the Board on 25 September 2020. Several drafts of the EIS were submitted to EPA for review against the Guidelines before it was finalised and accepted on behalf of the Board on 29 April 2024.

The EIS was released for public inspection for 28 days on 9 May 2024. Advertisements were placed in *The Mercury* and on the EPA website. The EIS was also referred to relevant government agencies for comment. No representations were received.

2. SD Objectives and EIA Principles

The proposal must be considered by the Board in the context of the objectives of the Resource Management and Planning System of Tasmania (RMPS), and the Environmental Management and Pollution Control System (EMPCS). Both sets of objectives are specified in Schedule 1 of EMPCA.

The functions of the Board are to administer and enforce the provisions of EMPCA, and to use its best endeavours to further the RMPS and EMPCS objectives. The Board must assess the proposal in accordance with the Environmental Impact Assessment Principles defined in Section 74 of EMPCA.

3. The Proposal

The main characteristics of the proposal are summarised below. A detailed description of the proposal is provided in Section 2 of the EIS.

3.1 Summary of the main characteristics of the proposal

3.1.1 Activity

Selfs Point WWTP is an existing level 2 wastewater treatment works involving the discharge of sewage with a permitted capacity to treat an average dry weather flow (ADWF) of 13 ML/day sewage or wastewater.

The proposal is to replace Selfs Point WWTP and increase the treatment capacity of the new WWTP to accommodate predicted flows from both the existing Selfs Point WWTP and those currently treated by Macquarie Point WWTP. The treatment capacity of Selfs Point WWTP will be increased from 10.4 ML/day to 24.9 ML/day to also provide adequate treatment capacity for anticipated catchment growth over the next 30 years. Discharge from the upgraded Selfs Point WWTP will be predominantly through the existing long outfall located at Blinking Billy Point. During high intensity wet weather events and other abnormal operating scenarios, discharge will also occur via a new outfall at Selfs Point at the mouth of New Town Bay.

The proposal includes the following key components:

- New inlet works and primary treatment.
- Installation of new bioreactors.
- Installation of a new 8.5ML treated effluent storage tank to balance flows.
- New sludge treatment system.
- Installation of a new odour treatment system.
- Replacement of the existing local Selfs Point effluent outfall pipeline.

3.1.2 Location and planning context

Location	12 Selfs Point Road, New Town (No Certificate of Title, Property ID 3286956), 12A Selfs Point Road, New Town (Certificate of Title 163940/2, Property ID 3286948), 10 Selfs Point Road, New Town (Certificate of Title 163941/1, Property ID 3189590), 10A Selfs Point Road, New Town (Certificate of Title 163940/3, Property ID 3189582), Selfs Point Road Reservation, land adjacent to Gas Road, and as shown in Figure 1.
Land zoning	The site falls across two zones under the <i>Hobart Interim Planning Scheme 2015</i> : the Utilities Zone and the Recreation Zone. Additionally, the outfall is located in the Environmental Management Zone.
Land tenure	TasWater, Local Government (City of Hobart), and the Department of Natural Resources and Environment Tasmania (Crown Land Services). See Table 5-1 of the EIS for further information.

3.1.3 Activity site

Land Use	Most of the site that is Local Government (City of Hobart) owned land (excluding the road corridor for the local Selfs Point effluent outfall pipeline) is used as a storage depot by the City of Hobart and does not have any recreational activities occurring on it. The remaining parts of that title area will continue to be used for the existing activities including the Ten Lives Cat Centre to the east, the New Town Bay Rowing Centre to the west and Rugby Park to the south. Historically there has been significant reclamation across the site, and historical use of a portion of 10 Selfs Point Road as a landfill facility following reclamation. The landfill was subsequently capped with clay and dredge spoil between 1998 and 2000 for use as an
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	experimental wetland area fed from the Selves Point WWTP effluent discharge. The wetland area was drained and is no longer used and remains in a dry state.
Topography	Generally flat, with the wetland area slightly elevated compared to surroundings.
Geology	Transitional olivine basalt, which forms the bedrock under the significant anthropogenic fill that has been used on both the wetland site and existing Selves Point WWTP.
Soils	Comprised of undifferentiated alluvial soils.
Hydrology	New Town Rivulet is the closest minor tributary of the River Derwent and is now essentially an engineered canal in the lower reaches. Groundwater movement in the direct vicinity of the site slopes in a northerly direction from the wetlands through to the shoreline.
Natural Values	<p>The entirety of the terrestrial site lies on previously disturbed land, and the vegetation communities within the site have been assessed under the TASVEG 4.0 code as being entirely comprised of 'Extra-urban miscellaneous (FUM)'. The only notable native vegetation recorded within the site is comprised of (presumably) planted <i>Eucalyptus globulus</i> trees scattered around the edges of the site and between the wetland areas and existing WWTP site. Introduced flora species are ubiquitous across the site, with environmental weeds widespread and abundant, including seven declared weed species. The <i>E.globulus</i> trees may present a food resource to the swift parrot (<i>Lathamus discolor</i>) listed as endangered under the <i>Threatened Species Protection Act (TSPA)</i> and Critically Endangered under the <i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>. The site was not found to support any other significant fauna habitat, flora or vegetation communities.</p> <p>The environment around the proposed effluent outfall location is classified as the middle estuarine zone in accordance with the Derwent Estuary Program (DEP). Typical of the middle reaches of the Derwent Estuary, the substrate of the area is predominantly low productivity, silty sand habitat with occasional scattered rocks and debris. Typical species in the area include the introduced Northern Pacific seastar (<i>Asterias amurensis</i>), biscuit stars (<i>Pateriella regularis</i>), and introduced New Zealand screw shells (<i>Maoriculpus rosaceus</i>). Several marine mammals have the potential to occur in the area, albeit in a transitory fashion, including the southern right whale and humpback whale, New Zealand fur seals, and bottlenose or common dolphins.</p>

3.1.4 Location region

Climate	Temperate with an annual minimum average of 9°C and maximum average of 17.6°C. Rainfall is heavier through the winter and spring seasons, with monthly means ranging from 37-63 mm. Winds are generally stronger during the summer months, with predominant winds throughout the year being south-westerly.
Surrounding land zoning, tenure and uses	<p>The proposal site is surrounded by Local Government Act Reserve, Authority Freehold, Casement, Crown Land, Local Government, Private Freehold and Public Reserve land.</p> <p>Surrounding the site are recreation, community purpose, and port and marine land uses, including fuel storage facilities and Cornelian Bay cemetery and crematorium. The nearest residential land is located approximately 100 m to the west.</p>
Species of conservation significance	The area around Selves Point is potential habitat for the Derwent seastar (<i>Marginaster littoralis</i>), listed as endangered under the TSPA and critically endangered under the EPBC Act and the Tasmanian Live-bearing seastar (<i>Parvulastra vivipara</i>), listed as endangered under the TSPA and vulnerable under the EPBC Act. The Derwent seastar, previously observed near the proposed outfall, has not been observed for several decades.

	The Blinking Billy outlet is located on sediment substrates near the mouth of the estuary at 32 m depth. There is a known population of the spotted handfish (<i>Brachionichthys hirsutus</i>), listed as critically endangered under the EPBC Act and endangered under the TSPA, nearby.
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3.1.5 Proposed infrastructure

Major infrastructure	<ul style="list-style-type: none"> • New inlet works and primary treatment. • Installation of new bioreactors. • Installation of a new 8.5 ML treated effluent storage tank to balance flows. • New sludge treatment system. • Installation of a new odour treatment system. • Replacement of the existing local Selfs Point effluent outfall pipeline.
Other infrastructure	<p>New pipeline and associated sewerage pumping station from the Macquarie Point WWTP to the proposed new inlet works.</p> <p>Upgraded power supply to the site, which will be undertaken by TasNetworks.</p>

3.1.6 Wastes and emissions

Liquid	Untreated sewage (wastewater) collected from the Selfs Point WWTP catchment. Stormwater runoff from excavation and stockpile areas. Groundwater from excavations.
Atmospheric	<p>Dust from construction activities such as trenching, excavation, stockpiling of materials and movement of vehicles.</p> <p>Odour emissions associated with decommissioning of existing process units and operation of the WWTP.</p>
Solid	<p>During the construction period waste construction materials such as concrete, plastic and steel (tens of tonnes), general waste including general recyclables (several tonnes), and general refuse including recyclables (food scraps, paper and packaging) will be generated.</p> <p>During the operational phase general waste including general recyclables will be generated.</p>
Controlled wastes	<p>During the construction period small quantities of controlled waste including solvents and paints (<5,000 L), waste oil or hydraulic fluid (<5,000 L), possible contaminated soils (variable quantities) (addressed in Section 6.4 of the EIS), waste from transportable toilets (to be removed by a licensed operator) and waste diesel from the underground storage tank (UST) removal (approx. 2,700 L) will be generated.</p> <p>During the operational phase smaller quantities of paints, oils and lubricants used for maintenance, screening and grit from the inlet works (these will be collected in sealed 10 m³ storage bins for regular (monthly) collection, sewage sludge and biosolids.</p>
Noise	Intermittent noise during construction including use of piling equipment, pneumatic tools (e.g., jackhammer), excavators, generators and from trucks. Minimal noise from operational phase as pumps located underground in a concrete structure.
Greenhouse gases	Generated from use of fuel in machinery, trucks, and vehicles to transport materials and wastes to and from the sites and in excavation and drilling activities during construction. Concrete materials used for the proposal have embedded carbon dioxide emissions. The pump station will use mains electricity. Minor fugitive emissions from biological processes occurring in the sewage including carbon dioxide, nitrous oxide and methane.

3.1.7 Construction, commissioning and operations

<p>Proposal timetable</p>	<p>Construction is expected to commence in the 2024-2025 financial year, with an approximate 24-month construction window before commissioning.</p> <p>The new WWTP will be constructed in the wetland area to the west leaving the existing WWTP to operate without interruption for the majority of the construction period.</p>
<p>Construction hours</p>	<p>The majority of the construction is proposed to be undertaken with construction hours limited to:</p> <ul style="list-style-type: none"> • Monday to Friday between 0700 hours and 1800 hours • Saturday between 0800 hours and 1300 hours • Sunday and public holidays – no work <p>There are, however, requirements for pre-drilling to facilitate piling activities to be on a 24-hour roster during weekdays, Saturdays, Sundays and public holidays</p>
<p>Operating hours (ongoing)</p>	<p>Continuous (24 hours per day, 7 days per week)</p>



Figure 1: Site Location (Figure 1-2 of the EIS)



Figure 2: Outfall Locations (EIS Figure I.1)

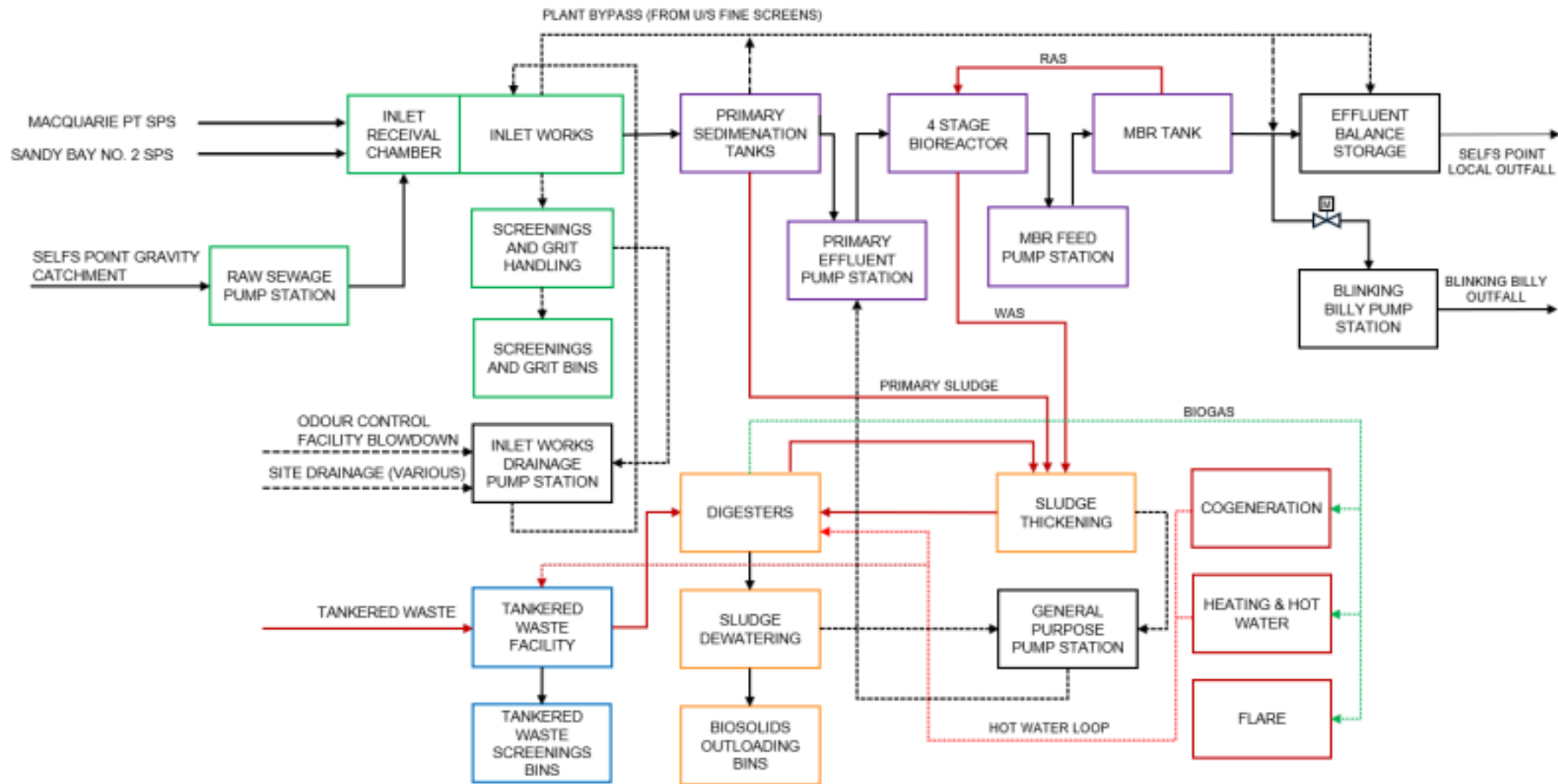


Figure 3: Process diagram for new configuration of Selfs Point WWTP (Figure 2-2 of the EIS)

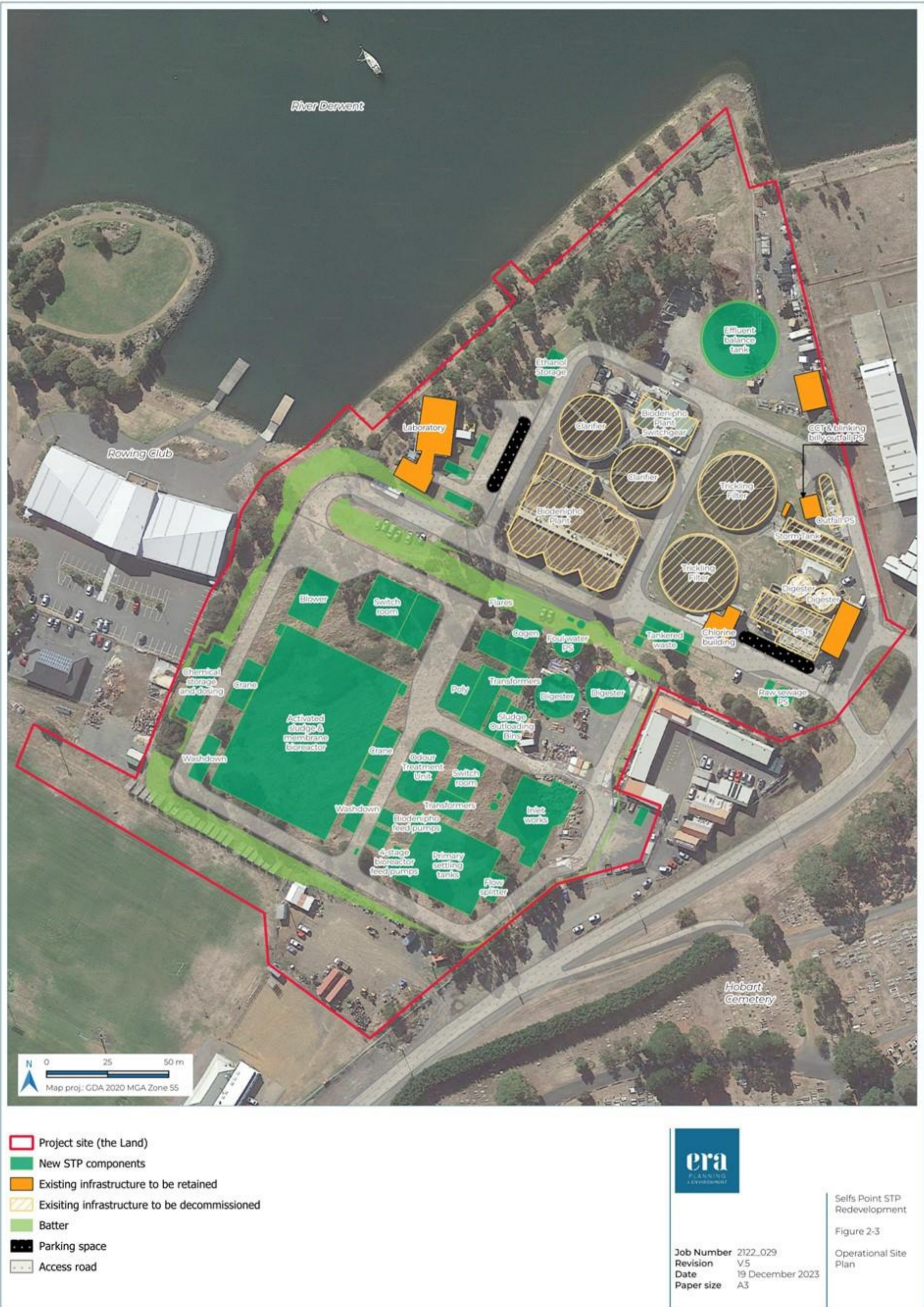


Figure 4: Operational Site Plan (Figure 2-3 of the EIS)

4. Project Rationale and Alternatives

The purpose of the project is to allow Macquarie Point WWTP, which is an ageing asset, to be decommissioned and demolished and to facilitate redevelopment of the Macquarie Point precinct. The secondary purpose is to increase treatment capacity and efficacy of the Macquarie Point and Sells Points catchments to allow for future catchment growth.

Options focussed on an upgrade at the existing Sells Point WWTP site, as finding an alternative location was considered to be difficult in an urban area and cost prohibitive, particularly when considering the layout of the sewerage network. The existing available and suitable adjacent land was also a consideration.

The initial version of the upgrade included a staged approach, where a combination of new and existing infrastructure would be used to meet an initial 2040 design horizon, termed “Stage 1”. This would then be followed by a second stage which would essentially replace all of the old treatment infrastructure, resulting in completely renovated plant to last up to 2054 (“Stage 2”).

This staged approach was abandoned in 2023 due to the integration of the existing Biedenipho bioreactors not being found to be cost effective. It was decided to complete Stage 1 and Stage 2 at the same time, resulting in essentially a completely new plant. Moving away from the staged approach allows a combined activated sludge/membrane bioreactor configuration to be built, allowing efficiencies in construction. The move to the new design also means that dry and wet weather flows would be subject to membrane treatment for removal of microbes, eliminating the need for subsequent UV disinfection, which would have been required for the Biedenipho process.

Seven treatment options were taken through to the second round of analysis. These were:

- Conventional activated sludge process (primary treatment)
- Conventional activated sludge process (raw sewage)
- Membrane bioreactor (MBR) (primary treatment)
- MBR (raw sewage)
- Aerobic granular sludge (raw sewage)
- Sequencing batch reactor (raw sewage)
- Integrated fixed-film activated sludge (raw sewage).

The MBR (primary treatment) option was ultimately selected based on:

- Reduced capital cost due to the small footprint of the intensified process.
- The smaller tank size improves the ability for this option to accommodate flows beyond 2054 and reduce potential odour impacts.
- Provides good process robustness to achieve performance criteria and deal with variability in influent quality.

5. Public and Agency Consultation

No public submissions were received during the public consultation period.

The EIS was also referred to several government agencies with an interest in the proposal. Submissions were received from the following:

- Conservation Assessments (CAS), Natural Resources and Environment Tasmania
- Marine and Safety Tasmania (MAST)

The following individuals also provided specialist advice on the EIS:

- Regulatory Officer, Environment Protection Authority
- Scientific Officer (Air), Environment Protection Authority
- Scientific Officer (Water), Environment Protection Authority
- Scientific Officer (Noise), Environment Protection Authority
- Senior Environmental Officer, Contaminated Land & Regulatory Systems, Environment Protection Authority

Appendix I of this report contains a summary of the government agency submissions received.

6. Evaluation of Key Environmental Issues

Four key environmental issues were identified for detailed evaluation in this report:

- Water Quality
- Noise
- Air Quality
- Land Contamination and Groundwater

These issues are discussed in the following subsections.

General conditions

The following general conditions will be imposed on the activity:

- G1** Access to and awareness of conditions and associated documents
- G2** Incident response
- G3** Proposed change to activity
- G4** Change of ownership
- G5** Change of responsibility
- G6** Complaints register
- G7** Annual Environmental Review
- G8** Amendment of required plans and reports
- G9** Notification prior to construction
- G10** Notification prior to commissioning
- G11** Notification prior to commencement of operations

6.1 Water Quality

6.1.1 Description

Treated wastewater can, albeit at low concentrations, contain a wide range of contaminants such as organic material, suspended solids, nutrients, metals, organic contaminants and pathogens.

Treated wastewater discharges can impact on water quality both in the:

- near field - before effluent receives sufficient dilution and dispersion where contaminant toxicity to the marine ecosystem and pathogenic impacts to recreational users and aquaculture are the primary concerns, and
- far field - where increased nutrient loads, if excessive, can lead to eutrophication issues such as prolific algal growth and impact on aquatic communities by smothering substrates and causing deoxygenation.

Occasional discharges of partially treated wastewater in high rainfall events also have the potential to temporarily impact water quality in the vicinity of the discharge location, noting however that, in those circumstances water quality is also impacted by stormwater run-off from across the catchment.

Construction activities have the potential to temporarily impact on water quality and aquatic biota through increased sediment runoff and release of contaminants from stormwater runoff or leakage of drilling fluid or hazardous substances from construction areas.

The extent of those impacts depends on the characteristics and ecological sensitivities and uses of the receiving environment. Under the *State Policy of Water Quality Management 1997*¹ (SPWQM) these are referred to as Protected Environmental Values (PEVs) and have been set for all surface waters in Tasmania. These PEVs are used by government to guide requirements for any activities, such as WWTPs, potentially impacting on those values, to ensure the long-term sustainable use of surface waters.

As noted in section 6.1.1.1 of the EIS the Derwent Estuary is considered a disturbed ecosystem as a consequence of sustained anthropogenic impacts from urbanisation, flow regime changes, industrial discharges and introduction of marine pests.

Existing discharges

The Sels Point WWTP provides wastewater treatment for domestic, commercial, and industrial premises in the New Town, Sandy Bay and Taroona suburbs of Hobart. Sels Point WWTP uses an enhanced secondary treatment process comprised of pre-fermenters, anaerobic and aerobic biological nutrient removal, sedimentation, ultraviolet and chlorine disinfection. Sludge is anaerobically digested, dewatered, lime stabilised, and land applied as a fertiliser and soil conditioner. Sels Point WWTP is currently permitted to treat and discharge up to 13 megalitres (ML) average dry weather flow (ADWF) wastewater per day. The EIS (section 2.2.1) advises, based on measured inflows to the WWTP, that an average of 8 ML/day ADWF is currently treated by Sels Point WWTP. The average daily flow received during the 2022-2023 period was 10.9 ML. Effluent quality from Sels Point is generally reasonable, achieving a good level of compliance with limits for most parameters including nutrients. In 2022-2023 Sels Point achieved 79% compliance with bacteriological parameters and 73% compliance with limits for total residual chlorine.

The treated effluent is predominantly discharged via a pumped outfall pipeline at Blinking Billy through a multipoint diffuser at 32 m depth. Approximately 1% of the treated effluent was previously reused to irrigate the Friends School sportsground but this has now ceased based on advice from Public Health. During significant wet weather events, flows in excess of the full treatment capacity of Sels Point and the Blinking Billy rising main are discharged via a Sels Point local outfall (SPLO). The frequency and volume of these bypass events fluctuates depending on rainfall. July 2020 - June 2021 was a wet year and 20 bypass events were recorded with flows ranging from 8 kilolitres (kL) to 19.2 ML. This effluent has received primary treatment and chlorine disinfection (refer to EIS section 2.1 for more detail).

¹ [State Policy on Water Quality Management 1997 | EPA Tasmania](#)

The Macquarie Point WWTP provides wastewater treatment for domestic, commercial, and industrial premises (including McRobies landfill and Cascade Brewery) for the Hobart CBD and the suburbs of Battery Point, Mount Stuart, Glebe, North, West and South Hobart. This is predominantly a gravity network. Some areas of the network are very old, made of clay or concrete and low lying. Three of these sub-catchments (and Franklin Wharf, Salamanca and Battery Point) are prone to saltwater ingress during high tides.

Macquarie Point WWTP uses a basic secondary treatment process comprising primary and secondary sedimentation, trickling filters and chlorine disinfection with no specific nutrient removal. During peak weather flow, effluent can bypass secondary treatment and if the capacity of the WWTP is exceeded the full treatment process can be bypassed. Macquarie Point is currently permitted to treat and discharge up to 18 ML average dry weather flow (ADWF) of wastewater per day. The EIS (section 2.2.1) advises, based on measured inflows to the WWTP, that an average of 10.45 ML/day ADWF is currently treated by Macquarie Point WWTP. The average daily flow received during the 2022-2023 period was 13.79 ML. Macquarie Point WWTP is an older secondary treatment process with little nutrient removal capability. Effluent quality from Macquarie Point WWTP is poor and is characterised by high organic and nutrient loads and by relatively high conductivity (due to the saltwater infiltration). Over the last few years there have been several process failures at Macquarie Point WWTP resulting in prolonged discharges of poorer quality effluent.

The treated effluent is discharged via a pumped outfall at Macquarie Wharf through a diffuser at 12 m depth.

Section 2.2.2 of the EIS discusses the current influent flows and loads of wastewater received by the current WWTPs and the process to identify the key contaminants of concern used to inform the design parameters for the new Selfs Point WWTP. Effluent screening conducted in 2016 identified aluminium (from addition of flocculant in the treatment process), copper, zinc and total residual chlorine (from disinfection) in Macquarie Point WWTP effluent and copper and zinc in Selfs Point WWTP effluent as potential contaminants of concern. These contaminants, with the exception of zinc, were not measured in the receiving environment during the related ambient monitoring program in 2016. No correlation could be found between ambient zinc concentrations and either the Macquarie Point or Selfs Point WWTP discharges. Zinc levels are generally elevated in the Derwent Estuary as a consequence of the historic and ongoing operation of the zinc smelter.

EIS Appendix B, section 7 presents a whole of estuary risk assessment for the proposal. This finds that, of the nine WWTP discharges in the Derwent Estuary, Macquarie Point WWTP is the largest contributor of pollutant loads and presents a medium risk of causing eutrophication, human health impacts and toxic impacts from chlorine. Selfs Point, due to the deep outfall providing good dilution and dispersion of effluent, poses a low risk.

Proposed discharges and receiving environment

The proposal is to construct a new sewage pumping station adjacent to Macquarie Point WWTP which will transfer all wastewater flows currently received and treated by Macquarie Point WWTP and transfer these to a new and expanded Selfs Point WWTP. The proposed Macquarie Point Sewage Pumping Station was subject to a separate assessment by the Board and was approved in February 2024².

The proposed new Selfs Point WWTP will be designed to cater for flows currently treated by both existing WWTPs and for predicted future flows to the 2054 design horizon being 24.9 ML/day ADWF. This is based on studies undertaken in 2020 to establish likely Hobart catchment growth rates, with an annual 0.9% catchment growth rate applied.

The new Selfs Point WWTP will use activated sludge and membrane bioreactors for biological nutrient removal and disinfection. Two new anaerobic sludge digesters and sludge dewatering and handling facilities are also part of the development. Refer to section 3 of this report for an overview of the proposed new Selfs Point WWTP and to section 2.3 of the EIS for a detailed description.

² [TasWater, Macquarie Point Sewage Pumping Station | EPA Tasmania](#)

Fully treated effluent

The predicted effluent quality is summarised in Table 1, below. As noted in the table, most of the proposed limits are consistent with accepted modern technology limits (AMT) developed by the EPA. These limits are specified in the *Emission Limit Guidelines for Sewage Treatment Plants that Discharge Pollutants into Fresh and Marine Waters*³ (ELGs) and were derived to provide guidance and benchmarks for WWTP operation in compliance with the SPWQM. While these apply specifically to WWTPs with a design capacity of no greater than 500 kL/day ADWF, these values are used as guidance for larger WWTPs, coupled with the results of ambient monitoring to determine whether impacts are sustainable.

The ELGs also clarify that the EPA does not consider chlorine disinfection as best practice environmental management (BPEM). While chlorine is not required or proposed to achieve desired pathogen levels at the new WWTP, TasWater has advised that the treated effluent needs to be dosed with a low concentration of chlorine to prevent bacterial regrowth in the outfall rising main.

Table 1: Proposed effluent quality limits (based on EIS Table 2.3)

Parameter	Current Selfs Point WWTP maximum limit	Proposed 50 th percentile	Proposed 90 th percentile	Proposed maximum	Comments
Biochemical Oxygen Demand (mg/L)	15	10	15	-	Equivalent to AMT
Total Suspended Solids (mg/L)	20	10	20	-	Equivalent to AMT
E.coli (cfu/100ml)	750	200	500	750	Equivalent to AMT
Oil and Grease (mg/L)	5	2	5	-	Equivalent to AMT
Total Nitrogen (mg/L)	10	7	10	-	Equivalent to AMT
Ammonia (mg/L)	2	1	2	5	Equivalent to AMT
Total Phosphorus (mg/L)	3	2	5	-	Relaxed compared to AMT with justification based on environmental impact assessment
pH	6.5-8.5	Range 6.5-8.5			Equivalent to AMT
Total Residual Chlorine (mg/L)	1	-	-	<0.1	Chlorine dosing to prevent biofouling in the Blinking Billy transfer main

Ambient monitoring can inform the extent of the impact of toxicants in the area immediately around the discharge.

If this zone is limited and meets criteria specified in section 20.3 of the SPWQM, the Board may determine it is appropriate to set a mixing zone. This acknowledges that waters within the mixing zone of the discharge do not meet determined water quality objectives of that receiving environment. The criteria for mixing zones include that the mixing zone must be as small as possible, should not occupy a significant

³ [Setting Emission Limits for Wastewater Treatment Plants | EPA Tasmania](#)

proportion of the receiving waters designated for any given PEV, and the mixing zone must not detract from the values and uses of the surrounding waters. The Board needs to be first satisfied that:

- the discharge limits are set at levels which will not prejudice the achievement of water quality objectives; and
- pollutant discharges are reduced to the maximum extent that is reasonable and practical having regard to best practice environmental management (BPEM) and the waste hierarchy.

To satisfy the waste hierarchy the Board needs to be satisfied that TasWater has taken sufficient steps to reduce the discharge and investigate options for recycling and reuse of effluent. To manage influent volumes and strengths of wastewater TasWater must manage trade waste flows and inflow and infiltration (I&I). To protect their sewerage assets TasWater controls trade waste received into the network through trade waste agreements with relevant customers. The requirements of these agreements vary depending on the strength, volumes and contaminants involved.

I&I levels, if high, can significantly increase the wastewater flows discharged. As noted above, saltwater infiltration is a known issue in some older, lower lying areas of the Macquarie Point catchment. It is noted that sewer diversion works being undertaken at Macquarie Point will address some of this problem. Sels Point sewer catchment is less of a concern due to the age and height of the network.

TasWater maintains a state-wide inflow and infiltration management plan which includes an assessment and prioritisation of catchments and sub catchments for infiltration investigation works and investment. Review of the I&I Management Plan produced by TasWater indicates that overall, the Sels Point WWTP catchment has comparatively low levels of I&I (ranked 47) whereas Macquarie Point catchment is a higher priority (ranked 19 out of 79).

EIS Appendix J provides an assessment of inflow and infiltration in the Macquarie Point catchment conducted in 2016 and a 2023 technical memo to provide assurance that the design assumptions for peak flows for this project are appropriate. It is noted that Sels Point influent should sufficiently dilute the more saline Macquarie Point influent.

TasWater undertook studies to investigate reuse options in 2014 and then again in 2022 (EIS Appendix A). Predicted effluent quality meets reuse class B quality standards⁴ although predicted median effluent salinity is elevated and would require monitoring. Appendix A explored a range of class B reuse options including industrial reuse and irrigation of public spaces within 5 km of the WWTP and along the route of the Blinking Billy rising main, and expansion of the existing Brighton and Clarence reuse schemes. It was concluded that, at this time, options for full reuse are very limited and, due to a lack of contiguous suitable sites, cost prohibitive and that at this time, pursuing effluent reuse as well as upgrading Sels Point WWTP, is not viable.

Wastewater contains high levels of nutrients, namely nitrogen and phosphorus in various forms. As noted above, elevated nutrient loads can lead to eutrophication impacts in the far field receiving environment. The EIS (Section 2.2.4 and Table 2.4) presents data on the combined current mass loads of nutrients and physical parameters (BOD and suspended solids) discharged by the combined Macquarie Point and Sels Point WWTPs comparing these figures against what is predicted to be discharged by the new Sels Point WWTP. This suggests that the mass loads of total nitrogen and total phosphorus discharged to the Derwent will reduce by 58% and 42% respectively. The mass load of ammonia will reduce by 73%.

Fully treated effluent from the new Sels Point WWTP will continue to be discharged via the deep outfall off Blinking Billy Point (Figure 2). The Blinking Billy Outfall (BBO) for the new Sels Point WWTP will be structurally unchanged, however there will be an increase in flows discharged at this location. This outfall is located 550 m offshore and discharges through a long diffuser comprising 11 ports at 32 m depth. The BBO has a capacity of 345 litres per second (L/s), which equates to approximately 29.8 ML/day and above the maximum quantity being applied for (26 ML/day). The EIS advises that ambient modelling has conservatively adopted this maximum discharge rate as a continuous discharge, whereas in reality, the discharged rate will follow diurnal pattern with morning and evening peaks.

⁴ [Environmental Guidelines for the Use of Recycled Water in Tasmania \(DPIWE, 2002\)](#)

Plume dilution studies undertaken in 2016 demonstrates the effluent plume rises through the water column and disperses from the surface in the direction of the tide (Figure 5).

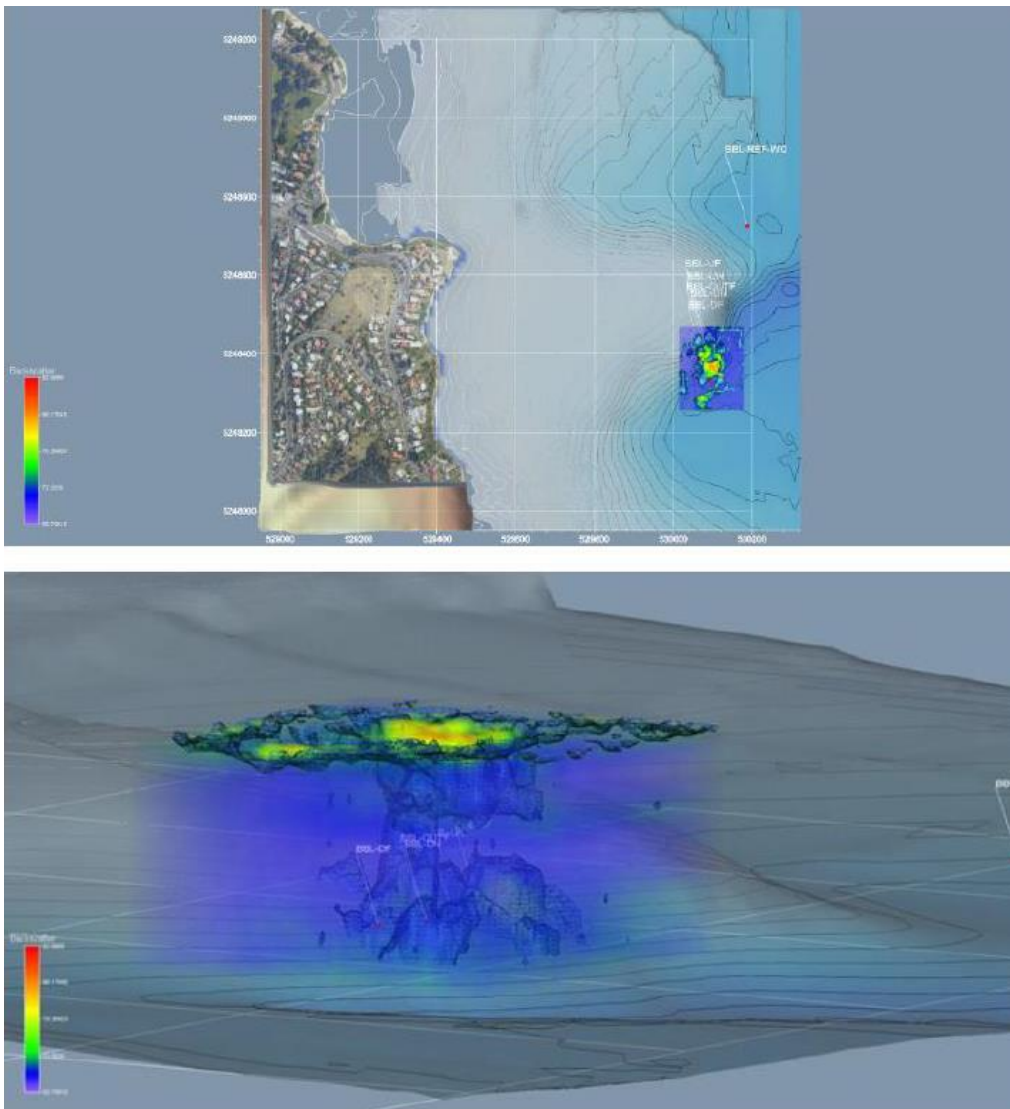


Figure 5: BBO plume tracer study outgoing tide (EIS Appendix B figure 4.3)

Blinking Billy is located in the Lower Derwent Estuary. Notably there is a population of the benthic dwelling spotted handfish (*Brachyonichthes hirsutus*) listed as critically endangered under the EPBC Act and endangered under the Threatened Species Protection Act (TSPA).

The relevant PEVs for the Lower Derwent estuary include:

- Protection of Aquatic Ecosystems:
 - Protection of modified (not pristine) ecosystems from which edible fish, crustaceans and abalone, but not other shellfish, are harvested, and having particular regard to the ecological values identified in paragraph below*.
- Recreational Water Quality and Aesthetics#:
 - Primary contact water quality
 - Secondary contact water quality
 - Aesthetic water quality and having particular regard to recreational uses.

*This area of the Derwent Estuary is characterised by relatively high salinities, intermediate to deep water depths and is well-mixed by winds and currents. Important estuarine habitat types include rocky cliffs, intertidal and subtidal rocky reefs, macroalgae beds,

seagrass beds, sandy beaches and coastal dunes (1). Major conservation areas within this area include the Cape Direction Muttonbird Sanctuary, Tinderbox Marine Reserve, Kingston Beach Golf Course Wildlife Sanctuary and Alum Cliffs Recreation Reserve. Threatened/protected species found in this area include whales (southern right, humpback, orca), dolphins, seals, wedge tailed eagles, southeastern seastars and the spotted handfish (2). Other species of conservation significance include giant string kelp, seahorses/sea dragons, threespins and muttonbirds (3). Finfish are harvested from the lower Derwent by recreational fishermen, however shellfish harvesting has been prohibited due to high concentrations of heavy metals (1). Abalone, crayfish and sea urchins are also harvested from the area, particularly along the western shoreline, south of Taroona.

#The lower Derwent is used for both primary and secondary recreation. Popular swimming beaches include Howrah Beach and Bellerive Beach, Opossum Bay, Half Moon Bay, Blackmans Bay, Kingston Beach, Taroona and Long Beach/Sandy Bay. The area is also widely used for recreational boating and fishing. The Tinderbox Marine Reserve and surrounding areas are popular sites for snorkelling and scuba diving.

Peak and partially treated overflows

During peak wet weather events when the capacity of the Blinking Billy rising main and outfall are being exceeded, treated flows will be diverted to the effluent balancing tank for storage and if that storage is exceeded discharge will occur via the SPLO. During emergency events such as power failure, or if flows exceed the capacity of the WWTP partially treated flows will discharge will occur via the SPLO. The outfall will have a peak hydraulic capacity of 1,340 L/s and discharge is predicted to occur on average seven times per year with a predicted total discharge of 130 ML/yr. Ambient modelling conducted to determine the impact of this discharge is based on the maximum discharge rate of 1,340 L/s and as a continuous discharge, this is conservative since this equates to 115 ML/day and close to the anticipated annual volume discharged at this location.

Acoustic doppler current profiler (ADCP) results found that the current moves primarily in a south-easterly direction but at depth there is a strong movement of water upstream in a northerly direction. Plume studies found that effluent reports to the surface and then moves with the tide.

Due to structural damage of the current outfall, the proposal includes a new local outfall to be constructed to the south of the existing outfall between Sels Point and Cornelian Bay Point (refer to Figure 2).

It is proposed that the new outfall will extend approximately 200 m offshore to a depth of 8 m. The outfall pipe will be floated and then sunk in to place with precast concrete collars spaced at 5-6 m intervals. The outfall will be fitted with a diffuser with 20-25 ports spread along 100 m of the outfall to optimize dispersion of effluent discharged.

Construction of the new SPLO has the potential to cause temporary environmental impacts on water quality and disturbance of aquatic biota through increased sedimentation and release of contaminants or leakage of hazardous substances (e.g. fuels, lubricants and oils).

There will be a further emergency discharge location at the Sels Point WWTP location. The pump station that transfers flows to the BBO is low lying. In the event of failure of the high voltage mains power supply, failure of the backup power supply, and coupled with the mechanical failure of the flow control valve that shuts off flow to the pump station that transfers flows to the BBO, effluent would be discharged to the local stormwater system. The EIS advises that with the reliability of the high voltage power supply arrangement proposed for the site, the likelihood of this event occurring is very low.

This part of the Derwent is referred to as the Middle Derwent Estuary.

The relevant PEVs for the Middle Derwent Estuary include:

- Protection of Aquatic Ecosystems:
 - Protection of modified (not pristine) ecosystems from which edible fish, crustaceans and abalone, but not other shellfish, are harvested, and having particular regard to the ecological values identified in paragraph below*.
- Recreational Water Quality and Aesthetics:
 - Primary contact water quality
 - Secondary contact water quality

- Aesthetic water quality and having particular regard to recreational uses[#].

- Industrial Water Supply (*Nyrstar Hobart Smelter*)

* This region of the Derwent Estuary is considerably narrower than downstream areas and is partially sheltered from prevailing westerlies. The shoreline is relatively convoluted with numerous embayments (the largest of these is Herdsmans Cove, where the Jordan River joins the estuary). Water depths between the Bowen and Tasman bridges are deep to intermediate, permitting the passage of large ships. Above the Bowen Bridge, however, the channel becomes more well-defined and is bordered by extensive subtidal flats. Salinities in this area are intermediate, and the water column ranges from strongly stratified at the Bridgewater Causeway to partially mixed at the Tasman Bridge (1).

Important estuarine habitat types include numerous bays and coves, rocky promontories, silt/pebble beaches, saline and intertidal flats, salt marshes and seagrass beds. Wetlands were formerly present at the heads of many embayments but have been largely reclaimed with the exception of a few remnants (e.g. Goulds Lagoon, Risdon Cove) (1). Major conservation areas include the East Risdon Nature Reserve, Green Point Nature Reserve and Goulds Lagoon Wildlife Sanctuary. Threatened/protected species found in this area include dolphins, occasional seals, green and gold frog, and southeast seastars. (2). Goulds Lagoon and Risdon Cove also provide important habitat for a range of waterbirds (3).

[#] The middle Derwent is primarily used secondary recreation, particularly small boat sailing, rowing and fishing. Some primary contact uses also occur, such as swimming, water skiing and wind -surfing, and the annual Cross-Derwent Swim occurs near the southern boundary of this area.

Current water quality

The Derwent Estuary has been subject of extensive ambient monitoring programs and reports including by the Derwent Estuary Program (DEP) and by TasWater in 2014-15 to establish the impacts of all of the WWTP outfalls in the Derwent. The EPA in 2019, using this data, developed draft default guideline values (DGVs) for sections of the Derwent, including the Middle and Lower Derwent Estuary to establish appropriate water quality conditions to be maintained and assess the impact of the proposed discharges against. The CSIRO has produced a biogeochemical model of the Derwent Estuary providing a detailed insight into nutrient inputs and movement in the estuary and areas of algal boom.

Refer to EIS Appendix B section 3 which provides a detailed overview of the Derwent Estuary and section 6.1.1 of the EIS, which summarizes this water quality data collected by TasWater and DEP providing a comprehensive overview of water and sediment quality and hydrodynamics in the vicinity of both outfall locations.

Key findings

- Ambient concentrations of total nitrogen are high in the Derwent system with the middle estuary having higher levels of nitrate and nitrite than the lower estuary. Work undertaken by CSIRO found that the sewage outfalls and marine influxes are the two main sources of nitrogen used by macroalgae.
- Phosphorus and dissolved phosphorus concentrations also tend to be higher in the middle estuary and throughout the estuary tend to be higher in surface waters than at depth.
- It is noted that surface water nutrient concentrations deplete in summer and autumn and that algal production in summer is controlled by nitrogen and light. Phosphorus levels are such that they do not limit algal production.
- Chlorophyll α levels reflect nutrient parameters with higher middle estuary values reducing in the lower estuary. This is consistent with the CSIRO model that indicates a persistent bloom of phytoplankton biomass in the middle estuary.
- The Derwent Estuary is known historically to have elevated heavy metal concentrations through industrial activities located in the catchment including the zinc smelter. Median concentrations of zinc have exceeded relevant toxicant trigger values in surface waters in the vicinity of the smelter and near Selfs Point. These concentrations have reduced in recent years. Total aluminium was also detected but not in dissolved form, likewise total copper was also detected but not dissolved copper at Selfs Point. At Blinking Billy dissolved zinc, potentially associated with the Selfs Point WWTP discharge has been found above toxicant trigger values along with elevated total aluminium concentrations.

- Monitoring indicates that under normal conditions pathogen levels around both BBO and SPLO sites are generally acceptable. Monitoring confirms that elevated pathogen levels can be triggered by different types of events such as rainfall or some form of WWTP failure.
- Sediment sampling undertaken by TasWater at both BBO and SPLO did not find any conclusive impacts as a consequence of the discharges either in sediment quality or in benthic infauna abundance.
- Results of current speed and direction measurements indicate that at Blinking Billy currents are highly variable across tidal cycle and depth with highest speeds at depth. Tidal movements were generally in a north to southeast direction. At Sels Point flows are influenced by both river and tidal flow with surface waters moving on a northerly and south-easterly direction with the tide and bottom waters moving more in a northerly direction (refer to EIS Appendix B, figure 3.2). The middle estuary is high stratified, the lower estuary less so.

Overall ambient monitoring results indicate that anthropogenic effects continue to be significant in the Derwent Estuary and WWTPs are contributors of potential contaminants of concern with nutrients of particular interest as a mass load in this region.

Potential impact of discharges

EIS Appendix B presents ambient modelling predictions for both fully treated effluent to be discharged at Blinking Billy and of partially treated discharges at SPLO under the proposal. Near field modelling was undertaken to understand the extent of potential effluent toxicity and pathogenic influence near the outfalls, as well as ecosystem stressors, noting that ammonia and nitrate are considered as both ecosystem stressors and toxicants.

Blinking Billy

Table 2 below provides the relevant DGVs used and presents the calculated dilution requirements for the discharge at Blinking Billy.

These calculations take into account background ambient concentrations and the result is the dilutions required to achieve the relevant DGV. EIS Appendix B Table 4.4 presents the dilution achieved at various distances from the Blinking Billy discharge point under various tidal conditions. As chlorine is highly reactive in the environment, modelling for this dilution requirement also took into account literature-based decay rates. The dilution requirements below are simple dilution ratios and factors, and subsequent plume dilution studies and water quality monitoring near the outfall post commissioning of the treatment plant will confirm or refine the dilution achieved as it relates to volume discharged and hydrodynamics.

Table 2: Dilution requirements for treated effluent design parameters Blinking Billy (Appendix B, Table 4.1)

Parameter	Adopted 90 th percentile	Applied DGV (annual, bottom)	Ambient background [^]	Dilution requirement (X:1)
Ecosystem stressors				
BOD (mg/L)	15	<5	-	2
TSS (mg/L)	20	6 [^]	3 [^]	5
Oil and Grease (mg/L)	5	<1	-	4
TN (mg/L)	10	0.346	0.27	127
Nitrate (mg/L)	7.5*approx.	0.0561	0.004	143
Ammonia (mg/L)	2	0.0175	0.009	233
TP (mg/L)	5	0.043	0.036	708
Toxicants				
	Ceff	ANZG DGVs	Camb	
Nitrate (mg/L) – toxicant	7.5	2.4	0.056	2
Ammonia – toxicant	2	0.91	0.018	1
Chlorine (mg/L) - toxicant	1	0.007 [#]		143
Microbiological indicators (cfu/100ml)				
Faecal Coliforms	500	150~	<10	2
Enterococci	500 [%]	40	<10	12

[^]Jacobs (2016) DEP data summary median background concentration and 80th percentiles for WQOs

[~]ANZG thermotolerant coliforms low risk guideline for recreational waters

[#]Batley and Simpson (2020) Guideline value recommended by EPA Tasmania (2022)

[%]Enterococci concentrations are assumed to be commensurate to faecal coliforms

Near field modelling has determined the toxicant parameter with the highest dilution requirement at BBO is chlorine however, it is important to note that this modelling was based on an effluent concentration of 1 mg/L. TasWater has subsequently modified the proposal and chlorine will no longer be used for disinfection in the treatment process but instead to prevent biofouling in the outfall pipeline. This means that chlorine can be dosed at a much lower rate aiming for compliance with 0.1 mg/L residual chlorine at the point of discharge.

Chlorine discharged at 1 mg/L required 143-fold dilution to bring the toxicant to below the toxicant trigger value of 7.2 µg/L previously adopted by the EPA. 143-fold dilution is easily achieved under all scenarios within 20 m. The toxicant trigger value for chlorine has now been revised to 10 µg/L and so these calculations for chlorine are now considered very conservative.

Nitrate and ammonia, as toxicants, required 2:1 and 1:1 dilution respectively, enterococci required 12:1 and thermotolerant coliforms 2:1. These were all achieved within 2 m of the outfall.

Phosphorus had the highest ecosystem stressor dilution requirement, at 708:1 indicating the effluent phosphorus may elevate ambient water quality above DGV for phosphorus up to 1 km from the outfall. In the context of eutrophication risk, it should be noted that nitrogen is diluted to below DGV within 10 m.

To conclude the consideration of the potential impacts of the treated effluent discharge at BBO, Appendix B presents an environmental risk assessment summarising the key stressors and the threat they pose and considers the factors that influence those risks. Specifically, chlorine and disinfection by-product toxicity,

and nutrient enrichment were considered with respect to risks to aquatic ecosystems and nutrient enrichment potential to impact of recreational water quality and aesthetics.

The impact of the discharge was considered with reference to the population of spotted handfish located 850 m north-west of the outfall. Noting that chlorine toxicity is addressed within 20 m, the risk assessment also examines the impact of disinfection by-products. It presents that on the basis that disinfection byproducts generally react with bromine present in seawater. Bromoform concentrations were also modelled to meet a DGV of 10 ug/L within 20 m of the outfall. With the change of predicted chlorine concentrations this will also be less. The conclusion was that toxicity risks presented by the discharge on the spotted handfish population was low.

Nutrient enrichment was also considered. At the discharge point the receiving waters are thought to be nitrogen limited, particularly in summer when algal blooms are most likely to occur. The proposed treatment process at Sels Point WWTP will substantially reduce the loads of nitrogen (and phosphorus) discharged into the estuary and so the report concludes that the risks of algal growth as a consequence of the discharge to impact on both aquatic ecosystems and recreational values is also low.

Selfs Point Local Outfall

Table 3 below provides the relevant DGV used and presents the calculated dilution requirements for the discharge at SPLO. This information was also used to inform the depth to which the SPLO should be installed. This section of the river has a pronounced halocline around 4-6 m depth.

Table 3: Dilution requirements for treated effluent design parameters Selfs Point (Appendix B, Table 5.1)

Parameter	Adopted 90 th percentile	Applied DGV (annual, surface)	Ambient background [^]	Dilution requirement (X:1)
Ecosystem stressors				
BOD (mg/L)	15	<5	-	2
TSS (mg/L)	20	7 [^]	4 [^]	4
Oil and Grease (mg/L)	5	<1	-	4
TN (mg/L)	10	0.330	0.270	161
Nitrate (mg/L)	7.5*approx.	0.0493	0.020	254
Ammonia (mg/L)	2	0.0104	0.013	191
TP (mg/L)	5	0.030	0.036	166
Toxicants				
	Ceff	ANZG DGVs	Camb	
Nitrate (mg/L) – toxicant	7.5	2.4	0.05	2
Ammonia – toxicant	2	0.91	0.011	1
Microbiological indicators (cfu/100ml)				
Faecal Coliforms	500	150~	<10	2
Enterococci	500	40%	<10	12

[^]Jacobs (2016) DEP data summary median background concentration

~ANZG thermotolerant coliforms low risk guideline for recreational waters; 'NHMRC (2008) Cat A guideline

% *Enterococci* concentrations are assumed to be commensurate to faecal coliforms

Chlorine will not be dosed into effluent discharged at SPLO and so therefore does not need to be considered. Near field modelling has determined the toxicant parameter with the highest dilution requirement at SPLO is nitrate (2:1). Nitrate (254:1) is also the ecosystem stressors with the highest dilution requirement. All parameters except nutrients will meet DGVs within 10 m of the discharge point

at the proposed discharge depth of 8 m. Nitrate as the toxicant of concern, and enterococci, the pathogen requiring greatest dilution, will meet DGVs within 1-2 m of the discharge. Similarly to BBO the extent of nutrient enrichment will extend more than 1 km.

As for the Blinking Billy discharge, Appendix B concludes the consideration of the potential impacts of the treated effluent discharge at SPL0 by undertaking an environmental risk assessment. Nitrogen and phosphorus nutrient enrichment risks are considered against:

- protection of aquatic ecosystems and risks of algal production resulting in low oxygen levels and impacting habitat quality,
- recreational water quality and algal growth impacting aesthetics; and
- potential impacts from algal growth clogging pipes and infrastructure on Nyrstar which extracts water from the Derwent for industrial use on site.

These risks are assessed against the exposure, which at this location, is nine discharge events per year and a total volume of approximately 130 ML/yr. It is concluded that, as it is an infrequent discharge the impacts will have a much lesser impact on the values, will only cause a small and temporary increase in nitrogen and phosphorus levels in the near-field environment and is unlikely to have any significant effects on the mid and far field nutrient dynamics of this area. Overall, the eutrophication related risks to the Middle Derwent Estuary from wet-weather discharge events during winter, spring, summer, and autumn were found to be low. The potential impact to the water supplied to Nyrstar was found to be insignificant.

The whole of estuary risk assessment of the proposal in EIS Appendix B concludes that the proposal will benefit the estuary by significantly reducing nutrient loads and by shifting the discharge downstream to an area with much better dilution and dispersion.

6.1.2 Management measures

Management measures proposed in the EIS for the different phases of the proposal to mitigate water quality impacts include:

Construction

Water Quality MM1: a sediment and erosion control plan to be developed as part of the Construction Environmental Management Plan (CEMP). This will identify all watercourses and drainage lines and specific measures to prevent sedimentation occurring and to reduce discharge of any sediment laden stormwater from leaving the site.

Water Quality MM2: material stockpiles (presumably sands, gravels and soils required for construction) will be managed to avoid any run-off.

Operation

Water Quality MM3: the WWTP and associated pipelines will be subject to regular maintenance and inspection.

Water Quality MM4: supervisory control and data acquisition (SCADA) systems to include monitoring systems and alarms for any system or equipment failures. Procedures will be in place for immediate response to identified failures to restore operations and maintain effluent quality.

Water Quality MM5: Chlorine dosing rates will be optimised through the commissioning period based on testing at the Domain break of head tank and the BBO pump station to optimise the dosage required by measuring residual chlorine in the effluent after it has travelled through the transfer pipeline length; laboratory experiments will also be run using project-specific effluent to measure chlorine decay rates over longer periods. This information will be used to optimise the dosing rate to achieve the necessary controls at the heat exchangers, while minimising residual chlorine released to the environment.

Water Quality MON1: The marine ambient monitoring plan outlined in Section 6.1.4.3 will be implemented, which includes regular influent and effluent monitoring (including during upset storm

conditions) to ensure WWTP performance is maintained. Any issues identified from the results will be investigated immediately and rectified as required.

6.1.3 Public and agency comment and responses

No public submissions were received in relation to water quality issues. EPA Water Specialist considerations are discussed in the evaluation below.

6.1.4 Evaluation

Overall, this proposal will deliver a substantial benefit to water quality in the Derwent Estuary by removing the Macquarie Point WWTP discharge, greatly improving wastewater treatment at Selfs Point WWTP and relocating the combined effluent flows to the BBO outfall in the lower estuary.

Construction activities include significant piling works on an area previously used as a landfill, and the construction of a new marine outfall at Selfs Point. Both of these activities have the potential to impact on water quality. Site contamination issues are addressed in section 6.4.

Condition **CN2** requires a CEMP to be developed, approved, and implemented to address construction impacts, including any sediment and erosion controls, and management for potentially contaminated ground water required to minimise impacts on water quality, and will ensure these measures are captured.

Commissioning, including cut over of flows from the old WWTP processes (Macquarie Point WWTP and existing Selfs Point WWTP) to the new, can result in the discharge of poorer quality effluent if not planned carefully and it is obviously not possible to turn off influent wastewater flows even temporarily. Condition **CMI** requires the development of a Process Commissioning Plan for the Director's approval prior to the commencement of commissioning to ensure the sequencing of transfers is as carefully considered and planned as possible and so that EPA regulators are informed.

The proponent has a state-wide I&I Plan which is a requirement of most level 2 WWTPs to prioritise catchments for I&I investigations and improvement to reduce stormwater ingress to the sewerage system. Despite studies and works conducted to date, ongoing continuous improvement needs to be sought in reducing inflow and infiltration in the large sewerage catchment served by the new Selfs Point WWTP and specifically in identifying and investing on those sub catchments impacted by saltwater ingress. The standard requirement for TasWater to produce an annual statewide I&I plan is included in condition **OP3** to ensure this work continues in this catchment.

Ambient monitoring results provided through the DEP and targeted campaigns by consultancies have been used effectively to describe the existing environment, the effects of the existing discharges, and to predict the effects of the proposed changes with the new WWTP, the increased hydraulic flow and the effect of these changes on the existing BBO receiving environment and at the new SPLO.

The current SPLO into the middle estuary requires upgrading, and as part of this proposal a new SPLO will be installed in the same general area. This outfall will continue to discharge intermittently during peak wet weather flows and in emergencies.

While the SPLO location has shifted by approximately 170 m from where the ADCP was conducted, it was deployed at approximately 5 m depth, within the depth range proposed. The results showing surface currents move in a northerly and south-easterly direction with the tide and bottom waters predominantly moving in a northerly direction as a result of river and marine tidal flow at depth are still applicable.

The outfall placement at depths of 2 m above the halocline, and at 6 m (existing), 8 m and 12 m (below the halocline), were modelled. A proposed diffuser configuration, consisting of 25 ports (150 mm, N & S), spaced 4 m apart along a 50 m length, perpendicular to the Derwent River currents, was modelled. In terms of optimal depth of outfall, the results suggest that, despite dilution and dispersion improving with depth, mixing will have little effect on the size and extent of the footprint of the nutrient plume that will occur in the far-field environment. Therefore, any depth greater than the existing 6 m at which effluent is currently discharged, would be acceptable environmentally, with 8 m being selected as the outfall depth at this stage of design.

These outfall/diffuser arrangements at all depths were modelled at the maximum flow rate of 1,340 L/s which is the maximum flow the outfall can discharge. The dilution requirements for the toxicity indicator, nitrate, and the microbial indicator, faecal coliforms, are predicted to be met within 10 m of the SPLO at all depths greater than 2 m.

For ecosystem effects the nutrient footprint of the discharge is predicted to extend beyond 1 km from the outfall location in the direction of the prevailing current at the time. The more available forms of nitrogen, namely dissolved inorganic nitrogen (constituting ammonia + nitrate + nitrite) and the phosphate ion (PO_4^{3-}), demonstrated that the bioavailable components of nitrogen are limiting all year round.

Wet weather discharges at the SPLO will occur when the BBO capacity is exceeded (>345 L/s) and the Selfs Point WWTP balance storage is full. It is predicted 1.9% of the total effluent volume is expected to be discharged at the SPLO over approximately nine discharge events per year. This amounts to a total volume of approximately 130 ML per year (689 ML over five years). It is accepted these intermittent wet-weather discharges will cause only temporary increases in nutrient and toxicant loads in the near field. Under these wet conditions, with reduced residence time and high levels of dilution, this poses a low risk of significant impacts in the middle and far field.

The proposed effluent quality limits, as detailed in Table 2-3 in the EIS are consistent with accepted modern technology (AMT) performance expectations, except for total residual chlorine and total phosphorus 90th percentile limit at 5 mg/L is almost double the AMT level of 3 mg/L. The low total residual chlorine limit is an obvious improvement for the level of toxicant currently being discharged but also the concentration of the potential disinfection byproducts that could be produced will also be lower. The increased total phosphorus level is a result of changes at the WWTP and is approved on the basis of the ambient assessment conducted as well as the overall significant reduction (41%) of the total phosphorus load resulting from decommissioning of the Macquarie Point WWTP.

The assessment of limiting nutrient factors using the Redfield ratio assessment also identified that in the estuary dissolved inorganic nitrogen was the limiting factor rather than dissolved phosphorus. Redfield ratios were calculated for nutrient data using the DEP water quality data at sites in the middle and lower Derwent. This data set provided a monthly time-series of nutrient concentrations over the past 11 years (2004-2015). The Redfield ratio for marine phytoplankton suggests a molecular carbon: nitrogen: phosphorus (C:N:P) ratio of 106:16:1 (or 50:7:1 by weight). N:P and dissolved inorganic nitrogen: phosphate (DIN:PO₄) ratios were calculated for summer and winter using nutrient data from monitoring sites (with complete datasets) in closest proximity to the outfalls. The ratios were calculated for both the surface waters and bottom water layers EIS Appendix B, Appendix B (Table 9-4 and Table 9-5). N:P showed nitrogen limitation in summer and phosphorus limitation in winter at all sites and in the surface and bottom waters. The nitrogen limitation is stronger in the bottom waters due to intrusion of marine waters. DIN:PO₄ ratios in Table 9-4 and Table 9-5 indicated nitrogen limitation all year round at all sites, particularly in summer.

This has been supported by other investigations conducted such as by CSIRO. CSIRO reported the Redfield ratios indicate primary production in the estuary in summer is controlled by access to nitrogen and light for photosynthesis. Phosphorus concentrations are elevated in the mid estuary throughout the year and are relatively lower in other parts of the estuary. In comparison to nitrogen, phosphorus concentrations remain in excess of the Redfield ratio (16N:1P) and are therefore thought not to limit primary production in the estuary (Wild-Allen et al 2009).

The conclusions of the EIS assessment on ambient water quality as affected by the changes at the Selfs Point WWTP, decommissioning of the Macquarie Point WWTP, and the changed discharge conditions at the SPLO and BBO are supported.

The improved treatment at Selfs Point WWTP will result in a predicted load reduction in total nitrogen and phosphorus of 58 and 41% respectively and all but remove the discharge of chlorine as a toxicant. Additionally, relocating the flows currently discharged at Macquarie Point downstream to BBO will result in treated effluent having less residence time in the Derwent estuary and further reducing the risk to eutrophication effects in the middle estuary.

Condition **EF1** and the maps enclosed as Attachments 2 and 3 state and depict the approved discharge locations at Blinking Billy and Selfs Point. Caveats around the operation of the SPLO are also included. Condition **EF5** requires signs to be erected to warn the public of the presence of the discharge and discourage recreational activities in the immediate vicinity of the outfall.

Condition **EF2** imposes effluent quality limits for the discharge. Maximum limits are retained for toxicants, *E. coli* and enterococci but not for physical and chemical stressors such as nutrients. These limits are generally consistent with the limits proposed by TasWater in the EIS (refer to Table 1 above) and largely reflect AMT limits with the exception of the proposed limits for total phosphorus. This is acceptable on the basis that, with respect to eutrophication risks, it has been found that it is nitrogen that is limiting with respect to algal growth in the receiving environment and so a relaxation on phosphorus limits should not lead to worse environmental outcomes. The proposal will already deliver a substantial reduction in phosphorus loads to the Derwent Estuary from the existing discharges. Imposing a stricter limit would, due to fluctuations in influent quality, result in the need for additional chemical dosing within the treatment process and so, on balance, it is agreed that the proposed limits are acceptable.

Oil and grease limits proposed by TasWater are not included. Consistent with EPA guidance and recognising generally that oil and grease levels in WWTP effluent have not posed a concern for many years, it is no longer considered necessary to impose limits for oil and grease. Given the high level of treatment proposed it is also not considered necessary to monitor for oil and grease.

While disinfection performance is currently measured against *E. coli* (previously thermotolerant coliforms), enterococci is the preferred indicator organism for recreational waters. Given the relatively close proximity to waters around Sandy Bay which attract a high level of primary and secondary recreational uses, suitable limits have been derived for enterococci based on the figures used in the mixing zone modelling thus ensuring Category A recreational guideline value is achieved within 1-2 m of the outfall. The values selected will protect environmental values within an acceptable distance of the outfall.

A maximum effluent chlorine limit is imposed by condition **EF3** due to the separate effluent monitoring location proposed for this parameter.

TasWater has proposed a period of chlorine dosing optimisation during commissioning to determine the required dosing rate to achieve the required level of residual chlorine to prevent pathogen regrowth but minimise chlorine discharged at the outfall. This is supported and condition **EF6** reflects this commitment.

Modelling of the proposed increase discharge at BBO indicates that toxicant concentrations (except chlorine) and pathogenic indicator organism counts in the vicinity of the outfall will be reduced to below relevant trigger values within 5 m of the outfall. Mixing zone modelling indicated that the ambient trigger value of 0.0072 mg/L for chlorine is met within 20 m of the outfall in all conditions. However, this is based on a discharge concentration of 1 mg/L, whereas TasWater is now proposing an effluent maximum limit of 0.1 mg/L. The EPA Water Specialist has advised that the proposed new ANZG default guideline trigger value for 95% species protection for chlorine has been raised to 0.01 mg/L which would reduce the mixing zone even further.

Given the very low proposed effluent quality limits for chlorine, the EPA Water Specialist advises that the proposed ambient monitoring for chlorine and associated disinfection by-products is not required and further, would most likely be unsuccessful in detecting measurable quantities of these parameters.

Consistent with the Regulatory Framework for the Sustainable Discharge of Treated Wastewater from Level 2 WWTPs (EPA, 2020)⁵ mass load limits are not applied as the discharge is to estuarine waters. Mass load limits are typically applied to discharges into inland waters and as a driver to encourage exploration of effluent reuse options. TasWater has already completed reuse feasibility studies demonstrating that substantial reuse is not currently viable. Mass load limits, if set, would be applied to the discharge flows applied for. As this figure is based on catchment growth up to 2054 the figure would, in any case, be quite meaningless for a number of years.

⁵ [Sustainable Discharge of Treated Wastewater | EPA Tasmania](#)

In recognition of the previous reuse feasibility studies conducted indicating that substantial effluent reuse for Sels Point WWTP was not feasible and the very significant environmental improvements that will be gained through this project, not least in reducing the nutrient loads discharged to the Derwent Estuary, it is considered that the requirements of section 20 of the SPWQM are met, namely:

- Removing Macquarie Point WWTP discharge.
- Substantially reducing nutrient loads.
- Providing more reliable disinfection.
- Reducing the discharge of toxicants such as ammonia.
- Reducing the discharge of chlorine and associated disinfection byproducts.

It is therefore recommended the Board consider setting a mixing zone around the discharge at Blinking Billy in accordance with condition **EF4** and as depicted in Attachment 2.

Condition **EF7** requires development and submission of a Bypass Report within 26 months of commencement of operations to confirm the flow rates at which bypasses come into operation. Condition **EF8** requires a periodic review of the discharges to SPLO to ensure this remains consistent with predictions in the EIS.

Despite a mixing zone being proposed, it is considered appropriate that a future requirement for effluent reuse feasibility be included. Noting the investment in this proposal and the need for TasWater to focus on other WWTP discharges presenting risks of environmental harm, this requirement is imposed by condition **EF9** to be due in 10 years from commencement of operations. This ensures that the objectives of the SPWQM continue to be pursued into the future.

To ensure compliance with flow and effluent requirements specified in the permit conditions monitoring requirements are imposed by condition **M1** and the Table of Monitoring Requirements, included as Attachment 4. Conditions **M2** and **M3** ensure samples and measurements are collected and analysed in accordance with appropriate procedures and standards to ensure the accuracy of results obtained and that those results are provided in a monthly monitoring report to the Director.

Condition **M4** requires flow meters to be validated every 12 months to ensure accuracy of flow measurement, and Condition **M5** requires monitoring points to be appropriately labelled to ensure samples are consistently collected at the correct location.

Condition **M7** requires a contaminant screening program to be developed and approved to ensure wastewater received and treated by the new Sels Point WWTP is screened to ensure all relevant contaminants are identified for monitoring in the ambient monitoring program and in the biosolids contaminant screening program, including emerging contaminants of concern. Condition **M8** requires a plume dilution study to be completed once the new WWTP is operational to identify the location and extent of the effluent plume and refine ambient monitoring locations proposed for the ambient monitoring required by permit conditions. The outcomes of these requirements will refine the ambient monitoring requirements detailed in Attachment 4 Table of Monitoring Requirements.

Condition **M9** requires a receiving environment monitoring report to be submitted within 24 months of the commencement of operations and thereafter in accordance with the recommendations of the report. This condition requires the results of the receiving environment monitoring and an analysis of the effects of the discharge to be described. Recommendations for any further improvements to the discharge or ongoing monitoring program must also be made in this report and approved by the Director.

To ensure operations of the new Sels Point WWTP are in accordance with environmental conditions, including compliance with effluent quality and flow requirements condition **OPI** requires development of an Operational Procedures and Maintenance Manual to detail operational procedures to be documented.

A Contingency Management Plan is required by condition **OP2** to document measures to be taken should an unplanned event occur which has the potential to cause environmental harm to minimise and mitigate such harm. This includes identifying nearby water users and land holders that can be affected by such events and other stakeholders including government agencies, to ensure they are notified. The Contingency Management Plan must include measures in the event a discharge occurs through the emergency discharge location.

6.1.5 Conditions

The proponent will be required to comply with the following conditions:

- CM1 Process Commissioning Plan
- CN2 Construction Environmental Management Plan
- EF1 Effluent discharge locations
- EF2 Effluent quality limits for discharge to the River Derwent near Blinking Billy Point
- EF3 Effluent chlorine limit for the discharge to the River Derwent near Blinking Billy Point
- EF4 Mixing zone
- EF5 Signage of discharge location
- EF6 Chlorine dosing validation program
- EF7 Bypass Report
- EF8 Sels Point outfall overflow reporting and review
- EF9 Effluent reuse feasibility study
- M1 Monitoring requirements
- M2 Samples and measurements for monitoring purposes
- M3 Monitoring reporting and record keeping
- M4 Flow monitoring equipment
- M5 Signage of monitoring points
- M6 Event Recorder for Bypass
- M7 Contaminant screening program and report
- M8 Plume Dilution Study
- M9 Receiving Environment Monitoring Report
- OPI Operational Procedures and Maintenance Manual
- OP2 Contingency management
- OP3 Inflow and Infiltration Management Plan

6.2 Noise

6.2.1 Description

Surrounding land uses are described in EIS section 5 and shown in Figure 5.1. Sensitive receptors include the residential area of Lutana to the west with the closest property approximately 100 m from the western boundary of The Land. There are public housing apartments approximately 175 m to the south. What the EIS terms “recreationally and culturally sensitive premises” include the cemetery, recreational grounds, a bridge club, New Town Rowing Centre and a cattery, are all located in close proximity to the site. Traffic on the Brooker Highway is a significant noise source.

Section 6.2 of the EIS discusses the background noise environment, potential impacts of noise emissions from the construction and operational phases of the proposal and presents the results of the noise assessment conducted (EIS Appendix D).

Noise monitoring was conducted in 2022 at six locations, including a control site, at the boundary of the WWTP and at noise sensitive receptors (figure 6). Previous noise monitoring had occurred in 2016 at sites 1, 4 and 5, the results of which are also discussed. Site 6, the control site at Cook Street in Lutana is slightly remote from the WWTP and not depicted in the figure. The results demonstrate that during daytime, background noise is moderately high at all sites (45-56dB (LA90)) with the source being largely attributed to traffic noise on the Brooker Highway. At night noise levels were lower, and industrial noise from Lutana was audible. Sels Point WWTP was only audible at the monitoring site located at the site boundary.

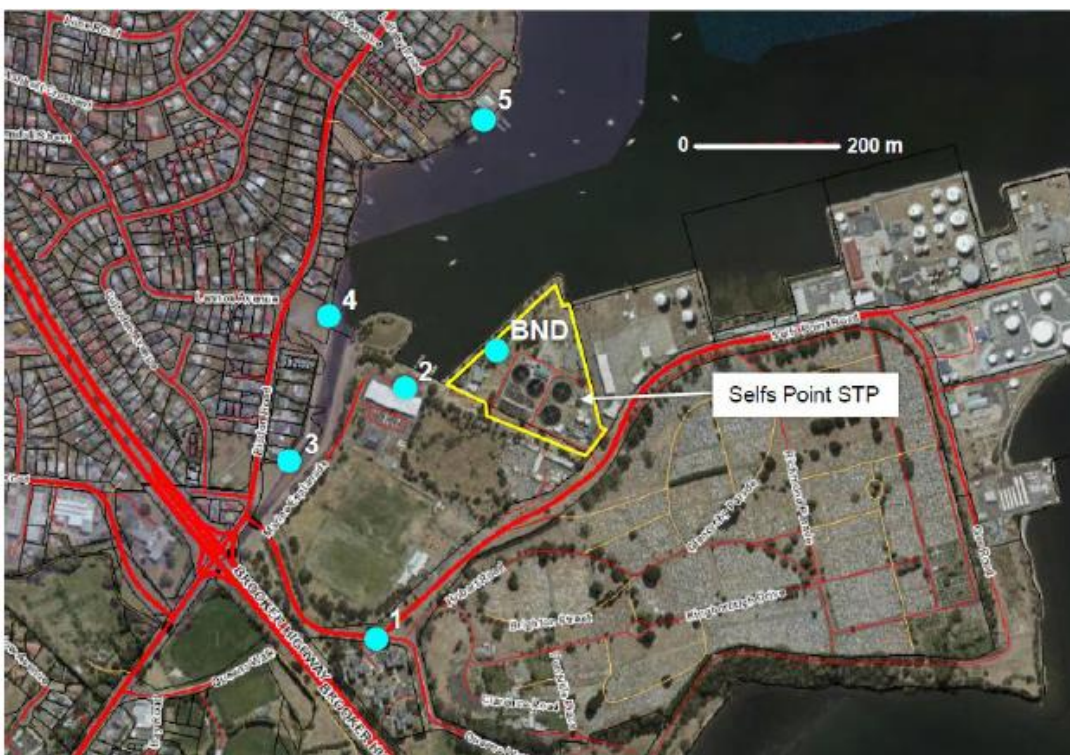


Figure 6: Noise monitoring locations (EIS figure 6.7)

Construction phase

Noise emissions during construction of the new WWTP have the potential to cause environmental nuisance to nearby sensitive receptors particularly through operation of mobile construction equipment including pneumatic jackhammers, excavators, generators, cranes and trucks. Piling works is anticipated to be the most persistent and noisiest phase, with the use of a piling rig.

Due to the former uses and ground conditions of the site where the new WWTP is to be constructed, it is likely that piling works will be required across the site and will need to occur 24 hours, 7 days a week for up to nine months to meet construction timeframes. These works, particularly due to the proximity to residential receptors, have the potential to cause nuisance.

To address the potential impacts of construction noise the EIS has referred to the requirements of the NSW EPA Draft Construction Noise Guideline 2020⁶ which presents more detailed and specific guidance around managing construction noise than Tasmanian requirements. The NSW guidance provides recommended standard hours of construction, which are reasonably consistent with Tasmanian guidelines, but which are more stringent in suggesting construction activities should be limited after 1300 hours on a Saturday. The NSW Guidelines set two levels to define noise disturbance, being 'noise affected' and 'highly noise affected' and set different noise management requirements for each level inside and outside of those standard construction hours.

During standard construction hours, levels at 'noise affected' premises are defined as rating background noise levels plus 10dB at which, if exceeded, the proponent must apply all reasonable and feasible work practices to meet this level and all potentially impacted residents should be notified. Outside of standard hours 'noise affected' levels are defined as rated background plus 5dB and the proponent must provide strong justification for work outside of standard hours, must apply all reasonable and feasible mitigation measures, residual impacts quantified and impacted residents notified.

'Highly noise affected' during any hours is defined as 75dB or greater. During standard hours the proponent must apply all reasonable and feasible work practices to mitigate noise and agree with the regulator to identify any further management measures including engagement with the community to identify solutions. Outside of standard hours, supplementary mitigation measures outlined in the guidelines must also be considered.

The impacts of construction piling were specifically assessed for two different types of drill rig and for an excavator and the outcomes described in EIS section 6.2.3.1. During standard construction hours the modelling found predicted noise emission levels to be below 'noise affected' levels. However, without mitigation the drill rig noise is above the 'noise affected' levels outside of standard hours. The assessment then modelled the noise with noise barriers around the drill rig on 2-3 sides. This reduced the predicted noise levels to below noise affected and thus concluded that drill rig noise can be effectively mitigated.

The EIS advises that construction methods proposed for laying the new outfall is not expected to cause noise impacts on marine fauna. This is considered further in section 7.1 natural values.

Operational phase

EIS section 6.2.3.2 discusses likely sources of noise, the potential noise emissions during the operational phase of the proposal and the results of noise modelling completed to determine the likely significance of any impacts on noise sensitive receptors. Significant sources of noise include the inlet works, co-generation equipment, pumps, sludge dewatering building and the noisiest sources being the blower building (104 dBA) and the odour control system (OCS) fan inlet ductwork (100dBA). Figure 7 identifies the locations of that equipment on the site.

Noise modelling was completed for neutral (calm) and worst case weather conditions (receptors downwind of the site) and compared noise levels with the noise limits currently imposed on the existing Selfs Point WWTP being:

50 dB(A) between 0800 hours and 1800 hours (day time),

40 dB(A) between 1800 hours and 2200 hours (evening time); and

35 dB(A) between 2200 hours and 0800 hours (night time).

The modelling found the proposal to be compliant with day time noise limits at all sites except the rowing sheds (site 2), but exceeded evening and night time noise levels at all sites under both neutral and worst case scenarios.

⁶ [Construction noise \(nsw.gov.au\)](https://www.nsw.gov.au)

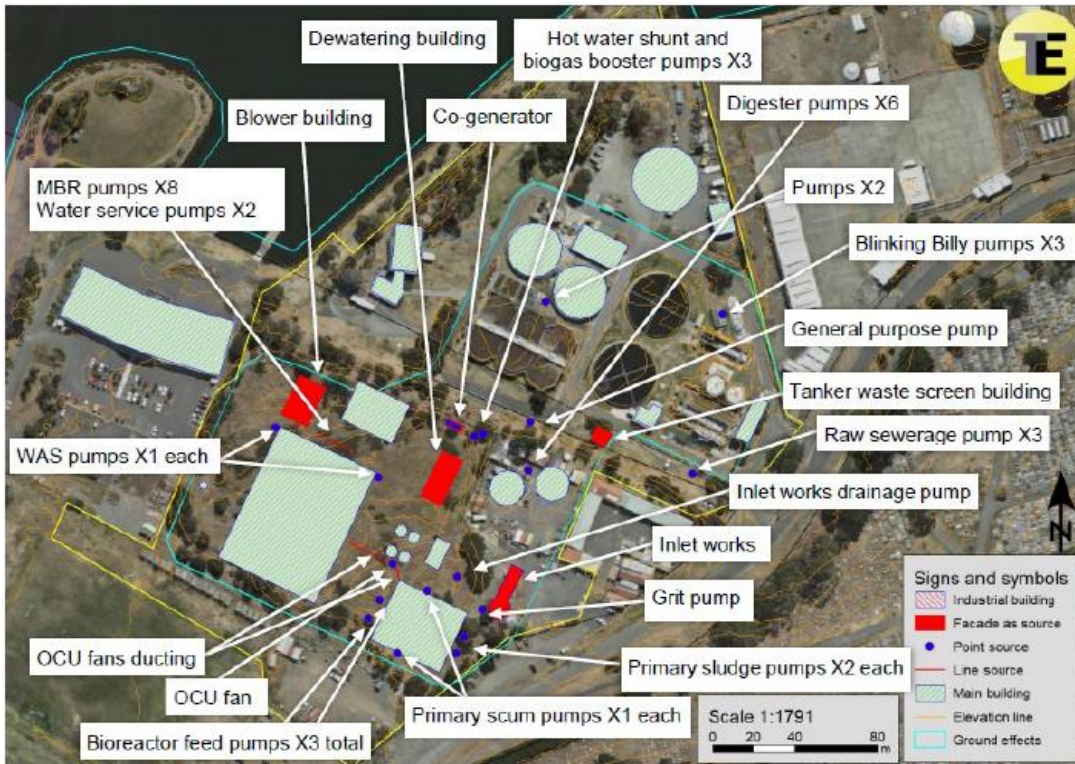


Figure 7: Modelled noise sources (EIS figure 6.9)

Modelling for the worst-case scenario was then repeated with recommended noise mitigation measures with the results showing compliance with 35dB(A) at all sensitive receptors, noting that the rowing club is not a noise sensitive receptor (see Figure 8). Noise mitigation measures include selection of quieter equipment, building design, enclosing noisy equipment in acoustic enclosures and use of acoustically absorbent materials.



Figure 8: Predicted noise contours worst case scenario with mitigation (EIS Figure 6.10)

The EIS acknowledges the construction piling phase will require implementation of specialised noise management measures for operations outside of standard construction hours. However, the EIS concludes that, with appropriate mitigation measures deployed, noise can be managed through all three phases of the proposal including during the construction piling phase, the construction phase and operational phase.

6.2.2 Management measures

Management measures proposed in the EIS for the different phases of the proposal to mitigate noise impacts include:

Design

Noise MM 1: The Project will include the following noise management and mitigation as a minimum, as included in the noise modelling undertaken on the concept design:

- Selection of equipment with lower sound power level specifications (for pumps, blowers and fans).
- Acoustic enclosures for select equipment, including pumps, internal equipment associated with the inlet works, blower building and sludge dewatering building, and fan casings in the OCU.
- The use of acoustically absorbent internal lining in selected buildings to control reverberation.
- The use of an inlet silencer and acoustic lagging of inlet ductwork for the OCU.

Noise MM 2: The final design will include the required mitigation to ensure the existing EPN limits during the day (50 dB(A)), evening (40 dB(A)) and night (35 dB(A)) are met at the closest sensitive receptor.

Noise MM 3: Additional noise modelling will be undertaken to ensure the final design meets the current EPN requirements prior to construction commencing; the report will be made available to the EPA. In the event noise modelling indicates EPN requirements are not met, additional management and mitigation will be applied to the design to bring the modelled results to within the acceptable range.

Construction

Noise MM 4: Where possible operation of noise generating machinery and equipment during construction will be restricted to standard hours as defined by the NSW EPA Draft Construction Noise Guideline 2020 (the Guidelines), that is:

- Monday to Friday between 0700 hours and 1800 hours
- Saturday between 0800 hours and 1300 hours
- Sundays and public holidays – no work

Any works required to be undertaken outside these timeframes that require the use of noise generating machinery and equipment will be undertaken in accordance with the noise management measures outlined in the Guidelines.

Noise MM 5: Low-noise generating plant and equipment will be used where practicable.

Noise MM 6: Broadband reversing alarms will be used where practicable over traditional tonal alarms to minimise any nuisance noise generated.

Noise MM 7: The proponent will require the contractor to have regularly serviced and maintained equipment to minimise noise emissions.

Noise MM 8: Where practical, machinery will be operated at low speed or power and be switched off when not in use, rather than left idling for prolonged periods.

Noise MM 9: Delivery trucks will be advised to not use exhaust brakes in populated areas.

Noise MM 10: Regular community updates will be undertaken to inform construction timeframes.

Noise MM 11: A detailed Construction Noise Management Plan (CNMP) will be provided to the EPA prior to construction commencement to particularly address evening and night drilling noise impacts. Specific information from the appointed contractors drilling equipment to be used onsite will be measured and incorporated into the model to be provided with the CNMP. The CNMP will also include a proposal for trial monitoring at the start of the construction phase to verify the modelling predictions and detail what further mitigation could be adopted if the demonstrated noise levels are found to be problematic.

Noise MM 12: Where predrilling, using a continuous flight auger drilling rig, is required outside the standard hours as defined by the NSW EPA Draft Construction Noise Guidelines 2020 (the Guidelines) the rig will be enclosed on at least two sides by a suitable noise barrier at least 0.8 m above the rig engine to ensure noise emissions from construction remain below the adopted noise affected noise management levels for non-standard hours.

Operation

Noise MM 13: Noise emitting equipment will be regularly inspected, maintained, and replaced as required.

Noise MON 1: Directly post-commissioning, a noise survey will be undertaken at the sites used in Tarkarri (2024) (EIS Appendix C) to confirm the modelling results. The results of the survey will be provided to the EPA within 3 months of undertaking the survey. In the event the noise emissions are above the regulatory targets, additional noise mitigation or management will be applied in discussion with the Director, EPA. This may include the installation of additional or improved acoustic enclosures, quieter equipment, or additional acoustically absorbent internal linings in buildings.

6.2.3 Public and agency comment and responses

No public representations were received regarding noise emissions. EPA Noise Specialist considerations are discussed in the evaluation below.

6.2.4 Evaluation

The construction phase of the proposal, and specifically the proposal for 24 hour piling works to occur, poses the most significant risk of causing environmental nuisance. The Addendum to EIS Appendix C presents a pragmatic approach to addressing this issue and the use of the NSW guidance approach is supported.

Condition **CNI** specifies permissible construction hours noting, normal construction activities are limited to the standard hours specified in the NSW guidance, thus restricting Saturday construction hours to 0800 hours to 1300 hours in light of the extended construction for drilling and piling works and to provide some respite to residents. The proposal for drilling and piling activities to occur on public holidays is however not supported and restricted by **CNI** clause 1.3.

To ensure works proposed outside of normal construction hours is consistent with the modelling undertaken, drilling and piling activities are limited to the use of the drill rig with mitigation measures to be approved by the Director in accordance with condition **CN7**. To reflect the proposed management measure condition **CN7** requires the development of a Construction Drilling and Piling Noise Management Plan. This condition requires additional noise modelling to be conducted using details of the actual drilling equipment to be used on site with and without proposed mitigation measures and requires the modelling to demonstrate compliance with project specific management levels representative of background levels plus 10dB(A) and 5dB(A) for standard construction hours and for drilling and piling works outside of those hours. The plan must also detail noise monitoring that will be conducted at the start of the construction phase to verify the modelling results. If monitoring results are unsatisfactory additional mitigation measures must be proposed.

If noise complaints are received during the construction phase condition **CN8** requires the Director to be notified within 24 hours.

To ensure proposed mitigation measures for general construction noise are implemented condition **CN2** required the development of a Construction Environmental Management Plan which should summarise relevant management measures for construction noise to ensure all relevant contractors and employees are aware of those requirements.

The EIS demonstrates that with suitable noise mitigation measures the operation of the new WWTP is less likely to cause environmental nuisance. The standard daytime noise limit for industry is 45dBA. The noise

model shows that this daytime limit can be easily met by the upgraded facility, therefore for best practice it is recommended to reduce the current daytime limit from 50dBA to 45dBA. The current evening and night-time limits remain appropriate. These are imposed by condition **N1**. To ensure noise mitigation measures proposed have been successful and the new WWTP is compliant with the noise limits imposed, condition **N2** required a noise survey to be completed and a report provided to the Director for approval within 6 months of the commencement of normal operations.

6.2.5 Conditions

The proponent will be required to comply with the following conditions:

- CN1 Operating hours - Construction
- CN2 Construction Environmental Management Plan
- CN7 Construction Drilling and Piling Noise Management Plan
- CN8 Construction noise complaints
- N1 Noise emission limits
- N2 Noise survey report

6.3 Air Quality

6.3.1 Description

Air emissions, including particulates and odour, have potential to cause environmental harm including nuisance, particularly to human receptors, if not appropriately mitigated and managed. Odorous emissions to air from commissioning and operation of the new Selfs Point WWTP have the potential to cause environmental nuisance. Dust during the construction phase may also impact on local air quality. Air quality impacts are described in EIS section 6.3. Appendix D of the EIS specifically considers potential odour impacts describing the outcome of odour dispersion modelling undertaken in relation to the proposal.

Sensitive receptors are described in section 6.1. The prevailing wind direction at the nearest weather station to the project site (located in New Town, Hobart) is from the north-west.

The existing Selfs Point WWTP has not been the source of odour complaints in the past, however odour from the WWTP is anecdotally detected at times.

The significant sources of odour from wastewater treatment process are generally the inlet works, primary treatment, biological treatment process (bioreactors) and sludge treatment and handling. During normal operations the generation of odour from the sewage treatment process should be controlled and barely detectable beyond the boundary of the Land. The main potential causes of odour may be as a consequence of a sudden deterioration of wastewater influent quality or as a result of a treatment process failure or breakdown.

It is proposed that all inlet screens, grit removal and associated channels, primary sedimentation tanks, sludge handling building and bins, digester outlet chambers, and the tankered waste receipt will be fully enclosed and vented to a new odour control system. The bioreactor feed chamber will be covered and directed to the odour control system but the rest of the bioreactor system, comprising biological nutrient removal and a membrane bioreactor will be uncovered due to the need for regular inspections and maintenance access.

The bioreactors are comprised of two oxidation ditch bioreactors which are fed in parallel and then discharge to combined secondary anoxic and aerobic zones (see figure 9 below). As the wastewater passes through the bioreactor, nitrogen in the form of ammonia is oxidised in the aerobic zones of the bioreactor into nitrite, then to nitrate through nitrification. Nitrate in areas of the bioreactor where oxygen is not present is then reduced through denitrification to nitrogen gas, which leaves the system through off-gassing to the atmosphere. Refer to EIS Section 2.3 and Appendix K for a detailed description of the bioreactors. The bioreactors are identified in EIS Appendix D, along with the odour control unit stack, as a significant potential odour source.

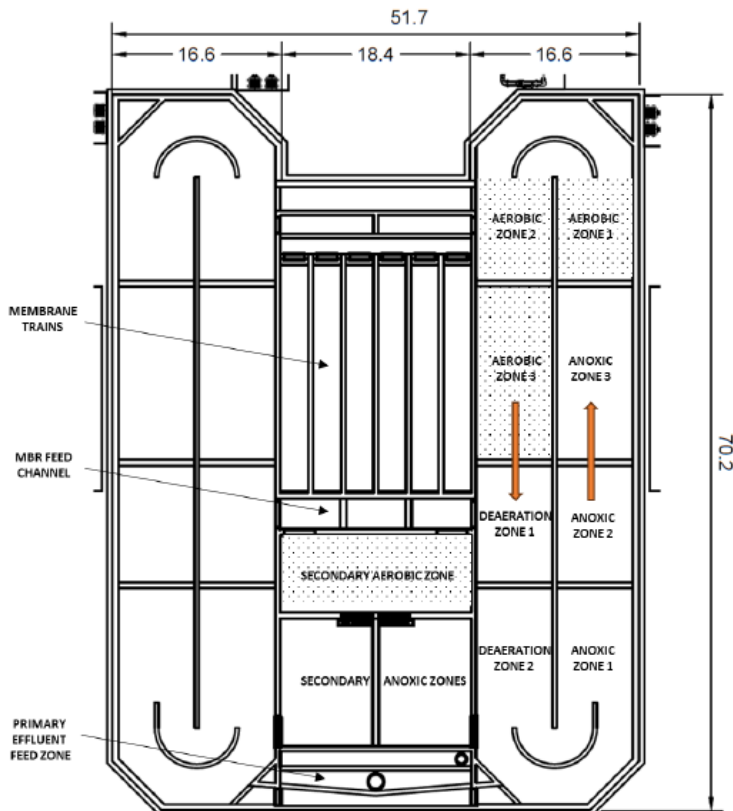


Figure 9: Concept schematic of proposed bioreactor (EIS figure 2.4)

The proposed design of the odour control system (OCS) is described in the EIS section 2.4.4. It is noted that this may change subject to contaminant characterisation works to be undertaken, however it is proposed that odour treatment will comprise three biotrickling filters in parallel, two activated carbon filters and two extraction fans (duty/standby). This will provide sufficient redundancy in the event of unit failure or for maintenance. Treated air will be vented through a 14-15 m stack at a rate of 15 metres per second (m/s).

Biogas (~63% methane) generated by the anaerobic sludge digestors will be captured and used as a fuel source to heat water and generate electricity in a biogas cogeneration system (EIS section 2.4.11). The hot water produced will be transferred to each digester to maintain the sludge at the required temperature to optimise the anaerobic process. A separate heat exchanger and hot water supply will be run to the tankered waste receival station to pre-heat the tankered waste before being pumped to the digesters. The biogas cogeneration system will be capable of producing up to 550 kilowatts (kW) of energy for use onsite. The biogas system will also contain an enclosed emergency gas flare to burn off any excess biogas, which has been sized to be capable of burning off the 2054 peak biogas volumes if required. This will avoid the release of methane to the environment, which is 25 times more harmful as a greenhouse gas than carbon dioxide.

The *Environment Protection Policy (Air Quality) 2004 (Air EPP)*⁷ provides the framework for the management and regulation of point and diffuse sources of emissions or for pollutants with the potential to cause environmental harm. Schedule 3 of the Air EPP specifies that atmospheric modelling of odour should demonstrate that the predicted maximum ground level concentration does not exceed 2 odour units (OU) 99.5th percentile, 1-hour average design criteria at the boundary of The Land.

EIS Appendix D provides an assessment of the potential odour impacts of the proposal, including atmospheric dispersion modelling. The meteorological modelling used meteorological data from several local weather stations combined with a prognostic model.

⁷ [Environment Protection Policy \(Air Quality\) 2004 | EPA Tasmania](#)

Three ‘normal’ scenarios were modelled, Scenario 1 being the proposal under normal operating conditions using Sydney Water database odour emission rates, Scenario 2 using the emission rates measured at the existing Sells Point WWTP and Scenario 3 using the emission rates measured at the existing Sells Point WWTP and with the bioreactor covered and air extracted and treated in the OCS.

The Sells Point WWTP site currently uses pre-fermenters. The pre-fermenters break down long chained carbohydrates into volatile fatty acids (VFAs) which make the biological treatment processes more efficient. A side effect of this pre-fermentation is that all downstream biological process units tend to have a much higher odour emission rate than normal. The new upgrade does not use pre-fermentation. Therefore, Scenario 1 was conducted using specific odour emission rates from the Sydney Water database from operations that do not use pre-fermentation. Scenario 2 uses a set of conservative odour emission rates that are based on historical site-specific measured odour emission rates, which include the use of pre-fermenters. Pre-fermenters are also known to cause an increase in specific odour emissions for downstream wastewater treatment process units, which indicates that Scenario 2 could provide a conservative estimation of potential odour impacts.

The modelling results for Scenarios 1 and 3, with the Project operating under normal conditions, indicate compliance with the Air EPP Schedule 3 regulatory boundary criteria of 2 OU (1-hour average, 99.5th percentile) in all directions. The predicted odour concentrations at all sensitive receptors are below 1 OU in both scenarios. The results for Scenario 2 indicate that the criterion of 2 OU is exceeded at the southern, south-western and south-eastern boundary (Figure 10) with the highest predicted odour concentration being 3.5 OU. Receptors in the area between the 2 OU and 3 OU isopleths include a sports field, the bridge club, rugby club house and the cemetery.

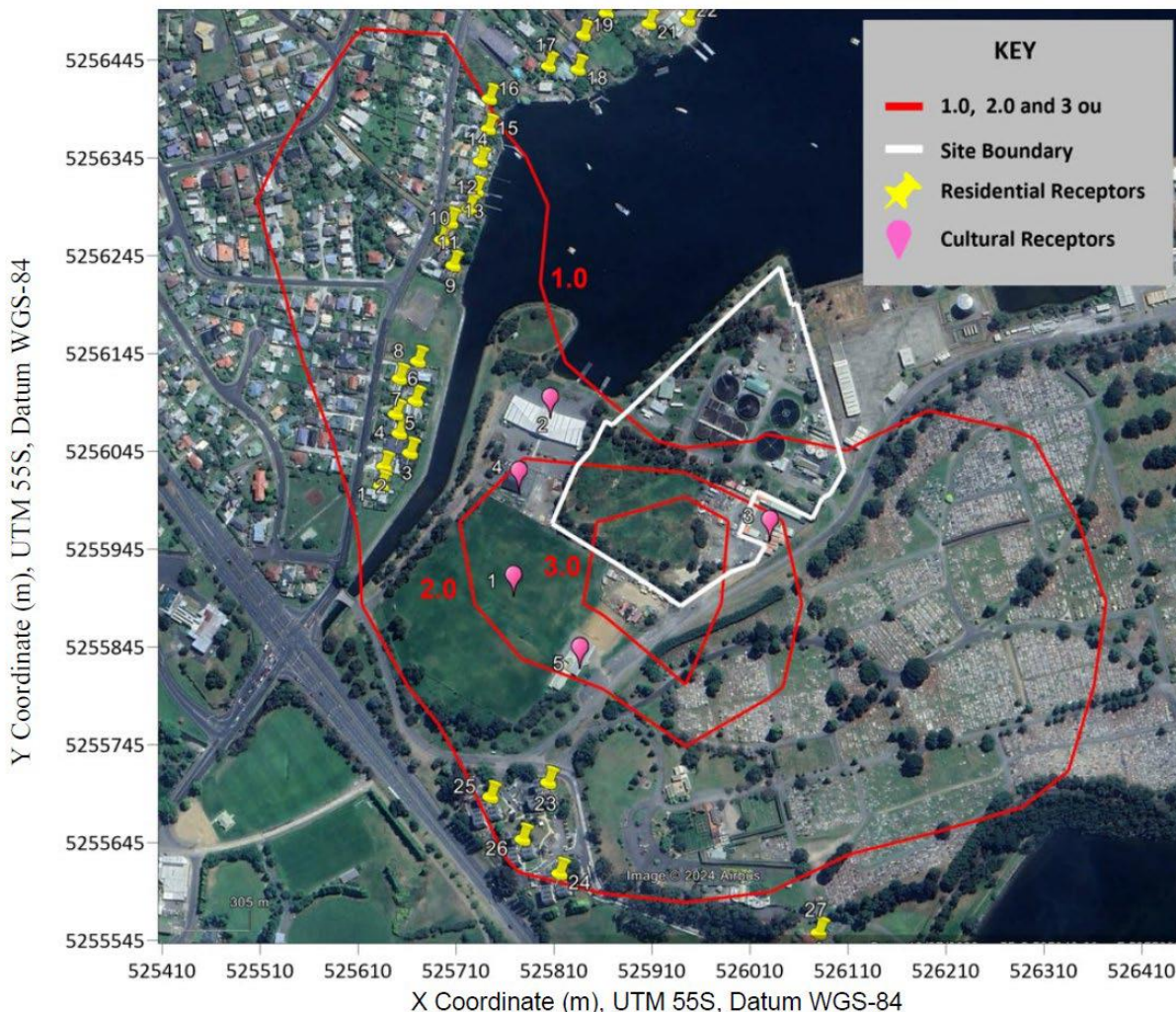


Figure 10: Predicted 99.5th percentile 1-hour average odour emission contours for Scenario 2 (EIS figure 6.13)

The odour emission rates from the new facility are expected to be lower than the historical site-specific odour measurements used in Scenario 2. Therefore, Scenario 1, rather than Scenario 2, is thought to be more representative of the potential odour emission impact and the site is likely to be compliant with Schedule 3 Air EPP criteria.

The EIS commits that if post-commissioning measurements of odour emission rates are similar to those used in Scenario 2, odour impacts will be remodelled to determine if it is necessary to retrofit covers on the anoxic zones of the bioreactors and connect to the OCS.

Seven 'upset' scenarios were also modelled. EIS Appendix D describes these scenarios in detail and advises that these have been conservatively modelled to ensure that the worst meteorological conditions are captured. These scenarios are those which can be reasonably likely to occur and result in an increase in odour emissions. They include loss of aeration, failure of odour extraction, a reduction in solids retention time in the bioreactors, pressure relief valves on both digesters are left open, activated carbon filter change over, digester system failure and, lastly, an increase in the emissions generated by tankered waste deliveries.

According to the model, upset Scenario 4 when the pressure relief valves on both sludge digesters are left open would have the largest impact on residential receptors. It is noted however that there are multiple safeguards to prevent this occurring and so the expected frequency is once every 10 years for up to four hours. Under upset conditions, the site will not be compliant with the Air EPP odour criteria. However, the likelihood of elevated odour emissions from the plant causing environmental nuisance is low.

EPA notes the MBR technology is relatively new to Tasmania and temperature conditions significantly affect microbial growth and activity, solubility, and other physicochemical properties of organic matter. As a result, temperature variability has been linked to deterioration in bulk water quality parameters and to MBR system instability (Arévalo, 2014). The facility may require some time for adjustments to the MBR before it can operate under optimal conditions.

6.3.2 Management measures

Management measures proposed in the EIS for the different phases of the proposal to mitigate air quality impacts include:

Construction

Air Quality MM 1: Onsite stockpiling of materials will be avoided where possible for management of dust emissions. If stockpiles are necessary, they will be sited away from the Project Site boundary and with consideration of the prevailing wind direction and the locations of sensitive receptors, watercourses, and surface water drains.

Air Quality MM 2: Potentially dust generating material stockpiles, unsealed roads and excavated areas will be sprayed during periods of dry weather with water or a suitable dust suppressant as required.

Air Quality MM 3: Speed restrictions will be applied to all roads within the Project Site, which will minimise dust generation.

Air Quality MM 4: Project information and construction schedules will be provided to local residents, advising them of potential dust and/or odour generation during construction and the mitigation measures to be applied.

Air Quality MM 5: Community consultation/notification will be undertaken as early as possible regarding potential odour spikes as a result of the decommissioning of existing process units.

Air Quality MM 6: During decommissioning of infrastructure containing odour generating materials (during construction phase), mitigation such as temporary infrastructure covers, bagging of waste, and vacuum trucks will be used to minimise odour generation. Decommissioning will also be staged to minimise total odour generation, and weather conditions will be taken into account when planning decommissioning

activities to maximise odour dispersion and dilution. Details will be incorporated into the CEMP for the Project.

Operation

Air Quality MM 7: Odour emitting equipment (including new and retained) and areas will be regularly inspected, maintained, and equipment replaced as required.

Air Quality MON 1: Directly post-commissioning, odour concentrations will be investigated to confirm the assumptions used in the modelling, including testing odour emissions from the bioreactors to confirm their emission rates. Odour will be remodelled if the outcome of the investigations indicated a higher than expected odour emission rate from the various WWTP components. The results of the investigation will be provided to the EPA within 3 months of completion. In the event that odour emissions are deemed unacceptable by the Director, EPA, additional odour mitigation or management will be investigated, including potentially covering the BNR anoxic zones.

6.3.3 Public and agency comment and responses

No public submissions were received in relation to odour or dust emissions. EPA Air Specialist considerations are discussed in the evaluation below.

6.3.4 Evaluation

Construction activities include excavation and stockpiling of materials including potentially contaminated soils requiring temporary storage, as well as movement of vehicles, all of which have the potential to generate dust. The management measures proposed are reasonable for managing dust and keeping the local community informed during the construction phase.

Condition **CN2** requires a Construction Environmental Management Plan to be developed, approved, and implemented to address construction impacts specific to the project site.

Given the semi urban location of the site and potential for dust to be contaminated, an additional condition, Condition **CN4** requires the control of dust emissions during construction.

Commissioning including cut over of flows from the old WWTP processes (Macquarie Point WWTP and existing Selfs Point WWTP) to the new can result in process upset and emission of nuisance odours if not planned carefully. Condition **CMI** requires development of a Process Commissioning Plan for the Director's approval prior to the commencement of process commissioning, to ensure the sequencing of transfers is as carefully considered and planned as possible to minimise the risk of nuisance odour and so that EPA regulators are informed.

EPA Air Specialists engaged with TasWater's consultants in the development and review of the odour modelling conducted and are satisfied the input data used is appropriate and the report has assessed the potential environmental nuisance or harm from a likely range of potential emission scenarios.

Considering the normal operations scenarios modelled in EIS Appendix D it is difficult to gauge whether the Sydney Water odour emission rates used in Scenario 1 or the site-specific odour measurements used in Scenario 2 are more representative of the likely actual emission rates of the new Selfs Point WWTP. The proposed management measure to commit to a post commissioning monitoring and modelling exercise to confirm the actual emission rates is therefore supported, as is the commitment to retrofit covers on the bioreactors, if necessary. These commitments are reflected in conditions imposed in the permit.

Condition **A1** is a standard condition which requires odour emissions to be controlled to prevent environmental nuisance. Condition **A2** requires the proponent to develop an odour monitoring and management plan for day-to-day operations to ensure efficient detection and mitigation of elevated odours from the site. Conditions **A3** and **A4** reflect the management measures proposed to undertake odour sampling of all sources following commissioning of the WWTP and to implement changes to odour management or mitigation measures if the sampling identifies this as being necessary.

The risks of variation of wastewater influent causing a process upset and therefore increase in odour generation are thought to be quite low for this proposal. The new Selfs Point WWTP will serve a very large catchment dominated by domestic and commercial sources and while there are a few industrial sources, none of these produce the volumes of trade waste likely to singularly cause enough impact on influent quality to result in a process upset.

EIS Appendix D considers a range of process failure upset scenarios, all of which had low probabilities and the resultant impacts were found to be minor and temporary.

These considerations indicate that the proposed design of the WWTP is robust, using contemporary odour extraction and abatement technology. The designed redundancy in both the odour extraction and abatement units is supported.

Any potential residual odour impacts of the proposal should satisfy the requirements of the EPP Air if the post-commissioning measurement of odour emission rates determines the measurements reflect those used in Scenario 1. However, if the odour sampling indicates the odour emission rates are more representative of those used in Scenario 2, odour impacts will be remodelled to determine if it is necessary to retrofit covers on the anoxic zones of the bioreactors and connect to the OCS or implement an alternate technology to reduce odour.

6.3.5 Conditions

The proponent will be required to comply with the following conditions:

- CM1 Process Commissioning Plan
- CN2 Construction Environmental Management Plan
- CN4 Control of dust emissions during construction
- A1 Odour management
- A2 Odour Management Plan
- A3 Odour sampling
- A4 Odour sampling report and odour mitigation plan

6.4 Land Contamination and Groundwater

6.4.1 Description

The new Sels Point WWTP will be predominately located on the wetland area adjacent to the existing WWTP at 10 Sels Point Road. This site was historically used as a landfill. In the 1990s the landfill was capped with clay and the site was selected to receive dredge spoil from New Town Bay and converted into a wetland receiving treated effluent from Sels Point WWTP. The wetland was a failure and some years later was abandoned and left to dry out. Bore logs from the wetlands area show a ~2 m surface layer of silty/clay material, then around 6 m of landfill material in a matrix of clay and sand, followed by 12 m of weathered basalt/dolerite and then a basalt bedrock layer at 20 m below ground level. Assessment of the existing WWTP land at 12 Sels Point Road identified that the site was reclaimed between 1966 and 1972 using mixed fill material of unknown origins, suspected of including municipal landfill and rubble. Previous drill holes on the site have identified clay, cobbles, bricks, basalt and dolerite in the first 5 m below ground level (i.e. fill material), followed by marine sediment layers including silt, clay, sand, cobbles and weathered rock from approximately 5 m below ground level; continuous basalt was found from 11.5 to 21 m (EIS Appendix F).

Several contaminated land investigations have been conducted relevant to the project site including in 2013, 2016 and 2021 (EIS section 6.4.1). TasWater consultants reviewed this data and EIS Appendix E presents the results of a data gap analysis of these studies completed for the project in 2022. EIS Appendix F presents the recommended contaminated site assessment.

Soils on the wetland area are contaminated with elevated concentrations of metals, benzo(a)pyrene and total petroleum hydrocarbons (TPH). On the existing Sels Point WWTP site soils were also found to be contaminated with elevated metals, benzo(a)pyrene and polycyclic aromatic hydrocarbons (PAH). Some asbestos contaminating material has also been found on the site. The sites are mapped as low probability acid sulfate soils (ASS). Samples collected across both sites indicate the presence of a significant level of acid neutralising material with no samples exceeding action criteria from the Tasmanian Acid Sulfate Soils Management Guidelines⁸.

Groundwater is encountered at 0.21- 1.56 m above the Australian Height Datum (AHD), across the project site with a conductivity ranging from 1867 $\mu\text{S}/\text{cm}$ - 4006 $\mu\text{S}/\text{cm}$ in shallower groundwater to 18 230 $\mu\text{S}/\text{cm}$ at depth reflecting the proximity to the Derwent estuary. There are no known uses of groundwater in the area and so PEVs attributed to groundwater in the area are the default guideline values for aquatic ecosystems.

Groundwater sampling in 2022 found all contaminants were below human health criteria specified in the national Guidelines for Managing Risks in Recreational Water (NHMRC, 2008) except benzo(a)pyrene. Nickel, zinc, PAH and Perfluorooctanesulfonic acid (PFOS) were found above Australian and New Zealand Guidelines (ANZG 2018) default marine ecosystem protection values. Dissolved methane and total carbon dioxide detected in all bores sampled indicates the presence of land fill gas. Given the shallow depth, groundwater will be encountered during construction and some built infrastructure, including wet wells, will need to sit below the water table. The potential for groundwater contamination is noted in the EIS and management measures proposed for managing groundwater during the construction phase must be sufficient to control the risk of groundwater contamination.

Landfill gas screening identified high concentrations of methane beneath the development area, particularly from the bores located on the wetland area (53.9 % v/v and 46.9 % v/v) and carbon dioxide (23.6 % v/v and 27.5 % v/v). The lower and upper explosive limits for methane are 5 % v/v and 15 % v/v respectively. The concerning concentrations of methane prompted a requirement to investigate the extent of the landfill gas risk for this proposal. Risk assessment was proposed to be undertaken in two stages: an initial rapid screening risk assessment (RSRA), and a subsequent full landfill gas risk assessment (LGRA). The RSRA is provided as EIS Appendix G and the results summarised in section 6.4.1.4 of the EIS. The highest methane recordings were towards the centre of the wetland (51.7-56.7 % v/v CH₄ and 49.7-52.7 % v/v methane). Elevated results were also noted along the westernmost boundary of the wetland that adjoins the Council

⁸ [Acid Sulfate Soils | Department of Natural Resources and Environment Tasmania \(nre.tas.gov.au\)](https://www.nre.tas.gov.au/acid-sulfate-soils)

depot, with methane levels of between 7.8 – 23.2 % v/v methane. Although landfill gas was detected in high concentrations, very low gas flow rates were observed in the monitoring bores. It was concluded that the landfill gas poses a moderate to high risk and that a full LGRA is required to be conducted prior to construction to inform a Landfill Gas Management Plan for the project.

A 4,500 litre petroleum underground storage tank (UST), reportedly decommissioned in 1973, located on the existing Selfs Point WWTP site, was found to still contain around 2,700 litres of diesel fuel. The UST will be emptied, fully decommissioned and removed as part of the project during the construction phase.

EIS Appendix F provides a conceptual site model (CSM) to ensure that site contamination sources, receptors and potential exposure pathways are identified. The risks as described above relate to the use of the site as a landfill and from the dredge spoil and could lead to human health and ecological impacts from release of volatile, explosive or asphyxiant gases and mobilisation of contaminants. Most of the pathways identified are relevant to the construction phase of the project including excavation of soils, piling and drilling which could all lead to exposure of contaminants and contamination of air, surface and/or groundwater. The CSM anticipates that once the site is stabilised, the exposure pathways to the historic contamination sources should be closed and the site will not pose an ongoing risk to human health or the environment. Landfill gas may however pose an ongoing risk during the operational phase of the project and will require specific management. Operational risks should largely be around leaks, spills of contaminating materials handled on site including sewage, sewage sludge, chemicals and hydrocarbons.

6.4.2 Management measures

Management measures proposed in the EIS for the different phases of the proposal to mitigate land contamination impacts include:

Design

Land Contamination MM 1: A comprehensive Landfill Gas Risk Assessment (LGRA) will be undertaken for the Project Site and surrounds prior to construction commencing to collect additional data to delineate the extent of landfill gas risk, and further assess the landfill gas management, mitigation and monitoring required for the construction and operational phases of the Project.

Land Contamination MM 2: The results of the LGRA will be used to inform the design process and ensure that the final design provides suitable mitigation measures to ensure landfill gas risk is adequately managed for the duration of the Project.

Construction

Land Contamination MM 3: A construction Site Contamination Management Plan will be developed prior to construction commencing based on relevant EPA Information Bulletins, guidelines and NEPMs and as a minimum contain:

- Maps showing areas of potential contamination within the Project Site,
- Appropriate personal protective equipment procedures,
- Procedures for temporary stockpiling of contaminated material during construction, including any cover and drainage aspects,
- Testing, monitoring, and classification procedures in accordance with relevant guidelines for areas of contamination, including soils and groundwater,
- Procedures for reuse of any contaminated soils,
- EPA processes for sign-off of material considered Level 2 contaminated and greater,
- Location arrangements for disposal of contaminated material or water (e.g. Copping Landfill),
- Procedures for classifying and disposing of clean fill type 1 & 2 in accordance with the EPA Approved Management Method,
- Procedures for dealing with unanticipated contaminated material,
- Decontamination procedures for vehicles and workforce; and
- Appended specialised plans and procedures where required.

The Site Contamination Management Plan will form part of the CEMP for the Project.

Land Contamination MM 4: All existing stockpiled soil within the Project Site and soil excavated as part of the Project will be treated as contaminated waste and stored appropriately until classified in accordance with Tasmanian EPA Information Bulletin No. 105, after which it will be disposed of accordingly depending on contamination classification.

Land Contamination MM 5: ASS risk and management will be addressed through the development of a construction ASS Management Plan in accordance with the DPIPWE document Tasmanian Acid Sulfate Soil Management Guidelines 2015 prior to construction commencing. The ASS Management Plan will form part of the CEMP for the Project.

Land Contamination MM 6: A construction Landfill Gas Management Plan will be developed prior to the commencement of construction based on the results and recommendations of the LGRA to ensure safety of construction workers, the broader community and the environment during the construction phase. The Landfill Gas Management Plan will form part of the CEMP for the Project.

Land Contamination MM 7: The existing underground storage tank within the Project Site will be removed under the supervision of a suitably qualified environmental consultant prior to construction commencing, in accordance with the *Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2020* and EPA requirements.

Land Contamination MM 8: WWTP infrastructure will be leak tested during the commissioning phase of the Project.

Land Contamination MON 1: All monitoring for site contamination during construction will be included in the Site Contamination Management Plan for the Project.

Land Contamination MON 2: The construction Landfill Gas Management Plan will include construction monitoring requirements for landfill gas, to be developed from the RSRA and LGRA prior to construction commencing.

Groundwater MM 1: Dewatering will be managed in accordance with a construction Dewatering Procedure, which as a minimum will contain methods for suitable collection, treatment and discharge of dewatered groundwater.

The Dewatering Procedure will form part of the CEMP for the Project.

Groundwater MM 2: Groundwater flow testing will be undertaken prior to construction commencing to inform the Dewatering Procedure.

Operation

Land Contamination MM 9: An operational Landfill Gas Management Plan will be developed for the operational phase of the Project, including suitable management, mitigation and monitoring measures in accordance with the recommendations from the RSRA, LGRA, and any ongoing monitoring to ensure any safety or operational risks are adequately managed throughout the operational period of the Project. The Landfill Gas Management Plan will form part of the Operations Environmental Management Plan (OEMP) for the Project.

Land Contamination MON 3: The operational Landfill Gas Management Plan will include operational monitoring requirements for landfill gas, to be developed from the RSRA and LGRA prior to operation commencing.

Land Contamination MON 4: A Groundwater Monitoring Plan will be developed for the operational phase of the Project to monitor groundwater contamination, the results of which will be used primarily to detect any leaks in Project infrastructure and to monitor contaminant levels reaching the receiving environment (Derwent Estuary). The plan will be based on the outcomes of ongoing preconstruction and construction groundwater monitoring and will include a suite of management and mitigation options for consideration in the event groundwater contamination becomes a significant risk to the receiving environment. The Groundwater Monitoring Plan will form part of the OEMP for the Project.

6.4.3 Public and agency comment and responses

No public or agency submissions were received in relation to land contamination issues.

6.4.4 Evaluation

The EIS, by drawing on the previous site contamination information from the project site, provides a rigorous and comprehensive assessment of the potential site contamination risks. It is clear that the most significant risk with respect to surface and groundwater contamination is during the construction phase and particularly during the excavation and piling for the foundations of the new WWTP components on the wetland area.

Management measures proposed, including a site-specific soil and groundwater monitoring exercise, to provide more data and further inform site management before construction, are supported.

Landfill gas also poses a significant concern and will require detailed assessment, monitoring and specific management measures to ensure the human and environmental risks are safely addressed. The commitment to a detailed LGRA to be undertaken and a Landfill Gas Management Plan to be developed prior to construction is supported and reflected in condition **CN3**. This condition includes a requirement for a revised landfill gas risk assessment and management plan to be developed and approved by the Director to detail landfill gas monitoring and control measures for the operational phase of the proposal and for those requirements to be incorporated in the Operational Procedures and Maintenance Manual required by condition **OPI**.

The proposed management measure to develop a Site Construction Management Plan is reflected in the requirements of condition **CN2** which requires a Construction Environmental Management Plan to be developed and submitted for the Directors approval. This requires management measures to be developed for a suite of potential environmental issues during the construction phase pertinent to this issue including preventing impacts on surface waters, management of environmentally hazardous materials and ASS management.

Given the semi urban location of the site and potential for dust to be contaminated, an additional condition, Condition **CN4** requires the control of dust emissions during construction.

Condition **CN5** requires solids entrained in stormwater to be retained on The Land.

In addition to the requirements of the Construction Environmental Management Plan, condition **CN6** specifically requires contaminated stormwater to be collected and treated prior to discharge.

Condition **MI0** requires a Groundwater Contamination Monitoring Plan to be developed to monitor any changes to groundwater quality and environmental risks as a consequence of historic activities on the site, from the changes to ground conditions as a consequence of the project site development and from the future operation of the activity.

Regarding the management and decommissioning of the underground storage tank **LO3** reminds the proponent of obligations under the *Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2020*.

6.4.5 Conditions

The proponent will be required to comply with the following conditions:

- CN2 Construction Environmental Management Plan
- CN3 Landfill Gas Risk Assessment and Management Plan
- CN4 Control of dust emissions during construction
- CN5 Retention of sediment
- CN6 Stormwater

MI0 Groundwater Contamination Monitoring Plan

OPI Operational Procedures and Maintenance Manual

Other information included in the conditions:

LO3 Underground Storage Tanks

7. Evaluation of Other Environmental Issues

In addition to the key issues, the following environmental issues are considered relevant to the proposal and have been evaluated in this section:

1. Terrestrial natural values
2. Marine and coastal
3. Waste management
4. Dangerous goods and environmentally hazardous substances
5. Decommissioning and rehabilitation
6. Socio-economic issues
7. Greenhouse gases

7.1 Terrestrial Natural Values

7.1.1 Potential impacts

A natural values survey has been undertaken for the site including the existing WWTP area and the area for the expansion (EIS Appendix H). This survey found the project site to be anthropogenically disturbed, with the majority of plant species found onsite to be introduced, including several declared weed species such as blackberry, boneseed, fennel and broom. There are approximately 55 *Eucalyptus globulus* trees on the site.

Three threatened fauna species are recorded within 500 m of the site, Tasmanian wedge-tailed eagle (*Aquila audax subsp. fleayi*), white bellied sea eagle (*Haliaeetus leucogaster*) and swift parrot (*Lathamus discolor*). The survey concludes that the swift parrot is the only one of these species likely to be ever present on the site with the *E. globulus* trees providing potential foraging habitat. The swift parrot is listed as endangered under the TSPA and critically endangered under the EPBC Act. The design of the new WWTP took into account the locations of these trees and 30 trees have been avoided.

While the site is in the range and has potential habitat for the green and gold frog (*Litoria raniformis*), eastern barred bandicoot (*Perameles gunnii*), and Tasmanian devil (*Sarcophilus harrisii*) the survey concluded that due to its urban location and degraded condition the site does not provide critical habitat for these species.

The EIS concludes that, with the management measures proposed for the project, the risk to terrestrial natural values is low.

7.1.2 Management measures proposed in EIS

Management measures proposed in the EIS for the different phases of the proposal to mitigate terrestrial natural values impacts include:

Design

Biodiversity and Natural Values MM 1: The key management measure for the protection of biodiversity in the area is the protection of the planted *E.globulus* trees along the Project Site fringes, which may be used for foraging by the listed swift parrot on occasion. The Project footprint has been designed to avoid disturbance to *E.globulus* trees as a priority, and the remaining trees will be avoided by any future modifications.

Construction

Biodiversity and Natural Values MM 2: All identified swift parrot foraging habitat trees to be retained within 30 m of the boundary of the proposed Project footprint area will be clearly marked and exclusion zones established around them to avoid unnecessary impact during the construction phase of the Project Site.

Biodiversity and Natural Values MM 3: A construction Weed, Disease and Hygiene Management Plan will be prepared prior to construction. This plan will be prepared in general accordance with the Weed, Disease Planning and Hygiene Guidelines (DPIPWE, 2015b) and include provisions for:

- Pre-construction weed control for areas of existing weed infestation in the Project Site.
- Hygiene protocols, including vehicle washdown prior to site entry/exit to avoid the spread of weeds and pathogens in general accordance with the Tasmanian Washdown Guidelines for Weed and Disease Control and Keep It Clean – A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens.
- Control measures for material brought onto the site for construction to ensure it is free from weed seeds or disease.

The Weed, Disease and Hygiene Management Plan will form part of the CEMP for the Project.

Biodiversity and Natural Values MM 4: At the completion of construction, topsoil will be reinstated to disturbed areas, including seeding with a suitable (non-invasive) species to establish a stable site and reduce the potential for weed spread post-construction.

Operation

Biodiversity and Natural Values MM 5: The Project Site will be kept free of declared weeds throughout the operational phase, with site inspections and declared weed control measures to be stipulated in the OEMP for the Project.

Biodiversity and Natural Values MM 6: Any swift parrot collision fatalities that are found onsite will be reported to the EPA on an annual basis and if deemed necessary, collision mitigation measures will be installed at the Project Site in consultation with NRE Tasmania and the EPA.

7.1.3 Public and agency comment

No public submissions were received in respect to terrestrial biodiversity and natural values. CAS concluded that the management measures proposed in the EIS were satisfactory for biodiversity and natural values issues.

7.1.4 Evaluation

Condition **CN2** requires the development, approval and application of a CEMP and includes a requirement for management measures for weed, pest and disease management. While the remaining management measures proposed are supported it is not considered necessary to impose other conditions in relation to this issue.

7.1.5 Conditions

The proponent will be required to comply with the following condition:

CN2 Construction Environmental Management Plan

7.2 Marine and coastal

7.2.1 Potential impacts

The BBO is to be retained and structurally unchanged and so there will be no construction impacts on marine ecology at this location.

The existing SPLO will be decommissioned and left in situ and a new SPLO, to be located approximately 170 m south of the existing outfall, will be constructed and operated as part of the proposal.

The potential impacts from construction of the marine outfall include potential damage to the seabed through misjudged drilling, surface water contamination through the loss of drilling fluid, and damage or disruption to aquatic habitat and species. The terminus section of the outfall will be anchored to the seafloor with concrete collars and will cause some localised disturbance and damage. It is noted that marine vessels may be used during installation of the outfall pipe, posing a risk of introducing marine pests. EIS Appendix I provides the results of an aquatic survey undertaken in the proposed outfall location and section 6.6 uses this information to inform and assess the siting, design and construction of the new outfall infrastructure.

EIS section 6.6.1 provides a description of the tidal and subtidal zones of the western shoreline of the middle and lower Derwent from Selfs Point to Blinking Billy. Drawing on descriptions provided by the Derwent Estuary Program (DEP) the shoreline area surrounding the SPLO is highly modified and described as rocky reef and subtidal silt, which provide habitat for benthic infauna, microscopic algae, macroalgae, and seagrasses and macrophytes in shallower areas. It is noted that the sediments play an important role in the denitrification of the system but that sediments contained elevated levels of heavy metals from industry. The whole estuary is host to introduced pest marine species including the Pacific seastar (*Asterias amurensis*) European green crab (*Carcinus maenas*), Pacific oyster (*Crassostrea gigas*), New Zealand seastar (*Patiriella regularis*), and the New Zealand screw shell (*Maoricolpus roseus*).

It is noted the area around Selfs Point is potential habitat for the Derwent seastar (*Marginaster littoralis*), listed as endangered under the TPSA and critically endangered under the EPBC Act and the Tasmanian Live-bearing seastar (*Parvulastra vivipara*), listed as endangered under the TPSA and vulnerable under the EPBC Act. The Derwent seastar, previously observed near the proposed outfall, has not been observed for several decades.

The survey conducted of the outfall route for the new SPLO and the surrounding area did not observe the Live-bearing seastar or any other threatened marine species.

The BBO is located on sediment substrates near the mouth of the estuary at 32 m depth. As well as many commonly occurring fish species including flathead, sea mullet, flounder, skate, Australian salmon, silver trevally, jack mackerel, sharks, blue-throat wrasse, bastard trumpeter and leatherjacket, there is a known population of the spotted handfish (*Brachionichthys hirsutus*), listed as critically endangered under the EPBC Act and endangered under the TSPA, nearby.

Several marine mammal species are observed in the Derwent Estuary including the southern right whale (*Eubalaena australis*) and humpback whale (*Megaptera novaeangliae*), New Zealand fur seal (*Arctocephalus forsteri*), Australian fur seal (*Arctocephalus pusillus*) and subantarctic fur seal (*Arctocephalus tropicalis*), as well as bottlenose dolphins (*Tursiops truncatus*) and common dolphins (*Delphinus delphis*). There is some potential for construction to impact on these species through construction noise or collision or entanglement from the use of barges and installation of the pipeline, although the EIS concludes this is unlikely.

The operation of the two outfalls, including the changes in discharge regime, being the changes in quality and volumes of wastewater discharged through these outfalls, has the potential to impact on the diversity and abundance of marine species from nutrient enrichment or toxicity. The impacts of these changes, including the impact on the spotted handfish population at BBO location have been considered and addressed in Section 6.1 Water Quality.

7.2.2 Management measures proposed in EIS

Management measures proposed for the different phases of the proposal to mitigate marine and coastal impacts include:

Marine and Coastal MM 1: Floating and submersible plant and equipment to be used for the Project will be disinfected and cleaned prior to use in the marine environment.

Marine and Coastal MM 2: Any marine vessels and equipment used will have all required Introduced Marine Pest (IMP) inspections completed and documentation in place.

Marine and Coastal MM 3: Silt curtains will be used in the marine environment around activities that present a risk of sediment disturbance or sedimentation.

Marine and Coastal MM 4: Aquatic spill kits will be present during any construction activities that occur near or within the marine environment.

Marine and Coastal MM 5: Refuelling will not occur within 30 m of the marine environment.

Marine and Coastal MM 6: Marine mammal observers will be present during the installation of the local Selfs Point effluent outfall, who will be responsible for implementing the following protocol during construction:

- Each day the immediate area will be scanned for the presence of cetaceans or pinnipeds.
- Construction activities will not occur, or must cease, if any cetacean or pinniped species is known to be present within 500 m of construction activities.
- The Marine Conservation Program within NRE Tas will be consulted immediately prior to
- Construction activities commencing to determine whether there have been any recent marine mammal sightings in the proposed work area (24 hr Whale Hotline on 0427 WHALES or 0427 942 537).
- Occurrences of listed cetaceans or pinnipeds will be reported to NRE Tasmania within 90 days.
- Reference data will include species name, location-GPS (grid reference GDA94), observer name, date, number of individuals and area occupied.
- Works will be undertaken in accordance with the National Guidelines for Whale and Dolphin Watching: Whale and Dolphin Viewing Guidelines (available at www.nre.tas.gov.au).

7.2.3 Public and agency comment

No public submissions were received in relation to marine and coastal impacts.

During the development of this proposal CAS raised concerns with regard to the potential impacts of the changes to the discharge regime from the Selfs Point outfall on the Derwent seastar, noting that this species is vulnerable to eutrophication impacts from increased nutrient discharges. These concerns were resolved on the basis that overall, the proposal will result in the reduction of 58% of the total nitrogen and 42% of the total phosphorus that is currently discharged from the existing Selfs Point and Macquarie Point STPs into the Derwent Estuary. Overall, CAS concluded that the management measures proposed in the EIS were satisfactory for biodiversity, natural values, and marine and coastal issues.

7.2.4 Evaluation

The management measures proposed to manage potential impacts during the construction of the Selfs point local outfall are generally supported. Condition **CN2**, which requires development of a CEMP, includes a specific requirement to include management measures in relation to flora and fauna management, including marine mammals.

As discussed in section 6.1 of this report condition **MI** requires receiving environment monitoring to be undertaken in accordance with the Table of Monitoring Requirements attached to the permit as Attachment 4, which includes water quality, benthic and biological monitoring in the vicinity of the Blinking Billy outfall. **M9** requires submission of a receiving environment monitoring report summarising the findings of that monitoring. The results of this monitoring will determine whether the impacts of the discharge are

likely to be deleteriously impacting on marine flora or fauna species in the vicinity of the outfall. It was determined that due to the infrequent nature of the discharge from Selfs Point outfall and the improved quality of any such discharges, receiving environment monitoring is not warranted at this location.

7.2.5 Conditions

The proponent will be required to comply with the following conditions:

- CN2 Construction Environmental Management Plan
- M1 Monitoring requirements
- M9 Receiving Environment Monitoring Report

7.3 Waste management

7.3.1 Potential impacts

Wastes produced during the construction phase will include large quantities of non-hazardous materials such as excess construction materials (concrete, plastic and steel), general waste, small quantities of controlled wastes (waste oils, hydraulic fluids, paints and solvents) and waste from onsite toilets. The diesel will be removed from the underground storage tank.

Some demolition waste will be produced from demolition of minor infrastructure including road surfaces, concrete and pipes, however decommissioning of the existing Selfs Point WWTP does not form part of this proposal and will be addressed through the requirements of the permit conditions currently in place for the existing WWTP (Licence to Operate Scheduled Premises 3513 as varied by Environment Protection Notice 9797/1).

Contaminated soils and the potential for excavation of acid sulfate soils have already been addressed in section 6.4 of this report.

During the operational phase, Selfs Point WWTP will generate large quantities of sewage sludge which will be treated to produce biosolids, as well as screenings and grit from the inlet works. Wastes from maintenance activities will also be produced such as smaller quantities of paints, solvents, oils, lubricants, and paper and plastic packaging.

Inappropriate storage, handling and disposal of wastes may contaminate soil, surface water or groundwater, may be odorous and aesthetically unpleasant.

7.3.2 Management measures proposed in EIS

Management measures proposed in the EIS for the different phases of the proposal to mitigate potential waste management impacts include:

Construction

Waste MM 1: Wastes from onsite toilets will be stored within the portable toilet system and removed from the site by a suitably licensed operator and disposed of at a licensed wastewater facility. This may be able to be disposed of at the existing Selfs Point STP for a portion of the construction period.

Waste MM 2: A waste management area will be delineated within the construction compound(s), with all wastes to be segregated (into recyclables and non-recycles) and all putrescible and/or potentially windblown waste to be stored in sealed bins.

Waste MM 3: All wastes classed as environmentally hazardous materials will be stored in appropriately banded containers.

Waste MM 4: Wastes will be removed from site on a regular basis by a suitably qualified operator and disposed of at a suitably licensed facility.

Waste MM 5: Any asbestos encountered during construction (including demolition) will be removed by a licensed specialist contractor and disposed of at a suitably licensed waste facility.

Waste MM 6: Diesel remaining in the UST will be pumped out by a licensed operator as part of the UST removal process and taken to a licensed facility for disposal.

Waste MON 1: The construction contractor will maintain records of waste volumes generated and disposal locations, including disposal facility receipts.

Waste MON 2: The construction contractor will undertake weekly site audits to ensure the waste management system is effective, clean up any windblown or otherwise escaped waste, and modify storage arrangements if necessary.

Operation

Waste MM 7: During operation a waste management area will be delineated, with all wastes to be segregated (into recyclables and non-recycles) and all putrescible and/or potentially windblown waste to be stored in sealed bins. Wastes will be removed from site on a regular basis by a suitably qualified operator and disposed of at a suitably licensed facility.

Waste MM 8: Grit and screenings generated during operation will be stored in sealed bins and removed from site by a suitably qualified operator to be disposed of at a suitably licensed facility, on a monthly basis.

Waste MM 9: Detailed site-specific information about biosolids monitoring, handling and management will be incorporated into the existing TasWater Sewage Sludge Management Plan. The existing plan was developed based on the requirements of the EPA's Tasmanian Biosolids Reuse Guidelines⁹ (TBRGs) and Approved Management Method for Biosolids Reuse. The updated plan will include, but not be limited to, the following details:

- Provide an overview of biosolids treatment and handling at the WWTP, including transportation details.
- Set satisfactory controls to ensure sludge contaminant quality will be consistently maintained.
- Identify arrangements and alternative pathways for any biosolids that do not meet the criteria for reuse (including transport to a licensed landfill facility if required).
- Define a biosolids monitoring program that fully complies with the requirements of the EPA's Tasmanian Biosolids Reuse Guidelines.
- Outline the requirements for process verification for stabilisation of biosolids produced in accordance with the EPA's Tasmanian Biosolids Reuse Guidelines, including all monitoring requirements and evidence to be provided to the EPA.

Waste MON 3: Biosolids will be subject to regular testing to ensure they meet permit requirements prior to being collected and transported offsite to existing agricultural reuse sites. This will be included in the Biosolids Management Plan.

7.3.3 Public and agency comment

No public or agency submissions were received in relation to waste management.

7.3.4 Evaluation

Condition **CN2** requires development, approval and application of the approved CEMP to ensure suitable waste management and disposal during construction activities.

In order to keep track of movements of controlled waste during the operational phase of the project condition **WMI** requires a Controlled Waste Register to be maintained. This specifically regarding movements of sewage screenings, grit, sewage sludge and biosolids.

Condition **WM2** requires a sewage sludge management plan to be developed to demonstrate sewage sludge and biosolids will be treated, classified and managed in accordance with the TBRGs.

Condition **M7** includes a requirement for the proposed contaminant screening program to include screening for any additional parameters to be included in biosolids contaminant grading. Condition **WM3** requires a Biosolids Stabilisation Verification Report to be provided. This report is to demonstrate that the biosolids treatment process complies with the relevant requirements of section 8 of the TBRGs, specifically stabilisation demonstration of the new treatment process to ensure the material is suitable for its intended beneficial reuse.

Additionally, Schedule 3 provides information regarding management of wastes. Information Item **LO4** advises there are legal obligations under EMPCA in respect to the transport of controlled waste.

⁹ [Biosolids Reuse | EPA Tasmania](#)

Information Item **OII**, Waste Management hierarchy, provides details about appropriate management of general solid and liquid waste generated at the facility.

7.3.5 Conditions

The proponent will be required to comply with the following conditions:

CN2 Construction Environmental Management Plan

M7 Contaminant screening program and report

WMI Controlled Waste Register

WM2 Sewage Sludge Management Plan

WM3 Biosolids Stabilisation Verification Report

Other information included in the permit:

LO4 Controlled waste transport

OII Waste management hierarchy

7.4 Dangerous goods and environmentally hazardous substances

7.4.1 Potential impacts

Inappropriate storage, handling, and disposal of environmentally hazardous substances, including sewage, fuels, oils and chemicals can lead to spills and leaks and may contaminate soil, surface water and groundwater. Spills of these substances may cause harm to flora and fauna, particularly in aquatic environments. These risks can be easily mitigated by use of standard management practices such as use of suitable storage vessels, impervious bunding and employing correct handling and disposal options.

Section 6.9 of the EIS details the hazardous substances that will be used on site during the construction, commissioning and operational phases of the proposal.

During the construction and commissioning phases large volumes of fuel, hydraulic oils and lubricants will be stored and used on site for use in machinery and vehicles, paints, solvents, disinfectants and cement will also be on site. LPG gas will be brought on to site for commissioning and operation of the site for the sludge digesters.

Methanol, chlorine (gas or sodium hypochlorite), flocculant (alum), caustic soda (sodium hydroxide), citric acid and polymers will all be required for the operation of the new WWTP.

During the commissioning and operational phases untreated and partially treated wastewater, sewage sludge, also hazardous materials will need to be managed.

7.4.2 Management measures proposed in EIS

Management measures proposed in the EIS for the different phases of the proposal to mitigate risks from storage and handling of dangerous goods and environmentally hazardous substances include:

Dangerous goods and environmentally hazardous materials MM 1: All dangerous goods or environmentally hazardous materials will be stored in appropriately bunded containers within the construction compound(s), in accordance with relevant Australian Standards and state regulations.

Dangerous goods and environmentally hazardous materials MM 2: A refuelling truck will be used throughout the construction phase, which will make regular deliveries to the Project Site. The truck will have on board spill kits and use temporary bunding equipment.

Dangerous goods and environmentally hazardous materials MM 3: A register of dangerous goods and environmentally hazardous materials used onsite will be maintained throughout the construction period. The register will be accompanied by the appropriate safety, storage, segregation and handling information (including Safety Data Sheets).

Dangerous goods and environmentally hazardous materials MM 4: Hydrocarbon and chemical spill kits will be stored within the construction compound(s) and wherever dangerous goods and environmentally hazardous materials are used throughout the Project Site. Kits will also be stored on select site vehicles.

Dangerous goods and environmentally hazardous materials MM 5: All disposal of dangerous goods and environmentally hazardous materials will be undertaken in accordance with relevant Australian Standards and state regulations.

Dangerous goods and environmentally hazardous materials MM 6: Clean-up measures, reporting and notification procedures for equipment breakdowns and accidental releases will be incorporated in an Emergency Response Plan for the Project. This will include clean-up procedures in aquatic environments as well as incident response in the event of fire, chemical release or an explosion. The Emergency Response Plan will form part of the CEMP for the Project.

Dangerous goods and environmentally hazardous materials MM 7: All spills of dangerous goods or environmentally hazardous materials will be reported to the site supervisor, with spills >100 L or any spills >5 L direct to the aquatic environment to be reported to the EPA within 24 hours of the incident occurring.

Dangerous goods and environmentally hazardous materials MM 8: The site induction for all staff will include training in use and disposal of all dangerous goods and environmentally hazardous materials to be used onsite as well as protocols to follow in the event of an incident involving these materials.

Dangerous goods and environmentally hazardous materials MON 1: Records of volumes of all dangerous goods or environmentally hazardous materials used for the Project will be maintained by the construction contractor and be made available to EPA upon request.

Dangerous goods and environmentally hazardous materials MON 2: Monthly audits of all aspects of dangerous goods and environmentally hazardous materials management, mitigation and monitoring will be undertaken and made available to the Director, EPA, upon request.

7.4.3 Public and agency comment

No public submissions or agency comment were received in relation to dangerous goods and environmentally hazardous materials issues.

7.4.4 Evaluation

The EIS management measures proposed are considered appropriate for managing environmentally hazardous substances. The following conditions are imposed to reflect those management measures.

Condition **CN2** requires development, approval and application of the approved CEMP to ensure suitable waste management and disposal during construction activities.

Conditions **H1** and **H2** require all environmentally hazardous materials held on The Land to be kept within containment systems such as impervious bunded areas or spill trays, appropriate to the volume of material.

Condition **H3** requires appropriate spill kits to be held on site to assist with containment of spills.

Condition **H4** stipulates minimum requirements when using mobile refuelling equipment on site for the construction phase of the proposal.

In addition, **LO2** is included which provides information on the proponent's responsibilities under relevant legislation relating to hazardous materials including the *Work Health and Safety Act 2012* and any subordinate legislation.

Condition **OPI** requiring the development of an Operational Procedures and Maintenance Manual and condition **OP2** requiring development and adherence to a Contingency Management Plan detailing appropriate response actions to respond to unplanned events such as the release of sewage and wastewater.

7.4.5 Conditions

The proponent will be required to comply with the following conditions:

CN2 Construction Environmental Management Plan

H1 Storage and handling of hazardous materials

H2 Hazardous materials (<250 litres)

H3 Spill kits

H4 Handling of hazardous materials - mobile

OPI Operational Procedures and Maintenance Manual

OP2 Contingency management

Other information included in the permit:

LO2 Storage and handling of dangerous goods, explosives and dangerous substances

7.5 Decommissioning and rehabilitation

7.5.1 Potential impacts

Decommissioning of the existing Selfs Point WWTP will be addressed through decommissioning and rehabilitation requirements imposed by the existing permit (Environmental Protection Notice 9797/1) and does not form part of this assessment.

The EIS advises that the nominal operational lifespan of the new WWTP is around 80 years with some components such as pumps, valves and switchboards requiring replacement more frequently (approximately every 25 years).

Potential impacts from a poorly decommissioned site include safety and visual impacts from equipment being left on site, and contamination and water quality impacts should wastewater, chemicals or hydrocarbons be left on site. Poorly decommissioned and rehabilitated sites also limit future uses of the land.

7.5.2 Management measures proposed in EIS

Decommissioning and rehabilitation of the site is discussed in section 8 of the EIS but focuses on rehabilitation following the construction phase. Given the purpose of the proposal, which is to provide treatment of continuously generated sewage and wastewater from the Greater Hobart area, temporary cessation of the activity is an extremely unlikely scenario and permanent cessation could only occur in the event that alternative infrastructure was put in place.

7.5.3 Public and agency comment

No public or agency comments were received in relation to decommissioning and rehabilitation.

7.5.4 Evaluation

It should be noted that these conditions only apply to future decommissioning and rehabilitation applicable to the new Selfs Point WWTP. Decommissioning and rehabilitation associated with the current Selfs Point WWTP will be addressed through the existing environmental conditions imposed on that activity.

Condition **DC1** is required to ensure the proponent notifies the Director of the permanent cessation of the activity. Condition **DC2** requires a Decommissioning and Rehabilitation Plan be submitted to the Director within 30 days of being notified of any planned cessation. Condition **DC3** is required to ensure rehabilitation of the site following permanent cessation.

7.5.5 Conditions

The proponent will be required to comply with the following conditions:

- DC1 Notification of cessation
- DC2 DRP requirements
- DC3 Rehabilitation following cessation

7.6 Socio-economic issues

7.6.1 Potential impacts

Macquarie Point has been identified by the Tasmanian Government as a key development opportunity for Hobart, however the presence of the Macquarie Point WWTP currently restricts development for a range of sensitive uses. The broader proposal to close Macquarie Point WWTP and convey sewage flows to an expanded and upgraded Selfs Point WWTP will allow redevelopment of the Macquarie Point precinct for either the stadium proposal, the Macquarie Point Development Corporation development masterplan, or other similar proposals to improve the amenity of the area for tourism, residential and cultural uses.

The Macquarie Point WWTP is ageing and has been the subject of several environmental incidents in recent years. The Selfs Point WWTP increasingly frequently discharges partially treated wastewater via the Selfs Point outfall during wet weather events. The project will also deliver improved wastewater treatment for the Hobart catchment, increasing the capacity of the system for future population growth and improving water quality in the River Derwent.

TasWater recently announced that the cost of the project has substantially increased to \$314 million. The EIS advises the construction phase will employ local construction firms where possible.

7.6.2 Management measures proposed in EIS

None proposed.

7.6.3 Public and agency comment

No public or agency comments were received in relation to socio-economic issues.

7.6.4 Evaluation

The objectives of the RMPS and EMPCA centre around the concept of sustainable development which requires consideration of meeting the economic and social needs of people now and in the future while sustaining the environment.

The proposed construction and operation of the new and expanded Selfs Point WWTP while providing essential public infrastructure to service the future needs of a large proportion of Greater Hobart will also allow redevelopment of the Macquarie Point site, which is currently underutilised, to provide commercial, entertainment and cultural development opportunities to occur.

Social and economic considerations are considered in the Board's decision making process.

7.6.5 Conditions

No conditions are required.

7.7 Greenhouse gases

7.7.1 Potential impacts

The production of construction materials such as concrete, and the operation of machinery and trucks from burning hydrocarbon fuels will cause greenhouse gas emissions during construction.

In the operational phase of the proposal the WWTP will use mains electricity which, in Tasmania, is primarily from renewable sources. In the rare event of extended power outages a backup generator, likely to be fuelled by diesel, will be used and is also a potential source of greenhouse gas emissions. There will be an associated increase in greenhouse gas emissions due to the electricity required from the need to pump wastewater flows from the Macquarie Point catchment to the new Selfs Point WWTP.

Significant volumes of biogas (63% methane) will be generated from the digestion of sewage sludge. This gas is proposed to be captured and used as a fuel source by the Project to heat water and generate electricity through a new biogas cogeneration system and will offset electricity consumption. The biogas system will have an emergency flare to burn off excess biogas if required, to avoid the release of methane which, as a greenhouse gas, is 25 times more harmful than carbon dioxide. The biogas system will substantially reduce greenhouse gas emissions from the site.

Other fugitive emissions of sewage derived gases including methane, nitrous oxides and carbon dioxide are a small potential source of greenhouse gas emissions.

7.7.2 Management measures proposed in EIS

Management measures proposed in the EIS include the installation of the biogas cogeneration system and back up emergency flare.

7.7.3 Public and agency comment

No public or agency comments were received in relation to greenhouse gases.

7.7.4 Evaluation

The proposal to install a biogas cogeneration system will realise a significant reduction in the emission of greenhouse gas emissions over the life of the project, is viewed as a positive development and is supported by EPA. Peak daily production of 4,500Nm³/day is below the threshold for a fuel burning facility under Schedule 2 EMPCA. TasWater is required to report greenhouse gas emissions to the Commonwealth under the *National Greenhouse and Energy Reporting Scheme*. No further requirements are imposed.

7.7.5 Conditions

No conditions are required.

9. Report Conclusions

This assessment has been based on the information provided by the proponent, TasWater, in the permit application and the case for assessment (the EIS).

This report incorporates specialist advice provided by EPA scientific and regulatory staff, the Department of Natural Resources and Environment Tasmania, and other government agencies, and considers issues raised in public submissions.

It is concluded that:

1. the RMPS and EMPCS objectives have been duly and properly pursued in the assessment of the proposal; and
2. the assessment of the proposal has been undertaken in accordance with the Environmental Impact Assessment Principles; and
3. the proposal is capable of being managed in an environmentally acceptable manner such that it is unlikely that the RMPS and EMPCS objectives would be compromised, provided that the Permit Conditions - Environmental No. 10507 appended to this report are imposed and duly complied with.

The environmental conditions in Appendix 3 are a new set of operating conditions for the entire, intensified activity that will supersede the existing permit conditions.

10. Report Approval

Environmental Assessment Report and conclusions, including environmental conditions, adopted:



Andrew Paul

CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY

Meeting date: 30 July 2024

II. References

ERA Planning & Environment (2024) Selfs Point Sewage Treatment Plant Upgrade TasWater Environmental Impact Statement April 2024; Hobart, Tasmania

Wild-Allen, Karen., Jennifer Skerratt, Farhan Rizwi, John Parslow, (2009). Derwent Estuary Biogeochemical Model: Technical Report. CSIRO Marine and Atmospheric Research October 2009.

J. Arévalo, L.M. Ruiz, J. Pérez, M.A. Gómez (2014) Effect of temperature on membrane bioreactor performance working with high hydraulic and sludge retention time, *Biochemical Engineering Journal*, Volume 88, pages 42-49 (<https://doi.org/10.1016/j.bej.2014.03.006>).

NSW Environment Protection Authority (2020) Draft Construction Noise Guideline November 2020; Paramatta, NSW.

NHMRC. (2008). *Guidelines for Managing Risks in Recreational Water*. Canberra: Australian Government - National Health and Medical Research Council.

ANZG. (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Canberra ACT, Australia: Australian and New Zealand Governments and Australian state and territory governments. Available at www.waterquality.gov.au/anz-guidelines.

12. Appendices

- Appendix 1 Summary of public and agency submissions
- Appendix 2 Table of proponent management measures
- Appendix 3 Permit conditions

Appendix I: Summary of public and agency submissions

Table I: Matters raised during public consultation period

Agency	Comments and Issues	Further Information Requested	EPA Comments
MAST	<ol style="list-style-type: none"> 1. Any on water works may require a Notice to Mariners to be issued by MAST. 2. Any underwater pipelines will need to be referred to MAST to consider impacts on safe navigation of vessels. 3. If any aids to navigation are required during or on completion of the project to assist mariners at the determination of MAST, then the proponent will be responsible for the cost and ongoing maintenance and management. 	No	Information passed on to TasWater
CAS	<p>Management Measures</p> <p>CAS can advise that the management measures outlined in the EIS appear to be adequate and is supportive of the management measures in Section 9 (pg. 151-153) for biodiversity, natural values, and marine and coastal.</p> <p>Derwent River Seastar</p> <p>Based on the information provided, CAS considers the previous issues discussed regarding the status and impacts to the Derwent River seastar (<i>Marginaster littoralis</i>) have been satisfactorily resolved, noting that the new treatment systems will result in the reduction of 58% of the total nitrogen and 42% of the total phosphorus that is currently discharged from the existing Selfs Point and Macquarie Point STPs into the Derwent Estuary.</p>	No	Concerns raised through the development of the EIS have been satisfactorily addressed.

Appendix 2: Table of proponent management measures

Table 1: Proponent management measures (Table 9.1 of EIS)

Management and mitigation number	Management or mitigation measure	Phase	EIS Section
Various MM 1	A Final Design Report will be submitted to the EPA for approval prior to the commencement of construction. The Final Design Report will be informed by geotechnical assessment and engineering constraints	Design	Section 6
Various MM 2	A Construction Environmental Management Plan (CEMP) capturing all relevant construction phase management measures set out in this EIS (and any resulting approval conditions) will be prepared and made available to the EPA prior to the commencement of construction. The approved CEMP will be implemented throughout construction.	Construction	Section 6
Various MM 3	An Operational Environmental Management Plan (OEMP) capturing all relevant operational phase management measures as set out in the EIS (and any resulting approval conditions) will be prepared and made available to the EPA prior to the commencement of operation. The approved OEMP will be implemented throughout the operational period.	Operation	Section 6
Various MM 4	An online complaints register and contact phone number for both construction and operational phases will be established to capture any dust, odour, noise, traffic or other complaints received from the public. Complaints will be actioned, the complainant notified and a record kept of the resolution.	Construction and operation	Section 6
Water Quality MM 1	Prior to construction commencing, a construction Sediment and Erosion Control Plan for the Project will be developed, identifying all major drainage lines and waterways and site-specific management and mitigation to be used, including controls such as sandbags, sediment fences, sediment traps and diffusion paths. The Sediment and Erosion Control Plan will form part of the CEMP for the Project.	Construction	Section 6.1.4
Water Quality MM 2	No materials will be stockpiled on existing drainage lines; stockpile perimeter drains and sediment fencing will be used as required.	Construction	Section 6.1.4
Water Quality MM 3	The STP and associated pipelines will be subject to regular maintenance and inspection.	Operation	Section 6.1.4
Water Quality MM 4	The Project's SCADA systems will include monitoring systems and alarms to alert staff of any system or equipment failures. Procedures will be in place to ensure immediate response to any identified issues to ensure the functionality of the STP is maintained and treated effluent quality is not compromised.	Operation	Section 6.1.4
Water Quality MM 5	Chlorine dosing rates will be optimised through the commissioning period based on testing at the Domain break of head tank and the Blinky Billy outfall pump station to optimise the dosage required by measuring residual chlorine in the effluent after it has travelled through the transfer pipeline length; laboratory experiments will also be run using Project-specific effluent to measure chlorine decay rates over longer periods. This information will be used to optimise the dosing rate to achieve the necessary controls at the heat exchangers, while minimising residual chlorine released to the environment.	Operation (Commissioning)	Section 6.1.4

Management and mitigation number	Management or mitigation measure	Phase	EIS Section
Noise MM 1	The Project will include the following noise management and mitigation as a minimum, as included in the noise modelling undertaken on the concept design:	Design	Section 6.2.4
	<ul style="list-style-type: none"> • Selection of equipment with lower sound power level specifications (for pumps, blowers and fans). 		
	<ul style="list-style-type: none"> • Acoustic enclosures for select equipment, including pumps, internal equipment associated with the inlet works, blower building and sludge dewatering building, and fan casings in the OCU. 		
	<ul style="list-style-type: none"> • The use of acoustically absorbent internal lining in selected buildings to control reverberation. 		
	<ul style="list-style-type: none"> • The use of an inlet silencer and acoustic lagging of inlet ductwork for the OCU. 		
Noise MM 2	The final design will include the required mitigation to ensure the existing EPN limits during the day (50 dB(A)), evening (40 dB(A)) and night (35 dB(A)) are met at the closest sensitive receptor.	Design	Section 6.2.4
Noise MM 3	Additional noise modelling will be undertaken to ensure the final design meets the current EPN requirements prior to construction commencing.	Design	Section 6.2.4
Noise MM 4	Where possible operation of noise generating machinery and equipment during construction will be restricted to standard hours as defined by the NSW EPA Draft Construction Noise Guideline 2020 (the Guidelines), that is:	Construction	Section 6.2.4
	<ul style="list-style-type: none"> • Monday to Friday between 0700 hours and 1800 hours 		
	<ul style="list-style-type: none"> • Saturday between 0800 hours and 1300 hours 		
	<ul style="list-style-type: none"> • Sundays and public holidays – no work 		
	Any works required to be undertaken outside these timeframes that require the use of noise generating machinery and equipment will be undertaken in accordance with the noise management measures outlined in the Guidelines.		
Noise MM 5	Low-noise generating plant and equipment will be used where practicable.	Construction	Section 6.2.4
Noise MM 6	Broadband reversing alarms will be used where practicable over traditional tonal alarms to minimise any nuisance noise generated.	Construction	Section 6.2.4
Noise MM 7	The proponent will require the contractor to have regularly serviced and maintained equipment to minimise noise emissions.	Construction	Section 6.2.4
Noise MM 8	Where practical, machinery will be operated at low speed or power and be switched off when not in use, rather than left idling for prolonged periods.	Construction	Section 6.2.4
Noise MM 9	Delivery trucks will be advised to not use exhaust brakes in populated areas.	Construction	Section 6.2.4
Noise MM 10	Regular community updates will be undertaken to inform construction timeframes.	Construction	Section 6.2.4
Noise MM 11	A detailed Construction Noise Management Plan (CNMP) will be provided to the EPA prior to construction commencement to particularly address evening and night drilling noise impacts. Specific information from the appointed contractors drilling equipment to be used onsite will be measured and incorporated into the model to be provided with the CNMP. The CNMP will also include a proposal for trial monitoring at the start of the construction phase to verify the modelling predictions and detail what further mitigation could be adopted if the demonstrated noise levels are found to be problematic.	Construction (pre-construction)	Section 6.2.4

Management and mitigation number	Management or mitigation measure	Phase	EIS Section
Noise MM 12	Where predrilling, using a continuous flight auger drilling rig, is required outside the standard hours as defined by the NSW EPA Draft Construction Noise Guidelines 2020 (the Guidelines) the rig will be enclosed on at least two sides by a suitable noise barrier at least 0.8 m above the rig engine to ensure noise emissions from construction remain below the adopted noise affected noise management levels for non-standard hours.	Construction	Section 6.2.4
Noise MM 13	Noise emitting equipment will be regularly inspected, maintained, and replaced as required.	Operation	Section 6.2.4
Air Quality MM 1	Onsite stockpiling of materials will be avoided where possible for management of dust emissions. If stockpiles are necessary, they will be sited away from the Project Site boundary and with consideration of the prevailing wind direction and the locations of sensitive receptors, watercourses, and surface water drains.	Construction	Section 6.3.4
Air Quality MM 2	Potentially dust generating material stockpiles, unsealed roads and excavated areas will be sprayed during periods of dry weather with water or a suitable dust suppressant as required.	Construction	Section 6.3.4
Air Quality MM 3	Speed restrictions will be applied to all roads within the Project Site, which will minimise dust generation.	Construction	Section 6.3.4
Air Quality MM 4	Project information and construction schedules will be provided to local residents, advising them of potential dust and/or odour generation during construction and the mitigation measures to be applied.	Construction	Section 6.3.4
Air Quality MM 5	Community consultation/notification will be undertaken as early as possible regarding potential odour spikes as a result of the decommissioning of existing process units.	Construction	Section 6.3.4
Air Quality MM 6	During decommissioning of infrastructure containing odour generating materials (during construction phase), mitigation such as temporary infrastructure covers, bagging of waste, and vacuum trucks will be used to minimise odour generation. Decommissioning will also be staged to minimise total odour generation, and weather conditions will be taken into account when planning decommissioning activities to maximise odour dispersion and dilution. Details will be incorporated into the CEMP for the Project.	Construction	Section 6.3.4
Air Quality MM 7	Odour emitting equipment (including new and retained) and areas will be regularly inspected, maintained, and equipment replaced as required.	Operation	Section 6.3.4
Land Contamination MM 1	A comprehensive Landfill Gas Risk Assessment (LGRA) will be undertaken for the Project Site and surrounds prior to construction commencing to collect additional data to delineate the extent of landfill gas risk, and further assess the landfill gas management, mitigation and monitoring required for the construction and operational phases of the Project.	Design	Section 6.4.4
Land Contamination MM 2	The results of the LGRA will be used to inform the design process and ensure that the final design provides suitable mitigation measures to ensure landfill gas risk is adequately managed for the duration of the Project.	Design	Section 6.4.4
Land Contamination MM 3	A construction Site Contamination Management Plan will be developed prior to construction commencing based on relevant EPA Information Bulletins, guidelines and NEPMs and as a minimum contain:	Construction	Section 6.4.4
	<ul style="list-style-type: none"> • Maps showing areas of potential contamination within the Project Site 		

Management and mitigation number	Management or mitigation measure	Phase	EIS Section
	<ul style="list-style-type: none"> • Appropriate personal protective equipment procedures 		
	<ul style="list-style-type: none"> • Procedures for temporary stockpiling of contaminated material during construction, including any cover and drainage aspects 		
	<ul style="list-style-type: none"> • Testing, monitoring, and classification procedures in accordance with relevant guidelines for areas of contamination, including soils and groundwater 		
	<ul style="list-style-type: none"> • Procedures for reuse of any contaminated soils 		
	<ul style="list-style-type: none"> • EPA processes for sign-off of material considered Level 2 contaminated and greater 		
	<ul style="list-style-type: none"> • Location arrangements for disposal of contaminated material or water (e.g. Copping Landfill) 		
	<ul style="list-style-type: none"> • Procedures for classifying and disposing of clean fill type 1 & 2 in accordance with the EPA Approved Management Method 		
	<ul style="list-style-type: none"> • Procedures for dealing with unanticipated contaminated material 		
	<ul style="list-style-type: none"> • Decontamination procedures for vehicles and workforce 		
	<ul style="list-style-type: none"> • Appended specialised plans and procedures where required. 		
	The Site Contamination Management Plan will form part of the CEMP for the Project.		
Land Contamination MM 4	All existing stockpiled soil within the Project Site and soil excavated as part of the Project will be treated as contaminated waste and stored appropriately until classified in accordance with Tasmanian EPA Information Bulletin No. 105, after which it will be disposed of accordingly depending on contamination classification.	Construction	Section 6.4.4
Land Contamination MM 5	ASS risk and management will be addressed through the development of a construction ASS Management Plan in accordance with the DPIPW document Tasmanian Acid Sulfate Soil Management Guidelines 2015 prior to construction commencing. The ASS Management Plan will form part of the CEMP for the Project.	Construction	Section 6.4.4
Land Contamination MM 6	A construction Landfill Gas Management Plan will be developed prior to the commencement of construction based on the results and recommendations of the LGRA to ensure safety of construction workers, the broader community and the environment during the construction phase. The Landfill Gas Management Plan will form part of the CEMP for the Project.	Construction	Section 6.4.4
Land Contamination MM 7	The existing underground storage tank within the Project Site will be removed under the supervision of a suitably qualified environmental consultant prior to construction commencing, in accordance with the <i>Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2020</i> and EPA requirements.	Construction	Section 6.4.4
Land Contamination MM 8	STP infrastructure will be leak tested during the commissioning phase of the Project.	Construction	Section 6.4.4
Land Contamination MM 9	An operational Landfill Gas Management Plan will be developed for the operational phase of the Project, including suitable management, mitigation and monitoring measures in accordance with the recommendations from the RSRA, LGRA, and any ongoing monitoring to ensure any safety or operational risks are adequately managed throughout the operational period of the Project. The Landfill Gas Management Plan will form part of the OEMP for the Project.	Operation	Section 6.4.4
Biodiversity and Natural Values MM 1	The key management measure for the protection of biodiversity in the area is the protection of the planted <i>E.globulus</i> trees along the Project Site fringes, which may be used for foraging by the listed	Design	Section 6.5.4

Management and mitigation number	Management or mitigation measure	Phase	EIS Section
	swift parrot on occasion. The Project footprint has been designed to avoid disturbance to <i>E.globulus</i> trees as a priority, and the remaining trees will be avoided by any future modifications.		
Biodiversity and Natural Values MM 2	All identified swift parrot foraging habitat trees to be retained within 30 m of the boundary of the proposed Project footprint area will be clearly marked and exclusion zones established around them to avoid unnecessary impact during the construction phase of the Project Site.	Construction	Section 6.5.4
Biodiversity and Natural Values MM 3	A construction Weed, Disease and Hygiene Management Plan will be prepared prior to construction. This plan will be prepared in general accordance with the Weed, Disease Planning and Hygiene Guidelines (DPIPWE, 2015b) and include provisions for:	Construction	Section 6.5.4
	<ul style="list-style-type: none"> Pre-construction weed control for areas of existing weed infestation in the Project Site. 		
	<ul style="list-style-type: none"> Hygiene protocols, including vehicle washdown prior to site entry/exit to avoid the spread of weeds and pathogens in general accordance with the Tasmanian Washdown Guidelines for Weed and Disease Control and Keep It Clean – A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens. 		
	<ul style="list-style-type: none"> Control measures for material brought onto the site for construction to ensure it is free from weed seeds or disease. 		
	The Weed, Disease and Hygiene Management Plan will form part of the CEMP for the Project.		
Biodiversity and Natural Values MM 4	At the completion of construction, topsoil will be reinstated to disturbed areas, including seeding with a suitable (non-invasive) species to establish a stable site and reduce the potential for weed spread post-construction.	Construction	Section 6.5.4
Biodiversity and Natural Values MM 5	The Project Site will be kept free of declared weeds throughout the operational phase, with site inspections and declared weed control measures to be stipulated in the OEMP for the Project.	Operation	Section 6.5.4
Biodiversity and Natural Values MM 6	Any swift parrot collision fatalities that are found onsite will be reported to the EPA on an annual basis and if deemed necessary collision mitigation measures will be installed at the Project Site in consultation with NRE Tasmania and the EPA.	Operation	Section 6.5.4
Marine and Coastal MM 1	Floating and submersible plant and equipment to be used for the Project will be disinfected and cleaned prior to use in the marine environment.	Construction	Section 6.6.4
Marine and Coastal MM 2	Any marine vessels and equipment used will have all required Introduced Marine Pest (IMP) inspections completed and documentation in place.	Construction	Section 6.6.4
Marine and Coastal MM 3	Silt curtains will be used in the marine environment around activities that present a risk of sediment disturbance or sedimentation.	Construction	Section 6.6.4
Marine and Coastal MM 4	Aquatic spill kits will be present during any construction activities that occur near or within the marine environment.	Construction	Section 6.6.4
Marine and Coastal MM 5	Refuelling will not occur within 30 m of the marine environment.	Construction	Section 6.6.4
Marine and Coastal MM 6	Marine mammal observers will be present during the installation of the local Selfs Point effluent outfall, who will be responsible for implementing the following protocol during construction:	Construction	Section 6.6.4
	<ul style="list-style-type: none"> Each day the immediate area will be scanned for the presence of cetaceans or pinnipeds. 		

Management and mitigation number	Management or mitigation measure	Phase	EIS Section
	<ul style="list-style-type: none"> Construction activities will not occur, or must cease, if any cetacean or pinniped species is known to be present within 500 m of construction activities. 		
	<ul style="list-style-type: none"> The Marine Conservation Program within NRE Tas will be consulted immediately prior to construction activities commencing to determine whether there have been any recent marine mammal sightings in the proposed work area (24 hr Whale Hotline on 0427 WHALES or 0427 942 537). 		
	<ul style="list-style-type: none"> Occurrences of listed cetaceans or pinnipeds will be reported to NRE Tasmania within 90 days. Reference data will include species name, location-GPS (grid reference GDA94), observer name, date, number of individuals and area occupied. 		
	<ul style="list-style-type: none"> Works will be undertaken in accordance with the National Guidelines for Whale and Dolphin Watching: Whale and Dolphin Viewing Guidelines (available at www.nre.tas.gov.au). 		
Groundwater MM 1	Dewatering will be managed in accordance with a construction Dewatering Procedure, which as a minimum will contain methods for suitable collection, treatment and discharge of dewatered groundwater.	Construction	Section 6.7.4
	The Dewatering Procedure will form part of the CEMP for the Project.		
Groundwater MM 2	Groundwater flow testing will be undertaken prior to construction commencing to inform the Dewatering Procedure.	Construction	Section 6.7.4
Waste MM 1	Wastes from onsite toilets will be stored within the portable toilet system and removed from site by a suitably licensed operator and disposed of at a licensed wastewater facility. This may be able to be disposed of at the existing Selfs Point STP for a portion of the construction period.	Construction	Section 6.8.3
Waste MM 2	A waste management area will be delineated within the construction compound(s), with all wastes to be segregated (into recyclables and non-recycles) and all putrescible and/or potentially windblown waste to be stored in sealed bins.	Construction	Section 6.8.3
Waste MM 3	All wastes classed as environmentally hazardous materials will be stored in appropriately bunded containers.	Construction	Section 6.8.3
Waste MM 4	Wastes will be removed from site on a regular basis by a suitably qualified operator and disposed of at a suitably licensed facility.	Construction	Section 6.8.3
Waste MM 5	Any asbestos encountered during construction (including demolition) will be removed by a licensed specialist contractor and disposed of at a suitably licensed waste facility.	Construction	Section 6.8.3
Waste MM 6	Diesel remaining in the UST will be pumped out by a licensed operator as part of the UST removal process and taken to a licensed facility for disposal.	Construction	Section 6.8.3
Waste MM 7	During operation a waste management area will be delineated, with all wastes to be segregated (into recyclables and non-recycles) and all putrescible and/or potentially windblown waste to be stored in sealed bins. Wastes will be removed from site on a regular basis by a suitably qualified operator and disposed of at a suitably licensed facility.	Operation	Section 6.8.3
Waste MM 8	Grit and screenings generated during operation will be stored in sealed bins and removed from site by a suitably qualified operator to be disposed of at a suitably licensed facility, on a monthly basis.	Operation	Section 6.8.3
Waste MM 9	Detailed site-specific information about biosolids monitoring, handling and management will be incorporated into the existing	Operation	Section 6.8.3

Management and mitigation number	Management or mitigation measure	Phase	EIS Section
	TW Sewage Sludge Management Plan. The existing plan was developed based on the requirements of the EPA's Tasmanian Biosolids Reuse Guidelines and Approved Management Method for Biosolids Reuse. The updated plan will include, but not be limited to, the following details:		
	<ul style="list-style-type: none"> Provide an overview of biosolids treatment and handling at the STP, including transportation details. 		
	<ul style="list-style-type: none"> Set satisfactory controls to ensure sludge contaminant quality will be consistently maintained. 		
	<ul style="list-style-type: none"> Identify arrangements and alternative pathways for any biosolids that do not meet the criteria for reuse (including transport to a licensed landfill facility if required). 		
	<ul style="list-style-type: none"> Define a biosolids monitoring program that fully complies with the requirements of the EPA's Tasmanian Biosolids Reuse Guidelines. 		
	<ul style="list-style-type: none"> Outline the requirements for process verification for stabilisation of biosolids produced in accordance with the EPA's Tasmanian Biosolids Reuse Guidelines, including all monitoring requirements and evidence to be provided to the EPA. 		
Dangerous goods and environmentally hazardous materials MM 1	All dangerous goods or environmentally hazardous materials will be stored in appropriately bunded containers within the construction compound(s), in accordance with relevant Australian Standards and state regulations.	Construction	Section 6.9.3
Dangerous goods and environmentally hazardous materials MM 2	A refuelling truck will be used throughout the construction phase, which will make regular deliveries to the Project Site. The truck will have on board spill kits and use temporary bunding equipment.	Construction	Section 6.9.3
Dangerous goods and environmentally hazardous materials MM 3	A register of dangerous goods and environmentally hazardous materials used onsite will be maintained throughout the construction period. The register will be accompanied by the appropriate safety, storage, segregation and handling information (including Safety Data Sheets).	Construction	Section 6.9.3
Dangerous goods and environmentally hazardous materials MM 4	Hydrocarbon and chemical spill kits will be stored within the construction compound(s) and wherever dangerous goods and environmentally hazardous materials are used throughout the Project Site. Kits will also be stored on select site vehicles.	Construction	Section 6.9.3
Dangerous goods and environmentally hazardous materials MM 5	All disposal of dangerous goods and environmentally hazardous materials will be undertaken in accordance with relevant Australian Standards and state regulations.	Construction	Section 6.9.3
Dangerous goods and environmentally hazardous materials MM 6	Clean-up measures, reporting and notification procedures for equipment breakdowns and accidental releases will be incorporated in an Emergency Response Plan for the Project. This will include clean-up procedures in aquatic environments as well as incident response in the event of fire, chemical release, or an explosion.	Construction	Section 6.9.3
	The Emergency Response Plan will form part of the CEMP for the Project.		
Dangerous goods and environmentally hazardous materials	All spills of dangerous goods or environmentally hazardous materials will be reported to the site supervisor, with spills >100 L or any spills >5 L direct to the aquatic environment to be reported to the EPA within 24 hours of the incident occurring.	Construction	Section 6.9.3

Management and mitigation number	Management or mitigation measure	Phase	EIS Section
hazardous materials MM 7			
Dangerous goods and environmentally hazardous materials MM 8	The site induction for all staff will include training in use and disposal of all dangerous goods and environmentally hazardous materials to be used onsite as well as protocols to follow in the event of an incident involving these materials.	Construction	Section 6.9.3
Dangerous goods and environmentally hazardous materials MM 9	The operational storage requirements of chemicals for the treatment process and maintenance requirements will strictly follow required Australian Standards, which will be quality controlled through operational sign-off on the Project by the lead engineering company and a third-party assessor.	Operation	Section 6.9.3
Dangerous goods and environmentally hazardous materials MM 10	The use and storage of dangerous goods and environmentally hazardous materials will be governed and documented by TW through internal HSEQ procedures.	Operation	Section 6.9.3
Hazard analysis and risk assessment MM 1	The existing Contingency Management Plan for the Selfs Point STP will be updated to reflect the Project.	Operation	Section 6.11
Fire Risk MM 1	An Emergency Response Plan will be developed for the Project which will include fire response protocols. These will indicate muster points, evacuation plans, and emergency service contact and reporting protocols.	Construction	Section 6.12
	The Emergency Response Plan will form part of the CEMP for the Project.		
Fire Risk MM 2	Designated smoking areas will be included onsite.	Construction	Section 6.12
Fire Risk MM 3	All hot works will be internally permitted by the construction contractor to ensure adequate controls are in place.	Construction	Section 6.12
Fire Risk MM 4	All flammable goods will be handled and stored in accordance with Australian Standards and Safety Data Sheets.	Construction	Section 6.12
Fire Risk MM 5	Project infrastructure will comply with all fire-related building codes.	Construction	Section 6.12
Fire Risk MM 6	Any additional operational fire risks as a result of the Project will be addressed in the existing operational and emergency plans for the existing STP operation.	Operation	Section 6.12

Appendix 3: Permit conditions – Environmental I0507

PERMIT PART B
PERMIT CONDITIONS - ENVIRONMENTAL No. 10507

Issued under the *Environmental Management and Pollution Control Act 1994*

Activity: **The operation of a wastewater treatment plant (ACTIVITY TYPE:
Wastewater Treatment Works)
SELS POINT WASTEWATER TREATMENT PLANT, SELS POINT
ROAD
NEW TOWN TAS 7008**

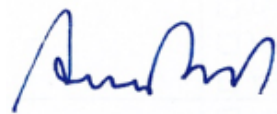
The above activity has been assessed as a level 2 activity under the *Environmental Management and Pollution Control Act 1994*.

Acting under Section 25(5)(a)(i) of the EMPCA, the Board of the Environment Protection Authority has required that this Permit Part B be included in any Permit granted under the *Land Use Planning and Approvals Act 1993* with respect to the above activity.

Municipality: **HOBART**
Permit Application Reference:
EPA file reference: **261952**

Date conditions approved: 30 July 2024

Signed:



CHAIRPERSON, BOARD OF THE ENVIRONMENT
PROTECTION AUTHORITY

DEFINITIONS

Unless the contrary appears, words and expressions used in this Permit Part B have the meaning given to them in **Schedule 1** of this Permit and in the EMPCA. If there is any inconsistency between a definition in the EMPCA and a definition in this Permit Part B, the EMPCA prevails to the extent of the inconsistency.

ENVIRONMENTAL CONDITIONS

The person responsible for the activity must comply with the conditions contained in **Schedule 2** of this Permit Part B.

INFORMATION

Attention is drawn to **Schedule 3**, which contains important additional information.

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Attachment 2: Discharge to Water off Blinking Billy Point (modified: 08/07/2024 14:24).....	1 page
Attachment 3: Discharge to Water off Selfs Point (modified: 09/07/2024 09:18).....	1 page
Attachment 4: Table of Monitoring Requirements (modified: 18/07/2024 15:12).....	3 pages

Schedule 1: Definitions

In this Permit Part B:-

90th Percentile means the value at which the relevant parameter is exceeded by no more than 10 percent of all sample results over a twelve month period.

Activity means any environmentally relevant activity (as defined in Section 3 of EMPCA) to which this document relates, and includes more than one such activity.

Authorized Officer means an authorized officer under section 20 of EMPCA.

Background Noise Level ($L_{A90,T}$) is the level that is exceeded 90% of the time for each measurement interval when measured in the absence of the subject site noise.

Bypass means the discharge of untreated or partially treated effluent most commonly as a result of WWTP component failure or increased inflows to the WWTP as a result of high rainfall.

Commencement of operations means the period after satisfactory completion of the commissioning phase, where operation and maintenance is transferred from the responsibility of the construction contractor to the person responsible.

Commissioning means the testing of major items of equipment and is taken to be completed when the item(s) are being used or operated in the course of normal operations.

Construction means activities associated with the construction phase of the activity, including but not limited to, activities associated with the clearance of vegetation, site works to create a level site, rock breaking, installation of fences and other infrastructure whether on land or in water.

Controlled Waste has the meaning described in Section 3(1) of EMPCA.

Director means the Director, Environment Protection Authority holding office under Section 18 of EMPCA and includes a delegate or person authorised in writing by the Director to exercise a power or function on the Director's behalf.

Dominant or Intrusive Noise Characteristics means any noise characteristic that contributes to a noise being considered louder than would be indicated by the A-weighted sound pressure level measured, or that exacerbates nuisance or harm caused by the noise.

DRP means Decommissioning and Rehabilitation Plan.

Effluent means wastewater discharged from The Land.

EIS means the entitled *Selvs Point Sewage Treatment Plant Upgrade TasWater Environmental Impact Statement* by ERA Planning and Environment and dated 24 April 2024.

EMPCA means the *Environmental Management and Pollution Control Act 1994*.

Environmental Harm and **Material Environmental Harm** and **Serious Environmental Harm** each have the meanings ascribed to them in Section 5 of EMPCA.

Environmental Nuisance has the meanings ascribed to it in Section 3 of EMPCA.

Environmentally Hazardous Material means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals but excludes sewage.

EPA Board means the Board of the Environment Protection Authority established under section 13 of EMPCA and includes a delegate or person authorised in writing by the EPA Board to exercise a power or function on the EPA Board's behalf.

Inflow and Infiltration Management Plan means the documents entitled 'TasWater Inflow and Infiltration Strategy v1.0 10/3/2016' in conjunction with the document entitled 'TasWater Inflow and Infiltration Management Plan v1.0 19/05/2016' and includes any amendment to or substitution of these documents approved in writing by the Director.

Mass Load means the mass of a pollutant discharged over a given period of time calculated in accordance with the method outlined in the Annual Environmental Review Guidelines referred to in these conditions.

Median means the value at which the median of all results for the relevant parameter from the previous 12 month period is below the stated value.

Mixing Zone means a three dimensional area of the receiving waters around a point of discharge of pollutants within which it is recognised that the water quality objectives for the receiving waters may not be achieved.

Noise Measurement Procedures Manual means the document titled *Noise Measurement Procedures Manual*, by the Department of Environment, Parks, Heritage and the Arts, dated July 2008, and any amendment to or substitution of this document.

Noise Sensitive Premises means residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.

Normal Ambient Noise refers to the ambient noise of the receiver location in the absence of the subject site noise. Ambient noise level is measured in L_{Aeq} .

Person Responsible is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

Planning Authority means the Council(s) for the municipal area(s) in which The Land is situated.

Pollutant has the meaning ascribed to it in Section 3 of EMPCA.

Reporting Period means the financial year.

Sewage Sludge means concentrated solids separated from wastewater during the wastewater treatment process.

Sewage Sludge Management Plan Guidelines means the document of this title published by EPA Tasmania in August 2020, and includes any subsequent versions of this document.

Stormwater means water runoff as a consequence of a rainfall event, whether surface flow, piped flow, or flow within conduits, including any contaminants collected by the water during its passage.

Tasmanian Biosolids Reuse Guidelines means the document of this title published by the Environment Protection Authority in June 2020, and includes any subsequent versions of this document.

The Land means the land on which the activity to which this document relates may be carried out, and includes: buildings and other structures permanently fixed to the land, any part of the land covered with water, and any water covering the land. The Land falls within the area defined by:

- 1 Property ID 3286956, 3189590 and 3189582;
- 2 the portion of Crown land for the route of the Selfs Point local outfall from the high-water mark at Selfs Point to the terminal end of the outfall pipeline; and
- 3 the portion of Crown land for the route of the Blinking Billy outfall from the high-water mark at Blinking Billy Point to the terminal end of the outfall pipeline; and
- 4 as further delineated at Attachments 1, 2 and 3.

Wastewater means spent or used water (whether from industrial or domestic sources) containing a pollutant and includes stormwater which becomes mixed with wastewater.

Wastewater Reuse EMP means the document entitled [name of reuse EMP, author and date] and includes any amendment to or substitution of this document approved in writing by the Director.

WWTP means the wastewater treatment plant located on The Land.

Schedule 2: Conditions

Maximum Quantities

Q1 Regulatory limits

- 1 The activity must not exceed the following limits :
 - 1.1 24,900 kilolitres per day of design capacity to treat an average dry weather flow of sewage or wastewater

General

G1 Access to and awareness of conditions and associated documents

A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work on The Land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

G2 Incident response

If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

G3 Proposed change to activity

- 1 The person responsible must notify the Director in writing prior to implementing any change to the activity authorised by this document that may cause or increase the emission of a pollutant or which may result in environmental harm or environmental nuisance (even temporarily). A change includes, but is not limited to, any of the following:
 - 1.1 an increase in the discharge of a pollutant, or the location of its discharge.
 - 1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity.
 - 1.3 any clearance of native vegetation or earthworks.
 - 1.4 a change in the quantity or characteristics of materials used in carrying out the activity.
- 2 The notification must be in an approved form and include the following:
 - 2.1 details of the proposed change;
 - 2.2 an assessment of the environmental impacts that may result from the change;
 - 2.3 any relevant approvals held by the person responsible; and
 - 2.4 any advice from the relevant planning authority to the effect that approval is not required.
- 3 The person responsible must provide additional information as requested by an Authorized Officer.
- 4 The proposed change must not be implemented until the Director has confirmed in writing that they are satisfied that no other approval or variation of this document is required.

- 5 For the avoidance of doubt, a notification of a proposed change under this provision is not required if the proposed change is part of a referral to the EPA Board for assessment under sections 24, 25 or 27 of EMPCA.

G4 Change of ownership

If the owner of The Land upon which the activity is carried out changes or is to change, then, as soon as reasonably practicable but no later than 30 days after becoming aware of the change or intended change in the ownership of The Land, the person responsible must notify the Director in writing of the change or intended change of ownership.

G5 Change of responsibility

If the person responsible for the activity intends to cease to be responsible for the activity, that person must notify the Director in writing of the full particulars of any person who will become the person responsible for the activity, before such cessation.

G6 Complaints register

- 1 A public complaints register must be maintained. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:

- 1.1 the date and time at which the complaint was received;
- 1.2 contact details for the complainant (where provided);
- 1.3 the subject matter of the complaint;
- 1.4 any investigations undertaken with regard to the complaint; and
- 1.5 the manner in which the complaint was resolved, including any mitigation measures implemented.

- 2 Complaint records must be maintained for a period of at least 3 years.

G7 Annual Environmental Review

Unless otherwise approved by the Director a publicly available Annual Environmental Review must be submitted each year within 3 months of the end of the Reporting Period. The Annual Environmental Review must be prepared using the latest version of the Annual Environmental Review Guidelines which is available on request from the Director.

G8 Amendment of required plans and reports

- 1 The plans and reports required by these conditions must be amended to address any matter required by the Director, as advised by notice in writing.
- 2 Amended plans and reports must be resubmitted within the timeframe that the Director specifies.

G9 Notification prior to construction

At least 14 days prior to the commencement of construction of the activity, the person responsible for the activity must notify the Director of the date on which construction is expected to commence.

G10 Notification prior to commissioning

At least 14 days prior to the commencement of process commissioning of key items of equipment, the person responsible for the activity must notify the Director of the date on which commissioning is expected to commence.

G11 Notification prior to commencement of operations

The Director must be notified in writing of the commencement of operations at least 14 days before that occurs.

Atmospheric

A1 Odour management

The person responsible must institute such odour management measures as are necessary to prevent odours causing environmental nuisance beyond the boundary of The Land.

A2 Odour Management Plan

- 1** Unless otherwise approved in writing by the Director, an Odour Management Plan must be submitted to the Director for approval within 6 months of the date of the commencement of operations.
- 2** The Odour Management Plan must include:
 - 2.1** an inventory of all potential odour sources at the WWTP;
 - 2.2** an overview of the odour collection and abatement equipment in operation at the WWTP;
 - 2.3** details of any proposed actions to be implemented to mitigate anticipated odour issues associated with activities undertaken at the WWTP;
 - 2.4** a proposed methodology and frequency for regular odour inspections to be undertaken to ensure odours at the WWTP are minimised to levels that are unlikely to cause environmental nuisance at nearby sensitive receptors; and
 - 2.5** a procedure for recording and acting upon any increase in odour emissions.
- 3** The person responsible must implement and act in accordance with the approved Odour Management Plan.
- 4** In the event that the Director, by notice in writing to the person responsible, either approves a minor variation to the approved Odour Management Plan or approves a new Odour Management Plan in substitution for the plan originally approved, the person responsible must implement and act in accordance with the varied plan or the new plan, as the case may be.

A3 Odour sampling

- 1** Unless otherwise specified in writing by the Director, sampling of odour emissions from the activity must be completed within 12 months of the commencement of operations.
- 2** Within 30 days of the commencement of operations, the proposed odour sampling methodology must be submitted to the Director for approval.
- 3** The methodology must include:
 - 3.1** proposals for measurement of odour emissions;
 - 3.2** recommendations for seasonal and operating conditions most suitable for undertaking the odour sampling; and
 - 3.3** a timetable for the completion of the odour sampling.
- 4** Odour sampling must be undertaken in accordance with the approved methodology by personnel or laboratories approved by the Director.

A4 Odour sampling report and odour mitigation plan

- 1** Unless otherwise specified in writing by the Director, the person responsible must submit an odour sampling report to the Director for approval within four (4) months of the completion of the odour sampling.
- 2** Unless otherwise specified in writing by the Director, the odour sampling report must include:
 - 2.1** the location and operational characteristics of all emission sources;
 - 2.2** sampling parameters and test methods used;

- 2.3 information about the activity operating conditions at the times of the sampling;
 - 2.4 a comparison of the measured parameters with the relevant inputs used in the air quality modelling presented in the Air Dispersion Model Report included in the EIS;
 - 2.5 a discussion of any differences between the measured odour emission rate values and those assumed as atmospheric dispersion modelling input values in the EIS;
 - 2.6 potential for exceedance of relevant limits and criteria specified in the Air Quality EPP;
 - 2.7 a conclusion on whether odorous compounds from the activity are likely to cause environmental nuisance at or beyond the boundary of The Land; and
 - 2.8 any other information relevant to the sampling.
- 3 In the event that the odour sampling results noticeably exceed those predicted by the air dispersion model and/or it is concluded odour is likely to cause environmental nuisance, the report must also include an odour mitigation plan detailing:
 - 3.1 specific measures to reduce or eliminate odour emissions;
 - 3.2 a timeline for the implementation of these measures; and
 - 3.3 provisions for ongoing monitoring to assess the effectiveness of the corrective actions.
 - 4 Once approved the person responsible must act in accordance with the approved odour mitigation plan.
 - 5 The person responsible may apply to the Director to vary or substitute the odour sampling report or odour mitigation plan. Any variation or substitution of the report or plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

Commissioning

CM1 Process Commissioning Plan

- 1 Unless otherwise approved in writing by the Director, at least 30 days prior to the commencement of process commissioning, the person responsible must submit to the Director for approval a Process Commissioning Plan.
- 2 The Process Commissioning Plan must include:
 - 2.1 a commitment to provide the Director with confirmation of the successful completion of all pre-commissioning inspection, calibration and testing of equipment, prior to process commissioning commencing;
 - 2.2 a description of the key milestones and procedures for undertaking process commissioning including the stages at which wastewater flows will be introduced to the new WWTP;
 - 2.3 a proposed timeline for the key milestones of process commissioning and progress reporting to the Director;
 - 2.4 a commitment to notifying the Director prior to the cutover of flows from the existing Selfs Point WWTP and from Macquarie Point WWTP to the new WWTP;
 - 2.5 appropriate mitigation measures to ensure non-compliant effluent is not discharged from the new WWTP; and
 - 2.6 appropriate mitigation measures to ensure nuisance odours are not emitted from either the existing WWTP or the new WWTP during commissioning.
- 3 Process commissioning must not commence until the Director approves the Process Commissioning Plan.

- 4 The person responsible must implement and act in accordance with the approved Process Commissioning Plan.
- 5 In the event that the Director, by notice in writing to the person responsible, either approves a minor variation to the approved Process Commissioning Plan or approves a new Process Commissioning Plan in substitution for the plan originally approved, the person responsible must implement and act in accordance with the varied plan or the new plan, as the case may be.

Construction

CN1 Operating hours - Construction

- 1 Unless otherwise approved in writing by the Director:
 - 1.1 With the exception of drilling and piling, construction activities must not be undertaken outside 0700 hours to 1800 hours Monday to Friday; and 0800 hours to 1300 hours Saturdays (standard hours).
 - 1.2 Drilling and piling construction activities outside of the hours specified in CN1, clause 1.1 must be limited to the use of the drill rig with mitigation measures approved in writing by the Director in accordance with condition CN7.
 - 1.3 Notwithstanding the above paragraphs, construction activities must not be carried out on Public Holidays that are observed State-wide (Easter Tuesday excepted).

CN2 Construction Environmental Management Plan

- 1 At least 30 days prior to the commencement of construction activities, or by a date otherwise specified in writing by the Director, a Construction Environmental Management Plan ('Construction EMP') must be submitted to the Director for approval.
- 2 The Construction EMP must provide the Final Design Report for the activity.
- 3 The Construction EMP must contain a detailed description of the proposed timing and sequence of the major construction activities and of the proposed management measures to be implemented to avoid or minimise the environmental impacts during the construction phase. The Construction EMP must include, but not necessarily be limited to, management measures in relation to the following:
 - 3.1 identification, treatment and disposal of contaminated soils and excavated landfill material;
 - 3.2 acid sulphate soil management (if identified in pre construction testing);
 - 3.3 monitoring and control of landfill gas;
 - 3.4 monitoring and management of groundwater including contaminated groundwater;
 - 3.5 prevention of impacts upon surface water and waterways;
 - 3.6 erosion and sediment control;
 - 3.7 noise control;
 - 3.8 dust control;
 - 3.9 management of environmentally hazardous materials;
 - 3.10 management and disposal of waste;
 - 3.11 cultural (Aboriginal and non-aboriginal) heritage considerations;
 - 3.12 flora and fauna management, including marine mammals;
 - 3.13 weed, pest and disease management; and

- 3.14 quality control arrangements including supervision by appropriately qualified and experienced persons, detailed construction specifications for key items of environmental management infrastructure, documented site procedures, quality control testing and the keeping of appropriate records.
- 4 The Construction EMP must include details of a proposed reporting schedule and format to keep the Director regularly advised on the progress of construction activities.
- 5 Construction must not commence until the Construction EMP has been approved by the Director.
- 6 Once approved the person responsible must act in accordance with the approved Construction EMP.
- 7 The person responsible may apply to the Director to vary or substitute the Construction EMP. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

CN3 Landfill Gas Risk Assessment and Management Plan

- 1 At least 30 days prior to the commencement of construction activities, or by a date otherwise specified in writing by the Director, a Landfill Gas Risk Assessment and Management Plan must be submitted to the Director for approval.
- 2 The Landfill Gas Risk Assessment and Management Plan must contain the results of a Landfill Gas Risk Assessment undertaken in accordance with the recommendations of the EIS management measures and EIS Appendix G. The Landfill Gas Risk Assessment and Management Plan must include, but not necessarily be limited to:
 - 2.1 delineation of the extent of landfilled waste on site;
 - 2.2 results of monitoring of landfill gas bores;
 - 2.3 assessment of the potential for landfill gas to migrate laterally;
 - 2.4 screening for landfill gas emissions in service alignments, utility pits, nearby buildings in the vicinity of the known landfill area using methane measurements;
 - 2.5 review of the detailed WWTP design to assess the potential for increased risks from landfill gas as a consequence of the expansion of the WWTP onto the wetlands area; and
 - 2.6 provide details of proposed landfill gas monitoring and control measures required for the construction of the WWTP expansion for inclusion in the Construction EMP required by these conditions.
- 3 Prior to the commencement of process commissioning an updated Landfill Gas Risk Assessment and Management Plan must be submitted to the Director for approval and provide details of proposed landfill gas monitoring and control measures required for the operation of the WWTP expansion for inclusion in the Operational Procedures and Maintenance Manual required by these conditions.
- 4 Once approved the person responsible must act in accordance with the approved Landfill Gas Risk Assessment and Management Plan.
- 5 The person responsible may apply to the Director to vary or substitute the Landfill Gas Risk Assessment and Management Plan. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

CN4 Control of dust emissions during construction

- 1 Construction activities must be managed using such measures as are necessary to prevent dust emissions causing environmental nuisance. Such measures may include but are not limited to:
 - 1.1 using a dust suppression method such as watering dust generating surfaces; and

- 1.2 ceasing construction activities in windy weather when dust may be blown in the direction of residences.

CN5 Retention of sediment

During construction activities all reasonable measures must be implemented to ensure that solids entrained in stormwater traversing the construction site are retained on The Land. Such measures may include provision of strategically located sediment fences, and appropriately sized and maintained sediment settling ponds.

CN6 Stormwater

- 1 Polluted stormwater that will be discharged from The Land must be collected and treated prior to discharge to the extent necessary to prevent serious or material environmental harm, or environmental nuisance.
- 2 Notwithstanding the above, all stormwater that is discharged from The Land must not carry pollutants such as sediment, oil and grease in quantities or concentrations that are likely to degrade the visual quality of any receiving waters outside The Land.
- 3 All reasonable measures must be implemented to ensure that solids entrained in stormwater are retained on The Land. Such measures may include appropriately sized and maintained sediment settling ponds or detention basins.

CN7 Construction Drilling and Piling Noise Management Plan

- 1 Unless otherwise approved in writing by the Director a Construction Drilling and Piling Noise Management Plan must be provided to the Director for approval 30 days prior to the commencement of drilling and piling activities. The plan is to have the aim of adequately managing drilling and piling construction noise to prevent environmental nuisance. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition.
- 2 Without limitation, the plan must include details of the following:
 - 2.1 the results of noise modelling using sound power levels for the specific equipment to be used for the drilling and piling works, with and without proposed mitigation measures;
 - 2.2 based on the modelling results, details of the mitigation measures that will be deployed to meet the following project specific management levels:
 - 2.2.1 Standard hours (refer condition CN1, clause 1.1): $53 \text{ dB(A)}L_{\text{Aeq,10min}}$
 - 2.2.2 Non-standard hours: $40 \text{ dB(A)}L_{\text{Aeq,10min}}$
 - 2.3 details of a proposed trial noise monitoring and reporting program to occur at the start of the construction phase to verify modelling predictions;
 - 2.4 details of proposed additional mitigation measures that may be deployed in the event measured noise levels are unacceptable;
 - 2.5 commitments to deploy such measures if required;
 - 2.6 commitments to conduct additional monitoring to respond to any noise and vibration complaints; and
 - 2.7 details of a community notification and engagement plan to keep residents informed of these works.
- 3 Construction drilling and piling works must not commence until the Director approves the Construction Drilling and Piling Noise Management Plan.

CN8 Construction noise complaints

In the event that a noise complaint is received in relation to construction activities, the complaint must be reported to the Director within 24 hours.

Decommissioning And Rehabilitation

DC1 Notification of cessation

Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

DC2 DRP requirements

- 1** Unless otherwise approved in writing by the Director, a Decommissioning and Rehabilitation Plan (DRP) for the activity must be submitted for approval to the Director within 30 days of the Director being notified of the planned cessation of the activity. The DRP must be prepared in accordance with any guidelines provided by the Director. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition.
- 2** The person responsible may apply to the Director to vary or substitute the DRP. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

DC3 Rehabilitation following cessation

- 1** Following permanent cessation of the activity, and unless otherwise approved in writing by the Director, The Land must be rehabilitated including:
 - 1.1** stabilisation of any land surfaces that may be subject to erosion;
 - 1.2** removal or mitigation of all environmental hazards or land contamination, that might pose an ongoing risk of causing environmental harm; and
 - 1.3** decommissioning of any equipment that has not been removed.
- 2** Where a Decommissioning and Rehabilitation Plan (DRP) has been approved by the Director, decommissioning and rehabilitation must be carried out in accordance with that plan.
- 3** The person responsible may apply to the Director to vary or substitute the DRP. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with affect from the date specified in the notice.

Effluent

EF1 Effluent discharge locations

- 1** Effluent from the activity must only be discharged at the following discharge locations:
 - 1.1** Discharge to water: discharge to the River Derwent near Blinking Billy Point at grid reference E530124 N5248360 as depicted on the plan at Attachment 2.
 - 1.2** Discharge to water: discharge to the River Derwent near Selfs Point at grid reference E526894 N5255900 as shown on Attachment 3.
- 2** Effluent must only be discharged to the location referred to in clause 1 1.2 in the following circumstances:
 - 2.1** the volume of effluent discharging from the plant exceeds the effluent storage capacity of the WWTP and pipes to the other authorised discharge point due to significant weather events; or
 - 2.2** the pipes to the other authorised discharge points cannot be used because of essential maintenance or repair works; or
 - 2.3** in the case of emergency or equipment failure; or

2.4 the Director has approved the discharge in writing.

EF2 Effluent quality limits for discharge to the River Derwent near Blinking Billy Point

- 1** From the commencement of normal operations, effluent discharged to the River Derwent near Blinking Billy Point must comply with the effluent quality limits set out in the Table of Effluent Quality Limits for discharge to the River Derwent near Blinking Billy Point at the Effluent Quality monitoring location specified in Attachment 4.
- 2 Table of Effluent Quality Limits for discharge to the River Derwent near Blinking Billy Point**

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Substance or measure	Unit of measurement	Minimum limit	Median limit	90th Percentile limit	Maximum limit
Biochemical Oxygen Demand	mg/L	-	10	15	-
Suspended Solids	mg/L	-	10	20	-
Ammonia Nitrogen	mg/L	-	1	2	5
Total Nitrogen	mg/L	-	7	10	-
Total Phosphorus	mg/L	-	2	5	-
<i>Escherichia coli</i>	MPN/100 mL	-	200	500	750
Enterococci	MPN/100mL	-	200	500	750
pH	pH units	6.5	-	-	8.5

EF3 Effluent chlorine limit for the discharge to the River Derwent near Blinking Billy Point

- 1** From the commencement of normal operations, effluent discharged to the River Derwent near Blinking Billy Point must comply with the following maximum limit:
 - 1.1** < 0.1 mg/L total residual chlorine.

EF4 Mixing zone

Unless otherwise specified in writing by the Director, the mixing zone is defined as the body of water that extends to a radial boundary of 20 metres from the end of the diffuser, and extends vertically from the seafloor to the surface, as shown at Attachment 2.

EF5 Signage of discharge location

Signage must be installed and maintained on land near to outfalls to discourage recreational activities within waters immediately around the outfall. Signage is to alert the public as to the proximity and nature of the discharge.

EF6 Chlorine dosing validation program

- 1** Unless otherwise approved in writing by the Director, at least 30 days prior to the commencement of process commissioning, a chlorine dosing validation program must be submitted to the Director for approval.
- 2** The chlorine dosing validation program is to have the aim of optimising chlorine dosing rates to ensure compliance at all times of the effluent quality limit imposed by condition EF3 and prevent pathogen regrowth and biofouling in the Blinking Billy rising main.
- 3** Without limitation, the program must include:
 - 3.1** details of the proposed sampling locations and parameters that will be measured;

- 3.2 a proposed schedule of sampling to determine chlorine dosing rates that will take into account variations in flows and other factors that may impact on chlorine disinfection efficacy;
- 3.3 a commitment to provide the Director a report to summarise the outcomes of the validation program and the chlorine dosing rates required to ensure effluent compliance;
- 3.4 details of an ongoing verification monitoring program to ensure effluent compliance; and
- 4 Once approved the person responsible must act in accordance with the approved chlorine dosing validation program.
- 5 The person responsible may apply to the Director to vary or substitute the chlorine dosing validation program. Any variation or substitution of the program approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

EF7 Bypass Report

- 1 A Bypass Report must be submitted by the person responsible to the Director within 26 months of the commencement of operations or by a date otherwise specified in writing by the Director.
- 2 The Bypass Report must contain details of WWTP component design and operation including:
 - 2.1 the maximum wastewater inflow rate at which full treatment is maintained with no bypass occurring;
 - 2.2 the wastewater inflow rate at which each bypass at the WWTP comes into operation; and
 - 2.3 a summary of the operation of each of the bypasses since commencement of operations including dates, relevant rainfall statistics and the estimated volumes spilled on each occasion.

EF8 Selfs Point outfall overflow reporting and review

- 1 Unless otherwise approved in writing by the Director, a Selfs Point outfall overflow review report must be prepared and submitted to the Director for approval within five (5) years of the commencement of operations and at five (5) yearly intervals thereafter. The Selfs Point local overflow report must include:
 - 1.1 details of every Selfs Point outfall overflow which has occurred during the previous five (5) years including date, time, duration and volume of wastewater discharged;
 - 1.2 rainfall data for Hobart preceding and during each recorded Selfs Point overflow;
 - 1.3 a determination on the potential impact of each Selfs Point overflow;
 - 1.4 a comparison of the Selfs Point outfall overflow events against the original predictions in the EIS; and
 - 1.5 a summary of works completed and /or planned to address any exceedance of predicted overflow frequency or volumes.

EF9 Effluent reuse feasibility study

- 1 A feasibility study for reuse of effluent from the activity must be submitted to the Director within 10 years of the commencement of operations, or a date otherwise specified in writing by the Director. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition. The study must include:

- 1.1** a strategic evaluation of the potential for the establishment of an effluent reuse scheme;
- 1.2** details of investigations undertaken to maximise the reuse of treated effluent discharged from the activity including identification of potential land areas and uses suitable for reuse; and
- 1.3** where reuse is feasible, a written commitment from the person responsible to implement a reuse scheme including an action plan with timelines for completion of significant actions.

Hazardous Substances

H1 Storage and handling of hazardous materials

- 1** Unless otherwise approved in writing by the Director, all environmentally hazardous materials, including chemicals, fuels, and oils, stored on The Land in volumes exceeding 250 litres must be stored and handled in accordance with the following:
 - 1.1** Any storage facility must be contained within a spill collection bund with a net capacity of whichever is the greater of the following:
 - 1.1.1** at least 110% of the combined volume of any interconnected vessels within that bund; or
 - 1.1.2** at least 110% of the volume of the largest storage vessel; or
 - 1.1.3** at least 25% of the total volume of all vessels stored in that spill collection bund; or
 - 1.1.4** the capacity of the largest tank plus the output of any firewater system over a twenty minute period.
 - 1.2** All activities that involve a significant risk of spillages, including the loading and unloading of bulk materials, must take place in a bunded containment area or on a transport vehicle loading apron.
 - 1.3** Bunded containment areas and transport vehicle loading aprons must:
 - 1.3.1** be made of materials that are impervious to any environmentally hazardous material stored within the bund;
 - 1.3.2** be graded or drained to a sump to allow recovery of liquids;
 - 1.3.3** be chemically resistant to the chemicals stored or transferred;
 - 1.3.4** be designed and managed such that any leakage or spillage is contained within the bunded area (including where such leakage emanates vertically higher than the bund wall);
 - 1.3.5** be designed and managed such that the transfer of materials is adequately controlled by valves, pumps and meters and other equipment wherever practical. The equipment must be adequately protected (for example, with bollards) and contained in an area designed to permit recovery of any released chemicals;
 - 1.3.6** be designed such that chemicals which may react dangerously if they come into contact have measures in place to prevent mixing; and
 - 1.3.7** be managed such that the capacity of the bund is maintained at all times (for example, by regular inspections and removal of obstructions).

H2 Hazardous materials (< 250 litres)

- 1 Unless otherwise approved in writing by the Director, each environmentally hazardous material, including chemicals, fuels and oils, stored on The Land in discrete volumes not exceeding 250 litres, but not including discrete volumes of 25 litres or less, must be stored within bunded containment areas or spill trays which are designed and maintained to contain at least 110% of the volume of the largest container.
- 2 Bunded containment areas and spill trays must be made of materials that are impervious to any environmentally hazardous materials stored within the bund or spill tray.

H3 Spill kits

Spill kits appropriate for the types and volumes of materials handled on The Land must be kept in appropriate locations and maintained in a functional condition to assist with the containment of spilt environmentally hazardous materials.

H4 Handling of hazardous materials - mobile

- 1 Where mobile containment of environmentally hazardous materials is utilised for the fuelling or servicing of mobile or fixed plant on The Land, all reasonable measures must be implemented to prevent unauthorised discharge, emission or deposition of pollutants:
 - 1.1 to soils within the boundary of The Land in a manner that is likely to cause serious or material environmental harm;
 - 1.2 to groundwater;
 - 1.3 to waterways; or
 - 1.4 beyond the boundary of The Land.
- 2 Reasonable measures may include spill kits, spill trays/bunds or absorbent pads, and automatic cut-offs on any pumping equipment.

Monitoring**M1 Monitoring requirements**

- 1 Unless otherwise specified in writing by the Director, monitoring must be undertaken in accordance with the Table of Monitoring at Attachment 4, as follows:
 - 1.1 the items listed in Column 1 must be sampled or tested at the locations listed in Column 2 for the parameters listed in Column 3 at the frequencies listed in Column 5 using the techniques listed in Column 6; and
 - 1.2 resultant monitoring data must be reported to the Director in accordance with the requirements set out in Column 7 and in the units listed in Column 4.

M2 Samples and measurements for monitoring purposes

- 1 Any sample or measurement required under these conditions must be taken and processed in accordance with the following:
 - 1.1 sampling and measuring must be undertaken by a person with training, experience, and knowledge of the appropriate procedure;
 - 1.2 the integrity of samples must be maintained prior to delivery to a testing facility;
 - 1.3 sample analysis must be conducted by a testing facility accredited by the National Association of Testing Authorities (NATA), or a testing facility approved in writing by the Director, for the specified test;
 - 1.4 details of methods employed in taking samples and measurements and results of sample analysis, and measurements must be retained for at least three (3) years after the date of collection; and

- 1.5 sampling and measurement equipment must be maintained and operated in accordance with manufacturer's specifications and records of maintenance must be retained for at least three (3) years.

M3 Monitoring reporting and record keeping

- 1 Unless otherwise specified in writing by the Director, a Monthly Monitoring Report, in an electronic format approved by the Director, must be submitted to the Director by the 21st day of the following month. As a minimum, the Monthly Monitoring Report must include the following information:
 - 1.1 the laboratories at which sample analyses were carried out
 - 1.2 contact details for a person responsible for managing monitoring programs;
 - 1.3 the estimated or measured average daily flow to the wastewater treatment plant; and
 - 1.4 for each sample or measurement:
 - 1.4.1 a sample or measurement identification which allows the location from which the sample or measurement was taken to be clearly identifiable;
 - 1.4.2 the date and time at which each sample or measurement was taken;
 - 1.4.3 the parameters for which analyses or measurements were carried out and the units in which the results are reported; and
 - 1.4.4 the results for all sample analyses and measurements.
- 2 A record of all Monthly Monitoring Reports submitted to the Director must be maintained and copies of all test reports referenced to the relevant Monthly Monitoring Reports kept for a minimum period of three (3) years.

M4 Flow monitoring equipment

- 1 Flow monitoring equipment must be maintained in accurate working order in accordance with the manufacturer's specifications and, unless otherwise approved in writing by the Director, must be validated at least once every 12 months.
- 2 The dates on which flow monitoring equipment has been validated must be recorded and validation records kept for a minimum of 3 years.
- 3 For the purposes of this condition:
 - 3.1 'validate' means to undertake a set of actions including inspecting the flow monitoring equipment to check that it is installed in compliance with any relevant standards and is maintained to an acceptable state of repair, which provides an acceptable level of confidence that the flow monitoring equipment operates within an acceptable range of error under normal operating conditions.
 - 3.2 'Flow monitoring equipment' means an instrument, including a flow meter, that measures and may record a flow or level of liquid and includes any ancillary device attached to or incorporated into the instrument.

M5 Signage of monitoring points

- 1 With the exception of open water sampling and monitoring locations external to The Land, all monitoring points must be clearly marked to indicate the location and name of the monitoring point.
 - 1.1 The location of monitoring points external to The Land must be recorded with sufficient accuracy to ensure that monitoring can be undertaken at the same location repeatedly and in accordance with these conditions.

M6 Event Recorder for Bypass

The person responsible must install, prior to the commencement of operations, an event recorder at a location which ensures that the date, time and duration of any bypass is recorded.

M7 Contaminant screening program and report

- 1 Unless otherwise approved in writing by the Director, a proposed contaminant screening program, must be provided to the Director for approval at least 30 days prior to the commencement of operations. The proposed contaminant screening program is to have the aim of identifying potential contaminants of concern for inclusion as parameters in the receiving environment monitoring detailed in Attachment 4 and in biosolids contaminant testing.
- 2 Without limitation the program must include:
 - 2.1 proposed contaminant parameters for inclusion in the contaminant screening program considering:
 - 2.1.1 all trade waste or commercial sources of contaminations within the catchment contributing inflows to the WWTP; and
 - 2.1.2 consideration of relevant contemporary literature to identify any emerging pollutants of concern, including physical and chemical contaminants.
 - 2.2 a proposed sampling plan detailing locations, methodology of sampling, frequency and duration of sampling and the parameters that will be measured.
- 3 Unless otherwise approved in writing by the Director, a contaminant screening report must be provided to the Director for approval within three months of the completion of the contaminant screening program.
- 4 The contaminant screening report must provide the results of the sampling undertaken and details of the proposed contaminants for inclusion in:
 - 4.1 the ambient monitoring program required by these conditions and the reasons for their inclusion as well as the reasons for omitting any other parameters identified for inclusion in the contaminant screening program; and
 - 4.2 initial biosolids contaminant screening.
- 5 The person responsible may apply to the Director to vary or substitute the contaminant screening program. Any variation or substitution of the program approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

M8 Plume Dilution Study

- 1 Unless otherwise specified in writing by the Director, a Plume Dilution Study must be undertaken within three (3) months and a Plume Dilution Study Report provided for approval within six (6) months, of the commencement of operations.
- 2 The Plume Dilution Study must:
 - 2.1 identify the behaviour and dimensions of the mixing zone at the discharge location authorised by condition EF1(1.1); and
 - 2.2 be undertaken in both incoming and outgoing tidal conditions.
- 3 The Plume Dilution Report must:
 - 3.1 document and summarise the findings of the plume dilution study;
 - 3.2 include a comparison of the findings of this study against the mixing zone predicted by modelling in the EIS; and

- 3.3 make recommendations, based on the findings of the plume dilution study, for the selection of receiving environment monitoring locations for the receiving environment monitoring program required by condition M1 and described in Part B of Attachment 4.

M9 Receiving Environment Monitoring Report

- 1 Unless otherwise specified in writing by the Director, a Receiving Environment Monitoring Report must be submitted to the Director for approval within 24 months of the commencement of operations, and thereafter in accordance with the recommendations of the previously approved Receiving Environment Monitoring Report.
- 2 This report is to document the findings of any ambient monitoring undertaken over the previous reporting period in accordance with these conditions and as specified in Attachment 4 Table of Monitoring Requirements.
- 3 The report is to be prepared in accordance with any guidance provided by the Director and as a minimum the report must include:
 - 3.1 details of sites monitored and sampling or survey methods;
 - 3.2 all sampling and analysis results;
 - 3.3 a comparison to modelling predictions in the EIS on the extent of the mixing zone against the conclusions of the monitoring undertaken;
 - 3.4 an assessment of the effects of the effluent discharge from the WWTP on the receiving environment both within and outside the mixing zone, taking into account Protected Environmental Values and relevant sensitive receptors; and
 - 3.5 recommendations for any necessary mitigation measures and/or changes to the monitoring program as specified by these conditions.

M10 Groundwater Contamination Monitoring Plan

- 1 Unless otherwise approved in writing by the Director, a Groundwater Contamination Monitoring Plan must be submitted to the Director for approval within six (6) months of the date of the commencement of process commissioning.
- 2 The Groundwater Contamination Monitoring Plan must:
 - 2.1 describe the location, including a map of the Land, of groundwater monitoring bores to be constructed or that have already been constructed to detect groundwater contamination caused by the activity and from historic activities conducted on the site;
 - 2.2 provide reasons why the location of proposed and/or existing bores is appropriate for the purpose of detecting groundwater contamination including a conceptual site model (CSM) and potential source-pathway-receptor linkages;
 - 2.3 include sampling frequency and measurement parameters for each monitoring location;
 - 2.4 describe assessment criteria, trigger conditions and contingency actions for exceedances of assessment criteria for each monitoring location.
- 3 If the Groundwater Contamination Monitoring Plan proposes construction of bores, those bores must be constructed within six (6) months following the date on which the Director approved the plan.
- 4 The Director must be notified of construction of the bores proposed by the Groundwater Contamination Monitoring Plan within three (3) months of construction. The bore installation and development record and geological log including surveyed location and height for each newly constructed bore must be provided with the notification.

- 5 Once approved the person responsible must act in accordance with the approved Groundwater Contamination Monitoring Plan.
- 6 The person responsible may apply to the Director to vary or substitute the Groundwater Contamination Monitoring Plan. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with affect from the date specified in the notice.

Noise Control

N1 Noise emission limits

- 1 Noise emissions from the activity at any noise sensitive premises in other ownership and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:
 - 1.1 45 dB(A) between 0800 hours and 1800 hours (Day time); and
 - 1.2 40 dB(A) between 1800 hours and 2200 hours (Evening time); and
 - 1.3 35 dB(A) between 2200 hours and 0800 hours (Night time).
- 2 Where the combined level of noise from the activity and the normal ambient noise exceeds the noise levels stated above, this condition will not be considered to be breached unless the noise emissions from the activity are audible and exceed the background noise level by at least 5 dB(A).
- 3 The time interval over which noise levels are averaged must be 10 minutes or an alternative time interval specified in writing by the Director.
- 4 Noise emissions from the site should not contain any dominant or intrusive noise characteristics when measured or observed at any noise sensitive premises as assessed in accordance with the *Noise Measurement Procedures Manual*. Where noise emissions from the site contain any dominant or intrusive noise characteristics at any noise sensitive premises, measured noise levels must be adjusted for tonality, impulsiveness, modulation and low frequency in accordance with the *Noise Measurement Procedures Manual*.
- 5 All methods of measurement must be in accordance with the *Noise Measurement Procedures Manual*.

N2 Noise survey report

- 1 Unless otherwise approved in writing by the Director, a noise survey must be completed and the report provided to the Director for approval, within 6 months of the commencement of normal operations.
- 2 Within 30 days of the commencement of operations, the proposed noise survey method must be submitted to the Director for approval.
- 3 Without limitation, the survey method must address the following:
 - 3.1 measurements must be carried out at day, evening and night times (where applicable) at each location; and
 - 3.2 measurement locations, and the number thereof, must be specified, with one location established as a control location (noise).
- 4 Measurements and data recorded during the survey must include:
 - 4.1 operational status of noise producing equipment and throughput of the activity;
 - 4.2 subjective descriptions of the sound at each location;
 - 4.3 details of meteorological conditions relevant to the propagation of noise; and

- 4.4 the equivalent continuous (L_{eq}) and L_1 , L_{10} , L_{50} , L_{90} and L_{99} A-weighted sound pressure levels measured over a period of 10 minutes or an alternative time interval specified by the Director.
- 5 The noise survey report must include the following:
 - 5.1 the results and interpretation of the measurements required by these conditions;
 - 5.2 a map of the area surrounding the activity with the boundary of The Land, measurement locations, and noise sensitive premises clearly marked on the map;
 - 5.3 any other information that will assist with interpreting the results and whether the activity is in compliance with these conditions and EMPCA; and
 - 5.4 recommendations of appropriate mitigation measures to manage any noise problems identified by the noise survey.

Operations

OP1 Operational Procedures and Maintenance Manual

- 1 An Operational Procedures and Maintenance Manual ('the Manual') must be developed within 12 months of the commencement of operations or by a date specified in writing by the Director. The Manual must provide detailed information relating to the activity and must detail operational procedures as required to ensure compliance with these conditions.
- 2 The Manual must be prepared in accordance with any guidelines provided by the Director. If no guidelines are provided, the Manual must:
 - 2.1 be written in an easy to understand format, with checklists, diagrams, instructions and photographs as appropriate.
 - 2.2 be available for easy reference by operational staff, including any documents referenced by the Manual
 - 2.3 be clear about who is responsible for carrying out tasks, as well as how, when or how often tasks should be performed.
- 3 The Manual must be kept up to date, and reviewed at least annually, and must take into account environment related complaints, incidents and changes to the activity.

OP2 Contingency management

- 1 A Contingency Management Plan must be prepared and submitted to the Director for approval within six (6) months of the commencement of operations and maintained with relevant and contemporary information. The plan must detail measures to prevent and mitigate environmental harm if an unplanned event occurs. Unplanned events that must be addressed by the plan include but are not limited to:
 - 1.1 incidents, accidents, power failures and malfunctions with the potential to cause the release of effluent that does not comply with these conditions;
 - 1.2 pipe ruptures leading to discharge of wastewater;
 - 1.3 nuisance odour; and
 - 1.4 fire and flooding.
- 2 The Contingency Management Plan must include communication procedures that ensure that water users and land holders that may be adversely impacted, the general public and relevant government agencies are informed of any unplanned event to the extent necessary to allow them to take precautions against adverse impacts upon the environment, human health and livestock health.
- 3 As far as is reasonable and practicable, the Contingency Management Plan must include contact details for all water users and land holders that may be impacted by an unplanned event and must be kept up to date by the person responsible.

- 4 The person responsible must ensure that all personnel are aware of the Contingency Management Plan and their responsibilities in relation to unplanned events and have access at all times to the Contingency Management Plan.
- 5 Once approved the person responsible must act in accordance with the approved Contingency Management Plan.
- 6 The person responsible may apply to the Director to vary or substitute the Contingency Management Plan. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

OP3 Inflow and Infiltration Management Plan

- 1 An Inflow and Infiltration ('I&I') Management Plan must be submitted annually by the person responsible to the Director for approval within three (3) months of the end of the Reporting Period or by a date otherwise specified in writing by the Director.
- 2 The I&I Management Plan must be prepared in accordance with the Inflow and Infiltration Management Plan Guidelines.
- 3 The person responsible must not implement an I&I Management Plan until it is approved by the Director. Once approved the person responsible must act in accordance with the approved I&I Management Plan.

Waste Management

WM1 Controlled Waste Register

- 1 A Controlled Waste Register, to document storage and movement of sewage screenings, grit material, sewage sludge and biosolids must be maintained.
- 2 The Controlled Waste Register must:
 - 2.1 keep an accurate record of type and quantity of Controlled Wastes stored on The Land, with the exception of sewage sludge contained within lagoons; and
 - 2.2 record the following detail in relation to Controlled Waste removed from The Land:
 - 2.2.1 the type of Controlled Waste;
 - 2.2.2 the quantity of Controlled Waste;
 - 2.2.3 the Controlled Waste Transporter who moved the Controlled Waste;
 - 2.2.4 the date the Controlled Waste was moved;
 - 2.2.5 the recipient of the Controlled Waste; and
 - 2.2.6 the destination address of the Controlled Waste.
- 3 Controlled Waste records must be maintained for a period of at least 3 years.

WM2 Sewage Sludge Management Plan

- 1 A Sewage Sludge Management Plan must be submitted annually by the person responsible to the Director for approval within three (3) months of the end of the Reporting Period or by a date specified in writing by the Director.
- 2 The Sewage Sludge Management Plan must be prepared in accordance with the Sewage Sludge Management Plan Guidelines and the Tasmanian Biosolids Reuse Guidelines.
- 3 Once approved the person responsible must act in accordance with the approved Sewage Sludge Management Plan.

- 4 The person responsible may apply to the Director to vary or substitute the Sewage Sludge Management Plan. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with affect from the date specified in the notice.

WM3 Biosolids Stabilisation Verification Report

- 1 Unless otherwise specified in writing by the Director, a Biosolids Stabilisation Verification Report, must be submitted to the Director for approval prior to sewage sludge or biosolids being beneficially reused.
- 2 The report must be consistent with the requirements of section 8.4 of the Tasmanian Biosolids Reuse Guidelines and as a minimum include:
 - 2.1 confirmation of the stabilisation grade achieved;
 - 2.2 evidence that the relevant process achieves vector attractions reduction requirements;
 - 2.3 test results from a suitably accredited laboratory showing compliance with maximum pathogen levels for the stabilisation grade achieved;
 - 2.4 records of measurements taken of relevant process criteria to ensure compliance with the designated stabilisation process; and
 - 2.5 details of the predicted volumes of biosolids that will be produced by the activity and its intended reuse option.
- 3 Unless otherwise approved in writing by the Director, biosolids stabilisation verification must be repeated whenever there is a significant change to WWTP treatment process infrastructure or influent loadings.

Schedule 3: Information

Legal Obligations

LO1 EMPCA

The activity must be conducted in accordance with both the conditions in this document and the obligations of the *Environmental Management and Pollution Control Act 1994* (EMPCA) and subordinate regulations. The conditions of this document do not replicate legislated obligations; therefore, you should ensure you are aware of your obligations under EMPCA and subordinate regulations.

LO2 Storage and handling of dangerous goods, explosives and dangerous substances

1 The storage, handling and transport of dangerous goods, explosives and dangerous substances must comply with the requirements of relevant State Acts and any regulations thereunder, including:

- 1.1** *Work Health and Safety Act 2012* and subordinate regulations;
- 1.2** *Explosives Act 2012* and subordinate regulations; and
- 1.3** *Dangerous Goods (Road and Rail Transport) Act 2010* and subordinate regulations.

LO3 Underground Storage Tanks

The operation and management of underground petroleum storage system must be in accordance with *Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2020*.

LO4 Controlled waste transport

Transport of controlled wastes to and from The Land must be undertaken only by persons authorised to do so under EMPCA or subordinate legislation.

Other Information

OI1 Waste management hierarchy

1 Wastes should be managed in accordance with the following hierarchy of waste management:

- 1.1** waste should be minimised, that is, the generation of waste must be reduced to the maximum extent that is reasonable and practicable, having regard to best practice environmental management;
- 1.2** waste should be re-used or recycled to the maximum extent that is practicable; and
- 1.3** waste that cannot be re-used or recycled must be disposed of at a waste depot site or treatment facility that has been approved in writing by the relevant planning authority or the Director to receive such waste, or otherwise in a manner approved in writing by the Director.

OI2 Notification of incidents under section 32 of EMPCA

Where a person is required by section 32 of EMPCA to notify the Director of the release of a pollutant, the Director can be notified by telephoning **1800 005 171** (a 24-hour emergency telephone number).

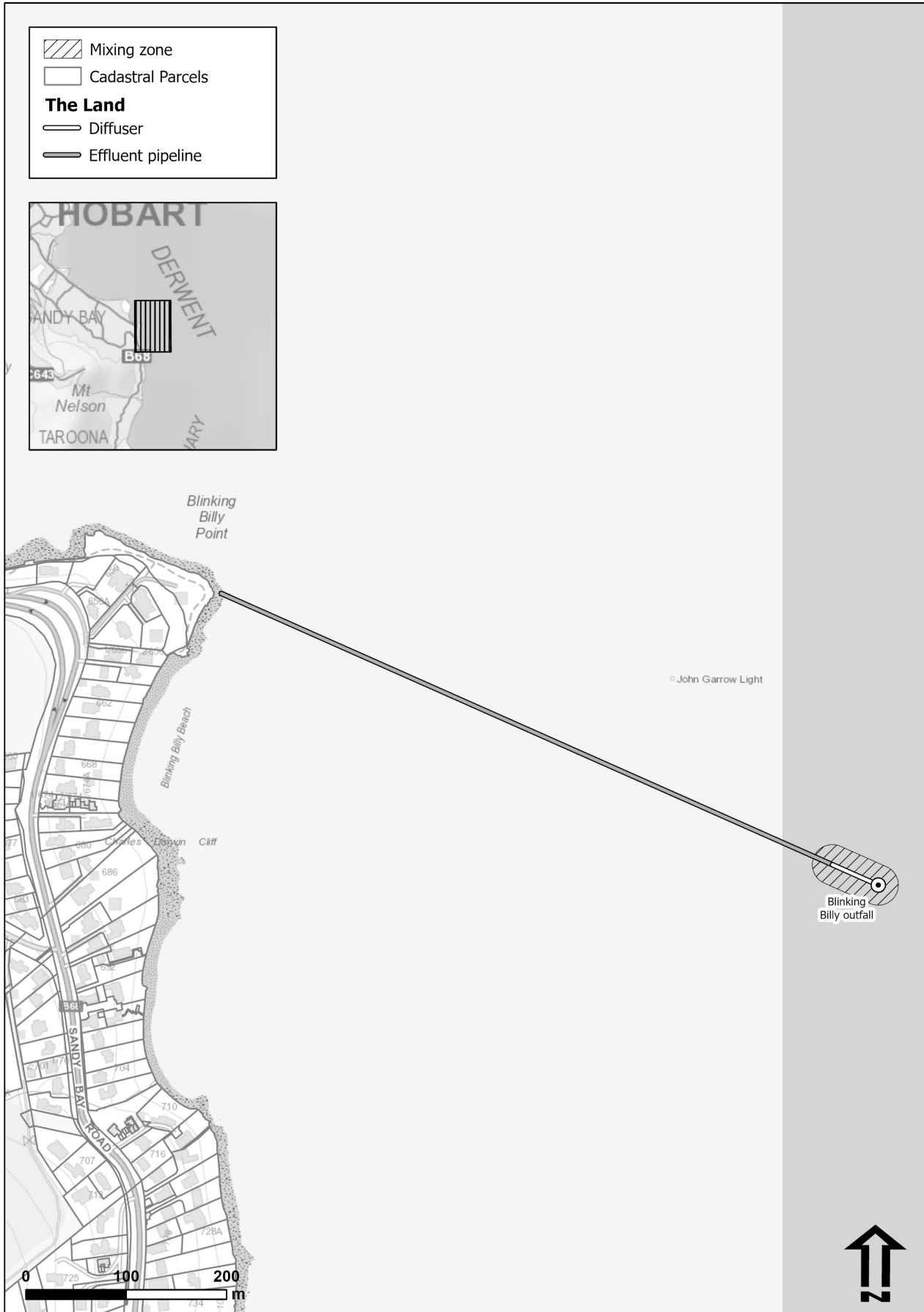
OI3 Release of Relevant Information

Under the provisions of Section 23AA of EMPCA relevant information relating to monitoring of environmental impacts required under these conditions may be subject to publishing or public release by the Director.

Attachment 1: Selfs Point WWTP



Attachment 2: Discharge to Water off Blinking Billy Point



Attachment 3: Discharge to Water off Self's Point



ATTACHMENT 4: TABLE OF MONITORING REQUIREMENTS

PART A: INFLUENT, EFFLUENT & SLUDGE MONITORING

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Item	Sampling locations	Parameter	Unit of measure	Sampling or testing frequency	Sampling or testing technique	Reporting requirements
WWTP inflow	Inlet flow monitoring	Flow	kL/day	Continuous measurement	Flow meter	Results to be included: a) in the Monthly Monitoring Report as an average for the reporting period of total daily flow; and b) as required in the Annual Environmental Review.
WWTP influent & effluent contaminant screening	Inlet quality composite sample location Effluent quality composite sample location	Parameters to be determined in the approved contaminant screening program required by condition M7.	Parameters to be determined in the approved contaminant screening program required by condition M7.	As determined in the approved contaminant screening program required by condition M7.	Flow-weighted 24-hour composite sample	Results to be included in the Contaminant Screening Report required by condition M7.
WWTP outflow	Effluent flow monitoring location: Blinking Billy discharge	Flow	kL/day	Continuous measurement	Flow meter	Results to be included: a) as required in the Annual Environmental Review.
Effluent Quality	Effluent quality grab monitoring location	<i>E. coli</i>	MPN/100ml	Weekly	Grab sample	Results to be included: a) in the Monthly Monitoring Report; and b) as required in the Annual Environmental Review.
		Enterococci				
	Effluent quality composite monitoring location	pH	pH units	Weekly	Field Test	
		Temperature	°C			
		Conductivity	dS/m or µS/cm			
		Biochemical Oxygen Demand	mg/L	Annual	Flow-weighted 24-hour composite sample	
		Total Suspended Solids				
		Ammonia-Nitrogen				
		Nitrate-Nitrogen				
		Nitrite-Nitrogen				
		Total Nitrogen				
		Total Phosphorus				
		Arsenic	mg/L	Annual	Flow-weighted 24-hour composite sample	
		Cadmium				
		Chromium				
Copper						
Lead						
Manganese						
Mercury						
Nickel						
Selenium						
Zinc						
Effluent chlorine monitoring location	Total residual chlorine		Weekly	Grab sample		
Wastewater Treatment Bypass	Wastewater bypass monitoring location	Date and time	Date and time	When bypass occurs	Automated event recorder that logs bypasses.	Report the following in the Annual Environmental Review: a) Date, volume discharged, discharge location and level of treatment. b) Total number of bypasses in the reporting period.
		Duration of bypass	Time (days, hours, minutes)	When bypass occurs	Automated event recorder that logs duration of bypasses.	
		Flow	kL	When bypass occurs	Automated event recorder that allows the estimation or measurement of the volume of a bypass.	

ATTACHMENT 4: TABLE OF MONITORING REQUIREMENTS

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Item	Sampling locations	Parameter	Unit of measure	Sampling or testing frequency	Sampling or testing technique	Reporting requirements
		Level of treatment prior to discharge	Primary, Secondary or Tertiary	When bypass occurs	Observation during the bypass	
Sludge	Sludge / Biosolids located on the Land	In accordance with the <i>Tasmanian Biosolids Reuse Guidelines 2020</i> , or as otherwise approved by the Director.	In accordance with the <i>Tasmanian Biosolids Reuse Guidelines 2020</i> , or as otherwise approved by the Director.	In accordance with the <i>Tasmanian Biosolids Reuse Guidelines 2020</i> , or as otherwise approved by the Director.	In accordance with the <i>Tasmanian Biosolids Reuse Guidelines 2020</i> , or as otherwise approved by the Director.	Results to be included: a) as required in the Annual Environmental Review; and b) as otherwise approved by the Director.

ATTACHMENT 4: TABLE OF MONITORING REQUIREMENTS

PART B: RECEIVING ENVIRONMENT MONITORING

Column 1 Item	Column 2 Sampling locations	Column 3 Parameter	Column 4 Units of measurement	Column 5 Default sampling frequency	Column 6 Sampling technique	Column 7 Reporting requirements	
Receiving Water Quality Monitoring at Blinking Billy	Blinking Billy Outfall: 530090E 5248377N Specific locations as determined by the Plume Dilution Study approved by the Director in accordance with condition M7. As a guide: North of outfall (10m, 50m, 100m and 500m) South of outfall (10m, 50m, 100m and 500m) West and east at edge of defined mixing zone Reference site: 529943E 5249220N	pH	pH units	To commence within 2 months of the approval of the Plume Dilution Study required by condition M8. Monitoring to occur monthly for 12 months and then as required by the Director in consideration of the report findings.	Grab samples. Top, middle, bottom of plume as defined by salinity profiling. Sampling on a mix of incoming and outgoing tides.	Results to be reported within Monitoring Report required under condition M9 of the permit.	
		Temperature	°C				
		Salinity	PSU				
		Dissolved oxygen	% saturation				
		Ammonia-Nitrogen	mg/L				
		Nitrate-Nitrogen					
		Nitrite-Nitrogen					
		Total Nitrogen					
		Total Phosphorus					
		Dissolved Reactive Phosphorus					
		Chlorophyll a	µg/L				
		Enterococci	MPN/100ml				
		<i>E.coli</i>					
		Any parameters as identified in effluent screening program results and required by the Director in accordance with condition M7.					
Benthic Infauna and Sediment Monitoring at Blinking Billy	Outfall North of outfall (10m, 50m, 100m and 500m) South of outfall (10m, 50m, 100m and 500m) Reference site: 529943E 5249220N	Arsenic	mg/kg (DMB)	Once prior to commissioning and once at completion of 12 months of operations. Subsequent sampling as required by the Director in consideration of the report findings.	Sediment samples to be collected by diver core or remotely using a Craib corer.	Results to be reported within Monitoring Report required under condition M9 of the permit.	
		Cadmium					
		Chromium					
		Copper					
		Lead					
		Manganese					
		Nickel					
		Zinc					
		Total Nitrogen					
		TKN					
		Nitrate					
		Ammonia					
		Total Phosphorus					
		Total petroleum hydrocarbon (TPH)					
		Total organic carbon (TOC)					
		Particle size distribution	% dry matter				
		Any parameters as identified in effluent screening program results and required by the Director in accordance with condition M7.					-
		Benthic infauna samples to be collected in triplicate and identified to family level					-

For the purposes of the Table of Monitoring Requirements the following definitions apply:

Flow Meter means an instrument that measures and records a flow or level of liquid and includes any ancillary device attached to or incorporated into the instrument

Continuous measurement means automatic ongoing measurement at all times

On-line means measurements or analyses are carried out automatically and the results electronically recorded for remote viewing and analysis

Field test/ on-site test means either *in situ* testing or analysis of samples immediately with appropriate instrumentation

Grab sample means a discrete sample collected in a manner that ensures it is a representative sample

Flow-weighted 24-hour composite means a composite sample consisting of grab samples taken continuously over a 24-hour period at a rate proportional to wastewater flow.

Grid references are expressed as Map Grid of Australia Zone 55 GDA2020. Coordinates can only be considered accurate within a few metres.



ENVIRONMENT PROTECTION AUTHORITY