

VICKERY EXTENSION PROJECT

ENVIRONMENTAL IMPACT STATEMENT

SECTION 7

SUMMARY OF MANAGEMENT, MITIGATION, MONITORING AND REPORTING

TABLE OF CONTENTS

7	SUMMARY OF MANAGEMENT, MITIGATION, MONITORING AND REPORTING	7-1
7.1	OVERVIEW	7-1
7.2	KEY ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURES	7-1
7.2.1	Land Resources	7-2
7.2.2	Water Resources	7-2
7.2.3	Noise	7-3
7.2.4	Blasting	7-4
7.2.5	Air Quality	7-4
7.2.6	Biodiversity	7-4
7.2.7	Aboriginal Heritage	7-5
7.2.8	Historic Heritage	7-6
7.2.9	Visual Character	7-6
7.2.10	Social and Community Infrastructure	7-7
7.2.11	Rehabilitation and Mine Closure	7-8
7.3	ENVIRONMENTAL MONITORING	7-8
7.3.1	Groundwater	7-8
7.3.2	Surface Water	7-8
7.3.3	Noise	7-9
7.3.4	Blasting	7-9
7.3.5	Air Quality	7-10
7.3.6	Rehabilitation	7-10
7.4	REPORTING	7-10
7.4.1	Annual Review	7-10
7.4.2	Development Consent Requirements	7-10
7.4.3	Independent Environmental Audit	7-10
7.4.4	Other Reporting	7-10

LIST OF TABLES

Table 7-1	Summary of Project Management, Mitigation, Monitoring and Reporting
Table 7-2	Summary of the Project Environmental Monitoring Regime

7 SUMMARY OF MANAGEMENT, MITIGATION, MONITORING AND REPORTING

In accordance with the SEARs, this section provides a consolidated summary of Whitehaven’s commitments in relation to management, monitoring and reporting activities for the Project.

7.1 OVERVIEW

Section 4 of this EIS outlines proposed environmental management, mitigation, monitoring and biodiversity offset measures for the Project.

These include measures relating to land resources and agricultural production, groundwater, surface water, flooding, noise, blasting, air quality, greenhouse gas emissions, biodiversity, road transport, visual character, Aboriginal heritage, historic heritage, socio-economic impacts and hazard and risk.

Section 5 of this EIS describes the approach to rehabilitation and landscape management for the Project.

The existing monitoring program at the Vickery Coal Mine will be reviewed to address the Project disturbance areas and activities.

Table 7-1 presents a proposed list of management and monitoring plans for the Development Consent.

It is recognised that changes to the Project environmental management, mitigation, monitoring and reporting proposed in the EIS may be considered necessary during further consultation with government agencies in the assessment and approval process of the Project.

Project environmental management, mitigation, monitoring and reporting will be conducted in accordance with the finalised Development Consent conditions and associated licences and approvals, with the final monitoring details (locations, parameters and frequencies) to be provided in the relevant management plans and monitoring programmes.

7.2 KEY ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURES

Key environmental management measures and commitments to be implemented for the Project include:

- management of water resources including preparation of a Water Management Plan;
- management of operational noise emissions associated with the Project and preparation of a Noise Management Plan;
- management of blasting and vibration associated with the Project and preparation of a Blast Management Plan;
- minimising operational air quality impacts associated with the Project and preparation of an Air Quality Management Plan;
- management of biodiversity in the Project area and biodiversity offset areas and preparation of a Biodiversity Management Plan;
- management of Aboriginal and historic heritage at the Project and preparation of a Heritage Management Plan;
- management of road transport impacts through the implementation of Whitehaven’s Traffic Management Plan, which will be revised as required to incorporate the Project;
- management of visual impacts associated with the Project (including night-lighting);
- management of soil resources in the Project area and agricultural land on adjoining Whitehaven-owned lands;
- population and community infrastructure management measures;
- preparation of a Koala Plan of Management; and
- progressive rehabilitation of Project disturbance areas, and implementation of a mine closure strategy.

These are described below, with reference to the relevant sections of this EIS where further detail is available.

**Table 7-1
Summary of Project Management, Mitigation, Monitoring and Reporting**

Proposed Management, Mitigation, Monitoring and Reporting	Key EIS Sections and Appendices
Management, Mitigation and Monitoring	
Water Management Plan	Sections 4.4 and 4.5 and Appendices A and B
Noise Management Plan	Section 4.7 and Appendix D
Blast Management Plan	Sections 4.8 and 4.9 and Appendix D
Air Quality Management Plan	Section 4.9 and Appendix E
Biodiversity Offset Strategy	Section 4.11 and Appendix F
Biodiversity Management Plan	Section 4.11 and Appendices F and N
Traffic Management Plan	Section 4.12 and Appendix I
Heritage Management Plan	Sections 4.15 and 4.16 and Appendices G and K
Mining Operations Plan (MOP)	Section 6.5.1
Pollution Incident Response Management Plan	Section 4.19
Koala Plan of Management	Section 4.11
Reporting Requirements	
Annual Review	Section 6.5.1
EPBC Act Annual Compliance Reporting	Sections 4.4.3, 4.5.3 and 4.11.3
Licences and Approvals	Section 6.5.1
Greenhouse Gas Reporting	Section 4.10

7.2.1 Land Resources

Section 4.3 describes the land resources and management measures. Key components of the proposed Project land management are described below.

Soil Management

The MOP will describe soil management measures relevant to the various stages of mine development (i.e. stripping, stockpiling and rehabilitation). The management measures will include identification of soil constraints and use of appropriate amelioration measures.

Contaminated Lands

The following measure will be implemented to manage potentially contaminated land:

- A detailed site inspection of Features of Interest 4, 5, 6, 7, 10 and 16 (as identified in Appendix Q) would be conducted prior to disturbance in the area to determine if there is any land contamination requiring remediation.

7.2.2 Water Resources

Sections 2.10, 4.4.3 and 4.5.3 describe the Project water management measures. Key components of the proposed Project Water Management System are summarised below.

Water Management Plan

A Water Management Plan will be developed for the Project in consideration of the requirements of an EPL and relevant Development Consent conditions for the Project.

Site Water Balance

Periodic review and revision of the site water balance will be undertaken over the life of the Project to record and document the status of inflows (water capture), storage and consumption (e.g. dust suppression and Project CHPP water supply) and to optimise water management performance.

Monitoring will be undertaken over the life of the Project to provide data for refinement of the site water balance (Section 7.3.2).

Whitehaven will obtain and hold appropriate WALs at all stages of the mine life and following mine closure.

Surface Water Management Measures

In relation to surface water, the Project Water Management System will include:

- a detailed description of the water management system on-site;
- detailed plans, including design objectives and performance criteria;
- trigger levels for investigating any potentially adverse impacts associated with the Project;
- contingency mitigation/compensation/offset measures that will be implemented in the event that downstream surface water users or riparian vegetation is adversely affected by the Project; and
- a surface water monitoring program.

Groundwater Management Measures

In relation to groundwater, the Water Management Plan will include the following:

- baseline data of groundwater levels, yield and quality in the region, and privately-owned bores that could be affected by the Project;
- details of the groundwater monitoring program (Section 7.3.1) including monitoring locations, parameters and frequency of sampling;
- groundwater assessment criteria for investigating any potentially adverse groundwater impacts; and
- a program to validate the regional numerical groundwater model for the Project.

It will also describe the contingent mitigation/compensation/offset options that will be enacted in the unlikely event that other groundwater users are adversely affected by the Project.

Flood Management

Project Rail Spur

The Project rail spur will be designed consistent with the criteria of the Draft FMP. This will include construction of the Project rail spur and loop as a generally elevated structure with some in-filled embankment sections where conditions permit. The design will be finalised during detail design.

Flood Protection

A permanent flood bund around the southern extent of the open cut will be constructed to prevent inundation of the open cut during operations and post-mining.

The permanent flood bunding, adjacent to Stratford Creek, will be designed to a height that will provide protection against the peak flood height associated with a Probable Maximum Precipitation rainfall event. The width and geometry of the permanent flood bund will be determined during detailed design of the Project, but will be such that it is stable under these extreme flow conditions.

7.2.3 Noise

Sections 2.5.9 and 4.7.3 describe the Project noise management measures. Key components of the proposed Project noise management are summarised below.

Noise Management Plan

A Noise Management Plan will be prepared for the Project, which will describe the noise management system for the Project, including details of:

- the noise mitigation measures for the Project;
- real-time noise monitoring locations;
- attended noise monitoring locations;
- the predictive meteorological forecasting system;
- the pro-active noise management system;
- specified trigger levels for the implementation of additional mitigation measures; and
- complaint response protocols.

Operational Noise Mitigation Measures

Whitehaven will implement a number of noise management and mitigation measures, as summarised below:

- consideration of noise controls on a selection of mobile plant during fleet procurement (e.g. consideration of extra quiet mobile plant models) to reduce emitted noise levels;
- enclosure/acoustic shrouding of selected ROM coal crushing and screening infrastructure in the Project CHPP; and

- optimising shielding during adverse meteorological conditions.

Noise Management and Affection Zones

Private receivers where noise emissions are predicted to exceed the Project-specific noise trigger levels can be divided into a Noise Management Zone and a Noise Affection Zone.

Proposed management procedures, in addition to the mitigation and management measures described below, for these zones may include:

- response to any landowner issues of concern or complaints;
- discussions with relevant landowners to assess concerns;
- refinement of on-site noise mitigation measures and mine operating procedures;
- implementation of feasible and reasonable acoustical mitigation at receivers, in accordance with the Voluntary Land Acquisition and Mitigation Policy; and
- entering into negotiated agreements with landowners (including acquisition for receivers identified to be in the Noise Affection Zone).

7.2.4 Blasting

Sections 4.8.3 and 4.9.3 describe the Project blasting management measures. Blast and vibration management will be conducted in accordance with a Blast Management Plan which will include:

- safety control measures and notification/closure procedures in relation to blasting within 500 m of Blue Vale Road, Braymont Road and the Vickers State Forest;
- procedures for the management of livestock in close proximity to blast events;
- blast controls and/or blast optimisation measures to enable compliance with relevant criteria at receiver locations;
- blast monitoring (Section 7.3.4);
- a blast notification list; and

- management of fume emissions in accordance with the *Code of Good Practice: Prevention and Management of Blast Generated NO_x Gases in Surface Blasting* (Australian Explosives Industry and Safety Group Inc., 2011).

7.2.5 Air Quality

Section 4.9.3 describes the Project air quality management measures. Key components of the proposed Project air quality management are summarised below.

Air Quality Management Plan

An Air Quality Management Plan will be prepared for the Project, which will include details of the following:

- air quality mitigation measures to be implemented for the Project;
- the real-time air quality monitoring program;
- trigger levels for the investigation of additional mitigation measures;
- response protocols during adverse conditions; and
- meteorological forecasting system.

7.2.6 Biodiversity

Sections 4.11.3 and 4.11.4 describe the proposed management of biodiversity and the Biodiversity Offset Strategy for the Project. Key components are summarised below.

A number of measures were proposed to be implemented at the Approved Mine to avoid and minimise impacts on biodiversity (Section 4.11.3). These existing measures will be continued for the Project.

A number of additional impact avoidance and mitigation measures are proposed for the Project, including:

- Measures to minimise impacts on mature vegetation associated with the construction of the Project rail spur, including locating the rail spur to avoid impacts to mature trees and planting species characteristic of the River Red Gum Riparian Tall Woodland (NA 193) will be planted in the construction corridor along the river, including River Red Gum (*Eucalyptus camaldulensis*).

- Construction of the Blue Vale Road realignment to avoid clearance of the Weeping Myall Woodland, or otherwise offset impacts at a ratio of at least 5:1.
- Establishing native vegetation and fauna habitat on the mine rehabilitation through seeding/planting.

Biodiversity Management Plan

Whitehaven will prepare and implement a Biodiversity Management Plan for the Project, which will include details of the following:

- protection measures for vegetation and soil outside of the Project disturbance areas;
- weed control measures;
- clearing strategies to minimise impacts on fauna and threatened flora;
- salvage and reuse of material from the site for habitat establishment;
- strategies to minimise the removal of hollow trees, logs and stags;
- feral animal control measures;
- fauna monitoring during clearing activities, fauna rescue and relocation of micro-habitat features; and
- monitoring and performance evaluation of fauna micro-habitat management actions.

Biodiversity Offset Strategy

The approved Biodiversity Offset Strategy covers a total area of approximately 3,423 ha (approximately 2,063 ha of land-based offset areas on Whitehaven owned land and 1,360 ha of mine rehabilitation to woodland/forest at the Approved Mine).

The existing Biodiversity Offset Strategy for the Approved Mine will be augmented for the Project to account for additional residual impacts on flora and fauna. The additional Biodiversity Offset Strategy for the Project involves:

- offsetting residual impacts of the Project by retiring credits in accordance with the NSW Offset Policy; and
- providing offsets to address additional residual significant impacts on MNES.

The Project credit requirements will be offset for the Project using mine site rehabilitation as well as one, or a combination, of the following:

- acquiring or retiring credits under the biobanking scheme in the BC Act:
 - retiring existing credits on the existing Whitehaven Biobank Site;
 - purchasing existing credits on the *Biodiversity Credits Register*; and/or
 - creating new credits by establishing a land-based offset area owned by Whitehaven or another entity.
- making payments into an offset fund once established by the NSW Government; and/or
- providing supplementary measures as outlined in the NSW Offset Policy.

A portion of the ecosystem credits required for the Project will be satisfied by the proposed creation of credits from mine rehabilitation.

There is optionality around fulfilling the offset requirement for the Project, however, Whitehaven will commence the mechanism for securing the offset requirements (regardless of the offset mechanism) within 5 years of commencement of clearing native woodland/forest (or to a timeframe specified by DP&E and/or DEE).

7.2.7 Aboriginal Heritage

Section 4.15.3 describes the Project Aboriginal heritage management measures. Key components of the proposed Project Aboriginal heritage management are summarised below.

A Heritage Management Plan will be developed in consultation with the RAPs and the OEH. The Heritage Management Plan will be developed prior to the commencement of any surface disturbance works which will harm known Aboriginal heritage sites in the Project area.

During development of the Heritage Management Plan, the RAPs will be requested to provide advice on the storage of collected artefacts and the management of artefacts at the completion of Project activities (e.g. artefact replacement onto the post-mining landscape or retained for display/educational purposes).

Whitehaven will maintain a comprehensive Aboriginal Heritage Sites Database for all known Aboriginal heritage sites within the Project area, including the name, AHIMS number, site type, scientific (or other) significance, MGA coordinates and status of the site, and mark these sites on relevant Project documentation.

A protocol for surface disturbance works to reduce the risk of accidental damage to known Aboriginal heritage sites (e.g. demarcation of Aboriginal heritage sites located in proximity to, but outside of, disturbance areas) will be implemented for the Project.

Where practicable, known Aboriginal heritage sites will be avoided during Project construction and operational works associated with flexible components (e.g. ancillary infrastructure).

Proposed ancillary surface infrastructure areas will be surveyed (if not already done so) prior to the commencement of construction activities.

Where avoidance of known Aboriginal heritage sites is not practicable, site(s) will be subject to baseline recording (to the standard required by OEH AHIMS site card recording forms) by a suitably qualified archaeologist (where not already completed) prior to salvage via surface collection.

Salvage of a representative collection of visible surface artefacts will be undertaken for safekeeping in consultation with the RAPs.

Monitoring of blast vibration will be undertaken at the grinding groove site (AHIMS 20-4-0009) (Section 7.3.4), as required throughout the life of the Project and in accordance with a Blast Management Plan.

7.2.8 Historic Heritage

Section 4.16.3 describes the Project historic heritage management measures. Key components of the proposed Project historic heritage management are summarised below.

Management measures for the identified historic heritage sites will be described in a Heritage Management Plan developed for the Project.

Specific management measures for relevant historic heritage sites of significance will include:

- Blast monitoring at the Kurrumbede Homestead (Section 7.3.4).
- Inspection of the Kurrumbede Homestead by a structural engineer prior to commencement of mining to confirm relevant blast vibration limits.
- Photographic archival recording of the weatherboard home (Site 22).

A Heritage Management Plan will be developed in consultation with the OEH prior to construction and will detail the Project historic heritage management measures, including specific measures to manage potential indirect impacts to the Kurrumbede Homestead Complex (Site 1).

7.2.9 Visual Character

Section 4.14.3 describes the Project visual character management measures. Key components are summarised below.

Progressive rehabilitation of the Project landforms will be undertaken and will assist in reducing the contrast between them and the surrounding environment. The design of the Western Emplacement will assist with the visual shielding of the active open cut operations from viewpoints to the north, west and south-west of the Project. The level of visual modification by the Western Emplacement itself will vary over time, reducing as vegetation becomes established and mature.

Vegetative screens, and in some cases bunds, will be installed along sections of the Blue Vale Road realignment where prominent views of the active mine operations will be available to road traffic.

In addition, upon receiving a request from an owner of any privately-owned dwelling with direct views of the Project, Whitehaven will assess whether there is a high visual impact. In the event the Project is concluded to be resulting in a high visual impact at a dwelling, Whitehaven will implement reasonable and feasible visual mitigation measures in consultation with the owner to minimise the visibility of the Project from the dwelling.

Measures that will be employed to mitigate potential impacts from night-lighting (including sky glow) could include one or more of the following, where practicable and without compromising operational safety:

- All external lighting associated with the Project will comply with AS 4282:1997 – *Control of the Obtrusive Effects of Outdoor Lighting* (e.g. upward light spill will be minimised through adequate aiming of lights and the use of shielded fittings where practicable).
- Night-lighting will be restricted to the minimum required for operations and safety requirements so as to avoid over lighting.
- Appropriate positioning and orientation of lights.
- Use of warm white colours, where appropriate.
- Screens will be installed where required along sections of the Project rail spur to mitigate potential train lighting impacts to neighbouring residents and users of the Kamilaroi Highway.
- Mitigation measures at private residences, where warranted and if requested by the landholder (e.g. curtains, cladding, screens and tree planting).

7.2.10 Social and Community Infrastructure

Whitehaven would continue to work in partnership with the Narrabri Shire Council, Gunnedah Shire Council and the local community to maximise potential opportunities and minimise potential social impacts of the Project.

A number of social impact mitigation and management strategies will be implemented for the Project, including:

- Stakeholder engagement and consultation strategies, including:
 - community consultation on EIS findings;
 - ongoing communication and engagement programs;
 - dedicated contact points within Whitehaven to facilitate community liaison;
 - a community complaints and response procedure;
 - co-operation on cumulative impacts to provision of community infrastructure; and
 - support of community cohesion and development via engagement with key community stakeholders.

- Local landholder amenity and quality of life strategies, including:
 - ongoing local landholder engagement program; and
 - preparation of property specific mitigation plans, if requested by the landowner.
- Community infrastructure and wellbeing strategies, including:
 - provision of construction and operational workforce data to key agencies to support service planning;
 - funding and support of local community infrastructure providers via Voluntary Planning Agreements; and
 - education and promotion of environmental health and water resource management in the region.
- Housing and workforce management strategies, including:
 - encouraging Project contractors and suppliers to preferentially employ local residents within the region;
 - operations recruitment strategy, including preferential employment of local residents and implementation of the Whitehaven Workforce Diversity Policy;
 - support for locally based training programs;
 - encouraging non-local personnel to use the Boggabri Accommodation Camp;
 - settlement and integration strategies for personnel moving to the region;
 - implementation of a personnel behaviour code of conduct within local towns; and
 - monitoring of cumulative impacts to housing availability and affordability, in consultation with DP&E and other mining operations.
- Local business opportunities strategies, including:
 - development of a local content strategy for Project contractors/suppliers and implementation of a local supplier database;
 - consultation with local business groups and chambers, including the Boggabri Business and Community Progress Association; and
 - support of a courtesy bus between the Boggabri Accommodation Camp and Boggabri town.

7.2.11 Rehabilitation and Mine Closure

Section 5 describes the rehabilitation and mine closure planning for the Project. Key components are summarised below.

The overall rehabilitation goal for the Project mining area is to enhance the cover and connectivity of native woodland, while retaining some areas of agricultural land capable of supporting cattle grazing.

The MOP will include detailed and quantifiable performance measures and completion criteria (based on the Development Consent requirements for the Project). The rehabilitation performance measures and completion criteria included in the MOP will be specific, measurable, achievable, realistic and time-bound.

The conceptual post-mining land uses of the Project will continue to comprise a combination of nature conservation (woodland/forest) and agricultural (pasture) land uses, consistent with the post-mining land use of the Approved Mine.

The conceptual final landform and revegetation program will provide for a combination of approximately 2,670 ha of native woodland/forest and some 280 ha of agricultural land (i.e. land suitable for grazing).

Planning for mine closure will be conducted over the life of the Project, in consultation with the Gunnedah Shire Council, Narrabri Shire Council, DP&E and the local community, and will include consideration of amelioration of potential adverse socio-economic effects due to the reduction in employment at Project closure.

7.3 ENVIRONMENTAL MONITORING

Environmental monitoring to be implemented for the Project is described in Section 4. Table 7-2 provides an overview of the Project environmental monitoring regime.

The Project monitoring network will be developed as part of the preparation of management plans. Monitoring measures are described further below.

7.3.1 Groundwater

The existing groundwater monitoring network established for the Approved Mine and the Project is considered adequate for providing information on groundwater flow and a basis for groundwater model calibration and verification. Two additional bores monitoring groundwater level and quality will be installed in the waste rock emplacement areas once sufficiently developed.

The groundwater monitoring program will be described in detail in the Water Management Plan, to be prepared in consideration of the requirements of any relevant Development Consent conditions for the Project.

During preparation or ongoing review of the Water Management Plan, the monitoring frequency or suite of parameters measured at some sites may be reduced if considered appropriate.

The groundwater monitoring network will be sampled during mining and for at least two years following mining.

7.3.2 Surface Water

Surface water monitoring will be conducted on watercourses and drainage lines upstream and downstream of the Project mining area.

The monitoring locations and parameters will be selected during development of the Water Management Plan, to be prepared in consideration of the requirements of any relevant Development Consent conditions for the Project.

Monitoring will also be undertaken over the life of the Project to provide data for refinement of the site water balance, including:

- records of pumped water volumes;
- storage levels in mine water dams and other containment storages;
- dust suppression water usage rates; and
- Project CHPP water usage rates.

**Table 7-2
Summary of the Project Environmental Monitoring Regime**

Environmental Aspect	Environmental Monitoring [#]	Indicative Frequency [#]
Meteorology	<ul style="list-style-type: none"> ■ <i>Meteorology</i> – on-site meteorological station and implementation of a meteorological forecasting system. 	<ul style="list-style-type: none"> ■ Continuous.
Groundwater	<ul style="list-style-type: none"> ■ <i>Groundwater levels (vibrating wire piezometers)</i> – monitoring bores installed within the Permian coal measures. 	<ul style="list-style-type: none"> ■ Continuous.
	<ul style="list-style-type: none"> ■ <i>Groundwater levels and quality (standpipe piezometers)</i> – monitoring bores installed within the Permian coal measures and within the alluvium and sites to be installed within the waste rock emplacement areas once sufficiently developed. 	<ul style="list-style-type: none"> ■ Quarterly.
	<ul style="list-style-type: none"> ■ <i>Groundwater extraction</i> – sumps within the open cut. 	<ul style="list-style-type: none"> ■ Quarterly.
Surface Water	<ul style="list-style-type: none"> ■ <i>Surface water quality</i> – monitoring sites on watercourses and drainage lines upstream and downstream of the Project. 	<ul style="list-style-type: none"> ■ Following sufficient rainfall to gather a sample.
	<ul style="list-style-type: none"> ■ <i>Sediment dam water quality</i> – sediment dam release points. 	<ul style="list-style-type: none"> ■ During controlled release.
	<ul style="list-style-type: none"> ■ <i>Structural integrity of dams</i> – all sediment, mine water and coal contact water dams. 	<ul style="list-style-type: none"> ■ Quarterly.
	<ul style="list-style-type: none"> ■ <i>Up-catchment diversions</i> – integrity/stability. 	<ul style="list-style-type: none"> ■ Monthly and following 50 mm of rainfall in 24 hours.
	<ul style="list-style-type: none"> ■ <i>Erosion and sediment control structures.</i> 	<ul style="list-style-type: none"> ■ Quarterly.
Noise	<ul style="list-style-type: none"> ■ <i>Attended noise monitoring</i> – monitoring at neighbouring residences as required. 	<ul style="list-style-type: none"> ■ Quarterly.
	<ul style="list-style-type: none"> ■ <i>Real-time</i> – monitoring and recording at neighbouring residences and other locations as required. 	<ul style="list-style-type: none"> ■ Continuous.
Blasting	<ul style="list-style-type: none"> ■ <i>Blasting</i> – a residence on property 127, the Kurrumbede Homestead and the grinding groove site in the Namoi River. 	<ul style="list-style-type: none"> ■ Per blast.
Air Quality	<ul style="list-style-type: none"> ■ <i>Dust deposition</i> – dust gauges within the Project mining area and surrounds. 	<ul style="list-style-type: none"> ■ Monthly.
	<ul style="list-style-type: none"> ■ <i>Real-time PM₁₀ and PM_{2.5}</i> – TEOM(s) within the vicinity of the Project. 	<ul style="list-style-type: none"> ■ Continuous.

[#] Indicative monitoring requirement to be reviewed and confirmed under the management plans required under the Development Consent, EPLs, mining tenements for the Project and Water Licence conditions and on-site investigations.

7.3.3 Noise

The noise management system for the Project will include a real-time noise and meteorological monitoring network, as well as a meteorological forecasting system.

Real-time noise monitors will be installed in locations that will provide representative noise levels at the most sensitive receivers surrounding the Project. The noise monitoring locations will be determined as part of the Noise Management Plan.

Real-time meteorological data will be recorded at the Project meteorological station.

The meteorological forecasting system will be used to anticipate upcoming periods of adverse weather conditions (e.g. based on wind speed, direction and atmospheric stability). The predictive meteorological forecasting system will be used in conjunction with the real-time noise monitoring system and will provide an alert for mine personnel to review the real-time data and manage mining activities for that day as may be required.

7.3.4 Blasting

Blast monitoring will be conducted at nearby privately-owned receivers, at the Kurrumbede Homestead and at the grinding groove site on the Namoi River (AHIMS 20-4-0009). Exact locations will be determined as part of the Blast Management Plan.

7.3.5 Air Quality

Air quality monitoring for the Project will be conducted at several dust gauges throughout the Project mining area and surrounds and at a TEOM. An Air Quality Management Plan will be prepared for the Project and will identify any additional air quality monitoring sites and equipment required for the Project. Consideration will be given to the installation of a second TEOM in the vicinity of the Project mining area.

The network of real-time dust monitors in the vicinity of the Project will continuously log short-term particulate matter concentrations and report the data to a web-based recording system.

7.3.6 Rehabilitation

A rehabilitation monitoring program for the Project will be designed to track the progress of revegetation and to determine the requirement for intervention measures, such as thinning to reduce the density of revegetated areas, or additional plantings in areas where vegetation establishment has been sub-optimal.

Revegetation surveys will be undertaken by an appropriately qualified and experienced person to identify the success of rehabilitation and identify any additional measures required to achieve ongoing rehabilitation success.

The Project rehabilitation monitoring program, rehabilitation parameters and completion criteria will be determined in consultation with relevant government agencies and documented in the MOP.

7.4 REPORTING

The following subsections describe the expected reporting requirements for the Project (based on requirements at the time of preparation of this EIS). Whitehaven will adjust its reporting requirements should they change in the future.

7.4.1 Annual Review

Whitehaven will produce an Annual Review of the environmental performance of the Project for a 12 month reporting period. Copies of the Annual Review will be made available on the Whitehaven website.

Environmental monitoring results will be compared against relevant statutory requirements, monitoring results of previous years and relevant predictions of this EIS.

Biodiversity management, biodiversity offsets and rehabilitation monitoring results and various environmental activities planned for the next 12 months will also be discussed in the Annual Review.

7.4.2 Development Consent Requirements

Whitehaven will provide regular reporting of environmental performance of the Project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of the Project Development Consent and associated licences and approvals.

7.4.3 Independent Environmental Audit

Consistent with existing reporting requirements of the Approved Mine Development Consent (SSD-5000), Whitehaven will commission an independent environmental audit of the Project every three years or at an alternative interval as required by the Project Development Consent.

Upon completion of the independent environmental audit, Whitehaven will submit a copy of the audit and its responses to the DP&E and where necessary, revise environmental management plans.

7.4.4 Other Reporting

Annual Return

A summary of monitoring required by an EPL for the Project (including the recording of complaints) and a Statement of Compliance will be reported in Annual Returns and submitted to the EPA.

EPBC Act Approval – Annual Reporting

Whitehaven will prepare annual reports assessing compliance with relevant conditions of an EPBC Act approval for the Project.

Water Licences – Annual Reporting

Whitehaven will continue to report in accordance with the conditions of existing and any future water licences to DI Water.

Greenhouse Gas Reporting

Under the requirements of the NGER Act, relevant sources of greenhouse gas emissions and energy consumption must be measured and reported on an annual basis, allowing major sources and trends in emissions/energy consumption to be identified.

NPI Reporting

Whitehaven will continue to provide annual National Pollutant Inventory (NPI) reports to the EPA. Emissions data for the Project will be made publicly available on the Federal Government's NPI website (www.npi.gov.au) and will also be reported in the Annual Review.

Community Complaints Register

A complaints register will be maintained for the Project. Complaints and subsequent actions undertaken will be reported in the Annual Review and on the Whitehaven website.