DURALIE COAL MINE
WASTE MANAGEMENT PLAN

REVISION STATUS REGISTER

Section/Page/ Annexure	Revision Number	Amendment/Addition	Distribution	DPIE Approval Date
All	A	Original	DP&I	March 2011
All	WMP-R02-A	Edits made to: • reflect amended Project Approval conditions by Order of The Land and Environment Court of NSW dated 10 November 2011; • consider recommendations (where relevant) of an independent environmental audit dated November 2011; and • consider any outcomes of the Annual Review for the Duralie Coal Mine (dated September 2011).	DP&I	6-3-2012
All	WMP-R02-B	Annual Review (2013)	DP&I	-
All	WMP-R03-A	December 2014 Modification Approval	DP&E	23-6-2015
All	WMP-R04-A	Updated to reflect current status of DCM and mine closure planning.	DPIE	TBC

SEPTEMBER 2021
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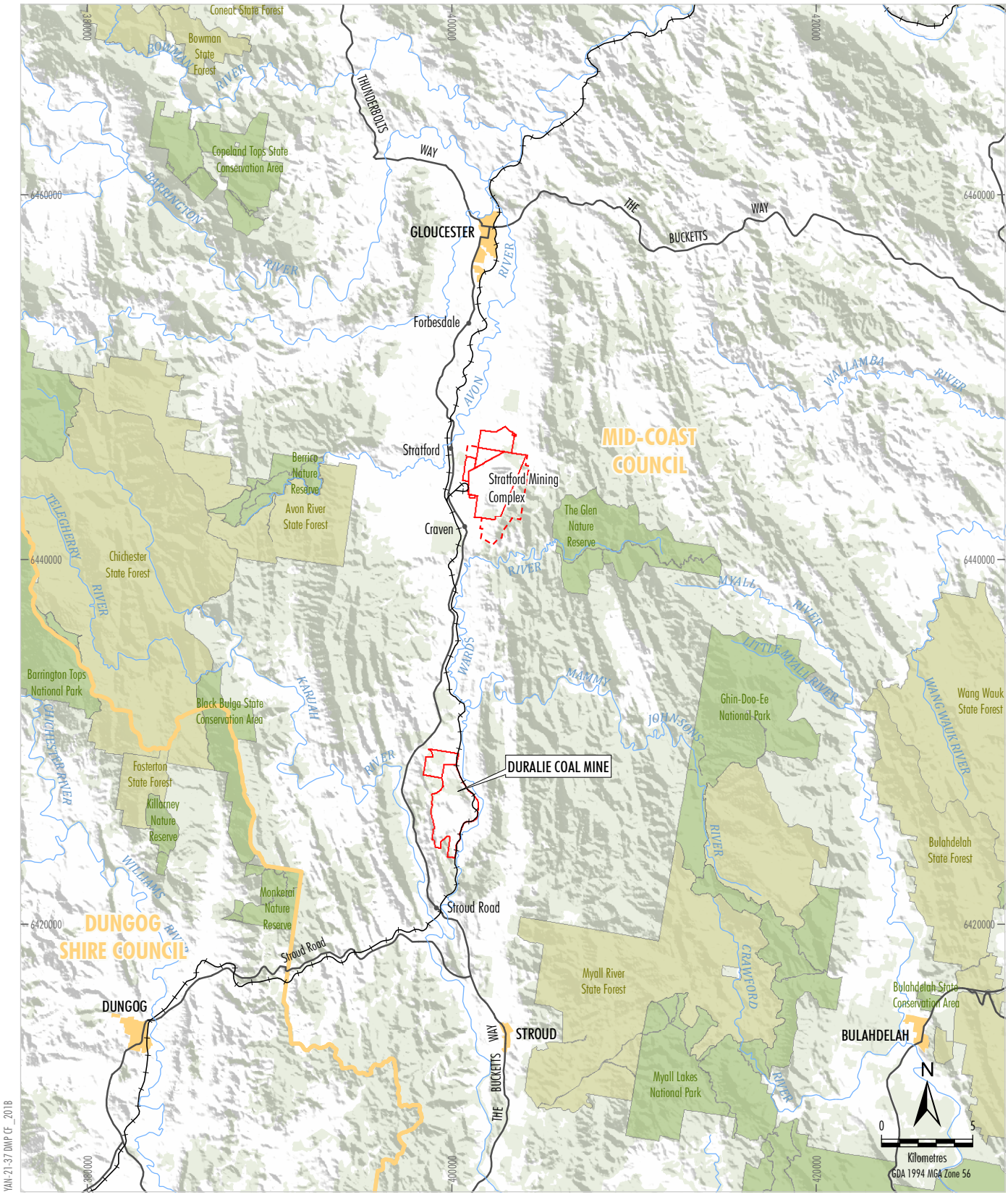
1 INTRODUCTION

Duralie Coal Pty Ltd (DCPL), a wholly owned subsidiary of Yancoal Australia Limited, operates the Duralie Coal Mine (DCM). The DCM is situated adjacent to Mammy Johnsons River within the Karuah River Catchment, between the townships of Wards River and Stroud Road on the Bucketts Way in New South Wales (NSW) (Figure 1). The NSW Minister for Urban Affairs and Planning granted Development Consent for the DCM in August 1997 and coal production commenced in 2003.

The Duralie Extension Project (DEP) involves the extension and continuation of mine operations at the DCM. DCPL was granted approval for the DEP under section 75J of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act) on 26 November 2010 (NSW Project Approval [08_0203]) and under sections 130 and 133 of the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC) on 22 December 2010 (Commonwealth Approval [EPBC 2010/5396]). On 10 November 2011, the NSW Project Approval (08_0203) was amended by Order of The Land and Environment Court of NSW and further modified on 1 November 2012. On the 5 December 2014, NSW Project Approval (08_0203) was modified to reflect approval of the Duralie Open Pit Modification. A copy of the amended NSW Project Approval (08_0203) and the Commonwealth Approval (EPBC 2010/5396) is available on the DCPL website (http://www.duraliecoal.com.au).

The main activities associated with the approved DEP (as modified) include:

- continued development of open cut mining operations at the DCM to facilitate a total run-of-mine (ROM) coal production rate of up to approximately 3 million tonnes per annum (Mtpa), including:
  - extension of the existing approved open pit in the Weismantel Seam to the north-west (i.e. Weismantel open pit) within Mining Lease (ML) 1427 and ML 1646; and
  - open cut mining operations in the Clareval Seam (i.e. Clareval open pit) within ML 1427 and ML 1646;
- ongoing exploration activities within existing exploration tenements;
- progressive backfilling of the open pits with waste rock as mining develops, and continued and expanded placement of waste rock in out-of-pit waste rock emplacements;
- increased ROM coal rail transport movements on the North Coast Railway between the DCM and the Stratford Mining Complex (SMC) in line with increased ROM coal production;
- continued disposal of excess water through irrigation (including development of new irrigation areas within the existing ML 1427 and ML 1646) (refer below regarding status of irrigation at the DCM);
- construction of Auxiliary Dam No. 2 to relative level (RL) 100 metres (m) to provide 2,900 megalitres of on-site storage capacity to manage excess water on-site;
- progressive development of dewatering bores, pumps, dams, irrigation infrastructure and other water management equipment and structures;
- development of new haul roads and internal roads;
- upgrade of existing surface facilities and supporting infrastructure as required in line with increased ROM coal production;
- continued development of soil stockpiles, laydown areas and gravel/borrow pits;
- establishment of the permanent Coal Shaft Creek Diversion alignment adjacent to the existing DCM mining area;
- ongoing surface monitoring and rehabilitation; and
- other associated minor infrastructure, plant, equipment and activities.



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LEGEND

- Mining Lease Boundary
- NSW State Forest
- National Park, Nature Reserve or State Conservation Area
- Local Government Area Boundary

Source: Geoscience Australia (2006);
NSW Department of Planning & Environment (2017)

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DURALIE COAL MINE

Regional Location

Figure 1

The activities associated with the approved Duralie Open Pit Modification include:

- an increase in the maximum depth of the Clareval open pit;
- a minor increase in the extent of surface development of the DCM of approximately 2.5 hectares, resulting from:
  - a reduction in low wall angles of the Clareval open pit and the removal of a pillar between the Clareval and Weismantel open pits to improve geotechnical stability; and
  - associated relocation of the up-catchment diversion to the west of the Clareval open pit;
- revision of mining sequence (i.e. progression of mining in the Clareval and Weismantel open pits); and
- an increase in height of the waste rock emplacement (i.e. the backfilled open pit) from approximately 110 m Australian Height Datum (AHD) to approximately 135 m AHD.

The general arrangement of the DCM, showing modifications, is provided in Figure 2.

Current Status of the DCM

Condition 5, Schedule 2 of Project Approval (08_0203) authorises mining operations to be carried at the DCM until 31 December 2021.

Accordingly, DCPL is planning for the commencement of the mine closure phase (i.e. after the cessation of mining operations on 31 December 2021) and has revised this Waste Management Plan (WMP) to reflect the current stage of operations and to describe anticipated mine closure activities and waste management at the DCM for the mine closure phase.

Operations at the DCM now reflect the transition towards mine closure:

- **Clareval Open Pit:** mining of the Clareval Open Pit has now been completed, and dewatering of the pit has ceased. Partial backfilling with waste rock mined from the Weismantel Open Pit has commenced, along with shaping of the pit area to its final landform design. Mining of the Clareval Open Pit was finalised to a shallower depth than the maximum approved depth as modelled in 2014 DCM Open Pit Modification.
- **Weismantel Open Pit:** mining of the Weismantel Open Pit will continue until 31 December 2021, however, will also not occur to the maximum approved depth as modelled in 2014 DCM Open Pit Modification. Progressive backfilling of completed areas of the Weismantel Open Pit has been undertaken.
- **DCM Water Management System Changes:**
  - Following the cessation of mining of the Clareval Open Pit (now final void) and the Clareval void becoming available as a water storage, Weismantel Open Pit dewatering is now preferentially transferred to the Clareval void and not stored within the Main Water Dam. As a result, all irrigation activities for the purpose of reducing the total site water inventory at the DCM have now ceased and the DCM's Irrigation Area irrigation system has been decommissioned and removed.
  - Decommissioning of other redundant water management structures has also commenced. Consistent with the approved DCM final landform design, Auxiliary Dam No. 1 has been dewatered, decommissioned and rehabilitated.
- **Vegetation Clearance:** No new disturbance areas (within approved surface disturbance areas) are proposed.

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LEGEND

- Mining Lease Boundary
- Approximate Extent of Existing/Approved Surface Development
- Existing/Approved First Flush Protocol Pump Back System
- Existing/Approved Up-catchment Diversion System

Source: © NSW Spatial Services (2019)
Orthophoto: Google Earth CENS/Airbus (2020)

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DURALIE COAL MINE

DCM General Arrangement

Figure 2

- **Closure Planning:** The DCM's Mine Closure Planning Program (described in the DCM Mining Operations Plan and Rehabilitation Management Plan) includes technical assessments and works that will be undertaken and implemented as the DCM progresses towards and commences the mine closure phase.
  - DCPL is progressively completing components of the Mine Closure Planning Program, with the various technical assessments currently being completed based on the refined final landform design. The outcomes from these reviews and Mine Closure Planning Program technical assessments and works will be incorporated into a DCM Mine Closure Plan.

DCM Activities after Cessation of Mining Operations

Following the completion of mining operations (and the cessation of rail movements of ROM coal) on 31 December 2021, key activities at the DCM would include:

- infrastructure decommissioning and demolition;
- bulk rehabilitation earthworks (which may include final blasting to achieve final landform design);
- revegetation of final landform in accordance with the DCM Rehabilitation Management Plan;
- removal of all mining fleet, major earthworks fleet and drilling fleet from the DCM;
- phase out of workforce (including transition of partial workforce to SCM); and
- refinement of monitoring programs and environmental management plans to reflect rehabilitated site.

DCPL anticipates that bulk rehabilitation earthworks to facilitate rehabilitation of the DCM in accordance with the refined final landform design would be completed in 2023. Once bulk rehabilitation earthworks are complete, all major fleet will be removed from site and the site workforce will be reduced to support post-closure activities. Consequently, due to the removal of mining fleet and other major fleet and the reduction in workforce, waste generation at the DCM will significantly reduce.

2 PURPOSE AND SCOPE

This WMP has been prepared by DCPL in accordance with the requirements of Condition 53, Schedule 3 and Condition 4, Schedule 5 of the NSW Project Approval (08_0203) (Section 3.1).

The WMP aims to provide a framework to:

- identify the waste streams produce by the project;
- detail the control measures to prevent and/or minimise any material harm to the environment;
- describe what measures would be implemented to reduce, re-use and recycle the waste generated by the project;
- outline the procedures and protocols, where the above principles are not practicable, for the storage and disposal of waste in the most environmentally appropriate manner;
- detail the monitoring, reporting and reviewing of the requirements and measures set out in the WMP; and
- establish the responsibilities and accountabilities for the management of waste at the DCM.

This revision of the WMP has been prepared to:

- describe the current status of operations at the DCM;
- describe that once mining operations and bulk rehabilitation earthworks have ceased, two waste streams previously generated at the DCM would cease (i.e. waste rock generation and waste generated by mining-related activities) and the waste management measures relevant to these waste streams would reduce and/or become redundant;
- describe that once mining operations cease, DCM on-site operations and activities would reduce in scale, as would the DCM workforce, resulting in reduced volumes of remaining waste streams (i.e. general recyclable and non-recyclable wastes, and sewage and effluent; and
- include administrative updates to contemporise the plan.

3 STATUTORY REQUIREMENTS

DCPL's statutory obligations are contained in:

(i) the conditions of the NSW Project Approval (08_0203);

(ii) the conditions of the Commonwealth Approval (EPBC 2010/5396);

(iii) relevant licences and permits, including conditions attached to mining leases; and

(iv) other relevant legislation.

Obligations relevant to this WMP are described below.

3.1 NSW PROJECT APPROVAL

The conditions of the NSW Project Approval (08_0203) relevant to waste management are described below.

3.1.1 Waste Management Plan

Condition 53, Schedule 3 of the NSW Project Approval (08_0203) requires the preparation of a WMP. Condition 53 states:

Waste

53. The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Secretary. This plan must be submitted to the Secretary within 3 months of the date of this approval, unless otherwise agreed by the Secretary.

3.1.2 Waste Management Requirements

Condition 52, Schedule 3 of NSW Project Approval (08_0203) outlines the waste management requirements for the DCM. Condition 52 states:

Waste

52. The proponent shall:

(a) minimise the waste generated by the project; and

(b) ensure that the waste generated by the project is appropriately stored, handled and disposed of to the satisfaction of the Secretary.

These requirements are addressed in Section 5.

3.2 LICENCES, PERMITS AND LEASES

In addition to the NSW Project Approval (08_0203) and Commonwealth Approval (EPBC 2010/5396), all activities at the DCM will be conducted in accordance with a number of licences, permits and leases which have been issued or are pending issue.

Key licences, permits and leases pertaining to the DCM include:

- ML 1427 issued under Part 5 of the NSW *Mining Act, 1992* and approved by the NSW Minister for Mineral Resources in April 1998.
- ML 1646 issued under Part 5 of the NSW *Mining Act, 1992* and approved by the NSW Minister for Primary Industries in January 2011.
- Environment Protection Licence (EPL) 11701 issued under Part 3 of the NSW *Protection of the Environment Operations Act, 1997* (PoEO Act) by the EPA in September 2002 (as modified by subsequent licence variations).
- Water Access Licence (WAL) 41518 for extraction of groundwater from the DCM open cut pits issued by the DPIE-Water (originally granted 22 September 2002 under former Groundwater Licence 20BL168404).
- Mining Operations Plan (or Rehabilitation Management Plan) as approved by the NSW Resources Regulator.
- Water Supply Works Approval (20WA202053) under the NSW *Water Management Act, 2000* issued by the then Department of Water and Energy (now DPIE-Water) on 15 May 2009 for the Coal Shaft Creek diversion and various on site water management structures[1].
- Mining and occupational health and safety related approvals granted by the Resources Regulator and SafeWork NSW.

EPL conditions that are applicable to this WMP are provided in Table 1:

Table 1
EPL 11701 Conditions Applicable to this Waste Management Plan

Condition	Requirement
Section 3 Condition L3.1	*The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.*
Section 3 Condition L3.2	*This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.*
Section 3 Condition L3.3	*Except as provided by any other condition of this licence, only the hazardous waste listed below may be generated at and/or stored at the premises.* *Waste oil generated at and stored on the premises not exceeding 30,000 litres at any time.*
Section 4 Condition O1.1	*Licensed activities must be carried out in a competent manner.* *This includes:* *(a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and* *(b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.*
Section 4 Condition O6.1	*The licensee must ensure any hazardous and/or restricted and/or liquid waste is not mixed with any other type of waste or with any other material.*

[1] This approval replaced the previous *Water Act, 1912* Licence 20SL060324 for these structures.

3.3 OTHER LEGISLATION AND GUIDELINES

DCPL will conduct the DCM consistent with the NSW Project Approval (08_0203), the Commonwealth Approval (EPBC 2010/5396) and any other legislation that is applicable to an approved Part 3A Project under the EP&A Act.

In addition to the Acts referred to above and in Section 3.2, the NSW Acts, Regulations and Guidelines applicable to the WMP include, but are not limited to, the:

- *Protection of the Environment Operations (Waste) Regulation, 2014.*
- *Waste Avoidance and Resource Recovery Act, 2001* (WARR Act).
- *Environmental Guidelines: Waste Classification Guidelines Parts 1-4* (EPA, 2014).
- *Leading Practice Sustainability Development Program for the Mining Industry – Hazardous Materials Management* (Department of Industry, Science, Energy and Resources, 2016).

4 IDENTIFICATION OF WASTE STREAMS

A waste stream analysis has been undertaken for the DCM and wastes classified in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014) (Appendix 1). The key waste streams for the DCM during the mining operations phase comprise:

- waste rock consisting of potentially acid forming rock, non-acid forming rock and oversized ROM coal reject;
- waste generated by mining related activities including workshop and maintenance activities, drilling and exploration activities, agricultural and irrigation activities, coal handling plant, administration buildings and crib rooms;
- general recyclable and non-recyclable wastes; and
- sewage and effluent.

Mine Closure Phase

Once mining operations cease on 31 December 2021 and bulk rehabilitation earthworks have been completed, waste rock generation would cease and waste generated by mining-related activities would significantly reduce due to removal of mining fleet, drilling fleet and other major fleet (including cessation of waste tyre generation).

The volume of general recyclable and non-recyclable wastes, and sewerage and effluent, would also significantly reduce due to the reduction of workforce at the DCM.

5 WASTE MANAGEMENT AND MINIMISATION MEASURES

5.1 GENERAL SITE WASTE MANAGEMENT

Waste management at the DCM is the responsibility of the mine owner (DCPL) and all personnel on-site including contractors.

Waste management at the DCM is based around the general principles of the waste hierarchy established under the WARR Act and ensures resource management options are considered against the following priorities:

1. **Avoidance/minimisation** – the first priority is to take action to reduce the overall volume of waste generated at the DCM;
2. **Resource recovery** – where possible, generated waste will be re-used or recycled consistent with the most efficient use of the recovered resource; and
3. **Disposal** – remaining waste which cannot be used by the above means will be disposed of in the most environmentally responsible manner.

The methods and procedures by which the principles of the waste hierarchy are applied at the DCM are detailed in the following sections. Further to these procedures, specific waste management at the DCM is detailed in the waste stream analysis (Appendix 1).

5.2 WASTE REDUCTION

General waste avoidance and minimisation principles are the key priority at the DCM to reduce the quantity of wastes required to be disposed off-site. Waste reduction is achieved by:

- All personnel and contractors to consider possible opportunities for waste avoidance during the procurement of resources for DCM operations and projects;
- DCM resources and stock will be regularly monitored and reviewed to ensure efficient stock control and avoid unnecessary wastage;
- All waste streams generated at the DCM will be segregated to avoid contamination of wastes which may be recovered and re-used or recycled; and
- The Environment and Community Superintendent is responsible for identifying and implementing waste minimisation opportunities and strategies.

DCPL or the mine contractor will provide suitable waste segregation and disposal bins and will arrange for contents to be regularly removed from site.

Waste reduction will continue to be prioritised during the mine closure phase for the remaining waste streams.

5.3 RE-USE OF WASTE MATERIALS

DCPL encourages the efficient use of recovered resources and will seek all opportunities to re-use materials to ensure maximum utilisation of the resource is achieved. Re-use of waste materials will be achieved by ensuring all personnel and contractors consider the possible opportunities for waste re-use whilst undertaking operations and projects at the DCM. Any practicable and cost effective means for waste re-use will be implemented and monitored by the Environmental and Community Superintendent and the mine contractor.

Potential resources and wastes for re-use include, but are not limited to, timber and timber pallets, polyethylene and steel pipelines, and scrap metal.

Sewage effluent from site buildings will be treated at an on-site sewage treatment facility and self-irrigated on a designated area of vegetated land. The sewage treatment facility will be monitored by DCPL to ensure correct operation and avoidance of any adverse environmental impacts.

It is anticipated that the on-site sewage treatment facility would remain on-site until relinquishment of the mining lease.

5.4 RECYCLING

All waste materials which may not be re-used on-site will be segregated and recycled where practicable. DCPL or the mining contractor will provide recycling bins and arrange for the contents to be regularly removed from site. Recycling at the DCM will be carried out to the maximum practicable extent.

The following waste streams generated by the DCM will be recycled:

- scrap timber and timber pallets;
- paper and cardboard;
- plastic products suitable for recycling;
- scrap metal (ferrous and non-ferrous);
- waste oil;
- batteries; and
- general recyclables e.g., aluminium cans, plastic containers, glass jars and bottles.

These waste streams may still be generated at the DCM during the mine closure phase, however at significantly reduced volumes.

5.5 STORAGE AND DISPOSAL

The least desirable and “end of pipe” solution for waste management is storage and disposal. These wastes must be carefully managed to minimise negative environmental outcomes. All waste streams generated by the DCM will be first evaluated for their potential for re-use or recycling. Where re-use or recycling is not practicable, the waste will be collected and stored at a designated waste disposal area. Sufficient bins, recycling and waste collection areas will be provided and maintained to facilitate efficient waste management. These facilities will be monitored and maintained.

The Environmental and Community Superintendent will ensure all wastes intended to be disposed of off-site are removed on a regular basis by an appropriately licensed contractor. Waste streams not re-used or recycled are not to be disposed of at the premises except as expressly permitted by EPL 11701 and/or Project Approval (08_0203). No waste (other than approved waste) is to be buried or disposed of at any location within the mining lease or on DCPL-owned land including the burial of waste within the pits and waste rock emplacement.

Waste rock and used tyres are the only waste streams exempt from this requirement. The EPA has advised DCPL that a scheduled activity for waste tyre disposal in the DCM open cut pit is not required to be listed on the EPL. The location and quantity of tyres disposed of in the pits and waste rock emplacement will be surveyed, recorded in a used tyre register and maintained by DCPL. Used tyre burial will continue at the DCM after the cessation of mining operations until used tyre volumes are exhausted.

If any soils found to be contaminated by hydrocarbons (beyond minor spillages) are identified, their existence will be reported to DCPL environmental staff. DCPL environmental staff, will then provide instruction for the contaminated soil to be collected and removed for treatment at a dedicated onsite bioremediation area. Soils contained within this area may not be removed or disturbed until the soils under treatment have been deemed suitable for burial as non-contaminated waste following appropriate analytical testing instigated by DCPL. As detailed in Section 5.8.4, a Contaminated Land Assessment would be undertaken during the mine closure phase.

DCPL will not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal.

5.6 HAZARDOUS WASTE

Hazardous chemicals and materials are managed in accordance with the Stratford Coal Hazardous Chemicals and Materials Procedure.

All waste streams classified as hazardous waste will be segregated and stored in an appropriately contained area for the specific type of hazardous waste. Hazardous waste will be transported from site in accordance with the National Transport Commission (NTC) *Australian Code for the Transport of Dangerous Goods by Road or Rail, Edition 7.7* (NTC, 2020). Hazardous waste will only be transported from site by an appropriately licensed contractor and where required, will be tracked and reported.

5.7 TRAINING AND AWARENESS

DCPL is committed to continual training and awareness of all staff, employees and contractors at the DCM. Training and awareness procedures are an integral part of ensuring the full implementation of the WMP across all aspects of the project. Training and awareness at the DCM is provided in the form of:

- site inductions;
- departmental familiarisations; and
- tool box talks.

All staff, employees and contractors are required to be appropriately inducted and familiar with their intended work area. Talk box talks will be conducted on an ongoing basis as required for refreshing information or raising awareness of a particular issue.

5.8 MINE CLOSURE WASTE MANAGEMENT STRATEGY

A Mine Closure Waste Management Strategy, as described below, has been developed relevant to waste management at the DCM for the mine closure phase.

5.8.1 Identification of Additional Waste Streams from Closure Activities

Additional waste streams may be generated from mine closure activities, in particular from infrastructure decommissioning and/or demolition activities. Additional fleet and equipment will be brought to the DCM to conduct the infrastructure decommissioning and demolition activities. As a result, some additional hazardous materials to those listed in Appendix 1 may be required. DCPL will update the Waste Stream Analysis and this WMP as required during the mine closure phase in consultation with the DPIE.

5.8.2 Infrastructure Decommissioning and Demolition

During the closure phase DCPL will prepare a decommissioning & demolition plan for the site which includes a strategy for all infrastructure to be retained or removed, assessment of additional waste streams and volumes, management of any contaminated waste and consideration of any hazardous materials.

Anticipated Infrastructure Removal

Infrastructure anticipated to be removed from site includes:

- fixed equipment and infrastructure (for re-use at another location [e.g. the SMC] or recycling); and
- non-salvageable/non-recyclable and non-contaminated infrastructure (for disposal at an off-site licensed facility or on-site subject to relevant approvals being obtained).

Once all equipment and infrastructure components not required for mine closure have been removed from an area, the area will be rehabilitated in accordance with the rehabilitation objectives for the Infrastructure Area Domain (i.e. revegetated to woodland/open forest) as per the Rehabilitation Management Plan. Rehabilitation will involve deep-ripping the area, topsoiling and seeding/planting with woodland/open forest species.

Some concrete hardstands, administration and ablution buildings, site access roads, sheds, buildings and sediment dams may be retained for alternate post-mining uses, subject to consultation with the relevant stakeholders.

Electricity transmission infrastructure will be retained for future use by landholders unless during consultation landholders/stakeholders determined it is no longer required, in which case it will be decommissioned and removed from site.

The rail siding may also be retained for future use if agreed with relevant regulatory authorities and if appropriate approvals are obtained.

It is anticipated that some internal roads will be retained for future use to facilitate access through the site.

Removal Strategy and Timing

Once mining operations have ceased, it is expected that infrastructure and equipment not required to support final rehabilitation activities (i.e. landform bulk shaping and soil placement) and ongoing monitoring and maintenance works, will be progressively decommissioned and removed from site.

Scheduling of infrastructure removal will be undertaken on a campaign basis to minimise disruptions to road networks. Oversize heavy vehicle transport of infrastructure/equipment will be undertaken in accordance with relevant permits and load declarations obtained in accordance with *Additional Access Conditions – Oversize and overmass heavy vehicles and loads* (Roads and Maritime Services, 2017) (or its current equivalent at the time of the event) and any other licences and escorts as required by regulatory authorities. Any relevant permits and transport requirements will be obtained in consultation with the RMS and relevant local councils at the time.

Heavy vehicle scheduling will, where possible, consider and occur outside of peak periods associated with general movement of vehicles (e.g. morning and afternoon peak traffic times) to minimise disruptions to the road networks along the transport route.

In accordance with the DCM's Mine Closure Planning Program (Section 1), an Infrastructure Decommissioning and Demolition Plan will be developed by DCPL to co-ordinate and manage the decommissioning and demolition process.

5.8.3 Waste Management, Disposal and Remediation Measures

Waste generated from infrastructure demolition activities will be managed in accordance with the Infrastructure Decommissioning and Demolition Plan.

This WMP will be updated to include the Infrastructure Decommissioning and Demolition Plan once prepared. Rehabilitation of former infrastructure areas will be undertaken in accordance with the DCM's Rehabilitation Management Plan (or Closure Plan).

5.8.4 Contaminated Land Assessment

A contaminated land assessment will be undertaken once mining operations have ceased, during the mine closure phase. The assessment will focus on decommissioned infrastructure areas, including ROM coal handling and stockpiling facilities, workshops, fuel storage areas and chemical storage facilities.

The contaminated land assessment will be undertaken in accordance with the requirements of the NSW *Contaminated Land Management Act, 1997* and in consideration of relevant guidelines, including the *Managing Land Contamination Planning Guidelines SEPP 55–Remediation of Land* (Department of Urban Affairs and Planning and EPA, 1998), *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and the *National Environment Protection (Assessment of Site Contamination) Measure* (National Environment Protection Council, 2013).

Any potential contamination areas will be remediated as recommended in the assessment, which is expected to involve excavation of the contaminated materials and disposal at an off-site licensed facility or on-site subject to relevant approvals being obtained. Rehabilitation of the area would be undertaken in accordance with the rehabilitation objectives for the Infrastructure Area Domain (i.e. revegetated to woodland/open forest), or domain applicable to the area.

5.8.5 Hazardous Materials Assessment

A hazardous materials assessment of the site will be undertaken once mining operations have ceased. This assessment will be undertaken with consideration of the Infrastructure Decommissioning and Demolition Plan. The hazardous materials assessment will identify any potentially hazardous waste streams and establish a suitable management and remediation measure.

6 MONITORING, REPORTING AND REVIEWING

6.1 MONITORING

To ensure full and satisfactory implementation of the WMP, all areas of the operation will undergo routine inspections and monitoring which will include all waste disposal areas. Routine monitoring will comprise weekly inspections of waste storage and disposal areas. Monitoring of waste management procedures will be conducted by DCPL or the waste contractor with inspections to include:

- general housekeeping, waste and litter accumulation;
- waste segregation and contamination;
- proper waste re-use and recycling;
- proper storage of hazardous wastes;
- waste storage volumes; and
- regular waste disposal.

Additional periodic inspections will be conducted by DCPL environmental staff. Any incidents with the potential to cause material environmental harm or health and safety issues will be reported immediately in accordance with the Pollution Incident Response Management Plan (PIRMP) and will be managed accordingly.

All waste tracking and reporting will be conducted by DCPL or the waste contractor. Records will include waste type and mass/volume and will reference the waste management procedure. The waste management procedure will identify waste intended for recycling or disposal, the licensed contractor engaged to remove the waste and the final destination of the waste product. Reports will include all special wastes, hazardous wastes and general waste. All records and receipts of waste management will be retained.

Routine monitoring and periodic inspections will continue during the mine closure phase focussing on the remaining waste streams and disposal areas.

6.2 REPORTING

6.2.1 Reporting Protocols

In accordance with Condition 2(g), Schedule 5 of NSW Project Approval (08_0203), DCPL has developed protocols for managing and reporting the following:

- incidents;
- complaints;
- non-compliances with statutory requirements; and
- exceedances of the impact assessment criteria and/or performance criteria.

The management of incidents is described in the PIRMP. The management of complaints and non-compliances is described in detail in the DCM's Environmental Management Strategy (EMS).

6.2.2 Annual Review

In accordance with Condition 3, Schedule 5 of NSW Project Approval (08_0203), DCPL will prepare an Annual Review of the environmental performance of the Project by the end of December each year. The Annual Review will be made publicly available on the Duralie Coal website, in accordance with Condition 10, Schedule 5 of NSW Project Approval (08_0203).

The Annual Review will specifically address the following aspects of Condition 3, Schedule 5 of NSW Project Approval (08_0203), which are directly relevant to waste management:

- include a comprehensive review of the monitoring results and complaints records for the DCM over the past year, including a comparison of these results against the:
  - relevant statutory requirements, limits or performance measures/criteria;
  - monitoring results of previous years; and
  - relevant predictions in the EA;
- identify any exceedance of criteria over the last year, and describe what actions were (or are being) taken to ensure compliance;
- identify any trends in the monitoring data over the life of the DCM;
- identify any discrepancies between the predicted and actual impacts of the DCM, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the next year to improve the environmental performance of the DCM.

This WMP will be reviewed within three months of the submission of an Annual Review, and revised if necessary as described in Section 6.3 below.

6.2.3 Independent Environmental Audit

In accordance with Condition 8, Schedule 5 of NSW Project Approval (08_0203), an independent environmental audit will be undertaken by the end of December 2011[2], and every three years thereafter. A copy of the audit report will be submitted to the Secretary of DPIE and made publicly available on the Duralie Coal website. The independent audit will be undertaken by an appropriately qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary of the DPIE.

6.3 WASTE MANAGEMENT PLAN REVIEW

In accordance with Condition 4, Schedule 5 of NSW Project Approval (08_0203), this WMP will be reviewed, and if necessary revised to the satisfaction of the Secretary of the DPIE within three months of the submission of:

- an Annual Review[3], in accordance with Condition 3, Schedule 5 of Project Approval (08_0203);
- an incident report, in accordance with Condition 6, Schedule 5 of Project Approval (08_0203);
- an audit, in accordance with Condition 8, Schedule 5 of Project Approval (08_0203); or
- any modification to the conditions of NSW Project Approval (08_0203).

[2] An independent environmental audit was completed in November 2011 (Trevor Brown & Associates, 2011).

[3] The Duralie Coal Mine Annual Review (DCPL, 2014) was submitted in September 2014.

The review will include an assessment of the current waste controls and management procedures and performance against waste targets. Any amendments will be made to reflect the identified areas for improvement to waste management and undertaken in consultation with the appropriate regulatory authorities.

As described in Section 5.8. during the mine closure phase this WMP will be revised to include details of infrastructure decommissioning and demolition activities, as well as management of the wastes generated from these activities, including consideration of any hazardous materials.

This WMP will be made publicly available on the Duralie Coal website, in accordance with Condition 10, Schedule 5 of NSW Project Approval (08_0203). A hard copy will also be kept at the DCM.

7 RESPONSIBILITIES AND ACCOUNTABILITIES

DCPL considers waste management to be the responsibility of all personnel employed onsite and as such, all personnel are required to comply with the procedures and protocols set out in this WMP.

Compliance with all approvals, plans and procedures will be the responsibility of all personnel (staff and contractors) employed on or in association with the DCM.

The DCM Environment & Community Superintendent will undertake regular inspections, internal audits and initiate directions identifying any remediation/rectification work required, and areas of actual or potential non-compliance. A protocol for the managing and reporting of non-compliances with statutory requirements has been developed as a component of DCPL's Environmental Management Strategy.

The DCPL Operations Manager and Environment & Community Superintendent are responsible for:

- satisfactorily implementing the WMP;
- ongoing review of DCM's waste management performance;
- responding to any incidents with the potential to cause harm to the environment or personnel;
- periodic inspections and monitoring for compliance; and
- effecting any amendments or modifications made to the WMP.
- providing all resources necessary for waste management at the DCM;
- ensuring all wastes are managed appropriately including storage, segregation, recycling and disposal;
- ensuring all personnel are fully trained and aware of relevant requirements;
- engaging appropriately licensed contractors for the disposal of waste; and
- monitoring, reporting and reviewing as required by the WMP.

8 REFERENCES

Department of Industry, Science, Energy and Resources (2016) *Leading Practice Sustainability Development Program for the Mining Industry – Hazardous Materials Management.*

Department of Urban Affairs and Planning and Environment Protection Authority (1998) *Managing Land Contamination Planning Guidelines SEPP 55-Remediation of Land.*

Duralie Coal Pty Ltd (DCPL) (2014) *Annual Review – Duralie Coal Mine*, September 2014.

Environmental Protection Authority (2014) *Environmental Guidelines: Waste Classification Guidelines Parts 1-4*.

National Environment Protection Council (2013) *National Environment Protection (Assessment of Site Contamination) Measure.*

National Transport Commission (2020) *Australian Code for the Transport of Dangerous Goods by Road and Rail, edition 7.7.* Melbourne*.*

New South Wales Office of Environment and Heritage (2011) *Guidelines for Consultants Reporting on Contaminated Sites*.

Roads and Maritime Services (2017) *Additional Access Conditions – Oversize and overmass heavy vehicles and loads*.

Trevor Brown & Associates – Applied Environmental Management Consultants (2011) *Independent Environmental Audit Duralie Coal Mine*, dated November 2011.

APPENDIX 1

DURALIE COAL MINE WASTE STREAM ANALYSIS

Table A1-1
Waste Stream Analysis

Waste Classification	Waste Material	Source	Disposal	Management/Treatment
Special Waste	Waste Tyres	Workshop	Buried Onsite	Disposed of in backfilled waste rock emplacement. Record on used tyre register.
	Clinical Waste	First aid room	Dispose Offsite	Collected and disposed of by an appropriately licensed contractor. Recorded on waste register.
Liquid Waste	Sewage	Buildings	Dispose Onsite	Treatment at onsite sewage treatment plant and irrigated on to pasture.
Hazardous Waste	Spray Cans/Aerosols	Pit, Workshop	Dispose Offsite	Collected in designated receptacle and removed from site by an approved regulated waste receival contractor. Recorded on waste register.
	Waste Oil/Grease	Workshop	Recycle, Dispose Offsite	Stored on spill containment pallets or in bunded area with lids to prevent spillage. Recorded on waste register.
	Oil Filters	Workshop	Dispose Offsite	Separated from waste stream, stored in designated bin in workshop for removal by an appropriately licensed contractor. Recorded on waste register.
	Oily Rags	Workshop, Pit	Dispose Offsite	Collected and taken offsite with hydrocarbon contaminated material. Recorded on waste register.
	Grease Cartridges	Workshop	Dispose Offsite	Collected in designated receptacle and removed from site by an approved waste receival contractor. Recorded on waste register.
	Empty Oil Drums	Workshop	Dispose Offsite	Collected in designated receptacle and removed from site by an approved waste receival contractor. Recorded on waste register.
	Batteries	Workshop, Pit	Recycle, Dispose offsite	Collected in bunded used battery storage area and removed by an appropriately licensed contractor. Recorded on waste register.
	Degreaser	Workshop	Dispose Offsite	Collected in designated receptacle and removed from site by an approved regulated waste receival contractor. Recorded on waste register.
	Engine Coolant	Workshop	Dispose Offsite	Collected in designated receptacle and removed from site by an approved regulated waste receival contractor. Recorded on waste register.
	Contaminated Soils (Hydrocarbons)	Pit, Workshop	Dispose Onsite	Contaminated soils will be contained and removed to the bioremediation area onsite.
General Solid Waste (putrescibles)	Food Waste and Mixed General Waste	Admin, Offices, Crib Room	Dispose Offsite	Collected by an appropriately licensed contractor and recorded on a waste register.

Table A1-1 (Continued)
Waste Stream Analysis

Waste Classification	Waste Material	Source	Disposal	Management/Treatment
General Solid Waste (non-putrescibles)	Food Containers	Admin, Offices, Crib Room	Dispose Offsite	Collected by an appropriately licensed contractor and recorded on a waste register.
	Scrap Metal, Fencing Wire	Workshop, Pit, Rural	Recycle	Separated for recycling and collected by an approved scrap metal merchant
	General Recyclables: Aluminium Cans, Plastics, Glass Bottles	Admin, Offices, Crib Room	Recycle	Separated for recycling and collected by an appropriately licensed contractor and recorded on a waste register.
	Scrap Paper/Cardboard	Admin, Offices	Recycle	Separated for recycling and collected by an appropriately licensed contractor and recorded on a waste register.
	Packaging/Containers	Admin, Offices, Workshop	Dispose Offsite	Collected by an appropriately licensed contractor and recorded on a waste register.
	Timber/Pallets	Workshop, Pit, Rural	Re-use, Dispose Offsite	Stored and re-used onsite collected by a licensed contractor for disposal. Recorded on waste register.
	Stationary	Admin, Offices	Dispose Offsite	Collected by an appropriately licensed contractor and recorded on a waste register.
	Mechanical Parts	Workshop	Dispose Offsite	Collected by an appropriately licensed contractor and recorded on a waste register.
	PE and Steel Pipelines	Pit, Rural	Re-use	Collected in a designated storage area and re-used onsite.
	Electrical Cables/Wires	Workshop	Dispose Offsite	Collected by an appropriately licensed contractor and recorded on a waste register.
	Conveyer Belts	Coal Handling Plant	Dispose Offsite	Collected by an appropriately licensed contractor and recorded on a waste register.
	Toner Cartridges	Admin, Offices	Dispose Offsite	Collected by an appropriately licensed contractor and recorded on a waste register.