

Tarrawonga Coal Project

Environmental
Assessment

SECTION 7

STATEMENT OF
COMMITMENTS

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SOC1 STATEMENT OF COMMITMENTS

In accordance with the Director-General's Environmental Assessment Requirements, this section provides a statement of Tarrawonga Coal Pty Ltd's (TCPL's) commitments in relation to the Tarrawonga Coal Project (the Project).

SOC1.1 PROPOSED PROJECT ENVIRONMENTAL MANAGEMENT, MONITORING AND REPORTING

Section 4 of this Environmental Assessment (EA) outlines proposed environmental management and offset measures for the Project.

These include measures relating to land resources, agricultural production, groundwater, surface water, noise, blasting, air quality, greenhouse gas emissions, ecology, road transport, visual character, Aboriginal heritage, non-Aboriginal heritage, socio-economics and hazard and risk. Where relevant, Project specific environmental monitoring programs are also proposed in Section 4.

Section 5 of this EA describes how the Project would be progressively rehabilitated and integrated into the adjoining landscapes.

TCPL will review and revise the existing Tarrawonga Coal Mine management and monitoring plans listed in Table SOC-1. Table SOC-1 also lists new management and monitoring plans that are proposed to be prepared for the Project.

The existing monitoring program at the Tarrawonga Coal Mine will be augmented to address additional Project disturbance areas and the open cut extensions. Figure SOC-1 shows the location of environmental monitoring sites proposed to be maintained or added for the Project.

It is recognised that changes to the Project environmental management, monitoring and reporting proposals contained in this EA may be considered necessary during government agency assessment of this EA.

Environmental management, monitoring and reporting will be conducted in accordance with finalised Project Approval conditions, with the final monitoring details (locations, parameters and frequencies) to be provided in the relevant management plans/monitoring programs.

SOC1.2 SPECIFIC ENVIRONMENTAL COMMITMENTS

Environmental management and offset measures to be implemented for the Project are described in Section 4. Key commitments include:

- design and construction of an engineered low permeability barrier to the east and south-east of the open cut;
- design, construction and implementation of a permanent Goonbri Creek alignment and associated flood bund;
- integration of key aspects of the Project with the adjoining Boggabri Coal Mine (i.e. Northern Emplacement, coal processing and loading of Project product coal onto trains);
- cessation of sized run-of-mine (ROM) coal road transport to the Whitehaven Coal Handling and Preparation Plant (once suitable approvals and upgrades are in place);
- management and mitigation of operational noise;
- rehabilitation of Project disturbance areas, including the reinstatement of key agricultural and ecological values;
- provision of biodiversity offset measures for the Project;
- management of the Project final void to minimise potential long-term impacts on water resources; and
- participation in joint air quality, operational noise and regional groundwater monitoring schemes with the adjoining Boggabri Coal Mine and the Maules Creek Coal Project.

These are described further below.

Low Permeability Barrier

A low permeability barrier will be constructed in the alluvium to the east and south-east of the open cut. Construction of the low permeability barrier will be completed before the Project open cut intersects the alluvium (approximately Year 12).

The design objectives of the low permeability barrier include minimising the potential for drainage of alluvial groundwater into the open cut during operations and post-mining, and maintaining the hydraulic character of Goonbri Creek.

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

Proposed Management, Monitoring and Reporting	Key EA Sections and Appendices
<i>Management and Monitoring</i>	
Environmental Management Strategy	Section 2.1.8
Water Management Plan	Sections 4.4, 4.5 and Appendices A and B
• Site Water Balance	Section 4.5 and Appendix B
• Erosion and Sediment Control Plan	Sections 4.3, 4.5 and 5 and Appendix B
• Surface Water Monitoring Program	Section 4.5 and Appendix B
• Groundwater Monitoring Program	Section 4.4 and Appendix A
• Surface and Groundwater Response Plan	Sections 4.4 and 4.5 and Appendices A and B
Goonbri Creek Management Plan [#]	Section 4.5
Noise Management Plan	Section 4.6 and Appendix C
Blast Management Plan	Section 4.6 and Appendix C
Air Quality and Greenhouse Gas Management Plan	Section 4.7 and Appendix D
Biodiversity Offset Strategy	Sections 4.9 and 4.10 and Appendices E and F
Biodiversity Management Plan [#]	Sections 4.9 and 4.10
Offset Area Management Plan [#]	Sections 4.9 and 4.10 and Appendix E
Farm Management Plan [#]	Sections 4.3, 4.10 and Appendices E and I
Aboriginal Heritage Management Plan	Section 4.13 and Appendix K
Waste Management Plan	Section 4.3
Rehabilitation Strategy	Appendix I
Rehabilitation Management Plan	Sections 4.9, 4.10, 5 and Appendix I
Bushfire Management Plan	Sections 4.3, 4.9 and 4.10
<i>Reporting Requirements</i>	
Annual Environmental Management Report and Mining Operations Plan or Rehabilitation and Environmental Management Plan	Section 6.4.1
Licences and Approvals	Section 6.4.1
Greenhouse Gas Reporting	Sections 4.8.2 and 4.8.3

[#] New management plan to be prepared.

TCPL Commitment

TCPL commits to construction of the low permeability barrier to meet the following design objectives:

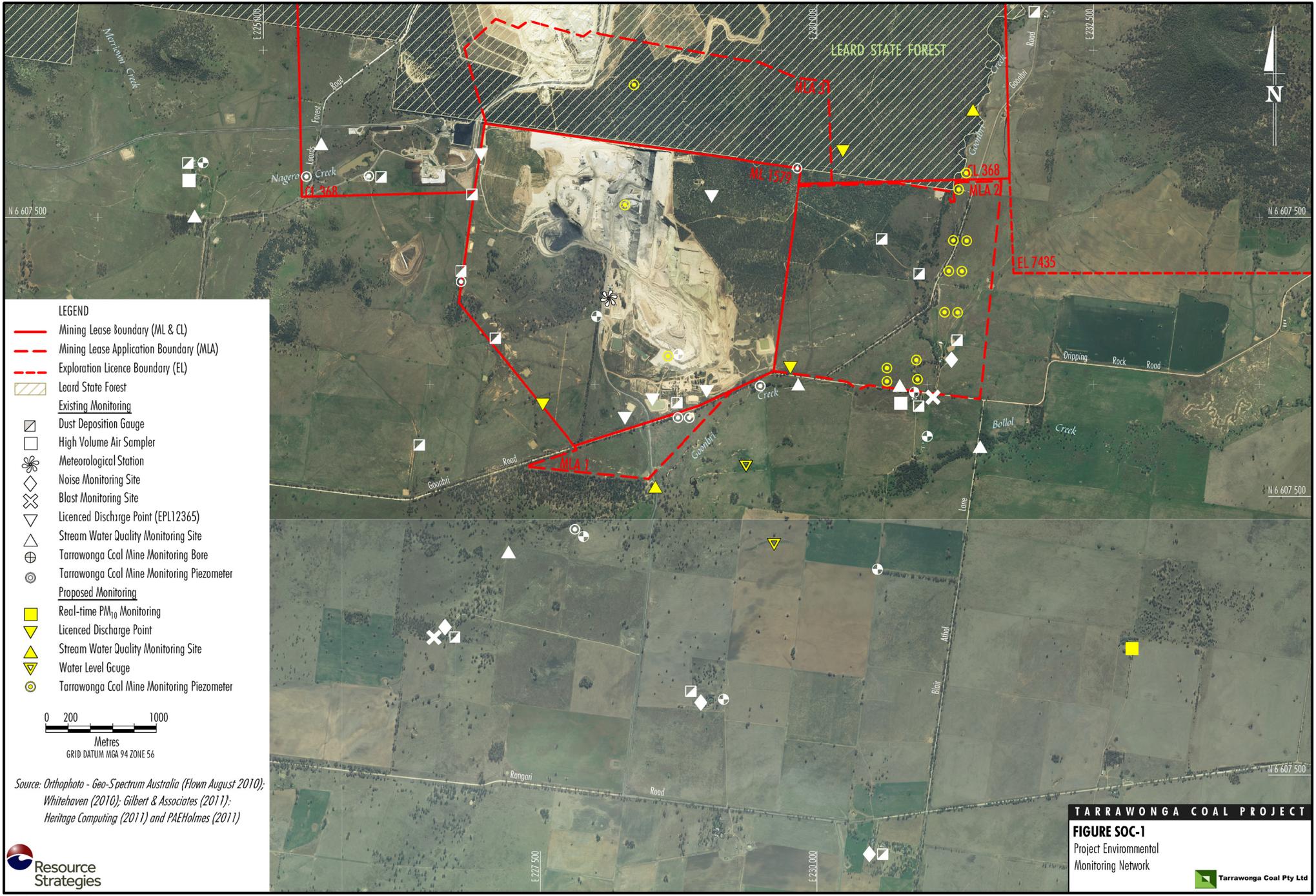
- minimise the potential for local drainage of alluvial groundwater into the open cut during operations and post-mining;
- minimise the potential for future instability of the open cut batters formed in the alluvium;
- maintain the hydraulic character of Goonbri Creek by minimising the potential loss of baseflow; and
- maintain the value of alluvial groundwater, by minimising potential interactions with the mine final void, post-mining.

In addition, TCPL will augment the existing piezometer network with additional sites to validate the performance of the low permeability barrier.

Permanent Goonbri Creek Alignment and Associated Flood Bund

In approximately Year 15, open cut mining would remove a 3 kilometre (km) section of Goonbri Creek. Prior to the open cut advancing into this section of the creek, the permanent Goonbri Creek alignment will be established.

A permanent flood bund will also be constructed to prevent inundation of the open cut during operations and post-mining. The permanent flood bund will generally coincide with the alignment of the low permeability barrier.



LEGEND

- Mining Lease Boundary (ML & CL)
- - - Mining Lease Application Boundary (MLA)
- . - . Exploration Licence Boundary (EL)
- Leard State Forest
- Existing Monitoring**
- Dust Deposition Gauge
- High Volume Air Sampler
- ✪ Meteorological Station
- Noise Monitoring Site
- Blast Monitoring Site
- Licenced Discharge Point (EPL12365)
- Stream Water Quality Monitoring Site
- Tarrawonga Coal Mine Monitoring Bore
- Tarrawonga Coal Mine Monitoring Piezometer
- Proposed Monitoring**
- Real-time PM₁₀ Monitoring
- Licenced Discharge Point
- Stream Water Quality Monitoring Site
- Water Level Gauge
- Tarrawonga Coal Mine Monitoring Piezometer

0 200 1000
Metres
GRID DATUM MGA 94 ZONE 56

Source: Orthophoto - Geo-Spectrum Australia (Flown August 2010);
Whitehaven (2010); Gilbert & Associates (2011);
Heritage Computing (2011) and PAHolmes (2011)



TARRAWONGA COAL PROJECT
FIGURE SOC-1
Project Environmental
Monitoring Network



TCPL Commitment

TCPL commits to the design, construction and implementation of the permanent Goonbri Creek alignment to meet the following design objectives:

- construct a low flow channel that approximates the existing section of Goonbri Creek upstream of the Project in terms of stream geometry, hydrology and geomorphology;
- mimic the meandering path of the existing alignment of Goonbri Creek, such that the length of the permanent Goonbri Creek alignment is approximately the same length as the section of Goonbri Creek being removed;
- minimise the disturbance to the reaches of Goonbri Creek upstream of the permanent Goonbri Creek alignment; and
- provide a stable transition back to the existing Goonbri Creek alignment which results in no detectable change to the hydraulic conditions in the reaches of Goonbri Creek or the Bollol Creek floodplain area downstream.

In addition, TCPL commits to the design and construction of the permanent flood bund to a height that will provide protection against the peak flood height associated with a Probable Maximum Precipitation rainfall event.

TCPL will develop and implement a Goonbri Creek Management Plan prior to the commencement of construction activities associated with the low permeability barrier, permanent Goonbri Creek alignment and flood bund.

The Goonbri Creek Management Plan will describe:

- the design and construction details of the permanent Goonbri Creek alignment and flood bund;
- revegetation objectives and activities;
- water quality, ecological, hydrological and geomorphic performance and completion criteria for the permanent Goonbri Creek alignment based on baseline conditions; and
- a monitoring/maintenance program for water quality, ecological, hydrological and geomorphic integrity of the permanent Goonbri Creek alignment.

Integration with the Boggabri Coal Mine

Whitehaven Coal Mining Pty Ltd (Whitehaven) and Boggabri Coal Pty Limited have entered into an agreement that enables the handling, processing and transportation of Project coal at the upgraded Boggabri Coal Mine Infrastructure Facilities and private rail spur.

Under this agreement Boggabri Coal Pty Limited will handle and process Project ROM coal at the upgraded Boggabri Coal Mine Infrastructure Facilities on a campaign basis.

In addition, the Project Northern Emplacement will be integrated with the southern extent of the Boggabri Coal Mine waste rock emplacement to facilitate an integrated waste emplacement landform, avoiding the formation of a new valley between the two mine landforms and reducing the Project disturbance area.

Cessation of Sized ROM Coal Haulage to Whitehaven Coal Handling and Preparation Plant

Once approvals and upgrades are in place for the transfer of Project ROM coal to the Boggabri Coal Mine Infrastructure Facilities, Project sized ROM coal will no longer be trucked to the Whitehaven Coal Handling and Preparation Plant for train loading and associated processing.

Management of Operational Noise

Due to the extensions to the open cut, increased mobile fleet and alteration to operating hours (i.e. change from 20.5 to 24 hours per day) the Project has the potential to result in additional noise emissions at nearby privately-owned residences.

A number of iterative steps were undertaken to develop noise mitigation measures for the Project, including preliminary noise modelling, evaluation of potential noise management and mitigation measures and assessment of their effectiveness and feasibility by TCPL.

TCPL Commitment

TCPL will implement the following noise management and mitigation measures to appreciably reduce noise emissions associated with the Project:

- installation of an earth bund on the southern side of exposed sections of the services corridor (i.e. ROM coal haul road to the Boggabri Coal Mine);
- modified alignment of haul routes to reduce their exposure relative to nearby receivers; and
- a reduction in the number of mobile fleet items operating during the evening and night-time periods.

Rehabilitation Objectives and Final Landform

The Project would require the progressive removal of approximately 334 hectares (ha) of woodland and forest habitat and approximately 223 ha of grassland habitat.

This includes approximately 145 ha of native vegetation in the Leard State Forest, and approximately 13 ha of Box-Gum Woodland, which is an endangered ecological community.

The Project Northern Emplacement will be integrated with the southern extent of the Boggabri Coal Mine waste rock emplacement.

TCPL Commitment

The Project final landform and revegetation program will provide for a combination of approximately 752 ha of native woodland/forest and some 210 ha of Class 3 agricultural suitability land.

The agricultural land will be capable of being used for pasture production for grazing and occasional cropping. Revegetation of woodland/forest areas will include the planting of species characteristic of the local vegetation communities, including species from the Box-Gum Woodland endangered ecological community.

In addition, TCPL commits to a riparian vegetation enhancement program on a 3.2 km section of Goonbri Creek downstream of the Project open cut, through measures such as revegetation and stock exclusion.

A Rehabilitation Management Plan will be developed and implemented for the Project, including a rehabilitation monitoring program designed to track the progress of rehabilitation and revegetation.

Biodiversity Offset Measures*TCPL Commitment*

TCPL commits to the provision of an area to offset the residual impacts of the Project on flora and fauna and maintain or improve the biodiversity values of the region in the medium to long-term.

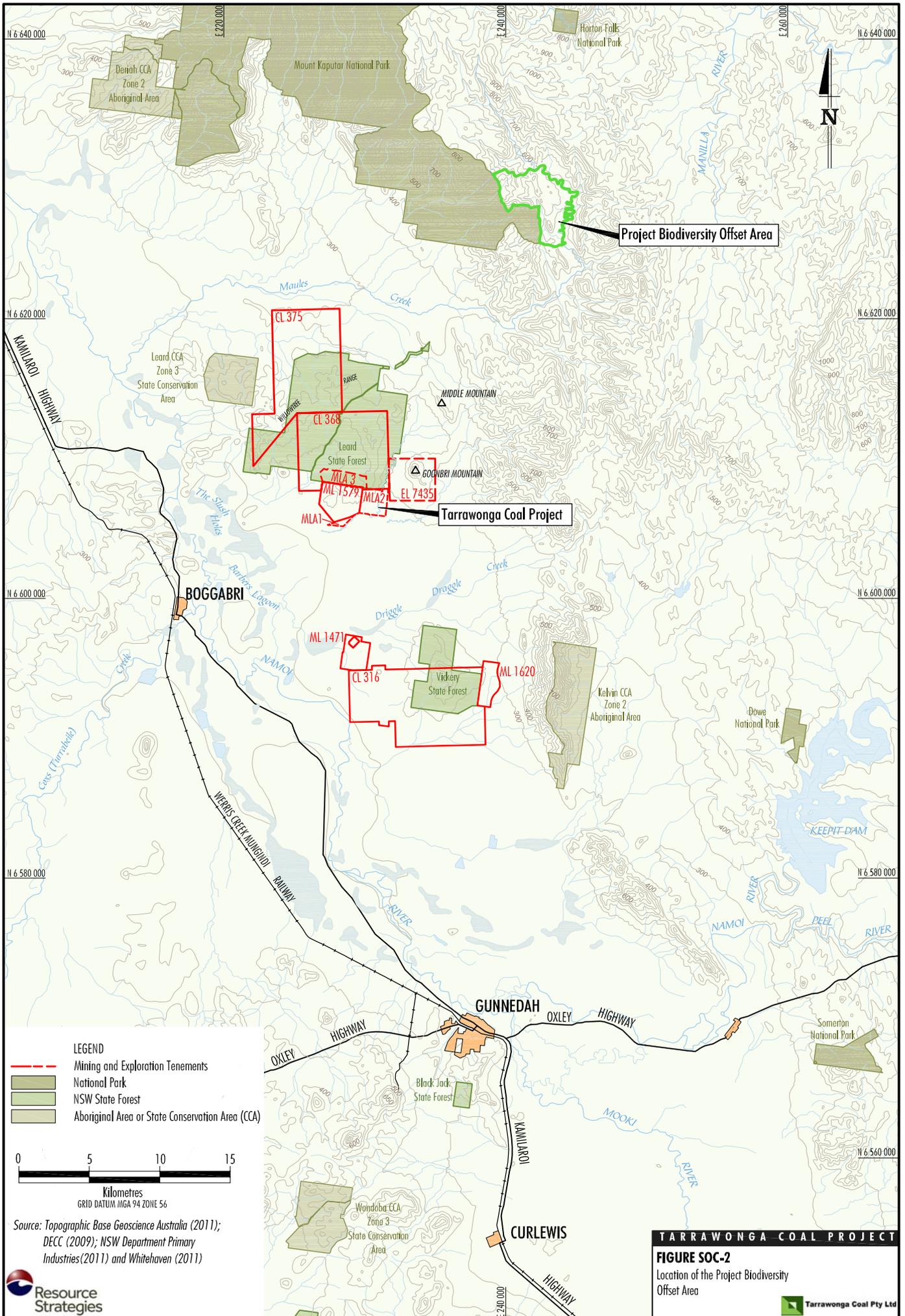
The biodiversity offset for the Project comprises approximately 1,600 ha of freehold land that has been purchased by Whitehaven.

The offset is situated approximately 20 km to the north-east of the Project and adjoins Mount Kaputar National Park (Figure SOC-2). Prior to its recent purchase by Whitehaven the offset area was part of a larger agricultural property.

Ecological gains from the biodiversity offset include:

- Similar vegetation communities/fauna habitats, compared to the Project area, will be conserved/enhanced in the biodiversity offset area.
- The biodiversity offset area is suitably located to benefit flora and fauna populations (biodiversity values) potentially impacted by the Project.
- The biodiversity offset area is located adjacent to Mount Kaputar National Park.
- Ephemeral creeks occur within the biodiversity offset area, providing a diversity of habitats.
- Substantial areas of Box-Gum Woodland (232 ha) occur in the biodiversity offset area.

Through active management, particularly of areas previously cleared for agriculture, the ecological values of the biodiversity offset area can be further improved. TCPL commits to a number of management measures to enhance the offset area's flora and fauna values. These measures will be detailed in the Offset Area Management Plan to be prepared for the Project.



Project Biodiversity Offset Area

Tarrawonga Coal Project

BOGGABRI

GUNNEDAH

CURLEWIS

- LEGEND**
- - - Mining and Exploration Tenements
 - National Park
 - NSW State Forest
 - Aboriginal Area or State Conservation Area (CCA)

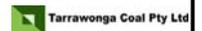


Source: Topographic Base Geoscience Australia (2011);
DECC (2009); NSW Department Primary
Industries (2011) and Whitehaven (2011)



TARRAWONGA COAL PROJECT

FIGURE SOC-2
Location of the Project Biodiversity
Offset Area



The Offset Area Management Plan will also include a program to monitor and audit the effectiveness of the management measures and to evaluate performance against specified completion criteria.

TCPL intends to reach an agreement with the New South Wales (NSW) Government so that the biodiversity offset area can be permanently added to the adjoining Mount Kaputar National Park.

In the interim, TCPL will enter into a conservation arrangement with the NSW Government to ensure the protection and management of the offset area (e.g. a voluntary conservation agreement with the NSW Minister for the Environment).

Management of the Project Final Void

At the cessation of mining, a final void would remain at the eastern extent of the open cut.

One of the rehabilitation and mine closure goals for the Project is to minimise the long-term drawdown and potential water quality effects on local groundwater aquifers, so that their beneficial use is not adversely impacted.

TCPL Commitment

TCPL commits to installing permanent perimeter bunds and/or diversion channels to limit the catchment area of the final void.

In addition, TCPL will design and construct the final void to minimise the long-term drawdown and potential water quality effects on local groundwater aquifers. This will be achieved by adjusting the final void batter angles and/or placing additional waste rock backfill in the final void such that a permanent waterbody will form and reach an equilibrium level close to, but below, the local pre-mining groundwater level in the coal measures.

TCPL will adopt an adaptive management approach to the final void design and mine closure planning for the Project. Final void design and mine planning will be undertaken by TCPL in consultation with relevant government agencies as a component of the Rehabilitation Management Plan.

Participation in Joint Air Quality, Operational Noise and Regional Groundwater Monitoring

The Air Quality and Greenhouse Gas Management Plan will be revised and updated to address the construction and operation of the Project, including additional best-practice dust suppression measures on Project haul roads (i.e. additional haul road watering and/or the use of chemical dust suppressants).

The Noise Management Plan will be revised to include details of the mitigation and management measures for noise and methodology for measuring temperature inversions.

The Groundwater Monitoring Program (which is included in the Water Management Plan) will be updated to address the Project and associated extensions to the piezometer network.

TCPL Commitment

TCPL will work with the proponents of the Boggabri Coal Mine and Maules Creek Coal Project to develop and implement a joint network of real-time particulate matter monitors, operational noise monitors and regional groundwater monitoring in the vicinity of the Project. The details of the joint network will be provided in the revised Air Quality and Greenhouse Gas Management Plan, Noise Management Plan and Water Management Plan.