



Report and recommendations of the Environmental Protection Authority



Tims Thicket Liquid Waste Facility Upgrade

City of Mandurah

Report 1657

November 2019

Environmental impact assessment process timelines

Date	Progress stages	Time (weeks)
24/07/2017	EPA decides to assess – level of assessment set	
20/03/2019	Section 43A change to proposal application released for public comment	86
26/03/2019	Public comment period for section 43A change to proposal closed	1
20/09/2019	EPA accepted Proponent Response to Public Comments for section 43A change to proposal	25
24/10/2019	EPA board considered assessment	5
22/11/2019	EPA provided report to the Minister for Environment	4
27/11/2019	EPA report published	3 days
11/12/2019	Close of appeals period	2

Timelines for an assessment may vary according to the complexity of the proposal and are usually agreed with the proponent soon after the Environmental Protection Authority (EPA) decides to assess the proposal and records the level of assessment.

In this case, the EPA met its timeline objective to complete its assessment and provide a report to the Minister.



Dr Tom Hatton
Chairman

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Summary

The Tims Thicket Liquid Waste Facility Upgrade (the proposal) was originally referred to the Environmental Protection Authority (EPA) by the City of Mandurah (the proponent) in March 2017.

The Tims Thicket Waste Management Facility (WMF) is located approximately 15 kilometres south of Mandurah and covers an area of 28 hectares. The site has been in operation since 1995.

The WMF accepted up to 5000 kilolitres per annum of liquid waste before ceasing in 2014 due to a breach in the liners of the anaerobic ponds and has since been operating solely as a Class I inert landfill. The proposal is to recommence operations for the acceptance and processing of up to 5000 kilolitres per annum of liquid waste, including septage and grease trap waste.

The EPA assessed the proposal at the level of Assessment on Referral Information. The proponent changed the proposal design during the assessment to reduce its impact. The EPA has concluded that the proposal is environmentally acceptable, and can be implemented subject to conditions.

In the course of the assessment, the EPA examined the impacts of the proposed change in the context of the approved project, considering the cumulative impacts of the entire revised proposal where appropriate.

The EPA consulted with key regulators during the assessment and the EPA accepts the Department of Water and Environmental Regulation's advice that potential emissions and discharges from the facility can be adequately regulated through licence conditions under Part V of the *Environmental Protection Act 1986*.

The EPA has recommended conditions (Appendix 5) which includes a requirement for hygiene and disease management procedures to minimise impacts to flora and vegetation from dieback (*Phytophthora cinnamomi*) and manage weeds (condition 6).

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1. Introduction

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for Environment on the outcomes of the EPA's environmental impact assessment (EIA) of the proposal by the City of Mandurah. The proposal is to upgrade the existing liquid waste facility at the Tims Thicket Waste Management Facility (WMF), located approximately 15 kilometres (km) south of Mandurah (Figure 1).

The EPA has prepared this report in accordance with section (s.) 44 of the *Environmental Protection Act 1986* (EP Act). This section of the EP Act requires the EPA to prepare a report on the outcome of its assessment of a proposal and provide this assessment report to the Minister for Environment. The report must set out:

- what the EPA considers to be the key environmental factors identified during the assessment
- the EPA's recommendations as to whether or not the proposal may be implemented and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject.

The EPA may also include any other information, advice and recommendations in the assessment report as it thinks fit.

The proponent referred the proposal to the EPA on 13 March 2017. On 24 July 2017, the EPA decided to assess the proposal and set the level of assessment at Assessment on Referral Information.

1.1 EPA procedures

The EPA followed the procedures in the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016* (EPA 2016a) and the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016* (EPA 2016b).

2. The proposal

2.1 Proposal summary

The proponent, the City of Mandurah, proposes a change (referred to in this report as the 'proposal'), to its approved project to construct and operate a liquid waste facility, limestone quarry and Class I landfill.

The approved project consists of the existing approved proposal:

- Change to Yalgorup National Park Boundary, Extension to Wastewater Treatment Plant Site, Septage Disposal Facility and Quarry, Tim's Thicket, City of Mandurah (Ministerial Statement 375, 29 November 1994).

The proposed change includes upgrading the existing liquid waste facility and recommencing operations for the acceptance and processing of up to 5000 kilolitres per annum (kL/a) of liquid waste, including septage and grease trap waste. The original proposal included the acceptance of up to 28 cubic metres per day of septage waste (equivalent to 10,220 cubic metres per annum).

The proposed change comprises the following additional activities and/or elements:

- installation of new liners at the three anaerobic ponds
- replacing the existing oxidative pond with a facultative pond
- replacing the existing storage pond with an oxidation pond
- construction of an evaporation pond.

The key characteristics of the revised proposal (i.e. the amalgamation of the existing approved project and the proposed change) are summarised in Tables 1 and 2 below. A detailed description of the proposed change in relation to the existing approved project is provided in the Referral Document (Talis 2017) and s. 43A application (Talis 2019a).

In undertaking this assessment, the EPA has assessed the impacts of the proposed change in the context of the approved project, considering the cumulative impacts of the entire revised proposal where appropriate. The EPA has also considered if the original conditions on the proposal are relevant or can be regulated more appropriately through Part V of the EP Act.

Table 1: Summary of the proposal

Proposal title	Tims Thicket Liquid Waste Facility Upgrade
Short description	<p>The proposal is for the recommissioning and upgrade of the existing liquid waste facility and existing landfill and quarry located at the Tims Thicket Waste Management Facility, 15 km south of Mandurah.</p> <p>The upgraded liquid waste facility includes a receival tank, anaerobic ponds, facultative pond, oxidation pond, and an evaporation pond for the treatment of liquid waste including septage and grease trap waste.</p>

Table 2: Location and proposed extent of physical and operational elements

Element	Location	Existing approval (Ministerial Statement/s and other regulatory approvals)	Proposed change (this proposal)	Proposed extent (revised proposal)
<i>Physical elements</i>				
Liquid waste facility	Figure 2	Disturbance of approximately 3 ha	Increase in disturbance of up to 1.5 ha	Disturbance of up to 4.5 ha within a 31.3 ha development envelope
Limestone quarry / Class I inert landfill	Figure 2	Disturbance of approximately 25 ha	Reduction in disturbance of up to 3.6 ha	Disturbance of up to 21.4 ha within a 31.3 ha development envelope
<i>Operational elements</i>				
Liquid waste permitted to be processed	-	-	-	5000 kL/a

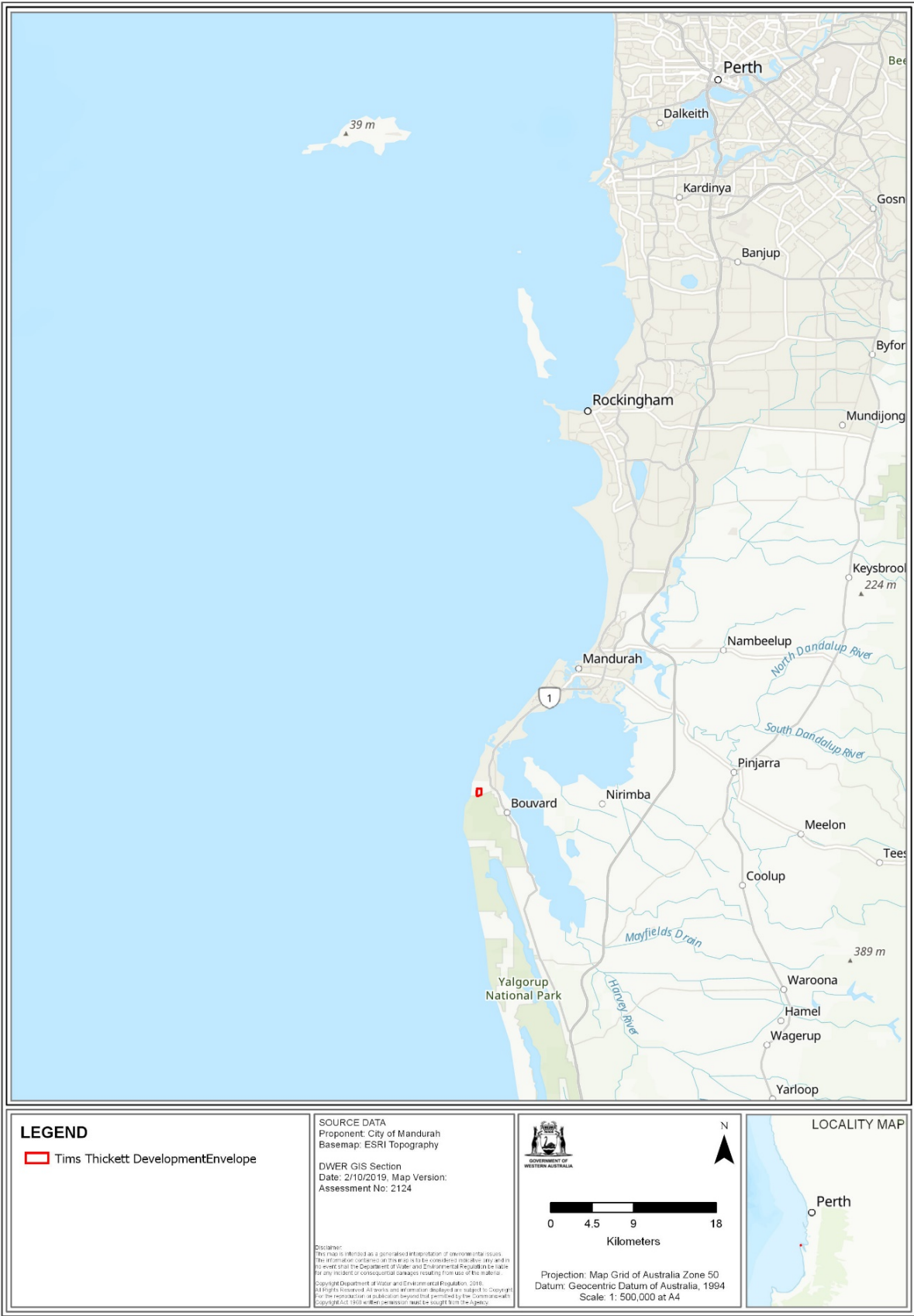


Figure 1: Regional location

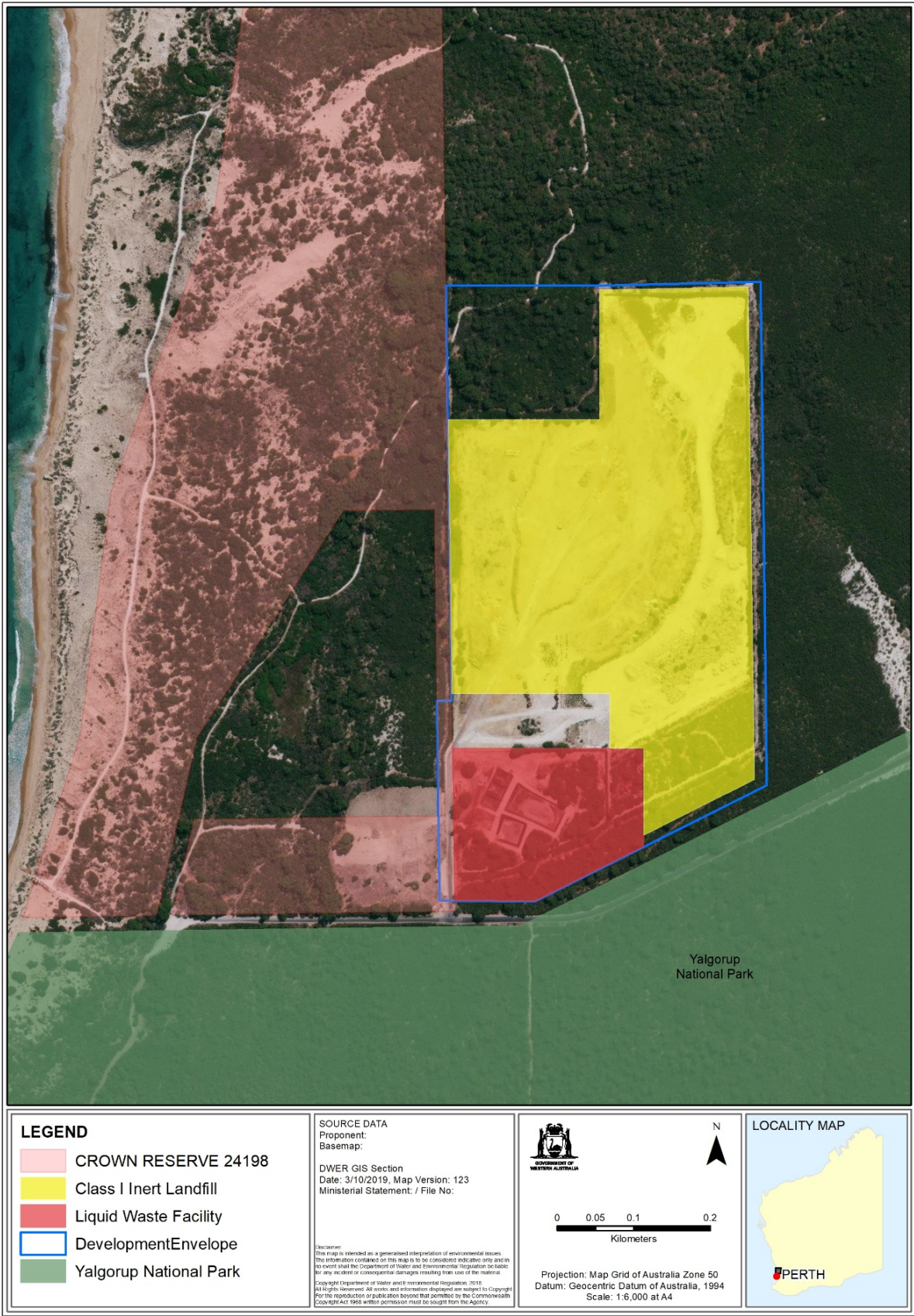


Figure 2: Proposal development envelope

2.2 Changes to the proposal during assessment

During the assessment and following community feedback, the proponent requested changes to the proposal to reduce the impact to the environment. On 21 February 2019, the proponent provided an application and supporting information and requested the following changes to the proposal:

- an upgraded liner system under the ponds
- replacing the balancing pond with a facultative pond
- replacing the storage pond with an oxidation pond
- removal of the biological nutrient removal plant
- replacing the irrigation field with an evaporation pond.

The changes will result in a system which does not discharge treated liquid waste during operations and there will be no irrigation of treated liquid waste onto the Class I landfill. To ensure adequate capacity for the evaporation pond to store excess treated liquid waste and stormwater, a redesign of the treatment ponds has seen a reduction from 6500 kL/a to 5000 kL/a.

The changes initially included a green waste transfer station, however the proponent subsequently removed this from consideration of the current proposal. Any consideration for the addition of a green waste transfer station within the Tims Thicket WMF in the future would require relevant statutory approvals.

The Chairman, as a delegate of the EPA, concluded that the changes were unlikely to significantly increase any impact that the proposal may have on the environment and gave consent under s. 43A of the EP Act to the changes on 20 September 2019. Tables 1 and 2 above reflect the final changes to the proposal footprint.

2.3 Context

There were three proponents for Ministerial Statement (MS) 375, including the former Conservation and Land Management Authority (now Department of Biodiversity, Conservation and Attractions), the former Water Authority of Western Australia (now Water Corporation), and the City of Mandurah.

The original proposal approved under MS 375 included a change to the Yalgorup National Park boundary through inclusion of part of Reserve 24198 and excision of Reserve 21271, provision of land for a future expansion of a proposed wastewater treatment plant, and development of a limestone quarry and septage disposal facility. The realignment of the Yalgorup National Park boundary has occurred and activities on the site consist of the limestone quarry and Class I landfill, and a liquid waste facility (currently not operational).

The Tims Thicket WMF has been operational since 1995 and was accepting up to 5000 kL/a of liquid waste. In November 2014, the WMF ceased the acceptance of liquid waste due to a breach in the pond liner system and has been operating solely as a Class I inert landfill.

3. Consultation

The EPA advertised the referral information for the proposal for public comment in April 2017 and received 24 submissions. All submissions requested 'Assess – Public Environmental Review'.

The proponent consulted with government agencies during the preparation of the supplementary report provided with the referral.

In March 2019, the proponent's request to change the proposal under s. 43A of the EP Act was advertised for public comment. One public submission was received during the public comment period. The key issues raised relate to:

- potential impacts to Inland Waters
- potential impacts to conservation significant flora and fauna
- inadequate information about the green waste transfer station
- inadequate consultation with community groups.

The proponent addressed the issues raised in the Response to Public Comments document (Talis 2019c).

The EPA considers that the consultation process has been appropriate and that reasonable steps have been taken to inform the community and stakeholders about the proposed development. Relevant significant environmental issues identified from this process were taken into account by the EPA during its assessment of the proposal.

4. Key environmental factors

In undertaking its assessment of this proposal and preparing this report, the EPA had regard for the object and principles contained in s. 4A of the EP Act to the extent relevant to the particular matters that were considered.

The EPA considered the following information during its assessment:

- the proponent's referral information (March 2017)
- the proponent's s. 43A change to the proposal application (February 2019)
- public comments received on the referral and the s. 43A change to the proposal application
- the proponent's response to public comments for the s. 43A change to the proposal (August 2019)
- the EPA's own inquiries
- the EPA's *Statement of environmental principles, factors and objectives* (EPA 2018a)
- the relevant principles, policy and guidance referred to in the assessment of each key environmental factor in section 4.1.

Having regard to the above information, the EPA identified the following key environmental factor during the course of its assessment of the proposal:

- **Inland Waters** – potential contamination of groundwater or surface waters from seepage, leakages or spillages of liquid waste from the treatment ponds.

The EPA considered other environmental factors during the course of its assessment of the proposal. These factors, which were not identified as key environmental factors, are discussed in the proponent's referral documentation (Talis 2017) and s. 43A change to the proposal application (Talis 2019a). Appendix 3 contains an evaluation of why these other environmental factors were not identified as key environmental factors.

Having regard to the EP Act principles, the EPA considered that the following principle was particularly relevant to its assessment of the proposal:

1. **The principle of waste minimisation** – the proposal would involve upgrading its existing septage facility for the treatment of liquid waste.

Appendix 2 provides a summary of the principles and how the EPA considered these principles in its assessment.

The EPA's assessment of the proposal's impacts on the key environmental factor is provided in section 4.1. This section outlines whether or not the EPA considers that the impacts on the factor are manageable. Section 6 provides the EPA's conclusion as to whether or not the proposal as a whole is environmentally acceptable.

4.1 Inland Waters

EPA objective

The EPA's environmental objective for this factor is *to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected*.

Relevant policy and guidance

The EPA considers that the following current environmental policy and guidance is relevant to its assessment of the proposal for this factor:

- *Environmental Factor Guideline – Inland Waters* (EPA 2018b)
- WA Environmental Offsets Policy (Government of Western Australia 2011)
- WA Environmental Offsets Guidelines (Government of Western Australia 2014).

The considerations for EIA for this factor are outlined in *Environmental Factor Guideline – Inland Waters* (EPA 2018b).

EPA assessment

Existing environment

The proposal is located approximately 500 metres (m) east of the Indian Ocean, which is the nearest surface water body. The second nearest surface water body is the Peel Harvey Estuary located approximately 2.2 km east of the site. The site is located outside of the Peel Harvey Water Quality Improvement Plan Catchment.

There are no registered wetlands in proximity to the site. A wetland locally known as the 'weed pit' is located 200 m west of the site and was historically utilised for the storage of algal bloom material from the Peel Harvey Estuary.

The site topography is approximately 7.5 m Australian Height Datum (AHD) in the western side and 3.5 m AHD in the eastern side. A hydrological study undertaken in 1994 found that the superficial formations are hydraulically connected and form an unconfined aquifer dominated by the Harvey Estuary and Ocean flow systems. The groundwater table is shallow, and flow beneath the site varies from seasonal recharge and fluctuations from tides, but moves generally towards the ocean in the west for the majority of the year.

The original liquid waste facility had been operational since 1995, before ceasing the acceptance of liquid waste in 2014 due to a breach in the liners of the anaerobic ponds. Groundwater monitoring found detectable concentrations of nutrients and trace metals including copper, zinc, nitrogen and phosphorous. The proponent is currently monitoring attenuation and groundwater quality under its Part V EP Act licence conditions.

Potential impacts

Inland Waters has the potential to be directly and indirectly impacted by the proposal from equipment or system failure and overflow from the liquid waste treatment and storage ponds, resulting in seepage, leakages or spillages.

Mitigation and management

The EPA notes that the proponent has considered the application of the mitigation hierarchy in accordance with *Environmental Factor Guideline – Inland Waters* (EPA 2018b).

The proponent has redesigned the liquid waste treatment pond system as part of the proposed upgrades to avoid and minimise impacts to Inland Waters. The proposed upgrades would ensure that the ponds are a closed system, with no planned discharges. The design of the ponds would include upgrades to the pond liners to facilitate more efficient operation and cleaning without a high risk of compromising the liner. The enhanced liner system would include:

- a double 2 millimetre (mm) high density polyethylene (HDPE) geomembrane separated by a geonet leak detection layer, as well as a protection layer consisting of 125 mm reinforced concrete pad for each of the three refurbished anaerobic ponds
- a 2 mm HDPE lined facultative pond and protection layer of 300 mm crushed limestone
- a 2 mm HDPE lined oxidation pond and evaporation pond.

The EPA notes that the proponent has avoided and minimised potential impacts to Inland Waters by changing its proposal to include an evaporation pond to contain any excess treated liquid waste, rather than discharging it through the initially proposed irrigation field. The design and management of the site would ensure all effluent will be retained onsite. The evaporation pond would be used only in the event that the oxidation pond reaches capacity and is designed to contain excess treated liquid waste and rainfall. Modelling over a six year period indicates that a maximum of 67 per cent capacity (including freeboard) would be reached for a 1 in 10 year 72-hour storm event.

The proposal would include additional management measures to reduce the potential for seepage from the facility, including upgrading the existing receival area and extension of the hard standing area for the drying pad, replacement of existing pipes with a HDPE pipe network for the transfer of treated liquids between ponds, and the installation of concrete sumps. Surface waters would also be diverted away from the facility.

The proponent would be undertaking further assessment of soils prior to construction of the new pond system to determine whether removal is required, which may include disposal at a suitable Class I or Class II landfill, to remove any secondary sources for seepage of treated liquid waste.

The proponent has committed to undertaking a groundwater monitoring program over the life of the facility. Seepage or leakages from the treatment ponds, including

groundwater monitoring requirements, can be regulated under Part V of the EP Act, administered by the Department of Water and Environmental Regulation. This is further detailed in *Section 6: Other Advice*.

Summary

The EPA has paid particular attention to the:

- *Environmental Factor Guideline – Inland Waters* (EPA 2018b)
- proponent's application of the mitigation hierarchy to avoid and minimise impacts to inland waters
- incorporation of a HDPE liner system, concrete reinforcement and leak detection in the design of the treatment ponds
- proponent's commitment to undertake a groundwater monitoring program over the life of the facility.

The EPA considers, having regard to the relevant EP Act principles and environmental objective for Inland Waters that the impacts to this factor are manageable and can be adequately regulated through Part V of the EP Act. The EPA notes that the seepage and other emissions can be regulated through licence conditions.

5. Conclusion

The EPA has considered the proponent's proposal to recommence the acceptance of liquid waste for treatment at the existing Tims Thicket WMF. The EPA notes that the proponent has undertaken measures to avoid and minimise impacts on key environmental factors.

Application of mitigation hierarchy

Consistent with relevant policies and guidance, the proponent has addressed the mitigation hierarchy by identifying measures to avoid, minimise and rehabilitate environmental impacts including:

- location within the existing proposal area
- incorporation of a liner system in the treatment and storage ponds
- management measures including ensuring that there would be no discharges from the site and surface water management
- proposed groundwater monitoring program.

Conclusion

The EPA has taken the following into account in its assessment of the proposal as a whole, including the:

- impacts to the key environmental factor
- EPA's confidence in the proponent's proposed mitigation measures
- relevant EP Act principles and the EPA's objective for the key environmental factor
- EPA's view that the impacts to the key environmental factor is manageable, provided the recommended conditions are imposed.

Given the above, the EPA has concluded that the proposal is environmentally acceptable and therefore recommends that the proposal may be implemented subject to the conditions recommended in Appendix 5.

6. Other advice

The EPA consulted with key regulators during the assessment to identify areas of regulatory duplication and to contemporise the existing conditions. As a result of this consultation, the EPA considers that dieback and weeds should continue to be managed through the Ministerial Statement but other aspects associated with the proposal can be regulated through other instruments, such as the Part V licence. The EPA provides the following advice regarding key aspects that require regulation.

Emissions and discharges

The EPA notes that a works approval and licence is a statutory requirement under Part V of the EP Act for this proposal and is the best regulatory instrument to regulate emissions and discharges from landfill and liquid waste facilities.

The EPA consulted with the Department of Water and Environmental Regulation (DWER) during the assessment and notes the DWER has appropriate regulatory powers to control emissions and discharges from the site and put in place suitable emissions monitoring and mitigation conditions. The EPA considers that DWER has appropriate powers to ensure that there is appropriate compliance and enforcement of the licence conditions.

As a part of the licensing process, the EPA recommends that a number of additional bores be included in the groundwater monitoring program, including more downgradient of the proposal. The EPA expects that a target and/or limit would be applied to the licence where a high risk to a sensitive receptor is present.

The EPA considers that Part V can appropriately decommission and close the site as would occur for other similar landfill and liquid waste facilities across the state.

Community consultation

The EPA notes there is community concern regarding this facility and its historical operations. The proposal is considered environmentally acceptable in its current design, however, the EPA would recommend more ongoing consultation between the proponent and the community into the future. The EPA also advises that in the future when sewerage is installed within the areas from where the facility receives waste, the facility be appropriately closed and rehabilitated with community agreement on the final land use e.g. recreation, native vegetation etc.

7. Recommendations

That the Minister for Environment notes:

1. The proposal assessed is for the Tims Thicket Liquid Waste Facility Upgrade, located approximately 15 km south of Mandurah.
2. The key environmental factor identified by the EPA in the course of its assessment is Inland Waters, set out in section 4.
3. The EPA has concluded that the proposal may be implemented, provided the implementation of the proposal is carried out in accordance with the recommended conditions and procedures set out in Appendix 5. Matters addressed in the conditions include the following:
 - a) requirement for hygiene and disease management procedures to minimise impacts to flora and vegetation from dieback (*Phytophthora cinnamomi*) and manage weeds (condition 6)
4. Other advice provided by the EPA, set out in section 6.

References

EPA 2005, *Guidance Statement No. 3: Separation Distances Between Industrial and Sensitive Land Uses*, Environmental Protection Authority, Perth, WA.

EPA 2016a, *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016*, Environmental Protection Authority, Perth, WA.

EPA 2016b, *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual*, Environmental Protection Authority, Perth, WA.

EPA 2016c, *Environmental Factor Guideline – Marine Environmental Quality*, Environmental Protection Authority, Perth, WA.

EPA 2016d, *Environmental Factor Guideline – Flora and Vegetation*, Environmental Protection Authority, Perth, WA.

EPA 2016e, *Environmental Factor Guideline – Terrestrial Fauna*, Environmental Protection Authority, Perth, WA.

EPA 2016f, *Environmental Factor Guideline – Terrestrial Environmental Quality*, Environmental Protection Authority, Perth, WA.

EPA 2016g, *Environmental Factor Guideline – Social Surroundings*, Environmental Protection Authority, Perth, WA.

EPA 2018a, *Statement of Environmental Principles, Factors and Objectives*, Environmental Protection Authority, Perth, WA.

EPA 2018b, *Environmental Factor Guideline – Inland Waters*, Environmental Protection Authority, Perth, WA.

Government of Western Australia 2011, *WA Environmental Offsets Policy*, Perth, WA.

Government of Western Australia 2014, *WA Environmental Offsets Guidelines*, Perth, WA.

Talis 2017, *Tims Thicket Liquid Waste Facility Upgrade: EPA Referral supporting document*, prepared for City of Mandurah, Perth, WA.

Talis 2019a, *Tims Thicket Liquid Waste Facility Upgrade: Section 43a supporting document*, prepared for City of Mandurah, Perth, WA.

Talis 2019b, *Tims Thicket Liquid Waste Facility Upgrade: Licence Amendment Application supporting document*, prepared for City of Mandurah, Perth, WA.

Talis 2019c, *Tims Thicket Liquid Waste Facility Upgrade: section 43a response to public comments*, prepared for City of Mandurah, Perth, WA.

Appendix 1: List of submitters

Organisations:

Bouvard Coast Care Group

Appendix 2: Consideration of principles

EP Act Principle	Consideration
<p>1. The precautionary principle</p> <p><i>Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In application of this precautionary principle, decisions should be guided by –</i></p> <p><i>a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and</i></p> <p><i>b) an assessment of the risk-weighted consequences of various options.</i></p>	<p>In considering this principle, the EPA notes that Inland Waters could be significantly impacted by the proposal. The assessment of these impacts is provided in this report.</p> <p>The treatment ponds would be upgraded to include a new liner system, and there would be no discharge of treated liquid waste. There is also no proposed new clearing of vegetation in addition to the original proposal.</p> <p>From its assessment of this proposal, the EPA has concluded that there is no threat of serious or irreversible harm.</p>
<p>2. The principle of intergenerational equity</p> <p><i>The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.</i></p>	<p>In considering this principle, the EPA notes that Inland Waters could be impacted by the proposal. The assessment of these impacts is provided in this report.</p> <p>The proposal would manage liquid waste including septage and grease trap waste generated in the local area and provide benefit for the broader community who still have septic tanks to service their properties.</p> <p>The proposal is an improvement from the existing liquid waste facility, and includes an upgraded liner system in ponds to minimise risk to Inland Waters. The proposal is a closed system and would not be discharging treated liquid waste to the environment.</p> <p>From its assessment of this proposal, the EPA has concluded that the environmental values will be protected and that the health, diversity and productivity of the environment will be maintained for the benefit of future generations.</p>

EP Act Principle	Consideration
<p>3. The principle of the conservation of biological diversity and ecological integrity</p> <p><i>Conservation of biological diversity and ecological integrity should be a fundamental consideration.</i></p>	<p>In considering this principle, the EPA notes that Inland Waters could be impacted by the proposal. The assessment of these impacts is provided in this report.</p> <p>The proposal would not require any additional disturbance from that considered in the original assessment.</p> <p>From its assessment of this proposal, the EPA has concluded that the proposal would not compromise the biological diversity and ecological integrity of the affected areas.</p>
<p>4. Principles relating to improved valuation, pricing and incentive mechanisms</p> <p>(1) <i>Environmental factors should be included in the valuation of assets and services.</i></p> <p>(2) <i>The polluter pays principles – those who generate pollution and waste should bear the cost of containment, avoidance and abatement.</i></p> <p>(3) <i>The users of goods and services should pay prices based on the full life-cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste.</i></p> <p>(4) <i>Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structure, including market mechanisms, which enable those best placed to maximise benefits and/or minimize costs to develop their own solution and responses to environmental problems.</i></p>	<p>In considering this principle, the EPA notes that the proponent would bear the cost relating to Inland Waters.</p> <p>The EPA has had regard to this principle during the assessment of the proposal.</p>

EP Act Principle	Consideration
<p>5. The principle of waste minimisation</p> <p><i>All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.</i></p>	<p>This principle is a fundamental and relevant consideration for the EPA when assessing and considering the impacts of the proposal on the environmental factor of Inland Waters.</p> <p>The proposal would involve the treatment of liquid waste generated in the local area and provide benefit for the broader community who still have septic tanks to service their properties.</p> <p>The proposal would involve the treatment of liquid waste generated in the local area. No discharge of liquid waste is proposed and excess treated liquid waste would be placed in an evaporation pond designed to contain overflow from the oxidation pond and direct rainfall.</p> <p>The EPA has had regard to this principle during the assessment of this proposal.</p>

Appendix 3: Evaluation of other environmental factors

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
SEA			
Marine Environmental Quality	Spillages, leaching or overflow from ponds could potentially impact on Marine Environmental Quality. There is potential for the leaching of contaminants from soils into the water table and movement towards the Indian Ocean.	Public comments <ul style="list-style-type: none"> • Concern about marine fauna impacts from groundwater contamination. • Faecal contamination exceeding recreational use limits at nearby beaches. 	<p>Marine Environmental Quality was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal.</p> <p>The Indian Ocean is located approximately 500 m west of the site.</p> <p>Having regard to:</p> <ul style="list-style-type: none"> • the topography and the densely vegetated land between the facility and the ocean • the distance between the proposal and the ocean • an upgraded liner system in the ponds, including a leak detection system for the anaerobic ponds • no proposed discharges from the site • further testing and removal of existing contaminated soils • management including directing surface water away from the facility

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
			<ul style="list-style-type: none"> • <i>Environmental Factor Guideline – Marine Environmental Quality</i> (EPA 2016c) • the significance considerations in the <i>Statement of Environmental Principles, Factors and Objectives</i>, <p>the EPA considers it is unlikely that the proposal would have a significant impact on Marine Environmental Quality and that the impacts to this factor are manageable.</p> <p>Accordingly, the EPA did not consider Marine Environmental Quality to be a key environmental factor at the conclusion of its assessment. Potential impacts to groundwater and surface waters are discussed through the environmental factor Inland Waters.</p>
LAND			
Flora and Vegetation	The proposal could impact on flora and vegetation from disturbance of a 4.5 ha area for the construction and operation of the liquid waste facility upgrades, within a 31.3 ha development envelope.	Public comments <ul style="list-style-type: none"> • Impacts to vegetation ecosystems including Banksia Woodlands, Sedgeland of halocene dunelines, and Tuart Woodlands. • Inadequate management of weeds. • Inadequate surveys undertaken for flora and vegetation. • Potential for bioaccumulation of metals from uptake in plants. 	<p>Flora and Vegetation was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal.</p> <p>The proposal lies adjacent to the Yalgorup National Park. Areas within the development envelope have been previously cleared for the existing liquid waste facility, quarry and landfill activities.</p>

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
			<p>Previous flora and vegetation surveys were undertaken in and around the proposal area. Tuart woodlands are located south of the project area and were not expected to be impacted by the proposal. The proposed total clearing of vegetation is also a reduction from the clearing initially approved for the site.</p> <p>Having regard to:</p> <ul style="list-style-type: none"> the proposal is located within mostly previously disturbed areas at the Tims Thicket WMF the reduction in total disturbance footprint for the limestone quarry/Class I landfill and liquid waste facility from the original proposal <i>Environmental Factor Guideline – Flora and Vegetation</i> (EPA 2016d) the significance considerations in the <i>Statement of Environmental Principles, Factors and Objectives</i>, <p>the EPA considers it is unlikely that the proposal would have a significant impact on Flora and Vegetation and that the impacts to this factor are manageable.</p>

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
			Accordingly, the EPA did not consider Flora and Vegetation to be a key environmental factor at the conclusion of its assessment. However, the EPA has updated requirements for dieback as a result of consultation on the conditions and outlined these as a contemporary requirement. This is set out in condition 6-1 of Appendix 5. Dieback was considered in the original assessment prior to the clearing of vegetation during the construction of the first liquid waste facility.
Terrestrial Fauna	The proposal would require the disturbance of up to 4.5 ha within a 31.3 ha development envelope and has potential to impact on terrestrial fauna habitat.	Public comments <ul style="list-style-type: none"> • Inadequate management of conservation significant fauna, including <i>Pseudocheirus occidentalis</i> (ring-tailed possum) and <i>Marutus flavus</i> (peacock spider). • Impacts on fauna habitat in surrounding areas. 	<p>Terrestrial Fauna was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal.</p> <p>The proposal is located adjacent to the Yalgorup National Park. The development envelope has been cleared previously for the existing liquid waste facility, quarry and landfill activities.</p> <p>A fauna survey has been previously undertaken and was used to support the original assessment. No priority listed fauna were identified at the time. The proposed total clearing of fauna habitat is also a reduction from the clearing initially approved for the site.</p>

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
			<p>Having regard to:</p> <ul style="list-style-type: none"> the proposal is located within the previously disturbed areas at the Tims Thicket WMF proposed fencing around the site to restrict access <i>Environmental Factor Guideline – Terrestrial Fauna</i> (EPA 2016e) the significance considerations in the <i>Statement of Environmental Principles, Factors and Objectives</i>, <p>the EPA considers it is unlikely that the proposal would have a significant impact on Terrestrial Fauna and that the impacts to this factor are manageable. Potential impacts to groundwater and surface water are discussed in the factor Inland Waters.</p> <p>Accordingly, the EPA did not consider Terrestrial Fauna to be a key environmental factor at the conclusion of its assessment.</p>
Terrestrial Environmental Quality	The soil quality at the site has previously been impacted from a breach of the existing pond liners, and investigations have recorded detectable	<p>Public comments</p> <ul style="list-style-type: none"> Concerns about existing activities involving disposal of soil or sand within Reserve 24198. 	Terrestrial Environmental Quality was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
	<p>concentrations of nutrients and thermotolerant coliforms. The proposal has potential to impact on soil quality from construction and operation of the liquid waste facility.</p>	<ul style="list-style-type: none"> Concerns about existing contamination at Reserve 24198 that could be mobilised in groundwater. 	<p>A soil investigation has been undertaken at the site. The results found that there was no visual or olfactory evidence of contamination within the underlying soils. Laboratory analysis was undertaken and found there were elevated nutrients and pathogens in the soil, particularly to the shallow soils beneath the anaerobic ponds.</p> <p>Removal of the soils may be required as part of the redevelopment. Preliminary review indicates that the soils would be suitable for a Class I/Class II landfill disposal.</p> <p>Having regard to:</p> <ul style="list-style-type: none"> existing contamination to shallow soils further planned soil investigations and removal of contaminated soils short environmental lifespan of thermotolerant faecal coliforms <i>Environmental Factor Guideline – Terrestrial Environmental Quality</i> (EPA 2016f) the significance considerations in the <i>Statement of Environmental Principles, Factors and Objectives</i>,

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
			<p>the EPA considers it is unlikely that the proposal would have a significant impact on Terrestrial Environmental Quality and that the impacts to this factor are manageable.</p> <p>Accordingly, the EPA did not consider Terrestrial Environmental Quality to be a key environmental factor at the conclusion of its assessment.</p>
WATER			
Inland Waters	Seepage, leakages and spillages from the treatment of liquid waste could potentially impact on groundwater and surface waters.	<p>Public comments</p> <ul style="list-style-type: none"> Concerns about historical contamination at the site, including elevated metals in groundwater. Potential impacts to Inland Waters from spills or leakages in the pond system. Contamination of groundwater, which is used for drinking and crops. Adequacy of the monitoring requirements at the site. 	The EPA considers Inland Waters to be a key environmental factor at the conclusion of its assessment and is further discussed in section 4.1

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
PEOPLE			
Social Surroundings	Construction and operational activities, including truck movements, could generate noise, odour and dust, and impact on nearby sensitive receptors.	Public comments <ul style="list-style-type: none"> Concerns about odour from the operational activities. Concerns about potential noise and dust impacting residents in proximity to the proposal site. Adequacy of the buffer zones. Change of land use from what was originally agreed. 	<p>Social Surroundings was identified as a preliminary key environmental factor when the EPA decided to assess the proposal.</p> <p>The nearest sensitive receptors are 1.2 km east and 1.4 km north to the site. There are no existing or proposed Yalgorup National Park recreation sites in close proximity to the facility.</p> <p>Since operation of the site in 1994, one formal noise complaint has been received. The hours of operation for the liquid waste facility would be Monday to Saturday between 7am and 4pm to minimise impacts from noise.</p> <p>Odour emissions may be generated during unloading of effluent in the receival tank prior to treatment, and during intermittent desludging of the anaerobic ponds. However, the facility is a closed system and also the anaerobic ponds will maintain a solid crust over the pond surface during treatment, which would act as a physical barrier for odour.</p> <p>Having regard to:</p>

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
			<ul style="list-style-type: none"> • the nearest sensitive receptor located 1,200 m east of the site • <i>Environmental Factor Guideline – Social Surroundings</i> (EPA 2016g) • <i>Guidance Statement No. 3 on Separation Distances between Industrial and Sensitive Land Uses</i> (EPA 2005) • the requirement to meet compliance with the Environmental Protection (Noise) Regulations 1997 • regulation of emissions and discharges including odour under Part V of the EP Act • the significance considerations in the <i>Statement of Environmental Principles, Factors and Objectives</i>, <p>the EPA considers it is unlikely that the proposal would have a significant impact on Social Surroundings and that the impacts to this factor are manageable and not different from those considered in the original proposal.</p> <p>Accordingly, the EPA did not consider Social Surroundings to be a key environmental factor at the conclusion of its assessment.</p>

Appendix 4: Proposed changes to conditions for revised proposal

Proposed Implementation Agreement (Ministerial Statement)

The EPA recommends that the proposal may be implemented and further recommends that the implementation of the proposal be subject to the Implementation Agreement (Ministerial Statement) set out in Appendix 5. The recommended Ministerial Statement has been developed in accordance with the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016* and includes a review of the following implementation conditions:

- Ministerial Statement 375: Change to Yalgorup National Park Boundary, Extension to Wastewater Treatment Plant Site, Septage Disposal Facility and Quarry, Tim's Thicket, City of Mandurah, issued on 29 November 1994.

Proposed changes

The main changes between the proposed new Ministerial Statement (Appendix 5) and the existing Ministerial Statement relate to:

- removal of activities related to other proponents including the change to the Yalgorup National Park Boundary and the extension to wastewater treatment plant site (former Department of Conservation and Land Management, and former Waste Authority of Western Australia)
- removal of conditions that are regulated under other processes
- updating conditions to reflect contemporary conditions.

Recommended environmental conditions

The EPA consulted with key regulators during the assessment to identify areas of regulatory duplication and to contemporise the existing conditions. As a result of this consultation, the EPA considers that dieback should continue to be managed through the Ministerial Statement but other aspects associated with the proposal can be regulated through other requirements. The EPA notes:

- Condition 6 of the recommended conditions requires the proponent to ensure that hygiene is managed at the facility to avoid potential impacts from dieback (*Phytophthora cinnamomi*) and manage weeds.

Recommended proposal details (Schedule 1)

The revised proposal details contained in Schedule 1 (Appendix 5) have been amended to include an updated description which reflects the EPA's contemporary approach to project descriptions described in the EPA's Procedures Manual.

Changes include the following:

- Table 1 providing a description of the upgraded liquid waste facility
- Table 2 restricting the activity disturbance areas
- updated map of the development envelope and disturbance footprint.

Appendix 5: Identified Decision-Making Authorities and Recommended Environmental Conditions

Identified Decision-making Authorities

Section 44(2) of EP Act specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This Appendix contains the EPA's recommended conditions and procedures.

Section 45(1) requires the Minister for Environment to consult with decision-making authorities (DMAs), and if possible, agree on whether or not the proposal may be implemented, and if so, to what conditions and procedures, if any, that implementation should be subject.

The following decision-making authorities have been identified:

Decision-making Authority	Legislation (and Approval)
1. Minister for Environment	<i>Biodiversity Conservation Act 2016</i> (Taking or disturbing threatened species)
2. CEO, Department of Water and Environmental Regulation	<i>Environmental Protection Act 1986</i> (Part V Works Approval and Licence)
3. CEO, Department of Health Chief Health Officer, Department of Health	<i>Health Act 1911</i> (Apparatus for the treatment of sewage) <i>Health (Miscellaneous Provisions) Act 1911</i> <i>Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974</i>

RECOMMENDED ENVIRONMENTAL CONDITIONS

STATEMENT THAT A REVISED PROPOSAL MAY BE IMPLEMENTED (*Environmental Protection Act 1986*)

TIMS THICKET LIQUID WASTE FACILITY UPGRADE

Proposal: Proposal to amend Septage Disposal Facility and Quarry, Tims Thicket, City of Mandurah, which is one aspect of the subject of Statement No. 375 dated 29 November 1994

Proponent: City of Mandurah
Australian Business Number 43 188 356 365

Proponent Address: 3 Peel Street
Mandurah WA 6210

Assessment Number: 2124

Report of the Environmental Protection Authority: 1657

Previous Assessment Number: 847

Previous Report of the Environmental Protection Authority: 751

Previous Statement Number: 375

Pursuant to section 45, read with section 45B of the *Environmental Protection Act 1986*, it has been agreed that:

1. the Proposal described and documented in Table 2 of Schedule 1 may be implemented;
2. this Statement supersedes Statement No. 375, and from the date of this Statement each of the implementation conditions in Statement No. 375 no longer apply in relation to the Revised Proposal; and
3. the implementation of the Revised Proposal, being the Tims Thicket Liquid Waste Facility Upgrade as amended by this Proposal, is subject to the following revised implementation conditions:

1 Proposal Implementation

- 1-1 When implementing the Revised Proposal, the proponent shall not exceed the authorised extent of the Revised Proposal as defined in Table 2 of Schedule 1, unless amendments to the Revised Proposal and the authorised extent of the Revised Proposal have been approved under the EP Act.

2 Contact Details

- 2-1 The proponent shall notify the CEO of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

3 Time Limit for Proposal Implementation

- 3-1 The proponent shall not commence implementation of the proposal after five (5) years from the date of this Statement, and any commencement, prior to this date, must be substantial.
- 3-2 Any commencement of implementation of the proposal, on or before five (5) years from the date of this Statement, must be demonstrated as substantial by providing the CEO with written evidence, on or before the expiration of five (5) years from the date of this Statement.

4 Compliance Reporting

- 4-1 The proponent shall prepare and maintain a Compliance Assessment Plan which is submitted to the CEO at least six (6) months prior to the first Compliance Assessment Report required by condition 4-6, or prior to implementation of the proposal, whichever is sooner.
- 4-2 The Compliance Assessment Plan shall indicate:
- (1) the frequency of compliance reporting;
 - (2) the approach and timing of compliance assessments;
 - (3) the retention of compliance assessments;
 - (4) the method of reporting of potential non-compliances and corrective actions taken;
 - (5) the table of contents of Compliance Assessment Reports; and
 - (6) public availability of Compliance Assessment Reports.
- 4-3 After receiving notice in writing from the CEO that the Compliance Assessment Plan satisfies the requirements of condition 4-2 the proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 4-1.
- 4-4 The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 4-1 and shall make those reports available when requested by the CEO.

- 4-5 The proponent shall advise the CEO of any potential non-compliance within seven (7) days of that non-compliance being known.
- 4-6 The proponent shall submit to the CEO the first Compliance Assessment Report fifteen (15) months from the date of issue of this Statement addressing the twelve (12) month period from the date of issue of this Statement and then annually from the date of submission of the first Compliance Assessment Report, or as otherwise agreed in writing by the CEO. The Compliance Assessment Report shall:
- (1) be endorsed by the proponent's CEO or a person delegated to sign on the CEO's behalf;
 - (2) include a statement as to whether the proponent has complied with the conditions;
 - (3) identify all potential non-compliances and describe corrective and preventative actions taken;
 - (4) be made publicly available in accordance with the approved Compliance Assessment Plan; and
 - (5) indicate any proposed changes to the Compliance Assessment Plan required by condition 4-1.

5 Public Availability of Data

- 5-1 Subject to condition 5-2, within a reasonable time period approved by the CEO of the issue of this Statement and for the remainder of the life of the proposal the proponent shall make publicly available, in a manner approved by the CEO, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)), management plans and reports relevant to the assessment of this proposal and implementation of this Statement.
- 5-2 If any data referred to in condition 5-1 contains particulars of:
- (1) a secret formula or process; or
 - (2) confidential commercially sensitive information;

the proponent may submit a request for approval from the CEO to not make these data publicly available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publicly available.

6 Disease Hygiene Management

- 6-1 During construction of the liquid waste facility and within five (5) years of the completion of construction, or as agreed in writing by the CEO, the proponent shall:

- (1) implement hygiene protocols consistent with the *Management of Phytophthora cinnamomi for Biodiversity Conservation in Australia*, Part 2 National Best Practice Guidelines as amended or replaced from time to time; and
- (2) undertake weed control and management to prevent the introduction or spread of environmental weeds.

Schedule 1**Table 1: Summary of the Proposal**

Proposal Title	Tims Thicket Liquid Waste Facility Upgrade
Short Description	<p>The proposal is for the recommissioning and upgrade of the existing liquid waste facility located at the Tims Thicket Waste Management Facility, 15 kilometres south of Mandurah.</p> <p>The upgraded liquid waste facility includes a receival tank, anaerobic ponds, facultative pond, oxidation pond, and an evaporation pond for the treatment of liquid waste including septage and grease trap waste.</p>

Table 2: Location and authorised extent of physical and operational elements

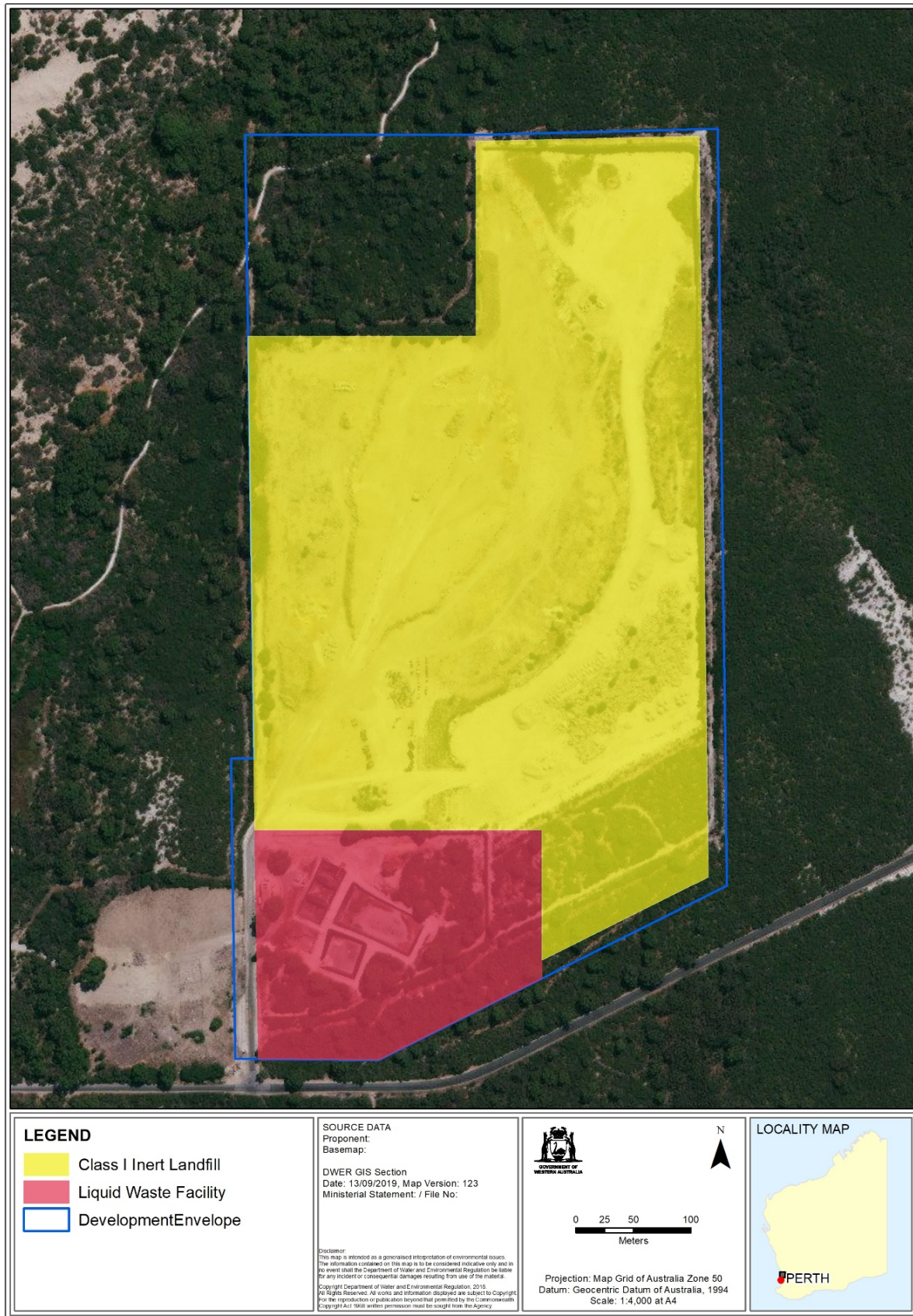
Column 1	Column 2	Column 3
Element	Location	Authorised Extent
Physical elements		
Liquid waste facility	Figure 1	Disturbance of up to 4.5 ha within a 31.3 ha development envelope
Class I Inert landfill / Limestone quarry	Figure 1	Disturbance of up to 21.4 ha within a 31.3 ha development envelope

Table 3: Abbreviations and Definitions

Acronym or Abbreviation	Definition or Term
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the <i>Environmental Protection Act 1986</i> , or his delegate.
EP Act	<i>Environmental Protection Act 1986</i>
ha	Hectare
kL/a	Kilolitres per annum

Figures (attached)

Figure 1 Development envelope (this map is a representation of the coordinates in Schedule 2)



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Figure 1: Proposal development envelope

Schedule 2

Coordinates defining the development envelope are held by the Department of Water and Environmental Regulation, Document Reference Number DWERDT200371.