EPA consultation hub – Alcoa landing page LINK and FAQ – closing date 21 August 2025

How to use this document

This document contains background information about the environmental impact process and guidance on how to make an effective submission.

It includes a table summarising the assessment for each of Alcoa's two Public Environmental Reviews.

It also contains a table listing all the sections of the Refinery proposal, and another table listing all the sections of the Mining proposal. You can copy the table for the proposal you wish to comment on, and use it to structure your submission. You don't need to fill in every space, just comment on the parts that you want to. These tables have NOT been filled with any review content – they are a guide for anyone who wants to make a submission.

Alcoa Environmental Reviews

1. **Pinjarra Alumina Refinery Revised Proposal** – significant amendment to existing proposal that operates under State Agreements and Ministerial Statement 646.
2. **Bauxite Mining Operations in the Darling Range 2023-2027** – resulting from two referrals by the WA Forest Alliance, which the EPA determined to assess the components that had not already been assessed, and subsequently combined into one proposal.

Background:

In WA, the Environmental Protection Authority (EPA) reviews and assesses proposals if they are likely to have a significant effect on the environment. Proponents, Government agencies, and individuals can refer a proposal to the EPA to be assessed.

In June 2020, Alcoa referred their own proposal to revise the existing **Pinjarra Alumina Refinery** proposal which is operating under Ministerial Statement 646. The EPA determined to assess the proposal at the level of Public Environmental Review with an 8 week public comment period. This is a typical EPA process.

In February 2023, the Western Australian Forest Alliance referred Alcoa's **Mining and Management Plan 2022 – 2026** and **Mining and Management Plan 2023 – 2027** to the EPA. These rolling 5 year

plans were previously approved through the State Agreement Act process (since the 1960's). The WA Forest Alliance referral triggered the EPA to investigate which parts of Alcoa's operations are subject to environmental impact assessment and had not previously been assessed. The EPA decided to assess both proposals at the level of Public Environmental Review with a 10 week public comment period. The EPA also provided Public Advice, which details the EPA's consideration and background of the State Agreement Act It includes this statement:

> *The EPA sought information from the Mining and Management Program Liaison Group [the group of government representatives chaired by the Department of Jobs, Tourism, Science and Innovation] during consideration of the referrals and found that the* ***Mining and Management Plan process has historically not assessed the full suite of environmental factors considered by the EPA, and that it lacks public input and transparency****. The EPA considers that the process* ***does not meet contemporary standards for environmental regulation and cannot be relied upon to mitigate the environmental impacts of the proposals****.*[1]

Alcoa was then required to provide a Proposal Content Document for each Mining and Management Plan proposal, which are attached to the referral documents. The documents contain this statement:

> *Alcoa is not a Proponent. Alcoa has prepared this Proposal Content Document at the EPA's request. In providing this document, Alcoa does not accept the validity of the third party referrals.*[2]

The Proposal Content Document was then advertised for public comment to inform the EPA's decision about whether to assess the proposal and at what level. Over 2,500 public comments were received, with over 2,000 of these asking for a Public Environmental Review. For context, the EPA received 122 submissions on the level of assessment for South32's Worsley Mine Expansion.

Common themes in submissions at referral stage:

- lack of transparency and public input into the Mining and Management Plan process
- impacts to biodiversity values of the Northern Jarrah Forest
- inadequacy of rehabilitation
- risks to water quality and quantity
- impacts to recreation, tourism and amenity values

For both Mining and Management Plans, the level of assessment was set at Public Environmental Review, with a 10 week public consultation period. Alcoa then applied to combine the assessments and the EPA accepted this. Both Mining and Management Plans are now combined under Assessment 2385, '**Bauxite mining on the Darling Range in the southwest of WA for the years 2023 to 2027**'. The scope of the assessment includes the activities from the first referral for 2022 to 2026.

The EPA then produced an Environmental Scoping Document for the two proposals (Pinjarra refinery and combined Mining Management Plans). This sets out the minimum requirements for the Environmental Review Document, including the preliminary key environmental factors and the EPA's policy and guidance that must be met.

---

[1] EPA Public advice Alcoa Mining Management Plans, page 9 (emphasis added)
[2] Alcoa Mining and Management Plans Proposal Content Document page 3

Alcoa then produced an Environmental Review Document for each proposal. They are available on the EPA website here. There are 90 documents for the Pinjarra refinery proposal and 92 for the Mining and Management Plan proposal.

Review guidance:

The EPA provides this guidance for public submissions:

> *Submissions should relate directly to the proposals under assessment. Information and comments pertaining to environmental values and outcomes, conditions, mitigation, cumulative impacts, rehabilitation and management can be submitted in categories relevant to environmental factors and will help inform the EPA's environmental impact assessment. These include flora and vegetation, terrestrial fauna, terrestrial environmental quality, inland waters, greenhouse gas emissions, social surroundings and air quality.*

The EPA's considerations are contained in the Statement of principles, factors, objectives and aims (April 2023) LINK

Factors and Objectives

The identification of factors provides a systematic approach to organizing and considering complex information used in environmental impact assessment. There are 14 factors organized into 5 themes (**sea, land, water, air, people**). The EPA has identified an environmental objective for each factor. Most of the objectives are structured this way: 'to protect' or 'to maintain' [the factor] so that [the value] is 'protected' or 'maintained'. Eg:

- Flora and vegetation: to protect flora and vegetation so that biological diversity and ecological integrity are maintained
- Inland waters: to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.

See p7 of the Statement of principles here.

A submission about the impacts to flora and vegetation should be focused on the value of the factor that will be affected, eg clearing <x number of> hectares of Northern Jarrah Forest will impact the biological diversity and ecological integrity of the forest <how>.

Significance

Significance is determined individually for each proposal taking into account the values, sensitivity and quality of the environment that will be impacted, the entire life cycle of the proposal, extent of impacts, resilience of environment to impacts, consequences of impacts, cumulative effects, holistic impacts, level of confidence in prediction of impacts, success of proposed mitigation, etc. See p8 of the Statement of principles.

A submission that argues significance should express it in the terms in the Statement of principles. The EPA's determination of significance is usually expressed in a complicated double negative way that relies on lack of certain outcomes, for example in the South32 Worsley report:

> *Based on the implementation of the recommended conditions requiring that viability of the population at Hotham North is not lost due to the proposal, and that a second population at least double the size is protected as an offset, the EPA considers that the environmental outcome for woylie is likely to not be inconsistent with the EPA objective for terrestrial fauna*[3]

Submissions should identify the significant impacts that are not consistent with the EPA's objectives, to counter the argument that impacts are not inconsistent with those principles.

Mitigation hierarchy

The EPA has two different mitigation hierarchies, one specifically for greenhouse gas, and the environmental factor hierarchy for all other factors. For environmental factors, the mitigation hierarchy is avoid > minimize > rehabilitate > offset. See p9 of the Statement of principles.

It can be difficult to argue the mitigation hierarchy for mining proposals where the location is set by the geological deposit, but it is possible to limit the proposal to the areas of mineral resource where environmental impacts are of less significance. The Mining and Management Plans proposal focuses on mitigation through rehabilitation and offsets. Both proposals offer avoidance through removal of the Reservoir Protection Zones , but also state that this is temporary:

> *Future mine plans will include Reservoir Protection Zones once the new water management and drainage control practices that have been put in place in accordance with the 2023-2024 Mining and Management Plans approval and section 6 Exemption Order have been demonstrated to be effective*.[4]

Submissions should highlight that Reservoir Protection Zones should be either permanently excluded from mining, or not offered as an area of avoidance.

Offsets

Offsets are a complex and specialized area and there is both Australian government and EPA guidance. If commenting on offsets, consider the policy and guidelines and focus on aspects of the offset proposal that do not meet the requirements.

When considering the application of offsets, a significant residual impact that is relevant to one environmental factor after application of the mitigation hierarchy cannot be reduced by an offsets measure related to another environmental factor. Highlight any instances of double-dipping.

There is no evidence that demonstrates the effectiveness of rehabilitation offsets in WA, as they have only been in use in environmental impact assessment since approximately 2014 and there will be a time lag of 200 years or more before any revegetation offset in the jarrah forest can replace the environmental values lost through clearing. Submissions can focus on the uncertainty associated with predicting future offset benefit such as future quality with and without offset. Further argument could be made regarding the acceptability of Alcoa using State Forest as an offset when it is owned by the Crown and already being managed for the Conservation and Parks Commission by the Department of Biodiversity, Conservation and Attractions (whether this meets the additionality principle), and within its own mining tenement.

---

[3] EPA Report 1768

[4] Alcoa Refinery Proposal ERD Chapter 4 page 4-12.

Greenhouse gas emissions

While the greenhouse gas emissions from this proposal will be significant, it is unlikely that the EPA will find this proposal to be inconsistent with their objective which is 'to minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable'. The greenhouse gas emissions from this project will be regulated under the national Safeguard Mechanism[5], and WA's Greenhouse Gas Emissions Policy for Major Projects[6] states that if a proposal is subjected to alternative regulatory measures, the State will no longer apply conditions to reduce net greenhouse gas emissions. This means that the EPA may assess greenhouse gas emissions from the proposals but will not regulate them. As with the EPA's assessment of the Worsley Mine Expansion, it is likely that the EPA will conclude that the proposal is 'generally consistent' with the EPA's greenhouse gas guideline. Any submissions on greenhouse gas emissions should have regard for the way the National Safeguard Mechanism works for major projects.

Holistic impact assessment and cumulative impact assessment

The EPA states that it includes holistic impact assessment and cumulative effects in assessment, but does not provide information in the Statement of environmental principles, factors, objectives and aims. It does provide some guidance for proponents in its Instructions: how to prepare an environmental review document. LINK

Holistic impact is where the combination of the environmental effect of two or more environmental factors or values has the potential to result in a significant impact. Cumulative impact is the impact of other proposals in addition to the one being considered.

Both holistic impact assessment and cumulative impact assessment were introduced into the EPA's deliberations after the Quinlan Review[7] in 2016, which was commissioned following the decision in the Supreme Court that the EPA's assessment of the Roe Highway extension to Stock Rd (Roe 8) was invalid.

In the Quinlan Review, the limitations of using environmental factors and objectives in environmental impact assessment were discussed, and the outcome of that review is that factors and objectives remain as useful tools but their individual assessments must be supplemented by holistic and cumulative assessment.

> *Interestingly, the issue of how complex, multi-factor impacts and cumulative impacts are going to be handled and reported using environmental factors and objectives was raised by only two practitioners (both senior consultants). Previously Morrison-Saunders and Bailey (2000 p270) identified the risk of being reductionist as a potential weakness with environmental factors and objectives in Western Australia 'that,* ***by breaking each proposal down into discrete parts …it may not adequately represent overall environmental functions****' so that* ***'it would be possible for each environmental factor to meet the minimum requirements of***

[5] https://www.dcceew.gov.au/climate-change/emissions-reporting/national-greenhouse-energy-reporting-scheme/safeguard-mechanism

[6] https://www.wa.gov.au/system/files/2024-10/greenhouse-gas-emissions-policy-major-projects.pdf

[7] Independent Legal and Governance Review into Policies and Guidelines for Environmental Impact Assessments under the Environmental Protection Act 1686 (WA), PD Quinlan SC, EM Heenan, and SU Govinnage, May 2016 EPA Legal and Governance Review - Quinlan et al 2016

> ***the EPA's environmental objectives but for the cumulative effect of all of the proposal impacts…to have unacceptable environmental consequences****'. Similarly, Donnelly et al (2006a p154) maintain that '****objectives, targets and indicators should not be considered in isolation for a particular environmental receptor due to the potential influence of environmental receptors on each other****'. To put it another way Reed et al, (2006 p412) stated that 'in addition to being objective and usable, indicators need to be holistic.'*

The EPA's most recent similar assessment for South32's Worsley expansion includes a short section titled holistic assessment. The EPA's assessment found that when the separate environmental factors and values affected by the proposal were considered together in a holistic assessment, the impacts from the proposal would not alter the EPA's views about consistency with the EPA factor objectives as assessed separately. This section did not provide any details about how the assessment of impacts to the factors separately, would change when considering the impacts to the factors as a combined whole. Submissions could argue that the actual holistic impact to the factors is greater than the sum of the individual impacts to the factors. For example, the impacts to inland waters result in a greater impact to terrestrial environmental quality, terrestrial fauna, and flora and vegetation because the quality and value of these factors rely on the local inland waters that will be disrupted by mining. In the EPA's assessment of inland waters for the Worsley expansion, the impacts to terrestrial fauna through changes in inland water quality and quantity are deferred to the section for terrestrial fauna.

Other submission guidance

WA Forest Alliance has published guidance on making a submission LINK and the Dwellingup Discovery Forest Defenders have also produced a series of information sheets here.

It is not necessary for submitters to spend time checking that the biological survey work meets the EPA's technical guidance. The EPA also requests comment from WA Government Departments including the Department of Water and Environmental Regulation, Department of Biodiversity, Conservation and Attractions (DBCA), Department of Planning, Lands and Heritage, Department of Mines, Petroleum and Exploration, and others. Within DBCA there are specialist teams that will coordinate the review and response from all of the functional units in DBCA including Species and Communities, Ecosystem Science, Animal Science, Plant Science, and the region/s. These teams will do a review of the more technical parts of the Environmental Review Documents including the flora and vegetation, and fauna surveys to assess if the survey work is adequate and accurate. Public submissions can identify errors in the biological survey work, but it is more important to provide additional evidence that counters the claims presented, for example the likely presence or absence of certain species in certain locations.

Document quality

The Mining and Management Plan Environmental Review Document was produced in a very short time by industry standards. Be alert to errors, gaps, inconsistencies and the use of old or irrelevant data. There are many instances where the Mining proposal documents refer to information in the Refinery proposal documents.

Information currency

The Pinjarra refinery has had two previous reassessments:

- Pinjarra Refinery Efficiency Upgrade in 2003-04, increase from 3.5 million to 4.2 million tonnes per year
- Un-named s45C production increase in 2014, increase from 4.2 to 5 million tonnes per year

The current Environmental Review Document has relied heavily on studies and reports produced for the Pinjarra Refinery Efficiency Upgrade or the 2014 s45C. Where a study is labelled with Efficiency Upgrade or Pinjarra Refinery Efficiency Upgrade, or was conducted prior to 2014, it could be scrutinized as likely out of date and based on a lower production rate than the current assessment. Assessment to support increased production to 5.25 Mtpa should be based on the most recent and accurate data, not extrapolated from 2003 data.

General guidance

In responding, remember the EPA's instructions for addressing each factor and objective:
-the receiving environment
-potential environmental impacts
-mitigation
-significant residual impact
-environmental outcomes

Consider these general statements, and back them up with evidence:

- There are elements of the receiving environment that have not been identified
- The receiving environment has values that have not been identified
- The quality of the receiving environment has been understated
- There are direct impacts that have not been identified
- There are indirect impacts that have not been identified
- The impacts have not been quantified OR have been inaccurately quantified
- The impacts have been minimized or dismissed
- There is no mitigation of impacts offered
- The mitigation of impacts is inadequate
- The mitigation of impacts will not be as effective as claimed
- There is no justification for limited mitigation of impacts
- The assessment of significant residual impact relies on incorrect assumptions OR understates the impact OR does not account for…
- The resulting environmental outcome is … a more significant impact than the proponent states OR does not meet the EPA's objective for the factor because…

END OF GUIDANCE

All pages beyond this point are the table summarising the assessment for each of Alcoa's two Public Environmental Reviews, and tables listing all the sections of both proposals that can be used as a template to complete your own submission.

Assessment Summary

Proposal	Referral	Level of Assessment	Scoping	Amend proposal during assessment	Environmental Review Document	Other documents
Pinjarra Alumina Refinery • Increase production from 5.0 to 5.25 Mtpa, increase residue from 10 Mtpa to 10.8 Mtpa • Clearing 1,695 ha within 3,241 ha refinery DE[8] • Transition mining from Huntly to Myara North and Holyoake • Clearing 8,323 ha within	Alcoa, 05/06/2020 Alcoa referral Alcoa Supporting Document	Assessment 2253 Assess at Public Environmental Review 8 weeks EPA determination	Environmental Scoping Document LINK Alcoa Proposal Content Document Preliminary key environmental factors: • Flora and vegetation • Terrestrial fauna • Terrestrial environmental quality • Inland waters • Air quality • Greenhouse gas emissions	S43A Notice LINK •Remove additional clearing in refinery DE – back to 1,396 ha within 3,241 ha refinery DE •Reduce additional clearing in mining areas to 7,500 ha clearing within 23,900 ha total DE •Combined extent 51,473 ha •Additional residue to 11.6 Mtpa	Environmental Review Document in **90** parts LINK – scroll down under Assessment > Environmental Review	*Alumina Refinery (Pinjarra) Agreement Act 1969* Ministerial Statement 646 (Huntly mine and Pinjarra refinery), LINK

34,103 ha mining DE			• Social surroundings			
Mining and Management Plan 2022-2026 • Clearing 20,558 ha within 66,620 ha mining DE at Huntly • Clearing 8,228 ha within 27,149 ha mining DE at Willowdale	WAFA, 28/02/2023 WAFA referral 1 And Alcoa Proposal Content Document	Assessment 2384 Assess at Public Environmental Review 10 weeks EPA determination and Public Advice	Environmental Scoping Document LINK	S43A Notice Combine 2022-2026 and 2023-2027 proposals LINK	EPA Termination	*Alumina Refinery (Pinjarra) Agreement Act 1969* *Alumina Refinery (Wagerup) Agreement Act 1978* Ministerial Statement 728 (Willowdale mine and Wagerup refinery) LINK EP Act Section 6 Exemption Order LINK 2023-2027 Mining and Management Plan (State Agreement version) LINK
Mining and Management Plan 2023-2027 • Clearing 22,504 ha within 66,620 ha mining DE at • Huntly • Clearing 10,197 ha within	WAFA, 28/02/2023 WAFA referral 2 And Alcoa Proposal Content Document	Assessment 2385 Assess at Public Environmental Review 10 weeks EPA determination			Environmental Review Document in **92** parts LINK – scroll down under Assessment > Environmental Review	

27,149 ha mining DE at Willowdale						

[1] DE = development envelope

Pinjarra Alumina Refinery Revised Proposal – assessment 2253 – response template

Environmental Review Document section	Comments	References	Outcome sought
Cover page Document control Invitation to make a submission Scoping – required work (Table)			
Executive summary 1. Proposal 1.1. Proposal content 1.2. Proposal alternatives 1.3. Local and regional context			
2. Legislative context 2.1. Environmental impact assessment process 2.2. Other approvals and regulation			
3. Stakeholder engagement 3.1. Key stakeholders			

3.2. Stakeholder identification and engagement process 3.3. Stakeholder consultation outcomes			
4. Object and principles of the EP Act			
5. Environmental factors and objectives 5.1. EPA environmental factor/s and objective/s 5.2. Relevant policy and guidance 5.3. Receiving environment 5.4. Potential environmental impacts 5.5. Mitigation 5.6. Assessment and significance of residual impact 5.7. Environmental outcomes			
6. Flora and Vegetation 6.1. EPA environmental factor/s and objective/s 6.2. Relevant policy and guidance 6.3. Receiving environment 6.4. Potential environmental impacts 6.5. Mitigation 6.6. Assessment and significance of residual impact 6.7. Environmental outcomes			

7. Terrestrial Fauna 7.1. EPA environmental factor/s and objective/s 7.2. Relevant policy and guidance 7.3. Receiving environment 7.4. Potential environmental impacts 7.5. Mitigation 7.6. Assessment and significance of residual impact 7.7. Environmental outcomes			
8. Terrestrial Environmental Quality 8.1. EPA environmental factor/s and objective/s 8.2. Relevant policy and guidance 8.3. Receiving environment 8.4. Potential environmental impacts 8.5. Mitigation 8.6. Assessment and significance of residual impact 8.7. Environmental outcomes 8.8.			
9. Inland Waters 9.1. EPA environmental factor/s and objective/s 9.2. Relevant policy and guidance 9.3. Receiving environment 9.4. Potential environmental impacts 9.5. Mitigation			

9.6. Assessment and significance of residual impact 9.7. Environmental outcomes 9.8.			
10. Air Quality **10.1.** EPA environmental factor/s and objective/s 10.2. Relevant policy and guidance 10.3. Receiving environment 10.4. Potential environmental impacts 10.5. Mitigation 10.6. Assessment and significance of residual impact 10.7. Environmental outcomes 10.8.			
11. Greenhouse Gases 11.1. EPA environmental factor/s and objective/s 11.2. Relevant policy and guidance 11.3. Receiving environment 11.4. Potential environmental impacts 11.5. Mitigation 11.6. Assessment and significance of residual impact 11.7. Environmental outcomes			
12. Social Surrounds			

12.1. EPA environmental factor/s and objective/s 12.2. Relevant policy and guidance 12.3. Receiving environment 12.4. Potential environmental impacts 12.5. Mitigation 12.6. Assessment and significance of residual impact 12.7. Environmental outcomes			
13. Other environmental factors or matters			
14. Offsets			
15. Matters of National Environmental Significance			
16. Holistic impact assessment			
17. Cumulative environmental impact assessment			
18. Additional information 18.1. References 18.2. Appendices 18.3. Disclaimers			

Bauxite Mining on the Darling Range 2023 to 2027 – assessment 2385

Environmental Review Document section	Comments	References	Outcome sought
Cover page Document control Invitation to make a submission Scoping – required work (Table)			
1. Overview of the Proposal 1.1 Proposal Content 1.2 Purpose and Scope of this Document 1.3 Proponent 1.4 Proposal Description 1.4.1 Bauxite Mining at Huntly Mine and Willowdale Mine 1.4.2 Mine Planning – Mining and Management Programs 1.4.3 Regional Exploration 1.4.4 Bauxite Mining Process 1.4.5 Mining Avoidance Zones and Limited Disturbance Areas 1.4.6 Water Supply and Usage 1.4.7 Supporting Infrastructure and Transport 1.4.8 Rehabilitation 1.4.9 Proposal status at EPA's Decision to Assess			

1.5 Proposal Alternatives 1.5.1 Justification 1.5.2 Proposal Alternatives 1.6 Local and Regional Context 1.6.1 Huntly Mine Local Context 1.6.2 Willowdale Mine Local Context 1.6.3 Exploration Lease Local Context 1.7 Modifications to the Proposal Since the Third-Party Referrals			
2. Legislative Context 2.1 Environmental Impact Assessment Process 2.1.1 State Agreements 2.1.2 Part IV of the Environmental Protection Act 1986 (WA) 2.2 Environmental Management Framework 2.2.1 Mining and Management Programs 2.2.2 Forest Clearing Advice 2.2.3 Management Plans 2.2.4 Rehabilitation Program Establishment 2.3 Other Approvals and Regulations			

2.3.1 Land Tenure 2.3.2 Decision-making Authorities 2.3.3 Rights in Water and Irrigation Act 1914			
3. Stakeholder Engagement 3.1 Overview 3.2 Stakeholder Identification and Engagement Process 3.3 Key Stakeholders 3.4 Stakeholder Consultation Outcomes			
4 Object and Principles of the EP Act 4.1 Environmental Principles 4.2 Key Environmental Factors 4.3 Impact Assessment Approach 4.3.1 Mine Disturbance Footprint 4.3.2 Commitments to Protect Key Environmental Values			
5 Environmental Factors and Objectives 5.1 Identification of Key Environmental Factors 5.2 Key Environmental Factor – Flora and Vegetation 5.2.1 EPA Objective			

5.2.2 Relevant Policy and Guidance 5.2.3 Receiving Environment 5.2.4 Receiving Environment – Vegetation 5.2.5 Receiving Environment – Flora 5.2.6 Potential Environmental Impacts 5.2.7 Mitigation 5.2.8 Assessment and Significance of Residual Impacts 5.2.9 Environmental Outcomes 5.3 Key Environmental Factor – Terrestrial Fauna 5.3.1 EPA Objective 5.3.2 Relevant Policy and Guidance 5.3.3 Receiving Environment 5.3.4 Terrestrial Vertebrate Fauna 5.3.5 Aquatic Fauna 5.3.6 Short-range Endemic Invertebrate Fauna 5.3.7 Potential Environmental Impacts 5.3.8 Mitigation			

5.3.9 Assessment and Significance of Residual Impact 5.3.10 Environmental Outcomes 5.4 Key Environmental Factor – Terrestrial Environmental Quality 5.4.1 EPA Objective 5.4.2 Relevant Policy and Guidance 5.4.3 Knowledge and survey gaps addressed in Pinjarra Alumina Refinery Revised Proposal (Assessment 2253) 5.4.4 Receiving Environment 5.4.5 Potential Environmental Impacts 5.4.6 Mitigation 5.4.7 Assessment of Significant Residual Impact 5.4.8 Environmental Outcomes 5.5 Key Environmental Factor – Inland Waters 5.5.1 EPA Objective 5.5.2 Relevant Policy and Guidance 5.5.3 Receiving Environment 5.5.4 Surface Water Systems			

5.5.5 Groundwater Systems 5.5.6 Overview of Significant Environmental Values 5.5.7 Potential Environmental Impacts 5.5.8 Mitigation 5.5.9 Assessment and Significance of Residual Impacts 5.5.10 Environmental Outcomes 5.6 Key Environmental Factor – Social Surroundings (Heritage) 5.6.1 EPA Objective. 5.6.2 Relevant Policy and Guidance 5.6.3 Receiving Environment 5.6.4 Potential Environmental Impacts 5.6.5 Mitigation 5.6.6 Assessment and Significance of Residual Impacts 5.6.7 Environmental Outcomes 5.7 Key Environmental Factor – Social Surroundings (Amenity) 5.7.1 EPA Objective 5.7.2 Relevant Policy and Guidance			

5.7.3 Receiving Environment 5.7.4 Potential Environmental Impacts 5.7.5 Mitigation 5.7.6 Assessment and Significance of Residual Impact 5.7.7 Environmental Outcome 5.8 Key Environmental Factor – Greenhouse Gas Emissions 5.8.1 EPA Objective 5.8.2 Policy and Guidance 5.8.3 Receiving Environment 5.8.4 Scope of this Proposal 5.8.5 Environmental Outcomes			
6 Other Environmental Factors or Matters 6.1 Other Environmental Factors 6.2 Rehabilitation Program 6.2.1 The Mine Rehabilitation Process 6.2.2 Rehabilitation Completion Criteria 6.2.3 Rehabilitation Monitoring and Reporting 6.2.4 Rehabilitation Area Certification			

6.2.5 Rehabilitation Status 6.2.6 Independent Peer Review of Rehabilitation Methods and Success to Date 6.3 Rehabilitation Performance 6.3.1 Flora and Vegetation 6.3.2 Fauna Recovery 6.3.3 Post-mining Land Use 6.4 Ongoing and Future Research			
7 Exploration 7.1 Overview 7.1.1 Exploration and Development Drilling 7.1.2 Supplementary Exploration Drilling 7.1.3 Groundwater Bore Drilling 7.2 Receiving Environment 7.2.1 Flora and Vegetation 7.2.2 Terrestrial Fauna 7.2.3 Terrestrial Environmental Quality 7.2.4 Inland Waters 7.2.5 Social Surrounds 7.3 Potential Impacts 7.4 Mitigation 7.5 Assessment of Significance of Residual Impacts			

7.6 Environmental Outcomes			
8 Offsets 8.1 EPA Objective 8.2 Policy and Guidance 8.3 Application of Mitigation Hierarchy 8.4 Significant Residual Impacts 8.5 Environmental Offset Considerations 8.6 Offset Strategy 8.7 Offset Proposal 8.7.1 Objectives 8.7.2 Proposed Outcomes 8.7.3 Proposed Offset Extent 8.7.4 Description of Actions to be Undertaken 8.7.5 Description of Offset Areas 8.7.6 Alignment with the Six Principles Outlined in the WA Environmental Offsets Policy and WA Environmental Offset Guideline 8.7.7 Alignment with Relevant Plans, Policies, and Recovery Plans 8.8 Stakeholder Consultation			

8.9 Finalisation and Implementation of Offsets			
9 Holistic Impact Assessment 9.1 Identified Key Environmental Values 9.2 Summary of the Potential Effects of the Proposal on the Environment as a Whole 9.3 Significant Residual Combined Environmental Effects 9.4 Consistency with EP Act Principles and EPA Objectives for Key Environmental Factors			
10 Cumulative Environmental Impact Assessment 10.1 EPA Definition of Cumulative Environmental Impacts 10.2 Proposal Considered for Cumulative Impacts 10.3 Flora and Vegetation Cumulative Impacts 10.3.1 Overview 10.3.2 Pastoral and Agricultural Operations 10.3.3 Timber Harvesting			

10.3.4 Fire 10.3.5 Mining and Rehabilitation 10.3.6 Disease and Weed Invasion 10.3.7 Climate Change 10.3.8 Impacts to Biodiversity 10.3.9 Knowledge and survey gaps addressed in Pinjarra Alumina Refinery Revised Proposal (Assessment 2253) 10.4 Terrestrial Fauna Cumulative Impacts 10.4.1 Past and Present Activities 10.4.2 Reasonably Foreseeable Future Activities 10.4.3 Knowledge and survey gaps addressed in Pinjarra Alumina Refinery Revised Proposal (Assessment 2253) 10.5 Terrestrial Environmental Quality Cumulative Impacts 10.5.1 Past and Present Activities 10.5.2 Reasonably Foreseeable Future Activities 10.5.3 Knowledge and survey gaps addressed in Pinjarra			

Alumina Refinery Revised Proposal (Assessment 2253) 10.6 Inland Waters Cumulative Impacts 10.6.1 Past and Present Activities 10.6.2 Reasonably Foreseeable Future Activities 10.6.3 Knowledge and survey gaps addressed in Pinjarra Alumina Refinery Revised Proposal (Assessment 2253) 10.7 Social Surroundings (Heritage) Cumulative Impacts 10.7.1 Land Clearing 10.7.2 Waterways 10.7.3 Land Access 10.7.4 Aboriginal Heritage Places 10.7.5 Minimising Cultural Heritage Impacts 10.7.6 Knowledge and survey gaps addressed in Pinjarra Alumina Refinery Revised Proposal (Assessment 2253) 10.8 Social Surroundings (Amenity) Cumulative Impacts			