# Environmental Assessment Report

## Hydro-Electric Corporation

### Lake King William Intake upgrade works

*Off Butlers Gorge Road, Bronte Park*

*January 2024*

epa TASMANIA

ENVIRONMENT PROTECTION AUTHORITY

# Environmental Assessment Report

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|---|---|
| Proponent | Hydro-Electric Corporation |
| Proposal | Lake King William Intake upgrade works |
| Location | Off Butlers Gorge Road, Bronte Park |
| Class of Assessment | 2A |
| EPN no. | 11367/1 |
| myDAS Folder No. | 22/10330 |
| myDAS Document No. | D23-331683 |

## Assessment Process Milestones

| Date | Milestone |
|---|---|
| 19 October 2022 | Project Description lodged |
| 14 December 2022 | Class of Assessment determined |
| 13 January 2023 | Guidelines Issued |
| 2 November 2023 | Case for assessment accepted by the Board |
| 11 November 2023 | Start of public consultation period |
| 25 November 2023 | End of public consultation period |
| 20 December 2023 | Date draft conditions issued to proponent |
| 19 January 2024 | Statutory period for assessment ends |

# Glossary/Acronyms

| Term | Detail |
|---|---|
| AEP | Annual Exceedance Probability |
| Board | Board of the Environment Protection Authority |
| CAS | Conservation Assessments Section, Natural Resources and Environment Tasmania |
| CEMP | Construction Environmental Management Plan |
| EER | Environmental Effects Report |
| EIA | Environmental impact assessment |
| EMPCA | *Environmental Management and Pollution Control Act 1994* |
| EMPCS | Environmental management and pollution control system |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act 1999* (Cth) |
| ESCP | Erosion and Sediment Control Plan |
| Hydro Tasmania | Hydro-Electric Corporation |
| LKW | Lake King William |
| LUPAA | *Land Use Planning and Approvals Act 1993* |
| mAHD | Metres above height datum |
| NCA | *Nature Conservation Act 2002* |
| NOI | Notice of Intent |
| NRE | Department of Natural Resources and Environment Tasmania |
| NTU | Nephelometric Turbidity Units |
| PAF | Potentially Acid Forming |
| PWS | Parks and Wildlife Service |
| QCP | Quarry Code of Practice (EPA 2017) |
| RMPS | Resource Management and Planning System of Tasmania |
| SD | Sustainable development |
| TSPA | *Threatened Species Protection Act 1995* |
| TWWHA | Tasmanian Wilderness World Heritage Area |
| WQMP | Water Quality Management Plan |

# Report Summary

This report provides an environmental assessment of the Lake King William Intake upgrade works by the Hydro-Electric Corporation (Hydro Tasmania). The proposal involves excavation of an approach channel, construction of a new intake structure, intake, tunnel, and downstream tunnel portal, with associated drilling, blasting, crushing, screening, permanent stockpiling of excess spoil and on-site concrete batch plants.

This report has been prepared based on information provided in the Environmental Effects Report (EER). Relevant government agencies and the public were consulted, and their submissions considered as part of the assessment.

**Appendix 1** contains a table of the Proponent's proposed management measures.

**Appendix 2** contains the Environment Protection Notice for the proposal.

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# 1. Approval Process

This proposal includes an activity defined as a 'level 2 activity' under clause 6(a)(ii), Schedule 2 of the *Environmental Management and Pollution Control Act 1994* (EMPCA), being materials handling. As required by section 27(1) of the *Environmental Management and Pollution Control Act 1994* (EMPCA), Hydro Tasmania referred the proposal to the Board of the Environment Protection Authority (the Board) on 26 September 2022.

The Board required that information to support the proposal be provided in the form of an Environmental Effects Report (EER), prepared in accordance with the Guidelines issued by the Board on 13 January 2023. Several drafts of the EER were submitted to EPA for review against the Guidelines prior to finalisation and acceptance on behalf of the Board on 2 November 2023.

The EER was released for public inspection for 14 days on 11 November 2023. Advertisements were placed in The Mercury and Advocate newspapers and on the EPA website. The EER was also referred to relevant government agencies for comment. No representations were received.

An agreement between the EPA and Hydro Tasmania was negotiated to extend the Board's timeframe for completing its assessment from 8 January 2024 until 19 January 2024.

The A/Executive Director, Environmental Assessments has undertaken determination of the assessment under delegation from the Board.

# 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 2.0 Part B of the EER.

## Summary of the proposal's main characteristics

### Activity

Extraction of approximately 259,000 cubic metres of material. Crushing and screening of up to 40,000 cubic metres of material. Construction of a tunnel and new intake structure at Lake King William (LKW).

***Background to the current proposal***

The Tarraleah Power Scheme is an existing hydropower scheme located in the Central Highlands of Tasmania. According to the EER much of the Tarraleah Power Scheme is more than 80 years old and many of its assets are nearing the end of their operational life, including the No. 1 conveyance, which must be replaced to ensure the continued safe and reliable operation of the power scheme.

The EER states that due to risks associated with the current alignment of the No 1. conveyance, refurbishment, or replacement in its current location was not considered feasible. Future relocation of the No. 1 conveyance requires, amongst other upgrades, relocation of the intake on LKW.

The EER goes on to note that in April 2022, the Federal Government announced a funding commitment for progressing scoping of the potential overall redevelopment of the power scheme and the no regrets upgrade works required, regardless of any decision around the overall power scheme redevelopment.

Since early 2022, Hydro Tasmania has been undertaking various components of the no regrets upgrade works. Hydro Tasmania consulted with EPA on three other 'packages' of works, which were ultimately deemed to not require assessment by the EPA Board under EMPCA, including:

- Package 1 – Construction of a coffer dam, borrow pit, laydown areas, stockpiles, and site offices at LKW and raising the Mossy Marsh Dam levee;
- Temporary resumption of quarrying at Laughing Jack Quarry to support the Mossy Marsh Dam upgrade; and
- Package 2 – Intake and downstream tunnel portals (this didn't include the tunnel, crushing and screening or many of the other associated works).

Package 3 was referred to the EPA Board on 19 October 2022, and was determined to require assessment under section 27 of EMPCA on 14 December 2022. This report documents the Board's assessment of the Package 3 works as detailed in section 2.4 of the EER.

### Location and planning context

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| **Location** | Off Butlers Gorge Road, Bronte Park, as shown in Figure 1. |
| **Land zoning** | Utilities and Rural. |
| **Land tenure** | Predominantly Permanent Timber Production land managed by Sustainable Timber Tasmania. The remainder of the land is managed by Hydro Tasmania. |
| **Mining lease** | Not required. |

## Activity site

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| **Land Use** | Hydropower generation and permanent timber production. LKW is also a wild trout fishery used by recreational anglers. |
| **Topography** | The approach channel and intake works are situated within and adjacent to a small bay on the southeastern corner of Lake King William. A shallow valley extends from the bay to the southeast where it reaches a crest and then falls to a large open plain that extends east and south toward the River Derwent. The downstream portal is located on the upper slope of this plain. The tunnel will be drilled through the shoulder of the small hill which rises to the northeast from the valley crest. |
| **Geology** | The geology of the area is Jurassic dolerite. |
| **Soils** | Soils are quaternary aged glacial deposits, colluvium and *in-situ* weathered bedrock. They include a range of particle sizes from boulders, cobbles and gravel, to finer sand silt and clay. |
| **Hydrology** | The Derwent catchment covers an area of approximately 8,800 $km^2$ in central and south-east Tasmania. The River Derwent originates at Lake St Clair and flows south-east for approximately 187 km to New Norfolk where it enters the Derwent Estuary.<br>The River Derwent and a few of its main tributaries have been dammed by, or diverted to, 21 storages for generation of hydroelectricity.<br>Flow from Lake St Clair is regulated by St Clair Dam, after which the river flows south-east for 5 km to the hydropower storage of LKW, formed by Clark Dam in 1951.<br>Water from LKW is diverted to the Tarraleah Power Station, where it enters the Nive River and flows through Lake Liapootah and Wayatinah Lagoon then back into the River Derwent.<br>LKW covers an area of 587 $km^2$ including the Lake St Clair catchment. The average annual average inflow to LKW is 28.7 $m^3/s$ and about half the flow is contributed by the Lake St Clair catchment. |
| **Natural Values** | Vegetation has already been cleared under other approval processes. The natural values assessment indicated that no vegetation communities listed under the *Nature Conservation Act 2002* were cleared and no threatened flora or fauna species listed under the *Threatened Species Protection Act 1999* impacted.<br>Two listed flora species were identified adjacent to access roads, being *Pomaderris elachophylla* (small-leaf dogwood) and *Westringia angustifolia* (narrowleaf westringia). |

## Location region

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| **Climate** | Rainfall is approximately 1,170 mm per annum. Wind direction is predominantly from the north and west. |
| **Surrounding land zoning, tenure and uses** | The site is surrounded by either Sustainable Timber Tasmania owned land designated as Permanent Timber Production Zone Land to the north, east and south, or the Tasmanian Wilderness World Heritage Area managed by the Parks and Wildlife Service to the west and south. |
| **Species of conservation significance** | See above comments regarding *Pomaderris elachophylla* (small-leaf dogwood) and *Westringia angustifolia* (narrowleaf westringia). |

## Proposed infrastructure

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| **Major equipment** | • Excavators (ranging from 13 to 150 tonne)<br>• D8/D9 dozers<br>• Loader<br>• Articulated dump truck<br>• Agitator<br>• Shotcrete application rig<br>• Jumbo drill rig (specific for tunnelling works)<br>• Charge up vehicle (for transporting explosives from the magazine to the work site)<br>• Elevated work platform<br>• Sediment boom<br>• Barge with long reach excavator<br>• Drag line bucket system<br>• Rollers / compactors<br>• Jumbo tipper truck<br>• Crushing and screening plant<br>• Mobile concrete batch plant, with storage of aggregate and cement |
| **Other infrastructure** | • Sediment ponds and associated drains<br>• Explosives storage facility<br>• Intake structure<br>• Upstream and downstream tunnel portals<br>• Tunnel<br>• Stockpiles |

## Inputs

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| **Water** | Water for dust suppression and amenities will be sourced from LKW. |
| **Energy** | Fuel for vehicles and machinery. Mains power for site offices / worker amenities. |
| **Other raw materials** | Explosives, coagulants, concrete, shotcrete. |

## Wastes and emissions

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| **Liquid** | Stormwater runoff from extraction and stockpile areas. Groundwater from the tunnel excavation. Water from dust suppression. Concrete washdown byproducts. |
| **Atmospheric** | Dust from internal and external traffic, stockpiles, blasting, crushing, and screening. |
| **Solid** | General refuse including food scraps, paper, and packaging. Rock and topsoil. |
| **Controlled wastes** | Sewage and greywater from amenities will be removed and disposed of by a suitably licenced operator at an approved location.<br>Waste engine oil, hydraulic fluids, greases from servicing. |
| **Noise** | From drill rig, blasting, crushing / screening, mobile equipment such as dozers, excavators and trucks, concrete batch plant. |
| **Greenhouse gases** | Mobile equipment and machinery will create greenhouse gases. |

## Construction and operations

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| **Proposal timetable** | Approach channel: April 2023 – December 2025 (commenced under Stage 2 works)<br>Tunnel: Commencing in late January 2024<br>Intake structure: February 2024 – August 2025 |
| **Operating hours** | Intake works:<br>Monday to Friday 0700 to 1900 hours<br>Saturday and Sunday 0700 to 1600 hours, as required<br>Tunnel:<br>24 hours, 7 days a week (underground works only) |


**Figure 1: Location (Figure 9 of the EER)**

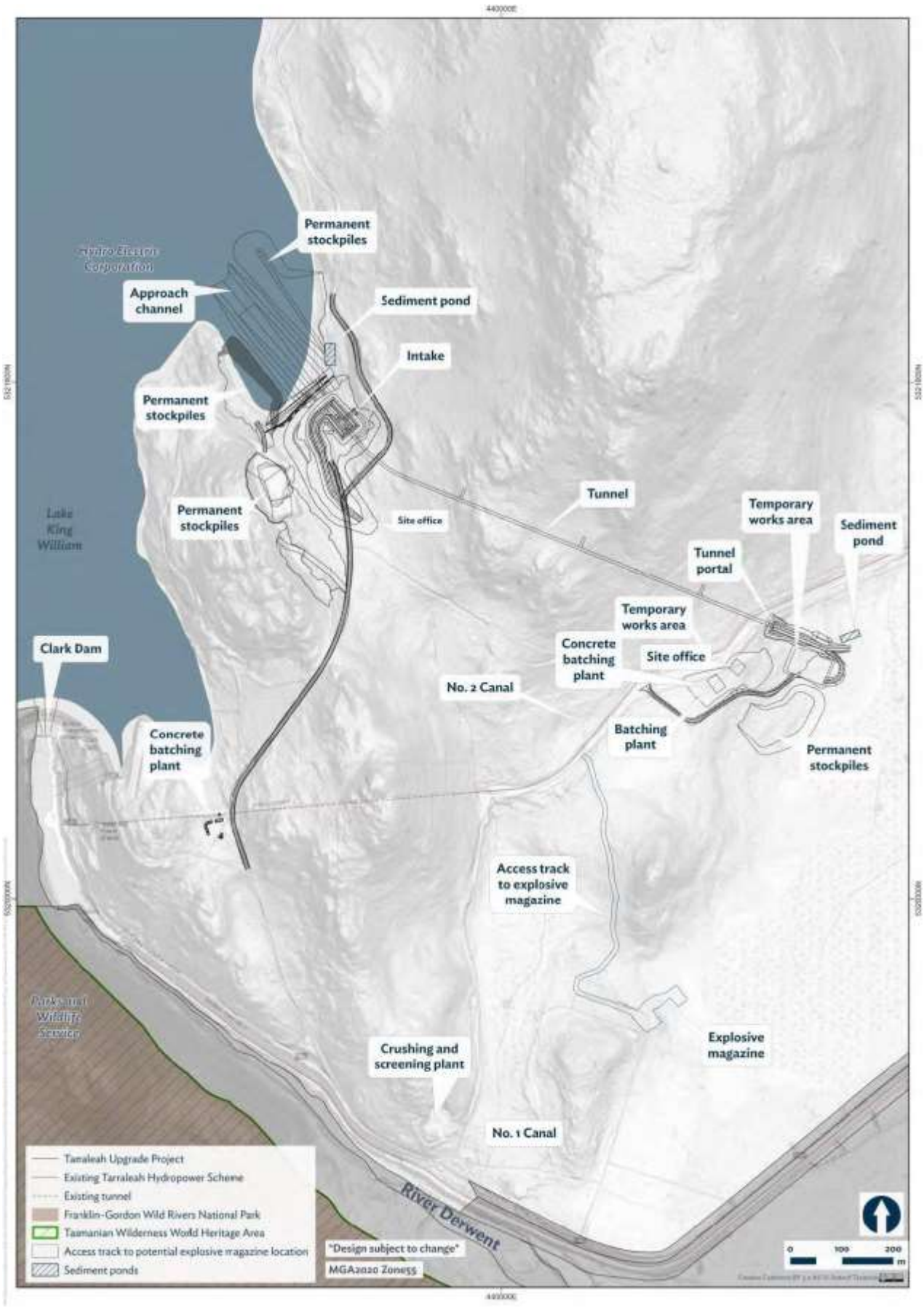



**Figure 2: Site plan (Figure 3 of the EER).**

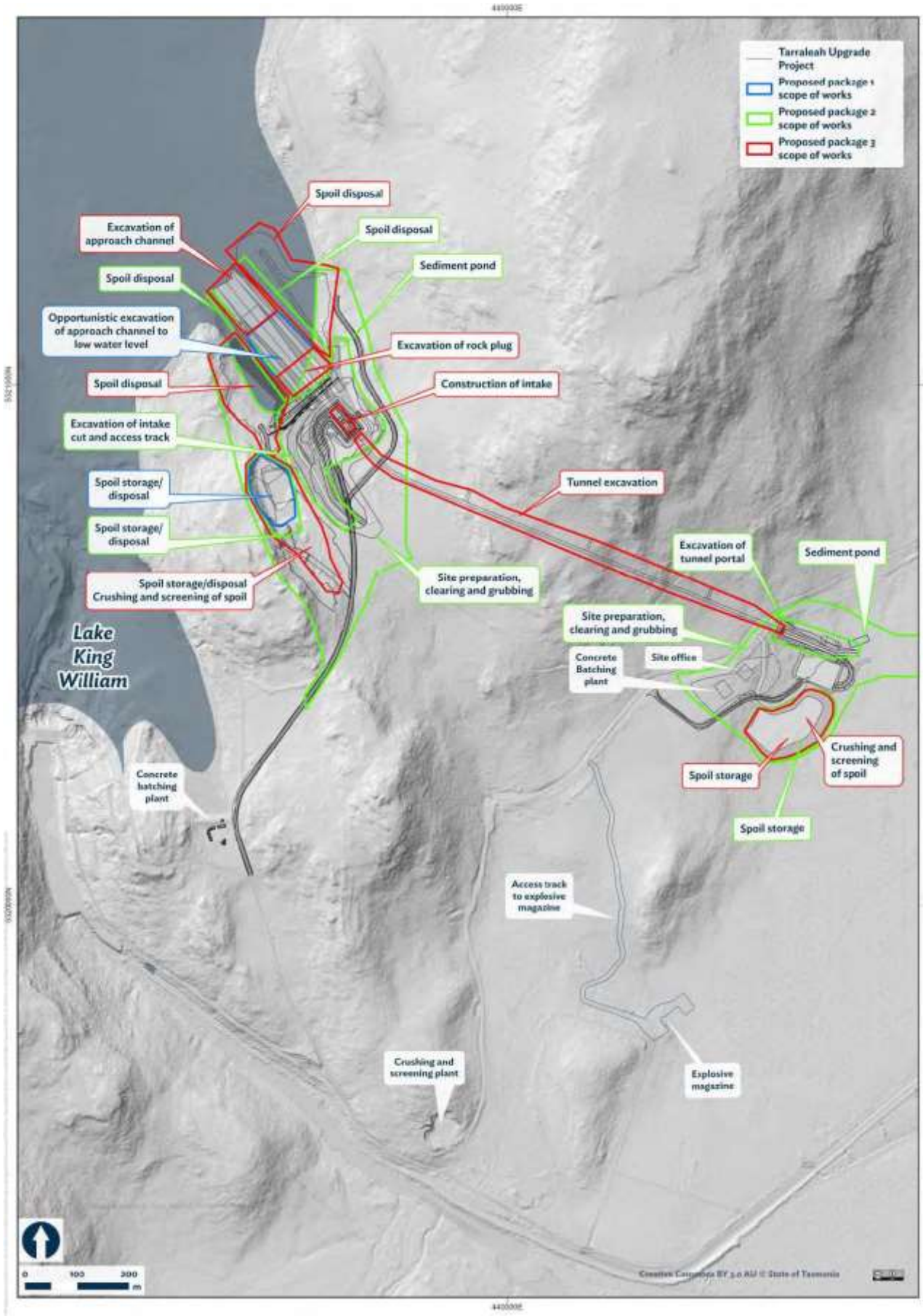



**Figure 3: Scope of works for Stage 3 being assessed (Figure 2 of the EER).**

# 4. Project Rationale and Alternatives

According to the EER, much of the Tarraleah Power Scheme is more than 80 years old and many of its assets are nearing the end of their operational life, in particular the No. 1 conveyance, the hillside penstocks, and the generating units in the existing station.

The EER states that Hydro Tasmania is assessing the commercial viability of the Tarraleah Redevelopment Project which proposes to replace much of the existing power scheme with a direct pressurised connection between LKW and a new power station adjacent to the existing Tarraleah Power Station.

The EER notes that even if the proposed Tarraleah Redevelopment Project was not to proceed, ageing assets, including No. 1 conveyance, must still be replaced to ensure the continued safe and reliable operation of the power scheme.

The EER goes on to state that due to risks associated with the current alignment of the No. 1 conveyance, refurbishment, or replacement of the canal in its current location was not considered feasible. It is also noted that relocating the No. 1 conveyance from its current alignment requires a new intake on LKW.

This proposal relates only to these 'no regret' works, referred to as Package 3 or Stage 3 scope of works, that are required to keep the existing Tarraleah Power Scheme functioning safely.

According to the EER, two alternatives were considered, being the progressive refurbishment of the existing power scheme including the No. 1 conveyance, which would have seen the scheme maintained in its current configuration; and undertaking the minimum refurbishment needed to keep the scheme operational.

The EER notes that progressive refurbishment has many limitations such as frequent outages, loss of power generation, high refurbishment cost, high operation and maintenance costs, residual asset risk and low system flexibility. It goes on to state that undertaking the minimum refurbishment is similarly not considered prudent, as there would also be many limitations such as frequent outages and loss of generation, lack of system flexibility and residual asset risk.

# 5. Public and Agency Consultation

No public submissions were received during the public consultation period.

The EER was referred to several government agencies with an interest in the proposal, including:

- Conservation Assessments Section, Natural Resources and Environment Tasmania
- Parks and Wildlife Servies, Natural Resources and Environment Tasmania
- Forest Practices Authority

The following individuals also provided specialist advice on the EER:

- Regulatory Officer, Environment Protection Authority
- Scientific Officer (Water), Environment Protection Authority
- Scientific Officer (Noise), Environment Protection Authority

# 6. Evaluation of Environmental Issues

The following environmental issues are considered relevant to the proposal and have been evaluated in this section:

1. Surface and ground water quality
2. Biodiversity and natural values
3. Weed and disease management
4. Waste management
5. Dangerous goods and environmentally hazardous materials
6. Noise emissions
7. Air quality
8. Rehabilitation

## 6.1 General conditions

The following general conditions will be imposed on the activity:

- G1 Regulatory limit
- G2 Access to and awareness of conditions and associated documents
- G3 Incident response
- G4 Proposed change to activity
- G5 Change of ownership
- G6 Complaints register
- G7 Amendment of required plans and reports
- G8 Quarry Code of Practice

## 6.2 Issue 1: Surface and ground water quality

### 6.2.1 Potential impacts

The proposal involves numerous activities including drilling, blasting, excavation, concrete batching, carting of material, stockpile creation, and refuelling / maintenance of vehicles, plant, and equipment, all of which have the potential to be sources of pollutants (e.g., sediments, fuel/oil, other chemicals) that may impact surface or ground water quality if not managed appropriately.

Section 3.1.1 of the EER provides detailed lists of potential sources of sediments associated with each of the main work areas. The proposal involves three main work areas (see Figure 2), being the:

- intake approach channel in LKW;
- intake portal on the shore of LKW; and
- downstream portal and tunnel.

There are also several areas such as the explosives magazine, one of the concrete batching plants and one of the crushing / screening plants that are located further south of the main work areas (refer to Figure 2).

There are two main receiving waters that could potentially be impacted by pollutants, being LKW at the approach channel and intake portal sites, and the River Derwent, via two tributaries from the tunnel and downstream tunnel portal sites.

### 6.2.2 Management measures proposed in EER

***General measures applied to The Land***

According to the EER, sediment and erosion control management measures have been developed in accordance with best practice guidelines such as the International Erosion Control Association (IECA 2008) *Best Practice Erosion and Sediment Control document*.

The EER states that an Erosion and Sediment Control Plan (ESCP) will be developed as part of the Construction Environmental Management Plan (CEMP) for the site. Furthermore, the EER goes on to state that the ESCP aims to:

- integrate erosion and sediment control into site and construction planning.
- minimise the soil area disturbed and exposed to erosion (i.e., staging of construction works and progressive rehabilitation where possible).
- control water flow through the construction sites.
- capture sediment that may be unavoidably mobilised due to the works and maximise sediment retention on The Land.
- maintain erosion and sediment control measures in proper working order.
- continually monitor erosion and sediment control measures and adjust throughout construction and rehabilitation works to maintain the required performance standard.
- rehabilitate disturbed waterways and construction sites.

Section 3.1.1 of the EER provides details of the proposed management measures that will be applied to each of the work areas. Broadly these management measures are either administrative type mitigation measures (e.g., the ESCP) or physical controls such as the sediment ponds, drains, sediment boom etc.

Section 3.9 of the EER specifically relates to the erosion and sediment control measures proposed for the works and contains proposed administrative and physical controls that will be implemented at each of the work areas prior to, and during construction works.

In addition, Section 3.10 and Appendix I (Water Quality Monitoring Plan (WQMP)) of the EER provide details of the water quality monitoring proposed for each of the work areas. The WQMP states its aim is

to provide water quality data to assist in detecting and mitigating any negative impacts from the proposed works. The EER also emphasises that an adaptive management approach will be required as it is unclear whether turbidity will increase significantly due to the construction activities.

Section 3.10.1 of the EER details the monitoring and performance criteria set for each work area, including turbidity, pH, ammonium nitrate, aluminium, and hydrocarbons. This section also outlines the management response(s) that will occur should any of the performance criteria be exceeded.

Each work area has its own proposed management measures for managing water quality, broadly they include:

Approach channel:

- Installation of a sediment boom in the bay adjacent to the work area.
- Installation of water quality monitoring rafts outside of the boom.
- Undertaking works when the lake level is at or below 704 mAHD to reduce the amount of wet works required.
- Constructing a stabilised rock pad where vehicles or machinery are required to traverse across the lakebed.

Intake portal:

- Installation of clean water diversion drains to divert clean water away from the work areas.
- Maintenance of the existing sediment pond and associated discharge drain which is aggregate lined with rock check dams.
- Cease pumping water from the intake excavation into the sediment pond on windy days.
- Directing vehicle / machinery washdown water to the sediment pond.
- Monitoring turbidity in LKW during construction works.

Downstream portal and tunnel:

- Installation of clean water diversion drains to divert clean water away from the work areas.
- Installation of a temporary diversion berm along the down-slope margin of the site.
- Maintenance / improvement of the existing sediment pond and associated discharge drain.
- Installation of a sediment pond for receiving groundwater only from tunnel dewatering. Cut off drains will be installed to ensure only tunnel groundwater is received by this sediment pond.

At both portal sites there will be concrete laden wash water and liquid emissions from the concrete batch plant which the EER states will be contained in 10 $m^3$ bays to be evaporated, meaning there will be no runoff from the designated work area.

In addition, there are several stockpiles across both portal sites that will have upslope diversion drains and downslope sediment fences or mulch berms installed.

Furthermore, the EER states that the sediment and erosion control mitigation measures have been developed in accordance with best practice guidelines such as the International Erosion Control Association (IECA 2008) *Best Practice Erosion and Sediment Control documents*.

### 6.2.3 Public and agency comment

No public or agency comments were received in relation to surface and ground water quality.

### 6.2.4 Evaluation

Specific comments relating to each work area are provided below.

***Approach channel***

The hydrodynamic modelling undertaken by the Proponent indicates that the approach channel is exposed to the dominant winds from the west, northwest and north-north-west and that on windy days resuspension of sediment in the bay is likely to occur naturally, especially during westerly and north-westerly winds.

Turbidity and pH will be continuously monitored by two telemetered water quality rafts installed in LKW approximately 75 m outside the floating silt curtain in the bay. These also include time lapse cameras which will assist in optimising the location of each raft by analysing the photos during wind and wave events prior to wet works occurring. This will allow real time monitoring of conditions, fast detection, and management of any sediment plumes created in LKW from the activity.

The modelling indicates that the floating silt curtain will have a variable impact on reducing the extent and dilution of a sediment plume, depending on the direction and duration of the wind event. Outside of any wet works, achieving a lower turbidity level from the intake portal work area on shore will assist in reducing the risk of creating visible sediment plumes in LKW.

Wet works (e.g., underwater blasting and excavation) are expected to create visible sediment plumes. The EER notes that the water quality rafts may need to be relocated during wet works to ensure the extent of any sediment plumes is not greater than predicted by the hydrodynamic modelling. The commitment to undertake works for the approach channel when lake levels are at or below 704 mAHD where possible is supported. This will help reduce the amount of wet works required and thus reduce any cumulative impacts on LKW.

The other main impact on water quality related to the approach channel, is from underwater blasting where there is potential for ammonium nitrate to leach into the water during placement of the charges and from undetonated explosives. The WQMP specifies that sampling for ammonia and nitrate will occur monthly and then daily during periods where blasting is occurring. Section 3.10.1 of the EER includes management responses for any exceedance of the performance criteria detected, primarily cessation of blasting while the exceedance is investigated and rectified. This approach is supported.

***Intake portal***

The intake portal is essentially a large, exposed construction site with the main impact on water quality being from mobilisation of sediments. An aluminium based coagulant will be used to assist with settlement of sediments, which could also negatively impact water quality.

Management of water at the intake portal is relatively straightforward. Diversion drains have been installed to divert clean water away from the site and all water within the work area is captured either by the existing sediment pond or within the intake portal pit, which will then be pumped into the sediment pond, before being discharged into LKW.

Officers from the EPA undertook a site visit in late June 2023 at which time the site was quite wet. As previously mentioned, clearance of the site has already occurred under Forest Practices processes. The installed stormwater management infrastructure was observed to be operating effectively with the sediment pond actively discharging water into LKW via a rock lined drain with small rock check dams. Discharge water was observed to be relatively clean given the amount of sediment mobilised across the work area at the time.

The proposed monitoring, as detailed in the WQMP (Appendix A of the EER), allows monitoring of the effectiveness of erosion and sediment control measures and the potential for negative impacts from coagulant use to be detected, to ensure that water being discharged to LKW does not cause environmental harm.

*Downstream portal and tunnel*

The downstream portal has a smaller area of surface disturbance than at the intake portal and approach channel. The main risk to water quality is from dewatering of the tunnel, which may include pollutants such as sediments, ammonium nitrate from unexploded explosives, aluminium from use of coagulants, concrete dust, particles from shotcrete and hydrocarbons from machinery / vehicles in the tunnel.

Installation of two sediment ponds at this site, as described in the EER, is supported to manage tunnel dewatering and surface water separately. Water from the sediment ponds will be discharged to tributaries of the River Derwent.

Various cut off drains are to be installed (Figure 15 of the EER) to minimise stormwater traversing the work area and to ensure that only water from the tunnel is collected and treated by the high performance tunnel dewatering sediment pond.

The WQMP details the specific monitoring that will be undertaken for the downstream portal and tunnel. Another telemetered water quality monitoring station is installed at the Derwent Pumps site, downstream of the work areas reporting to the River Derwent, which allows real time monitoring of conditions, and fast detection and management should the performance criteria be exceeded. Again, monitoring of ammonia, nitrate and aluminium will occur daily when blasting and/or dosing is occurring at the downstream portal and tunnel work area. Section 3.10.1 of the EER specifies the management responses for any exceedance of the performance criteria that is detected. This approach is supported.

*Conclusions*

The EER states that a conservative approach has been taken in assuming that some dispersive soils are present within the Quaternary glacial deposits at each of the work sites, despite testing at the approach channel and intake portal indicating limited evidence of them being present. Adopting a conservative approach is supported given the large open areas with potential to cause erosion and impact on surrounding water quality. In addition, reference to using the IECA 2008 documents in designing and operating the erosion and sediment control mitigation measures is supported.

The EPA Water Specialist was satisfied that the proposed management measures, monitoring program and management responses contained in the EER are appropriate and will allow the potential risks to water quality in LKW and the River Derwent to be effectively managed to help reduce the likelihood of the proposed works causing environmental harm.

Furthermore, the proposed performance criteria specified in Appendix A of the WQMP are considered appropriate and supported by the EPA Water Specialist. It is therefore considered appropriate to impose condition **M1** requiring that the activity be undertaken in accordance with the approved Water Quality Management Plan contained in the EER (Appendix I).

The WQMP notes that it is a dynamic document and subject to continual review, to support this, condition **M1** allows the person responsible to apply to the Director to vary or substitute the WQMP. Condition **G7** also allows the Director to require a plan to be amended if required.

To support the above conditions, condition **M2** sets out the minimum requirements for how samples and measurements are taken and processed for monitoring purposes.

Furthermore, condition **M3** requires that in the event any of the performance criteria set out in the WQMP are exceeded, the Director must be notified within 24 hours and a report provided to the Director within 30 days which should include details of the exceedance, the actions taken to control the exceedance and any measures put in place to prevent future exceedances.

The aims of the Erosion and Sediment Control Plan (ESCP) will be included in the Construction Environmental Management Plan (CEMP) and are supported. Condition **CN1** requires the CEMP to be submitted to the Director prior to the commencement of construction activities. The condition also states that construction must be undertaken in accordance with the objective and management measures contained within the Environmental Effects Report and that the proponent must act in accordance with the CEMP.

In addition to the specific monitoring conditions above, a standard suite of stormwater management conditions is considered appropriate to ensure that the proposed management measures are implemented and managed appropriately:

- Condition **E1** requires the proposed cut off drains to be constructed to prevent clean water from entering the works areas.
- Condition **E2** specifies that all reasonable measures must be implemented to ensure that solids entrained in stormwater traversing the work areas are retained on The Land.
- Condition **E3** states that polluted stormwater to be discharged from The Land must first be collected and treated to the extent necessary to prevent environmental harm or nuisance.
- Condition **E4** further supports this by setting the minimum requirements for the design and maintenance of the sediment ponds.

### 6.2.5 Conditions

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

**G7** Amendment of required plans and reports

**CN1** Construction and Environmental Management Plan

**E1** Perimeter drains or bunds

**E2** Retention of sediment

**E3** Stormwater

**E4** Design and maintenance of settling ponds

**M1** Water Quality Monitoring Plan

**M2** Samples and measurements for monitoring purposes

**M3** Exceedance of performance criteria

## 6.3 Issue 2: Biodiversity and natural values

### 6.3.1 Potential impacts

Clearing native vegetation can impact threatened flora and fauna, by destroying or removing individual species, or habitat, and can also impact on areas of geoscientific value (e.g., western Tasmanian blanket bogs). Similarly, wet works including underwater blasting / excavation and tunnelling have the potential to negatively impact water quality and thus aquatic habitat and species (e.g., loss of habitat, sedimentation, changes to hydraulic conditions) within LKW and the River Derwent. Further, the movement of vehicles and machinery associated with the proposed works have the potential to negatively impact threatened fauna species (e.g., roadkill).

The proposed works are located either on Hydro Tasmania owned and managed land or on Crown Land managed by Sustainable Timber Tasmania as Permanent Timber Production Zone Land.

According to the EER all works associated with this proposal occur in already cleared areas under a Forest Activity Permit, except for approximately 0.25 ha which will be cleared to install the explosives magazine south of the downstream tunnel portal. Forest Activity Permit (FAP) #2292 was issued by Sustainable Timber Tasmania on 17/11/2022 allowing clearance of approximately 34.7 ha of vegetation. Eight hectares were cleared under a Forest Practices Plan (FPP No. CGP0342) with the balance cleared under exemption (4(1)(ii) of the *Forest Practices Regulations 2017*).

The EER details that a desktop review of available databases and field surveys for terrestrial flora and fauna were undertaken between 2018 and 2022 (refer to EER Appendix C for the Natural Values Assessment). Nine native vegetation communities were identified, none were listed as threatened under the *Nature Conservation Act 2002* (NCA).

The EER noted that the proposed work areas are likely to be suitable foraging habitat for the threatened spotted-tailed quoll (*Dasyurus maculatus subsp. maculatus*) and Tasmanian devil (*Sarcophilus harrisii*). Potential suitable denning habitat for these species was identified on the rocky slope to the southeast of the intake. However, the natural values assessment did not identify any dens.

The EER also notes that there were several habitat trees recorded within the area assessed for the FAP which would be suitable for use by hollow nesting birds, arboreal mammals, and bats.

Two threatened flora species listed under the *Threatened Species Protection Act 1995* (TSPA) were recorded during the April 2022 flora surveys along Butlers Gorge Road, at and around the intersection with the switchyard track which accesses the LKW intake site. Both species were also recorded at the intersection with Butlers Gorge Road and the No. 2 Canal track which will be used for accessing the downstream portal works area. The two species are *Pomaderris elachophylla* (small-leaf dogwood) which is listed as vulnerable and *Westringia angustifolia* (narrowleaf westringia) which is listed as rare.

According to the EER, the natural values assessment did not identify any raptor nests within 1 km of the proposed work areas. The closest known nest (#3071) is located just over 1 km north of the intake and downstream portal areas, which are not visible from the nest. The EER goes on to state that there is potential for wedge-tailed eagle (*Aquila audax subsp. fleayi*) nesting habitat in the Tasmanian Wilderness World Heritage Area within 1 km and would have line of site to the proposed work areas.

The EER states that no threatened aquatic species have been recorded from LKW and it is not expected that any would occur based on known distributions (refer to EER Appendix D for the Aquatic Values Assessment).

The EER notes that there are geo-conservation values, being western Tasmania blanket bogs associated with buttongrass moorlands, identified on and adjacent to the downstream portal area. The EER states that a small area (1.7 ha) of lower quality buttongrass plains required clearing at the downstream portal.

### 6.3.2 Management measures proposed in EER

The EER states that to minimise the impact of the activity on native vegetation communities, the following measures will be implemented:

- Avoiding and minimising impacts on native vegetation where practicable (i.e., only clearing what is required for operational purposes).
- Implementing soil stabilisation and erosion control measures following completion of works to minimise the risk of ongoing erosion, sedimentation and weed establishment.
- Any areas of native vegetation cleared for temporary works that are not required for ongoing operational activities are rehabilitated to allow the native vegetation to re-establish.

The EER details that important flora and fauna exclusion areas will be marked out with tape before works commence, including:

- Identified threatened flora species;
- Threatened fauna habitats and habitat components; and
- Habitat trees that are to be retained.

According to the EER, large eucalypt habitat trees that are likely to have hollows and may provide shelter or nesting habitat for hollow dependant fauna, including the Tasmanian masked owl, will be retained where practicable and safe to do so.

The EER notes that while no raptor nests were identified within 1 km of the proposed works, there is potential wedge-tailed eagle nesting habitat within 1 km of the proposed works that would be visible. The EER makes a commitment to undertake an annual nest survey in any potential wedge-tailed eagle nesting habitat located within 1 km of the proposed works for the duration of the project.

The EER states that staff vehicles may be required to travel from Tarraleah to the site during the night-time period, which presents an increased risk of roadkill occurring. The EER makes several commitments in relation to reducing this risk, including:

- Speed limits of 40 km/hr and 60 km/hr will be applied at the construction site and along Butlers Gorge Road respectively to vehicles travelling during the night-time period.
- Site inductions will include a roadkill awareness component, including a protocol for recording and reporting roadkill of threatened fauna species (e.g., Tasmanian devil, spotted-tailed quoll, and eastern quoll).
- Where practicable the speed of vehicles travelling during the night-time period will be reduced by 10 km/hr on public roads.
- Removing roadkill carcasses from the road when safe to do so.

The EER notes that if additional vegetation clearance on the shore of LKW is required, a natural values assessment will be undertaken in accordance with the requirements of the *Guidelines for Natural Values Surveys – Terrestrial Development Proposals* (Natural and Cultural Heritage Division, 2015).

The EER includes several management measures in relation to erosion and sediment control, which are also directly relevant to impacts on water quality and thus aquatic habitats and species within LKW and the River Derwent (see Sections 3.9, 3.10.1 and 3.10.2 of the EER). Further measures proposed specifically in relation to the protection of aquatic habitats and species include:

- Hydrocarbon spill management during wet works in LKW.
- Minimising the area of wet works as far as practicable.
- Construction traffic within the lake bed will be kept within a defined footprint.
- Prior to works in the lake bed, a coarse gravel road will be laid to limit exposure and disturbance of fine sediments by construction vehicles.
- A hydrocarbon boom will be maintained within the tunnelling sediment pond near machines associated with tunnelling works.

- The potential impacts of blasting on aquatic species can be reduced through using small / low explosive repelling charges, or non-explosive scare techniques, to discourage fish, platypus, and birds from the immediate area before production blasts.

### 6.3.3 Public and agency comment

During early discussions, the Conservation Assessments Section (CAS) supported the proposed management measures outlined in the EER, particularly those related to:

- minimising the risk of vehicle collisions with the Tasmanian devil and spotted-tailed quoll during night-time periods;
- undertaking annual monitoring of potential wedge-tailed eagle nesting habitat within a 1 km radius of the site; and
- protecting water quality and thus aquatic flora and fauna in the receiving waters.

### 6.3.4 Evaluation

Based on the management measures proposed, the fact that almost all works will occur in already cleared areas and advice received from CAS, it is considered that the proposed development will have minimal impact on terrestrial and aquatic natural values or geo-conservation values. The management measures proposed in the EER are broadly supported.

The Proponent has committed to implementing various exclusion areas to protect threatened species or important habitat for threatened species (e.g., habitat trees). It is considered appropriate to require the two threatened species identified near access roads to be protected from accidental disturbance by demarcating those areas prior to works occurring, as detailed in condition **FF1**.

Should additional clearing be required on the shore of LKW, outside of the current proposal footprint, the commitment to undertake an additional natural values assessment is supported.

The commitment to undertake raptor nest surveys annually for the duration of the project, in potential nesting habitat located within 1 km of the proposed work areas is also supported to ensure potential impacts on the wedge-tailed eagle are managed appropriately. As there are no existing nests located within 1 km of the proposed works, a condition to require the surveys is not considered necessary.

Given the potential for vehicle movements during the night-time period, the management measures proposed to remove carcasses and reduce night-time speeds are considered reasonable and appropriate to help reduce the risk of collision with threatened species.

While it appears unlikely that any significant aquatic values will be impacted, the specific management measures proposed and those relating to the management of water quality more generally are considered appropriate and are supported.

The EER states that a small area (1.7 ha) of western Tasmanian blanket bog will be cleared at the downstream portal, noting that this area constitutes a small loss of the buttongrass plains which are locally widespread in the surrounding landscape. According to the EER the proposed works will not impact on the adjacent 48 ha of buttongrass plains. This view is supported, and it is anticipated that the management measures proposed will be adequate to protect the surrounding buttongrass plains from negative impacts.

No other conditions relating to natural values are considered necessary.

### 6.3.5 Conditions

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

**FF1** Protection of *Pomaderris elachophylla* (small-leaf dogwood) and *Westringia angustifolia* (narrowleaf westringia).

## 6.4 Issue 3: Weed and disease management

### 6.4.1 Potential impacts

The transport of vehicles, machinery, and material to, from or within The Land has the potential to introduce or spread weeds and diseases, which can negatively affect the environment if not managed appropriately.

The EER notes that thirteen introduced plant species were identified during the surveys at the LKW intake and downstream portal areas. One species identified is a declared weed under the *Weed Management Act 1999*, being *Cirsium arvense* var. *arvense* (Californian thistle).

It is also noted in the EER that four other declared weed species have been identified along Butlers Gorge Road, including *Ulex europaeus* (gorse), *Cytisus scoparius* (English broom), *Erica lusitanica* (Spanish heath) and *Pilosella aurantiaca* subsp. *aurantiaca* (orange hawkweed).

### 6.4.2 Management measures proposed in EER

The EER states that vehicles and equipment used for the construction of the tunnel and intake, vegetation clearance, road works, tracks and ancillary services will be clean and free of mud and dirt that could harbour weeds and diseases before commencing work at the site.

In addition, the EER states that the following mitigation measures will be implemented:

- Weed management will primarily be done through development and implementation of a Weed Management Plan that will focus on control and containment of declared and environmental weeds.
- Weed and disease management will focus on hygiene management for vehicles, machinery, equipment, and any construction materials to prevent the introduction of declared weed species to the site.
- Hygiene protocols for vehicles and heavy machinery entering and leaving the site are to follow the *Keeping it Clean: A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens* (field hygiene manual) and *Tasmanian Washdown Guidelines for Weed and Disease Control: Machinery, Vehicles and Equipment*.
- A field washdown site for vehicles and machinery leaving the site and travelling between areas of known weed infestations has been established at the site.
- Monitoring of weed management measures will be undertaken on a weekly basis during construction works.
- Soil stabilisation and erosion control measures will be implemented following completion of works to help minimise the risk of weed establishment.
- Monitoring of weeds will continue as part of the ongoing weed management program following construction, when weed control measures will be implemented as required.

### 6.4.3 Public and agency comment

CAS supported the management measures proposed to reduce the risk of introducing and / or spreading of weeds and diseases.

### 6.4.4 Evaluation

Several introduced plant species have been identified on The Land, one of which is a declared weed species. A further four declared weeds species have been identified along Butlers Gorge Road, which is used to access The Land, which poses a risk of introducing additional declared weed species to The Land if appropriate precautions are not taken.

It is therefore considered appropriate to require the Construction Environmental Management Plan (condition **CN1**(3.9)) to include details of the proposed washdown protocols, in accordance with the *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania.*

Condition **OP1** is imposed to require that The Land be kept substantially free of weeds and condition **OP2** requires a Weed Management Plan to be developed, approved, and implemented which will help support compliance with condition **OP1**.

### 6.4.5 Conditions

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

**CN1** Construction Environmental Management Plan

**OP1** Weed management

**OP2** Weed Management Plan

## 6.5 Issue 4: Waste management

### 6.5.1 Potential impacts

The EER states that there will be a variety of wastes generated as part of the proposal, including:

- Rock and soil spoil which will be stockpiled at the intake and downstream portal locations.
- General waste and recyclables from workers and for site office requirements.
- Sewage and greywater from site office amenities.
- Hydrocarbon waste from machinery operation.
- Oil, grease, and other consumables used for machinery maintenance.
- Concrete washdown byproducts.

If not managed appropriately these wastes have the potential to cause environmental harm or nuisance to the surrounding environment.

Acid forming materials that may be encountered in rock and soil have the potential to impact soil, surface water and groundwater if encountered and not managed appropriately. The EER notes excavations and tunnelling will be into dolerite bedrock and that there has been no evidence of the material already excavated being acid forming. Mapping also indicates that the likelihood of acid sulfate soils being present in the area is low to very low.

Section 2.4.4 of the EER provides details of the permanent soil stockpiles that have and will be created for the project. According to Table 1, the volume of soil that will be stockpiled for stage three of the works, which this assessment relates to will be approximately 259,000 cubic metres. Roughly 47,000 cubic metres of this will be from tunnel spoil and stockpiled within the designated spoil stockpile area adjacent to the downstream portal (see Figure 3). The remaining spoil, approximately 212,000 cubic metres, will be from the approach channel and intake portal excavations and will be stockpiled either within the disused quarry or on the western and eastern side of the approach channel as shown in Figure 3.

According to the EER up to 40,000 cubic metres of the spoil will be crushed and screened in four campaigns spread over a six month period. The EER notes that the crushed and screened material will be stockpiled at the spoil storage locations mentioned above for future use in the following ways:

- as sub-base for trenched sections of a future above ground pipeline;
- as aggregate for concrete produced for construction of the intake structure and tunnel lining; and
- as road base for the establishment and maintenance of access tracks.

The EER also states that approximately 3,000 cubic metres of concrete will be produced by the concrete batch plants for construction of the intake structure and tunnel lining which will produce waste. There will be concrete washout stations to wash concrete trucks out, the wastewater will report to one of the 10 cubic metre bays and will be left to evaporate, at which point any residue left will be removed and placed within one of the spoil stockpiles. The EER states that no discharge from these wastewater bays will occur.

### 6.5.2 Management measures proposed in EER

The EER states the objectives of waste management will be to minimise generation of waste, manage any wastes produced in accordance with the waste management hierarchy and dispose of wastes in accordance with relevant legislation, standards, and guidelines.

According to the EER the waste management hierarchy of Avoid, Reduce, Reuse, Recycle and Dispose will determine the appropriate means to:

- Adopt procurement and construction practices that minimise the generation of waste.
- All waste materials to be appropriately classified and segregated for reuse, recycling, or disposal.

- Avoid waste through efficient construction.
- Reduce waste through construction methods.
- Excess concrete waste should be returned to the local batching plant for treatment and re-use or placed in a site receptacle designated for concrete waste to be disposed of offsite.
- Reuse cleared vegetation waste (e.g., stumps and tree heads) for rehabilitation of the proposed spoil stockpiles.
- Waste disposal and recycling bins will be present onsite prior to the commencement of construction activities.

The EER makes the following general commitments regarding waste management:

- Waste disposal and recycling bins will be present onsite prior to the commencement of construction activities.
- Waste containers shall be clearly labelled and fitted with lids to prevent windblown litter.
- Appropriately licenced contractors will be used to dispose of project wastes and recyclables.
- Periodic inspections and scheduled pumping of temporary toilet facilities must be undertaken to prevent overflow and discharge to the environment. All the plumbing and connection works will be completed by a qualified plumber according to relevant standards.
- Controlled wastes and any other waste streams will be managed in accordance with Hydro Tasmania's Waste Management Procedure.

The EER states that stockpile management will maximise the retention of sand, silt and clay within the spoil, material laydown and general work site (including potentially dispersive soils) by utilising:

- Diversion drainage up-slope from spoil and material laydown areas.
- Good quality sediment fences or mulch filter berms down-slope from spoil and material laydown areas and the concrete plant.

The EER also states that stockpiles shall remain in a free-draining location to ensure the soil does not become saturated and shall not be located where a preferential flow path / drainage depression is present within the material laydown area.

The EER notes that the permanent spoil stockpile will be progressively rehabilitated including revegetation where possible with appropriate drainage to prevent any ongoing erosion or sedimentation issues. Noting that revegetation may not be practical for parts of the spoil disposal related to the approach channel where it will only consist of larger rock material and will be inundated at full supply level in LKW.

According to the EER placement and use of the concrete batch plants and washout areas will take into consideration the following:

- Located within an existing disturbed area that is easy to access and is signposted.
- Located away from preferential flow paths and watercourses.
- Consist of an impervious bund with a capacity that prevents any over topping or spillage.
- Wash bays will not be used for collection of excess concrete. Small amounts of excess concrete should be scraped off where possible and disposed of in a designated hard waste location for hardened concrete and masonry.
- Use of high pressure, low volume hoses for washdown to reduce water use where possible.

The EER states that the contents of the amenities (sewage and greywater) will be removed and disposed of by a suitably licensed operator at an approved location as required.

### 6.5.3 Public and agency comment

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

### 6.5.4 Evaluation

The measures proposed in the EER to manage general wastes, spoil stockpiles, concrete washout bays and sewage / greywater are generally supported. The requirement for a Construction Environmental Management Plan in condition **CN1** will cover the main issues associated with waste management during the construction works and formalise the commitments made in the EER. No specific waste management conditions are considered necessary.

Removal of waste for offsite disposal at a suitably licenced facility is supported. The proponent is made aware of the requirements for transport of any controlled wastes from the site (**LO5**) and the waste management hierarchy (**O11**).

### 6.5.5 Conditions

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

**CN1** Construction Environmental Management Plan

The proponent is made aware of the following:

**LO5** Controlled waste transport

**O11** Waste management hierarchy

## 6.6 Issue 5: Dangerous goods and environmentally hazardous materials

### 6.6.1 Potential impacts

Inappropriate storage and handling of dangerous goods and environmentally hazardous materials has the potential to result in contamination of soil, surface water and groundwater.

Several dangerous goods and environmentally hazardous materials will be used and stored within the work areas of this proposal, including:

- Diesel, oil, and lubricants used for operation and maintenance of vehicles and machinery;
- Grouting chemicals for sealing;
- Concrete for lining and hardening of surfaces, including shotcrete;
- Explosives containing ammonium nitrate;
- Small quantities of solvents, adhesives, sealants, and aerosols, including grease cartridges for machinery;
- Aqueous film forming foams for fire suppression protection systems; and
- An aluminium based coagulant / flocculant used as a chemical dosing agent for settling sediment within the sediment ponds.

### 6.6.2 Management measures proposed in EER

According to the EER any hazardous materials stored or transported will be done so in accordance with the relevant Safety Data Sheet and the applicable legislation, regulations, or Australian Standards.

The EER also states that contractors must not refuel vehicles or machinery within 40 m of a watercourse or the full supply level of LKW (SL 719.94 mAHD) or on steep slopes. Furthermore, the EER states that all tanks will be bunded or double skinned.

Section 3.5.3 provides detailed lists of the management measures that will be applied for bunded areas; for storage, spills, disposal, and management; and for the management of explosives.

Section 3.10.8 also specifies that any environmentally hazardous substances brought onto the site will be checked to ensure they have appropriate Safety Data Sheets, and that continual monitoring will be undertaken to ensure that the environmentally hazardous substances are being stored, handled, and transported in accordance with the relevant requirements of legislation.

The EER also makes the following commitments:

- Heavy machinery onsite would be available to push up or contain large scale spills by creating bunds or drains as necessary.
- Each heavy machine has an onboard spill kit for small spills during maintenance work or consumable refills.
- Oil and fuel spill kits, including hydrocarbon booms adequate for the quantity and type of materials will be kept onsite.
- Staff will be trained in the use of spill kits and associated equipment.
- Ensure any fuel or oil spills are contained immediately.
- Any soil contaminated with spilt materials will be removed off site and disposed of or treated at facilities capable of receiving such waste as soon as practicable to do so. Disposal methods will be determined by sampling contaminated material in accordance with EPA Information Bulletin 105: Classification and Management of Contaminated Soil for Disposal.
- Hydrocarbon bins will be available onsite.

### 6.6.3 Public and agency comment

No public comments were received in relation to dangerous goods and environmentally hazardous materials.

### 6.6.4 Evaluation

The management measures detailed in the EER are supported and considered appropriate to mitigate against the risk of environmental harm being caused by inappropriate storage or handling of dangerous goods and environmentally hazardous materials.

To support the commitments made, it is considered appropriate to impose the following conditions:

- Condition **H1** requires the appropriate storage and bunding of all environmentally hazardous materials.
- Condition **H2** sets the requirements for storage of smaller quantities (< 250 litres) of environmentally hazardous materials.
- Condition **H3** specifies that where mobile containment of environmentally hazardous materials is utilised for fuelling or servicing mobile or fixed plant or equipment, all reasonable measures must be implemented to prevent unauthorised discharge, emission, or deposition of pollutants to soil, groundwater, waterways or beyond the boundary of The Land.
- Condition **H4** requires that spill kits appropriate for the types and volumes of materials handled on The Land be kept and maintained in appropriate locations to assist with containment of any spills.

In addition, the Proponent is made aware of their legal obligations (**LO2**) for the storage and handling of dangerous goods, explosives, and dangerous substances. **OI2** also notifies the Proponent of their commitments under section 32 of EMPCA to notify the Director should there be a pollutant(s) released.

### 6.6.5 Conditions

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

**H1** Storage and handling of hazardous materials

**H2** Hazardous materials (<250 litres)

**H3** Handling of hazardous materials – mobile

**H4** Spill kits

The Proponent is also made aware of the following:

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

**OI2** Notification of incidents under section 32 of EMPCA

## 6.7 Issue 6: Noise emissions

### 6.7.1 Potential impacts

Noise emissions from the project have the potential to cause environmental nuisance to neighbouring properties and / or impacts on public health. Noise emission sources identified for the project include:

- Drill rig operation and associated blasting operations.
- Haulage of material to stockpiles and spoil.
- Crushing and screening of material.
- Use of ancillary equipment such as excavators, loaders, crushers, and truck movements.

The nearest sensitive receptors are located approximately 14 km to the north and east of The Land, with the nearest privately owned land parcel being approximately 10 km from The Land.

The EER states that underground works associated with construction of the tunnel, will be undertaken 24 hours a day, 7 days a week with drilling and blasting likely to occur twice each day. This work will be carried out by qualified contractors with blast plans to ensure:

- Drilling is carried out as specified by the blast contractor.
- Noise and vibration standards are met (both for drilling and blasting activities).
- Blasting activities are safe and meet all workplace health and safety requirements.
- Blasting is adequate for rock fragmentation for extraction by a loader and crushing.
- Proposed tunnelling methodology is to load, haul and stockpile tunnel spoil as it is blasted.
- Overall blast size and maximum instantaneous charge will be very small to reduce damage to the rock surrounding the tunnel.
- The blast effects will be limited due to the nature of underground blasting.

The EER notes that blasting on the surface at the approach channel, intake portal and the initial downstream portal surface areas will be irregular, but may occur daily for short periods (e.g., daily for two weeks then no blasting for a week). The EER also notes that except for underground works, the hours of operation for all other activities will be 0700 to 1900 hours Monday to Friday and 0700 to 1600 hours Saturday and Sunday, as required.

According to the EER, once completed the ongoing operation of the new intake will not alter the current noise emissions generated from the operation of the existing Tarraleah Power Scheme.

The EER also makes note of the fact that the adjacent forestry coupe (111 ha) is planned to be harvested by Sustainable Timber Tasmania during 2023/24, which will add to noise emissions in the area.

The EER states that the noise limits specified in the Quarry Code of Practice will not be exceeded given the large separation distance to any sensitive receptors.

### 6.7.2 Management measures proposed in EER

The EER lists the following practices that will be adopted to help mitigate any potential impacts from noise emissions:

- Project construction work will be undertaken within the hours set out in the EER / contract specifications.
- Plant and equipment will be well maintained in accordance with original equipment manufacturer recommendations, and modern equipment with lower noise emission standards will be preferentially used onsite.
- Sufficient stemming and appropriate delays between shot holes will be used.

- Where surface blasting times are not specified in EPN conditions (e.g., between 1000 hours and 1400 hours weekdays), a regular blasting time will be used.
- Blasting will be undertaken by a competent blasting contractor in accordance with a Blast Management Plan reviewed by a specialist consultant and endorsed by the Site Superintendent.
- Blasts will be designed in consideration of contract specifications and proximity to sensitive receptors and will aim to minimise risk of damage and nuisance due to blasting overpressure and ground vibration.
- Drilling of the tunnel will follow a pre-determined blast design plan, which includes relevant drilling prescriptions.
- The campground at LKW will be closed to avoid conflicts of use.

Furthermore, the EER also states that the potential impacts of rock blasting on aquatic species can be reduced through:

- Using small / low explosive repelling charges, or non-explosive scare techniques, to discourage fish, platypus, and birds from the immediate works prior to production blasts.
- Use of adequate lengths of angular stemming material in drill holes to reduce energy dispersal to the aquatic environment.
- Subdividing the explosives deployment using delays and using decking in drill holes where possible, to reduce total pressure.
- Use shaped charges for surficial charges to focus the blast energy, reducing energy released to the aquatic environment.

### 6.7.3 Public and agency comment

No public or agency comments were received in relation to noise emissions.

### 6.7.4 Evaluation

The conclusions of the desktop noise assessment undertaken, and the proposed management measures are generally supported.

Given the significant distance to sensitive receptors, it is not anticipated that environmental nuisance will be caused by noise emissions generated during the project. Additionally, this proposal only relates to construction works, which have a defined period for completion. Once the project is completed there will be no ongoing extraction or processing of materials and the noise emissions will revert to pre-existing conditions.

While blasting for the tunnel is proposed to be undertaken 24 hours a day 7 days a week, it is understood that relatively small charges will be used to fracture the rock as they need to preserve the integrity of the surround rock for tunnel stability. The onus is therefore on the Proponent to ensure that blasting is carried out appropriately and any effects on the surface are likely to be localised.

Surface blasting will only be undertaken during the proposed hours of operation and the Proponent has stated that a regular blasting time should be adhered to. In addition, to help prevent impacts on aquatic fauna the Proponent has included several measures to help scare aquatic fauna away before a full production blast and other methods to help reduce the extent of impact within the aquatic environment (e.g., reducing the extent of blast overpressure).

Given the above, the risk of noise nuisance is considered low. However, in view of the scale of the project and the intensive underground blasting it is considered appropriate to include condition **N1** requiring the Director to be notified within 24 hours of any noise complaint received. General condition **G6** is also

relevant which requires the proponent to maintain a complaints register. No other conditions relating to noise or blasting are considered necessary.

### 6.7.5 Conditions

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

**G6** Complaints register

**N1** Noise complaints

## 6.8 Issue 7: Air quality

### 6.8.1 Potential impacts

The project has the potential to cause dust emissions which may create an environmental nuisance or harm beyond the boundary of The Land if not managed appropriately. The project may generate dust emissions from:

- Drilling, blasting, and ripping of rock.
- Excavation of materials.
- Concrete batching and storage of aggregate.
- Constructing stockpiles.
- Crushing and vibratory screening of material.
- Vehicle and mobile machinery movements.
- Disturbed areas that have not yet been rehabilitated.

The project area is located on Hydro Tasmania owned and managed land and permanent timber production land managed by Sustainable Timber Tasmania which may be subject to clearing and burning during periods of timber harvesting.

The nearest sensitive receptors are located approximately 14 km to the north and east of The Land, with the nearest privately owned land parcel being approximately 10 km from The Land.

### 6.8.2 Management measures proposed in EER

According to the EER the below industry standard measures will be implemented to reduce the risk of dust being generated and causing environmental harm or nuisance:

- Dampening rock material before crushing and / or have sprayers on the output chute.
- Tunnel drilling activities will be conducted using a wet drilling method to maintain a respirable atmosphere within the tunnel and the tunnel will be mechanically ventilated.
- Watering internal roads as required during dry and windy conditions.
- Vehicle speeds will be reduced to 40 km/h close to the project site, including in between the intake portal, batching plants, and downstream portal.
- Vehicles travelling between the intake portal and downstream portal sites will be washed down as required for hygiene purposes, removing soil from vehicles which may otherwise be spread over roadways.
- Vegetation will be maintained along access roads as far as practicable.
- The remaining slash from cleared vegetation will be retained onsite for rehabilitation purposes avoiding the need to undertake a ‘planned burn’.
- Topsoil will be harvested and retained for rehabilitation of the site which will occur progressively over the life of the project.
- Slash obtained from cleared and grubbed areas will be used to help stabilise the soil surface and to limit wind action on exposed soils.
- Exposed surfaces and stockpiles will be rehabilitated progressively during each stage of the project.
- Construction sites will be closed to the public.
- A safety exclusion zone within LKW to prevent boats coming too close to the approach channel area.

### 6.8.3 Public and agency comment

No public or agency comments were received in relation to air quality.

### 6.8.4 Evaluation

While the areas disturbed for this project are significant, it is anticipated that the management measures proposed will assist in reducing dust emissions as far as practicable onsite and are broadly supported. Given the distances, it is considered unlikely there would be an impact on any sensitive receptor.

To support the management measures proposed condition **A1** is imposed which requires the Proponent to control and actively manage dust emissions produced by all activities undertaken on The Land to ensure dust emissions and environmental nuisance are prevented beyond the boundary of The Land.

Condition **G8**, which requires compliance with the Quarry Code of Practice, is also relevant as this specifies requirements for dust management.

### 6.8.5 Conditions

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

**A1** Control of dust emissions

**G8** Quarry Code of Practice

## 6.9 Issue 8: Rehabilitation

### 6.9.1 Potential impacts

Temporary or permanent cessation of the project has the potential to cause ongoing impacts to the environment if rehabilitation is not managed appropriately. Rehabilitation is necessary to ensure long term stability of the site, prevent erosion and sedimentation, reduce uncontrolled dust emissions, provide native flora and fauna habitat, and minimise potential for establishment of invasive flora species.

### 6.9.2 Management measures proposed in EER

The EER states that a rehabilitation plan addressing the following stages of rehabilitation will be prepared:

- Clearing and grubbing
- Topsoil harvesting and storage
- Subsoil preparation (prior to rehabilitation)
- Topsoil placement
- Vegetation reapplication
- Seed and fertiliser application
- Monitoring and auditing

The EER also states that rehabilitation of the site will be undertaken progressively as stockpile areas are completed and cleared areas are no longer needed, other than those required for operation and maintenance of the intake. The EER proposes to implement the following measures to ensure non-permanent construction related disturbances are rehabilitated and revegetated to stable, self sustaining, vegetated landforms:

- Progressive rehabilitation including stabilisation of the landform before revegetation.
- Ensuring topsoils are correctly stripped, stockpiled, and reinstated.
- Ensuring vegetation is correctly cleared, stockpiled, and reapplied.
- Ensuring all works and treatments are conducted at appropriate seasonal timing.

The EER goes on to state that successful rehabilitation will meet the following criteria:

- Appropriate handling and storage of vegetation, topsoils, and subsoils for revegetation.
- Establishment of a healthy, self sustaining native vegetative cover commensurate with pre-existing vegetation cover.
- Establishment of a stable landform, free from erosion.
- No introduction of new weeds or diseases and no population expansion of any existing weeds or diseases.

Further, the EER notes that following completion of the works, sediment control measures within LKW can be removed once the turbidity is below 4 NTU for more than one week within and outside the perimeter of the silt curtain.

According to the EER a site stabilisation plan will be prepared as a section of the CEMP to secure the long-term construction site. In addition, stripped topsoil stockpiles will be strategically redistributed to rehabilitate localised areas outside the area of future construction activities.

### 6.9.3 Public and agency comment

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

### 6.9.4 Evaluation

Condition **CN1** is relevant as it requires construction works to be undertaken in accordance with the objectives and management measures contained in the Environmental Effects Report, which are generally supported. The condition also requires the person responsible to act in accordance with the CEMP which must be submitted to the Director before commencing construction.

The CEMP is relevant here as it includes matters related to achieving successful rehabilitation of the Land after construction works have been completed.

This proposal relates only to construction works associated with the LKW Intake upgrade, it does not relate to any ongoing activities once construction has been completed. It is therefore appropriate to impose condition **CN2** requiring notification within 30 days of the completion of construction, and **CN3** requiring that following completion of construction works, rehabilitation of The Land must be undertaken. This includes stabilisation of any land surfaces that may be subject to erosion and removal or mitigation of all other environmental hazards or land contamination that may pose an ongoing risk of causing environmental harm. Nevertheless, it is noted that some areas will remain disturbed or modified, but managed by the proponent, due to operational needs for safe and efficient operation of the Tarraleah Power Scheme.

### 6.9.5 Conditions

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

**CN1** Construction Environmental Management Plan

**CN2** Notification of completion of construction

**CN3** Rehabilitation following completion of construction

# 7. Issues not assessed by the Board

Visual impact on the Franklin-Gordon Wild Rivers National Park / Tasmanian Wilderness World Heritage Area was raised during the assessment process but is not the responsibility of the Board under EMPCA, and may be more appropriately addressed by another regulatory agency.

## 7.1 Issue 1: Visual impact on the Franklin-Gordon Wild Rivers National Park / Tasmanian Wilderness World Heritage Area (The TWWHA)

### 7.1.1 Potential impacts

The proposal has the potential to negatively impact on the aesthetic values of the surrounding area, in particular from viewpoints within the Franklin-Gordon Wild Rivers National Park / Tasmanian Wilderness World Heritage Area (The TWWHA). The Tasmanian Parks and Wildlife Service noted that a Key Desired Outcome for the TWWHA is that the aesthetic qualities of the TWWHA are maintained or improved.

### 7.1.2 Management measures proposed in EER

The EER included a Visual Impact Assessment for the proposed works in Appendix G.

Section 3.8.1 of the EER states that in consideration of the Key Desired Outcome 5.8, being the aesthetic qualities of the TWWHA are to be maintained or improved, Hydro Tasmania is ensuring that the design of the facility is undertaken in a manner that ensures it blends into the location, to minimise its impact on surrounding aesthetic values.

The EER also notes that as most of the visual impact is of a temporary nature (i.e., during construction), consideration to the rehabilitation of the site as quickly and proactively as possible is considered a key mechanism to achieve the Key Desired Outcome.

An example of the design response noted in the EER is that Hydro Tasmania is seeking to reduce the visual impact of concrete walls and shotcrete treated embankments by using pigments to colour the concrete and reduce glare and colour contrast with surrounding natural materials.

According to the EER, rehabilitation works planned for the site will take place incrementally and as soon as practically possible, in and around other construction activities, which will assist in minimising the short term visual impacts of the intake works. Remedial actions being undertaken as part of the rehabilitation works include:

- Reshaping spoil heaps and earthen batters to minimise hard edges, mimicking the natural slope and landforms of the landscape context as much as practically possible, while maintaining stability.
- Respreading salvaged topsoil, stumps and other vegetative material cleared from the site, to create shadows and microclimates for natural recruitment of indigenous vegetation, to aid in visual softening and long-term reforestation.
- Establishing a range of indigenous vegetation through planting and seeding.

The EER states that these actions will ensure the visual impacts of the project will be mitigated to a high degree within four to five years after completion. In the longer term, once larger trees have re-established and any remaining exposed rock and clay have weathered, the new infrastructure will be barely distinguishable from vantages points within the TWWHA.

### 7.1.3 Public and agency comment

During early discussions with the Tasmanian Parks and Wildlife Service (PWS) visual impacts on the TWWHA was raised as a potential concern. PWS supported the proposed management measures outlined

in a draft version of the EER to assist in making the facility less visible in the landscape. However, the PWS had suggested that the potential for cumulative visual impact of the proposal, combined with planned harvesting of the adjacent forestry coupe by Sustainable Timber Tasmania also be addressed in the EER.

### 7.1.4 Conclusion

The Visual Impact Assessment concluded that, while the proposed works will likely be visible from some locations within the TWWHA and other locations, the impact on aesthetic values is limited due to various factors including distance, screening, and low visitation numbers to the more remote locations i.e., the King William Range and Mount Rufus walking tracks.

It is noted that Hydro Tasmania has included commitments to try to reduce the potential for negative impacts on aesthetic values within the TWWHA and surrounding areas in the short and long term.

It is noted that the EER has not addressed the potential for cumulative visual impacts from the proposal and planned harvesting of the adjacent forestry coupe, however, the operations undertaken by Sustainable Timber Tasmania are outside the control of Hydro Tasmania.

It is also noted that assessment of visual impact is not within the Board's area of responsibility and that the PWS may engage further with Hydro Tasmania regarding any outstanding concerns it has in relation to management of visual impacts on the TWWHA.

# 8. Report Conclusions

This assessment has been based on the information provided by the proponent, Hydro-Electric Corporation in the case for assessment (the EER).

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

It is concluded that:

1. the RMPS and EMPCS objectives have been duly and properly pursued in the assessment of the proposal;
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 Environment Protection Notice appended to this report is issued and served and its requirements are duly complied with.

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

Helen Mulligan

**A/EXECUTIVE DIRECTOR, ENVIRONMENTAL ASSESSMENT**
**Acting under delegation from the Board of the Environment Protection Authority**

Date: 10 January 2024

# 9. References

Hydro-Electric Corporation (2023) *Lake King William Intake Upgrade Works – Environmental Effects Report* (dated September 2023); Hobart, Tasmania (The EER).

Hydro-Electric Corporation (2023) *BotN Tarraleah Development, Lake King William intake upgrade water quality monitoring plan* (dated 14 September 2023); Hobart, Tasmania (The WQMP).

# 10. Appendices

Appendix 1 Table of proponent management measures

Appendix 2 Environment Protection Notice No. 11376/1

# Appendix 1: Table of proponent management measures

**Table 1: Proponent management measures (Section 4.0 of EER)**

| Number | Action | Timing |
|---|---|---|
| 1 | Tunnel drilling activities will be conducted using a wet drilling method to maintain a respirable atmosphere within the tunnel.<br>The tunnel will be mechanically ventilated. | Duration of works |
| 2 | Dampen rock material prior to crushing and/or have sprayers on the output chute to minimise dust emissions. | Duration of works |
| 3 | Watering of internal roads as required if excessive dust is generated during dry and windy conditions. Water will be available to suppress dust when required. | Duration of works |
| 4 | Vehicle speeds will be reduced to 40 km/h close to the project site, including in between the LKW intake, batching plant, and tunnel downstream portal. | Duration of works |
| 5 | Earth moving equipment will be cleaned prior to leaving site to prevent the tracking of soil on nearby roads. | Duration of works |
| 6 | Vegetation will be maintained along access roads as far as practicable. | Duration of works |
| 7 | Rehabilitation and site stabilisation will occur incrementally over the life of the project. Utilisation of slash obtained from cleared and grubbed areas to stabilise exposed soil surfaces and to limit wind action on dust generation at the soil surface. | Duration of works |
| 8 | The construction sites will be closed to the public. | Prior to commencement of and during works |
| 9 | A sediment pond has been designed and built adjacent to LKW to capture sediment-laden groundwater pumped from the intake cut. | Before commencing construction of the intake cut |
| 10 | Design and install a sediment pond downstream from the portal and tunnel work to capture sediment and manage water quality and chemical contaminants. The design will include an adequate freeboard to isolate chemical and hydrocarbon spills if required. | Before commencing construction of the intake cut |
| 11 | Installing appropriate erosion and sediment controls to manage sources of sediment. | Before commencing construction of the intake cut |
| 12 | Install a floating silt curtain in LKW that is a minimum 1.5 m deep from the lake's water surface to reduce the area of a sediment plume, particularly during wet work associated with the approach channel. | Duration of works |
| 13 | Cease pumping into LKW sediment pond on windy days. | Duration of works |

| Number | Action | Timing |
|---|---|---|
| 14 | Reduce the impact of the wet works on LKW by targeting water level of at least 704 m AHD that will:<br>o reduce the quantity of excavated material that needs to be removed during wet works<br>o reduce the duration of the wet works | Duration of works |
| 15 | A management action response in the event of a fire or hydrocarbon/chemical contaminant spill during tunnelling works that includes the following:<br>o isolating groundwater flow from the natural environment by<br>o turning off pumps and/or<br>o allowing adequate freeboard in the sediment pond to capture the contaminant<br>o close the sediment pond outflow<br>o test the sediment pond for the level/concentration of the contaminant<br>o dispose of contaminant according to the legislative requirement. | Duration of works |
| 16 | Managing and adjusting erosion and sediment controls to ensure effectiveness against the prescribed performance criteria. | Duration of works |
| 17 | Project construction work to be undertaken within the hours set out in the contract specification. | Duration of works |
| 18 | Plant and equipment shall be well maintained in accordance with original equipment manufacturer recommendations. | Duration of works |
| 19 | Close LKW campground and avoid conflicts of use. | Duration of works |
| 20 | Machinery will be well maintained and lubricated. Modern equipment, with their lower noise emission standards, will be preferentially utilised onsite. | Duration of works |
| 21 | Sufficient stemming and appropriate delays between shot holes will be used. | Duration of works |
| 22 | Where blasting times are not specified in the Permit (e.g., between 1000 hours and 1400 hours weekdays), a regular blasting time should be adhered to. | Duration of works |
| 23 | Blasting will be undertaken by a competent blasting contractor in accordance with a Blast Management Plan reviewed by a specialist consultant and endorsed by the Superintendent. | Duration of works |
| 24 | Blasts will be designed in consideration of contract specifications and proximity to sensitive receptors and will aim to minimise risk of damage and nuisance due to blasting overpressure and ground vibration. | Duration of works |

| Number | Action | Timing |
|---|---|---|
| 25 | Drilling of the tunnel will follow a pre-determined blast design plan, which includes relevant drilling prescriptions. | Duration of works |
| 26 | The surveys and assessments will be undertaken using methods that are consistent with those described in the *Guidelines for Natural Values Surveys - Terrestrial Development Proposals* (Natural and Cultural Heritage Division, 2015) if works are likely to result in clearing of vegetation on the shoreline of LKW, outside the proposed works footprint. | Prior to vegetation clearance as part of site preparation works |
| 27 | Important flora and fauna exclusion areas will be marked out with tape prior to works commencing including:<br>o threatened flora species<br>o threatened fauna habitats and habitat components<br>o habitat trees to be retained<br>o the Tarraleah Upgrade project avoids and minimises impacts on native vegetation where practicable. Habitat trees are retained where practicable and safe to do so. | Prior to vegetation clearance as part of site preparation works |
| 28 | It is recommended mitigation measures to reduce the risk of roadkill during these times will include speed limits (e.g., the construction site speed limit is 40 km per hour and a 60 km per hour speed limit along Butlers Gorge Road during twilight and night-time periods). | Duration of works |
| 29 | It is recommended that the site induction includes a roadkill awareness component including a protocol for recording and reporting roadkill of threatened fauna species namely Tasmanian devil, spotted-tailed quoll, and eastern quoll. | Duration of works |
| 30 | Reduce speed limit by 10 km/h on public roads during twilight and night-time periods (from one hour before dusk to one hour after dawn), where practicable. | Duration of works |
| 31 | Remove roadkill carcasses from road where safe to do so. | Duration of works |
| 32 | Use small/low explosive repelling charges, or non-explosive scare techniques, to discourage fish, platypus, and birds from the immediate works prior to production blasts. | Duration of works |
| 33 | Hygiene protocols for vehicles and heavy machinery entering and leaving the upgrade works site are to follow the Keeping it Clean: A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens (field hygiene manual). | Duration of works |
| 34 | Set up a field washdown site for vehicles and machinery leaving the site and travelling between areas | Duration of works |

| Number | Action | Timing |
|---|---|---|
| | if know weed infestations. Select a suitable washdown site following the field hygiene manual. | |
| 35 | Clean machinery to be effectively free from soil and vegetation prior to travel to the worksite. Prior to leaving the worksite the machinery will be cleaned as much as practicable to do so. | Duration of works |
| 36 | Any hazardous chemicals are handled, stored, and transported in accordance with any relevant Safety Data Sheet and applicable legislation, regulations, or Australian Standard. | Duration of works |
| 37 | Safety data sheets must be available and kept with each chemical. | Duration of works |
| 38 | Tanks are bunded or double skinned to prevent against major tank capacity spills. | Duration of works |
| 39 | The contractor must not refuel vehicles or machinery:<br>o within 40 m of the full supply level (SL 719.94) of LKW<br>o within 40 m of a watercourse<br>o on steep slopes | Duration of works |
| 40 | Design the refuelling area to prevent drips coming into contact with any unprotected ground surface. | Duration of works |
| 41 | Heavy machinery onsite would be available to push up or contain large scale spills by creating bund or drains as necessary. | Duration of works |
| 42 | Each heavy machine has an onboard spill kit for small spills during maintenance work or consumable refills. | Duration of works |
| 43 | Oil and fuel spill kits, including hydrocarbon booms adequate for the quantity and type of materials will be kept onsite. | Duration of works |
| 44 | Staff must be trained in the use of spill kits and associated equipment. | Duration of works |
| 45 | Ensure any fuel or oil spills contained immediately. | Duration of works |
| 46 | Any soil contaminated with spilt materials will be removed off site and disposed or treated at facilities capable of receiving such waste as soon as practicable to do so. Disposal methods will be determined by sampling contaminated material in accordance with the EPA Information Bulletin 105: Classification and Management of Contaminated Soil for Disposal. | Duration of works |
| 47 | Hydrocarbon bins will be available onsite. | Duration of works |
| 48 | Fibrecrete batch plant on site, of which materials and admixtures will be used and stored per manufacturers' guidelines. | Duration of works |
| 49 | Washdown bays for concrete slurry are created onsite in suitable locations. | Duration of works |

| Number | Action | Timing |
|---|---|---|
| 50 | The waste management hierarchy of Avoid, Reduce, Reuse, Recycle and Dispose will determine the appropriate means to:<br>o avoid waste through efficient construction<br>o reduce waste through construction methods<br>o reuse cleared vegetation waste (e.g., stumps and tree heads) for rehabilitation of the proposed spoil stockpiles. | Duration of works |
| 51 | Waste disposal and recycling bins will be present onsite prior to the commencement of construction activities. | Duration of works |
| 52 | Waste containers shall be clearly labelled and fitted with lids to prevent windblown litter. | Duration of works |
| 53 | Appropriately licenced contractors to be used to dispose of project wastes and recyclables. | Duration of works |
| 54 | Periodic inspections and scheduled pumping of temporary toilet facilities must be undertaken to prevent overflow and discharge to the environment. All the plumbing and connection works will be completed by qualified plumber according to relevant standards. | Duration of works |
| 55 | Manage controlled waste in accordance with Hydro Tasmania's Waste Management Procedure. | Duration of works |
| 56 | Manage other waste streams in accordance with Hydro Tasmania's Waste Management Procedure. | Duration of works |
| 57 | Prepare a rehabilitation plan addressing the following stages of<br>rehabilitation:<br>o clearing and grubbing<br>o topsoil harvesting and storage<br>o subsoil preparation (prior to rehabilitation)<br>o topsoil placement<br>o vegetation reapplication<br>o seed and fertiliser application<br>o monitoring and auditing. | Prior to commencement of works |

## Appendix 2: Environment Protection Notice No. 11376/1

# ENVIRONMENT PROTECTION NOTICE No. 11376/1

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

Issued to: **HYDRO-ELECTRIC CORPORATION**
**ACN 072 377 158**
**LEVEL 10, 4 ELIZABETH STREET**
**HOBART TAS 7000**

Environmentally Relevant Activity: **The Lake King William intake upgrade works, including the operation of a materials handling facility (ACTIVITY TYPE: Crushing, grinding, milling or separating into different sizes (rocks, ores or minerals))**
**LAKE KING WILLIAM INTAKE UPGRADE WORKS, OFF BUTLERS GORGE ROAD**
**BRONTE PARK TAS 7140**

## GROUNDS

I, Helen Mulligan , A/Executive Director, Environment Protection Authority , being satisfied in accordance with section 44(1A) of the *Environmental Management and Pollution Control Act 1994* (EMPCA) that in relation to the above-mentioned environmentally relevant activity that a Section 27 assessment has been conducted, hereby issue this environment protection notice to the above-mentioned person as the person responsible for the activity.

## PARTICULARS

The particulars of the grounds upon which this notice is issued are:

**1** The above activity, being an environmentally relevant activity, which does not require a land use permit, was required to be referred to the EPA under Section 27 of the EMPCA for environmental impact assessment. Having completed its assessment, the Board of the EPA has caused the Director to issue this environment protection notice containing conditions and restrictions which the Board requires to apply to the activity.

## DEFINITIONS

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

## REQUIREMENTS

The person responsible for the activity must comply with the conditions as set out in Schedule 2 of this Notice.

## INFORMATION

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

## PENALTIES

If a person bound by an environment protection notice contravenes a requirement of the notice, that person is guilty of an offence and is liable on summary conviction to a penalty not exceeding 1000 penalty units in the case of a body corporate or 500 penalty units in any other case (at the time of issuance of this Notice one penalty unit is equal to $195.00).

## NOTICE TAKES EFFECT

**This notice takes effect on the date on which it is served upon you.**

## APPEAL RIGHTS

You may appeal to the Appeal Tribunal against this notice, or against any requirement contained in this notice, within fourteen days from the date on which the notice is served. The Appeal Tribunal contact details are:

Registry
Tasmanian Civil & Administrative Tribunal
GPO Box 1311
Hobart TAS 7001

Phone: 1800 657 500
Email: resourceplanning@tascat.tas.gov.au

Signed: _____

A/Executive Director, Environment Protection Authority

Date: 10 January 2024

## Table Of Contents

***Attachments***

## Schedule 1: Definitions

**Aboriginal Relic** has the meaning described in section 2(3) of the *Aboriginal Heritage Act 1975*.

**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.

**Best Practice Environmental Management** or '**BPEM**' has the meaning described in Section 4 of EMPCA.

**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.

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

**Environmental Effects Report** means the document entitled *Lake King William Intake Upgrade Works - Environmental Effects Report*, dated September 2023 and prepared by the Hydro-Electric Corporation.

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

**Environmental Nuisance** and **Pollutant** each have the meanings ascribed to them 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.

**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.

**Quarry Code of Practice** means the document of this title published by the Environment Protection Authority in May 2017, 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.

**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 3384222; and

**2** as further delineated at Attachment 1.

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

**Water Quality Monitoring Plan** means the document entitled *BotN Tarraleah Development, Lake King William intake upgrade water quality monitoring plan*, dated 14 September 2023 and prepared by the Hydro-Electric Corporation.

**Weed** means a plant species that has, or is likely to have, an adverse impact on the environment because of the introduction, spread or increase in population size of the species in an area; and includes a declared weed as defined in the *Biosecurity Act 2019* and subordinate regulations.

**Weed And Disease Guidelines** means the document titled *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania*, by the Department of Primary Industries, Parks, Water and Environment, dated March 2015, and any amendment to or substitution of this document.

## Schedule 2: Conditions

### General

**G1 Regulatory limit**

**1** The activity must not exceed the following limit:

**1.1** 40,000 cubic metres per year of rocks, ores or minerals processed.

**G2 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.

**G3 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.

**G4 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.

**G5 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.

**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 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.

**G8 Quarry Code of Practice**

Unless otherwise required by these conditions or required in writing by the Director, the activity (or activities) undertaken on The Land must comply with the Acceptable Standards provisions of the *Quarry Code of Practice.*

**Atmospheric**

**A1 Control of dust emissions**

Dust emissions from The Land must be controlled to the extent necessary to prevent environmental nuisance beyond the boundary of The Land.

**Construction**

**CN1 Construction Environmental Management Plan**

**1** Construction must be undertaken in accordance with the objectives and management measures contained within the Environmental Effects Report.

**2** 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.

**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** prevention of impacts upon surface water and waterways;

**3.2** erosion and sediment control;

**3.3** noise control;

**3.4** dust control;

**3.5** management of environmentally hazardous materials;

**3.6** cultural (Aboriginal and non-aboriginal) heritage considerations;

**3.7** flora and fauna management;

**3.8** weed, pest and disease management;

**3.9** machinery washdown protocols in accordance with the Weed and Disease Guidelines;

**3.10** 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; and

**3.11** acid sulphate soil management (if identified in pre-construction testing).

**4** The person responsible must act in accordance with the Construction EMP.

**CN2 Notification of completion of construction**

Within 30 days of construction being completed, the person responsible for the activity must notify the Director in writing of that event.

**CN3 Rehabilitation following completion of construction**

**1** Following the completion of construction, 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; and

**1.2** removal or mitigation of all environmental hazards or land contamination, that might pose an ongoing risk of causing environmental harm.

**Effluent Disposal**

**E1 Perimeter drains or bund**

Perimeter cut-off drains, or bunds, must be constructed at strategic locations on The Land to prevent surface run-off from entering the area used or disturbed in carrying out the activity. All reasonable measures must be implemented to ensure that sediment transported along these drains, or bunds, remains on The Land. Such measures may include provision of strategically located sediment fences, appropriately sized and maintained sediment settling ponds, vegetated swales, detention basins and other measures designed and operated in accordance with industry best practice document *International Erosion Control Association (IECA), Best Practice Erosion and Sediment Control documents* (2008 or later version).

**E2 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.

**E3 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.

### E4 Design and maintenance of settling ponds

**1** Sediment settling ponds must be designed and maintained in accordance with the following requirements:

**1.1** ponds must be designed to successfully mitigate reasonably foreseeable sediment loss which would result from a 1 in 20 year storm event, or be designed in accordance with industry best practice document *International Erosion Control Association (IECA), Best Practice Erosion and Sediment Control documents* (2008 or later version).

**1.2** discharge from ponds must occur via a stable spillway that is not subject to erosion;

**1.3** all pond walls must be stable and treated with topsoil and vegetated or otherwise treated in such a manner as to prevent erosion; and

**1.4** sediment settling ponds must be periodically cleaned out to ensure that the pond design capacity is maintained. Sediment removed during this cleaning must be securely deposited such that sediment will not be transported off The Land by surface run-off.

## Flora And Fauna

### FF1 Protection of Pomaderris elachophylla (small-leaf dogwood) and Westringia angustifolia (narrowleaf westringia)

Unless otherwise approved in writing by the Director, the activity must be conducted in a manner that does not cause degradation or disturbance (including sedimentation) to the areas identified in the Environmental Effects Report as being inhabited by the species *Pomaderris elachophylla* (small-leaf dogwood) and *Westringia angustifolia* (narrowleaf westringia).

## 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 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.

### H4 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.

## Monitoring

### M1 Water Quality Monitoring Plan

**1** Unless otherwise specified in these conditions, the activity must be undertaken in accordance with the Water Quality Monitoring Plan.

**2** The person responsible may apply to the Director to vary or substitute the Water Quality 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.

**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 Exceedance of performance criteria**

**1** In the event that any of the performance criteria specified in the Water Quality Monitoring Plan are exceeded:

**1.1** The Director must be notified within 24 hours of the person responsible becoming aware of the exceedance.

**1.1.1** The notification must include details of the performance criteria that have been exceeded, the amount of the exceedance, the nature of the exceedance, and any immediate actions taken in response to the exceedance; known at the time of the notification.

**1.2** A report must be forwarded to the Director within 30 days of becoming aware of the exceedance.

**2** Unless otherwise approved in writing by the Director, the proposed actions to limit the likelihood of a recurrence must be implemented once approved by the Director. These actions may be amended from time to time with the written approval of the Director.

## Noise Control

**N1 Noise complaints**

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

## Operations

**OP1 Weed management**

The Land must be kept substantially free of weeds to minimise the risk of weeds being spread within or beyond the boundary of the The Land.

**OP2 Weed Management Plan**

**1** Within two (2) months of the date on which these conditions take effect, or by a date otherwise specified in writing by the Director, a Weed and Disease Management Plan must be submitted to the Director for approval. 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 to the Director's satisfaction.

**2** The plan must be consistent with the Weed and Disease Guidelines, or any subsequent revisions of that document.

**3** The person responsible must not implement the Weed Management Plan until the Director has approved the Plan. Once approved the person responsible must act in accordance with the approved Plan.

**4** In the event that the Director, by notice in writing to the person responsible, either approves a minor variation to the approved plan or approves a new 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.

## 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 Aboriginal relics requirements**

**1** Aboriginal relics, objects, sites, places and human remains regardless of whether they are located on public or private land, are protected under the *Aboriginal Heritage Act 1975*.

**2** Unanticipated discoveries of Aboriginal heritage must be reported to Aboriginal Heritage Tasmania on **1300 487 045** as soon as possible.

**LO4 Change of responsibility**

If the person responsible for the activity ceases to be responsible for the activity, they must notify the Director in accordance with Section 45 of the EMPCA.

**LO5 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).

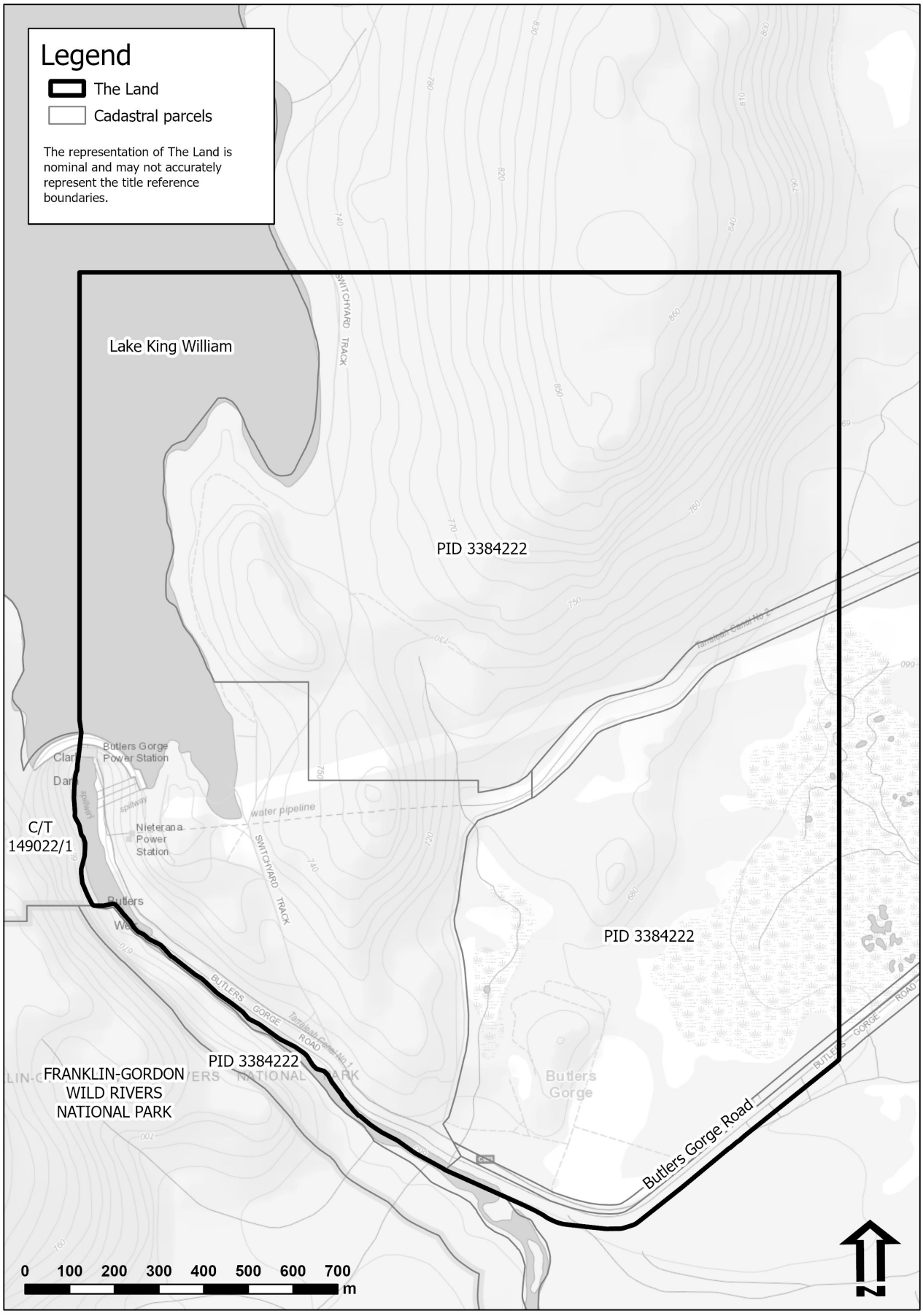
**OI3 Fees payable**

Under the provisions of the EMPCA and Regulations thereunder, the Director may require the person on whom this Notice is served to pay reasonable costs and expenses for the issuing of the Notice, making any amendments to the Notice and for ensuring compliance with the Notice.

**OI4 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: The Land




ENVIRONMENT PROTECTION AUTHORITY