

Environmental Effects Report Increase in Production 791 Calder Road Sand Washery



Table of Contents

1.	Introduction	3
1.1	Objectives	3
2.	Part A – Proponent Information	3
3.	Part B Project Description	4
3.1	Description of Project	4
3.2	Location.....	5
3.3	Timing	5
3.4	Processing Limit	8
3.5	Project Alternatives	8
4.	Site Details.....	9
5.	Part C – Potential Environmental Effects and Management	11
5.1	Flora and Fauna	11
5.2	Surface Water	12
5.3	Significant Areas	14
5.4	Dust Emissions	15
5.5	Liquid Effluent	15
5.6	Solid Waste	16
5.7	Noise Emissions	16
5.8	Traffic and Transport.....	17
5.9	Off-Site Impacts.....	17
5.10	Hazardous Substances and Chemicals.....	17
5.11	Site Contamination.....	18
5.12	Sustainability and Climate Change	18
5.13	Sites of High Public Interest.....	18
5.14	Rehabilitation and Decommissioning.....	18
5.15	Hazard and Risk Assessment.....	19
6.	Part D – Management Commitments.....	20
7.	Part E - Consultation	21
7.1	Future Consultation.....	21
8.	Part F – Development Application.....	22
8.1	Introduction.....	22
8.2	Site	22
8.3	Planning Scheme.....	22
8.4	Zone Purpose	23
8.5	Use Standards	25
8.6	Development Standards.....	25
8.7	Scheme Codes.....	26
9.	Conclusion	29

Figures

Figure 1: Regional Site Location

Figure 2: Local Site Location

Figure 3: 1M/2010 Vegetation Communities

Figure 4: Parking areas on the ML

Appendix

Appendix A: Certificate of Title

Appendix B: Dam Hazard Assessment Report.

1. Introduction

This Environmental Effects Report and Development Application has been developed by Rowell DJ (proponent) to seek approval from the Environment Protection Authority and Waratah Wynyard Council. The proponent is seeking approval to increase production to 20,000 m³ per annum (an increase from the approved 12,000 m³ per annum).

The proponent has been operating the same activity on the site for many years and has complied with local and State government regulations relating to their operations.

A Notice of Intent (NOI) for the Increase in Production was submitted to the Tasmanian Environment Protection Authority (EPA) on 30 April 2019. The EPA subsequently provided project specific guidelines and this Environmental Effects Report (EER) has been prepared in accordance with these guidelines.

The increase in production is necessary to meet known future demand for unique sand blends produced by the proponent to support large scale and high profile construction projects across Tasmania. The increase in production is specially targeting projects expected to commence construction in early 2020.

1.1 Objectives

This EER has been prepared in accordance with the Environmental Effects Guidelines – *Rowell DJ Increase in Material Processing, June 2019*.

The objectives of the EER are to provide the Board of the EPA and Waratah Wynyard Council (WWC) with information to consider the potential environmental effects of the project.

The EPA has classified the activity as a Level 2a, in accordance with the *Environmental Management and Pollution Control Act 1994 (EMPCA)* following consideration of the NOI. The activity classification as confirmed to the proponent in correspondence from the EPA on May 10 2019.

2. Part A – Proponent Information

The proponent is a Tasmanian based sand extraction and processing company, 100% family owned and operating on site since 1993. The proponent is well known in the Tasmanian construction industry for producing high quality sand products and unique blends for specialist applications e.g. dams, filters.

The proponent has been operating on site since the mid 1980s with sand extracted on site using 14-20t excavators and is transported to a central processing area in 25t articulated trucks for washing into various grades.

The raw sand is washed, using high pressure water and filtered through a sieve to produce a specific washed sand (graded sand). A number of by products are produced at this time, including waste sand, angular and rounded cobbles and aggregates for residential applications. These are also sold by the proponent, although the main economic product is the washed sand.

Graded sand is transported to the market across Tasmania. Once graded, the sand does not change chemistry, it remains inert and does not alter surface or ground water chemistry.

Washed sand is stockpiled into grades from fine sands to 50 mm marbles and 'waste sand'¹ is stored in two approved tailings dam.

¹ Waste sand is out of specification sand. The waste sand is inert.

Note that the proponent is continually seeking new markets for waste sand and while they are emerging, no firm market opportunities are currently available. Sand in the tailings dam is recoverable if new opportunities are presented.

The proponent details are as follows:

Proponent and Approvals
Proponent: DJ Rowell Administrative Address: 170 Tugrah Rd, Tugrah Responsible Person: David Rowell Site Address: Calder Road, Calder Contact Number: 0408 140 567 Email: rowells1@bigpond.com ABN: 16 078 004 841

3. Part B Project Description

3.1 Description of Project

The increase in production (IIP) is seeking to extract and process sand through increased extraction productivity within the existing Mining Lease 1M/2010 (site) and process sand from a Level 1 activity, operated by the proponent, located off Preolenna Road (these activities are currently authorised under existing permits).

The IIP is required to meet known future demand for washed sand to meet specific projects in the Tasmanian civil construction industry. The projects are commencing in late 2019.

The IIP will not require any changes in:

- Mining lease boundary
- Extraction equipment
- Processing infrastructure on site
- Access off Calder Road
- Permitted working hours
- Extraction or processing methodology
- Waste products produced
- New or additional tailings storage

The IIP will require:

- Additional employment on site (estimate 1 x FTE)
- Additional 14t excavator for extraction activities

There will be no new processing activities/methodologies undertaken on site that is not already approved under the existing EPN's. The IIP will utilise all existing infrastructure, personnel, machinery and processes.

There will be no new infrastructure required by this proposal. All existing buildings, utilities, access and management framework can accommodate the IIP.

A new excavator (14t) may be used to assist with extraction activities to complement the existing infrastructure and facilities on site:

- 1 x Truck and trailer delivery truck
- 2 x D6 dozers
- 2 x excavators
- 1 x sand washery
- 2 x tailings dams (capacity of 6ML each)
- 1 x bunded refuelling facility
- 2 x crew facilities (office, storage facility and undercover work area)
- 1 x 2 bay machinery storage shed
- Raw and washed sand stockpile area
- 2 x waste sand storage dams

There will be no change to the material processing. The extraction of raw sand from the approved Mining Lease and sand washery will operate as per existing approved operations. No extension to the Mining Lease is required to meet the IIP.

There may be a minor change to the layout of the washed sand stockpile area to accommodate additional blends and to improve the flow and function of this area. Any changes will occur within the approved mining lease at the existing stockpile area and no clearing of vegetation will be required.

The IIP will be achieved through increased productivity and extraction activity on site, transitioning employees from casual to full time. No change to the existing approved access off Calder Road is required.

3.2 Location

The mining and processing operations (site) is located off Calder Road on mining lease 1M/2010. The site is illustrated in Figures 1 and 2 and defined as:

- Address: off Calder Road, Calder
- Mining Lease: 1M/2010
- PID: 3104657
- Title reference: 161615/1 (Appendix A)
- Landowner: Forestry Tasmania, T/A Sustainable Timbers Tasmania.

3.3 Timing

The proponent is seeking approval to meet demand for late 2019/early 2020. Due to the minimal operational changes on site, production can be increased immediately using existing machinery, methodology and labour resources.

No new clearing is required, the existing pits become more productive to produce up to the requested 20,000m³ per year.

Figure 1: Regional Site Location

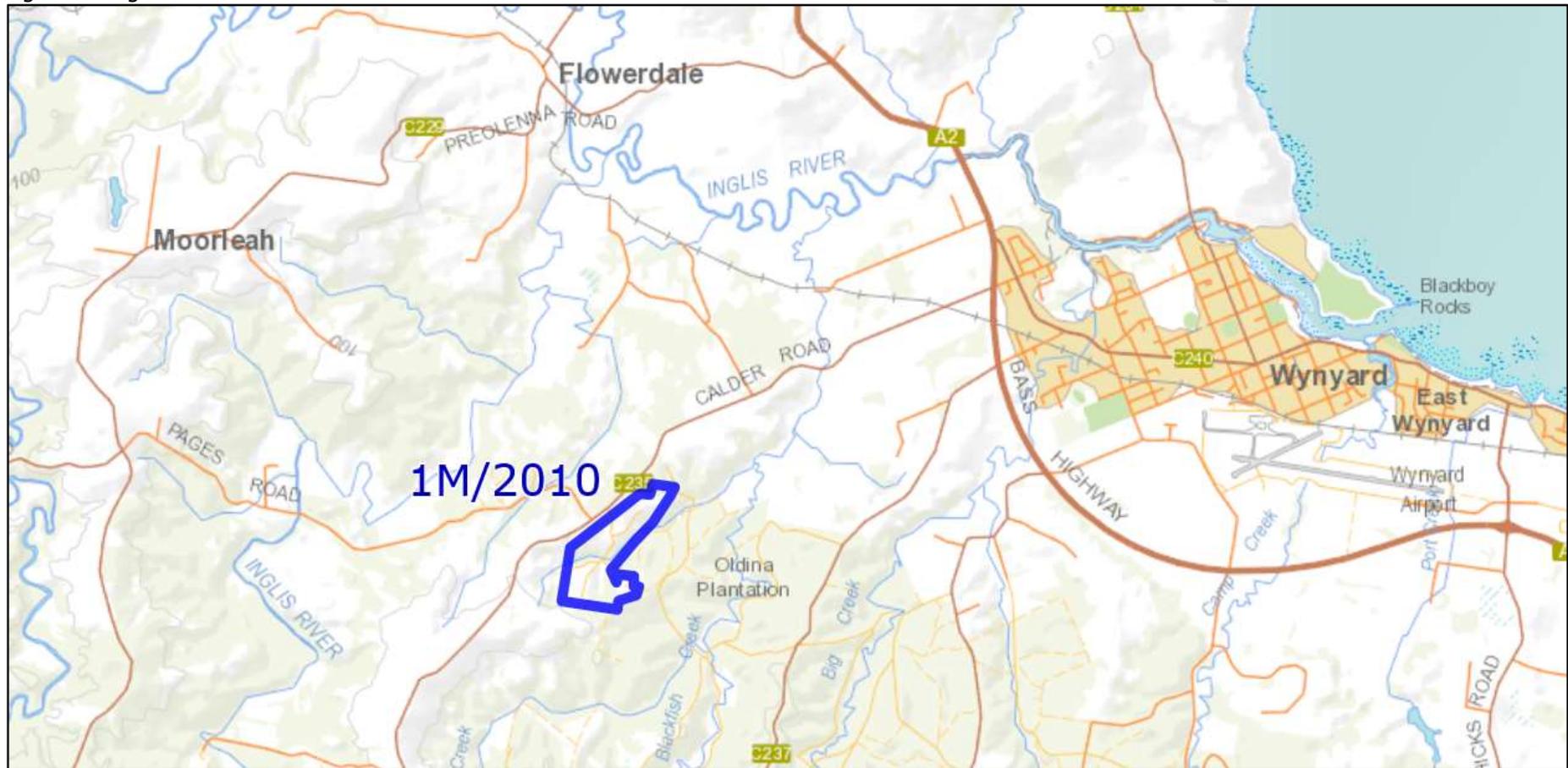


Figure 2: Local Site Location



3.4 Processing Limit

The proponent is seeking to increase production from 12,000m³ per year to 20,000m³² to meet known future demand for washed sand products.

The IIP will be undertaken in line with market orders and can be reached without the need to alter operations significantly, other than increasing extraction productivity through the addition of 1 x 14t excavator and additional inputs to the washery through continuous operations. Currently during the winter period production drops on site, however production can be maintained at higher levels to meet external project requirements.

The IIP will also be realised from processing sand on the site from a Level 1 activity, operated by the proponent, located off Preolenna Road (these activities are currently authorised under existing permits).

All other production elements on site will remain the same.

3.5 Project Alternatives

The site has been used for sand extraction and washery since the mid 1980s and is well established to support the future intended increase in production. The quality of the product on site and the site layout does not allow an alternative site to be used for operations.

If the proponent did not increase production, the business could not continue to grow and support the civil construction industry, and this would impact the viability of future projects and the future of operations on site.

² 20,000 m³ results in a production tonnage of 32,000 tonnes per annum (using 1.6 multiplier)

4. Site Details

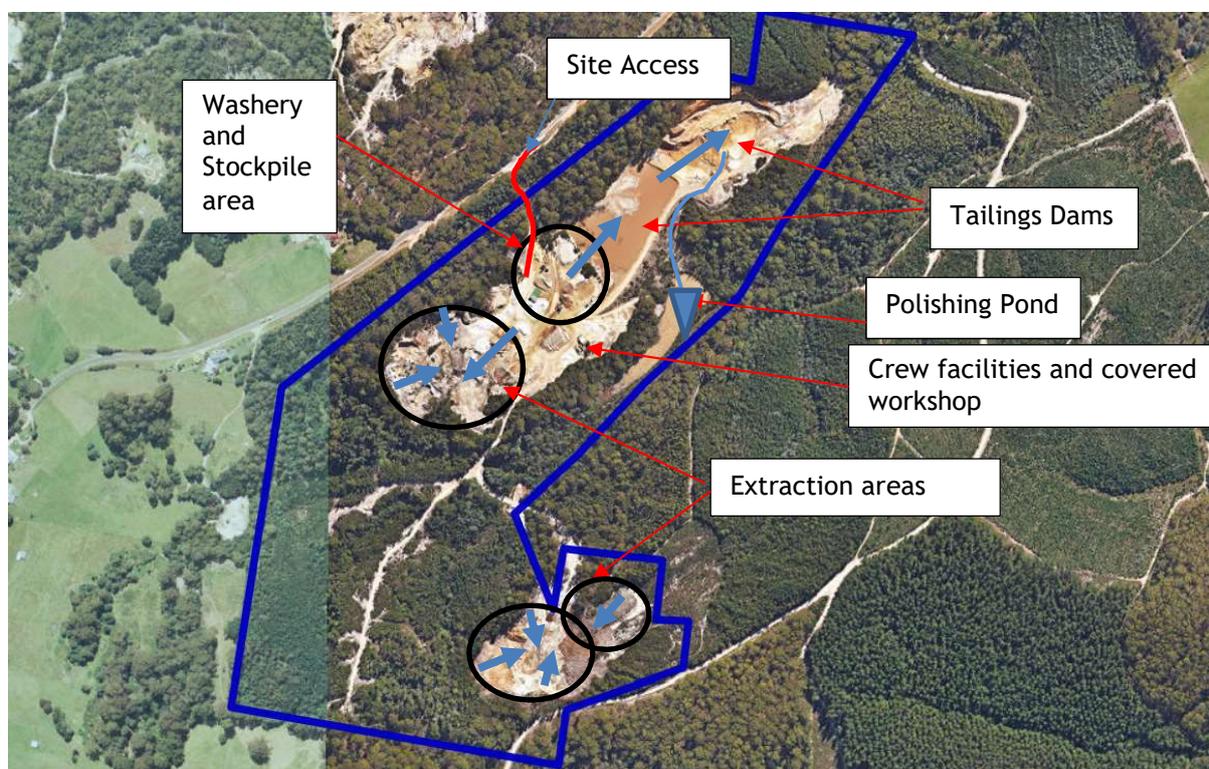
Current Condition

The site is an active sand mine, with cleared areas, tailings dams and extraction pits creating areas of disturbance, while rehabilitation of worked areas occurs in conjunction with extraction activities.

The site is located within a gully surrounded by plantation forestry area, managed by Sustainable Timbers Tasmania (STT). The local region is populated by other sand and hard rock quarries due to the local geology.

Site Layout

The site layout is provided below and illustrates the key features of the operations. Flow paths are indicated by the blue arrows and illustrate water from the washery reports to the tailings dams and due to the porous nature of the sand workings, water in the extraction area soaks into the workings – rather than generates a runoff.



Access

Heavy and light vehicle access is provided off Calder Road, via a deacceleration land on the eastern side of the road.

Calder Road at the site entrance is a signed 80 kmh speed limit and the road alignment provides adequate site distance in each direction.

No modifications to the site entrance are planned as part of the IIP, the existing arrangement is adequate for future operations.

Zoning

The site is zoned *Rural Resource* under the Waratah Wynyard Planning Scheme 2013. The closest residential zone is approximately 3.6 km (straight line distance) to the north east, near the populated town of Wynyard.

Existing Permits

The following permits existing on site and are current at the date of this EER:

Permit	Detail
Mining Lease	1M/2010
Existing EPN	PCE 9638/1 for the sand washery, 19000 tonnes per annum (tpa)
Tailings Dam EPN	PCE 9955

5. Part C – Potential Environmental Effects and Management

5.1 Flora and Fauna

5.1.1 Existing Conditions

The vegetation communities across the site is summarised below in Figure 3. The site has been highly disturbed by mining activities with extraction activities located in the FRG labelled area. The DOV labelled area is not part of sand extraction activities as it is on marginal land not suitable for sand extraction.

Figure 3: 1M/2010 Vegetation Communities (source www.TheLIST.tas.gov.au)



The site is likely to be a transient pathway for local species migrating around the mining lease, however the active working areas are unlikely to provide habitat due to historical sand extraction efforts and machinery movements. The Eucalyptus Ovata and Woodland (DOV) that will remain and not be disturbed by mining activities

The site does not support any known Heritage items or areas of suspected Heritage sensitivity.

The impacts on flora and fauna are expected to be negligible due to the historical disturbance and low values on site, with sand extraction focused in the areas labelled FUM and FRG.

All existing heavy vehicle access routes, storage and processing areas will continue to be used. They are significantly disturbed and no vegetation clearing is required to continue to use these areas if the IIP is approved.

The Eucalyptus Ovata and Woodland (DOV) is listed under Schedule 3A of the *Nature Conservation Act 2002* and will not be disturbed as future extraction pits will be located in the areas of FRG and FUM.

Pampas Grass is the only weed species thought to exist on site and will require ongoing management to control the local population. The key risk for the introduction and propagation of weeds is through

machinery and vehicle movements. Given all machinery that is used on site is stored and maintained on site, the potential for introduction of weeds is low.

There is potential that subcontractor trucks or specialised machinery that may be used on site could introduce weeds, or they could migrate as airborne seeds from neighbouring properties or forestry areas, therefore it is necessary to implement weed management practices consistent with State protocols.

5.1.2 Management Measures

The following management measures are suggested:

Commitment 1: No DOV will be disturbed during sand extraction.

Commitment 2: A weed management plan will be developed consistent with DPIPWE guidelines within 6 months of approval.

5.2 Surface Water

5.2.1 Existing Conditions

There are no natural water bodies on the site. Runoff generally soaks into the ground due to the porous nature of sand, rather than overland flow offsite into Beswicks Creek.

The current surface water arrangement is out of specification sand and wash water drains to the existing tailings dams and sand settles out of suspension. Once the water reaches the top of the outfall pipe, it is hard piped in PVC pipe to the polishing pond (the outfall pipe is a 90mm PVC elbow that is situated proud of the water level). The polishing ponds forms part of the sand washery operations and water is recycled from the polishing pond and reintroduced as sand wash water. Due to the nil chemical changes in water quality, recycling water is an ideal outcome to reduce water discharging offsite to Beswicks Creek and reduces ongoing demand for water by the proponent.

In extraction areas water soaks into the ground due to the porous nature of sand and does not generate a sheet flow across the extraction areas.

Beswicks Creek is located to the south/south east of the mining lease. This is a small ephemeral stream flowing to the southwest. No future operations will impact the alignment of Beswicks Creek.

To the north, Beswicks Creek branches off Blackfish Creek, which is a permanent creek flowing to the south. Beswicks Creek dissipates into the bush and farm paddocks 200 meters to the south of the site. The northern part of the creek flows in winter.

Blackfish Creek flows North to South 600 meters to the east and does not re-integrate with Beswicks Creek.

Beswicks Creek is not listed on the Conservation of Freshwater Ecosystems Database (CFEV - <https://wrt.tas.gov.au/cfev/login.jsp>). The CFEV database aims to ensure that priority freshwater values are appropriately considered in the development, management and conservation of the state's water resources.

Beswicks Creek is unlikely to support any recreational activities due to mature forestry plantations restricting access for boating activity, however, may support some fishing at local spots.

The site is located within the Inglis River Catchment (615 km²) with much of the catchment either forestry, pasture or cropping with concentrated patches of resource extraction, particularly around the site.

The Protected Environmental Values (PEVs) for the Inglis River are summarised in Environmental Management Goals for Tasmanian Surface Water, Catchments within the Circular Head and Waratah/Wynyard Municipal Area:

The PEVs are summarised as:

As a minimum, water quality management strategies should seek to provide water of a physical and chemical nature to support a modified, but healthy aquatic ecosystem from which edible fish may be harvested; that is acceptable for irrigation and stock watering purposes; and which will allow people to safely engage in primary contact activities such as swimming on Big Creek at Stanwyn Reserve and secondary contact recreation activities such as paddling or fishing in aesthetically pleasing waters.

The proponent must ensure the PEVs are maintained if any discharges from the site enters the local water bodies.

There are no known local uses or water takes from Beswicks Creek. The key risk to local water quality from operations is turbidity. However, the following strategies are used to limit potential impacts on local water quality and maintain compliance with the PEV's:

- There are a series of constructed cut off drains around the sand washery to direct surface water to the two approved tailings dams. Once water is in the dam, water is detained to allow the sand to settle from suspension
- At the extraction areas, the floor is shaped to contain water and encourage water to soak into the extraction areas due to the sandy nature of the site. Observations during rainfall indicates surface water soaks into the sand, rather than sheet flow into cut off drains.
- Minor tributaries of Beswicks Creek do cross internal accesses to extraction areas and present the greatest risk to local water quality. During summer periods the risks are low due to very low flows or no flow. During winter or higher rainfall periods, the proponent uses out of specifications cobbles and pebbles from the washery to create a ford to allow machinery and the articulated truck to travel across the tributary without disturbing the bed the tributary and creating localised turbidity. This has proven to be an effective strategy and the proponent has never received any complaints regarding water quality either directly from the public, EPA or Council. When extraction ceases, the cobbles are removed.

5.2.2 Assessment of Effects

Given the sites location and nature of the surrounding land uses, Beswicks Creek is not deemed sensitive to recreational, aesthetic or freshwater values. The tailings dam has been recently approved and is designed appropriately.

The tailings dam stores solid material (fine sand particles) that settles out of suspension and is stored, resulting in water that can then be recycled back through the processing facility.

The tailings dam is approximately 17 ML and is described:

- An embankment height approximately 5 m high
- A maximum water depth at any one time of 600 mm
- A trafficable earthen vehicle access on top of the embankment (6m wide)
- A downstream embankment 15 m wide and 3:1 slope (the landward side)

- An upstream embankment 10 m wide and 2:1 slope (the water side)
- A 225 mm diameter PVC drainage pipe transferring treated water from the tailings dam to the existing approved polishing pond (note the polishing pond is not part of this EER as it is existing and approved)
- A dam outlet pipe (90-degree bend on the end of the drainage pipe), upright in the dam. When the dam water level reaches the lip of the 90-degree bend, water exits the dam and goes to the polishing pond. As the water level in the dam increases, another length of 600 mm PVC is slotted onto the existing outlet structure, to increase the detention time in the dam.
- Due to the design of the dam and outlet pipe, the normal water depth any one time is 600mm, however extensions can be added to the water pipe to increase the water depth and conversely detention time.
- Water volume in the tailings dam will be 4000 m³

The impacts on Beswicks Creek are expected to be negligible, as has been the case with historical operations. The existing operations have multiple contingencies to prevent turbid water discharging off site including:

- Suitably sized tailings dam
- Detention in the tailings dam of up to 50 days
- Outlet structure that can quickly be adjusted to increase detention and settling time
- From the tailings dam, the water enters the polishing pond for further treatment
- 90% of the water in the polishing pond is recycled through the washery, rather than discharged. This will continue during the increase in production and therefore the polishing pond does not need to be increased in size to suit operations
- The existing permits for the Tailings dam require water quality monitoring to ensure operations are occurring appropriately.
- At the sand washery, all wash water is directed to the tailing's dams
- At the extractions areas, the floor is shaped to contain any rainfall and prevent it migrating away from the extraction area. Due to the porous nature of the sand, rainfall soaks into the ground
- At selected locations where access cross minor tributaries of Beswicks Creek, fords constructed from out of specification cobbles and pebbles to prevent the wheels disturbing the bed of the tributary.

5.2.3 Management Measures

The following management measures are suggested:

Commitment 3: Stormwater will be managed on site to ensure it is directed to the tailings dam from the washery and operational areas

Commitment 4: Water from the polishing pond will be recycled through the sand washery

5.3 Significant Areas

There are no known significant areas around the site that are of public interest (according to the provisions of the planning scheme or www.thelist.tas.gov.au). The site is unlikely to be a site of high public interest due to the historical mining effort since the 1970's and surrounding sand and gravel quarries.

5.4 Dust Emissions

5.4.1 Existing conditions

Due to the nature of operations on site and the sandy materials, dust can be caused by the following when combined with hot, dry and windy weather:

- Excavator and truck movements on disturbed sandy soils on access roads
- Loading and unloading raw sand
- Unconsolidated processed sand stockpiles

Without wind on site, these area or activities are unlikely to cause any dust issues or migrate beyond the mining lease. The proponent has not received any historical dust complaints from EPA or Council.

Water from the sand washery is used at times to wet down trafficable areas to improve visibility and internal road safety for articulated trucks.

5.4.2 Potential Impact

If the dust sources are not managed appropriately, typical impacts during construction may include:

- Fallout and localised amenity issues from sand settling on vegetation and static features (e.g. Buildings) during operations from frequent machinery movements and the loading/unloading of sand
- Reduced local air quality from disturbance of large volume of material This can impact the local air quality and surrounding amenity. In extreme cases, it may impact users of Calder Road and or Pages Road, leading to unsafe traffic conditions.

Due to the tall (generally > 20m standing height) trees around the working areas this provides some protection from prevailing winds to reduced wind speed across the site and conversely can act to trap any windblown material from migrating beyond the mining lease.

5.4.3 Assessment of Effects

The IIP is unlikely to impact local environmental values, surrounding landowners or local road network.

5.4.4 Management Measures

The following management measures will be implemented:

Commitment 5: Operations will cease in hot, dry and windy conditions if dust is observed migrating beyond the ML

Commitment 6: Water from the washery will be used to wet down trafficable areas to prevent localised dust issues

5.5 Liquid Effluent

There is no liquid waste produced on site as part of normal operations. Sand wash water is discussed and managed in section 5.2.

No further discussion is deemed necessary.

5.6 Solid Waste

5.6.1 Existing Conditions

The following solid wastes are produced on site:

- Out of specification sand (stored in approved tailings dams)
- Office/administrative wastes e.g. paper, plastic from lunchroom and office

The sand is inert and the only likely impact from the sand is sediment, rather than a chemical reaction. Sediment issues are addressed in section 5.2

Office and administrative wastes are securely stored in lidded rubbish bins and disposed of by a contractor to an authorised facility.

No management measures are deemed necessary.

5.7 Noise Emissions

5.7.1 Existing Conditions

The existing noise generating activities on site are:

- Heavy and light vehicle movements on internal roads
- Sand washery during operations
- Excavator movements, particularly beepers when the machine is tramming to a new position

These noise emissions are unlikely to be detected beyond the mining lease and no ear plugs or appropriate PPE is required when operating the machinery or sand washery – indicating the low noise emission from this activity.

All activities on site will occur during the existing permitted hours being

- 0700-1800 Monday to Friday
- 0800-1600 Saturday.
- No works on public holidays or Sundays

The closest sensitive receptor is 150 m to the north west and west the local vegetation between the source and the receptor is a mature dense pine plantation. The site is also 20m below road level and surrounded by mature trees approximately 20m in height, providing some barrier to noise transmission and visibility to operations.

5.7.2 Assessment of Effects

There operations are unlikely to cause any noise impacts based on existing site operations, location, location of sensitive receptors and vegetative barriers.

5.7.3 Management Measures

The following management measures are made:

Commitment 7: Operations will only occur during permitted hours

5.8 Traffic and Transport

The increase in production will not result in any additional outward traffic movements because the specialist blends to be produced will substitute existing sand blends, result in no net increase in traffic movements.

Inward movements will increase marginally, due to raw sand from the Level 1 activity. Based on historical analysis, movements are intermittent and may increase from 1 to 2 per two month period, in line with production requirements.

Heavy and light vehicle access is provided off Calder Road, via a deceleration land on the eastern side of the road.

Calder Road at the site entrance is a signed 80 kmh speed limit and the road alignment provides adequate site distance in each direction – approximately 80 m

No modifications to the site entrance are planned as part of the IIP, the existing arrangement is adequate for future operations.

5.9 Off-Site Impacts

The IIP is unlikely to cause any offsite impacts and no off-site facilities are needed to realise the IIP. The operations have historically been undertaken without disturbing any surrounding land in other ownership.

Due to the standing mature vegetation around the site, the operations are unlikely to be visible from local vantage points.

5.10 Hazardous Substances and Chemicals

The operations do not have any need for hazardous substances or chemicals. The only materials needed on site are:

- Diesel/oil/lubricants for heavy/light vehicles and machinery (diesel is stored in 3000L trailer mounted pod)
- Grease cartridges for excavators (500 ml cartridge)
- Hand wash in the crib room (200 ml retail bottle)

The diesel is contained in and on a double skinned pod on the trailer and when it is on site, the trailer is parked in a bund with a capacity of 2000L. Oils and lubricants are also stored within the bund to capture any minor drips. Waste oil is temporarily stored in the bund and removed by a suitably licensed contractor.

The bund volume is suitable because all machinery is filled immediately when the full pod is brought on site and the pod is largely close to empty when on site to limit potential for diesel to be stolen.

In the event of a spill, a spill kit is located on the trailer and the abundance of sand and machinery on site allows the proponent to quickly respond to a spill by building a bund with sand and control any migration.

The diesel is dispensed using a conventional trigger and gun, reducing potential for overfilling (due to auto shut off) and a spill would be limited to 1 draw of the hose, generally < 1L.

The grease cartridges are stored in the secure container and present little environmental risk.

The following commitments are made:

Commitment 8: Ensure a spill kit remains on the fuel trailer at all times

Commitment 9: Ensure the fuel trailer is parked in the bund when on site, with the exception of refuelling machinery

5.11 Site Contamination

No potentially contaminating land use activities have occurred on the site. The proposed use of the land has the potential to cause localised contamination during refuelling, however no historical refuelling incidents have been recorded that may give rise to local contamination.

The site has been a sand mine for many years and no spills of diesel or oil have been recorded, therefore the sand quarrying effort has not created a site contamination risk.

No further discussion is deemed necessary.

5.12 Sustainability and Climate Change

The increase in production is unlikely to have a noticeable impact on climate change and will not impact local, State or Federal governments achieving climate change policies.

Impacts from varying climates and more intense weather events has the potential to impact the site and potential offsite impacts, however this can be managed using existing management protocols and controls discussed in this EER.

The site will continue to derive sustainable outcomes with large scale water recycling to reduce raw water demand.

5.13 Sites of High Public Interest

The site is not a SoHPI and is not located near a SoHPI according to the provisions of the planning scheme and discussions with the site owners (Sustainable Timbers Tasmania) during the recent approval for the Tailings Dam.

5.14 Rehabilitation and Decommissioning

The current successful rehabilitation strategy is to rehabilitate worked areas with stripped topsoil and vegetation to reduce the quantity of 'open' or worked areas.

The current approval allows for 9ha of open area and this will be maintained if the IIP is approved. Rehabilitation of current worked out areas/accesses will be increased to ensure compliance with the 9ha permit condition:

- Worked areas are shaped to ensure adequate benching and safety
- Stripped topsoil will be spread over the extraction area
- Stripped vegetation will be laid over the topsoil to encourage local species to repopulate and provide a stable landform that is less erosion prone until vegetation is well established
- Oversight and management by the proponent to supplement rehabilitation activities, including weed management.

The current rehabilitation effort has been delayed by significant quantities of browsing animals eating new vegetation, despite efforts to prevent browsing. The proponent is making progress with rehabilitation and was able to dedicate more time to rehabilitation efforts during the winter 2019 period. As the vegetation starts to grow and mature, impacts from browsing will reduce and rehabilitation will become more visible.

The existing decommissioning and rehabilitation plan manages the long-term rehabilitation of the site to as close to bushland as possible and merge the working with the surrounding landscape.

If a short-term cessation of activities is to occur, then the following actions would be taken:

- EPA notified and kept up to date with the short term cessation
- All machinery removed from the site
- All diesel/oil/lubricants removed from the site
- Worked areas made safe, reduce drop offs
- Signage updated with current phone numbers for the proponent
- Boundaries made secure and the boom gate at the entry locked
- Continuous oversight from the proponent and locally based employees to ensure the site remains safe and secure and no environmental risks arise e.g. tailings dams are checked

There have been no historical reasons for a short-term closure, however it may happen into the future unexpectedly.

The following management commitments are made:

Commitment 10: A decommissioning and rehabilitation plan will be provided within 12 months after approval is granted for IIP

Commitment 11: Worked out areas will be rehabilitated to maintain the open area to a maximum of 9 ha

5.15 Hazard and Risk Assessment

The IIP does not present any additional hazard or risks that are not already present on site. The activity will be undertaken in the same manner as is currently permitted using the same methodology and site management.

The risks from the tailings dam were addressed and accepted in the recent approval, and summarised below (risk assessment is included in Appendix B for clarity)

Rowell DJ engaged Tasmanian Water and Environmental Services to undertake a hazard consequence assessment for the tailings storage dam to identify risk factors and ensure the design and construction adequately addresses these risks.

There is only plantation and natural bushland below the dam before the tributary crosses a low use forestry / country road (Beswicks Road) and before the flow path would enter onto flat paddocks. This assessment covers both human and ecological receptors.

A flood wave from a catastrophic failure would not impact anything of concern in this zone and using the approximate determination method under ANCOLD Guidelines. A flood wave is likely to be mostly contained and restricted in the immediate bushland where it will significantly disperse. It is estimated therefore the flood wave would only minimally cross the Beswicks Road, as the head wall above the 600mm diameter culvert beneath the road, would contain a slower moving and already dispersed dam break.

Sight distance approaches from both directions are not ideal to see a dam break, but the road winds, whereby speed would be significantly reduced prior to approaching the dam break and stopping distances are therefore considered to be good.

It is therefore considered the public at risk scenario (PAR) is nil and infrastructure damage would be mostly non-existent at the culvert and downstream.

No further management measures are deemed necessary.

6. Part D – Management Commitments

The following management commitments are made to support this project (Table 6)

Table 6: Summary of Management Commitments

Commitment No	Commitment	Responsibility	Timeframe
1	No DOV will be disturbed during sand extraction.	Site Manager	Always applies
2	A weed management plan will be developed consistent with DPIPWE guidelines within 6 months of approval.	Site Manager and machinery operators	When new heavy machinery is brought on site
3	Stormwater will be managed on site to ensure it is directed to the tailings dam from the extraction areas washery and operational areas. Stormwater from extraction areas will be controlled by localised ponds and shaping the floor of the extraction area to encourage containment, detention and soak into the sandy soils.	Site Manager	Always applies
4	Water from the polishing pond will be recycled through the sand washery	Site Manager	Always applies
5	Operations will cease in hot, dry and windy conditions if dust is observed migrating beyond the ML	Site Manager	As required
6	Water from the washery will be used to wet down trafficable areas to prevent localised dust issues	Site Manager	As required
7	Operations will only occur during permitted hours	Site Manager	Always applies
8	Ensure a spill kit remains on the fuel trailer at all times	Site Manager	Always applies
9	Ensure the fuel trailer is parked in the bund when on site, with the exception of refuelling	Site Manager	Always applies

	machinery and all hazardous liquids are stored in the bund		
10	A decommissioning and rehabilitation plan will be provided within 12 months after approval is granted for IIP	Site Manager	Provided to EPA within 12 months of approval and implementation of approved plan as required
11	Worked out areas will be rehabilitated to maintain the open area to a maximum of 9 ha	Site Manager	Always applies

7. Part E - Consultation

A summary of consultation to date is provided in Table 2. Only targeted consultation has been undertaken to date, consistent with the proposed installation of new equipment, which will be largely unnoticed by the surrounding community.

Table 2: Consultation to date

Consultation Party	Method	Topic of Discussion	Outcome
Waratah Wynyard Council	Email	Planning requirements and Development Application	Advice from WWC was that a new DA is required, as the increase is above the 5% threshold applied by WWC to increased production.
Tasmanian EPA	Face to face and email	EER requirements	The decision by WWC will guide the approval pathway
Sustainable Timbers Tasmania (STT)	Email/phone	Seeking landowner permission for application	STT will provide landowner consent when required.

7.1 Future Consultation

Future consultation is limited to regulatory agencies only. The advertising period will provide time for public comment, should there be any issues not adequately addressed in the approval documentation.

8. Part F – Development Application

8.1 Introduction

This Development Application (DA) has been developed by Rowell DJ (proponent) to seek approval from the Environment Protection Authority and Waratah Wynyard Council. The proponent is seeking approval to increase production to 20,000 m³ per annum (an increase from 12,000 m³ per annum).

The proponent has been operating the same activity on the site for many years and has complied with local and state government regulations relating to their operations.

European history is well known for the area and no items of significance are located on or near the site. The land was green field prior to 1970 and a sand pit since. A desktop Aboriginal Heritage Assessment was conducted, and the Aboriginal Heritage Commission assessed and required no further assessment.

This DA has been developed with reference to the EER and WWC Planning Scheme.

8.2 Site

The property is identified as PID3104657, CT161615/1, ML 1M/2010

8.3 Planning Scheme

8.3.1 Land Use Control Document

The site is controlled in land use terms by the *Waratah Wynyard Interim Planning Scheme 2013* (planning scheme)

8.3.2 Zone

The zone is defined as *Rural Resource* under the planning scheme

8.3.3 Overlays

The site is subject to the following overlays

- 111OAS – Operational Airspace 110m. The overlay covers the tailings dams, not the operational areas
- 111LDS – Low Landslip Class – a large area is covered by the overlay, extending well beyond the boundaries of the ML and title.

8.3.4 Definitions

Within the planning scheme and assessment by WWC, there is the concept of 'Best Fit' when it comes to defining the proposal against the applicable land use definitions in the planning scheme.

The definition of Extractive Industry is deemed the best fit to describe the activity:

Use of land for extracting or removing material from the ground, other than Resource development, and includes the treatment or processing of those materials by crushing, grinding, milling or screening on, or adjoining the land from which it is extracted. Examples include mining, quarrying, and sand mining

8.4 Zone Purpose

8.4.1 Zone Purpose Statement

The purpose of this zone is to provide for “the sustainable use or development of resources for agriculture, aquaculture, forestry, mining and other primary industries, including opportunities for resource processing”. Additionally, consideration is to be provided to use or development that “does not constrain or conflict with resource development uses”.

The mining lease is part of the larger *site* which provides for mining and forestry (known as Oldina Plantation). The proposal is intended to allow for the ongoing quarrying on the site, without impacting the environmental impact of the existing operations. This meets 26.1.1.1 in the provision of sustainable use of resources for mining.

The proposal does not include *resource development* uses. The land to be affected is already heavily modified. It would not be suitable for *resource development* without additional modification. The proposal does not impact on the capacity for the land to provide for *resource development* uses, now or into the future.

The application is deemed consistent with the purpose of the Rural Resource zone.

8.4.2 Local Area Objectives

In addition to the zone purpose, local area objectives (LAO) are articulated for the Rural Resource zone. The proposal is for development associated with the existing *Extractive Industry*.

The following comments are offered with respect to the Local Area Objectives.

26.1.2(a) The priority purpose for rural land is primary industry dependent upon access to a naturally occurring resource;

The IIP aims to continue an existing industry to utilise a natural occurring resource and is consistent with the LAO.

26.1.2(b) Air, land and water resources are of importance for current and potential primary industry and other permitted use;

The IIP will utilise existing land resources to allow the business to grow and develop. The existing arrangement of water recycling and reuse and the storage of waste sand in the tailings dam (that could be recovered if a viable reuse option is presented) demonstrates the proponent’s preservation of natural resources.

26.1.2(c) Air, land and water resources are protected against –

- (i) permanent loss to a use or development that has no need or reason to locate on land containing such a resource; and
- (ii) use or development that has potential to exclude or unduly conflict, constraint, or interfere with the practice of primary industry or any other use dependent on access to a naturally occurring resource;

The proposal is located on an existing productive resource and the IIP is consistent with ongoing use of that resource. No other existing uses exist on the site (historically or likely into the future) that could give rise to a conflict or limit the potential of another use.

26.1.2(d) Primary industry is diverse, dynamic and innovative, and may occur on a range of lot sizes and at different levels of intensity;

The IIP is seeking to increase intensity through additional production, however the extent of the ML is not required to change, nor is the types of infrastructure, tailings storage or management of the site.

26.1.2(e) All agricultural land is a valuable resource to be protected for sustainable agricultural production;

The IIP does not require the use or conversion of agricultural land and the ML would have limited capacity to support agricultural production. The IIP does not conflict with any agricultural uses.

26.1.2(f) Rural land may be used and developed for economic, community and utility activity that cannot be reasonably accommodated on land within a settlement or nature conservation area;

26.1.2(g) Rural land may be used and developed for tourism and recreation use dependent upon a rural location or undertaken in association with primary industry;

The IIP is located on a site where the resource is located. The activity is not suited to an area within a settlement or nature conservation area.

The IIP will continue to contribute to the local economy through local employment, maintenance and potential for further casual employment to meet short term peak demand

26.1.2(h) Residential use and development

This does not apply to the IIP as no residential use or development is planned.

The proposal is in keeping with the Local Area Objectives.

8.4.3 Desired Future Character Statements

The Desired Future Character Statements are also considered as part of this application to Council.

26.1.3 Use or development on rural land –

(a) may create a dynamic, extensively cultivated, highly modified and relatively sparsely settled working landscape featuring –

(i) expansive areas for agriculture and forestry;

(ii) mining and extraction sites;

(iii) utility and transport sites and extended corridors; and

(iv) service and support buildings and work areas of substantial size, utilitarian character, and visual prominence that are sited and managed with priority for operational efficiency

The IIP is entirely consistent with the requirements on rural land and the IIP is located on a highly modified site.

(b) may be interspersed with –

(i) small scale residential settlement nodes;

(ii) places of ecological, scientific, cultural, or aesthetic value; and

(iii) pockets of remnant native vegetation

The site has areas of standing natural vegetation that is preserved due to its protection status. However, there are no settlement nodes or known cultural aesthetic values on site or that will be impacted by the IIP.

- c) will seek to minimise disturbance to –
- (i) physical terrain;
 - (ii) natural biodiversity and ecological systems;
 - (iii) scenic attributes; and
 - (iv) rural residential and visitor amenity;

The IIP and EER details controls to prevent environmental harm or nuisance to prevent impact or disturbance to the listed values.

- (d) may involve sites of varying size –
- (i) in accordance with the type, scale and intensity of primary industry; and
 - (ii) to reduce loss and constraint on use of land important for sustainable commercial production based on naturally occurring resources;

The operations are part of a larger site, however, are relatively small footprint on the ML, consistent with local quarry activities around the site.

(e) is significantly influenced in temporal nature, character, scale, frequency, and intensity by external factors, including changes in technology, production techniques, and in economic, management and marketing systems.

The nature of the operations is not impacted by many factors, apart from investment in infrastructure assets. The broad range of products on site allows the proponent to manage variations in market demand.

8.5 Use Standards

26.3 Use Standards		
26.3.1 Requirements for discretionary on-residential use to locate on rural resource land	The IIP in a permitted use on rural residential land	Complies
26.3.2 Residential Use	NA – no residential use proposed	NA
26.3.3 Residential Use	NA – no residential use proposed	NA

8.6 Development Standards

26.4 Developments Standards		
26.4.1 Suitability of a site or a lot on a plan of subdivision for use or development		
A1	The site is suitably sized for the activity, no buildings are planned as part of the IIP	Complies
A2	The existing authorised access off Calder Road will be used and no modifications are required	Complies
A3	The site is capable of providing onsite water supply if needed	Complies
A4	Not applicable	Complies
A5	Stormwater is managed on site through natural absorption or directed into site stormwater ponds	Complies
26.4.2 Location and Configuration of Development		

A1	The works cannot migrate closer 20m to the ML, so the workings will comply	Complies
A2	No buildings are proposed	Complies
A3	No buildings or structures are proposed	Complies
A3.2	Not applicable	Complies
26.4.3 Location of a Development for Sensitive Uses		
Not applicable no sensitive uses are planned		Complies
26.4.4 Subdivision		
Not applicable not subdivision is planned		Complies
26.4.5 Buildings for Controlled Environment Agriculture		
Not applicable, no such buildings are planned		Complies

8.7 Scheme Codes

The scheme contains a number of codes, only those that are deemed to apply to the proposal are discussed in detail.

8.7.1 Bushfire Code

The proposal is not for a vulnerable or hazardous use, nor is it for subdivision. As such the Code does not apply.

8.7.2 Airport Impact Management Code

E2.5.1	Extractive Industry is within Group 3, and the noise limits are acceptable for this land use, as per the Mining Lease and EER.	Complies
E2.6.2 A1	The proposal has no capacity to penetrate the OLS, nor to interfere with aviation facilities.	Complies
E2.6.3	The proposal has no capacity to impact on Public Safety Areas.	Complies

8.7.3 Clearing and Vegetation Code

The proposal is exempt from the code according to E3.4.1 (c)

8.7.4 Change of Ground Level Code

The proposal is exempt from the code according to E4.4.1 (a) (ii)

8.7.5 Hazard Management Code

The proposal complies with this code as it is located in a low risk area and no sensitive uses are planned as part of the proposal and the operations on site will remain as has been previously and authorised, therefore there is no increase in risk.

8.7.6 Traffic Generating Use and Parking Code

The ML has sufficient parking for all light and heavy vehicles due to the size of the ML. 5 parking spaces are required and this can be provided for in the main processing area, as illustrated in Figure 4.

Loading and unloading areas are provided for in the main processing area.

Figure 4: Parking areas on the ML



8.7.7 Waterways Code

The management of site stormwater and operational water has been discussed in the EER and the provisions are deemed to comply with the Scheme. The management strategies to maintain the function and values of Beswicks Creek are provided below.

The provisions of the scheme require specific comment on Clause E10.6.1 P(1) - *The development must maintain the wide range of functions and values of a water body and the development must be consistent with advice or decision of relevant entity or regulatory body.*

In this instance the water body is Beswicks Creek and the relevant authority would be the Environment Protection Authority. No specific advice was received from the EPA, however the following provisions have been made to maintain compliance with the code:

Management Strategies

- There are no natural water bodies on the site. Runoff generally soaks into the ground due to the porous nature of sand, rather than overland flow offsite into Beswicks Creek.
- The current surface water arrangement is that out of specification sand and wash water from the sand washery drains to the existing tailings dams and sand settles out of suspension.
- Once the water reaches the top of the outfall pipe, it is hard piped in PVC pipe to the polishing pond (the outfall pipe is a 90mm PVC elbow that is situated proud of the water level). The polishing ponds form part of the sand washery operations and water is recycled from the polishing pond and reintroduced as sand wash water, rather than entering Beswicks Creek.
- Due to the nil chemical changes in water quality, recycling water is an ideal outcome to reduce water discharging offsite to Beswicks Creek and reduces ongoing demand for water by the proponent.
- In extraction areas water soaks into the ground due to the porous nature of sand and does not generate a sheet flow across the extraction areas.

Beswicks Creek is located to the south/south east of the mining lease. This is a small ephemeral stream flowing to the southwest. No future operations will impact the alignment of Beswicks Creek or require any extraction in Beswicks Creek.

To the north, Beswicks Creek branches off Blackfish Creek, which is a permanent creek flowing to the south. Beswicks Creek dissipates into the bush and farm paddocks 200 meters to the south of the site. The northern part of the creek flows in winter.

Blackfish Creek flows North to South 600 meters to the east and does not re-integrate with Beswicks Creek.

Beswicks Creek is not listed on the Conservation of Freshwater Ecosystems Database (CFEV - <https://wrt.tas.gov.au/cfev/login.jsp>). The CFEV database aims to ensure that priority freshwater values are appropriately considered in the development, management and conservation of the state's water resources.

Beswicks Creek is unlikely to support any recreational activities due to mature forestry plantations restricting access for boating activity, however, may support some fishing at local spots.

The site is located within the Inglis River Catchment (615 km²) with much of the catchment either forestry, pasture or cropping with concentrated patches of resource extraction, particularly around the site.

The Protected Environmental Values (PEVs) for the Inglis River are summarised in Environmental Management Goals for Tasmanian Surface Water, Catchments within the Circular Head and Waratah/Wynyard Municipal Area:

The PEVs are summarised as:

As a minimum, water quality management strategies should seek to provide water of a physical and chemical nature to support a modified, but healthy aquatic ecosystem from which edible fish may be harvested; that is acceptable for irrigation and stock watering purposes; and which will allow people to safely engage in primary contact activities such as swimming on Big Creek at Stanwyn Reserve and secondary contact recreation activities such as paddling or fishing in aesthetically pleasing waters.

The proponent must ensure the PEVs are maintained if any discharges from the site enters the local water bodies.

There are no known local uses or water takes from Beswicks Creek. The key risk to local water quality from operations is turbidity. However, the following strategies are used to limit potential impacts on local water quality and maintain compliance with the PEV's:

- There are a series of constructed cut off drains around the sand washery to direct surface water to the two approved tailings dams. Once water is in the dam, water is detained to allow the sand to settle from suspension
- At the extraction areas, the floor is shaped to contain water and encourage water to soak into the extraction areas due to the sandy nature of the site. Observations during rainfall indicates surface water soaks into the sand, rather than sheet flow into cut off drains.
- Minor tributaries of Beswicks Creek do cross internal accesses to extraction areas and present the greatest risk to local water quality. During summer periods the risks are low due to very low flows or no flow. During winter or higher rainfall periods, the proponent uses out of specifications cobbles and pebbles from the washery to create a ford to allow machinery and the articulated truck to travel across the tributary without disturbing the bed the tributary and creating localised turbidity. This has proven to be an effective strategy and the proponent has never received any

complaints regarding water quality either directly from the public, EPA or Council. When extraction ceases, the cobbles are removed.

Compliance is claimed against the performance criteria because:

- the mine plan excludes Beswicks Creek and the management strategies do not interfere with the form or function of Beswicks Creek.
- Where tributaries may be impacted by machinery movement around the lease to extraction areas, a ford is developed to reduce the risk of localised impact to water quality.
- Sewerage from the site is contained in a portable toilet and wastewater removed periodically by a licensed waste contractor
- No public access to Besiwcks Creek is reduced or modified by the proposal
- Flow is not impacted in Beswicks Creek as the polishing pond retains operational water for reuse in the washery
- No ground level changes in Beswicks Creek or tributaries is proposed by the increase in production
- The proponent has never received any complaints regarding water quality either directly from the public, EPA or Council. The proposal provides adequate sediment control measures that has been accepted by the EPA
- Due to nil impact on flows or water quality, we expect no impact on biodiversity or ecological function in Beswicks Creek or tributaries
- The proposal will not increase public risk or alter the safety profile above that which already exists

9. Conclusion

The proponent is seeking approved to increase production on site of sand extraction and washing to meet known future demand for unique sand blends in the Tasmanian civil construction industry.

The proponent has provided commitments for key environmental areas of water quality, noise and dust, with the commitments being consistent with the level of risk and outcomes achievable using the existing level of experience and management on site.

The proponent complies with environmental regulations and the proposal is unlikely to be noticeable to surrounding land uses or impact the local environment.

Certificate of Title

Appendix B

Tailings Dam Hazard Assessment Report