


# RAVENSWORTH OPEN CUT

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GLENCORE



## Environmental Management Strategy

**Number:** RAVCX-1962359669-15

**Owner:** Environment & Community Coordinator

**Status:** Approved

**Version:** 4.0

**Effective:** 15 June 2022

**Review:** 15 June 2025

*Uncontrolled unless viewed on the intranet*

# Table of Contents

<b>1.</b>	<b>Introduction .....</b>	<b>4</b>
1.1	Background .....	4
1.2	Purpose .....	4
1.3	Scope.....	5
1.4	Requirements for this Strategy .....	8
1.5	Objectives.....	9
1.6	Environmental Management Framework.....	10
1.7	Roles and Responsibilities.....	11
<b>2.</b>	<b>Commitments.....</b>	<b>15</b>
<b>3.</b>	<b>Planning .....</b>	<b>20</b>
3.1	Strategy and Planning .....	20
3.2	Objectives and Targets.....	22
3.3	Environmental Aspects and Impacts.....	22
3.4	Project and Change Management .....	24
3.5	Catastrophic Hazards .....	24
3.6	Legislation & Regulatory Requirements.....	24
3.6.1	Environmental Planning and Assessment Act 1979.....	27
3.6.2	Environmental Planning and Assessment Regulation 2000.....	27
3.6.3	Mining Act 1992 .....	27
3.6.4	Protection of the Environment Operations Act 1997 .....	30
3.6.5	Heritage Act 1977.....	30
3.6.6	National Parks and Wildlife Act 1974.....	30
3.6.7	NSW Biodiversity Conservation Act 2016 .....	30
3.6.8	Water Management Act 2000.....	31
3.6.9	Environment Protection and Biodiversity Conservation Act 1999 .....	32
3.6.10	Roads Act 1993.....	33
3.6.11	Glencore Standards and Policies.....	33
<b>4.</b>	<b>Implementation and Operation .....</b>	<b>34</b>
4.1	Documentation and Document Control.....	34
4.2	Communication and Consultation .....	34
4.2.1	Community Consultative Committee.....	36
4.3	Environmental Training, Awareness and Competency .....	36
4.4	Operational Controls.....	37
4.4.1	Management of Change – Management Plans.....	38
4.4.2	Cultural Heritage Management .....	40
4.4.3	Blast Management .....	40

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

4.4.4	Exploration and Drilling.....	40
4.4.5	Hydrocarbon Management.....	41
4.4.6	Air Quality and Greenhouse Gas Management .....	41
4.4.7	Noise Management.....	41
4.4.8	Water Management.....	42
4.4.9	Rehabilitation Management .....	42
4.4.10	Mine Closure Planning .....	43
4.4.11	Biodiversity Management .....	43
4.4.12	Waste Management.....	43
4.5	Emergency Preparedness and Response .....	44
<b>5.</b>	<b>Measurement and Evaluation .....</b>	<b>45</b>
5.1	Environmental Monitoring.....	45
5.2	Environmental Inspections.....	45
5.3	HSEC Review Meetings.....	45
5.4	Environmental Audits.....	46
5.4.1	External Audits .....	46
5.4.2	Internal Audits.....	46
5.5	Community Complaints & Environmental Incidents.....	46
5.5.1	Community Complaints.....	46
5.5.2	Dispute Resolution .....	47
5.5.3	Environmental Incidents .....	47
5.6	Non-compliance and Corrective Actions.....	48
5.7	Environmental Reporting.....	49
5.7.1	Internal Reporting .....	49
5.7.2	External Reporting.....	49
<b>6.</b>	<b>Review and Improvement.....</b>	<b>51</b>
6.1	Management Review .....	51
6.2	Continuous Improvement .....	51
6.3	Environmental Management Strategy Review .....	51
<b>7.</b>	<b>Document Information .....</b>	<b>52</b>
7.1	Reference Information.....	52
7.2	Change Information .....	55
<b>Appendix A</b>	<b>Noise Monitoring Locations .....</b>	<b>56</b>
<b>Appendix B</b>	<b>Air Quality Monitoring Locations .....</b>	<b>57</b>
<b>Appendix C</b>	<b>Surface Water Monitoring Locations.....</b>	<b>58</b>
<b>Appendix D</b>	<b>Groundwater Monitoring Locations .....</b>	<b>59</b>
<b>Appendix E</b>	<b>Blast Monitoring Locations .....</b>	<b>60</b>
<b>Appendix F</b>	<b>Management Strategy Approval .....</b>	<b>61</b>

Number: RAVCX-1962359669-15

Status:  
Approved

Effective:  
15 June  
2022

Owner: Environment & Community Coordinator

Version: 4.0

Review: 15  
June 2025

# 1. Introduction

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## 1.1 Background

The Ravensworth Operations is located between the townships of Singleton and Muswellbrook, in the Upper Hunter Valley region of New South Wales (NSW) (refer to *Figure 1-1*).

The Ravensworth Operations Development Consent 09\_0176 (PA 09\_0176) was granted on 11 February 2011 by the Minister for Planning and has subsequently been modified on four occasions: 16 August 2013, 19 December 2014, 16 February 2016 and 15 May 2023.

Ravensworth Operations also holds Development Consent DA 104/96 (DA 104/96) for the Ravensworth Underground Mine (RUM). DA 104/96 was approved on 20 November 1996 and has been modified on ten occasions (the latest being on 7 July 2022).. RUM was placed in Care and Maintenance in October 2014.

PA 09\_0176 and DA 104/96 allow for the expansion of existing approved mining operations and enables the consolidation of existing approvals for open cut mining and infrastructure within the Ravensworth area. Specifically, the approval consolidates existing approvals for the Narama Mine, Ravensworth West Mine, Cumnock Open Cut, RUM surface facilities and the Ravensworth Coal Handling and Preparation Plant (RCHPP). The Ravensworth Operations is shown in *Figure 1-2*.

PA 09\_0176 integrates the operational aspects of the mining operations, allowing for a consistent and integrated approach to environmental management and mine planning. The Ravensworth Operations is committed to implementing continued mining operations in the context of updated and contemporary environmental management requirements.

A number of company entities and joint venture partners are responsible for managing the operations, which are undertaken at the respective facilities that comprise the Ravensworth Operations. For the purpose of this Environmental Management Strategy (the Strategy), these respective entities will collectively be referred to as the Ravensworth Operations, with all activities ultimately being undertaken by Glencore Coal Assets Australia (GCAA) managed businesses.

## 1.2 Purpose

The Strategy provides the strategic context for the environmental management of the Ravensworth Operations and the framework from which the Environmental Management System (EMS) will be developed and implemented. This Strategy outlines how Ravensworth Operations manages environment and community aspects, impacts and performance. It provides a framework for the standards, plans and procedures implemented to ensure operations are managed in accordance with GCAA Health, Safety, Environment and Community (HSEC) Management System Framework (*GCAA-625378177 HSEC Management System Framework*), and with particular focus on the general principles of International Standard ISO:14001 (Environmental Management Systems) and all relevant licences and approvals held by Ravensworth Operations.

---

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 4 of 61

## 1.3 Scope

The Strategy applies to all activities at Ravensworth Operations including the Ravensworth Open Cut (ROC), RCHPP and the RUM. Environmental management is the responsibility of all personnel at the Ravensworth Operations.

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

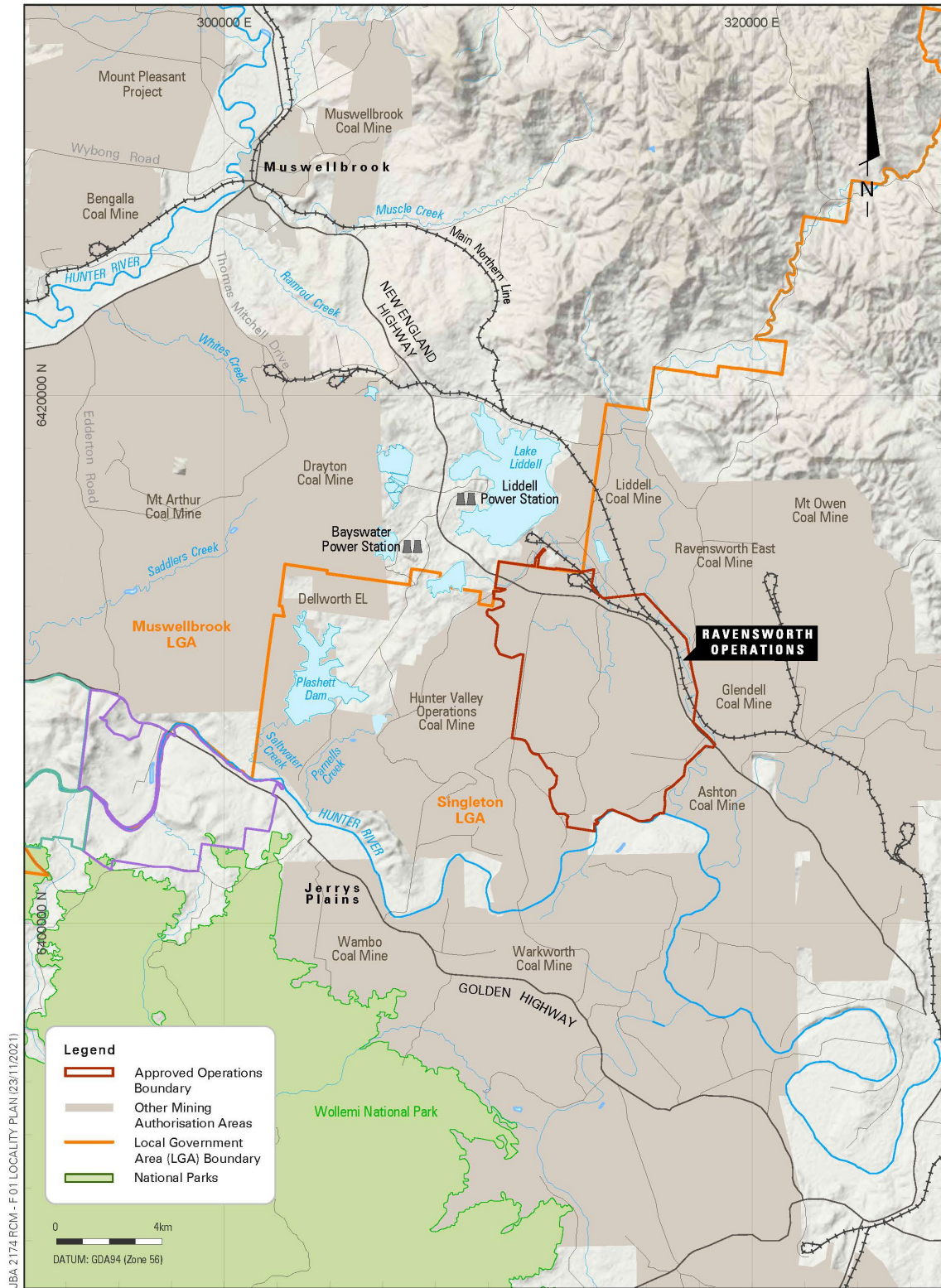
**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 5 of 61



RAVENSWORTH COMPLEX ENVIRONMENTAL  
MANAGEMENT STRATEGY

GLENCORE

**JB** JAMES BAILEY  
& ASSOCIATES  
*Environmental and Planning Consultants*

Ravensworth Complex Mine Layout

Figure 1-1 – Locality Plan

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025



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Ravensworth Complex Mine Layout

Figure 1-2 – Ravensworth Operations Mine Layout

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

## 1.4 Requirements for this Strategy

The Strategy has been developed to satisfy Condition 1 of Schedule 5 of PA 09\_0176. A list of the requirements of this condition and an indication of where they are addressed within this document are provided in **Table 1-1**.

In accordance with Condition 1 of Schedule 5 of PA 09\_0176, the Strategy has been prepared to the satisfaction of the Secretary. Copies of correspondence in relation to the development of the Strategy are available on the Department of Planning and Environment (DPE) Major Projects Website. A copy of the latest approval of the Strategy is also provided in **Appendix F**.

Whilst the Strategy guides operations across the whole of Ravensworth Operations including the RUM, this document is required for approval under PA 09\_0176 only (i.e. approval of the Strategy is not required under DA 104/96).

Schedule/ Condition	PA 09_0176 Condition Details	Section of Document
5, 1	<b>Environmental Management Strategy</b> The Applicant must prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Planning Secretary. The strategy must:	Entire Document
5, 1 (a)	be submitted to the Planning Secretary for approval by the end of June 2011;	N/A
5, 1 (b)	provide the strategic framework for environmental management of the development;	1.6
5, 1 (c)	identify the statutory approvals that apply to the development;	3.6
5, 1 (d)	describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;	1.7
5, 1 (e)	describe the procedures that would be implemented to:	
	<ul style="list-style-type: none"> <li>keep the local community and relevant agencies informed about the operation and environmental performance of the development;</li> </ul>	4.2 5.7.2
	<ul style="list-style-type: none"> <li>receive, handle, respond to, and record community complaints;</li> </ul>	5.5.1
	<ul style="list-style-type: none"> <li>resolve any disputes that may arise during the course of the development;</li> </ul>	5.5.2
	<ul style="list-style-type: none"> <li>respond to any non-compliance; and</li> </ul>	5.6
	<ul style="list-style-type: none"> <li>respond to emergencies.</li> </ul>	4.4.2

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Schedule/ Condition	PA 09_0176 Condition Details	Section of Document
5, 1 (f)	include:	
	<ul style="list-style-type: none"> <li>copies of any strategies, plans and programs approved under the conditions of this consent; and</li> </ul>	4.4
	<ul style="list-style-type: none"> <li>a clear plan depicting all the monitoring to be carried out in relation to the development.</li> </ul>	Appendix A Appendix D
5,1	<ul style="list-style-type: none"> <li>The Applicant must implement the approved strategy as approved from time to time by the Planning Secretary</li> </ul>	N/A

Table 1-1 – PA 09\_0176 Conditions

## 1.5 Objectives

In adopting the ISO:14001 principles, Ravensworth Operations has also adopted the “Plan-Do-Check-Act” model as shown in **Figure 1-3**. This has been applied to all the aspects of the EMS and the Strategy, to embed the continuous improvement process in all system documents.

The objectives of the Strategy are:

- To provide an overall framework for environmental management at Ravensworth Operations utilising the principles of ISO:14001;
- To integrate the requirements of the *GCAA-625378177 Management System Framework* and *GCAA-625378177 11.0 Environment Standard* into a Ravensworth Operations specific environmental management document;
- To ensure compliance with the Ravensworth Operations PA 09\_0176 and DA 104/96 and other relevant licences and approvals;
- To detail the relationship and interactions between various operational and environmental components of the Ravensworth Operations;
- To provide effective mechanisms for external communications, in particular maintaining a relationship with the local community; and
- To assist Ravensworth Operations personnel and contractors in administering their responsibilities regarding environmental management.

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

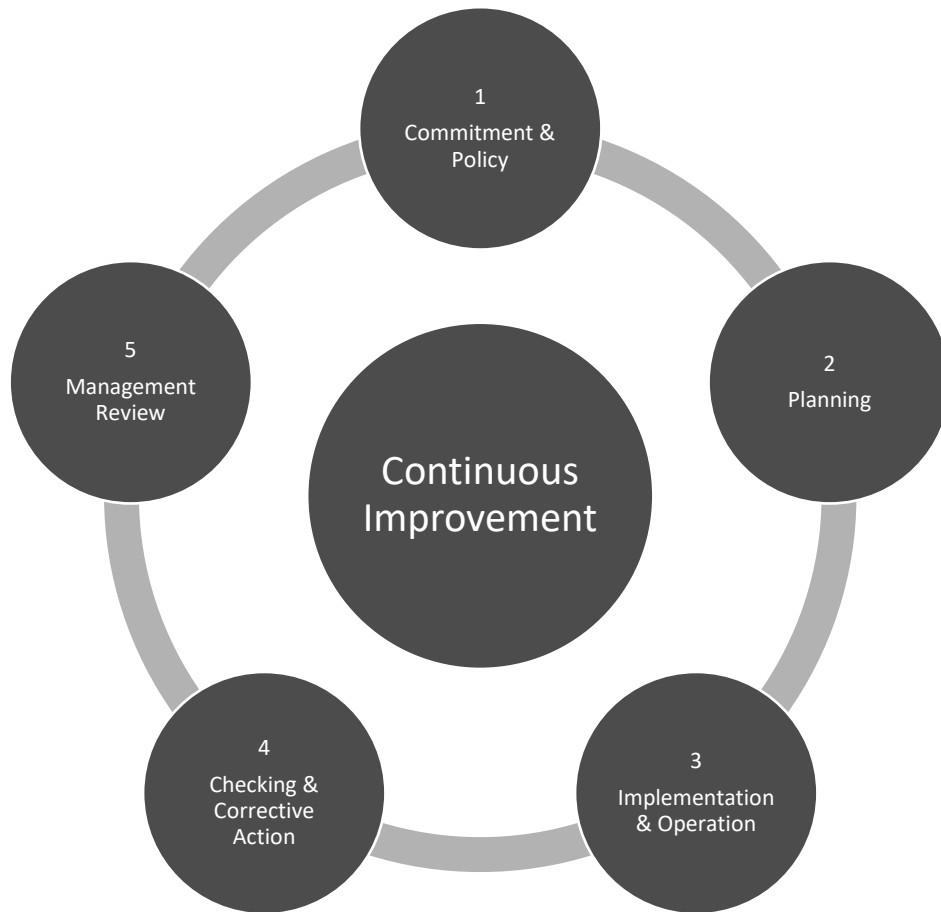


Figure 1-3 – Environmental Management System model adapted from ISO 14001:2015

## 1.6 Environmental Management Framework

As outlined in **Section 1.2**, the Strategy outlines the environmental management framework for the Ravensworth Operations, which aims to provide a consistent environmental management approach throughout its operations. The Strategy provides an umbrella document to procedures and plans that will be developed internally to address environmental aspects that are specific to each component of the Ravensworth Operations. Specifically, the Strategy provides the overarching management context from which site specific documents will be development and implemented. The core systems for the administration of the Strategy are outlined in **Table 1-2** below.

**Number:** RAVCX-1962359669-15

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15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

System	Purpose
<b>Environmental Management System</b>	<ul style="list-style-type: none"> <li>The collection of management plans, procedures and related documents concerning the Strategy.</li> </ul>
<b>SharePoint</b>	<ul style="list-style-type: none"> <li>The GCAA document management software and operating system used for the storage and publication of documents, including approved plans. Environment and Community (E&amp;C) management plans, strategies and procedures that cover the Ravensworth Operations are located in SharePoint so that plans are accessible on the individual site intranets.</li> </ul>
<b>Environmental Monitoring Database (EMD)</b>	<ul style="list-style-type: none"> <li>The repository for groundwater, surface water, air quality, noise, blast and meteorological records.</li> </ul>
<b>CMO™</b>	<ul style="list-style-type: none"> <li>The GCAA approvals and licences compliance storage database. CMO is also used for scheduling compliance actions pertaining to the requirements of licences.</li> </ul>
<b>Sentinex and Datamaster Systems</b>	<ul style="list-style-type: none"> <li>Real-time noise, air quality monitors, and blast monitors.</li> </ul>
<b>Consultation Manager™</b>	<ul style="list-style-type: none"> <li>The GCAA storage database for records of stakeholder consultation.</li> </ul>

Table 1-2 – Environmental Management Systems

## 1.7 Roles and Responsibilities

Environmental management is the responsibility of all employees and contractors at the Ravensworth Operations. The key Ravensworth Operations personnel and their relevant environmental and community management roles and responsibilities are outlined in **Table 1-3**. Specific roles and accountabilities are also defined within personnel position descriptions as well as the specific management plans and procedures contained within the relevant EMS document.

Role	Responsibilities
<b>Operations Manager</b>	<ul style="list-style-type: none"> <li>Maintain a working knowledge of the EMS and the Strategy and be aware of all environmental legislative requirements associated with their respective operation;</li> <li>Confirm mine operations are undertaken in accordance with the plans, procedures and standards included in the Strategy;</li> <li>Provide adequate resources for environmental management including qualified personnel, adequate financial resources and training as required for all employees; and</li> </ul>

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Role	Responsibilities
	<ul style="list-style-type: none"> <li>• Ensure any proposed works associated with the operation that may have an impact on the environment or the community, have the necessary legislative approval, prior to the commencement of works.</li> </ul>
<p><b>Environment &amp; Community Manager (ECM)</b></p>	<ul style="list-style-type: none"> <li>• Develop, implement and maintain the EMS and the Strategy, with the assistance of the Operations Managers;</li> <li>• Liaise with government and community stakeholders regarding environment and community matters associated with the Ravensworth Operations;</li> <li>• Liaise with senior management personnel to promote awareness and delegate tasks associated with the management of environmental issues/commitments at the Ravensworth Operations;</li> <li>• Prepare internal reports associated with the GCAA HSEC Management System and provide to the GCAA Group Environmental Manager, as required;</li> <li>• Provide environmental assistance and advice on legislative and approval requirements for any proposed works;</li> <li>• Coordinate complaints recording and investigation processes including associated reporting requirements;</li> <li>• Coordinate the implementation of corrective actions and evaluate their effectiveness associated with community complaints;</li> <li>• Coordinate training to communicate requirements of the EMS and the Strategy to relevant personnel; and</li> <li>• Implement a formal monthly environmental inspection program to assess compliance with legislation, standards, codes and other requirements.</li> </ul>
<p><b>Environment &amp; Community Coordinator (ECC)</b></p>	<ul style="list-style-type: none"> <li>• Prepare statutory environmental reports to ensure compliance with the approvals associated with Ravensworth Operations;</li> <li>• Coordinate the activities of specialist sub-consultants and project personnel for environmental assessment/monitoring/auditing responsibilities;</li> <li>• Confirm environmental monitoring occurs as per legislative procedures and company requirements;</li> <li>• Manage community complaints in line with the Strategy;</li> <li>• Liaise with government departments in accordance with regulatory requirements;</li> <li>• Manage the ongoing day to day monitoring and maintenance of physical environment and environmental incidents;</li> </ul>

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Role	Responsibilities
	<ul style="list-style-type: none"> <li>• Confirm all necessary reports are compiled accurately and submitted in a timely manner, both internally and externally;</li> <li>• Understand and apply relevant company policies and procedures;</li> <li>• Comply with all applicable laws, regulations and statutory obligations; and</li> <li>• Undertake regular environmental inspections to assess compliance with legislation, standards, codes and other requirements.</li> </ul>
<b>Environment &amp; Community Officer (ECO)</b>	<ul style="list-style-type: none"> <li>• Maintain a working knowledge of the EMS and the Strategy;</li> <li>• Be aware of all environmental legislative requirements and community responsibilities associated with their respective operation;</li> <li>• Undertake environmental management activities under instruction from the ECC; and</li> <li>• Undertake regular environmental inspections to assess compliance with legislation, standards, codes and other requirements.</li> </ul>
<b>Technical Services Manager, Mining Manager, Maintenance Manager, CHPP Manager</b>	<ul style="list-style-type: none"> <li>• Maintain a working knowledge of the EMS and the Strategy;</li> <li>• Be aware of the environmental legislative requirements and community responsibilities associated with their respective operation;</li> <li>• Facilitate those operations under his/her control are undertaken in accordance with the EMS and the Strategy and in particular, in accordance with relevant environmental management plans, procedures and standards;</li> <li>• Provide resources for appropriate training to all site employees regarding their environmental and community roles and functions;</li> <li>• Implement corrective actions arising from environmental incidents and audits;</li> <li>• Allow adequate provision in the annual capital budget for undertaking required environmental capital works;</li> <li>• Involve the E&amp;C Department in the assessment of any proposed works associated with the operation that may have an impact on the environment;</li> <li>• Maintain a high level of environmental performance at the site; and</li> <li>• Report any pollution control incidents and/or community complaints to the E&amp;C Department as soon as practicable.</li> </ul>
<b>All Employees and Contractors</b>	<ul style="list-style-type: none"> <li>• Have a general awareness of the EMS and the Strategy;</li> </ul>

**Number:** RAVCX-1962359669-15

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**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Role	Responsibilities
	<ul style="list-style-type: none"> <li>• Conduct their work activities in accordance with the EMS and the Strategy, in an environmentally responsible manner;</li> <li>• Report all environmental incidents to the Environmental &amp; Community Department or their immediate supervisor; and</li> <li>• Participate in relevant environmental training.</li> </ul>

*Table 1-3 – Roles and Responsibilities*

## 2. Commitments

All commitments outlined within the Strategy are detailed in *Table 2-1* below. Management commitments requiring actioning will be entered into the Ravensworth CMO and actioned accordingly. Records of documentation associated with the management commitments will also be maintained within CMO.

Commitment No.	Strategy Commitment	Section in Document
001	<p>The Environmental Management Strategy will:</p> <ul style="list-style-type: none"> <li>Provide an overall framework for environmental management at Ravensworth Operations utilising the principles of ISO:14001;</li> <li>Integrate the requirements of the <i>GCAA-625378177-10524 HSEC Management System Framework</i> and <i>GCAA-625378177-9978 11.0 Environment</i>;</li> <li>Ensure compliance with the Ravensworth Operations Project Approval, Development Consent and other relevant licences and approvals;</li> <li>Detail the relationship and interactions between various operational and environmental components of Ravensworth Operations;</li> <li>Provide effective mechanisms for external communications, in particular maintaining a relationship with the local community; and</li> <li>Assist Ravensworth Operations personnel and contractors in administering their responsibilities regarding environmental management.</li> </ul>	1.5
002	Annual Planning will be undertaken in accordance with <i>GCAA-625378177-9987 2.0 Strategy and Planning</i> .	3.1
003	Following the annual management review, HSEC strategies, plans, processes, objectives and targets are to be updated. Actions and minutes from the annual management review will be recorded in CMO and progress reviewed throughout the year.	3.2
004	Key aspects and impacts will be identified during the annual review of the Ravensworth Operations Annual Environment and Community Risk Assessment (Annual E&C Risk Assessment), Life of Mine (LOM) Risk Assessment and Site Wide Broad Brush Risk Assessment (Site Wide BBRA).	3.3

**Number:** RAVCX-1962359669-15

**Status:**  
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**Effective:**  
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2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Commitment No.	Strategy Commitment	Section in Document
005	Annual Rehabilitation Planning will be undertaken in accordance with the Rehabilitation Management Plan (formerly the Mining Operations Plan <sup>1</sup> ) and in accordance with <i>GCAA-625378177-10241 11.16 Rehabilitation Management</i> .	3.4
006	An Annual Rehabilitation and Land Management Plan (ARLMP) will be prepared for the following year, which will incorporate budget information, for approval by GCAA.  The ARLMP will be consistent with the objectives as documented in the RMP and LOM targets and address any requirements of Ravensthorpe specific approvals.	3.4
007	A Catastrophic Hazard Register will include nominated control measures to manage foreseeable catastrophic hazards and will be reviewed annually as part of the Site Wide BBRA process.	3.4
008	Exploration and drilling activities will be undertaken in accordance with <i>GCAA-625378177-10237 11.09 Exploration and Drilling</i> .	4.4.4
009	Conceptual Rehabilitation and Mine Closure Plan will be reviewed and revised at least every 3 years in accordance with <i>GCAA-625378177-10325 11.17 Mine Closure Planning</i> .	4.4.10
010	Ravensthorpe Operations will maintain awareness to changes to standards, codes or legislation by: <ul style="list-style-type: none"> <li>• Receipt of regular updates from legal advisers;</li> <li>• Participation in industry groups, such as the NSW Minerals Council and Minerals Council Australia;</li> <li>• Notification from the GCAA General Manager Environment &amp; Community and support team; and</li> <li>• Access to legislation via the internet.</li> </ul>	3.6
011	CMO (or similar) will be used to store evidence and maintain compliance with PA 09_0176 and DA 104/96, leases, licences, and other approvals. CMO will be updated regularly as triggered by actions or the addition of new or modified approvals.	3.6
012	Ravensthorpe Operations will operate in accordance with the Values and Code of Conduct set by Glencore and the GCAA Protocols and Standards. These requirements will be incorporated into the Ravensthorpe Operations system documentation, where relevant.	3.6.11

<sup>1</sup> On 2 July 2021, new rehabilitation and reporting requirements were introduced under Schedule 8A of *Mining Regulation 2016*. For large mines, a 12 month transition period is provided. Accordingly, from 2 July 2022, the previous Ravensthorpe Complex MOP has been replaced by a Rehabilitation Management Plan (and other supporting documents).

**Number:** RAVCX-1962359669-15

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**Review:** 15  
June 2025

Commitment No.	Strategy Commitment	Section in Document
013	The site intranet will be utilised to access plans, standards, procedures, forms and policies under the EMS and the Strategy.	4.1
014	Consultation with the community and other key external stakeholders will be undertaken in accordance with the <i>Ravensworth Operations Community and Stakeholder Engagement Strategy</i> .	4.2
015	The Ravensworth Operations website will provide access to the community to relevant information required by PA 09_0176 and DA 104/96.	4.2
016	Consultation with the local community occurs through the Ravensworth Community Consultative Committee (CCC).	4.2.1
017	An Annual Training Plan will be developed for Ravensworth Operations.	4.3
018	Copies of the latest approved versions of environmental management plans will be available on the Ravensworth Operations website.	4.4
019	Management Plans will be reviewed, updated and provided to relevant Departments for review and approval in accordance with <i>GCAA-625378177-9979 12.0 Change</i> .	4.4.1
020	Operational procedures will be developed and implemented for (at least) Ground disturbance and clearing procedures and Rehabilitation procedures.	4.4
021	The Ravensworth Operations will maintain a site specific emergency response plan prepared in accordance with <i>GCAA-625378177-9993 7.0 Emergency</i> .	4.4.2
022	A Pollution Incident Response Management Plan (PIRMP) will be maintained as required by Environment Protection Licence (EPL) 2652. Employees and contractors will receive training in the responsibilities of the PIRMP.	4.4.2
025	Monitoring programs will be included in the environmental management plans.	5.1
023	Regular environmental inspections are undertaken to determine compliance with legislation, standards, codes, other external requirements as well as the EMS and the Strategy.	5.2
024	HSEC meetings will be conducted on a regular basis in order to monitor compliance with the applicable GCAA requirements and other legislative requirements.	5.3

Number: RAVCX-1962359669-15

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June 2025

<b>Commitment No.</b>	<b>Strategy Commitment</b>	<b>Section in Document</b>
<b>025</b>	Internal and external audits will be undertaken to verify compliance with legislation, licences, approvals and <i>GCAA-625378177-9980 13.0 Assurance Standard</i> .	5.4
<b>026</b>	An independent environmental audit will be conducted every three years in accordance with PA 09_0176 and DA 104/96.  A copy of the audit report is to be submitted to the DPE within six weeks of its completion, along with an action plan for the recommendations made in the report.	5.4.1
<b>027</b>	A summary of all complaints will be reported on the Ravensworth Operations website (updated monthly) and in the Annual Review.	5.5
<b>028</b>	In the event of a disagreement between Ravensworth Operations personnel and a member of the community, the ECM will undertake the necessary liaison and communication to reach a resolution, which may include a meeting with the complainant to discuss the issue.	5.5.2
<b>029</b>	Environmental incidents are to be identified, investigated and reported in accordance with the <i>GCAA-625378177-9992 6.0 Incident</i> and <i>GCAA-625378177-10394 Incident Reporting and Investigation</i> .	5.5.3
<b>030</b>	The Ravensworth Operations ECM is to ensure that all incident notification requirements are undertaken in accordance with the PIRMP and <i>GCAA-625378177-9992 6.0 Incident</i> .	5.5.3
<b>031</b>	All non-compliances and the actions taken to correct and/or prevent the non-compliance from occurring again is to be recorded in CMO.	5.6
<b>032</b>	Internal environmental reporting will be undertaken through the submission of an EC Status Report to the GCAA ECM through CMO on a monthly basis.	5.7.1
<b>033</b>	Relevant environmental management information will be communicated to employees, contractors and visitors through avenues such as formal training and toolbox talks; weekly or daily planning meetings; inductions; and incident / hazard / near miss communications.	5.7.1
<b>034</b>	All external reporting will be undertaken with the approval of the Ravensworth Operations ECM. Reporting will include an Annual Review, EPL Annual Return, National Pollutant Inventory (NPI) and National Greenhouse and Energy Reporting (NGER) reports submitted annually.	5.7.2

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Commitment No.	Strategy Commitment	Section in Document
035	An annual internal management review of the EMS will be undertaken to assess the suitability and effectiveness of the systems used to manage environmental issues at the Ravensworth Operations.	6.1
036	<p>Continuous improvement will be provided by monitoring and corrective action.</p> <p>Any opportunities for continuous improvement will be identified and incorporated into the EMS and the Strategy, objectives and targets and environmental procedures, where appropriate.</p>	6.2
037	<p>The suitability of existing strategies, plans and programs required under PA 09_0176 and DA 104/96 will be reviewed within three months of:</p> <ul style="list-style-type: none"> <li>• The submission of an Annual Review;</li> <li>• The submission of an incident report;</li> <li>• The submission of an Independent Environmental Audit; or</li> <li>• Any modifications to the conditions of the approval.</li> </ul>	6.3

*Table 2-1 – Commitments within this Strategy*

## 3. Planning

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### 3.1 Strategy and Planning

Annual Planning is undertaken in accordance with *GCAA-625378177-9987 2.0 Strategy and Planning*. The annual risk management planning and budgeting process implemented for Ravensworth Operations is illustrated in *Figure 3-1*.

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

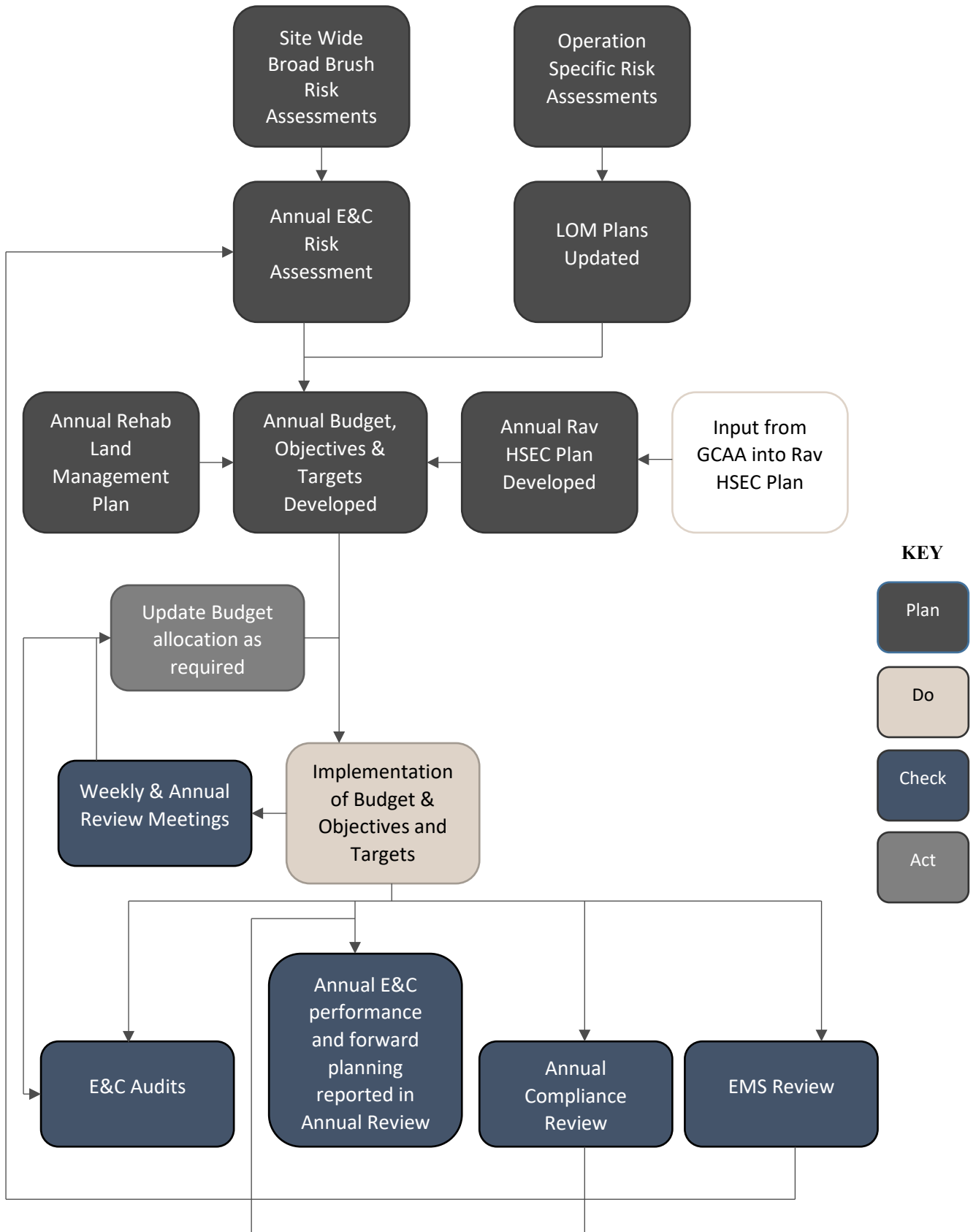
**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 20 of 61



**KEY**

- Plan
- Do
- Check
- Act

**Number:** RAVCX-1962359669-15

**Status:** Approved

**Effective:** 15 June 2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15 June 2025

Figure 3-1 – Annual E&C Planning Process

## 3.2 Objectives and Targets

Annual HSEC Plan objectives are incorporated into the site annual budget. Objectives and targets are specific, measurable and achievement of targets will generally demonstrate continuous improvement in environment and community management. Targets and specific improvement projects are often linked to an individual’s performance review process as part of GCAA’s performance appraisal and development system . The Ravensworth Annual HSEC Plan also incorporates the objectives and targets set by the GCAA Annual HSEC Plan.

The annual management review of environment and community issues and performance provides the operation with a detailed understanding of key environmental aspects and impacts prior to participating in the Ravensworth Operations Annual Environment and Community Risk Assessment (Annual E&C Risk Assessment). The annual management review meeting considers the following factors:

- Outcomes from monitoring and review activities;
- Internal and external environmental inspections, assessments and audit reports addressing operational, specialist, functional, management system, legal compliance and stakeholder requirements, or other external commitments;
- HSEC incident reports and investigation findings;
- Performance data, trends and reports including the extent to which targets and objectives have been met;
- Inputs and views of external stakeholders, including complaints;
- Status of corrective and preventative actions;
- Outcomes from previous management reviews; and
- Government policies and regulation, socio-economic or political developments and new scientific findings and technological developments.

Following the annual management review, HSEC strategies, plans, process, objectives and targets are to be updated. Actions and minutes from the annual management review meeting are recorded in CMO and progress is reviewed throughout the year.

A more detailed review of the Ravensworth Operations objectives and targets and compliance status is undertaken on a quarterly basis at HSEC meetings. These meetings provide a more comprehensive assessments of the status of project, actions, objectives and targets listed for the environment and community work schedule. The meeting is held with the Ravensworth Operations HSEC Management Team or representatives.

## 3.3 Environmental Aspects and Impacts

Aspects and impacts at Ravensworth Operations are considered for operational activities, legislative requirements and internal and external stakeholder views. Key aspects and impacts, including cumulative impacts from other operations or nearby industries are identified during the annual review

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

of the Annual E&C Risk Assessment and the LOM Risk Assessment and Site Wide Broad Brush Risk Assessment (Site Wide BBRA).

The Annual E&C Risk Assessment is undertaken in accordance with *GCAA-625378177-10317 11.01 Annual Environment and Community Risk Assessments*.

The purpose of the Annual E&C Risk Assessment is to identify significant environment and community aspects and impacts across the operation, the risk they pose to operations and the controls necessary to effectively manage them. Management of impacts is prioritised according to the level of risk each aspect is assigned. Once all identified aspects, impacts, risks and management controls have been identified, within the Annual E&C Risk Assessment, any changes are documented and managed in accordance with *RAV SD ANN 0011 Risk and Change Management Procedure*.

The purpose of the Site Wide BBRA is to identify significant aspects and impacts of operations at a site level. Existing or proposed management controls are identified to reduce the risk of impacts on the environment and the community. The need for any new (or modifications to existing) approvals are also identified during this process.

The LOM Risk Assessment considers aspects and impacts of business activities at a strategic level. These risk assessments cover the life of mine risks associated with each operation. The outcomes of the LOM Risk Assessment are used in conjunction with the Ravensworth Operations Annual E&C Risk Assessment and Site Wide BBRA to develop each operation's annual budget and work schedule.

The LOM Risk Assessment, Budget Risk Assessment and Site Wide BBRA are undertaken in accordance with *RAV SD ANN 0011 Risk and Change Management Procedure*.

Ravensworth Operations also undertakes specific risk assessments for identified significant environmental aspects and impacts, where appropriate preventative and/or mitigating measures will be documented through site environmental management systems. This may include but is not limited to climate change, bushfire, closure, human rights, and water risk assessments. Ravensworth Operations implements site specific risk management procedures that have been developed to comply with *GCAA-625378177-2844 Risk Management*.

As part of the risk management process, the Ravensworth Operations will:

- Maintain a site risk management plan in accordance with the GCAA Risk and GCAA Change Management Standards;
- Identify and conduct risk assessments using a competent risk assessment facilitator;
- During the risk management process, identify accountabilities at all levels of the organisation;
- Conduct risk management training and identify training needs for personnel required in the risk management process;
- Identify High Environmental Risk Facilities, where the failure of the facility could potentially cause significant environmental impacts. This is conducted through business planning and risk identification processes; where identified, these facilities are to be designed, operated, maintained and inspected in accordance with relevant good practice to minimise the risk of adverse environmental impacts; and
- Communicate information regarding risk management to potentially affected stakeholders.

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 23 of 61

## 3.4 Project and Change Management

All projects are managed to consider HSEC requirements generally in accordance with *GCAA-625378177-10328 11.20 Statutory Approval Management-NSW*, in conjunction with *RAV SD ANN 0011 Risk and Change Management Procedure*. Environmental impacts of projects are assessed during the planning phases to consider environmental criteria, legislative requirements and stakeholder views, as discussed above.

Change management for the review and update of Environmental Management Plans is discussed in **Section 4.4.1**.

## 3.5 Catastrophic Hazards

The systematic identification, assessment and management of foreseeable catastrophic hazards is undertaken utilising *GCAA-625378177-2844 CAA Financial Standard - Risk Management*.

This process includes:

- Identifying foreseeable hazards associated with operations at Ravensworth Operations;
- Assessing HSEC risks using recognised analysis and evaluation methodologies; and
- Implementing controls necessary to eliminate or reduce identified catastrophic risks in accordance with the established hierarchy of controls for environmental management.

Ravensworth Operations maintains a Catastrophic Hazard Register. The Register includes nominated control measures to manage foreseeable catastrophic hazards and is reviewed annually as part of the Site Wide BBRA process.

## 3.6 Legislation & Regulatory Requirements

There are a number of statutory requirements under both State and Federal legislation which apply to the operations of the Project. Ravensworth Operations will apply to the relevant regulators for all required approvals and licences. Key required approvals and licences are provided in **Sections 3.6.1 to 3.6.10** below.

Compliance management at Ravensworth Operations is undertaken in accordance with *GCAA-625378177-10301 11.01 Environmental Compliance Management*, and *GCAA-625378177-9980 13.0 Assurance and GCAA625378177-9989 3.0 Documents and Records*. Ravensworth Operations maintains awareness to changes to standards, codes or legislation in the following ways:

- a) Receipt of regular updates from legal advisers;
- b) Participation in industry groups, such as the NSW Minerals Council and Minerals Council Australia;
- c) Notification from the GCAA General Manager E&C and support team; and
- d) Access to legislation via the internet.

The requirement to provide training to personnel and contractors is assessed as per the Training Needs Analysis (TNA), following the E&C Department becoming aware of a change. Training is further discussed in **Section 4.3**.

Ravensworth Operations follows a specific approvals and compliance process to ensure that all approvals required for the continuity of the operations are obtained within the required timeframe

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 24 of 61

and the compliance with these approvals is maintained. Ravensthorpe Operations has adopted CMO to store evidence and maintain compliance with development consents, leases, licences, and other approvals. CMO is updated regularly as triggered by actions or the addition of new or modified approvals.

In the event that Ravensthorpe Operations requires a new major approval, the approval is obtained following the process outlined within accordance with *GCAA-625378177-10328 Statutory Approval Management NSW*. The requirement to modify or obtain additional government approvals is identified during the annual risk management planning and budgeting process, as outlined in **Section 3.1**.

**Figure 3-2** summarises the compliance management process followed at Ravensthorpe Operations.

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

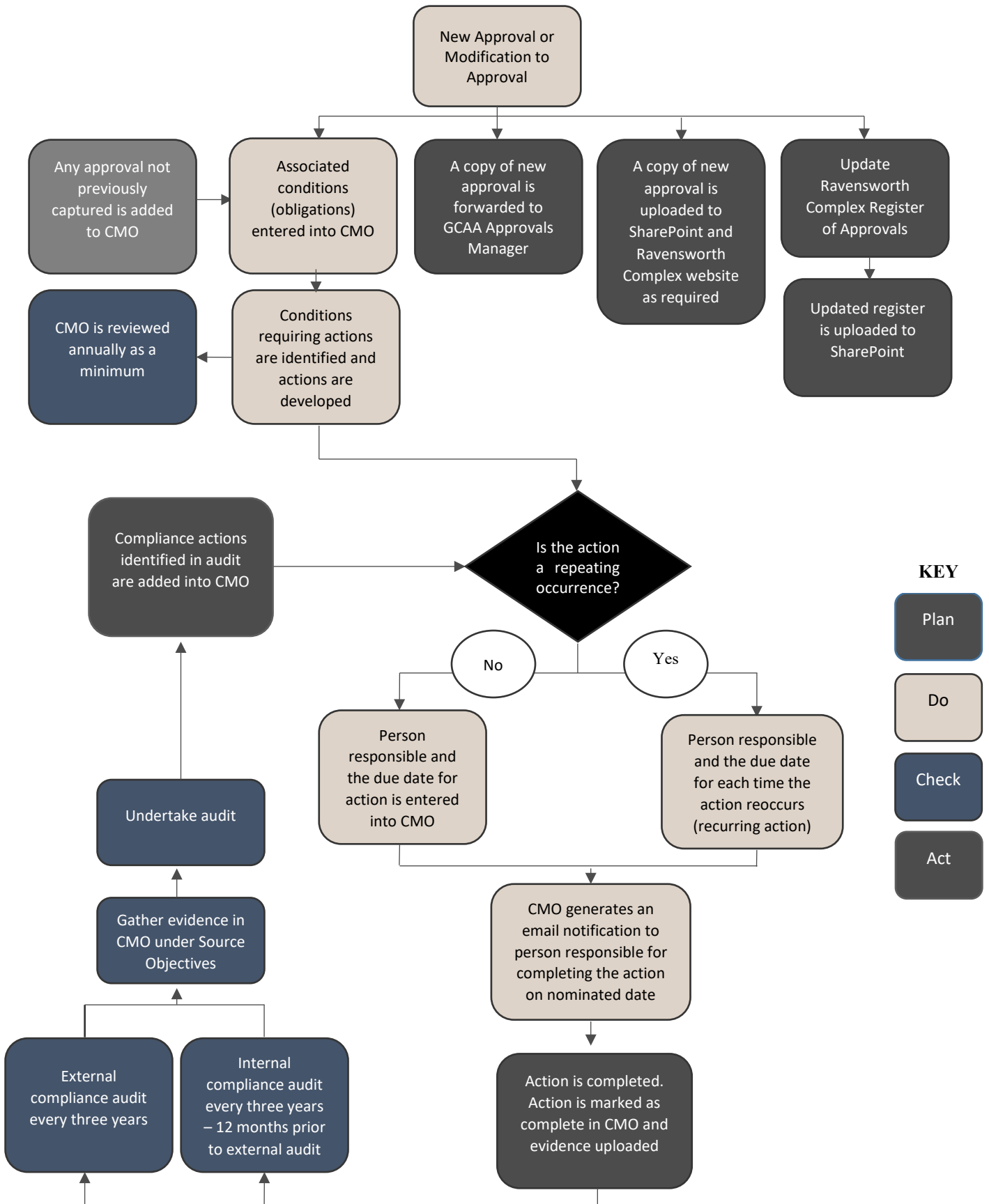


Figure 3-2 – Compliance Management

Number: RAVCX-1962359669-15

Status: Approved

Effective: 15 June 2022

Owner: Environment & Community Coordinator

Version: 4.0

Review: 15 June 2025

### 3.6.1 Environmental Planning and Assessment Act 1979

PA 09\_0176 and DA 104/76 are the primary documents for the operation of the Project and stipulate the key requirements under the *Environmental Planning & Assessment Act 1979 (EP&A Act)*. This Strategy has been prepared as required by Condition 1 of Schedule 5 of PA 09\_0176. **Table 1-1** lists the Consent conditions relevant to this Strategy and where each is addressed in this document. Whilst this Strategy has been prepared to encompass the activities at RUM, it is noted DA 104/96 does not specifically require the preparation of the Strategy.

Additionally, Management Plans and Monitoring Programs required under PA 09\_0176 and DA 104/96 are discussed in **Section 4.4** and **Section 5.1**.

### 3.6.2 Environmental Planning and Assessment Regulation 2000

The *Environmental Planning and Assessment Regulation 2000* provides further detail on the relevant procedures for at least the following:

- Lodging and advertising project applications and development applications;
- Requirements for Local Environment Plan and Development Control Plans;
- Determination of fees and development contributions to be paid by the proponent of a development;
- Preparation of an Environment Impact Study (EIS);
- Timeframes for the completion of Development Applications (DA) and major project application assessments;
- Public participation in the planning and approval process; and
- Certification requirements for construction and occupation of new developments.

### 3.6.3 Mining Act 1992

The *Mining Act 1992* prohibits the carrying out of prospecting and mining activities in NSW without the necessary authority. There are several types of authorities granted under this Act including Exploration Licences (EL) and Mining Leases (ML), which include Coal Leases (CL) and Consolidated Coal Leases (CCL) granted under earlier legislation.

A ML, generally granted for up to 21 years, allows the holder to prospect and mine for specified minerals. MLs are generally granted subject to conditions of which the holder is required to carry out its exploration, assessment and mining operations in accordance with. A list of current MLs for the Ravensworth Operations (including the RUM) is provided in **Table 3-1**.

MLs granted for coal reserves currently require the preparation of a Rehabilitation Management Plan (RMP). An Annual Rehabilitation Report (formally known as the Annual Environmental Management Report) is also required by the various MLs held for Ravensworth Operations. A Forward Program has been prepared and approved by the NSW Resources Regulator for the Ravensworth Operations for the period 1 July 2022 to 30 June 2025.

A Forward Program for the RUM has also been prepared and approved for the care and maintenance at RUM for the period 3 June 2022 to Monday 2 June 2025.

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 27 of 61

Lease	Holder	Expiry
<b>Ravensworth Operations</b>		
ML 1325	Cumnock No.1 Colliery Pty Limited, ICRA Cumnock Pty Limited	09/09/2035
ML 1357	Ravensworth Operations Pty Limited	17/08/2036
ML 1393	Cumnock No.1 Colliery Pty Limited, ICRA Cumnock Pty Limited	10/02/2027
ML 1484	AGL Macquarie Pty Limited, Resource Pacific Pty Limited	31/01/2024
ML 1485	AGL Macquarie Pty Limited, Resource Pacific Pty Limited	17/08/2036
ML 1576	Cumnock No.1 Colliery Pty Limited, ICRA Cumnock Pty Limited	23/02/2027
ML 1683	Cumnock No.1 Colliery and ICRA Cumnock	07/02/2034
CL 378	Cumnock No.1 Colliery Pty Limited, ICRA Cumnock Pty Limited	10/03/2027
CL 380	Ravensworth Operations Pty Limited	23/09/2033
CL 580	Ravensworth Operations Pty Limited	31/12/2023
CCL 723	Ravensworth Operations Pty Limited	31/01/2024
CCL 739	Ravensworth Operations Pty Limited	10/03/2029
A 385	Cumnock No.1 Colliery Pty Limited, ICRA Cumnock Pty Limited	02/06/2025
<b>Ravensworth Underground Mine</b>		
EL 7799*	Glencore Newpac Pty Limited	27/09/2023
ML 1416*	Resource Pacific Pty Limited	20/04/2039

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Lease	Holder	Expiry
ML 1506*	Resource Pacific Pty Limited	22/03/2044
ML 1564*	Resource Pacific Pty Limited	31/07/2026
ML 1581*	Resource Pacific Pty Limited	21/05/2027
ML 1591*	Resource Pacific Pty Limited	07/03/2028
ML 1595*	Resource Pacific Pty Limited	04/05/2028
ML 1625*	Resource Pacific Pty Limited	07/11/2029
ML 1348	Glencore Newpac Pty Limited	03/06/2033
ML 1349	Glencore Newpac Pty Limited	31/12/2023
ML 1398	Glencore Newpac Pty Limited	10/02/2027
ML 1477	Resources Pacific Pty Ltd	Pending Renewal
ML 1495	Resources Pacific Pty Ltd	01/10/2043
ML 1564	Resources Pacific Pty Ltd	01/08/2026
ML 1580	Glencore Newpac Pty Limited	30/12/2023
ML 1591	Resources Pacific Pty Ltd	08/03/2028
ML 1667	Glencore Newpac Pty Limited	31/12/2023
ML 1668	Glencore Newpac Pty Limited	31/12/2023

\* Authority relates to RUM but encompasses the land surface

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Table 3-1 – Current Mining Leases at the Ravensworth Operations

### 3.6.4 Protection of the Environment Operations Act 1997

The primary focus of the *Protection of the Environment Operations Act 1997* (POEO) is pollution prevention, waste management and minimisation, licensing of premises and activities with environmental risks and enforcement following environmental offences. The NSW Environment Protection Authority (EPA) issues an Environmental Protection License (EPL) for scheduled activities under this Act. In November 2012, the Ravensworth Operations consolidated its four EPLs within the complex (Ravensworth Operations EPL 2652, Cumnock EPL 37, Ravensworth Underground EPL 10377, and Ravensworth Coal Terminal EPL 5585) into Ravensworth Operations EPL 2652.

### 3.6.5 Heritage Act 1977

The *Heritage Act 1977* is the primary statutory control for items of State or Local Heritage significance. The Ravensworth Operations has developed a Historical Heritage Management Plan (HHMP) to manage the issues associated with this Act. This plan has been developed in consultation with the Heritage Branch, Council, local historical organisations and relevant landowners. The HHMP addresses the historical heritage management requirements associated with the Ravensworth Operations. It does not include heritage management strategies with regards to Aboriginal cultural heritage. These are addressed in the Ravensworth Operations Aboriginal Cultural Heritage Management Plan (ACHMP).

### 3.6.6 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* is the key statutory control for the management of Aboriginal heritage.

The Ravensworth Operations' ACHMP has been developed to manage the issues associated with this Act. The ACHMP has been developed in consultation with the relevant registered Aboriginal Groups and Heritage NSW. The ACHMP is applicable for activities within the project disturbance boundary and offset areas.

### 3.6.7 NSW Biodiversity Conservation Act 2016

The purpose of the *NSW Biodiversity Conservation Act 2016* (BC Act) (formerly governed by the *NSW Threatened Species Conservation Act 1995*) is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development (described in section 6 (2) of the *Protection of the Environment Administration Act 1991*). The BC Act provides protection for threatened species native to NSW. The impact assessment completed as part of the Ravensworth Operations Project Environmental Assessment (Umwelt 2010) (EA) resulted in the identification of a potential significant impact on one threatened fauna species and one Endangered Ecological Community (EEC). A detailed impact mitigation package consisting of standard impact mitigation strategies (such as post mining rehabilitation, preclearance and tree felling procedures) and a biodiversity offset strategy was developed to ameliorate the predicted impacts on these ecological features.

A Biodiversity Offsets Management Plan has been developed and details the biodiversity management, monitoring and rehabilitation requirements for the Ravensworth Operations. This document also includes management, monitoring and rehabilitation requirements for the

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 30 of 61

Ravensworth North, Hillcrest, Clifton and Stewart Offset Areas, in accordance with the requirements of the Development Consent.

### 3.6.8 Water Management Act 2000

The Ravensworth Operations currently holds water access licences (WALs) under the *Water Management Act 2000* for water extraction under Water Sharing Plans (refer to **Table 3-2**). The WALs held by the Ravensworth Operations permit the extraction of water from Management Zone 1B of the Hunter Regulated River (i.e. between the Goulburn River Junction and Glennies Creek Junction). Each WAL is linked to a works approval. The works approval allows for the installation of a pump station, at a defined location, to extract water as permitted by the WAL.

The Ravensworth Operations also holds a number of water access licences for groundwater interception, as listed in **Table 3-3**.

Licence Number	Water Source/ Management Zone	Category	Entitlement (Units)
<b>WAL 18317 (20AL21098)</b>	Hunter Unregulated and Alluvial Water Source/ Jerry Water Source/ Jerrys Management Zone (extraction from Bayswater Ck)	High Security	20
<b>WAL 9050 (20AL200462) Associated with works approval number 20WA200745</b>	Hunter River Regulated / Zone 1b (Hunter River from Goulburn River Junction to Glennies Creek Junction)	General Security	500
<b>WAL 10771 Associated with works approval number 20WA200463</b>	Hunter River Regulated / Zone 1b (Hunter River from Goulburn River Junction to Glennies Creek Junction)	High Security	25
<b>WAL 1046 (20AL201444) Associated with works approval number 20CA203133</b>	Hunter River Regulated / Zone 1b (Hunter River from Goulburn River Junction to Glennies Creek Junction)	High Security	3
<b>WAL 8964 (20AL203224) Associated with works approval number 20CA203133</b>	Hunter River Regulated / Zone 1b (Hunter River from Goulburn River Junction to Glennies Creek Junction)	General Security	1,590
<b>WAL 1325 (20AL203042) Associated with works approval number 20CA203133</b>	Hunter River Regulated / Zone 1b (Hunter River from Goulburn River Junction to Glennies Creek Junction)	Supplementary	13

Number: RAVCX-1962359669-15

Status:  
Approved

Effective:  
15 June  
2022

Owner: Environment & Community Coordinator

Version: 4.0

Review: 15  
June 2025

Licence Number	Water Source/ Management Zone	Category	Entitlement (Units)
<b>WAL 13102 (20AL203412)</b> <b>Associated with works approval number 20CA203133</b>	Hunter Regulated River / Zone 1A (Hunter River from Glenbawn Dam to Goulburn River Junction)	High Security	15

Table 3-2 – Surface Water Access Licenses issued under the Water Management Act (2000)

Licence Number	Water Source	Category	Entitlement (ML)
<b>WAL 41496</b> <b>Bore Licence 20BL168240</b>	Cumnock UG Extraction	Aquifer	2,520
<b>WAL 41531 (20AL218993)</b> <b>Bore Licence 20BL170749</b>	Narama Void Incidental Groundwater Interception	Aquifer	150
<b>WAL 41530 (20AL218992)</b> <b>Bore Licence 20BL170462</b>	Ravensworth West Pit Void Incidental Groundwater Interception	Aquifer	100
<b>WAL 41507</b> <b>Bore Licence 20BL173096</b>	Ravensworth North Pit Incidental Groundwater Interception	Aquifer	576
<b>WAL 41505</b>	Cumnock Wash Plant Pit	Aquifer	300
<b>WAL 41554</b> <b>Bore Licence 20BL170776</b>	South Open Cut	Aquifer	50

Table 3-3 – Groundwater Extraction Licenses issued under the Water Management Act (2000)

### 3.6.9 Environment Protection and Biodiversity Conservation Act 1999

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), approval from the Commonwealth Minister for the Environment is required for any action that may have a significant impact on Matters of National Environmental Significance (MNES). Four EPBC listed fauna species were identified as being potentially impacted by the Ravensworth Operations Project through the loss of habitat. The EPBC Act Approval was issued by the then Department of

**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Sustainability, Environment, Water, Population and Communities (DSEWPC)(now *Department of Climate Change, Energy the Environment and Water* (DCCEEW)) (No. 2010/5389) on 8 April 2011, and places 17 conditions on the Project.

A Federal Offset and Green and Golden Bell Frog Management Plan has been developed for the Ravensworth Operations in accordance with the EPBC Approval.

### 3.6.10 Roads Act 1993

The *Roads Act 1993* contains requirements for works on roads including the requirement to obtain permission from the local Council and Roads & Maritime Services.

### 3.6.11 Glencore Standards and Policies

As a business unit of GCAA, the Ravensworth Operations is required to operate in accordance with the Values and Code of Conduct set by Glencore. Additionally, GCAA has developed a set of Protocols and Standards that have been prepared to address the Glencore minimum requirements and provide guidance to operations on their effective implementation. The requirements of the Code of Conduct and the GCAA Guidelines will be incorporated into the Ravensworth Operations system documentation where relevant.

## 4. Implementation and Operation

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### 4.1 Documentation and Document Control

The document control process for the Ravensworth Operations has been developed in accordance with *GCAA-625378177-10301 11.01 Environmental Compliance Management* standard, which provides guidance and direction to GCAA Operations on implementing and maintaining systems to manage Sustainable Development legal compliance, including:

- Environmental Approvals Storage through a centralised Approvals Register;
- Management of Compliance and associated evidence via the GCAA wide CMO online system; and
- Internal assurance program for environmental approvals encompassing internal and external audits.

Site procedures ensure that:

- Appropriate documents are available for operations essential to the effective functioning of the relevant management system;
- All documents are appropriately labelled, filed and entered into the GCAA document management system;
- Obsolete documents are promptly removed from all points of issue or use;
- Changes resulting from a review of components of the management systems and Strategy are incorporated into the appropriate documentation and communicated effectively to the relevant personnel;
- Environmental documents are reviewed by the appropriate personnel prior to being issued; and
- Environmental correspondence documentation and environmental records are effectively maintained for a minimum of four years in accordance with relevant statutory requirements.

The Ravensworth Operations utilises the site intranet for the maintenance of the EMS and the Strategy, enabling access to plans, standards, procedures, forms and policies.

CMO is utilised for recording:

- Complaints and incidents;
- Approvals and associated commitments and actions;
- Audits; and
- Risk register templates.

### 4.2 Communication and Consultation

Ravensworth Operations promotes early engagement of stakeholders in order to facilitate open and honest communication with all community groups and individuals who have the potential to be affected by the operation. Stakeholder engagement is implemented throughout the project's lifecycle – from concept through to closure – so as to promote SD and minimise social impacts.

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 34 of 61

Stakeholder engagement strategy involves the following 4 steps:

- Identification of stakeholders;
- Identification of stakeholder's information requirements and timing;
- Assigning responsibility for undertaking the engagement; and
- Recording all stakeholder communication in Consultation Manager and or CMO as relevant.

Stakeholders are identified through formal and informal engagement processes including:

- EIS consultation;
- A consultation strategy workshop;
- Face to face consultation;
- Stakeholder and consultation surveys;
- Community complaints;
- Newsletter feedback; and
- Broad Brush Risk Assessments.

Consultation with the community and other key external stakeholders is undertaken in accordance with the *Ravensworth Operations Community and Stakeholder Engagement Strategy* (Stakeholder Engagement Strategy). Some of the key external stakeholders identified in the Stakeholder Engagement Strategy include:

- Government departments;
- The Ravensworth Operations's Community Consultative Committee (CCC);
- Local Aboriginal groups;
- Ravensworth Operations employees;
- Local communities;
- Regional environmental groups; and
- Neighbouring mining operations.

The identification of new stakeholders and their information requirements will be undertaken via a Stakeholder Identification and Information Needs Assessment in accordance with the Stakeholder Engagement Strategy.

The Ravensworth Operations also maintains a website providing access to the community to relevant information required by Condition 10 of Schedule 5 of PA 09\_0176 and Condition 9 of Schedule 4 of DA 104/96. This includes copies of:

- Approvals and licences;
- Approved strategies, plans and programs required by the Consents;
- Summary of monitoring results;
- Details of current activities;
- Scheduled blast times;

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 35 of 61

- Newsletters and community information sheets;
- A Complaints Register, which is updated on a monthly basis;
- Minutes of CCC meetings;
- Annual Reviews (over the last 5 years);
- Independent Environmental Audits; and

Any other matter required by the Secretary.

The Ravensworth Operations HSEC Communication and Consultation Procedure (RAVOC-258458278-1748) has been developed for sites to provide effective Health, Safety, Environment and Community (HSEC) communication processes to support sound HSEC management systems and practices on site, and to meet business, corporate and legislative requirements with regard to consultation.

The intent of this standard is to provide effective communication so that;

- Hazards and issues are known, addressed and avoided,
- Informed decisions may be made,
- People are motivated and encouraged to understand and accept opportunities to continually improve their HSEC performance and the HSEC Management System.
- Applicable requirements and information from Legislation, Standard, Codes and other external requirements are included in internal communications.
- Communications strategy is in place in the event of a catastrophic hazard.

#### 4.2.1 Community Consultative Committee

Consultation with the local community occurs through the Ravensworth CCC in accordance with Schedule 5, Condition 5 of PA 09\_0176 and Schedule 4, Condition 4 of DA 104/96. The CCC is operated in general accordance with the *Community Consultative Committee Guidelines State Significant Projects for Mining Projects* (Department of Planning and Environment January 2019).

### 4.3 Environmental Training, Awareness and Competency

The Ravensworth Operations aims to provide the necessary tools and training for its employees and contractors to enable the effective implementation of its sites' management systems and to assist with the risk management process.

An Annual Training Plan is developed for Ravensworth Operations to outline the training that will be undertaken to ensure all employees and contractors have obtained the necessary skills and knowledge required to complete all activities in a sustainable manner. All training is to be competency based and undertaken and assessed in accordance with the *GCAA-625378177-9990 Training Standard* and *RAVOC-258458278-2834 Training and Competency Management Plan*. All environment and community training programs are to include the following, where relevant:

- The importance of conformance with legislation, approvals and licences;

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 36 of 61

- The potential environmental and community impacts and associated controls for specific work activities;
- The roles and responsibilities of employees and contractors achieving conformance with environmental legislation, approvals and licences, the GCAA Code of Conduct and the EMS; and
- The potential consequences of noncompliance with environmental legislation, approvals, licences, the GCAA Code of Conduct and the EMS.

Ravensworth Operations implements and maintains a site familiarisation induction package, which includes information relevant to the environmental and community management of the Operations. As a minimum, the site familiarisation includes:

- An overview of the GCAA *Code of Conduct* and the site EMS and the Strategy;
- Key environmental issues for the Ravensworth Operations (i.e. surface water, groundwater, noise, blasting and biodiversity);
- Environmental incident and community complaint reporting requirements; and
- Emergency contact details.

All training records are kept and attendance at training sessions is recorded in accordance with the requirements of the *RAVOC-258458278-2834 Training and Competency Management Plan*. A review of the training records is to be undertaken on an annual basis to enable compilation of training records and to assist with the development of the Annual Training Plan for the following year.

Following changes to the mining operations or changes to a site's risk profile (refer to **Section 3.3**) appropriate training will be provided to relevant employees and contractors.

## 4.4 Operational Controls

Management plans and monitoring programs have been prepared in accordance with PA 09\_0176 and DA 104/96, Australian and International Standards and other applicable guidelines to facilitate the management of specific environment impacts of the operation. The implementation of the plans and programs will ensure effective environmental management and monitoring of mining operations and compliance with statutory requirements.

The environmental management plans and monitoring programs are required to address the requirements contained within the relevant GCAA standards, whilst also addressing the statutory requirements which are contained within the relevant statutory approvals, including but not limited to PA 09\_0176, DA 104/96 and EPL 2652.

The environmental management plans required for Ravensworth Operations include the following:

- Aboriginal Cultural Heritage Management Plan (ACHMP);
- Heritage Management Plan (HHMP);
- Noise Management Plan (NMP);
- Blast Management Plan (BMP);
- Air Quality and Greenhouse Gas Management Plan (AQGGMP);

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

Page 37 of 61

- Water Management Plan (WMP), which is comprised of the Erosion and Sediment Control Plan, Surface Water Management Plan, Groundwater Management Plan, Surface Water and Groundwater Response Plan and Creek Diversion Management Plan;
- Biodiversity Offset Management Plan (BOMP); and
- Rehabilitation Management Plan (RMP).

Copies of the latest approved versions of environmental management plans are available on the Ravensworth Operations public website at:

[www.glencore.com.au/operations-and-projects/coal/current-operations/ravensworth-operations/management-plans](http://www.glencore.com.au/operations-and-projects/coal/current-operations/ravensworth-operations/management-plans).

An overview of the environmental management plans, operational procedures and controls in place at Ravensworth Operations to manage potential environmental impacts is provided in the following sections.

#### 4.4.1 Management of Change – Management Plans

Environmental management plans and monitoring programs required to address the requirements contained in PA 09\_0176 and DA 104/96 are maintained within CMO. Where required, Management Plans will be reviewed, updated and provided to relevant Departments for review and approval in accordance with *GCAA-625378177-9979 12.0 Change Standard*.

When Management Plans are updated, Change Management processes will apply in accordance with *GCAA-625378177-11430 12.0 Change Management* and *RAV SD ANN 0011 Risk and Change Management Procedure*, where required. All compliance obligations made in Management Plans will be managed in accordance with *GCAA-625378177 11.01 Environmental Compliance Management* which details the process for managing compliance obligations in CMO. **Figure 4-1** below, derived from *GCAA-625378177-10328 11.20 Statutory Approvals Management NSW*, details the Management Plan obligation process which will be followed.

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**Number:** RAVCX-1962359669-15

**Status:**  
Approved

**Effective:**  
15 June  
2022

**Owner:** Environment & Community Coordinator

**Version:** 4.0

**Review:** 15  
June 2025

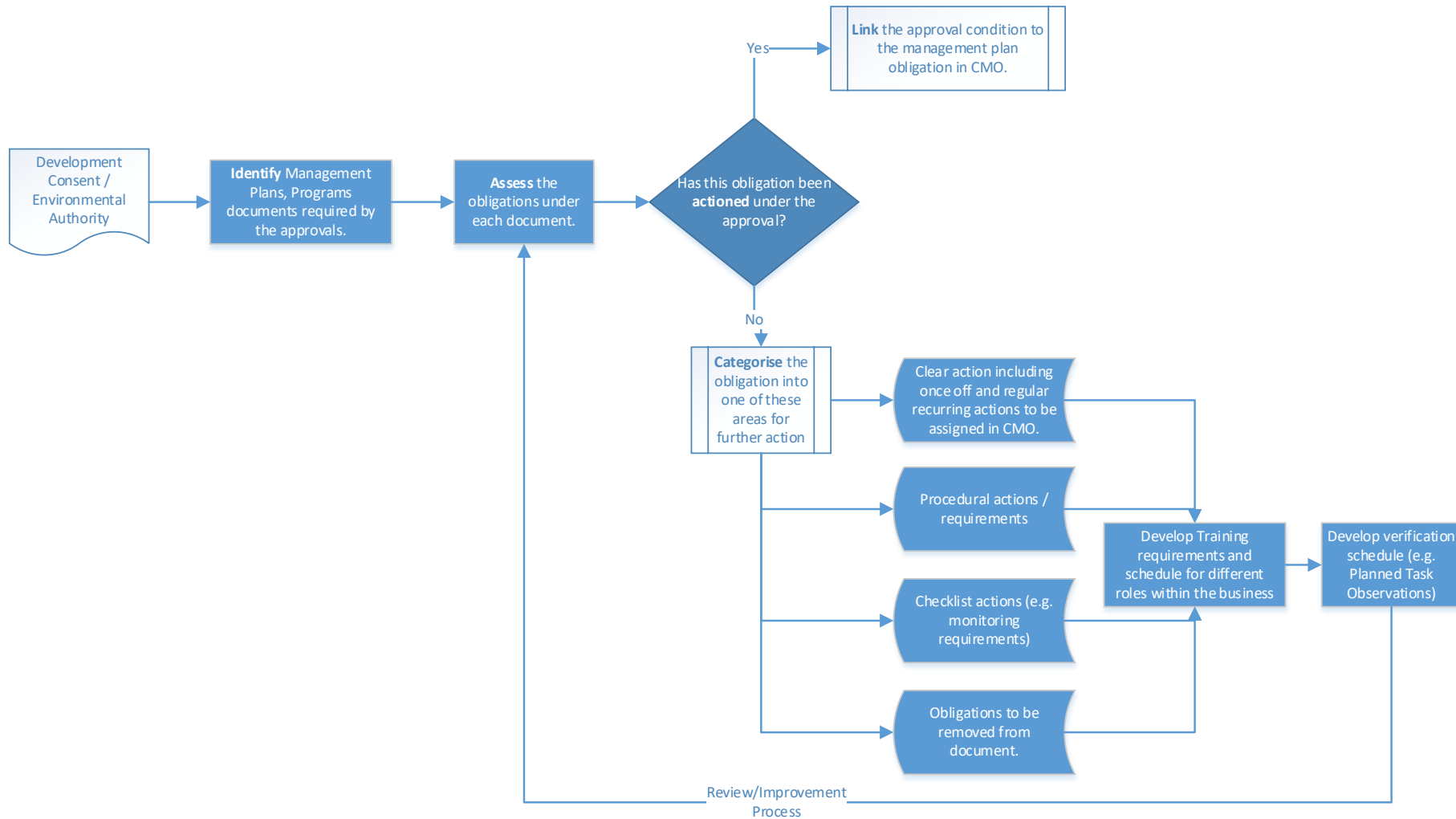


Figure 4-1 – Management Plan Obligation Process from CAA HSEC PCL 0020

**Number:** RAVCX-1962359669-15

**Status:** [Document Status (Office)]

**Effective:** [Effective Date]

**Owner:** [Owner (Office)]

**Version:** [Document Version (Office)]

**Review:** [Planned Review Date]

#### 4.4.2 Cultural Heritage Management

The ACHMP documents procedures for management of Aboriginal cultural heritage values associated with the Ravensworth Operations. The ACHMP was prepared in accordance with PA 09\_0176 and DA 104/96, in line with *11.21 GCAA-625378177-10266 Aboriginal Cultural Heritage Management – NSW*. The ACHMP:

- Details the management procedures and reporting requirements for Aboriginal heritage;
- Provides a detailed process for ongoing Aboriginal consultation;
- Outlines the obligations of personnel to protect Aboriginal sites not subject to approved harm;
- Describes the roles and responsibilities for staff in managing Aboriginal Heritage sites before and after salvage works; and
- Provides for continuous improvement through auditing and routine plan revision and update.

The HHMP addresses the historical heritage requirements associated with the Ravensworth Operations, in accordance with PA 09\_0176. The HHMP provides a description of the measures to be implemented to manage and protect heritage values within and adjacent to the Ravensworth Operations.

#### 4.4.3 Blast Management

The environment and community impacts of surface blasting at Ravensworth Operations are managed in accordance with the BMP to meet the requirements of PA 09\_0176 and *11.12 GCAA-625378177-9975 Blast Management*. The objectives of the BMP are to:

- Establish a blast monitoring system to assess the blast and vibration impact on surrounding receivers;
- Detail the controls to be implemented to minimise blasting impacts from the Ravensworth Operations;
- Provide a blast protocol to assess monitoring results against blast impact assessment criteria to evaluate compliance;
- Manage blast related community complaints in a timely and effective manner; and
- Detail the procedure for reporting blast criteria exceedances to relevant stakeholders.

Relevant procedures for managing blasting impacts include:

- *RAVCX-255487460-58 Pre-Blasting Assessment, Notification and Clearance Planning Procedure;*
- *RAVCX-307024981-4595 Post Blast Fume Management Procedure;*
- *RAVOC-258458278-14917 HVO – ROC Blast Protocol; and*
- *RAVOC-258458278-186 Explosives Management Plan.*

#### 4.4.4 Exploration and Drilling

Exploration and drilling activities at Ravensworth Operations is undertaken in accordance with *GCAA-625378177-10237 11.09 Exploration and Drilling*. As specified by this Protocol, each operation develops procedures specific to individual drilling programs to manage HSEC issues.

To assist with planning for these drilling programs, a member of the E&C Department undertakes an inspection prior to, during and post drilling, to ensure adequate controls are in place to minimise impacts on the environment and the community. Ravensworth Operations adopts the following GCAA drilling inspections and permits:

- *GCAA HSEC PER 0015 Surface Drilling Permit;*
- *GCAA-625378177-10184 During Exploration Drilling Inspection;* and
- *GCAA-625378177-10185 Post Exploration Drilling Inspection.*

Drilling inspections are held by the person responsible for undertaking the drilling program and returned to the E&C Department upon completion of the program (including rehabilitation of drill sites).

#### 4.4.5 Hydrocarbon Management

Hydrocarbon storage and inspections at Ravensworth Operations are managed as per *GCAA-625378177-10243 – 11.07 Hydrocarbon Management*. This protocol documents the requirements for the design, installation, operation and maintenance of hydrocarbon management infrastructure as well as requirements for transportation, storage and use of hydrocarbons.

#### 4.4.6 Air Quality and Greenhouse Gas Management

Air Quality and Greenhouse Gas (GHG) emissions at Ravensworth Operations are managed in accordance with the AQGGMP and *11.10 GCAA-625378177-10324 Air Quality Management*, to meet the requirements of PA 09\_0176 and DA 104/96.

The objectives of AQGGMP are to:

- Establish an air quality monitoring system to assess the air quality impact on surrounding sensitive receivers and performance against the specific air quality impact assessment criteria;
- Establish a monitoring system to assess GHG and energy use performance;
- Detail the controls and measures to be implemented to minimise dust generation (including cumulative impacts) and GHG emissions from the Ravensworth Operations;
- Manage air quality and GHG related community complaints in a timely and effective manner;
- Detail the requirement for reporting air quality criteria exceedances to the relevant stakeholders;
- Provide management commitments and strategies for dealing with air quality related issues; and
- Detail the independent review process to be followed, if requested by a landowner(s), where the Ravensworth Operations is determined to be exceeding the specific air quality acquisition criteria.

#### 4.4.7 Noise Management

The NMP, prepared in accordance with PA 09\_0176 and DA 104/96, provides a description of the measures to be implemented to mitigate, manage and monitor noise impacts from Ravensworth Operations. The NMP is aligned with the commitments of *11.11 GCAA-625378177-16332 Noise Management*.

The objectives of the NMP are as follows:

- Establish a noise monitoring system to assess the Ravensworth Operations operational noise impact on surrounding sensitive receivers and its performance against the specific noise impact assessment criteria provided in the relevant approvals;
- Detail the controls that are to be implemented to minimise noise emissions from the site;
- Allow adaptive management of the operation based on real time noise monitoring results and prevailing meteorological conditions;
- Provide a mechanism to assess monitoring results against noise impact assessment criteria and land acquisition criteria to evaluate compliance;
- Manage noise related community complaints in a timely and effective manner;
- Detail the requirement for reporting noise criteria exceedances to the relevant stakeholders;
- Provide management commitments and strategies for dealing with noise related issues; and
- Detail the independent review process to be followed by the Ravensworth Operations if requested by a landowner(s) where the operation is considered to be exceeding the specific noise acquisition criteria.

#### 4.4.8 Water Management

The WMP describes the measures and procedures to manage surface and groundwater impacts from Ravensworth Operations in accordance with PA 09\_0176 and DA 104/96. The WMP includes an Erosion and Sediment Control Plan, Surface Water Management Plan, Groundwater Management Plan, Surface Water and Groundwater Response Plan and the Creek Diversion Management Plan. The WMP (and associated sub-plans) have been prepared as per the *11.03 GCAA-625378177-10320 Water Management*, *11.05 GCAA-625378177-10322 Dams and Diversions* and *11.06 GCAA-625378177-10323 Erosion and Sediment Controls* protocols.

The objectives of the WMP and functions of the site water management system are to:

- Satisfy regulatory requirements, including meeting required performance criteria;
- Divert clean water around mining operations to minimise capture of upslope runoff and separate clean water runoff from mining activities;
- Segregate mine impacted water and runoff from undisturbed and revegetated areas with better water quality to minimise the volume of mine impacted water that requires reuse;
- Reuse mine impacted water within the water management system and within the Greater Ravensworth Area Water and Tailings Scheme to reduce reliance on raw/clean water;
- Install appropriate erosion and sediment controls to minimise soil erosion and the potential for transport of sediment downstream; and
- Minimise adverse effects on downstream waterways (including hydraulic and water quality impacts).

#### 4.4.9 Rehabilitation Management

Rehabilitation across the Ravensworth Operations is conducted in line with the Ravensworth Operations RMP and Ravensworth Underground Mine RMP, which were prepared to meet the requirements for a Rehabilitation Management Plan specified in both PA 09\_0176 and DA 104/96.

Annual Rehabilitation Planning is undertaken as outlined in the Forward Programs and in accordance with *GCAA-625378177-10241 11.16 Rehabilitation Management*. Ravensworth Operations prepares

an Annual Rehabilitation and Land Management Plan (ARLMP) for the following year which commences as part of the site annual budget cycle. Budget information is then incorporated into the ARLMP, which is approved by GCAA.

The ARLMP will be consistent with the objectives as documented in the Rehabilitation Management Plan, the LOM targets and will address any requirements of the Ravensworth Operations specific approvals.

#### 4.4.10 Mine Closure Planning

Planning for the closure of the Ravensworth Operations is undertaken in accordance with the *GCAA-625378177-10325 11.17 Mine Closure Planning* to ensure the best outcome is achieved for the community and the Ravensworth Operations.

The Ravensworth Operations has prepared both the ROC and CHPP Conceptual Rehabilitation and Mine Closure Plan (Ravensworth Operations Closure Plan) and the Ravensworth Underground Conceptual Mine Closure Plan. The Conceptual Closure Plans will be reviewed at least every three years in accordance with *GCAA-625378177-10325 11.17 Mine Closure Planning*. The objectives of these Plans are to align with GCAA's HSEC objectives, meet statutory requirements, provide a sustainable post-mining land use and achieve successful relinquishment of security bonds.

One of the key aims of a consolidated Ravensworth Operations Closure Plan is to manage broader issues at the site and develop synergies between the individual operations. The plan also aims to facilitate an integrated rehabilitation strategy for the Ravensworth Operations in accordance with the commitments in the EA and associated modifications, which is to be progressively implemented throughout the life of the operation.

As part of the development of the EA and conceptual planning for mine closure, preliminary closure criteria have been developed to ensure that the operation is progressing towards achieving final signoff and lease relinquishment.

#### 4.4.11 Biodiversity Management

The BOMP details the biodiversity management, monitoring and rehabilitation requirements for the Ravensworth Operations, as per the requirements of PA 09\_0176, DA 104/96. The BOMP was prepared in accordance with *11.18 GCAA-625378177-10326 Biodiversity Offset Management* protocol.

The BOMP provides a framework for the implementation of ecological management actions, regeneration and revegetation strategies, controls and monitoring programs that are to be implemented for the management of flora and fauna at Ravensworth Operations. The BOMP also details the management, monitoring and rehabilitation requirements for the Biodiversity Offset Areas (BOAs) including Ravensworth North, Hillcrest, Clifton and Stewart BOAs. The primary objective of the establishment of the BOAs is to protect and enhance the extent and condition of EECs and threatened species habitat values within the BOAs. The key management measures to enhance the EECs and threatened species habitat in the BOAs, including active and passive regeneration and revegetation initiatives, are described in *RAVOC-1007099517-20 Offset Area Management Program*.

#### 4.4.12 Waste Management

Waste at Ravensworth Operations is managed in accordance with the *GCAA 11.08 GCAA-625378177-10249 Waste Management*. These documents provide instruction on the correct handling, storage and disposal of waste materials and encourages efficient resource use and recovery. It also assists

sites to comply with relevant legislation, regulations, standards and consent/licence conditions, along with monitoring, reporting and auditing requirements.

## 4.5 Emergency Preparedness and Response

The Ravensworth Operations has a site specific emergency response plan prepared in accordance with *GCAA-625378177-9993 7.0 Emergency Standard*. The Emergency Response Management Plan (RAVOC – 258458278-8391) includes:

- Roles and accountabilities associated with the internal emergency response team and other relevant personnel;
- Training requirements for identified roles;
- Information for emergency response personnel, such as a site plan, access points and emergency equipment;
- Procedures for:
  - Responding to specific emergency situations;
  - Safe evacuation;
  - Initial and ongoing emergency notification to relevant parties;
  - Initiating specific emergency response equipment and directing emergency response personnel safely to the emergency scene;
  - Maintaining an events and communication log; and
  - Controlling both internal and external communications.
- A process for escalating the operation's emergency to crisis level;
- A process for search and rescue for any foreseeable emergency situation that has been identified;
- A process for dealing with all hazardous substances and dangerous goods (for example: fuel farms, radiation sources, high toxic chemicals, etc.) that are identified as being at risk of causing an emergency at the operation;
- A process for the identification of vital equipment and subsequent removal and protection of that vital equipment, relevant to the type of emergency situation; and
- Actions after the HSEC emergency has passed.

Ravensworth Operations maintain a PIRMP, as required by EPL 2652, for responding to pollution incidents. Employees and contractors receive training in the responsibilities of the PIRMP, particularly the requirement to notify relevant personal and authorities immediately following environmental incidents.

A copy of the PIRMP is available on Ravensworth Operations public website at:

[www.glencore.com.au/operations-and-projects/coal/current-operations/ravensworth-operations/management-plans](http://www.glencore.com.au/operations-and-projects/coal/current-operations/ravensworth-operations/management-plans)

## 5. Measurement and Evaluation

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### 5.1 Environmental Monitoring

Environmental monitoring programs have been developed in accordance with the PA 09\_0176 and DA 104/96, EPL 2652, Australian Standards and applicable guidelines to ensure the required environmental monitoring is undertaken at the Ravensworth Operations. The monitoring programs also include a protocol for assessing compliance with the relevant impact assessment criteria outlined in PA 09\_0176, DA 104/96 and EPL 2652. The monitoring programs that have been developed for the Ravensworth Operations are included in the following management plans:

- Blast Management Plan;
- Noise Management Plan;
- Air Quality and Greenhouse Gas Management Plan; and
- Water Management Plan.

These monitoring programs outline the monitoring regime, roles and responsibilities and compliance assessment protocol for each environmental aspect. The monitoring locations detailed in the respective monitoring programs have been reproduced in **Appendix A to E**.

### 5.2 Environmental Inspections

Regular environmental inspections are undertaken to determine compliance with legislation, standards, codes, other external requirements as well as the EMS and Strategy. Inspections are conducted by the relevant ECC or delegate and are recorded on a site specific inspection report form. Inspections are to be conducted as per the relevant Management Plan or Monitoring Program to which it relates.

In the event a non-conformance is identified during an inspection, corrective and/or preventative actions are to be developed in accordance with **Section 5.6**. The completion and effectiveness of the corrective and/or preventative action is to be assessed post implementation.

Environmental inspections are to be undertaken on an as needs basis, the frequency of which will be determined by the risk associated with the environmental issue or aspect being inspected.

### 5.3 HSEC Review Meetings

HSEC meetings are conducted on a regular basis in order to monitor compliance with the applicable GCAA requirements and other legislative requirements. The meetings are to be attended by relevant senior management representatives and key HSEC personnel as a minimum, and may include a review of the following:

- HSEC alerts from the previous reporting period;
- HSEC inspections from the previous reporting period;
- HSEC incidents and/or complaints from the previous reporting period;
- The effectiveness of actions implemented in the previous reporting period;
- Legislative changes from the previous reporting period; and
- The HSEC Strategy and Plan project status.

## 5.4 Environmental Audits

Internal and external audits are undertaken to verify compliance with legislation, licences, approvals and GCAA-625378177-9980 13.0 Assurance Standard.

The results of internal and external audits are communicated to the Ravensworth Operations Management Team and to the GCAA ECM where relevant. The recommendations from internal and external audits are consolidated into action plans and entered into CMO, the compliance management system containing an actions tracking database, to allow tracking of progress against the audit actions.

All internal and external auditors are to be appropriately qualified persons.

### 5.4.1 External Audits

Condition 8 of Schedule 5 of the PA 09\_0176 and Condition 7, Schedule 4 of DA 104/96 requires the Ravensworth Operations to undertake an independent environmental audit every three years in accordance with the relevant Consent. The audit must:

- Be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General of the DPE;
- Include consultation with the relevant agencies;
- Assess the environmental performance of the Ravensworth Operations and whether it is complying with the relevant requirements in the Development Consents and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);
- Review the adequacy of any approved strategies, plans or programs required under these approvals; and
- Recommend measures or actions to improve the environmental performance of the Operations and/or any strategy, plans or program required under these approvals.

A copy of the audit report is to be submitted to the DPE within six weeks of its completion, along with an action plan for the recommendations made in the report.

### 5.4.2 Internal Audits

The Ravensworth Operations may undertake regular internal HSEC assurance audits. These audits are to be conducted to assess whether the Ravensworth Operations and its EMS and Strategy meets the requirements of GCAA Policy, Frameworks and Standards. These audits are to be conducted in accordance with the GCAA Assurance Programme.

## 5.5 Community Complaints & Environmental Incidents

### 5.5.1 Community Complaints

The ECM maintains a centralised location to record communication details of relevant external stakeholders and procedures for stakeholder contact including a Complaints Procedure.

A Community Contact Line via an 1800 telephone number is available for members of the community to lodge a complaint, which is regularly advertised in a local newspaper. The Community Contact Line is in operation 24 hours per day, seven days a week. Complaints can also be reported via the Ravensworth Operations public website, by letter, in person or fax. All complaints are recorded in CMO and investigated by the ECC or their delegate. Initial response to the complainant will be made as soon as practicable by the ECC or their delegate.

The complaint resolution process includes:

- Registering all complaints in CMO;
- Investigating complaints impartially giving proper consideration to the facts and the circumstances prevailing at the time;
- Implementing corrective actions if required; and
- Reporting to relevant stakeholders of investigation outcomes and corrective actions taken.

If required, the ECC will arrange monitoring at or near the complainant's residence where appropriate and where agreed to by the complainant.

Follow up correspondence with the complainant will be made explaining the outcome of complaint investigations.

A summary of all complaints will be reported on the Ravensworth Operations website (updated monthly) and in the Ravensworth Operations Annual Review as outlined in **Section 5.7.2**.

## 5.5.2 Dispute Resolution

In the event of a disagreement between Ravensworth Operations personnel and a member of the community, the ECM will undertake the necessary liaison and communication to reach a resolution, which may include a meeting with the complainant to discuss the issue. Where relevant, negotiations will be initiated in accordance with the development consent conditions.

In relation to a dispute over acquisition of a property or the results of an independent review, if the matter cannot be resolved between the company and the resident, through the Independent Dispute Resolution Process, the matter is to be referred to the Secretary DPE for resolution.

## 5.5.3 Environmental Incidents

Environmental incidents are to be identified, investigated and reported in accordance with the *GCAA-625378177-9992 6.0 Incident Standard* and *GCAA-625378177-10394 Incident Reporting and Investigation Procedure*, which provides guidance for GCAA operations in the internal requirements for the management of incidents. Categories of environmental incidents are to be defined in accordance with the *GCAA-625378177-9992 6.0 Incident Standard*.

In accordance with internal system requirements, all hazards, near misses and incidents are to be reported to the supervisor of the relevant work area immediately. All incident details are to be entered into a database (CMO) along with any corrective/preventative actions that are identified as being required as a result of the incident.

The Ravensworth Operations ECM is to ensure that all incident notification requirements are undertaken in accordance with the PIRMP and *GCAA-625378177-9992 6.0 Incident Standard*, which outlines the method of internal reporting of incidents to management and GCAA where necessary.

The definition of 'incident' under PA 09\_0176 is "an occurrence or set of circumstances that causes or threatens to cause material harm". The ECM, in conjunction with the Operations Manager, will determine whether an incident is classified as having caused, or threatened to cause, material harm

to the environment, as defined in the POEO Act. If material harm has occurred or has the potential to occur, incidents will be reported to the relevant regulatory agencies in accordance with Condition 5 of Schedule 5 of PA 09\_0176. The relevant authorities may include (depending on the nature of the incident): DPE, EPA, Resources Regulator, Ministry of Health via the local Public Health Unit, SafeWork NSW, Singleton Council and NSW Fire and Rescue.

The following information will be provided:

- The time, date, nature, duration and location of the incident;
- The location of the place where pollution is occurring or is likely to occur;
- The nature, estimated quantity or volume, and the concentration of any pollutants involved, if known;
- The circumstances in which the incident occurred, including the cause of the incident, if known; and
- The action taken, or proposed to be taken, to deal with the incident and any resulting pollution or threatened pollution, if known.

Written details of the incident will be provided to the Secretary and the EPA within seven days of the date on which the incident occurred. All reportable incidents will be reported in the Annual Review and the EPL Annual Return.

## 5.6 Non-compliance and Corrective Actions

An environmental non-compliance can be defined as:

- Any inspection or test result that does not meet the acceptance criteria specified in PA 09\_0176 and DA 104/96 or EPL 2652;
- Any notice of non-compliance issued by any regulatory authority with environmental jurisdiction (e.g. DPE, EPA, DCCEEW, Natural Resources Access Regulator (NRAR), etc); or
- Any non-compliance with legislation, approvals or licences listed in the Ravensworth Operations Legal Compliance Register.

The non-compliance may be identified from routine inspections, audits or monitoring, or identified from an external complaint or an internal incident.

In the event of non-compliance, corrective or preventative action will be undertaken in accordance with internal system requirements, along with any requirements outlined by the relevant government agency.

All non-compliances and the actions taken to correct and/or prevent the non-compliance from occurring again is to be recorded in CMO.

A review of the effectiveness of the corrective or preventative action is to be conducted during the HSEC Review Meeting (**Section 5.3**).

Non-compliances are to be reported to DPE within 7 days, as required by Condition 5A of Schedule 5 of PA 09\_0176.

## 5.7 Environmental Reporting

### 5.7.1 Internal Reporting

Internal environmental reporting will be undertaken through the submission of an E&C Status Report to the GCAA ECM through CMO on a monthly basis. This report is formally documented and may include, but not be limited to, the following information:

- Performance against objectives and targets (i.e. the Annual HSEC Plan);
- Abnormal environmental monitoring results and an assessment of compliance with criteria from the PA 09\_0176 and DA 104/96 and EPL 2652;
- Environmental non-conformances or regulatory non-compliances;
- Updates on any approval processes;
- A summary of community complaints received; and
- Any necessary amendments to operational procedures or additional environmental control measures.

The Ravensworth Operations will also communicate relevant environmental management information to its employees, contractors and visitors through avenues such as:

- Formal training and toolbox talks;
- Weekly or daily planning meetings;
- Inductions; and
- Incident / hazard / near miss communications.

### 5.7.2 External Reporting

All external reporting will be undertaken with the approval of the Ravensworth Operations ECM. External environmental reporting requirements for the Ravensworth Operations, their frequency and required recipients are provided in **Table 5-1**.

Report	Frequency	Recipient(s)	Requirement for Reporting / Comments
EPL Annual Return	Annually	EPA	EPL 2652
Annual Review (including Annual Rehabilitation Report)	Annually	DPE NSW Resources Regulator DCCEEW EPA NRAR Singleton Council (SC) CCC members	PA 09_0176, DA 104/96 & MLs

Report	Frequency	Recipient(s)	Requirement for Reporting / Comments
National Pollutant Inventory Report (NPI)	Annually	DCCEEW	National Environment Protection Measure
National Greenhouse and Energy Reporting System (NGERS)	Annually	Clean Energy Regulator (Commonwealth)	National Greenhouse and Energy Reporting Act 2007

Table 5-1 – External Reporting Requirements

If environmental monitoring results identify an exceedance of the relevant impact assessment criteria, then DPE and EPA will be informed in accordance with the Condition 5A of Schedule 5 in PA 09\_0176, Condition 6A of Schedule 4 of DA 104/96, PIRMP and EPL 2652.

Information to be included in the written report accompanying a non-compliance notification shall include the following:

- Date, time and nature of the exceedance or incident;
- The cause (or likely cause) of the exceedance or incident;
- Actions taken to date; and
- Proposed measures to address the non-compliance and to prevent a reoccurrence.

Additionally, in accordance with Condition 10 of Schedule 5 of PA 09\_0176 and Condition 9 of Schedule 4 of DA 104/96, all monitoring results will be reported on the Ravensworth Operations website. All approved management plans and monitoring programs required by the PA 09\_0176 and DA 104/96 will also be placed on the Ravensworth Operations website.

## 6. Review and Improvement

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### 6.1 Management Review

An annual internal management review of the EMS will be undertaken to assess the suitability and effectiveness of the systems used to manage environmental issues at the Ravensworth Operations. The review will also determine compliance with GCAA HSEC Protocol, Policies, Frameworks, Standards and legislation, approvals and licences. The review will include all components of the EMS including strategies, management plans, monitoring plans and procedures required by PA 09\_0176 and DA 104/96 and will consider the following:

- GCAA HSEC Protocol, Policy, Framework and Standards;
- Legislative requirements;
- Performance against objectives and targets;
- Results of audits;
- Community complaints and environmental incidents;
- Environmental monitoring results;
- Non-conformances and corrective actions; and
- Feedback from stakeholders.

### 6.2 Continuous Improvement

The basis for continuous improvement is provided by monitoring and corrective action as detailed in **Section 5.6**. As part of the review process, performance criteria will be used to evaluate the performance of the Ravensworth Operations against the *GCAA Code of Conduct*, site environmental objectives and targets and associated achievements.

Any opportunities for continuous improvement will be identified and incorporated into the EMS and the Strategy, objectives and targets and environmental procedures where appropriate.

### 6.3 Environmental Management Strategy Review

In accordance with Condition 4 of Schedule 5 of PA 09\_0176 and Condition 3 of Schedule 4 of DA 104/96, the suitability of existing strategies, plans and programs required under the Consent must be reviewed within three months:

- a) The submission of an Annual Review;
- b) The submission of an Incident Report;
- c) The submission of an Independent Environmental Audit; or
- d) Any modifications to the conditions of the Consent.

In accordance with Condition 8 of Schedule 5 of the PA 09\_0176 and Condition 7 of Schedule 4 of DA 104/96, Ravensworth Operations will commission an Independent Environmental Audit to the satisfaction of DPE (refer to **Section 5.4.1**). The audit will include an assessment of the adequacy of this Strategy. Where necessary, following the audit, the Strategy will be updated and action taken to improve environmental performance and management practices at the Ravensworth Operations.

## 7. Document Information

### 7.1 Reference Information

Reference information, listed in **Table 7-1** below, is information that is directly related to the development of this document or referenced from within this document.

Reference	Title
GCAA-625378177-1052	HSEC Management System Framework
GCAA-625378177-2844	Risk Management
GCAA-625378177-9987 2.0	Strategy and Planning
GCAA-625378177-9989 3.0	Documents and Records
GCAA-625378177-9990 4.0	Training
GCAA-625378177-9991 5.0	Contractors and Suppliers
GCAA-625378177-9992 6.0	Incident
GCAA-625378177-9993 7.0	Emergency
GCAA-625378177-9977 10.0	Community and Stakeholder Engagement
GCAA-625378177-10296 10.05	Community Complaint Management
GCAA-625378177-9978 11.0	Environment
GCAA-625378177-10301 11.01	Environmental Compliance Management
GCAA-625378177-10320 11.03	Water Management
GCAA-625378177-10323 11.06	Erosion and Sediment Control
GCAA-625378177-10243 11.07	Hydrocarbon Management
GCAA-625378177-10249 11.08	Waste Management
GCAA-625378177-10237 11.09	Exploration and Drilling
GCAA-625378177-10324 11.10	Air Quality Management
GCAA-625378177-10238 11.11	Noise Management
GCAA-625378177-9975 11.12	Blast Management
GCAA-625378177-13661 11.13	Emissions and Energy
GCAA-625378177-10240 11.14	Environment and Community Training

Reference	Title
GCAA-625378177-10242 11.15	Land and Property Management
GCAA-625378177-10241 11.16	Rehabilitation Management
GCAA-625378177-10325 11.17	Mine Closure Planning
GCAA-625378177-10326 11.18	Biodiversity Offset Management
GCAA-625378177-10327 11.19	GIS Spatial Data Management
GCAA-625378177-10328 11.20	Statutory Approvals Management NSW
GCAA-625378177-10266 11.21	Aboriginal Cultural Heritage - NSW
GCAA-625378177-11430 12.0	Change Management
GCAA-625378177-9980 13.0	Assurance
GCAA-625378177-10531	Work Authorisation and Permit System
GCAA-625378177-10040	Work Authorisation
GCAA-625378177-2844	Risk Management Standard
GCAA-625378177-10394	Incident Reporting and Investigation
CAA HSEC PER 0015	Surface Drilling Permit
GCAA-625378177-10184	During Exploration Drilling Inspection
GCAA-625378177-10185	Post Exploration Drilling Inspection
RAVCX-307024981-4592	Ravensthorpe Operations Water Management Plan
RAVCX-1962359669-15	Ravensthorpe Operations Aboriginal Cultural Heritage Management Plan
RAVCX-307024981-4092	Ravensthorpe Mine Operations Blast Management Plan
RAV SD PLN 0062	Ravensthorpe Operations Noise Management Plan
RAV SD PLN 0067	Ravensthorpe Operations Air Quality and Greenhouse Gas Management Plan
RAVOC-1007099517-20	Ravensthorpe Operations Biodiversity Offset Management Plan
RAVOC-1007099517-67	Ravensthorpe Operations Pollution Incident Response Management Plan
RAV SD PLN 0030	Historic Heritage Management Plan
RAVCX-1962359669-15	Ravensthorpe Operations Mining Operations Plan

Reference	Title
RAVUG-27619932-35	Ravensworth Underground Mining Operations Plan – Care and Maintenance
RAVOC-258458278-15426	Operational Mine Closure Plan
RAV SD ANN 0011	Risk and Change Management Procedure
RAVOC-258458278-2834	Training and Competency Management Plan
RAVCX-255487460-58	Pre-Blasting Assessment, Notification and Clearance Planning Procedure
RAVCX-307024981-4595	Post Blast Fume Management Procedure
RAVOC-258458278-14917 HVO – ROC	Blast Protocol
RAVOC-258458278-186	Explosives Management Plan
RAVOC-1007099517-20	Offset Area Management Program
N/A	Umwelt (Australia) Pty Limited 2010. <i>Ravensworth Operations Project Environmental Assessment</i> , Report prepared for Ravensworth Operations Pty Limited.
RAVOC-258458278-8391	Ravensworth Open Cut Emergency Response Management Plan

Table 7-1 – Reference Information

## 7.2 Change Information

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in **Table 7-2** below.

Version	Date	Review Team	Change Details
1	20/01/2014	E&C Department	Reviewed plan and updated, ready for submission to DPE and regulators
1.1	10/09/2014	E&C Department	Reviewed and updated based on DPE comments
2.0	24/11/2014	E&C Department	Updated references to Water Management
3.0	02/01/2018	E&C Department	Reviewed and updated entire document in line with GCAA Protocols, Policies and Standards.
4.0	23/11/2021	James Bailey & Associates E&C Department	Review and contemporise document
5.0	10/08/2023	James Bailey & Associates E&C Department	Review EMS following Modification 4 approval

Table 7-2 – Change Information

# Appendix A Noise Monitoring Locations



RAVENSWORTH COMPLEX ENVIRONMENTAL MANAGEMENT STRATEGY

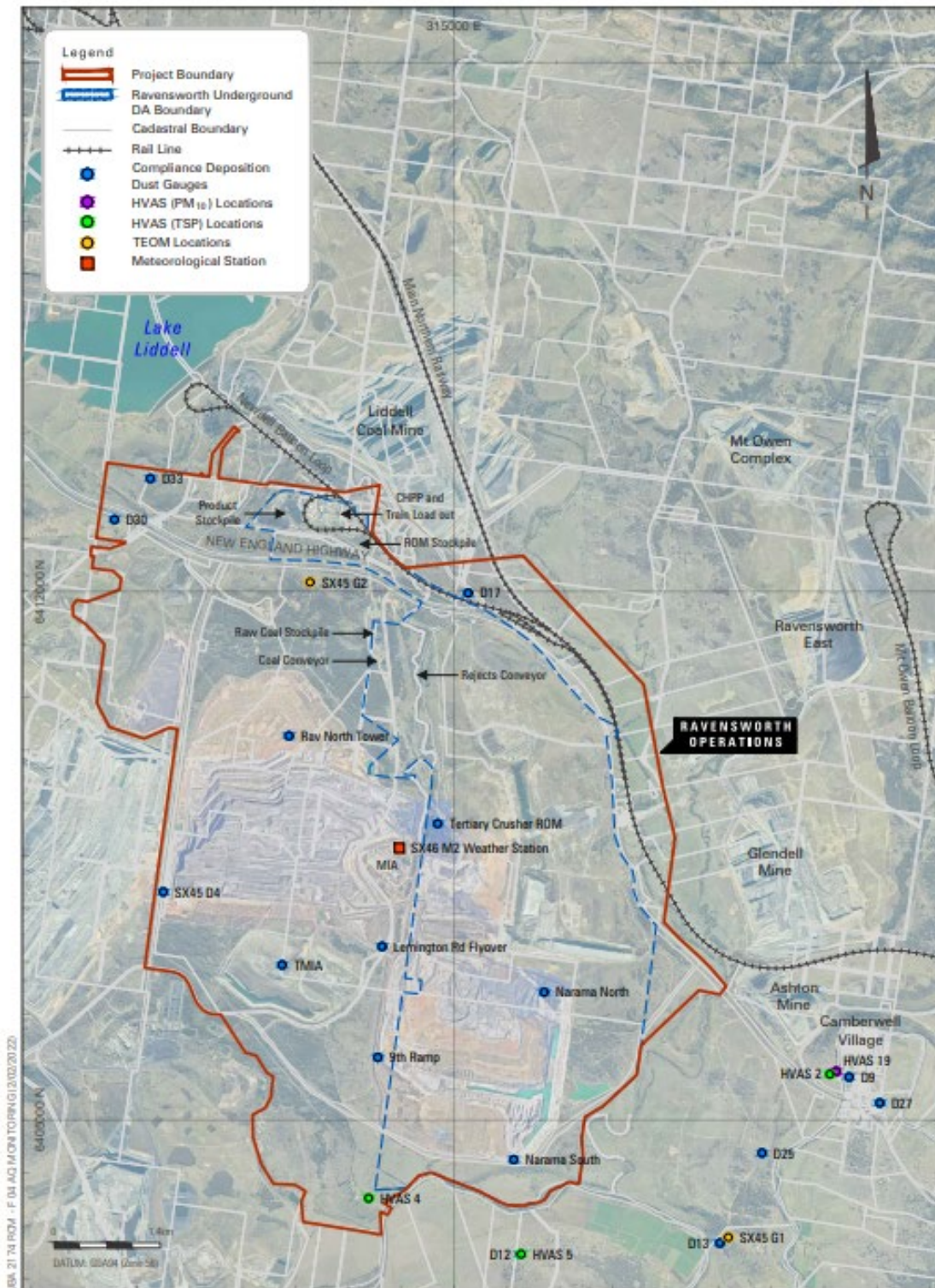
**GLENCORE**

**JB JAMES BAILEY & ASSOCIATES**  
Environmental and Planning Consultants

Noise Monitoring Locations

**FIGURE 3**

# Appendix B Air Quality Monitoring Locations



RAVENSWORTH COMPLEX ENVIRONMENTAL  
MANAGEMENT STRATEGY

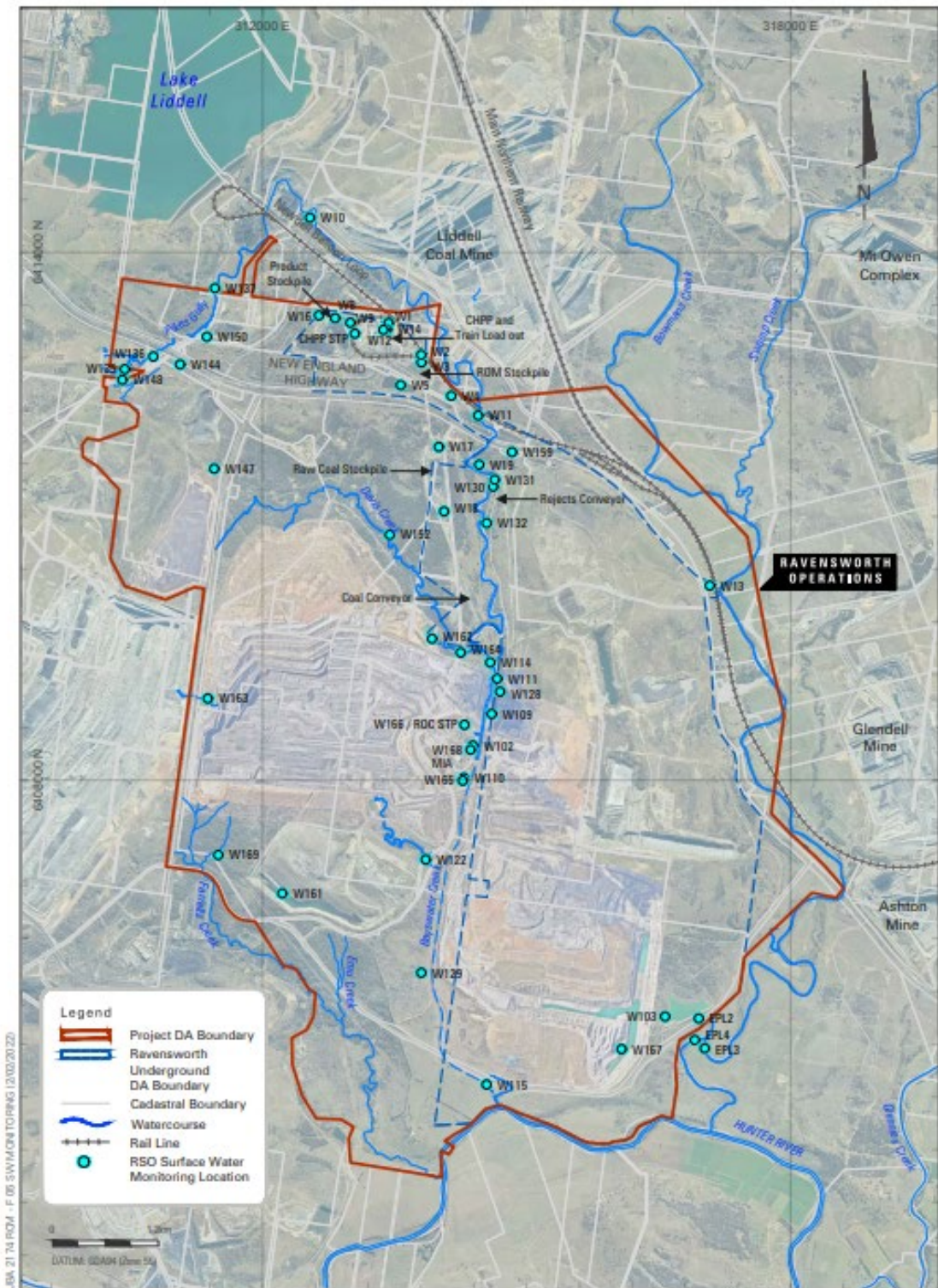
Air Quality Monitoring Locations

**FIGURE 4**

**GLENCORE**

**JB JAMES BAILEY & ASSOCIATES**  
Environmental and Planning Consultants

# Appendix C Surface Water Monitoring Locations



JBA 21 74 PQM - F 06 SWM ON TOPICS (2/02/2022)

RAVENSWORTH COMPLEX ENVIRONMENTAL MANAGEMENT STRATEGY

**GLENCORE**

**JB** JAMES BAILEY & ASSOCIATES  
Environmental and Planning Consultants

Surface Water Monitoring Locations

**FIGURE 5**

# Appendix D Groundwater Monitoring Locations



RAVENSWORTH COMPLEX ENVIRONMENTAL MANAGEMENT STRATEGY

Ground Water Monitoring Locations

**FIGURE 6**



# Appendix E Blast Monitoring Locations



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**JB** JAMES BAILEY & ASSOCIATES  
Environmental and Planning Consultants

RAVENSWORTH COMPLEX ENVIRONMENTAL  
MANAGEMENT STRATEGY

Blast Monitoring Locations

**FIGURE 7**

## Appendix F Management Strategy Approval

Department of Planning and Environment



Our ref: MP09\_0176-PA-109

Klay Marchant  
Environment and Community Manager  
Ravensworth Complex  
PO Box 294  
Muswellbrook, NSW, 2333

15/06/2022

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**Subject: Environmental Management Strategy for the Ravensworth Complex (condition 1 of Schedule 5 of MP09\_0176)**

Dear Mr Marchant

I refer to your submission dated 11 February 2022, requesting approval of the Environmental Management Strategy (Revision 4, dated February 2022).

I note the Environmental Management Strategy contains the information required by the relevant conditions of approval.

As nominee of the Planning Secretary, I approve the Environmental Management Strategy (Revision 4, dated February 2022) under condition 1 of Schedule 5 of MP09\_0176, subject to revising the document to ensure all agency names are up to date throughout the document (e.g. DPE rather than DPIE).

You are reminded that if there is any inconsistency between the approved document and the conditions of approval, then the requirements of the conditions of approval prevail.

Please ensure you make the document and this approval letter publicly available on the project website.

If you wish to discuss the matter further, please contact Sarah Clibborn on 88376095 or via email at [sarah.clibborn@planning.nsw.gov.au](mailto:sarah.clibborn@planning.nsw.gov.au).

Yours sincerely

A handwritten signature in black ink, appearing to be "SOD", written over a light blue horizontal line.

Stephen O'Donoghue  
Director  
Resource Assessments

as nominee of the Planning Secretary