



Application for Works Approval Amendment

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W5835/2015/1
Works Approval Holder	Illuka Resources Limited
ACN	008 675 018
File Number	DER2015/000690-1~2
Premises	North Capel Operations Yearly Road CAPEL, WA. 6271 Legal description – Mining tenements M70/257, M70/651, M70/959, M70/962, M70/970, M70/978, M70/990, M70/1083, M70/1128, M70/279, M70/386 and M70/1082. As defined by the coordinates in Schedule 1 of the Revised Works Approval
Date of Report	19/12/2022
Decision	Revised works approval granted

1. Decision summary

Works Approval W5835/2015/1 is held by Iluka Resources Limited (works approval holder, Iluka) for the construction of a 110 metre (m) stack for the discharge of emissions from the Synthetic Rutile Plant (SR1) located at the North Capel Operations facility (the premises) located at Yeady Road, Capel.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the time limited operations of the premises. As a result of this assessment, revised works approval W5835/2015/1 has been granted.

The revised works approval issued because of this amendment consolidates and supersedes the existing works approval previously granted in relation to the premises.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

2.2 Application summary

On 11 October 2022, the works approval holder submitted an application to the department to amend works approval W5835/2015/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- time limited operations of 180 days;
- remove SR1 dryer stack and
- include a new 110 m SR1 stack as an air emission source.

The works approval holder has requested time limited operations of 180 days to allow the continued operation of the 110 m SR1 stack, post the three-month environmental commissioning period currently within existing works approval W5835/2015/1. The works approval holder has proposed time-limited operations to provide sufficient time to prepare and submit the commissioning report and submit an amendment for licence L4557/1986/19 to include the new 110m SR1 stack as an air emission source.

The applicant has requested the removal of SR1 dryer stack and include the 110 m SR1 stack as an air emission source within the works approval. The delegated officer determined that the SR1 dryer stack is an authorised infrastructure and emission point in licence L4557/1986/19 where a licence amendment should be submitted for the removal of the SR1 dryer stack. Furthermore, the new 110 m SR1 stack is an existing authorised emission source within works approval W5835/2015/1, however, will be considered within this amendment report in the context as an emission point under time limited operations.

This amendment is limited only to changes to Category 31 chemical manufacturing activities from the existing works approval. There are no changes to the existing assessed production capacity of 380,000 tonnes per annual period

2.3 Background

Iluka North Capel Operations is a mineral sands processing facility located approximately 4.5 km north of Capel. The North Capel processing plant includes a separation mill, two synthetic rutile production plants (SR1 and SR2) and associated residue disposal and water treatment facilities.

Support processes include a cogeneration plant, a char plant and the storage of process by-products.

Works approval W5835/2015/1 was first issued in 2015 for the construction of a new 110 m stack to replace the 35 m dryer stack for SR1. The main objective of the new stack was to improve the safety of gas emissions from SR1 and decrease odour impacts on the neighbouring sensitive receptors. The following amendments to W5835/2015/1 have occurred to date.

- March 2018 the works approval expiry was extended by three years to 23 August 2021 as the construction of the stack had not commenced.
- January 2020 the SR1 stack location and diameter were modified noting that the delegated officer determined that the modifications were unlikely to alter the existing risk profile for air emissions.
- July 2021 the works approval expiry was extended by five years to 23 August 2026 due to market impacts by Covid-19.

2.4 SR1 stack operations and emissions

In synthetic rutile (SR) plants, ilmenite is upgraded to SR which produces combustible gases which are burnt within high-temperature chambers producing hot exhaust, which are a mixture of carbon dioxide, sulphur dioxide and water vapour. Particulates are then removed from the kiln and wastes are emitted into the air via stacks.

No new emission streams will be created through the installation of the 110 m SR1 stack and no change in process throughput will occur as a result. Emissions from the new SR1 stack are derived from the SR1 plant, which is regulated under licence L4557/1986/19.

Under the existing configuration, SR1 kiln exhaust gases are directed to the existing 110 m synthetic rutile plant 2 (SR2) stack, in combination with SR2 kiln exhaust gases and SR2 dryer gases. The SR1 dryer gases were emitted through a dedicated 35 m stack, which historically was identified as a potential odour source. The installation of the new 110 m SR1 stack will allow SR1 dryer exhaust gases and SR1 kiln exhaust gases to be redirected to their own stack, re-instating the original independent kiln exhaust gas configurations of the two synthetic rutile (SR) plants. The same SR1 kiln gases will continue to be treated by the thermal oxidiser and wet scrubber before being emitted to the new 110 m stack.

The original works approval issued in March 2018 and the January 2020 amendment (for changes to the diameter and location of the new 110 m SR1 stack) risk assessed air emission from the new 110 m SR1 stack. The delegated officer determined that air emissions including odour, volatile organic compounds, sulphur dioxide and particulate matter were assessed as a moderate risk, with the works approvals holders' controls for monitoring during environmental commissioning conditioned to determine air quality emissions. There are no changes to the conditioned environmental monitoring during the proposed time-limited operations.

2.5 Part IV of the EP Act

The North Capel Operation facility falls under Ministerial Statement 768 (MS768), Environmental Protection Authority Bulletins 225, 650 and 1244. The ministerial statement provides direction and conditions for solid waste management, final effluent quality and management and plant closure plans. The delegated officer determined that this amendment does not affect MS768 conditions and therefore does not require further consideration.

3. Decision

Based on the assessment in this decision report, the delegated officer has determined to grant revised works approval W5835/2015/1 subject to conditions. In determining to amend the works approval, the delegated officer has considered that the works approval amendment granted in

August 2015 and subsequent amendment in January 2021 provided the most recent assessments of the risk posed by air emissions from the new 110 m SR1 stack. On that basis, the delegated officer has determined that the inclusion of time limited operations while Iluka applies for a licence amendment to operate the new 110 m SR1 stack is appropriate given the risk profile is unlikely to be impacted by changing environmental conditions during time limited operations. A revised works approval will be granted with time-limited operating conditions aligned with the existing works approval including an operations table, emission discharge and reporting requirements.

The delegated officer noted that existing conditions requiring air emission environmental commissioning monitoring for the new 110 m SR1 stack remains and will be submitted to the department during time limited operations. Once Iluka has submitted a future licence amendment, the department will undertake a further risk assessment of the operational emissions. This includes the submitted commissioning monitoring data to ensure that the data previously presented by Iluka and assessed by the department, is consistent with previous assumptions made about air emissions and that they meet with current national air emission criteria.

The existing risk assessments determined that the air emissions from the new 110 m SR1 stack within the North Capel Operation with the applicants' controls had a moderate risk to sensitive receptors (residential and environment). The delegated officer did not foresee any changes to the emission profile and impacts to sensitive receptors for the addition of time limited operations and therefore did not warrant further risk assessment.

4. Consultation

Table 1 provides a summary of the works approval holders comments on the amendment undertaken by the department.

Table 1: Consultation

Consultation method	Comments received	Department response
Works approval holder was provided with a draft amendment on 8/11/2022	The works approval holder responded on 9 December 2022 with no comments other than a reference error.	The delegated officer notes this information.

5. Conclusion

Based on the assessment in this Amendment Report, the delegated officer has determined that a revised works approval will be granted, subject to conditions commensurate with the determining controls and necessary for administration and reporting requirements.

Furthermore, the works approval holder will need to apply for a licence amendment to L4557/1986/19 once time limited operations have commenced. It is noted that the existing licence L4557/1986/19 will require updating to the new licence format. This update to the new licence format will not assess existing licence conditions. However, to assist with the reformatting of the licence, the licence holder is advised to provide information on all operational requirements for all environmental pollution control infrastructure, management operations and emission points.

5.1 Summary of amendments

Table 2: Summary of works approval amendments

New conditions no.	Proposed amendments
Condition 11	Inclusion of time limited operations phases commencement and duration

Condition 12	conditions
Condition 13, Table 5	Inclusion of time limited operations infrastructure requirements.
Condition 14, Table 6	Inclusion of time limited operations phase authorised emission point
Condition 15	Inclusion of the time limited operations phase compliance reporting
Condition 16	

provides a summary of the proposed amendments and will act as a record of implemented changes. All proposed changes have been incorporated into the revised works approval as part of the amendment process.

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Condition 12	
Condition 13, Table 5	Inclusion of time limited operations infrastructure requirements.
Condition 14, Table 6	Inclusion of time limited operations phase authorised emission point
Condition 15	Inclusion of the time limited operations phase compliance reporting
Condition 16	

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. DER 2015, *Iluka Resources Limited – Works Approval Decision Report July 2015*, Perth, Western Australia
3. Department of Water and Environmental Regulation (DWER) 2019, *Guide to Licensing*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. DWER 2021, *Iluka Resources Limited- Works Approval W5835/2015/1*, Perth Western Australia.
6. DWER 2021, *Iluka Resources Limited- Amendment Report January 2021*, Perth Western Australia.