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MANNERING COLLIERY
Annual Review 2015
1 January 2015 – 31 December 2015

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Date:	30 April 2016

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Manning Colliery – Annual Review (AEMR) 2015

Name of mine	Manning Colliery
Titles/Mining Leases	Consolidated Coal Lease No. 719 Consolidated Coal Lease No. 721
MOP Commencement Date	1st January 2015
MOP Completion Date	31st March 2018
AEMR Commencement Date	1 January 2015
AEMR Completion Date	31 December 2015
Leaseholders	LakeCoal Pty Ltd and FassiCoal Pty Ltd (via sublease)
Mine Operator	LakeCoal Pty Ltd
Reporting Officer	Name: Wade Covey Title: Environment & Community Coordinator Date: 30 April 2016 Signature: 

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1 Introduction

Manning Colliery (MC) is an underground coal mine located on the southern side of Lake Macquarie approximately 60 km south of Newcastle (**Figure 1.1**). Development of Manning Colliery began in 1960 in conjunction with the construction of Vales Point Power Station and at that time was named Wyee State Coal Mine.

Production commenced in 1961 with extensive mining (first workings and secondary extraction) in both the Great Northern and Fassifern Seams. While some resources remain within the Great Northern Seam, mining has not been undertaken in this seam since 1999, with all recent mining occurring in the Fassifern Seam.

On the 30th June 2002 mining operations ceased and the mine was placed on care and maintenance, at that time the mine was operated by Powercoal Pty Ltd. On August 7th 2002 Centennial Coal acquired the Colliery from Powercoal. The mine was reopened and renamed Manning Colliery with production recommencing in January 2005, mining the Fassifern Seam. Due to unfavorable conditions the mine was again placed on care and maintenance, ceasing production on 27 November 2012.

LakeCoal, the operator of the adjacent Chain Valley Colliery, became the operator of Manning Colliery as a result of a mining cooperation agreement that was reached between the owners of Chain Valley Colliery and Manning Colliery. As a result, LakeCoal Pty Ltd became the operator of Manning Colliery effective the 17th October 2013. During the reporting period the site remained on care and maintenance.

In December 2015, a business decision was made by LakeCoal to progress the “underground link road project” between Manning Mine and Chain Valley Colliery. The construction of the Link Road and the re-commissioning of Manning Colliery is expected to occur during the 2016 reporting period.



Figure 1.1: Location of Manning Colliery

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1.1 Consent, Leases and Licences

1.1.1 Consent

Mannering Colliery was granted Project Approval on the 12 March 2008 under Section 75J of the Environmental Planning and Assessment Act, 1979 (EP&A Act). Three subsequent modifications of this approval have occurred, the first (MP06_0311 MOD 1) was granted on 25 October 2012, the second (MP06_0311 MOD 2) was granted on 27 November 2014, and the third (MP06_0311 MOD 3) was granted on 16 December 2015.

The most recent modification to Mannering's Project Approval (Mod 3) approved the following changes to Mannering's operations:

- an increase in the maximum rate of ROM coal handled at the mine from 1.1 Mtpa to 1.3 Mtpa;
- construction of asset protection zones around critical infrastructure from bushfires; and
- an extension of the project approval period from 31 March 2018 to 30 June 2022.

A copy of the consolidated Project Approval is attached as **Appendix 2**. The most recent modification permits the underground connection to Chain Valley Colliery and subsequent transfer of coal from Chain Valley to Mannering, and ultimately to the Vales Point Power Station by the overland conveyors from Mannering.

Condition 3 within Schedule 5 of the approval requires the submission of an Annual Review to the satisfaction of the Secretary. **Table 1.1** identifies the requirements of this condition and where each item has been addressed in this report.

Table 1.1: Annual Review Requirements

CONDITION REQUIREMENT	SECTION ADDRESSED
3. By the end of February 2013, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:	This report
a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year;	2, 3, 5 & 6
b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the: <ul style="list-style-type: none"> • the relevant statutory requirements, limits or performance measures/criteria; • requirements of any plan or program required under this approval; • the monitoring results of previous years; and • the relevant predictions in the documents listed in condition 2 of Schedule 2; 	2, 3 & 4
c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;	2, 3 & 6
d) identify any trends in the monitoring data over the life of the project;	2

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e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and	2 & 3
f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.	2, 3 & 6

1.1.2 Leases

The surface areas occupied by Manning Colliery lie within the Wyong Shire local government area (LGA), however, the leases which comprise the Manning Colliery holding straddle both the Wyong Shire and Lake Macquarie LGAs.

Significant changes occurred to the Colliery holding during the 2014 reporting period, which resulted in all active areas of the holding being transferred to the Chain Valley Colliery holding. The Chain Valley Colliery holding is shown on the **Mine Locality Plan (Appendix 1)** however the applicable mining tenements which are contained within the Manning Project Approval boundary, and include the surface areas of the Manning pit top are listed in **Table 1.2**.

Table 1.2: Relevant Leases

Title	Expiry
Consolidated Coal Lease 719	22/12/2020
Consolidated Coal Lease 721	29/07/2026

1.1.3 Surface Land

All Manning Colliery surface operational areas are owned by Delta Electricity and are occupied under a compensation agreement.

1.1.4 Licences

Environment Protection Licence (EPL) No. 191 issued by the Environment Protection Authority under the *Protection of the Environment Operations Act, 1997* covers the Collieries activities and premises.

A copy of EPL191 is posted on the Colliery website, www.manningmine.com.au or via the NSW EPA website, <http://www.environment.nsw.gov.au/licensing/> and is also provided as **Appendix 3**.

LakeCoal has held the EPL for Manning Colliery throughout the reporting period.

Monitoring results obtained in accordance with the licence conditions are now also made available publically on the Colliery website (updated monthly), under the environmental reporting page: <http://manningmine.com.au/approvals-plans-reports/environmental-reporting/>

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1.2 Mine Contacts

The current Colliery contacts as at the end of the reporting period are:

Mine Manager: David Walker
 Telephone: 02 4358 0508
 Email: dwalker@lakecoal.com.au

Environment and Community Coordinator: Wade Covey
 Telephone: 02 4358 0800
 Email: WCovey@lakecoal.com.au

Postal Address: LakeCoal Pty Ltd
 P.O Box 7115
 Mannering Park, NSW, 2259

1.3 Actions Required from Previous Annual Review Inspection

Table 1.3 - Actions required from last Annual Review inspection

Item	Issue / Observation	Relevant Agency	Action	Status
1	TSS non-compliance incident described on Section 2.8.2 of the 2014 AEMR.	DP&E	Supply the Department a copy of the investigation report delivered to the NSW EPA.	Complete – sent via email on 5 May 2015.
2	Website Reporting: Not all documents available on website.	DP&E	Add copies of the Mannering Mine Closure Plan, Greenhouse and Energy Efficiency Plan, and Independent Audit Report to the Mannering Website.	Complete. Documents uploaded to website on 6 May 2015.
3	AEMR Detail	DP&E	Ensure that monitoring results are graphed and analysed against previous years. Comment should be made on any trends and the site performance against impacts predictions in the EA, management plans or any statutory requirements. Data presented for review and comparison should include greenhouse gas emissions.	Complete. Refer to Section 3 .
4	Proposed Activities / Actions from audits	DP&E	Ensure that feedback is provided on the status of activities that were proposed to occur during the period as described in	Complete – refer to Section 6

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Item	Issue / Observation	Relevant Agency	Action	Status
			the previous document. Actions from the previous Independent Compliance Audit should be closed out or their status updated and provided in the Annual Review	Complete – Refer to Appendix 4 .
5	Coal Stockpile: Intended to be reclaimed or reused.	DRE	Assess the potential for spontaneous combustion Assess what approvals are required to transport material whilst Mannering remains on care and maintenance.	Complete. Refer to Section 3.14 Complete. Review concluded that a modification to Mannering's Project Approval would be required to permit coal haulage on public roads.
6	Rehabilitation Monitoring Plan	DRE	DRE encourages the development of a Rehabilitation Monitoring Plan	Complete. Rehabilitation Management Plan was provided as part of the CVC MOP which was approved on 27 March 2015.
7	DRE AEMR Guidelines	DRE	The 2015 AEMR is to include a section that specifically addresses the requirements of Section 5.	Complete - Refer to Section 5

1.4 Mine Geology

The most recent mining operations at Mannering Colliery have been located within the Fassifern Seam, which is part of the Boolaroo Formation within the Newcastle Coal Measures (see **Figure 1.2**). Overlying the Fassifern Seam are the Great Northern, Wallarah and Vales Point Seams (and their associated conglomerates and tuffs), which are part of the Moon Island Beach Formation within the Newcastle Coal Measures. The Wallarah and Fassifern Seams have been mined at Myuna Colliery to the north-east, while the Wallarah, Fassifern and Great Northern seams have been mined at Chain Valley Colliery to the east.

The coal resource within the Fassifern and Great Northern seams has a low sulphur content, which makes it a preferable supply for power generation. Within the Colliery holding, the Fassifern Seam lies at around 150 to 205 metres deep and mining is based on a three metre section of coal (approximate) beneath the B ply, which comprises approximately 1.0 to 1.2 metres of inferior coal left on the roof (Seedsman, 2011). The depth of cover to the Great Northern Seam is between approximately 140 and 155 metres and the typical seam thickness is 2.5 metres (Seedsman, 2011).

Previous workings within both of these seams are extensive. These workings, in conjunction with various geophysical surveys in the area, provide a solid base of data regarding regional and local structural features. The area within the Colliery holding is dissected by a number of north-west striking faults and dyke zones at a regional spacing of up to two kilometres, with drilling and surface magnetometer surveys confirming the locality of these structural features (Hanson Bailey, 2007).

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The stratigraphic sequence beneath the mine plan is comprised of three distinct units:

1. the upper Permian Newcastle Coal Measures, a sandstone/coal sequence with lesser siltstone;
2. the overlying Clifton Sub-group, which is the basal unit of the Triassic Narrabeen Group; and
3. quaternary to recent alluvial sediments.

The Great Northern Seam is separated from the Fassifern Seam within the Newcastle Coal Measure by approximately 25 to 30 metres. The strata directly below the Fassifern Seam are high strength sandstone formations, interbedded with thinner strata of other units such as shale, mudstone and coal (Hansen Bailey 2007). This interval between the Fassifern Seam and the Great Northern Seam is generally made up of two strata characterised in the lower section by the Awaba Tuff, which is the stone roof of the Fassifern Seam, and a conglomerate/coarse-grained sandstone unit in the upper section (Hansen Bailey, 2007). The roof of the Great Northern Seam is Teralba Conglomerate (Seedsman, 2011).

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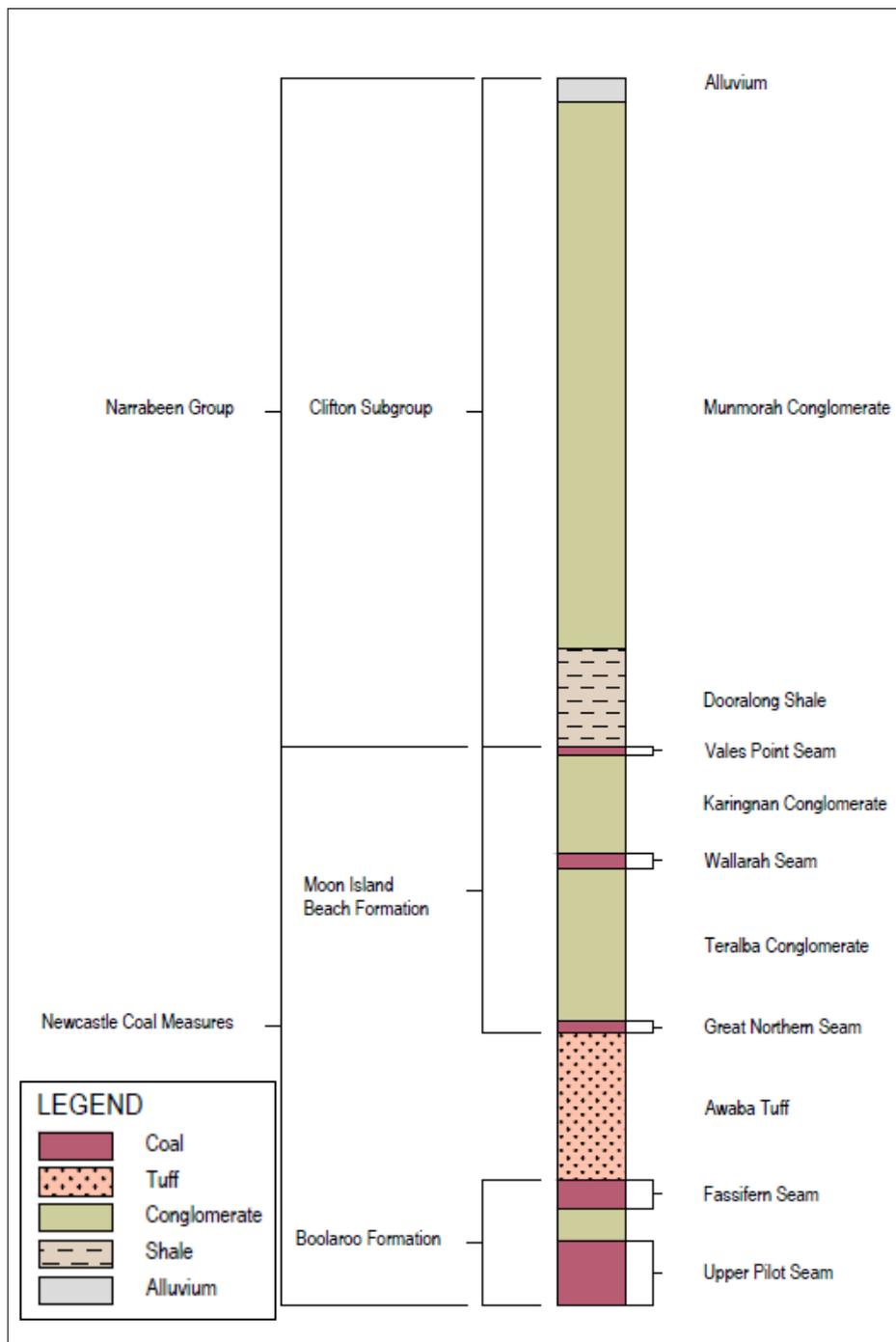


Figure 1.2: Typical Stratigraphy at Manning Colliery

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2 Operations

2.1 Exploration

There was no exploration undertaken at Manning Colliery during the 2015 reporting period.

There is no exploration planned for the 2016 reporting period.

2.2 Land Preparation

There was no land preparation undertaken during the reporting period and as a result the surface disturbance footprint remains unchanged.

2.3 Construction

No construction or infrastructure changes were made during the report period.

2.4 Mining

No mining activities were undertaken during the reporting period. Manning has remained on care and maintenance, with no production occurring since late 2012.

Existing workings in the Great Northern Seam are shown on the Great Northern Seam Workings Plan 2015 (**Appendix 1**) and existing workings within the Fassifern Seam are shown on Fassifern Seam Workings Plan 2015 (**Appendix 1**).

During the reporting period there was no coal extracted from Manning Colliery.

Figure 2.1 shows annual ROM production including the current reporting period.

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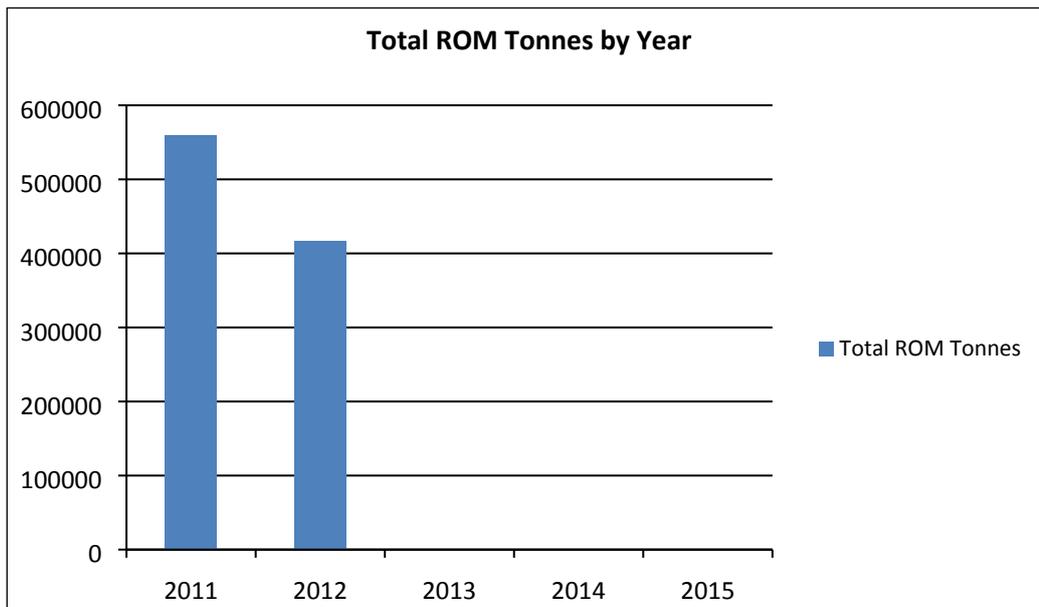


Figure 2.1: Annual ROM Production Levels

As stated in the introduction, effective the 17th October 2013, LakeCoal became the operator of Manning Colliery as a result of a mining cooperation agreement that was reached between the owners of Chain Valley Colliery and Manning Colliery.

The same agreement also underpins a proposed underground connection, likely to consist of at least two development headings (one belt road and one travel road), which would enable coal from the Chain Valley Colliery to be transported via Manning Colliery to Vales Point Power Station.

The intent of the proposed mine connection, would be to allow conveyor transport of coal from Chain Valley Colliery to Vales Point Power Station, reducing the need truck haulage between Chain Valley Colliery and Vales Point Power Station.

Modifications to the existing development consent (for Chain Valley Colliery) and the project approval (for Manning Colliery), which permit the proposed changes, were sought and obtained during the reporting period. With approval issued in December 2015.

It is expected that the development of the link road between Manning Colliery and Chain Valley Colliery will commence in the first half of the 2016 reporting period. The project is expected to take approximately 6 – 9 months to complete.

2.5 Mineral Processing

No mineral processing is undertaken onsite at Manning Colliery. Previously, ROM coal was sized and transported directly to Vales Point Power Station via a dedicated overland conveyor system.

No coal was mined for the reporting period, accordingly no mineral processing was required.

Future processing likely to be minimal, however to be decided at a later date.

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2.6 Waste Management

LakeCoal continued to implement a total waste management system for the site during the reporting period. The waste streams currently provided for include;

- General waste
- Paper and cardboard
- Oil rags
- Air/Oil filters
- Batteries
- Waste oil
- Timber

Management systems are in place at Manning Colliery for the various non-production waste streams generated by the operation in accordance with the requirements of MP06_0311 and EPL 191. In summary:

General Waste and Recyclables

All general wastes and routine maintenance consumables are collected on a regular basis by an appropriately licensed contractor for off-site disposal within a waste facility approved to accept such waste. Recyclable material is also collected by a licensed contractor for recycling at an appropriate facility.

Collections of general waste and recyclables are coordinated by the waste management contractors, who also undertake weekly waste inspections at the site.

Waste Oil and Grease

The generation of waste oils and grease is currently limited to the routine maintenance of plant and equipment. Waste oils and greases stored at the purpose built service bay area along with parts and packaging (for example, cartridges, filters and waste oil drums), are collected by a licensed waste contractor on an as needs basis for recycling and/or off-site disposal.

Oily water is contained within drive-in-sumps and treated by oil-water separators located on the mine surface. Licensed contractors regularly service and maintain the separators and remove all waste hydrocarbons from the site for recycling.

Sewage

Sewage generated by on-site staff amenities is pumped directly from Manning Colliery to Manning Park Waste Water Treatment Works via a dedicated pipeline under a Trade Waste Agreement with Wyong Shire Council.

The total waste management system also involves weekly site inspections by the waste management contractor to facilitate effective waste management and continual improvement along with monthly reporting, with some of the data from key waste streams presented on **Figure 2.2**.

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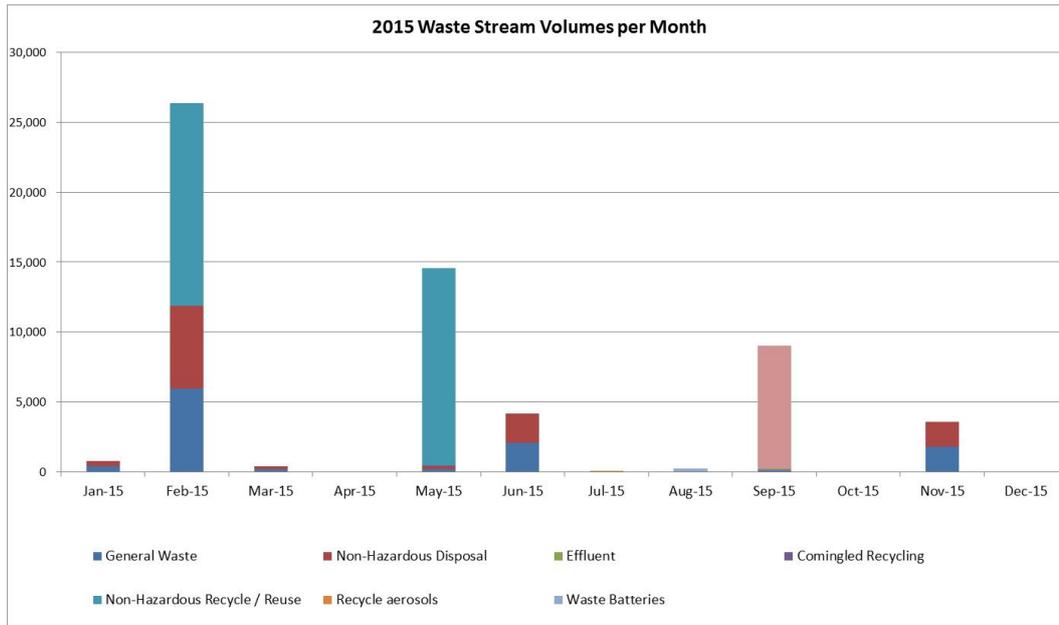


Figure 2.2: Major waste streams and volumes

2.7 Stockpiles

When operating, delivery of coal to Vales Point Power Station occurs via dedicated overland conveyor directly to the Power Station. Stockpiling of coal only occurs when Vales Point Power Station is unable to accept coal deliveries from the mine. The stockpile has a nominal capacity of approximately 25,000 tonnes.

No changes to the coal stockpile occurred during 2015, with the coal stockpiled remaining at approximately 4600 tonnes.

The existing coal stockpiled is intended to be reclaimed and sold following recommencement of production / coal transport from Manning, however there is no specific commencement date currently determined.

Following the recommencement of activities it is however expected that coal stockpiling will increase as the colliery resumes coal production and handling operations.

2.8 Water Management

2.8.1 Water Volume / Quantity

Each week during the reporting period an average of approximately 6.61 megalitres (ML) of mine water was discharged into an unnamed creek via the licenced discharge point (LDP001) which is monitored in accordance with Environmental Protection Licence No.191. The water discharged from site at LDP001 comes primarily from the underground mine dewatering and surface runoff from rainfall events. The average discharge rate over the reporting period was approximately 1,451 kilolitres (kL) per day while discharging, however discharging only occurred over 237 days during the year (Refer to **Figure 2.3**).

The maximum daily discharge during the reporting period peaked at 5,913 kL on 21 April 2015 and was associated with a major rainfall event (the 2015 “April Superstorm”). **Figure 2.3** presents the daily discharge data during the reporting period, daily discharge volumes are also reported in the monthly reports on the Colliery website.

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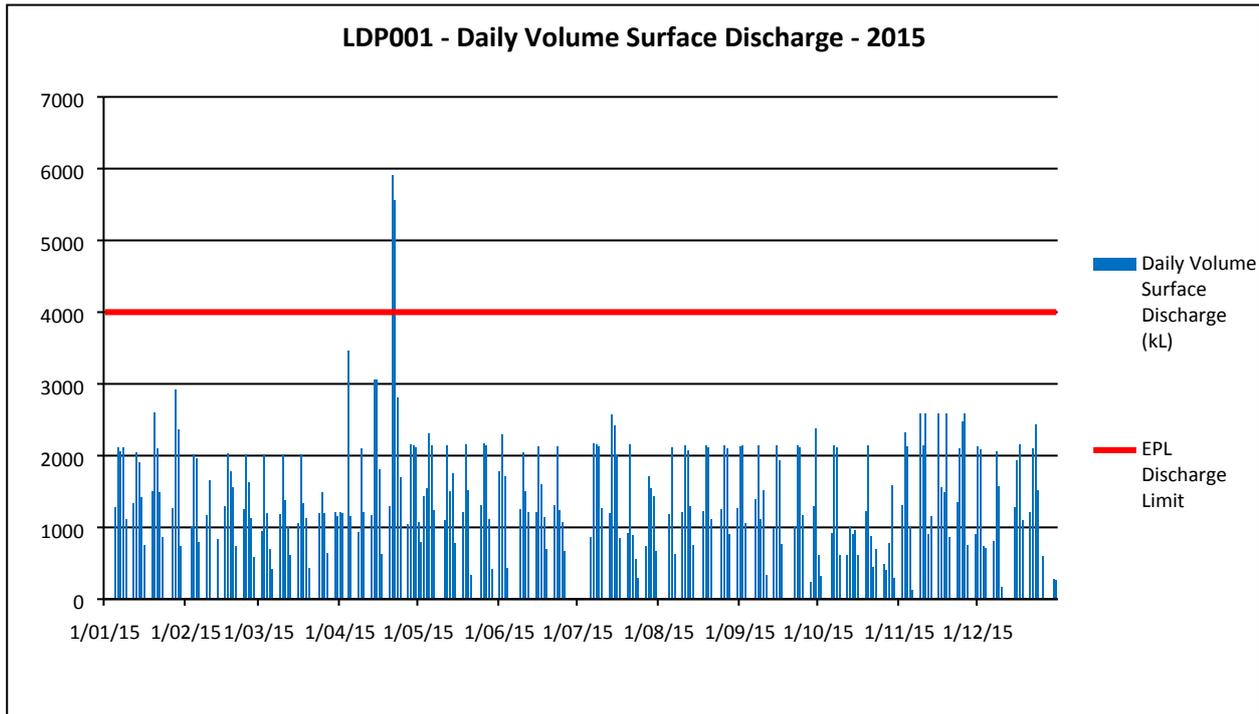


Figure 2.3: Surface discharge volumes during the reporting period

As evident in **Figure 2.3**, there were two days during the reporting period when the daily discharge volume exceeded the licensed limit of 4000 kL/day. These two events were both associated with the April Superstorm and occurred on the 21st and 22nd of April 2015 with volumes discharged being 5,913 kL and 5,558 kL respectively.

In both instances significant rainfall preceded the discharges with over 240mm being recorded over the three days from the 20th to 22nd April. Rainfall data for the month of April as recorded by the onsite weather station is presented in **Figure 2.4**.

As stipulated in Condition L3.2 of EPL 191, exceedances of the volume limit for LDP001 are permitted only if the discharge from LDP001 occurs solely as a result of rainfall at the premises exceeding 10mm during the 24 hours immediately prior to the commencement of discharge. This was the case for both discharge events in 2015 and accordingly no further action was taken in respect to the discharge volumes.

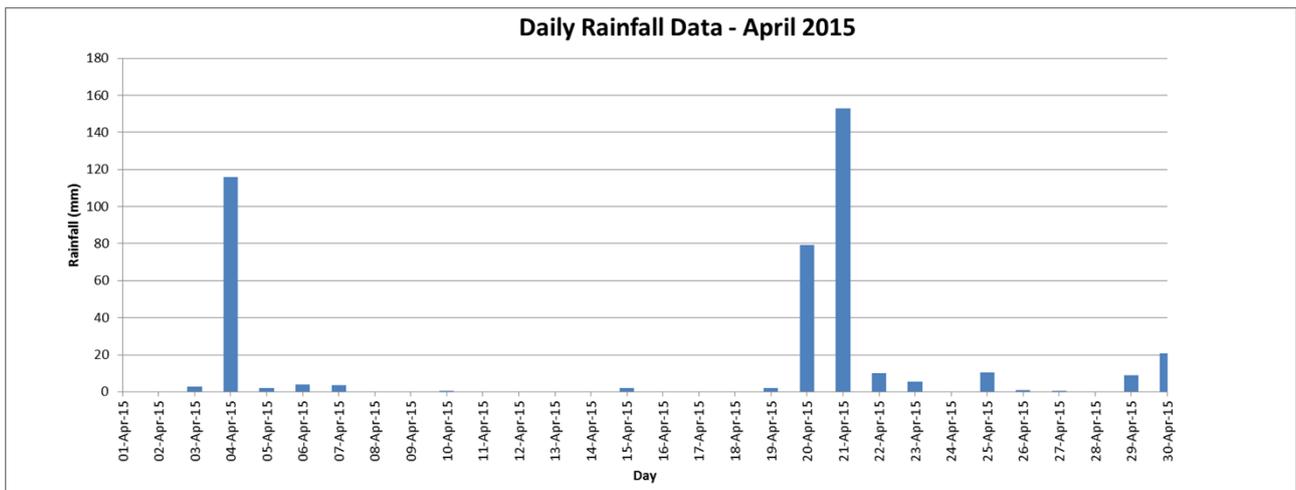


Figure 2.1: Daily rainfall data for April 2015

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During the reporting period a total of 311.51 ML of groundwater was extracted in accordance with 20BL172016, or approximately 69% of the 450 ML limit. An average of 1,385 kL was dewatered on a daily basis when pumping during the reporting period, with an average of pumped volume of 5.99 ML per week over the reporting period. Generally no pumping is undertaken on weekends and public holidays. The maximum daily mine dewatering rate during the reporting period reached 2,592 kL. Daily dewatering rates shown in **Figure 2.5**.

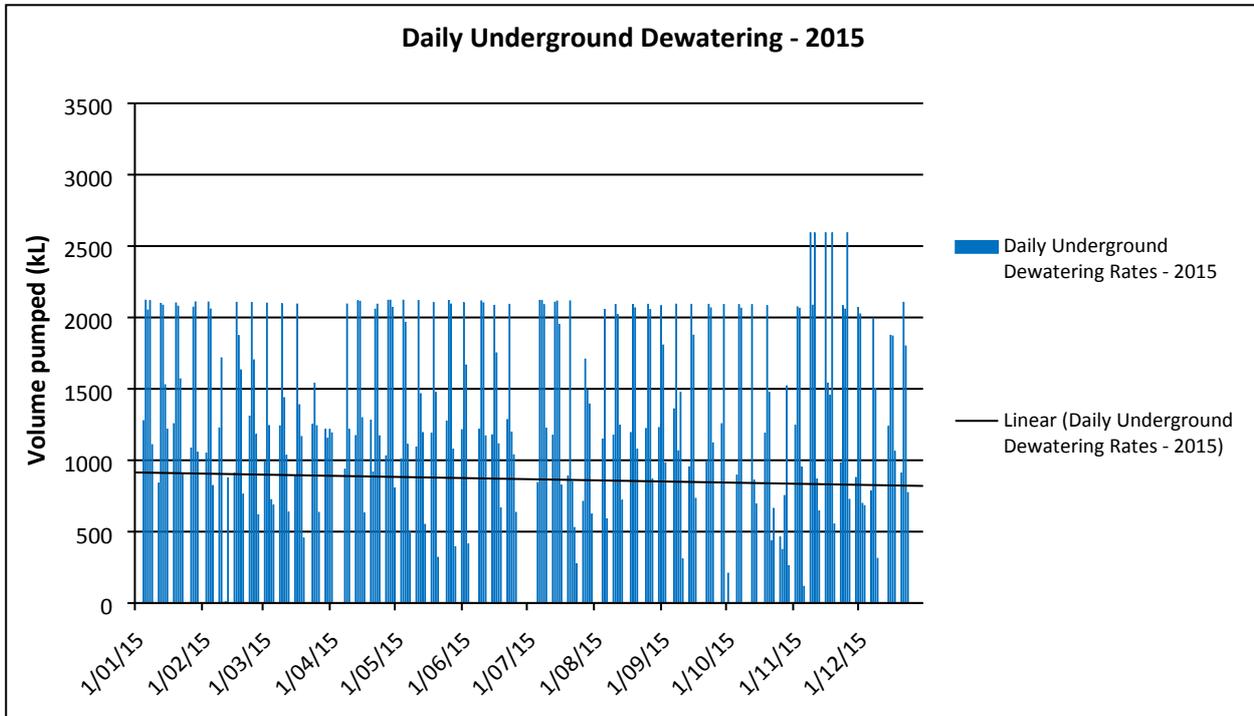


Figure 2.2: Underground discharge volumes during the reporting period

During the reporting period there were 17 days where power to the sites licensed discharge point was lost which resulted in technical non-compliances with the EPL 191 as data was unable to be obtained from the site flow meter and data logger. The power outages which resulted in these non compliances were a result of electrical storm activity in the region which affected the sites power supply. For the purpose of reporting, conservative estimates have been used to quantify the daily discharge volumes.

As outlined in the sites annual return for EPL191, Manning Colliery has committed to investigating the feasibility of installing a real time solar powered discharge monitoring system to reduce the occurrence of power related non compliances associated with LDP001.

2.8.2 Water Quality

Water quality monitoring results for pH, total suspended solids (TSS) and oil and grease along with associated limits at the licenced discharge point 1 (LDP001) are shown in **Figures 2.6, Figure 2.7 and Figure 2.5 2.8**. Refer to **Environmental Management Plan (Appendix 1)** for the location of LDP001.

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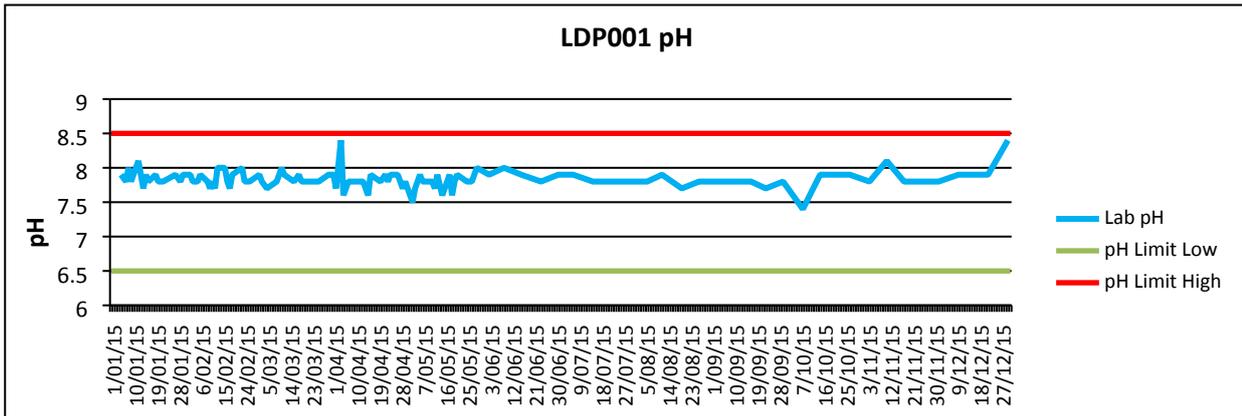


Figure 2.3: pH monitoring results at LDP001

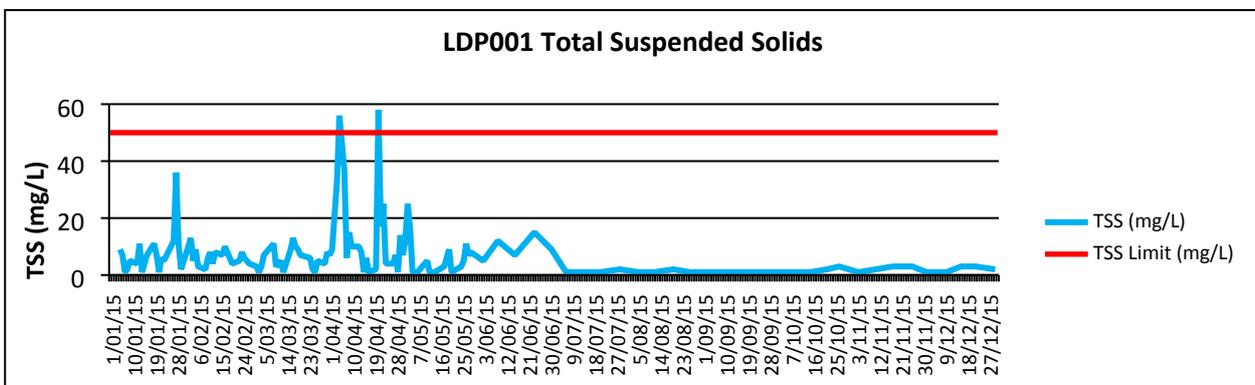


Figure 2.4: Total suspended solids monitoring results at LDP001

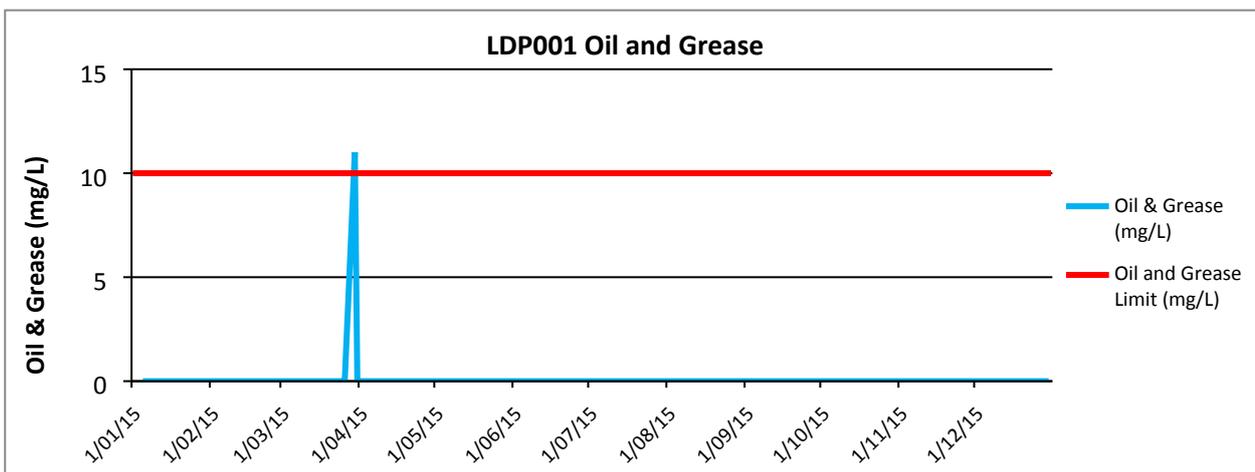


Figure 2.5: Oil and grease monitoring results at LDP001

Note that all oil and grease results less than the laboratory reporting limit (<5mg/L) is recorded as a zero result in Figure 2.8.

During the reporting period there were two exceedances of the total suspended solids criteria and one exceedance of the oil and grease criteria at the licenced discharge point, these occurred on the:

- 30/3/15 – Oil and grease result above the 10 mg/L limit, with a result of 11 mg/L.
- 5/4/15 – Total suspended solids result above the 50 mg/L limit, with a result of 56 mg/L.

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- 21/4/15 – Total suspended solids result above the 50 mg/L limit, with a result of 58 mg/L.

Details of each exceedance are provided in the following subsections.

Details on additional measures taken to manage total suspended solids levels are detailed in **Section 3**.

The water quality monitoring frequency was changed during the reporting period, in consultation with the EPA in line with changes made in the latest EPL (revised on the 13 May 2015). Prior to the 13th May water quality monitoring was required to be conducted daily during any discharge, with the water quality monitoring requirements being reduced to weekly from the 13th May 2015, as per current version of EPL191. The actual implementation of this reduced monitoring requirement occurred on 1 June 2015. The requirement for daily monitoring will be triggered once Manning Colliery commences coal operations.

2.8.2.1 Oil and grease exceedance - 30 March 2015

The incident, an oil and grease result of 11mg/L which exceeded oil and grease 100th percentile concentration limit within EPL191 of 10mg/L, was identified as a result of water sampling completed at 2:05pm on Monday the 30 March 2015 at the licenced discharge point (LDP001)

Following receipt of the laboratory results indicating an exceedance of the licence limit, the following actions were undertaken:

- The water storage dams, mine dewatering flows and final water discharge point (LDP001) were inspected by the Environmental Officer and Mine Manager. There were no signs of oil/grease presence, nor any evidence of prior contamination.
- Key personnel onsite were spoken to by the site Environmental Officer in relation to the incident, including the Mine Manager, HSEC Coordinator, Fitter, Electrician and Deputy. None of these personnel were able to identify any incidents or activities that might have led to potential oil and grease contamination of the discharge water. Specifically it was identified that there had been no mechanical or electrical failures, both on the surface or underground that could have resulted in an amount of oil or grease being released.
- The Environmental Officer arranged for the remaining water sample from the original laboratory (Steel River Testing) to be forwarded to ALS Environmental for more detailed analysis, including Total Recoverable Hydrocarbon (TRH) analysis with silica gel clean-up. The silica gel clean-up was requested as polar compounds (typically non-petrogenic) adsorb onto the activated silica gel particles, leaving the non-polar (typically petrogenic hydrocarbons).
- A self report was made to the EPA Environment Line due to the criteria exceedance (ref: C04798-2015).

Daily water monitoring occurred subsequent to the event to confirm results did not remain elevated.

The more detailed laboratory analysis results were obtained from ALS Environmental and found no hydrocarbons, neither total petroleum hydrocarbons nor total recoverable hydrocarbons to be present above their specific limits of reporting following the silica gel clean-up. In this instance the limits of reporting were between 20 µg/L and 100 µg/L, which are detection limits substantially below the 5 mg/L limit of the original analysis. Based on these results it was not considered that the oil and grease detected in the sample collected on the 30/3/15 was from an anthropogenic or petrogenic source, i.e. the source was not a petroleum hydrocarbon, and all subsequent water sampling results during the reporting period were <5 mg/L (i.e. below the limit of reporting).

Ultimately, the cause of the oil and grease result was unable to be identified. However it could have resulted from various sources of biogenic organics such as lipids, plant oils, tannins, lignins, proteins or humic acids among others.

A written report was provided to the EPA associated with this exceedance and monitoring of the licenced discharge point continued to occur in accordance with the site EPL requirements.

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2.8.2.2 TSS Exceedance – 5 April 2015

On the 30 March 2015, between 8pm and midnight, some 49.2mm of rain fell at Manning Colliery, the following day, the 31 March 2015, an additional 5.2mm fell, totalling 54.4mm. The sediment dams onsite are sufficient to meet a 90 percentile rainfall event of 58.7mm over a five day management period, which in this instance resulted in the rainfall event being captured, however it also resulted in the utilisation of the majority of the volumetric storage of the sediment dams and very limited storage remaining available. There were no issues with total suspended solid results over this period with results ranging from 4 mg/L to 9 mg/L between the 30th March and 2nd April. Water quality of the dams was monitored following the 30 March, however was not suitable for discharge due to visible turbidity.

On Friday the 3rd April, no groundwater pumping was undertaken, nor planned to recommence until the 8th April and there was no water discharged from site on the 3rd April.

On the 4th April, relentless heavy rain occurred over the 24 hour period resulting in a total of 115.6mm of rain falling at the site. The rainfall eased toward the end of the day, with only an additional 2.6mm of rain falling on Sunday the 5th April.

Due to the rainfall event on the 4th April and prior rainfall events, primarily on the 30th March, the site sediment dams were unable to contain to the total rainfall runoff volume, and as a result rainfall runoff was discharged from the final dam over both the 4th and 5th of April. Water sampling was coordinated and conducted on both these days.

The water quality monitoring at 10:50am the 4th April met the EPL licence criteria, with a total suspended solids result of 33 mg/L, which was elevated compared with typical results, but below the licence limit of 50 mg/L. However on the 5th April the total suspended solids result exceeded the licence limit, recording a result of 56 mg/L.

The water management dams at Manning Colliery are built to *Managing Urban Stormwater: Soils and Construction – Volume 2E* (DECC, 2008) storage sizing, and according to the Manning Surface Water Assessment, prepared by GHD in September 2013, the storage capacity of the onsite dams is sufficient to meet a 90 percentile rainfall event of 58.7mm over a five day management period. The rainfall event total of 115.6mm on the 4th April leading up to the time of the incident clearly exceeded this design capacity.

Due to the rainfall runoff above and beyond the design capacity of the site storage dams, this excess water was unable to be stored within the dams, and resulted in the discharge of waters with an elevated total suspended solids level on the 5th April 2015.

The exceedance was reported to the EPA with a written report subsequently provided on the 17 April.

2.8.2.3 TSS Exceedance – 21 April 2015

Over 240mm of rainfall was recorded over the three days from the 20th to 22nd April, with over 150mm falling on the 21st April alone. The rainfall on the 21st of April represents more than the long term average for the entire month of April, which has recorded an average of 129.8mm since 1899 (data from Bureau of Meteorology - Wyee weather station). The weather event, the April Superstorm, was severe and resulted in major infrastructure damage in the local region and disruptions to essential services, including power to the site.

This rainfall event, which represents an Average Recurrence Interval (ARI) of between 5 years and 10 years, resulted in the site sediment dams exceeding their design capacity, a 90 percentile rainfall event of 58.7mm over a five day management period, and subsequent exceedance of the Total Suspended Solids (TSS) pollution limit (50mg/L) as required by EPL191 with a result of 58 mg/L recorded on the 21st April.

The sediment dams at Manning Colliery were being managed to maximise storage volumes prior to storm event commencing on the 20th April.

Despite a number of road closures that inhibited access to the Colliery from a number of locations, monitoring was still able to be undertaken on all days during discharge, including on the 21st.

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The EPA was notified immediately after receiving lab results confirming that a TSS exceedance had occurred on the 21st April. Notification was made via the EPA environment line on the 24/4/15.

As a result of the rainfall event exceeding 150mm on the 21st April and the addition rainfall (>100mm) in the two days leading up to and subsequent to the 21st April exceeding the design capacity of the site sediment dams the rainfall runoff was unable to be stored within the dams, and resulted in the discharge of waters with an elevated total suspended solids level on the 21st April 2015.

LakeCoal continues to maintain the dams at Manning Colliery at low levels during dry periods to ensure maximum available storage during rainfall events and continue to undertake the other erosion and sediment control actions outlined in the Manning Colliery Water Management Plan, and has also subsequently installed an additional flocculation system as described in **Section 3.2**.

Subsequent to the 21st April, all water quality monitoring results for the remainder of the reporting period remained below the 50mg/L limit.

2.8.3 Potable Water Use

Potable water use during the reporting period (8.46 ML) was slightly lower than the prior reporting period (9.86 ML) and substantially lower than 2011 and 2012 (Refer to **Figure 2.9**), however this was expected due to lower water demand as a result of the Colliery remaining on care and maintenance throughout the 2013 – 2015 reporting periods.

While potable water during the reporting period has slightly decreased from recent previous year, it is expected to increase in the future due to a planned increase in activity during the 2016 reporting period and beyond, with the planned recommencement of mining activities associated with the underground linkage project.

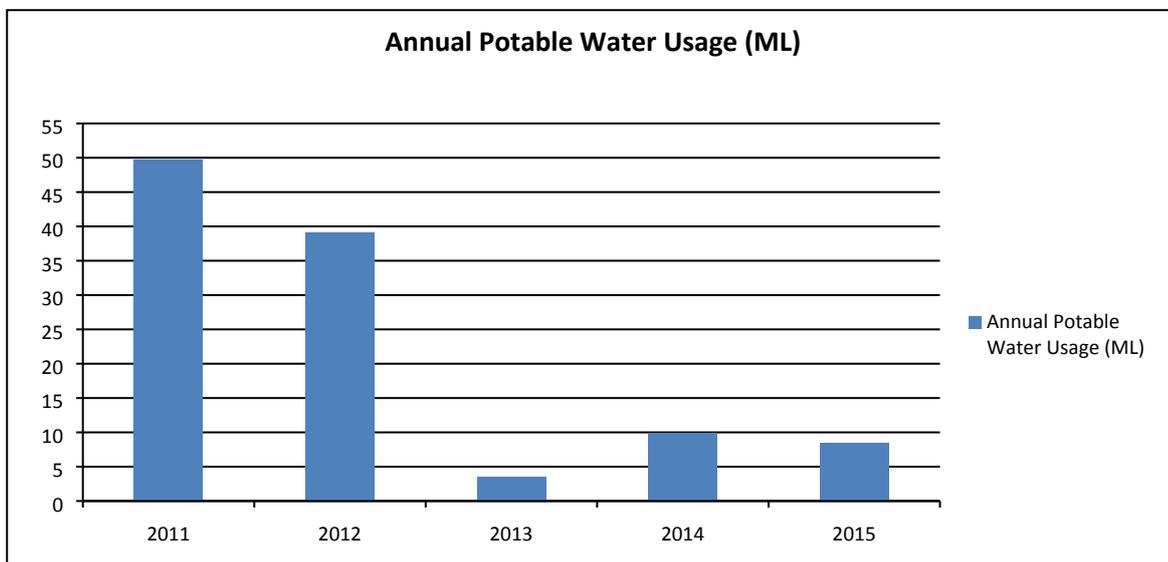


Figure 2.6: Potable water use

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2.8.4 Surface Water Management

The site surface water management system comprises both clean and dirty water catchments. A number of water management diversions direct clean water around the site to avoid increased hydraulic load on the sedimentation dams that treat the site dirty water prior to discharge.

Clean water from areas unaffected by the operational activities and water that runs onto the site area due to the contours of the surrounding land, i.e. primarily areas to the south and east, are diverted through clean water management structures (such as diversion drains and culverts under roads), enabling the water to ultimately report to Pond A. The clean water flow paths are shown on **Figure 2.10**.

The dirty water management system comprises a number of both surface and subsurface management structures to control the flow of water and ultimately direct the dirty water into the site sediment dams. **Figure 2.11** shows the dirty water flow paths.

The sediment dam system comprises a total of four main dams, labelled Pond 1, Pond 2, Pond 3 and Pond B, as shown on **Figure 2.10**. References to “Pond” and “Dam” are used interchangeably and refer to the same water management structures.

As shown on **Figure 2.11**, water from the dirty water catchments enters into Pond 1 or Pond 2, when both these dams are full water overflows into Pond 3. Once Pond 3 reaches capacity it subsequently over flows into Pond B. Finally, when Pond B reaches capacity it overflows out LDP001.

A series of interconnecting pipes and valves also allows Pond 2 to be drained into Pond 3, Pond 3 to be drained into Pond B and Pond B to be discharged via LDP001. These valves are generally kept shut to maximise storage capacity of the dams, but are opened after rainfall events, once water quality is suitable for discharge, to minimise water the volume of water stored and again increase storage capacity of the dams for the next rainfall event.

Water underground is derived from two sources: excess process water which is generated from mining operations and ground water which is released from the strata into underground mine workings. The collected water is pumped through an extensive goaf system that allows filtration and settlement.

The mine water discharge line consists of the main pump, flow meter, turbidity meter, valves and outlets. The mine water can be directed to pond 1, 3, B or LDP001. Under normal operation the mine water will be directed to LDP 1 to maintain capacity in the sediment dams for rainfall events.

Management of the 4 interconnected ponds is undertaken via weekly inspections and management as required following rainfall events. The intent of this active management is to maintain dams at their lowest possible levels whilst adhering to water quality criteria at the discharge point (LDP001).

During the reporting period the only change to the water management system was associated with an upgrade of the flocculent system, which is discussed in **Section 3.3**. Monitoring at the licenced discharge point occurs in accordance with EPL 191.

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Figure 2.7: Clean Water Management

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Figure 2.8: Dirty Water Management

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2.9 Hazardous Materials Management

A hazardous chemicals and dangerous goods register is maintained onsite to assist in management of risks to health and the environment. This register utilises an online chemicals database 'ChemWatch' which provides for ease of access to detailed information pertaining to hazardous chemicals and dangerous goods used onsite.

There have been no significant changes made to the management of hazardous materials during the reporting period. Refer to **Environmental Management Plan (Appendix 1)** for location of storage areas.

2.10 Other Infrastructure Management

No changes have been made to this process during the reporting period.

3 Environmental Management

LakeCoal is committed to operating Manning Colliery in an environmentally responsible manner through the application of the workplace Environmental Management System (EMS). This commitment is confirmed in the company's *Environment and Community Policy* (D-10103).

An initial site risk assessment *Handover of Manning Colliery on Care & Maintenance* (D-18224) includes the risk management of environmental aspects at Manning Colliery.

During 2015 the Broad Brush Risk Assessment for Manning Colliery was reviewed in accordance with AS/NZS ISO 31000 and MDG1010, was undertaken to identify hazards and assess the environmental and community related risk associated with the planned operation of Manning Colliery.

The risk assessment included:

- surface and groundwater;
- ecology;
- heritage;
- visual amenity;
- noise;
- air quality and greenhouse gas;
- traffic;
- hydrocarbon storage;
- deliveries;
- waste;
- asbestos;
- data records and reporting; and
- social aspects.

All aspects with potential environmental impacts, following the implementation of controls, were considered to have a low risk.

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3.1 Air Pollution

During the reporting period monitoring in accordance with the approved Air Quality Management Plan and EPL 191 licence conditions continued. Monitoring results are shown in **Table 3.1** and **Figure 3.1**. The rolling annual averages for 2015 and longer term annual average results (from 2006 - 2015) are presented on **Figure 3.2** and **Figure 3.3** respectively.

With respect to the ensuing table and figures, contaminated results are shown within **Table 3.1**, however, these results are not included within the annual averages and present as zero values in the monthly graphical results in **Figure 3.1**. Of the two contaminated results, the DG3 result from November 2015 was impacted by insects and the December 2015 DG4 result was impacted by numerous bird droppings. Contaminated results are noted by the environmental monitoring consultant engaged to complete the sampling and supported by corresponding field and/or laboratory notes.

No complaints of dust or air pollution were received in the reporting period.

Table 3.1: Depositional dust results (2015)

Sampling point	DG1 (EPA ID # 3)	DG2 (EPA ID # 4)	DG3 (EPA ID # 5)	DG4 (EPA ID # 6)	DG5 (EPA ID # 7)
Month	Insoluble Solids				
Jan-15	0.4	0.7	0.5	0.7	0.7
Feb-15	0.4	0.2	0.2	2.1	0.6
Mar-15	0.5	0.8	0.5	1.1	0.6
Apr-15	0.5	0.4	0.5	0.6	0.5
May-15	0.5	0.9	0.8	0.8	0.5
Jun-15	0.4	0.4	0.2	0.4	0.2
Jul-15	0.2	0.3	0.2	0.3	0.4
Aug-15	0.1	0.1	0.2	0.2	0.2
Sep-15	0.5	0.6	0.6	0.5	0.7
Oct-15	0.4	0.6	0.5	0.9	0.5
Nov-15	1.2	0.8	c4.4	1.5	1
Dec-15	1.2	0.8	1.1	c6.8	1.3
Annual Avg	0.53	0.55	0.48	0.83	0.60

- Notes: 1) For site locations refer **Environmental Management Plan (Appendix 1)**.
 2) DG3 contaminated in November 2015, DG4 contaminated in December 2015 – result not included in average calculations

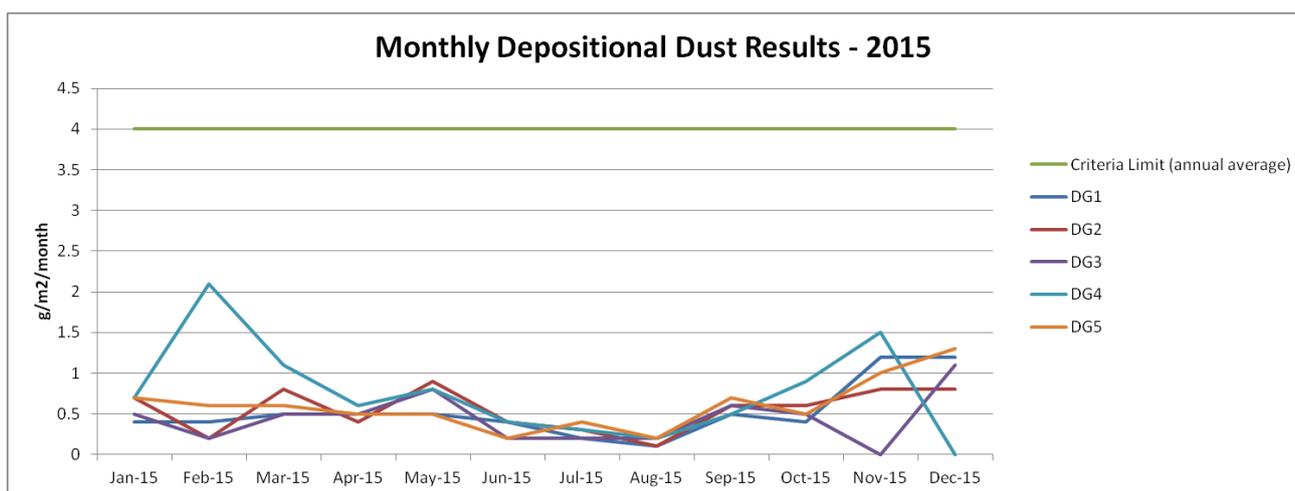


Figure 3.1: Monthly Depositional Dust Results in 2015

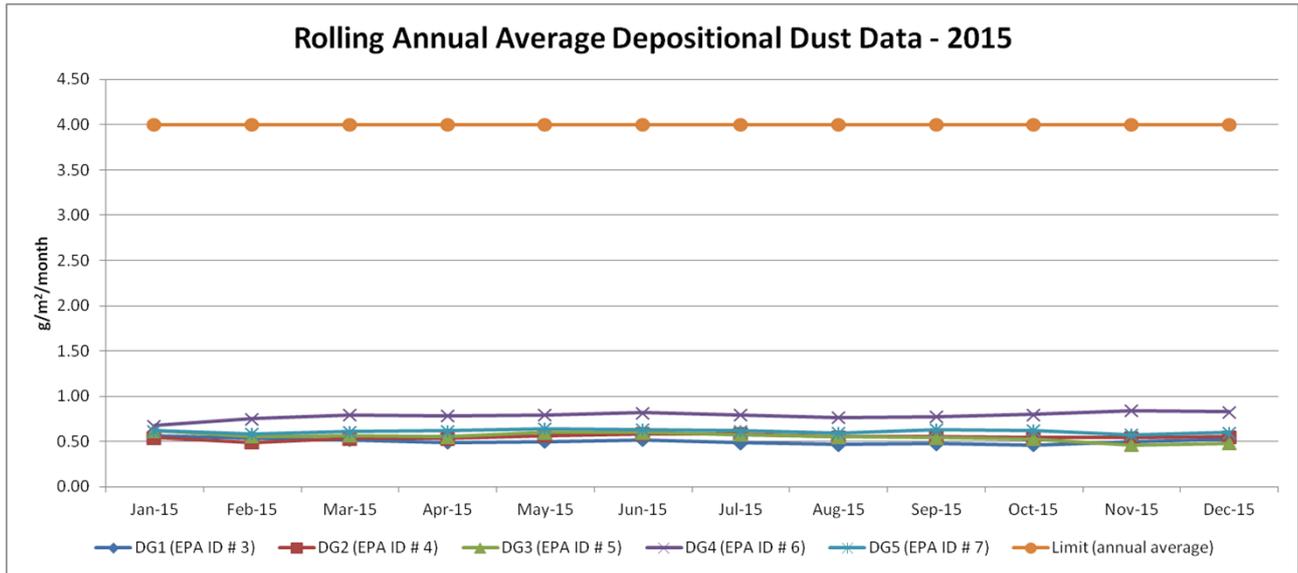


Figure 3.2: Rolling annual average depositional dust results (2015)

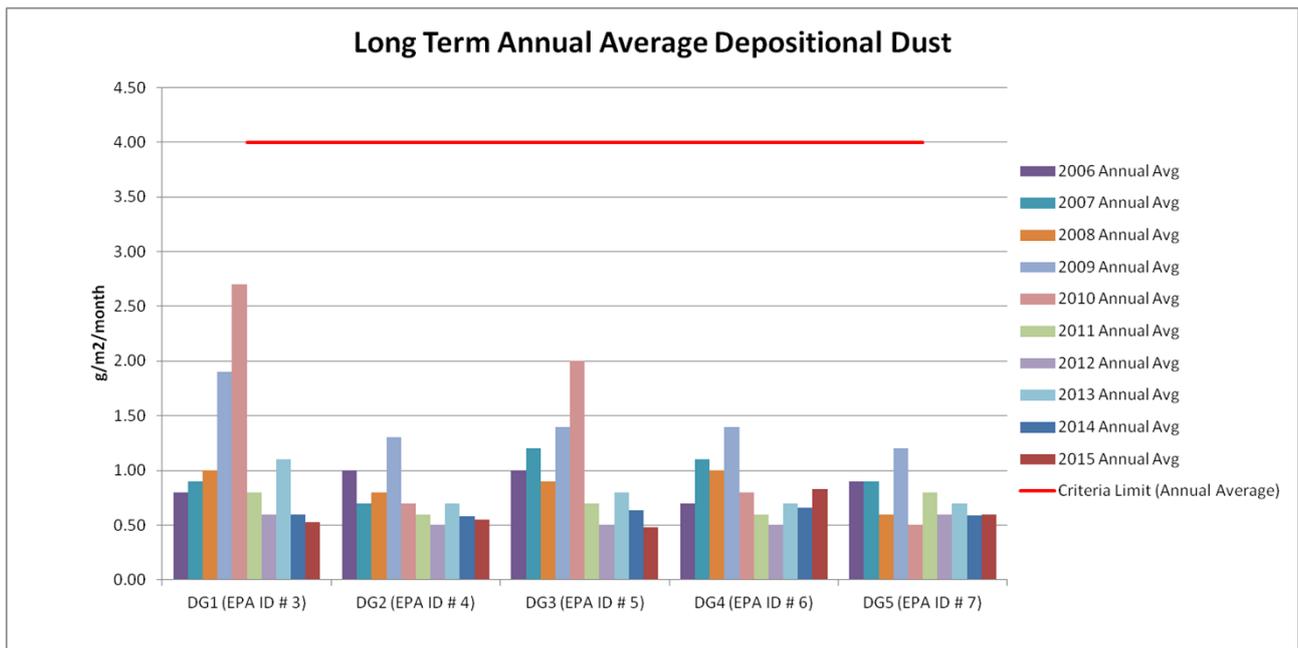


Figure 3.3: Long term annual average depositional dust results (2006 - 2015)

Air quality monitoring results in the 2015 reporting period show that air monitoring criteria has been met and the recorded levels do not exceed the prescribed maximum increase in deposited dust levels of 2g/m²/month or maximum level of 4mg/m²/month, with all average annual results below 1g/m²/month.

A comparison of annual average results from 2015 compared with prior years is provided in **Figure 3.3**, which shows that results have remained at low levels during the care and maintenance period, with three of five gauges showing slight decreases in 2015 compared with 2014 results and two gauges showing slight increases.

The air quality monitoring program, in accordance with the approved management plan, was ongoing at the end of the reporting period.

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3.2 Erosion and Sediment

Mining operations and significant rainfall events have the potential to cause erosion and/or generate sediment and impact on the surrounding catchment areas. These were unchanged during the reporting period and consist of:

- The exposed areas of the laydown areas, workshop and internal access tracks
- Coal stockpiles and coal handling equipment areas; and
- Vehicle and equipment movements;

The site includes a series of 8 sedimentation based sumps. These are inspected weekly for functionality and maintenance purposes. Identified actions are provided to the relevant site personnel by the site Environment and Community Coordinator or his delegate for completion as required.

Water not managed by the clean water diversion structures enters the sediment ponds or enters the underground drainage system which feeds into Pond 1.

The water draining from the hardstand catchment area reports to the pollution control Pond 1. Pond 1 will if required overflow into Pond 2, which then flows into Pond 3 and then Pond B prior to being discharged from site via LDP001. Total suspended solids are monitored at this point of the final dam prior to release (refer to **Section 2.8** for results).

Runoff from the coal handling and stockpile area is contained by a sedimentation-based sump system that helps capture the coal fines prior to entering sediment Pond 1 below the stockpile. Runoff from this area can contain a significant amount of coal fines due to the nature of the activities. A sedimentation fence was installed on northern end of the stockpile area to minimise the loading on adjacent drive-in sumps. This Pond along with Ponds 2 and 3 also function as primary settling ponds before discharging into Pond B.

Improvements to the existing flocculent system at Manning Colliery were completed in June 2015 following a field trial to determine the most effective flocculent product (based on site water quality conditions). The system implemented during the reporting period consists of solid flocculent blocks, situated at four locations leading into, or within, the sediment pond system. The flocculent blocks are situated at the following four locations:

- Pipeline entry of hardstand area catchment into Pond 1;
- Concrete drainage channel from the coal stockpile catchment into Pond 2 (**Photo 1**);
- Outlet of the subsurface drainage system leading into Pond 1; and
- At the outlet of the concrete pipe transferring water into the final dam (Pond B).

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Photo 1. Flocculent block located adjacent the coal stockpile area.

The flocculent locations are shown on the **Environmental Management Plan (Appendix 1)**

The intent of the revised flocculent system is to enable sediment laden water flows during rainfall events to dose the surface water running into the sediment ponds by dispersing small amounts of flocculent as the runoff flow passes across the solid (hydrophilic) flocculent blocks into the sediment dams immediately downstream. The system therefore only operates when sufficient rainfall has fallen to generate surface runoff, and continues to function while ever surface runoff into the sediment dam system continues. As a result the system is largely automated, when it rains it works, and simply requires the inspection and replacement of flocculent blocks as they are consumed. Inspections and maintenance of the flocculent system is completed weekly by environmental management personnel.

There have been no exceedances of the total suspended solids criteria since the implementation of the revised flocculent system.

Both volumetric flow and water quality results from the licenced discharge point continue to be reported on a monthly basis on the LakeCoal Manning website.

3.3 Surface Water Pollution

Monitoring of surface water discharged from LDP001 is undertaken by an external contracting company with sampling occurring monthly and weekly during discharges. **Section 3.3** contains monitoring results and discusses water quality, including the total oil and grease monitoring which occurs weekly during discharges.

During the reporting period there was one instance where total oil and grease levels exceeded the EPL criteria of 10 mg/L, this is covered in detail in **Section 2.8.2.1**.

3.4 Ground Water Pollution

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Water in underground workings is generated from ground water which is released from the strata into mine workings along with process water. The collected water is pumped through an extensive goaf system that allows filtration and settlement. The water is then pumped from the mine into the surface settlement pond systems prior to discharge via EPA licensed discharge point 1 (LDP-001).

No evidence of groundwater pollution and no known groundwater pollution has been identified at Manning Colliery.

3.5 Contaminated Polluted Land

The Colliery has a number of primary diesel and oil storages, all of which are bunded. There were no significant spills during the reporting period or reports of polluted land.

A Phase One Environmental Site Assessment (ESA) has been completed which identified areas of potential contamination. Phase 2 investigations and assessment are likely to be carried out over these areas during the decommissioning stage at end of mine life. Potential areas of concern are the land surrounding the diesel storage and the surface workshop. The development of a Remedial Action Plan following the Phase 2 assessment would occur, if required, based on the results from the site assessment.

3.6 Threatened Flora

There was no known impacts to threatened flora during the reporting period as a result of the Colliery's operations. No mining was undertaken during the reporting period as a result of the Colliery being placed in care and maintenance, and there have been no significant changes to the surface infrastructure.

3.7 Threatened Fauna

There was no known impacts to threatened fauna during the reporting period as a result of the Colliery's operations.

As discussed in **Section 2.3** there was no significant changes to the existing infrastructure. The "site footprint" remained unchanged during the reporting year, that is, no clearing works were undertaken that would have impacted threatened fauna species.

3.8 Weed Management

Weed management was ongoing throughout the reporting period.

Appropriately trained and qualified contractors were engaged to manage the weeds in the areas of the surface operations, primarily through herbicide application via vehicle mounted "quick spray" units (**Photo 2**).

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Photo 2 – Weed spraying undertaken in September 2015 around pit top area.

The contractor was engaged to undertake weed management activities on a quarterly basis throughout the reporting period.

3.9 Blasting

There was no blasting undertaken during the reporting period.

3.10 Operational Noise

Quarterly noise monitoring was conducted throughout the reporting period.

Noise monitoring locations are shown **Figure 3.4**, and results of the attended noise monitoring at these locations are presented in **Table 3.2** to **Table 3.9**. Summaries of the quarterly monitoring results are also provided throughout the year via the environmental reports on the Manning website

There were no exceedances of noise criteria during the reporting period.

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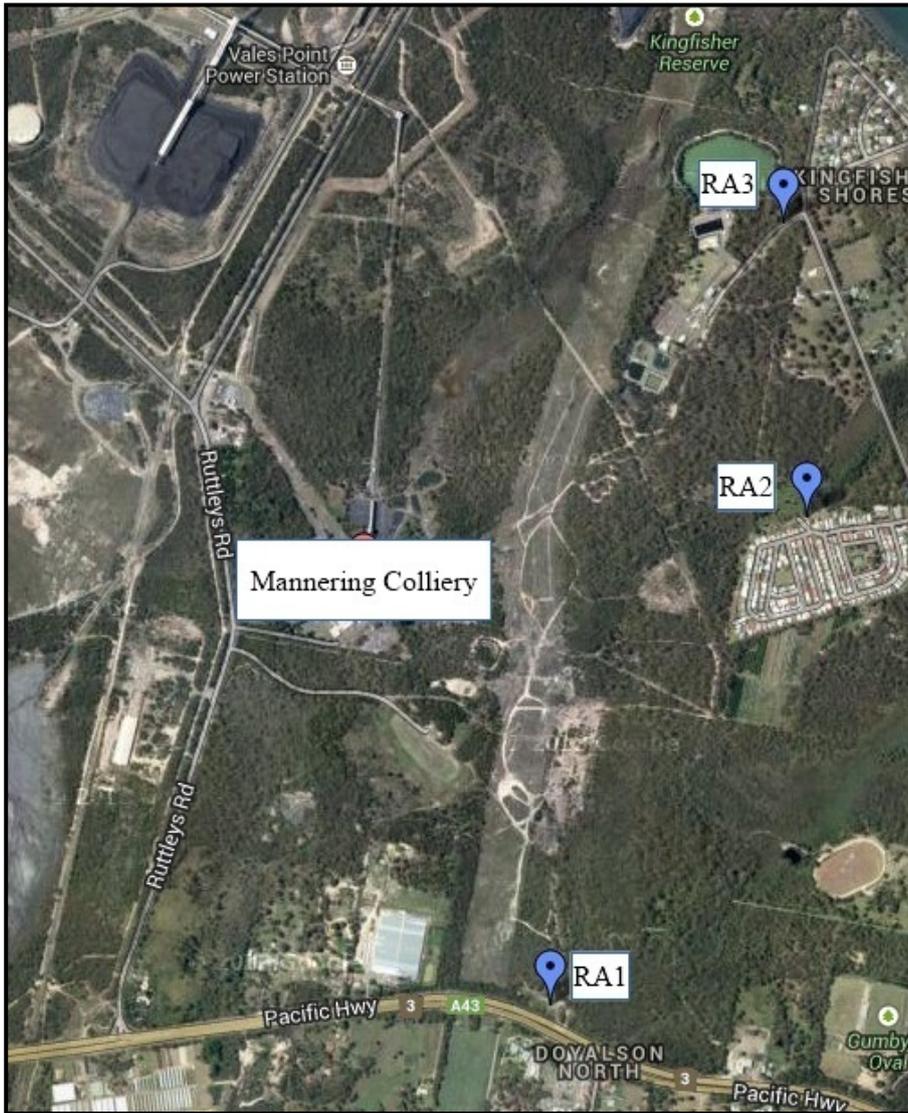


Figure 4: Noise Monitoring Locations

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Table 3.2: LAeq (15 min) Noise Monitoring Results – Quarter 1 2015

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB _{3,4,5}	Exceedance ^{4,5}
Day							
RA1	3/03/2015 12:02	2.2	-2.0	44	Yes	IA	Nil
RA2	3/03/2015 12:49	3.0	-2.0	43	Yes	IA	Nil
RA3	3/03/2015 13:10	1.5	-2.0	40	Yes	IA	Nil
Evening							
RA1	3/03/2015 18:24	3.0	-1.0	44	Yes	IA	Nil
RA2	3/03/2015 18:47	1.8	3.0	43	Yes	IA	Nil
RA3	3/03/2015 19:07	2.3	3.0	40	Yes	IA	Nil
Night							
RA1	3/02/2015 22:27	0.9	-1.0	35	Yes	IA	Nil
RA2	3/02/2015 23:12	1.2	-1.0	43	Yes	IA	Nil
RA3	3/02/2015 23:32	1.0	-1.0	40	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.3: LA1 (1 min) Noise Monitoring Results – Quarter 1 2015

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB _{3,4,5}	Exceedance ⁵
Night							
RA1	3/02/2015 22:27	0.9	-1.0	49	Yes	IA	Nil
RA2	3/02/2015 23:12	1.2	-1.0	50	Yes	IA	Nil
RA3	3/02/2015 23:32	1.0	-1.0	52	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

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Table 3.4: LAeq (15 min) Noise Monitoring Results – Quarter 2 2015

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ⁴ ₅
Day							
RA1	22/06/2015 12:53	2.7	-2.0	44	Yes	IA	Nil
RA2	22/06/2015 15:29	2.0	-2.0	43	Yes	IA	Nil
RA3	22/06/2015 15:49	1.7	-1.6	40	Yes	IA	Nil
Evening							
RA1	23/06/2015 19:13	0.5	-1.0	44	Yes	IA	Nil
RA2	23/06/2015 19:36	0.6	-1.0	43	Yes	IA	Nil
RA3	22/06/2015 19:45	0.9	3.0	40	Yes	IA	Nil
Night							
RA1	23/06/2015 22:00	0.9	0.5	35	Yes	IA	Nil
RA2	25/06/2015 01:00	0.2	3.0	43	Yes	IA	Nil
RA3	23/06/2015 22:21	0.8	-1.0	40	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.5: LA1 (1 min) Noise Monitoring Results – Quarter 2 2015

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ₁	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
Night							
RA1	23/06/2015 22:00	0.9	0.5	49	Yes	IA	Nil
RA2	25/06/2015 01:00	0.2	3.0	50	Yes	IA	Nil
RA3	23/06/2015 22:21	0.8	-1.0	52	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

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Table 3.6: LAeq (15 min) Noise Monitoring Results – Quarter 3 2015

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ⁴ ₅
Day							
RA1	21/09/2015 11:11	2.4	-2.0	44	Y	IA	Nil
RA2	21/09/2015 12:00	2.2	-2.0	43	Y	IA	Nil
RA3	21/09/2015 12:23	3.3	-2.0	40	N	IA	NA
Evening							
RA1	21/09/2015 18:25	1.4	3.0	44	Y	IA	Nil
RA2	21/09/2015 19:10	0.6	3.0	43	Y	IA	Nil
RA3	21/09/2015 19:30	0.3	3.0	40	Y	IA	Nil
Night							
RA1	28/09/2015 22:01	0.6	0.5	35	Y	IA	Nil
RA2	29/09/2015 01:00	0.2	0.5	43	Y	IA	Nil
RA3	28/09/2015 22:22	0.6	0.5	40	Y	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.7: LA1 (1 min) Noise Monitoring Results – Quarter 3 2015

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ₁	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
Night							
RA1	28/09/2015 22:01	0.6	0.5	49	Y	IA	Nil
RA2	29/09/2015 01:00	0.2	0.5	50	Y	IA	Nil
RA3	28/09/2015 22:22	0.6	0.5	52	Y	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

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Table 3.8: LAeq (15 min) Noise Monitoring Results – Quarter 4 2015

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ⁴ ₅
Day							
RA1	24/12/2015 13:50	3.2	-2.0	44	No	IA	NA
RA2	24/12/2015 14:13	2.8	-2.0	43	Yes	IA	Nil
RA3	24/12/2015 14:35	2.1	-2.0	40	Yes	IA	Nil
Evening							
RA1	28/12/2015 18:23	2.6	3.0	44	Yes	IA	Nil
RA2	28/12/2015 18:45	2.5	3.0	43	Yes	IA	Nil
RA3	28/12/2015 19:06	2.7	3.0	40	Yes	IA	Nil
Night							
RA1	28/12/2015 01:00	1.9	0.5	35	Yes	IA	Nil
RA2	28/12/2015 01:22	2.9	0.5	43	Yes	IA	Nil
RA3	28/12/2015 01:51	1.7	3.0	40	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.9: LA1 (1 min) Noise Monitoring Results – Quarter 4 2015

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
Night							
RA1	28/12/2015 01:00	1.9	0.5	49	Yes	IA	Nil
RA2	28/12/2015 01:22	2.9	0.5	50	Yes	IA	Nil
RA3	28/12/2015 01:51	1.7	3.0	52	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

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3.11 Visual, Stray Light

No lights are directed offsite or installed to shine above the horizontal. In addition the nearest residents to the site are approximately 800m from the site. No lighting or visual amenity complaints were received during the reporting period and no additional lighting was installed during the report period.

3.12 Aboriginal Heritage

As Manning Colliery has remained under care and maintenance during the reporting period and there are no identified Aboriginal sites within the pit top areas, there has been no potential for activities at Manning Colliery to negatively impact on Aboriginal sites during the reporting period.

3.13 Natural Heritage

The Non-Indigenous Cultural Heritage Management Plan identifies that there are no items of cultural significance within the pit top area, and identifies the following items of heritage significance within the Project Approval area;

- Morisset Hospital Precinct (listed under the NSW Heritage Act and Lake Macquarie City Council LEP)
- Eaton's Bulk Store (listed under the Wyong Shire Council LEP)

No mining was undertaken during the reporting period, and accordingly there was no potential for impact to either of these heritage features.

3.14 Spontaneous Combustion

Current stockpiling of coal is minimal, therefore reducing the risk of spontaneous combustion occurring within the pit top area.

Underground controls to mitigate risk of spontaneous combustion include:

- The mine has no known recorded spontaneous combustion events in its 50+ year history.
- Spontaneous combustion is considered at the mine design phase.
- The mine has developed Trigger Action Response Plans to identify and manage any deviation from normal operating conditions with respect to indicators of spontaneous combustion.
- The mine monitors gases using a multipoint tube bundle gas analysis system.
- The mine conducts regular underground inspections by Mining Officials.

Following a request from the Department of Resources and Energy from the last AEMR inspection Manning Colliery undertook a spontaneous combustion review of the small coal stockpiles located on the site ROM stockpile pad.

The review concluded that the risk potential for spontaneous combustion associated with the coal stockpiles was assessed to be low. This determination was based on the following:

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- The coal on the stockpile is assumed to be Fassifern Seam coal, since this is the only coal mined at the colliery since the early 1980's. The Fassifern Seam has a medium intrinsic spontaneous combustion reactivity based on R70 self-heating rate testing from the neighbouring Chain Valley Mine (around 3km distance - UniQuest Project No: 00293 Report – August 2012, attached)
- The stockpiles have been insitu for at least 3 years with no known reports or signs of spontaneous combustion.
- The stockpile is and will continue to be regularly inspected.
- Temperature probing of the stockpile undertaken during the reporting period indicated a maximum temperature of less than 25 deg C. The stockpiled coal has a very high moisture content since most stockpiles are water saturated under the surface. These two factors, when combined, significantly reduce the likelihood of the coal self-heating to the point of thermal runaway.

There were no instances of spontaneous combustion during the reporting period.

3.15 Bushfire

There were no instances of bushfire in the vicinity of the site recorded in 2015.

LakeCoal has, and will continue to, implement appropriate controls to assist in the management of bushfires that threaten the Colliery.

3.16 Mine Subsidence

Previous subsidence calculations by Centennial Coal using Bord and Pillar mining methods give a subsidence figure of <20mm of cumulative subsidence on the surface.

Subsidence monitoring was undertaken in August 2012, however no further monitoring has been undertaken as Manning Colliery is under care and maintenance. When mining operations resume, regular subsidence monitoring will occur in accordance with an approved MOP or specific subsidence management plans or extraction plan.

3.17 Hydrocarbon Contamination

All hydrocarbon materials are stored within a dedicated bunded store building, with emergency spill stations located adjacent to the area. Spill stations are checked weekly to ensure they remain adequately stocked and serviced as required by an external contractor.

Training for spill response is provided within the site induction program, which is a prerequisite before undertaking work at Manning Colliery. The Colliery also has a Pollution Incident Response Management Plan in place (through it's Duty Card system) to respond to pollution incidents. The Pollution Incident Response Management Plan was tested using a desktop scenario and relevant findings used to update the plan during the reporting period.

There were no incidents of hydrocarbon contamination, or significant spills, occurring during the reporting period.

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3.18 Methane Drainage

Methane levels in the Fassifern seam are a relatively low level content such that no pre or post methane drainage is required to maintain safe levels underground. All methane liberated in the mine enters the main ventilation air and is ventilated via the main fans.

The main fans continued to run during the reporting period, albeit at a lower flow than would usually be the case if production was occurring.

Monthly ventilation surveys, which document methane concentrations and mine ventilation flow also continued throughout the reporting period.

Methane emissions, and other greenhouse gas emissions, from the Colliery are reported annually to the Clean Energy Regulator in accordance with the *National Greenhouse and Energy Reporting Act 2007* (NGER Act). The emissions from the most recent reporting under the NGER Act are presented in **Table 3.10**. Note that the data from **Table 3.10** is presented in a financial year format as per NGER Act reporting requirements.

Table 3.10: Greenhouse Gas Emissions 2014-2015 Financial Year Period

Manning GHG Emissions	
Scope 1 (tCO ² -e)	104,578
Scope 2 (tCO ² -e)	4,178
Total	108,757

3.19 Public Safety

Manning Colliery pit top area is fenced with chain mesh and barbed wire security fencing, the Colliery gates are closed and locked where and when appropriate and the site is patrolled by security staff on a regular basis.

No issues concerning public safety arose during the reporting period.

No surface impacts from mining that could pose a risk to public safety occurred during the reporting period.

During 2015 a security presence and patrols were maintained while Manning Colliery is on care and maintenance.

3.20 Other Issues and Risks

There were no other environmental issues or risks encountered during the reporting period.

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4 Community Relations

4.1 Environmental Complaints

There were no community complaints received during the reporting period.

4.2 Community Liaison

The Community Consultative Committee continued to operate during the reporting period in accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Project, June 2007 (NSW Department of Planning)*.

Table 4.1 lists the current Community Consultative Committee members as at the end of the reporting period.

There were two CCC meetings held during the reporting period on 19 May 2015 and 10 November 2015.

Minutes for each of the committee meetings are available on LakeCoal's Mannering website (<http://manneringmine.com.au/community/consultative-committee-information/>).

At the end of the reporting period, the next CCC meeting had been planned for 2 February 2016.

Table 4.1: Community Consultative Committee Members

Stakeholder	Name
Independent Chairperson	Margaret MacDonald-Hill
Community	Bob Brooks
Community	Andrew Whitbourne
LakeCoal	Wade Covey
Lake Macquarie City Council	Jason Pauling
Wyong Shire Council	Emma Graham

In addition to the above the LakeCoal Mannering website is updated on a monthly basis with monitoring data, management plans, reports, audits and complaint details among other items.

LakeCoal's community hotline number (1800 687 557) is displayed prominently and permanently on the Colliery website.

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5 Rehabilitation

5.1 Buildings

Manning Colliery surface infrastructure comprises:

- Mine entry / exit for personnel and materials (1:3.5 Decline) including a winch house
- Coal conveyor drift
- Limited coal-handling facilities for breaking, crushing, sizing and storing product
- Overland conveyor systems
- Administration and bathroom facilities
- Workshop facilities
- Pollution control apparatus and structures
- Enclosed and bulk open material and equipment stores facilities
- Mine ventilation
- Air compressors
- Internal roads and car parking facilities.

The total area of effect of the colliery surface infrastructure is approximately 13.2 hectares.

5.2 Rehabilitation of Disturbed Land

There was no significant rehabilitation works on disturbed lands during the reporting period, which relates the fixed nature of the surface infrastructure, upon recommencement of mining activities all existing infrastructure and lay down areas will again be required for use.

Table 5.1 – Summary of Rehabilitation at Manning Colliery

Item	This period (2015)	Next period (2016)
	A. Total Mine Footprint (managed by LakeCoal)	Approximately 13.2
B Total Active Disturbance	13.2	14.2
C. Land being prepared for rehabilitation	Nil	Nil
D Land Under Active Rehabilitation	Nil	Nil
E Completed Rehabilitation	Nil	Nil

Table 5.2 – Maintenance Activities on Rehabilitated Land at Mannering Colliery

NATURE OF TREATMENT	Area Treated (Ha)		Comment/Control Strategies/Treatment Detail
	This period (2015)	Next period (2016)	
Additional Erosion Control Works (drains re-contouring, rock protection)	0	1	Re-contouring and rock protection of drains is undertaken on an as required basis as identified through the site environmental inspections. Erosion and sediment control works will be undertaken (as required) with the construction of the new APZ's.
Re-covering (further topsoil, subsoil sealing etc)	0	0	n/a
Soil Treatment (fertiliser, lime, gypsum etc.)	0	0	n/a
Treatment/Management (grazing, cropping, slashing etc.)	0	0	n/a
Re-seeding/Replanting (species density, season etc.)	0	0	Additional seeding to be undertaken following APZ establishment in 2016.
Adversely Affected by Weeds (type and treatment)	1	0	Weed Management undertaken during the reporting period.
Feral Animal Control (additional fencing, trapping, baiting etc.)	13.2	0	Feral animal control undertaken during the reporting period. Not scheduled to be undertaken again until 2017.

5.3 Other Infrastructure

There was no other rehabilitation works completed during the reporting period.

5.4 Rehabilitation Trials and Research

No rehabilitation trials or research was undertaken during the reporting period.

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5.5 Further Development of the Final Rehabilitation Plan

Further development of the rehabilitation and closure criteria occurred during the development of a new MOP, consistent with the September 2013 MOP guidelines, which was approved by the Department on 27 March 2015. These criteria will be refined over time as the MOP is varied or updated.

6 Activities proposed in the next Annual Review period

A summary of the activities (and their current status) that were proposed to be undertaken during the 2015 reporting period is provided in **Table 6.1** below.

Table 6.1 – Update on activities planned to be undertaken in the 2015 reporting period.

Activity Proposed	Status Update
Complete and lodge Environmental Assessment to support the proposed changes to the Project Approval to permit increased coal throughput from Chain Valley Colliery to Vales Point Power Station and in increase in the approval life.	Complete - EA lodged with DP&E in July 2015, approved 16 December 2015.
Submission and approval of a new Mining Operations Plan to 31 March 2018.	Complete – New MOP approved 27 March 2015.
Continued care and maintenance activities with a focus on ensuring the Colliery will be ready for recommencement of mining activities in 2015 if required.	Complete – all activities undertaken as required throughout the reporting period. Mining activities are scheduled to recommence in Half 1 2016 as the U/G link road project commences.
Removal of the geofabric bags and associated materials pending recommencement of mining activities	Not completed. Geofabric bags still in place. Will be reassessed during the 2016 reporting period after the commencement of mining activities
Installation of new guardrail at mine entry consistent with requirements from the Project Approval modification in November 2014.	Complete. New guardrail installed.

Activity Proposed	Status Update
Review and update environmental management plans	Ongoing. Environmental management plans are being reviewed and updated as required. At the end of the reporting period the Land Management Plan and Noise Monitoring Program had been drafted and are planned to be submitted by end April 2016.
Investigation and implementation of surface water management improvements for total suspended solids management.	Complete – Flocculant trials undertaken during the reporting period. Following the outcomes of the trial flocculant block stations were installed at four locations to assist with managing TSS levels.

A number of activities are proposed to be undertaken in the next reporting period, these include;

- Application to vary the site Environmental Protection Licence to allow for an increase in coal handling to 1.3Mt.
- Undertake assessment of the ongoing use of the geofabric bags at Mannering Colliery for disposal of coal fines.
- Continue the review and submission of the site environmental management plans.
- Commence the water quality study required under EPL191 associated with the recommencement of coal operations.
- Undertake noise mitigation options assessment following the recommencement of coal operations.
- Construction of the site Asset Protection Zones (APZ's).
- Undertake an Independent Compliance Audit in accordance with Project Approval requirements.
- Revision of site MOP to reflect current operations.
- Complete an investigation into the feasibility of a solar powered discharge monitoring system at LDP001.

7 Definitions

AEMR

Annual Environmental Management Report, now known as the Annual Review.

Annual Review

The annual environmental report compiled for Mannering Colliery, the Annual Review also fulfills the requirement for an Annual Environmental Report or an Annual Environmental Management Report (AEMR) generally required by mining leases.

CCC

Community Consultative Committee

DRE

Division of Resources and Energy within the Department of Trade, Investment, Regional Infrastructure and Services.

EPA

Environment Protection Authority

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EP&A Act

Environmental Planning and Assessment Act, 1979

EPL

Environment Protection Licence

EMS

Environmental Management System

kL

Kilolitre

LDP 1

Licensed Discharge Point 1 (per EPL191)

OEH

NSW Office of Environment and Heritage

t CO₂-e

tonnes of carbon dioxide equivalence

The website

The website of LakeCoal - Manning Colliery, which is, www.manningmine.com.au

MP 06_0311

Project approval MP 06_0311, as modified, issued under Section 75J of the Environmental Planning and Assessment Act 1979 for the Manning Colliery Extension of Mine Project.

VPPS

Vales Point Power Station

8 Appendices

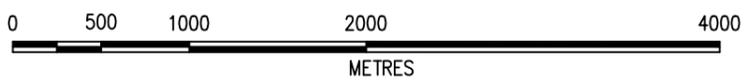
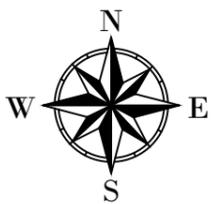
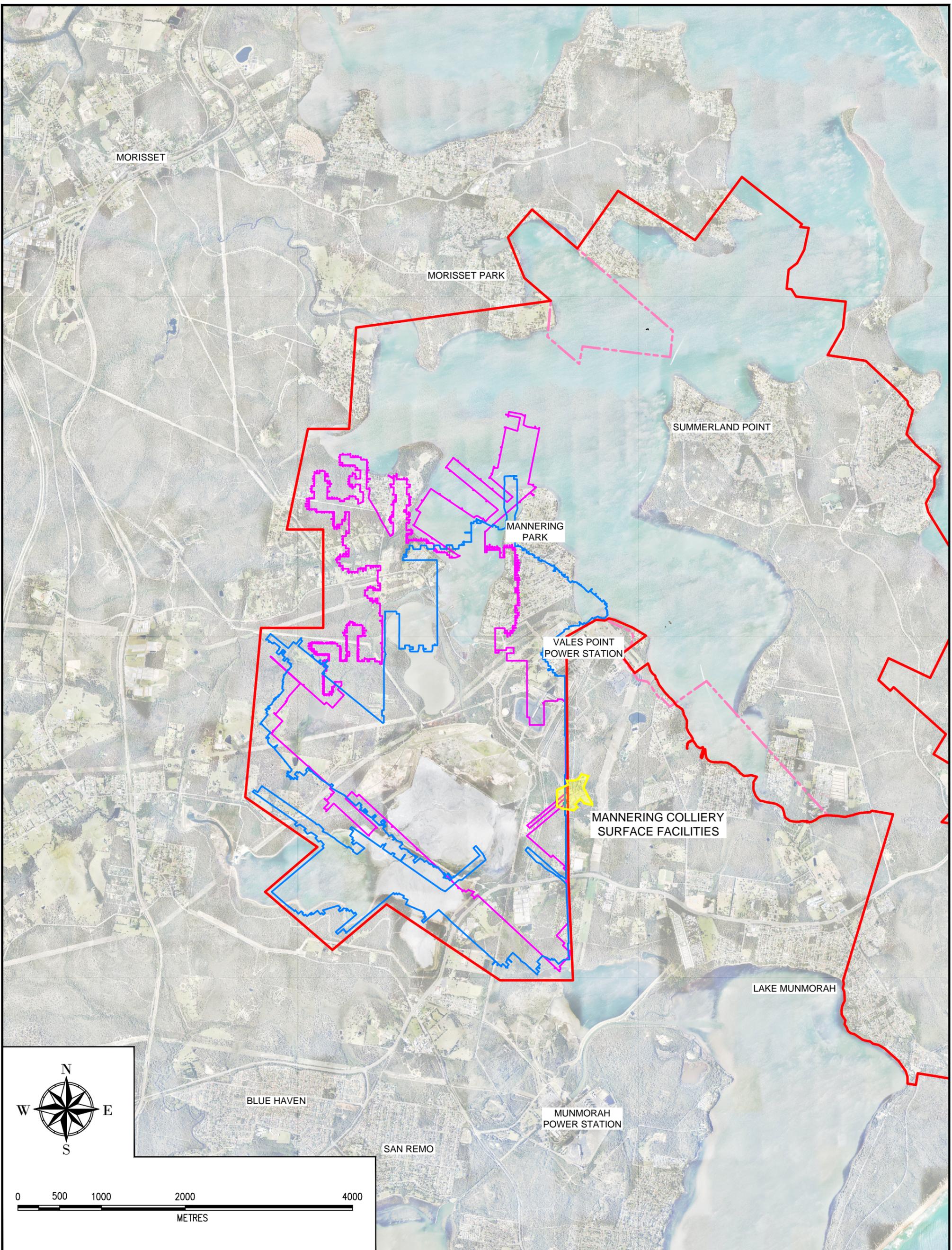
Appendix 1: Plans

Appendix 2: Consolidated Project Approval (MP06_0311 MOD 3)

Appendix 3: Environment Protection Licence 191

Appendix 4: Independent Audit Action Plan – Status Update

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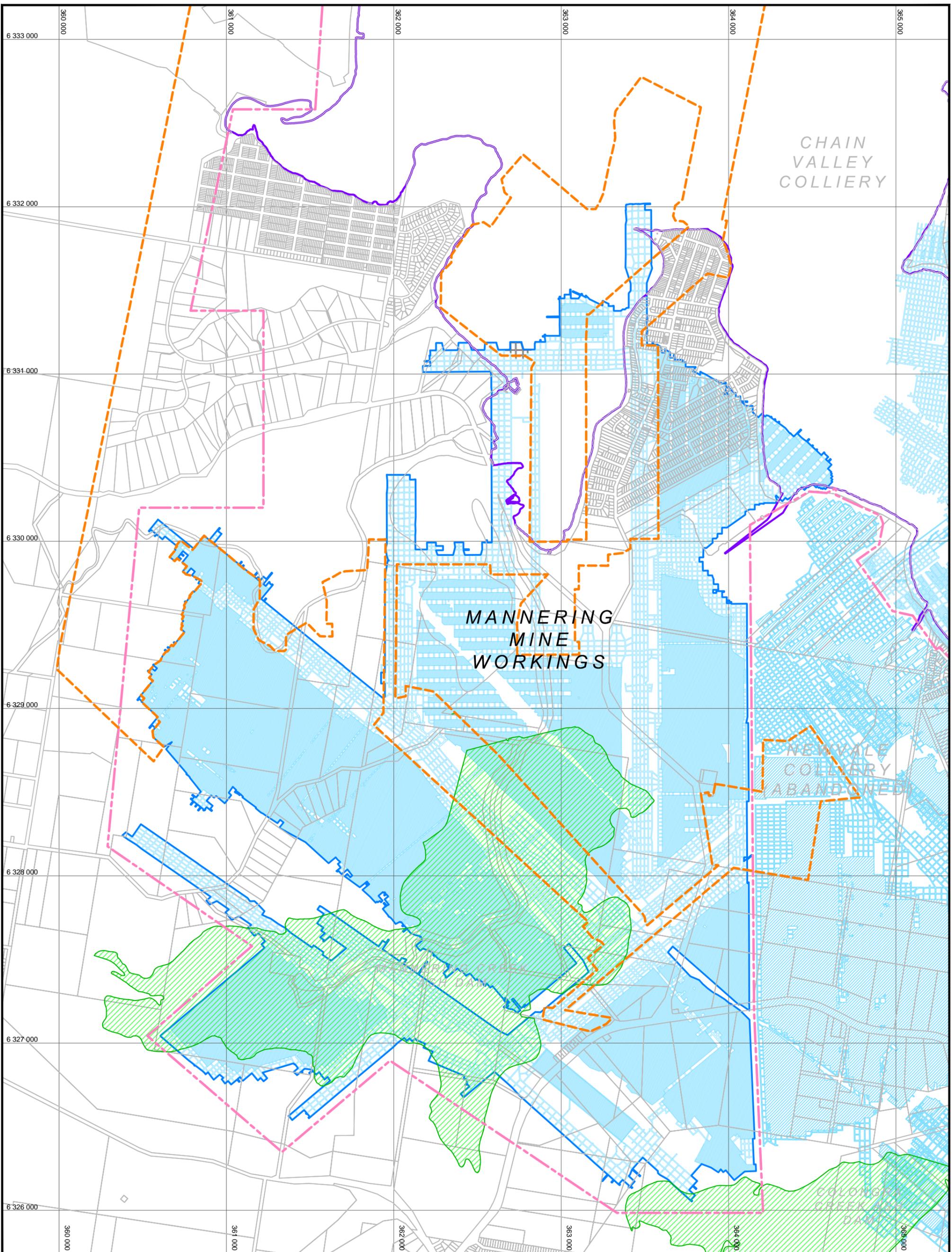
- Fassifern Seam - Existing Workings
- Great Northern Seam - Existing Workings
- Colliery Holding Boundary (Fassifern Seam)
- Colliery Holding Boundary (Great Northern Seam)

**LAKE COAL PTY LIMITED
MANNERING MINE**

**MINE LOCALITY PLAN
ANNUAL REVIEW - 2015**

SCALE:	1:40 000	DATE:	10 March 2016
DRAWN:	T Chisholm	DRG NO:	A1S0005_1
CHECKED:	-	REV NO:	2015
SIGNED:	-	SIZE:	A3

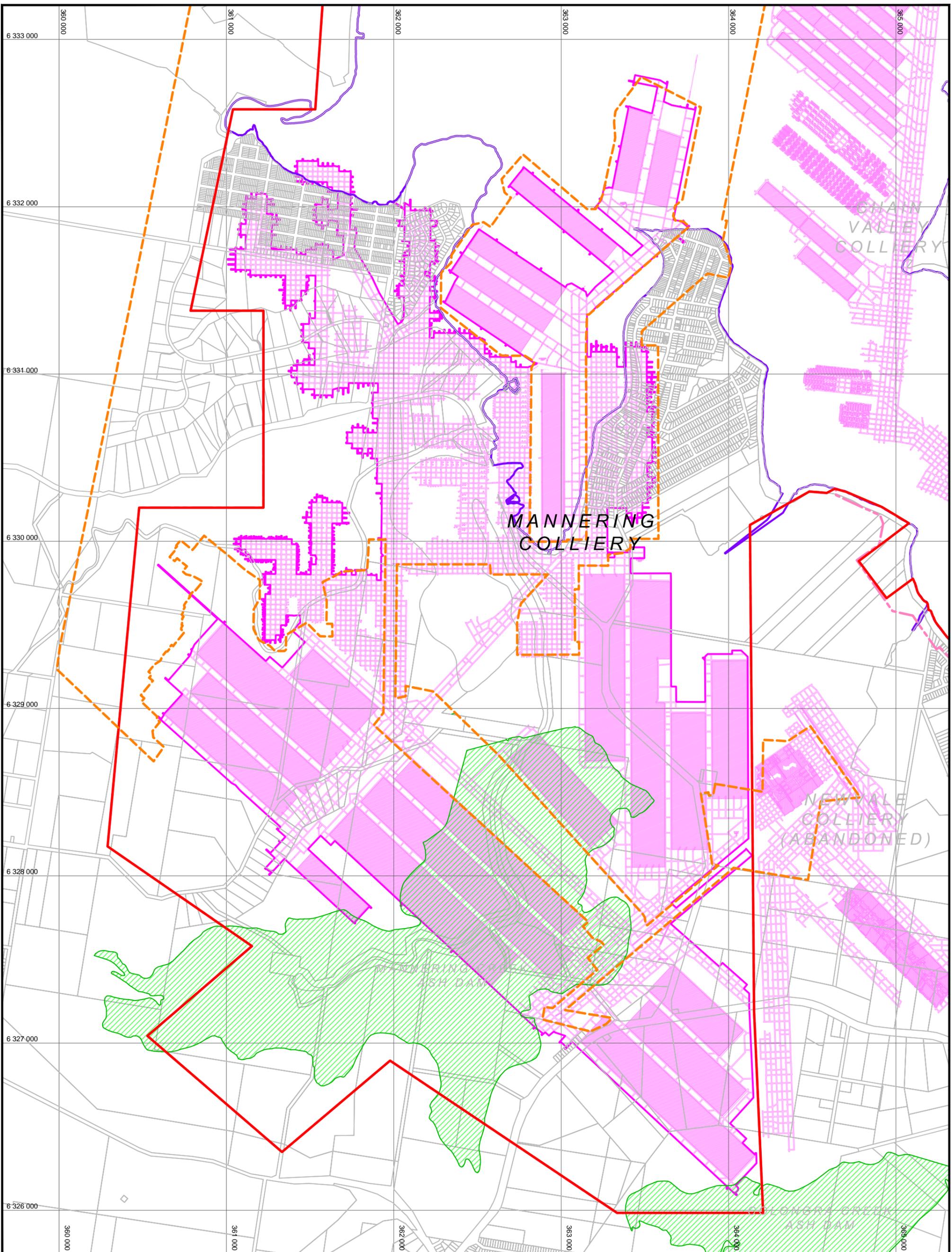




- Great Northern Seam - Existing Workings
- Lake Macquarie
- - - Colliery Holding Boundary
- - - MP 06_311 Approval Boundary
- ▨ Ash Dam(s)

LAKE COAL PTY LIMITED
MANNERLING MINE
GREAT NORTHERN SEAM WORKINGS
ANNUAL REVIEW - 2015

SCALE: 1:20 000	DATE: 10 March 2016	
DRAWN: T Chisholm	DRG NO: A1S0005_2	
CHECKED: -	REV NO: 2015	
SIGNED: -	SIZE: A3	



- Fassifern Seam - Existing Workings
- Lake Macquarie
- Colliery Holding Boundary
- MP 06_311 Approval Boundary
- Ash Dam(s)

LAKE COAL PTY LIMITED
MANNERLING COLLIERY
FASSIFERN SEAM WORKINGS
ANNUAL REVIEW - 2015

SCALE:	1:20 000	DATE:	10 March 2016
DRAWN:	T Chisholm	DRG NO:	A1S0005_3
CHECKED:	-	REV NO:	2015
SIGNED:	-	SIZE:	A3



Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Project Approval signed by Frank Sartor on 12 March 2008

Frank Sartor MP
Minister for Planning

Sydney

2008

SCHEDULE 1

Application No:	06_0311
Proponent:	Centennial Coal Company Limited
Approval Authority:	Minister for Planning
Land:	See Appendix 1
Project:	Mannering Colliery – Continuation of Mining Project

Red text represents Modification 1 of October 2012 (06_0311 MOD 1)

Blue text represents Modification 2 of November 2014 (06_0311 MOD 2)

Green text represents Modification 3 of December 2015 (06_0311 MOD 3)

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DEFINITIONS

Annual review	The review required by Condition 3 of Schedule 5
Affected councils	Wyong Shire Council and Lake Macquarie City Council
APZs	The asset protection zones shown in Figure 4 in Appendix 2
Built features	Includes any building or work erected or constructed on land, and includes dwellings and infrastructure such as any formed road, street, path, walk, or driveway; and any pipeline, water, sewer, telephone, gas or other service main
BCA	Building Code of Australia
CCC	Community Consultative Committee
Conditions of this approval	Conditions contained in Schedules 2 to 5 inclusive
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning & Environment
DPI Water	Department of Primary Industries-Water
DRE	Division of Resources and Energy of the Department of Industry
EA	Environmental Assessment titled <i>Mannering Colliery Environmental Assessment</i> , dated March 2007, including the response to submissions, dated 27 July 2007
EA (Mod 1)	Environmental Assessment titled <i>Mannering Colliery – Extension of Mine Project Section 75W Modification to Project Approval 06_0311</i> , as modified by the associated response to submissions dated 4 September 2012
EA (Mod 2)	Environmental Assessment titled <i>'Mannering Colliery – Modification 2, Environmental Assessment, Section 75W Modification to MP 06_0311'</i> dated April 2014, as modified by the associated response to submissions dated 15 September 2014
EA (Mod 3)	Environmental Assessment titled <i>'Mannering Colliery – Modification 3 Environmental Assessment, Section 75W Modification to MP 06_0311'</i> dated June 2015, including the associated Response to Submissions dated September 2015
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build
First workings	Extraction of coal by bord and pillar workings and the like
Incident	A set of circumstances that: <ul style="list-style-type: none"> • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this approval
Land	As defined in the EP&A Act, except for where the term is used in the noise and air quality conditions in Schedules 3 and 4 of this approval where it is defined to mean the whole of a lot, or contiguous lots, owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
LMCC	Lake Macquarie City Council
Mining operations	Includes all extraction, processing, handling, storage and transportation of coal carried out on the site
Minister	Minister for Planning, or delegate
Minor	Not very large, important or serious
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
OEH	Office of Environment and Heritage within the Department of Primary Industries
Privately-owned land	Land that is not owned by a public agency, Vales Point Power Station or a mining company (or its subsidiary)
Proponent	Centennial Coal Company Limited or any other person or company (including LakeCoal Pty Limited) who rely on this approval to carry out the project that is subject to this approval

Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
ROM	Run-of-mine
RMS	Roads and Maritime Services
Second workings	Extraction of coal by pillar extraction methods
Secretary	Secretary of the Department, or nominee
Site	Land referred to in Appendix 1
SMP	Subsidence Management Plan
Statement of Commitments	The Statement of Commitments in Appendix 3
Subsidence	Subsidence of the land surface caused by underground coal mining
WSC	Wyong Shire Council

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
 - (a) EA;
 - (b) EA (Mod 1);
 - (c) EA (Mod 2);
 - (d) EA (Mod 3); and
 - (e) Project Layout Plans.

Note:

- The Project Layout Plans are shown in Appendix 2.

- 2A. The Proponent shall carry out the development in accordance with the
 - (a) Statement of Commitments; and
 - (b) conditions of this approval.
3. If there is any inconsistency between the documents in condition 2, the most recent document shall prevail to the extent of the inconsistency. The conditions of this approval shall prevail over the documents in conditions 2 and 2A(a) to the extent of any inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
 - (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Limits on Approval

5. Mining operations may take place until 30 June 2022.

Note: Under this approval, the Proponent is required to rehabilitate the site to the satisfaction of the Secretary and DRE. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.

6. The Proponent shall not extract more than 1.1 million tonnes of ROM coal a year from the site.
- 6A. The Proponent shall not transport more than 1.3 million tonnes of ROM coal a year from the site.
7. The Proponent shall ensure all coal produced and/or received on the site is transported by overland conveyor to Vales Point Power Station.

Updating and Staging Strategies, Plans or Programs

8. The Proponent must regularly review the strategies, plans and programs required under this approval and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the mining industry. To facilitate these updates, the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis.

With the agreement of the Secretary, the Proponent may prepare a revision or stage of any strategy, plan or program required under this approval without undertaking consultation with all parties nominated under the applicable condition in this approval.

Notes:

- *While any strategy, plan or program may be submitted on a staged basis, the Proponent must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.*
- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

Structural Adequacy

9. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

Demolition

10. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

11. The Proponent shall ensure that all plant and equipment used on site is:
- (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

Community Enhancement Program

12. The Proponent shall pay the affected councils \$0.02 for each tonne of ROM coal produced by the project for the purpose of improving water quality in the Lake Macquarie catchment. This payment shall be:
- (a) shared equally by the affected councils;
 - (b) made by the end of March 2009, and at yearly intervals thereafter;
 - (c) calculated on the ROM coal produced in the previous calendar year; and
 - (d) subject to indexation by the Implicit Price Deflator, as published by the Australian Bureau of Statistics.

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

NOISE

Noise Impact Criteria

- The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately owned land.

Table 1: Noise limits dB(A)

Day <i>L_{Aeq}(15 min)</i>	Evening <i>L_{Aeq}(15 min)</i>	Night		Location (as listed in Appendix 4)
		<i>L_{Aeq}(15 min)</i>	<i>L_{A1}(1 min)</i>	
49	49	35	49	4 – di Rocco
47	47	35	49	5 – Keighran
44	44	35	49	6 – Swan
43	43	43	50	7 – Druitt
46	46	46	50	8 – May
45	45	45	52	9 – Jeans
40	40	40	52	11 – Jeans
43	43	43	52	18 – Jeans
44	44	44	52	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

This condition only has effect prior to recommencement of underground coal extraction at Mannering Colliery. At all other times, conditions 1 to 4 of Appendix 4B have effect in its place.

Noise Mitigation

- The Proponent shall prepare a report on potential noise mitigation measures for noisy equipment and activities undertaken on the site to the satisfaction of the [Secretary](#). This report must be:
 - prepared by a suitably qualified acoustic expert;
 - submitted to the [Secretary](#) by the end of September 2008; and
 - accompanied by an action plan for the implementation of any reasonable and feasible recommendations of the report.

Noise Monitoring

- The Proponent shall prepare a Noise Monitoring Program for the project to the satisfaction of the [Secretary](#). This program must:
 - be submitted to the [Secretary](#) by the end of September 2008;
 - be revised in consultation with the EPA and be submitted to the [Secretary](#) by the end of April 2016; and
 - include the use of [continuous and](#) attended noise monitoring measures to monitor the performance of the project.

The Proponent shall implement the approved Noise Monitoring Program as approved from time to time by the [Secretary](#).

SUBSIDENCE

- The Proponent shall limit its coal extraction methods on the site to first workings only, and shall not undertake second workings.

5. Deleted.

SOIL AND WATER

Discharge

6. The Proponent shall only discharge water from the site as expressly provided for by its EPL.
7. The Proponent shall investigate, assess and report on the ecological interactions of minewater discharged from the site with the aquatic ecology of the unnamed creek and wetlands (and associated vegetation) between the minewater discharge point/s and Lake Macquarie. This report must:
 - (a) be prepared in consultation with EPA by suitably qualified expert/s whose appointment/s have been approved by the Secretary;
 - (b) be submitted to the Secretary by the end of March 2009; and
 - (c) assess the probable alterations in the local ecology attributable to previous and proposed minewater discharges and any future cessation of minewater discharge flows.

Water Management Plan

8. The Proponent shall prepare a Water Management Plan for the project to the satisfaction of the Secretary. This plan must:
 - (a) be prepared in consultation with DPI Water by suitably qualified expert/s whose appointment/s have been approved by the Secretary;
 - (b) be submitted to the Secretary by the end of March 2009; and
 - (c) include a:
 - Site Water Balance;
 - Erosion and Sediment Control Plan;
 - Surface Water Monitoring Plan; and
 - Groundwater Monitoring Program.

The Proponent shall implement the approved management plan as approved from time to time by the Secretary.

Site Water Balance

9. The Site Water Balance must:
 - (a) include details of:
 - sources and security of water supply;
 - water use on site;
 - water management on site; and
 - (b) investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply.

Erosion and Sediment Control

10. The Erosion and Sediment Control Plan must:
 - (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction* (Landcom 2004, or its latest version);
 - (b) identify activities that could cause soil erosion and generate sediment;
 - (c) describe measures to minimise soil erosion and the potential for transport of sediment from the site;
 - (d) describe the location, function, and capacity of erosion and sediment control structures; and
 - (e) describe what measures would be implemented to monitor and maintain the structures over time.

Surface Water Monitoring Program

11. The Surface Water Monitoring Plan must include:
 - (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project;
 - (b) surface water impact assessment criteria;
 - (c) a program to monitor the impact of the project on surface water flows and quality; and
 - (d) procedures for reporting the results of this monitoring.

Groundwater Monitoring Program

12. The Groundwater Monitoring Program must include:
- detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality;
 - groundwater impact assessment criteria;
 - a program to monitor the impact of the project on groundwater levels, yield and quality; and
 - procedures for reporting the results of this monitoring.

REHABILITATION

13. The Proponent shall rehabilitate the site to the satisfaction of the Secretary and DRE. Rehabilitation must be substantially consistent with the Rehabilitation Objectives described in the EA, the Statement of Commitments and the following objectives in Table 2 below.

Table 2: Rehabilitation Objectives

Feature	Objective
Mine site (as a whole of the disturbed land and water)	Safe, stable and non-polluting, fit for the purpose of the intended post-mining land use(s).
Rehabilitation materials	<ul style="list-style-type: none"> Materials (including topsoils, substrates and seeds of the disturbed area) are recovered, appropriately managed and used effectively as resources in the rehabilitation.
Surface Infrastructure	To be decommissioned and removed, unless the DRE agrees otherwise.
Portals and ventilation shafts	To be decommissioned and made safe and stable.
Other land affected by the development	Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of: <ul style="list-style-type: none"> local native plant species (unless the DRE agrees otherwise); and a landform consistent with the surrounding environment.
Built features damaged by mining operations	Repair to pre-mining condition or equivalent unless: <ul style="list-style-type: none"> the owner agrees otherwise; or the damage is fully restored, repaired or compensated under the <i>Mine Subsidence Compensation Act 1961</i>.
Community	Ensure public safety.

- 13A. The Proponent shall carry out all surface disturbing activities in a manner that, as far as practicable, minimises potential for dust emissions and shall carry out rehabilitation of disturbed areas progressively, as soon as reasonably practicable, to the satisfaction of the Secretary and DRE.

Land Management Plan

14. The Proponent shall prepare a detailed Land Management Plan for the site to the satisfaction of the Secretary and DRE. This plan must:
- be submitted to the Secretary by the end of September 2008;
 - be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Secretary;
 - be prepared in consultation with DRE, OEH and affected councils; and
 - include measures to:
 - minimise visual impacts;
 - control weeds, feral pests and access; and
 - manage bushfires; and
 - provide details of who is responsible for monitoring, reviewing and implementing the plan.

Prior to the end of April 2016, the Proponent shall revise the Land Management Plan to incorporate the measures required to implement its commitments described in new row 2 of the Terrestrial Ecology section of its Statement of Commitments, and submit it to the Secretary for approval.

The Proponent shall implement the approved management plan as approved from time to time by the Secretary.

- 14A. The Proponent shall implement its preferred option of the three options set out in new row 2 of the Terrestrial Ecology section of its Statement of Commitments by 1 December 2016, following consultation with OEH and to the satisfaction of the Secretary.

Rehabilitation Plan

15. The Proponent shall prepare a Rehabilitation Plan for the site to the satisfaction of the DRE. This plan must:
- be submitted within 3 months of approval of Mod 2 for approval by DRE prior to carrying out any disturbing activities of the development, unless otherwise agreed by the Secretary;
 - be prepared in accordance with DRE guidelines and in consultation with the Department, OEH, EPA, DPI Water, WSC and LMCC and the mine's CCC;
 - incorporate and be consistent with the rehabilitation objectives in the EA, Statement of Commitments and Table 2 above;
 - integrate and build on, to the maximum extent practicable, the other management plans required under this approval; and
 - address all aspects of mine closure and rehabilitation, including post-mining land use domains, rehabilitation objectives, completion criteria and rehabilitation monitoring and management.

The Proponent shall implement the approved management plan as approved from time to time by the Secretary.

Note: The approved Mining Operations Plan (which will become the REMP once the Mining Act Amendments have commenced) required as a condition of the Mining Lease(s) issued in relation to this project, will satisfy the requirements of this condition for a Rehabilitation Plan.

AIR QUALITY

Impact Assessment Criteria

16. The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Table 3 at any residence on privately-owned land.

Table 3: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Monitoring

17. The Proponent shall prepare an Air Quality Monitoring Program for the project to the satisfaction of the Secretary. This program must:
- be submitted to the Secretary by the end of September 2008; and
 - use dust deposition gauges to monitor the performance of the project.

The Proponent shall implement the approved monitoring program as approved from time to time by the Secretary.

HERITAGE

Heritage Management Plan

18. The Proponent shall prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This Plan must:
- be prepared in consultation with any relevant Aboriginal stakeholders;
 - be submitted, prior to 31 March 2013, for approval to the Secretary;
 - include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site;
 - detail the responsibilities of all stakeholders; and

- (e) include programs/procedures and management measures for:
- dealing with previously unidentified Aboriginal objects (excluding human remains), including any need to halt works in the vicinity, assessment of significance, determination of appropriate mitigation measures (by a qualified archaeologist in consultation with Aboriginal stakeholders), re-commencement of works, notifying OEH, and registering the new site(s) in the OEH AHIMS register;
 - dealing with any human remains which may be discovered, including halting of works in the vicinity; notifying NSW Police, OEH, the Department and Aboriginal stakeholders; and not re-commencing any works in the vicinity unless authorised;
 - heritage induction for construction personnel (including procedures for keeping records of inductions);
 - ongoing Aboriginal consultation and involvement (including procedures for keeping records of this);
 - appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site; and
 - dealing with previously unidentified non-Aboriginal heritage items which may be discovered during the project.

The Proponent shall implement the approved management plan as approved from time to time by the Secretary.

VISUAL

19. The Proponent shall:
- (a) ensure no outdoor lights shine above the horizontal;
 - (b) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*;
 - (c) take all practicable measures to mitigate off-site lighting impacts from the project; and
 - (d) minimise the visual impacts of the project, to the satisfaction of the Secretary.

TRANSPORT

Monitoring of Coal Transport

20. The Proponent shall keep records of the amount of coal transported from the site each year, and include these records in the **Annual Review**.

Ruttleys Road Intersection

21. The Proponent shall:
- (a) complete a road safety audit of the intersection of Ruttleys Road and Mannering Colliery Access Road by the end of March 2009;
 - (b) provide copies of this audit to RMS, WSC and the Secretary within one month of its completion; and
 - (c) within 3 months of approval of Mod 2, install additional sections of guardrail (safety barrier) on the eastern side of Ruttleys Road between the Mannering Colliery access road and existing sections of guardrail further to the north;
 - (d) be responsible for the maintenance and upkeep of the pavement of the Ruttleys Road/Mannering Colliery access road intersection whilst the site is used for mining purposes or until the intersection is upgraded to a Type CHR intersection treatment; and
 - (e) prior to the number of workers (direct employees and contractors) at Mannering Colliery exceeding 70, the Proponent shall upgrade the Ruttleys Road/Mannering Colliery access road intersection to a Type CHR treatment in accordance with Construction Certificate SCC/69/2011 issued by WSC, or later updated versions of this Construction Certificate; to the satisfaction of the Secretary.

GREENHOUSE AND ENERGY EFFICIENCY

22. The Proponent shall prepare a Greenhouse and Energy Efficiency Plan for the project to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with EPA and generally in accordance with the *Guidelines for Energy Savings Action Plans* (DEUS 2005, or its latest version);
 - (b) be submitted to the Secretary for approval by the end of September 2008;

- (c) include a program to monitor greenhouse gas emissions and energy use generated by the project;
- (d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the site; and
- (e) describe how the performance of these measures would be monitored over time.

The Proponent shall implement the approved management plan as approved from time to time by the Secretary.

WASTE

23. The Proponent shall:
- (a) monitor the amount of waste generated by the project;
 - (b) investigate ways to minimise waste generated by the project;
 - (c) implement reasonable and feasible measures to minimise waste generated by the project; and
 - (d) report on waste management and minimisation in the **Annual Review**, to the satisfaction of the Secretary.

SCHEDULE 4 ADDITIONAL PROCEDURES

INDEPENDENT REVIEW

1. If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the [Secretary](#) in writing for an independent review of the impacts of the project on his/her land.

If the [Secretary](#) is satisfied that an independent review is warranted, the Proponent shall within 2 months of the [Secretary's](#) decision:

- (a) consult with the landowner to determine his/her concerns;
 - (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the [Secretary](#), to conduct monitoring on the land, to:
 - determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and
 - identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
 - give the [Secretary](#) and landowner a copy of the independent review.
2. If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the [Secretary](#).
 3. If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent shall:
 - (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance.

If the additional monitoring referred to above subsequently determines that the project is complying with the relevant criteria in schedule 3, or the Proponent and landowner enter into a negotiated agreement to allow these exceedances, then the Proponent may discontinue the independent review with the approval of the [Secretary](#).

4. If the independent review determines that the relevant criteria in schedule 3 are being exceeded, but that more than one project is responsible for this non-compliance, then the Proponent shall, together with the relevant project/s:
 - (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the relevant criteria are complied with; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner and other relevant projects to allow exceedances of the criteria in schedule 3,to the satisfaction of the [Secretary](#).

If the additional monitoring referred to above subsequently determines that the projects are complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the [Secretary](#).

5. If the landowner disputes the results of the independent review, either the Proponent or the landowner may refer the matter to the [Secretary](#) for resolution.

If the matter cannot be resolved within 21 days, the [Secretary](#) shall refer the matter to an Independent Dispute Resolution Process.

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Proponent shall revise an Environmental Management Strategy for the project. This strategy must:
 - (a) be submitted for approval to the **Secretary** prior to 30 June 2013;
 - (b) provide the strategic framework for the environmental management of the project;
 - (c) identify the statutory approvals that apply to the project;
 - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
 - (e) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the project;
 - respond to any non-compliance; and
 - respond to emergencies; and
 - (f) include:
 - copies of any strategies, plans and programs approved under the conditions of this approval; and
 - a clear plan depicting all the monitoring required to be carried out under the conditions of this approval.

The Proponent shall implement the approved management strategy as approved from time to time by the **Secretary**.

Management Plan Requirements

2. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
 - (a) detailed baseline data;
 - (b) a description of:
 - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - any relevant limits or performance measures/criteria;
 - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
 - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - (d) a program to monitor and report on the:
 - impacts and environmental performance of the project;
 - effectiveness of any management measures (see (c) above);
 - (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
 - (f) a protocol for managing and reporting any:
 - incidents;
 - complaints;
 - non-compliances with statutory requirements; and
 - exceedances of the impact assessment criteria and/or performance criteria; and
 - (g) a protocol for periodic review of the plan.

*Note: The **Secretary** may waive some of these requirements if they are unnecessary for particular management plans.*

Annual Review

3. By the end of February 2013, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the **Secretary**. This review must:
 - (a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year;

- (b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the:
 - the relevant statutory requirements, limits or performance measures/criteria;
 - requirements of any plan or program required under this approval;
 - the monitoring results of previous years; and
 - the relevant predictions in the documents listed in condition 2 of Schedule 2;
- (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;
- (d) identify any trends in the monitoring data over the life of the project;
- (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
- (f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.

Revision of Strategies, Plans and Programs

- 4. Within 3 months of:
 - (a) the submission of an annual review under Condition 3 above;
 - (b) the submission of an incident report under Condition 6 below;
 - (c) the submission of an audit under Condition 8 below; or
 - (d) any modification to the conditions of this approval (unless the conditions require otherwise),
 the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.

Community Consultative Committee

- 5. The Proponent shall continue to operate a Community Consultative Committee (CCC) for the project in accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version), and to the satisfaction of the Secretary.

Notes:

- *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and*
- *In accordance with the guideline, the Committee should be comprised of an independent chair and appropriate representation from the Proponent, Councils and the local community.*

REPORTING

Incident Reporting

- 6. The Proponent shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incidents associated with the project, the Proponent shall notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

- 7. The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.

INDEPENDENT ENVIRONMENTAL AUDIT

- 8. By the end of March 2013 and every three years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
 - (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
 - (b) include consultation with the relevant agencies;

- (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals); and
- (d) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under the abovementioned approvals.

Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary.

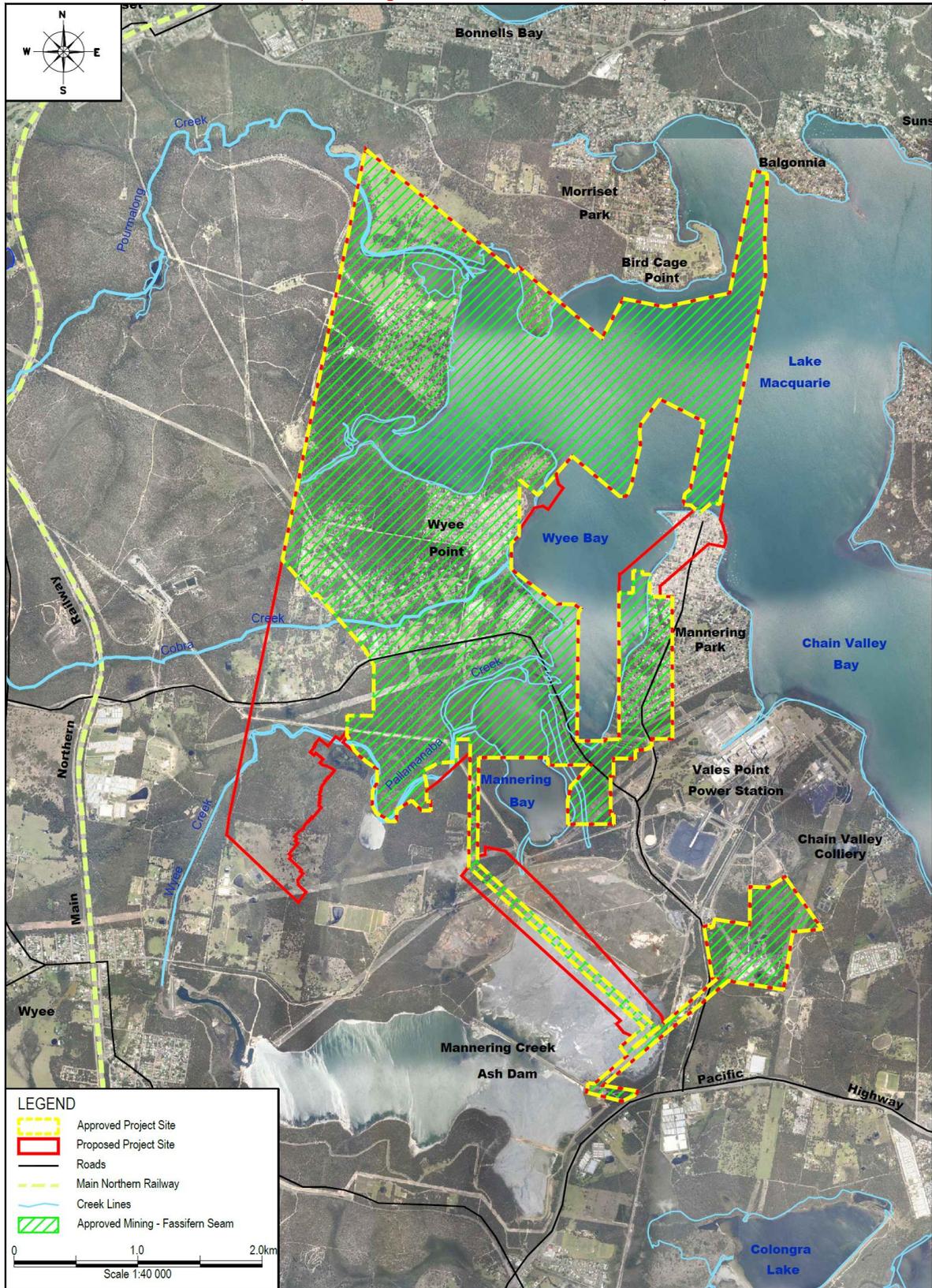
- 9. Within 6 weeks of the completion of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

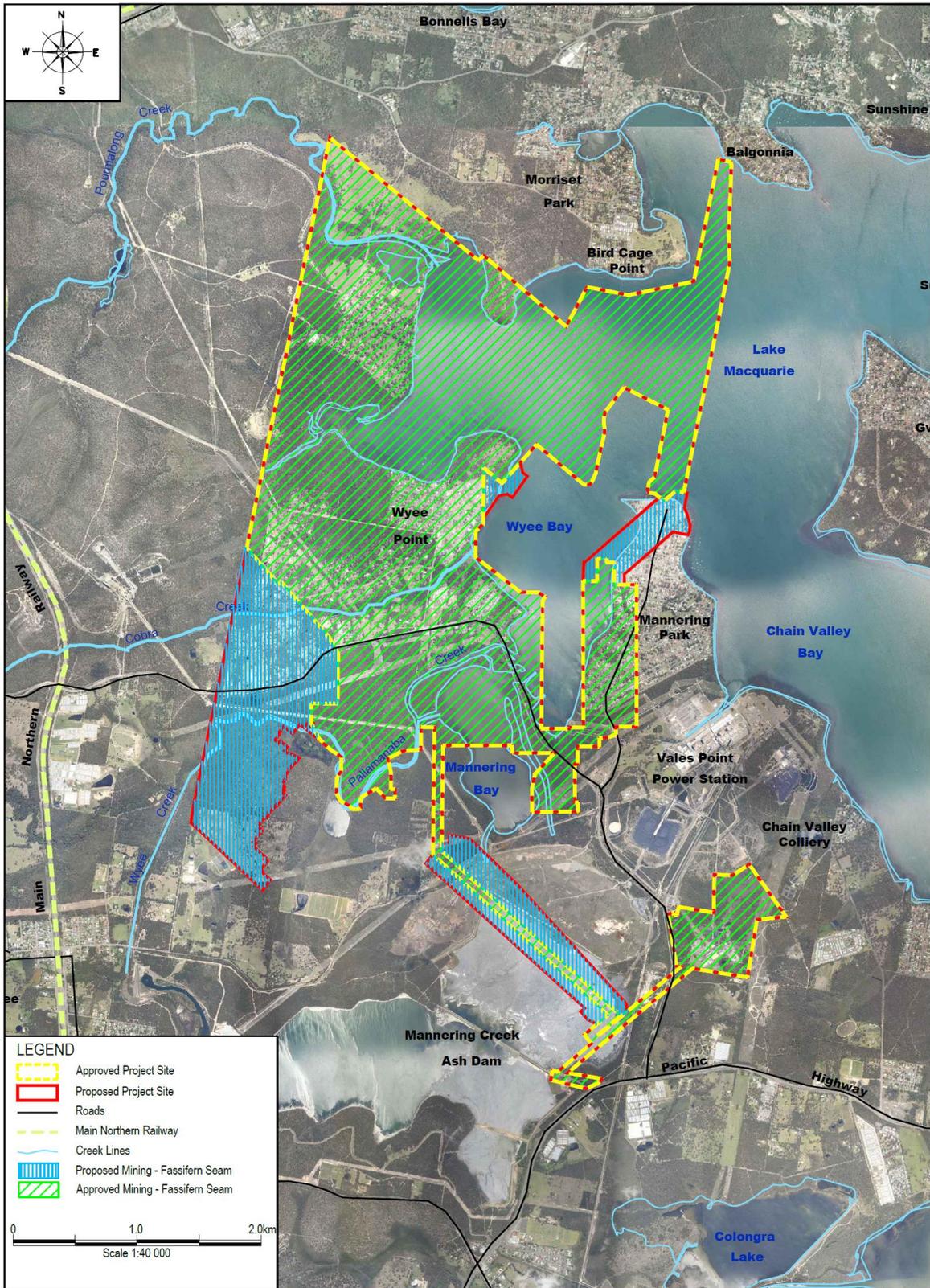
- 10. The Proponent shall:
 - (a) make copies of the following publicly available on its website:
 - the documents referred to in condition 2 of Schedule 2;
 - all relevant statutory approvals for the project;
 - all approved strategies, plans and programs required under the conditions of this approval;
 - a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval;
 - a complaints register, which is to be updated on a monthly basis;
 - minutes of CCC meetings;
 - the annual reviews required under this approval;
 - any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; and
 - any other matter required by the Secretary; and
 - (b) keep this information up-to-date, to the satisfaction of the Secretary.

APPENDIX 1: PROJECT LAND

Manning Colliery – Land to which the Project Approval applies
(shown edged in solid and dashed red lines)



APPENDIX 2: PROJECT MAPS



To be printed A4



Mannering Colliery - Extension of Mine Project
Proposed Mine Plan (Revised July 2012)

Figure 1: Revised Mine Plan for Fassifern Seam

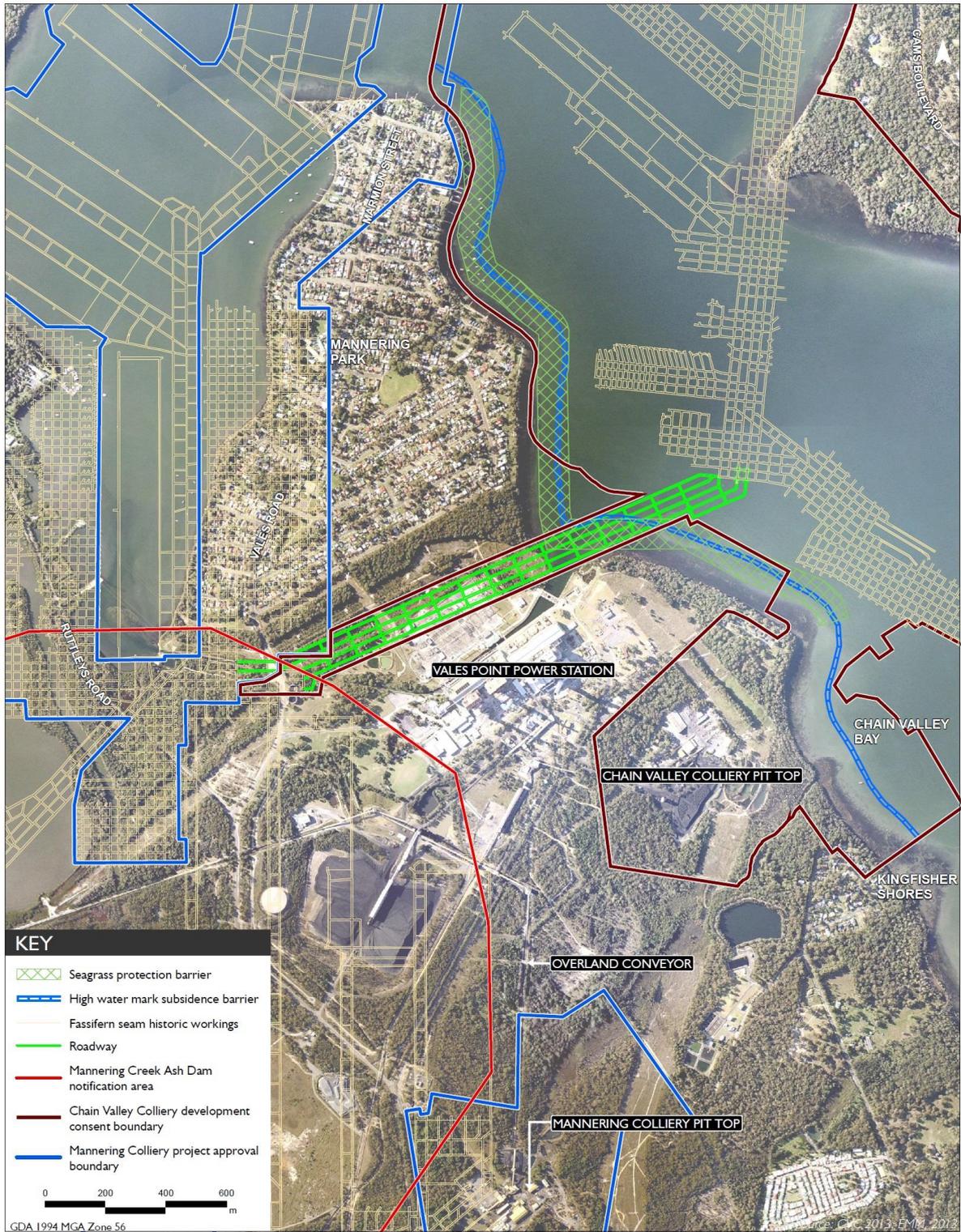


Figure 2: Location of the underground linkage to Chain Valley Colliery

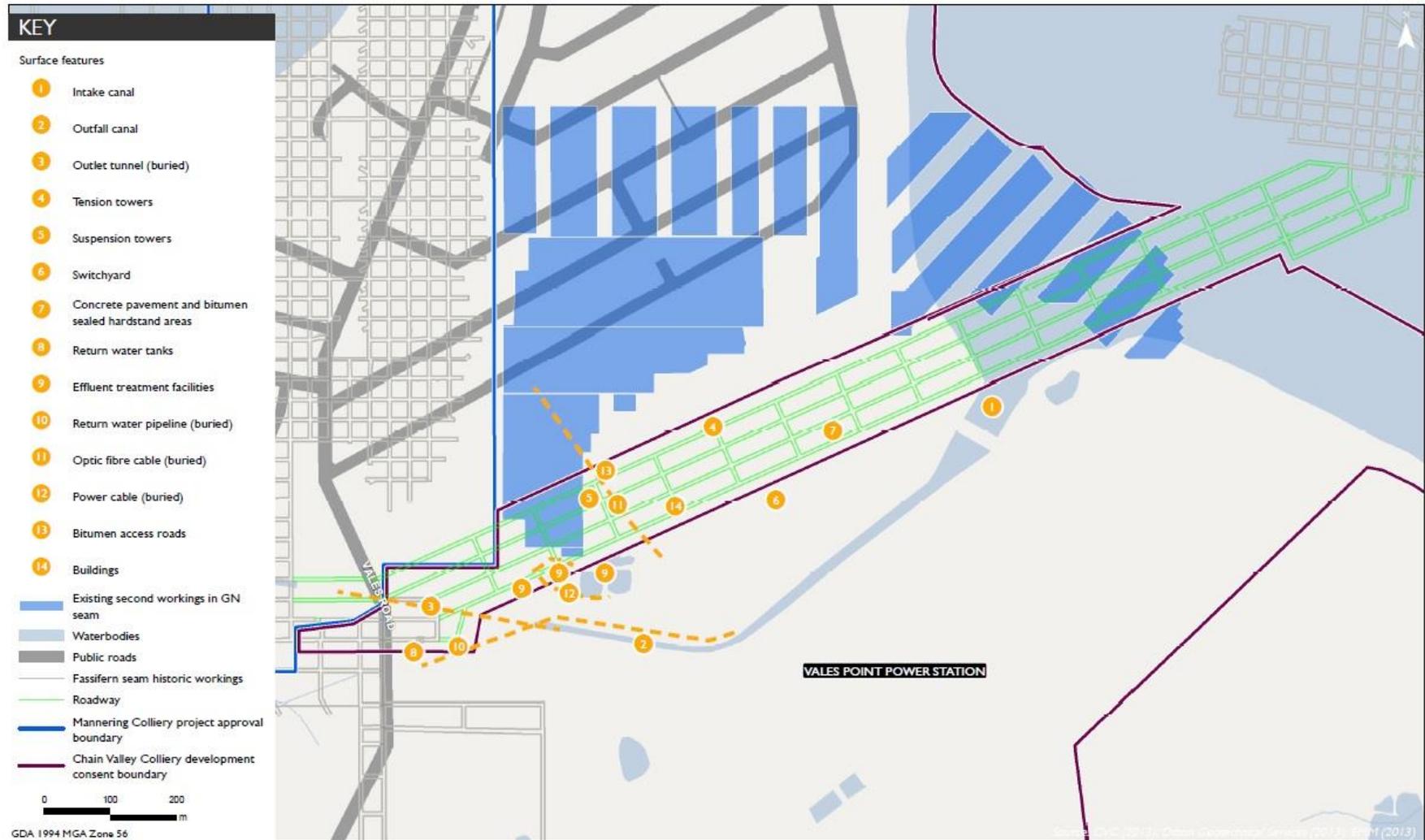


Figure 3: Location of the underground link and surface infrastructure



Figure 4. Location of asset protection zones

APPENDIX 3: STATEMENT OF COMMITMENTS

Revised Statement of Commitments (December 2015)

Revised Statement of Commitments

Subsidence
Mining to be limited to the approved bord-and-pillar method where coal recovery is limited to first workings only.
Monitoring of the existing subsidence monitoring marks will continue and additional subsidence monitoring marks will be installed above the proposed mining areas to measure the subsidence and verify that subsidence is within the predicted levels.
If it is identified that subsidence levels are greater than the predicted maximum of 20 millimetres, the DTIRIS Minerals Division will be consulted to determine appropriate management and mitigation actions.
Water Management
LakeCoal will undertake a review of the existing site water management system in consultation with the EPA.
The water level within the sediment pond system will be monitored and kept at a relatively low operating level, such that the ponds can provide a detention function in a significant rainfall event.
A visual assessment of the unnamed creek will be undertaken every 6 months to monitor stability and erosion.
Where practicable, underground water levels will be recorded to monitor changes in the level of water stored in underground depressions and to verify that the rate of extraction is sufficient.
The extraction of underground water from the mine workings will be undertaken in accordance with the Bore License (20BL172016) issued under the Water Act 1912.
To enable on-going assessment of the quality of water discharged, the existing monitoring program will be maintained for the life of the Project with the following enhancements: <ul style="list-style-type: none"> • An assessment of the surrounding catchments summarising land uses and other background information to characterise an appropriate water quality; and • Annual monitoring of heavy metals at the monitoring location identified as 'Downstream'.
Terrestrial Ecology
The following measures to manage the impacts of vegetation clearing/disturbance associated with the APZ requirements will be ongoing: <ul style="list-style-type: none"> • weed management; • large trees will be retained as a priority where possible; • felled trees will be relocated adjacent to the APZs to create additional fauna habitat; • any injured fauna will be taken to the nearest veterinary hospital for treatment before release; and • an ecologist will complete a pre-disturbance survey to determine important components of the Swamp Oak Floodplain Forest EEC for retention in the APZs.

<p>LakeCoal will investigate the following options for biodiversity offsets:</p> <ul style="list-style-type: none"> • provide \$10,000 of funding, which is equivalent to the biodiversity being lost (ie 5 credits x \$2,000 per credit) to existing environmental programs at the site which benefits the Swamp Oak Floodplain Forest EEC; or • consult with OEH to identify a suitable conservation program and provide \$10,000 of funding; or • purchase and retire 5 credits on the Biobanking register. <p>These options will be considered by the proponent in consultation with OEH and will reflect OEH's 'Approved BioBanking Assessment Methodology 2014'. The option that achieves the greatest benefit to the biodiversity impacted by the proposed modification will be selected.</p>
<p>If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to terrestrial ecology.</p>
<p>Aquatic Ecology</p>
<p>If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to aquatic ecology.</p>
<p>Aboriginal Heritage</p>
<p>Activities will continue to be managed in accordance with the Colliery's Aboriginal Cultural Heritage Management plan (ACHMP). Given the Colliery's current ACHMP is integrated with other Centennial sites, a separate ACHMP will be developed.</p>
<p>If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to cultural heritage in consultation with OEH.</p>
<p>All relevant Centennial Mannerling staff and contractors will be made aware of their statutory obligations for Aboriginal cultural heritage under the NP&W Act as part of the existing mine induction process.</p>
<p>An Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed and implemented for the identified Aboriginal heritage items within the Project Site in consultation with the relevant Aboriginal stakeholders. If additional sites are identified they will be assessed for cultural significance and be incorporated into the ACHMP.</p>
<p>In the unlikely event that skeletal remains are identified, the NSW Police Coroner will be contacted to determine if the material is of Aboriginal origin. If determined to be Aboriginal, contact will be made with the OEH, a suitably qualified archaeologist and representatives of the relevant Aboriginal stakeholder groups to determine an action plan for the management of the skeletal remains and formulate management recommendations if required.</p>
<p>European Heritage</p>
<p>If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to non-indigenous heritage.</p>
<p>All relevant Centennial Mannerling staff and contractors will be made aware of their statutory obligations for European cultural heritage under the Heritage Act 1977 as part of the existing mine induction process.</p>
<p>If, during the course of development works, significant non-indigenous cultural heritage material is uncovered within the Project Site, the Heritage Branch of OEH will be notified and any required monitoring or management strategies instigated.</p>

Air Quality
A review of dust management strategies and mitigation measures will be undertaken against the best practice dust mitigation measures identified in the NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining (Katestone Environmental Pty Ltd 2011), which was prepared for OEH. The review will identify any additional dust management practices that are reasonable and feasible for implementation at Mannering Colliery and will be undertaken generally in accordance with any requirements of a pollution reduction program that may be imposed by the OEH on the Mannering Colliery EPL in the future.
Traffic
Centennial Mannering will upgrade the Rutleys Road - Mannering Colliery Access Road intersection to improve safety and operational efficiency.
Socio-Economic
Centennial Mannering is committed to on-going community consultation and will continue to engage the community for the purposes of providing information relating to on-going operations and the Extension of Mine Project.
Rehabilitation
Rehabilitation will be undertaken in accordance with the Colliery's mining operations plan, which will be updated to include any changes as a result of the proposed modification.
The Mining Operations Plan will be amended to reflect the proposed modification and will include integrated rehabilitation and environmental management.
Monitoring
The Environmental Monitoring Program will be reviewed and updated, as required, to incorporate the commitments made in the Environmental Assessment and any additional consent conditions.

APPENDIX 4: NOISE ASSESSMENT LOCATIONS

Private Property Surrounding Mannering (Location of ID numbers are shown on following figure)

ID	Owner	ID	Owner	ID	Owner
1	Energy Australia	27	H Gleeson	53	H & J Beukers
2	Alcevski Investments	28	C Stead & M Garner	54	A Taylor-Stewart
3	Eaton & Sons Pty Ltd	29	A O'Keefe	55	G Kettles
4	O & J di Rocco	30	P Groen	56	R & E Brokenshire
5	A & M Keighran	31	M Parkin	57	B & S Fowler
6	Swan HydroPonics Pty Ltd	32	I Maclaren	58	B Sneddon
7	R Druitt	33	P Kranz	59	J & P Hanson
8	D & M May	34	T & V Wilding	60	L Crook & L Kelly
9	L F Jeans	35	G Williams	61	P & G Becker
10	L & J Jeans	36	P & C Byrnes	62	B Clover & R Alaban
11	L & J Jeans	37	G Holmes	63	T & O Becker
12	L & J Jeans	38	R & B Croucher	64	R Harris & D Kingsford
13	L & J Jeans	39	R & C Calvert	65	N Singleton
14	L & J Jeans	40	T & D Stolz	66	M Smith
15	L & J Jeans	41	A & S Whitbread	67	D & B Johnston
16	L & J Jeans	42	B Kelly	68	R & B Amos
17	L & J Jeans	43	L Preston	69	H & C Strand
18	L & J Jeans	44	G Bain	70	PhystonPty Ltd
19	L & J Jeans	45	C Clarke	71	R Howland
20	E & K Knight	46	W Carpenter	72	R & D Shannon
21	Jonita Homes Pty Ltd	47	S Mackay	73	P & B Williams
22	W & D Buchmasser	48	R Allen	74	P Batten
23	P McKee	49	S Jopp	75	G & A Dyer
24	J Farrell	50	P & M Davie	76	S Harrison & N Robertson
25	P Kretchmer & E Castle	51	D Olsen		
26	A Mearns	52	D Poulson & K Toope		

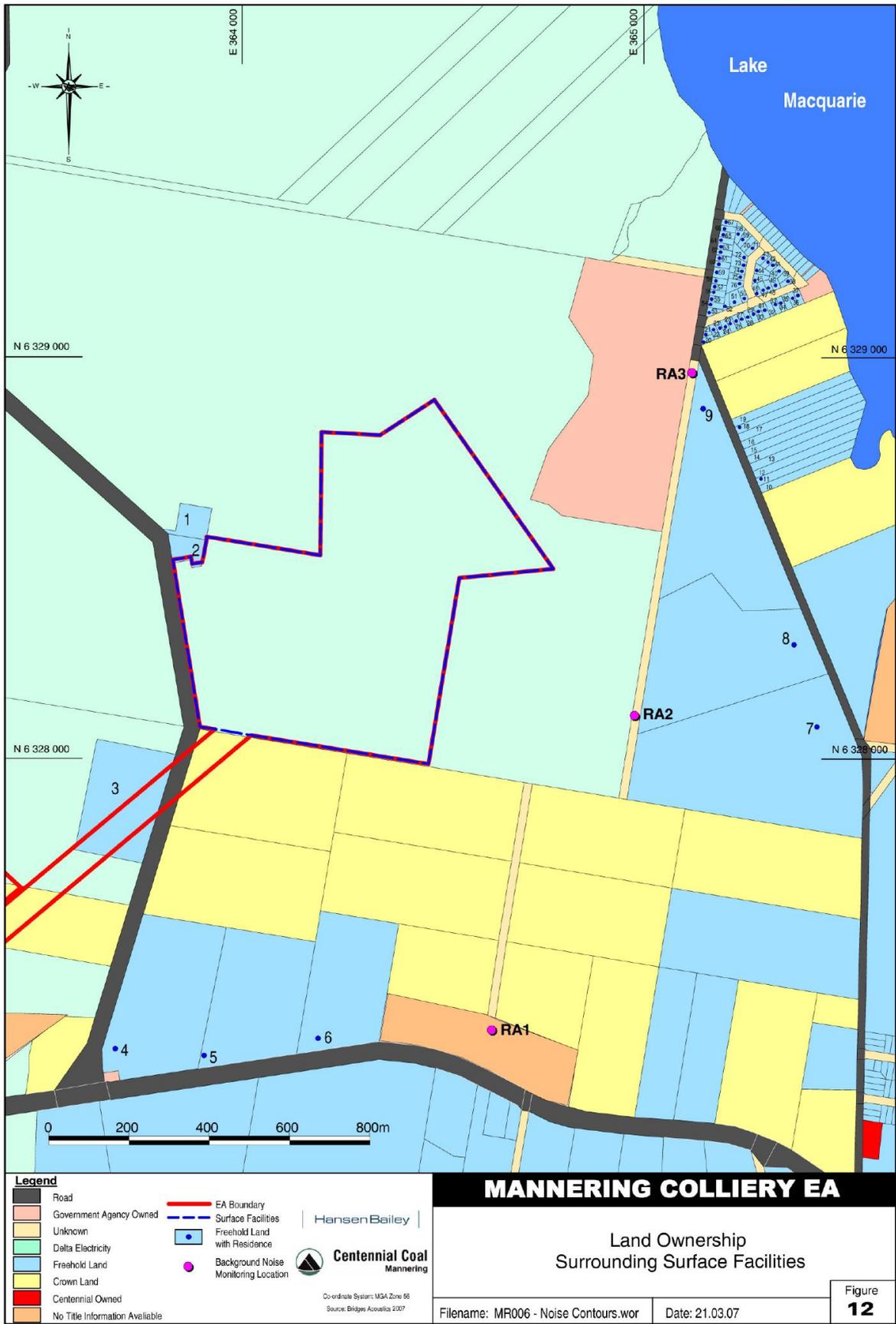


Figure 3: Land Ownership (noise assessment locations)

APPENDIX 4A: NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Tables 1 and 2 in Appendix 4B are to apply under all meteorological conditions except the following:
 - (a) wind speeds greater than 3m/s at 10 metres above ground level;
 - (b) stability category F temperature inversion conditions and wind speeds greater than 2 m/s at 10 m above ground level; or
 - (c) stability category G temperature inversion conditions.

Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station located on the site.

Compliance Monitoring

3. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.
4. This monitoring must be carried out at least once a month (at least two weeks apart) for the first 12 months following recommencement of underground coal extraction, and then quarterly thereafter, unless the Secretary directs otherwise.

Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the project.

5. Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (as amended from time to time), in particular the requirements relating to:
 - (a) monitoring locations for the collection of representative noise data;
 - (b) meteorological conditions during which collection of noise data is not appropriate;
 - (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
 - (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

APPENDIX 4B: ALTERNATE NOISE CONDITIONS

- From the recommencement of underground coal extraction at Mannering Colliery until 18 months thereafter, the Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land.

Table 1: Noise limits dB(A)

Day $L_{Aeq}(15\ min)$	Evening $L_{Aeq}(15\ min)$	Night		Location
		$L_{Aeq}(15\ min)$	$L_{A1}(1\ min)$	
40	40	40	49	4 – di Rocco
43	43	41	49	5 – Keighran
42	42	41	49	6 – Swan
39	39	39	47	7 – Druitt
46	46	46	47	8 – May
41	41	41	51	9 – Jeans
39	39	39	49	11 – Jeans
39	39	39	51	18 – Jeans
40	40	40	51	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

- Following the expiry of the 18 month period referred to in condition 1 above, the Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land.

Table 2: Noise limits dB(A)

Day $L_{Aeq}(15\ min)$	Evening $L_{Aeq}(15\ min)$	Night		Location
		$L_{Aeq}(15\ min)$	$L_{A1}(1\ min)$	
40	40	40	49	4 – di Rocco
41	41	41	49	5 – Keighran
41	41	41	49	6 – Swan
39	39	39	47	7 – Druitt
45	45	43	47	8 – May
41	41	41	51	9 – Jeans
39	39	39	49	11 – Jeans
39	39	39	51	18 – Jeans
40	40	40	51	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 2 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out

the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

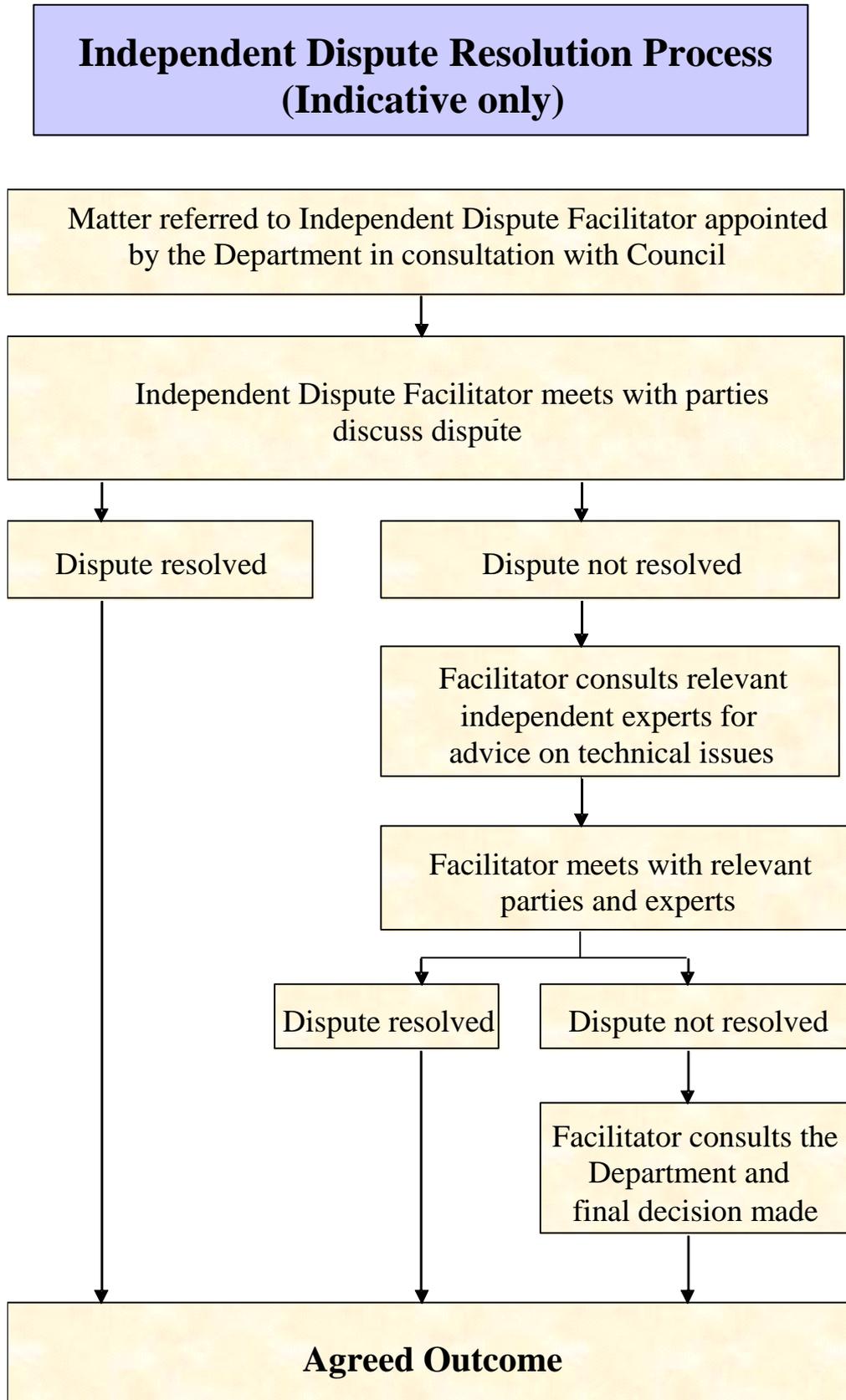
3. The Proponent shall prepare a report on all noise mitigation measures required to achieve the noise limits in Table 2 to the satisfaction of the Secretary. This report must:
 - (a) be prepared by a suitably qualified and experienced acoustic consultant whose appointment has been approved by the Secretary;
 - (b) be prepared in consultation with EPA, and submitted to the Department for approval within 6 months after recommencement of underground coal extraction; and
 - (c) include an action plan for the implementation of any reasonable and feasible recommendations of the report.

The Proponent shall implement the noise mitigation measures prior to the expiry of the 18 month period referred to in condition 1 above.

4. The Proponent shall prepare a Noise Compliance Report for the project to the satisfaction of the Secretary. The report must:
 - (a) be prepared by a suitably qualified acoustic consultant, whose appointment has been approved by the Secretary;
 - (b) be prepared in consultation with EPA, and be submitted for approval within 6 months of the expiry of the 18 month period referred to in condition 1 above; and
 - (c) investigate and evaluate the effectiveness of the noise mitigation measures required under condition 3 and compliance with the noise limits in Table 2.

APPENDIX 5:

INDEPENDENT DISPUTE RESOLUTION



Environment Protection Licence



Licence - 191

Licence Details

Number:	191
Anniversary Date:	01-January

Licensee

LAKECOAL PTY LTD
 PO BOX 7115
 MANNERING PARK NSW 2259

Premises

MANNERING COLLIERY
 RUTLEYS ROAD
 DOYALSON NSW 2262

Scheduled Activity

Coal Works
 Mining for Coal

Fee Based Activity

Scale

Coal works	0-2000000 T handled
Mining for coal	> 500000-2000000 T produced

Region

North - Hunter
 Ground Floor, NSW Govt Offices, 117 Bull Street
 NEWCASTLE WEST NSW 2302
 Phone: (02) 4908 6800
 Fax: (02) 4908 6810
 PO Box 488G NEWCASTLE
 NSW 2300

Environment Protection Licence

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

LAKECOAL PTY LTD
PO BOX 7115
MANNERING PARK NSW 2259

subject to the conditions which follow.

Environment Protection Licence



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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Coal Works	Coal works	0 - 2000000 T handled
Mining for Coal	Mining for coal	> 500000 - 2000000 T produced

A1.2 The licensee must not:

- (a) Produce by mining activities more than 1.1 million tonnes of coal within any 12 month period.
- (b) Undertake coal works handling more than 1.1 million tonnes within any 12 month period, where ROM coal handled on the premises may be made up of coal produced by mining activities from both the Mannering premises as defined in this licence or Chain Valley premises as defined in Environment Protection Licence number 1770.

Note: These limits on the scale of the fee based activities are based on project Approval 06_0311 granted under the *Environmental Planning and Assessment Act 1979* which limits extraction to 1.1 million tonnes of run of mine (ROM) coal per year and its modifications, the most recent of which is dated 27 November 2014.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
MANNERING COLLIERY
RUTLEYS ROAD
DOYALSON
NSW 2262
SURFACE PREMISES DESCRIBED BY PLAN OF PREMISES TITLED "MANNERING COLLIERY EPL PREMISES PLAN FIGURE 2 SURFACE EXTENTS, COMPLIANCE AND MONITORING LOCATIONS" DATED 21 JANUARY 2015 DOC14/370090-03 AND MINING FOR COAL IN THE FASSIFERN AND GREAT NORTHERN COAL SEAMS DESCRIBED BY THE PLAN OF THE PREMISES TITLED "MANNERING COLLIERY EPL PREMISES PLAN FIGURE 1 PROJECT EXTENTS" DATED 21 JANUARY 2015 DOC14/370090-03.

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A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
3	Dust monitoring		Dust deposition gauge identified as point 3 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03
4	Dust monitoring		Dust deposition gauge identified as point 4 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03
5	Dust monitoring		Dust deposition gauge identified as point 5 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03
6	Dust monitoring		Dust deposition gauge identified as point 6 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03
7	Dust monitoring		Dust deposition gauge identified as point 3 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

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P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Discharge from Final Treatment Pond (surface and groundwater) identified as point 1 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10

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pH	pH	6.5-8.5
Total suspended solids	milligrams per litre	50

L3 Volume and mass limits

- L3.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
- liquids discharged to water; or;
 - solids or liquids applied to the area;
- must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
1	kilolitres per day	4000

- L3.2 Exceedance of the volume limit for Point 1 is permitted only if the discharge from Point 1 occurs solely as a result of rainfall at the premises exceeding 10mm during the 24 hours immediately prior to the commencement of discharge

L4 Waste

- L4.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Waste	Any other waste received on the premises for storage, treatment, processing, sorting or disposal and which receipt is not a scheduled activity under Schedule 1 of the POEO Act, as in force from time to time.		
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource	As specified in each particular resource	N/A

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recovery exemption
under Clause 51A of the
Protection of the
Environment Operations
(Waste) Regulation
2014

- L4.2 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.
- L4.3 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence.

L5 Noise limits

Note: Noise limits are not specified as a condition of this licence. Noise limits are prescribed with the conditions of Project Approval 06_0311 granted under the *Environmental Planning and Assessment Act 1979*. Under the *Environmental Planning and Assessment Act 1979* the Department of Planning is the appropriate authority in respect of the administration and regulation of the Project Approval.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.
This includes:
- the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- must be maintained in a proper and efficient condition; and
 - must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.
- O3.2 Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.

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- O3.3 All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.
- O3.4 Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.
- O3.5 The tailgates of all haulage trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of materials.
- O3.6 Coal stockpiles must be maintained in a condition that will minimise the generation and emission of dust on the premises.

O4 Emergency response

- O4.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

O5 Other operating conditions

- O5.1 All above-ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.
- O5.2 The licensee must ensure that activities are conducted in an environmentally satisfactory manner. So as to minimise and prevent the pollution of air and water the licensee must:
 - (a) Ensure that vehicles or containers prior to leaving the premises are clean and sealed in a manner that will not cause materials or wastes used in conducting the activities at the premises to be tracked, thrown from, blown, fall, or cast from any vehicle or container onto a public road.
 - (b) The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

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M1.2 All records required to be kept by this licence must be:

- a) in a legible form, or in a form that can readily be reduced to a legible form;
- b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- a) the date(s) on which the sample was taken;
- b) the time(s) at which the sample was collected;
- c) the point at which the sample was taken; and
- d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 3,4,5,6,7

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Aluminium (total)	micrograms per litre	Monthly during discharge	Grab sample
Antimony	micrograms per litre	Monthly during discharge	Grab sample
Arsenic (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Arsenic (total)	micrograms per litre	Monthly during discharge	Grab sample
Barium	micrograms per litre	Monthly during discharge	Grab sample

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Beryllium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Beryllium (total)	micrograms per litre	Monthly during discharge	Grab sample
Boron	micrograms per litre	Monthly during discharge	Grab sample
Cadmium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Cadmium (total)	micrograms per litre	Monthly during discharge	Grab sample
Calcium	micrograms per litre	Monthly during discharge	Grab sample
Chromium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Chromium (total)	micrograms per litre	Monthly during discharge	Grab sample
Cobalt (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Cobalt (total)	micrograms per litre	Monthly during discharge	Grab sample
Conductivity	microsiemens per centimetre	Weekly during any discharge	Grab sample
Copper (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Copper (total)	micrograms per litre	Monthly during discharge	Grab sample
Iron	micrograms per litre	Monthly during discharge	Grab sample
Lead (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Lead (total)	micrograms per litre	Monthly during discharge	Grab sample
Lithium	micrograms per litre	Monthly during discharge	Grab sample
Magnesium	micrograms per litre	Monthly during discharge	Grab sample
Manganese (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Mercury (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Mercury (total)	micrograms per litre	Monthly during discharge	Grab sample
Molybdenum (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Molybdenum (total)	micrograms per litre	Monthly during discharge	Grab sample
Nickel (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Nickel (total)	micrograms per litre	Monthly during discharge	Grab sample
Nitrogen (ammonia)	micrograms per litre	Monthly during discharge	Grab sample
Oil and Grease	milligrams per litre	Weekly during any discharge	Grab sample

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pH	pH	Weekly during any discharge	Grab sample
Phosphorus	micrograms per litre	Monthly during discharge	Grab sample
Potassium	micrograms per litre	Monthly during discharge	Grab sample
Selenium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Selenium (total)	micrograms per litre	Monthly during discharge	Grab sample
Silica	micrograms per litre	Monthly during discharge	Grab sample
Silver (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Silver (total)	micrograms per litre	Monthly during discharge	Grab sample
Sulfur	micrograms per litre	Monthly during discharge	Grab sample
Tin	micrograms per litre	Monthly during discharge	Grab sample
Titanium	micrograms per litre	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Weekly during any discharge	Grab sample
Vanadium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Vanadium (total)	micrograms per litre	Monthly during discharge	Grab sample
Zinc (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Zinc (total)	micrograms per litre	Monthly during discharge	Grab sample

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a

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pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Weather monitoring

M4.1 For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns. **Point W1**

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	24 hour	AM-4
Wind direction	degrees	Continuous	1 hour	AM-2 and AM-4

M4.2 For the purpose of condition M4.1, Point W1 refers to a meteorological station established on the premises.

M4.3 The licensee may use the meteorological station established at Eraring Power Station provided the licensee has authority from Eraring Energy to access data from the Eraring Power Station at all times. However, if this station is not available at any time then condition M4.2 applies.

M4.4 The licensee must fully comply with condition M4 by 30 April 2011.

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:

- a) the date and time of the complaint;
- b) the method by which the complaint was made;
- c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- d) the nature of the complaint;
- e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

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M6 Telephone complaints line

- M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.
- M6.4 The licensee must nominate a representative of the company that is available all all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including a telephone number, must be current at all times.
Note: This condition does not apply until two (2) weeks after the date of issue of this licence.

M7 Requirement to monitor volume or mass

- M7.1 For each discharge point or utilisation area specified below, the licensee must monitor:
- the volume of liquids discharged to water or applied to the area;
 - the mass of solids applied to the area;
 - the mass of pollutants emitted to the air;
- at the frequency and using the method and units of measure, specified below.

POINT 1

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	In line instrumentation

6 Reporting Conditions

R1 Annual return documents

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
- a Statement of Compliance; and
 - a Monitoring and Complaints Summary.
- At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

- R1.3 Where this licence is transferred from the licensee to a new licensee:
- the transferring licensee must prepare an Annual Return for the period commencing on the first day of

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the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and

b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- a) the licence holder; or
- b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

- a) where this licence applies to premises, an event has occurred at the premises; or
 - b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
- and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

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- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
- a) the cause, time and duration of the event;
 - b) the type, volume and concentration of every pollutant discharged as a result of the event;
 - c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
 - d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
 - e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
 - f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
 - g) any other relevant matters.
- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

Receival of ROM Coal

- R4.1 The licensee must notify the Manager Hunter Region hunter.region@epa.nsw.gov.au within 24 hours of the receival of ROM Coal at the Coal Handling and Preparation Plant that the plant has been re-commissioned.

7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

- G2.1 **Completed Pollution Studies and Reduction Programs (PRPs)**

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PRP	Description	Completed Date
PRP 1 - Assessment of Potential Impacts of Metals	The licensee must conduct an assessment of metals detected in wastewater discharges from the mine in accordance with the ANZECC water quality guidelines.. To obtain a greater understanding of the type and concentration of metals discharged in mine water and entering the receiving waters. To limit the concentration of metals discharged in mine water within ANZECC guidelines.(@)	26-June-2013
Coal Mine Particulate Matter Control Best Practice	Requires licensee to conduct a site specific Best Management Practice (BMP) determination to identify ways to reduce particle emissions.	19-September-2012

8 Pollution Studies and Reduction Programs

U1 Coal Handling and Preparation Plant Commissioning Water Quality Monitoring Study

U1.1 The licensee must undertake a Coal Handling and Preparation Plant water quality monitoring commissioning study for 3 months upon re-commissioning of receipt of ROM Coal on the premises and normal coal handling procedures. The water quality monitoring study:

- a) must be carried out by an appropriately qualified and experienced person;
- b) include daily monitoring during discharge from monitoring point 1 of turbidity (NTU), total suspended solids (mg/L), electrical conductivity (us/cm), pH and oil and grease (mg/L); and
- c) be carried out in accordance with the EPA's Approved Methods.

A report must be prepared by an appropriately qualified and experienced person and include:

- d) comparison of results against limits in condition L2.4;
- e) include a table in the appendix of the report of all the data;
- f) include an analysis of the monthly results from metals monitoring as required in condition M2.3 and include mean daily discharge results as required in Condition M7.1.

The report must be sent to the Manager Hunter Region hunter.region@epa.nsw.gov.au within two months of completion of the monitoring.

Should the outcomes of this report identify that water management on the premises is not sufficient such that limits are met, the EPA may consider a pollution reduction program to investigate upgrade of the water management system.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Ms Debbie Maddison

Environment Protection Authority

(By Delegation)

Date of this edition: 06-April-2000

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End Notes

- 1 Licence varied by notice V/M upgrade, issued on 10-Jul-2000, which came into effect on 10-Jul-2000.
- 2 Licence varied by notice 1005801, issued on 13-Aug-2001, which came into effect on 07-Sep-2001.
- 3 Licence varied by Change of contact details, issued on 16-Apr-2002, which came into effect on 16-Apr-2002.
- 4 Licence transferred through application 141582, approved on 21-Nov-2002, which came into effect on 07-Aug-2002.
- 5 Licence varied by notice 1024680, issued on 04-Feb-2003, which came into effect on 06-Feb-2003.
- 6 Licence varied by notice 1043601, issued on 14-Jan-2005, which came into effect on 08-Feb-2005.
- 7 Licence varied by notice 1055208, issued on 01-Mar-2006, which came into effect on 26-Mar-2006.
- 8 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 9 Licence varied by notice 1105215, issued on 23-Feb-2011, which came into effect on 23-Feb-2011.
- 10 Licence varied by notice 1502466 issued on 21-Dec-2011
- 11 Licence transferred through application 1517779 approved on 29-Oct-2013 , which came into effect on 17-Oct-2013
- 12 Licence varied by notice 1527523 issued on 13-May-2015

Appendix 4 - Mannering Colliery Independent Environmental Audit Action Plan Status Update (2015 Annual Review)

Non compliances status in relation to conditions in Project Approval 06_0311, EPL 191, CCL721 and the required actions to achieve compliance are summarised in the following table.

Title / Condition number	Requirement	Compliance Status (at time of audit)	Action	Due Date	Current Status
Mannering Colliery- Continuation of Mining – Project Approval DA06_0311 S2.11	<p>Operation of Plant Equipment</p> <p>The Proponent shall ensure that all plant and equipment used on site is:</p> <p>(a) maintained in a proper and efficient condition; and</p> <p>(b) operated in a proper and efficient manner.</p>	<p>Non Compliant</p> <p>Recommendation Ensure future improvements to the dirty storm water are implemented and that existing operational management processes are maintained to reduce the amount of water and sediment loads entering and passing through the treatment system prior to discharge.</p>	Maintain servicing of diversion drains, sediment capture drains, sumps and oil water separators.	N/A (ongoing)	Ongoing. Regular inspections undertaken, drains cleaned out as required. Flocculent trials undertaken in 2015 and new flocculent block stations installed in the 2015 reporting period.
Mannering Colliery- Continuation of Mining – Project Approval DA06_0311 S3.2	<p>Noise Mitigation</p> <p>The Proponent shall prepare a report on potential noise mitigation measures for noisy equipment and activities undertaken on the site to the satisfaction of the Director-General. This report must be:</p> <p>(a) prepared by a suitably qualified acoustic expert;</p> <p>(b) submitted to the Director-General by the end of September 2008; and</p> <p>(c) accompanied by an action plan for the implementation of any reasonable and feasible recommendations of the report.</p>	<p>Non Compliant</p> <p>Recommendation When the Care and Maintenance program ceases and the site becomes operational, ensure a report on potential noise mitigation measures for noisy equipment and activities undertaken on the site is prepared to the satisfaction of the Director -General. Include an action plan for the implementation of any reasonable and feasible recommendations of the report</p>	On recommencement of activities investigate noise mitigation measures and report findings to the Director – General. (Note: due date proposed based on expected recommencement of mining in second half of 2014)	31/3/15	Requirement has been superseded by the noise conditions in the Mannering Colliery Project Approval (Mod 3). Noise Mitigation options assessment to be undertaken within 6 months from the recommencement of coaling operations at the site.
Mannering Colliery- Continuation of Mining – Project Approval DA06_0311 S3.6	<p>Discharge</p> <p>The Proponent shall only discharge water from the site as expressly provided for by its EPL.</p>	<p>Non Compliant</p> <p>Recommendation It is recommended that an investigation be undertaken to determine the quality of the water discharging from the reclamation tunnels under the conveyor to the Vales Point Power Station.</p> <p>Implement management controls of the water (such as redirecting to the water management system) if the water quality does not meet licence criteria.</p>	Sample and analyse water discharged from the reclamation tunnel to confirm if EPL criteria are being met. Investigate management controls of water discharged from reclamation tunnel if EPL criteria are not met.	30/6/14	Complete. Water samples taken from the coal reclaim drain on 28 March 2014 following a rainfall event. Results received showed a pH value of 8.1, EC of 231 and a TSS value of 2. Sampling indicated that the results were well within the EPL compliance criteria for EPL 191.
Mannering Colliery- Continuation of Mining – Project Approval DA06_0311 S3.12	<p>Ground Water Monitoring Program</p> <p>The Groundwater Monitoring Program must include:</p> <p>(a) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality;</p> <p>(b) groundwater impact assessment criteria;</p> <p>(c) a program to monitor the impact of the project on groundwater levels, yield and quality; and</p> <p>(d) procedures for reporting the results of this monitoring.</p>	<p>Non Compliant</p> <p>Recommendation It is recommended that either approval is sought from the Director- General that current monitoring is sufficient to meet the intent or and or requirements of this condition(3.12) or that a ground water monitoring program is developed and implemented in accordance with the condition.</p> <p>Alternatively the outputs of the hydrogeological model may provide information sufficient to meet the condition in the future.</p>	Seek approval from the Director – General that the current monitoring is sufficient to meet the intent and or requirements of this condition.	30/04/14	Complete. Letter sent to DP&E on 28 August 2014 requesting confirmation that the existing monitoring is sufficient. No response had been received from the Department at the end of the reporting period.
Mannering Colliery- Continuation of Mining – Project Approval DA06_0311 S3.18	<p>Heritage</p> <p>The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Director-General. This Plan must:</p> <p>(a) be prepared in consultation with any relevant Aboriginal stakeholders;</p> <p>(b) be submitted, prior to 31 March 2013, for approval to the Director-General;</p> <p>(c) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the</p>	<p>Preparation - Non Compliant (due to timing of submission).</p> <p>Implementation - Compliant</p> <p>Recommendation The 31 March 2013 deadline has not been met for the submission of the Non Indigenous Heritage Plan.</p> <p>Submit the Non Indigenous Heritage Plan to the Director General once the internal review has been</p>	Received approval of Non Indigenous Cultural Heritage Management Plan dated 10 th September 2013.	N/A (complete)	n/a.

Title / Condition number	Requirement	Compliance Status (at time of audit)	Action	Due Date	Current Status
	<p>site;</p> <p>(d) detail the responsibilities of all stakeholders; and</p> <p>(e) include programs/procedures and management measures for:</p> <ul style="list-style-type: none"> • dealing with previously unidentified Aboriginal objects (excluding human remains), including any need to halt works in the vicinity, assessment of significance, determination of appropriate mitigation measures (by a qualified archaeologist in consultation with Aboriginal stakeholders), re-commencement of works, notifying OEH, and registering the new site(s) in the OEH AHIMS register; • dealing with any human remains which may be discovered, including halting of works in the vicinity; notifying NSW Police, OEH, the Department and Aboriginal stakeholders; and not re-commencing any works in the vicinity unless authorised; • heritage induction for construction personnel (including procedures for keeping records of inductions); • ongoing Aboriginal consultation and involvement (including procedures for keeping records of this); • appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site; and • dealing with previously unidentified non-Aboriginal heritage items which may be discovered during the project. 	completed.			
Environment Protection Licence 191 L2.1	<p>Concentration Limits</p> <p>For each monitoring / discharge point or utilisation area specified in the table/s below (by a point number) the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified in the EPL.</p>	<p>Non Compliant</p> <p>Recommendation Ensure future planned improvements to the dirty stormwater treatment system are implemented and that existing operational management processes are maintained to reduce the amount of water and sediment loads entering and passing through the treatment system prior to discharge.</p> <p>Continue to monitor the performance of the system and address issues as they arise to ensure EPL limits are met.</p>	<p>Maintain servicing of diversion drains, sediment capture drains, sumps, turbidity meter, and oil water separators.</p> <p>Maintain weekly inspections of water management system.</p> <p>Monitoring continued as per EPL requirements.</p>	N/A (ongoing)	Complete/Ongoing - Regular inspections undertaken, drains/sumps cleaned out as required. Flocculent trials undertaken in 2015 and new flocculent block stations installed in the 2015 reporting period.
Environment Protection Licence 191 L3.1	<p>Volume and Mass Limits</p> <p>For each discharge point 1, the volume mass of</p> <ol style="list-style-type: none"> a) Liquids discharged to water; or b) Solids or liquids applied to the area; <p>Must not exceed 4000 kilolitres per day.</p>	<p>Non Compliant</p> <p>Recommendation Ensure the dirty wastewater treatment is managed so that sediment is not allowed to accumulate and impact the storage capacity of the dirty pond system.</p> <p>See other recommendations made throughout this report on water management.</p>	<p>Maintain servicing of diversion drains, sediment capture drains, sumps and oil water separators.</p> <p>Monthly public reporting of discharge volumes</p>	N/A (ongoing)	<p>Complete/Ongoing - Regular inspections undertaken, drains/sumps cleaned out as required. Flocculent trials undertaken in 2015 and new flocculent block stations installed in the 2015 reporting period.</p> <p>Monthly reporting available on the Mannering website.</p>
Environment Protection Licence 191 O1.1	<p>Activities must be carried out in a competent manner</p> <p>Licensed activities must be carried out in a competent manner. This includes :</p> <ol style="list-style-type: none"> 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. 	<p>Non Compliant</p> <p>Recommendation Ensure sediment loads capacities are maintained in the dirty water treatment system and that sediment loads are controlled at the source (i.e. the coal stockpile).</p>	<p>Maintain servicing of diversion drains, sediment capture drains, and sediment capture sumps.</p>	N/A (ongoing)	<p>Complete/Ongoing - Regular inspections undertaken, drains/sumps cleaned out as required.</p> <p>Additional erosion and sediment controls were installed around coal stockpile area in 2014 and have been maintained following inspections.</p>

Title / Condition number	Requirement	Compliance Status (at time of audit)	Action	Due Date	Current Status
Environment Protection Licence 191 M2.4	Special Frequency 2 For special frequency 2 the licensee must monitor daily during discharge	Non Compliant Recommendation Ensure daily monitoring of discharges are conducted. Monitoring equipment to be maintained in a condition to allow daily monitoring.	Alarm set up on site Citect system to notify of flow meter failure.	N/A (complete)	Ongoing. LakeCoal is currently assessing options for the installation of a solar powered stand alone discharge monitoring station to assist with reducing the frequency of non-compliances associated with power failures on site.
Environment Protection Licence 191 R2.2	Notification of Environmental Harm The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	Non Compliant Recommendation Ensure written details of a notification are provided to the EPA within seven days of the date on which an incident occurs.	Update Procedure EMS-P003 Environmental Incident Reporting to specifically state this requirement.	30/04/2014	Complete – this requirement is now reflected in the sites Pollution Incident Response Management Plan (specifically Duty Card 15) and has been included in the site Water Management Plan which is currently in a draft format. Water Management Plan to be submitted to DP&E during the 2016 reporting period.
Consolidated Coal Lease 721 #18	Prevention of Soil Erosion and Pollution. Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a relevant approval and in accordance with accepted Mining Operations Plan. For the purpose of this condition, water shall be taken to include any water course, waterbody or groundwaters. The lease holder must observe and perform any instructions given by the Director- General in this regard.	Non Compliant See recommendations in the main report regarding continuing improvements to the dirty water system.	Maintain servicing of diversion drains, sediment capture drains, sumps and oil water separators.	N/A (ongoing)	Complete/Ongoing - Regular inspections undertaken, drains/sumps cleaned out as required. Flocculent trials undertaken in 2015 and new flocculent block stations installed in the 2015 reporting period.