Kerosene Vale Ash Repository Stage 2

Annual Review

April 2016 – March 2017

Kerosene Vale Ash Repository Stage 2 Annual Review

Name of Operation	**Kerosene Vale Ash Repository Stage 2**
Name of Operator	**EnergyAustralia NSW**
Development Consent / Project Approval #	**07_0005**
Environment Protection Licence (EPL) #	**766**
Water Access Licence (WAL) #	**10AL116411**
Water Supply and Water Use Approval #	**10CA117220**
AEMR start date	**1st April 2016**
AEMR end date	**31st March 2017**

I, Ben Eastwood, certify that this report is a true and accurate record of the compliance status of Kerosene Vale Ash Repository Stage 2 for the period 1st April 2016 to 31st March 2017 and that I am authorised to make this statement on behalf of EnergyAustralia NSW.

Note:

The Annual Review is an 'environmental audit for the purposes of section 122B (2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.

The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement – maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents – maximum penalty 2 years imprisonment or $22,000, or both).

Name of authorised reporting officer	**Ben Eastwood**
Title of authorised reporting officer	**NSW Environment Leader**
Signature of authorised reporting officer	
Date	**29 June 2017**

This report may be cited as:

EnergyAustralia NSW (2017) Kerosene Vale Stage 2 Ash Repository Annual Review April 2016 – March 2017. EnergyAustralia NSW, NSW Australia.

Table of Contents

List of Plates

List of Tables

List of Figures

List of Appendices

1. Summary of compliance

EnergyAustralia (EA) owns and operates Kerosene Vale Ash Repository in accordance with Project Approval 07_0005 which was granted by the Minister for Planning on 26 November 2008. The Kerosene Vale Ash Repository is located approximately 10 kilometres north-west of the city of Lithgow and is associated with Wallerawang Power Station, located 2.5 kilometres to the south-west of the repository.

The Wallerawang Power Station ceased energy production in April 2014 and is currently being decommissioned and dismantled. As such, the bulk transport and disposal of ash to the Kerosene Vale Ash Repository subsequently ceased following the closure of the Wallerawang Power Station. The Kerosene Vale Ash Repository is currently being managed in a care and maintenance arrangement. Small volumes of ash will be disposed of at Kerosene Vale Ash Repository as and when required during the demolition of the Wallerawang Power Station. There was no ash disposed of at the Kerosene Vale Ash Repository from Wallerawang Power Station during the reporting period. Preliminary plans are being developed for the closure and rehabilitation of the Kerosene Vale Ash Repository.

The Kerosene Vale Ash Repository Stage 2 Annual Environment Management Report (AEMR) has been prepared pursuant to Schedule 2, Condition 7.3 of the Project Approval 07_0005. The AEMR has been prepared in accordance with the NSW Government's *Post-approval requirements for State significant mining developments Annual Review Guideline* dated October 2015.

A summary of the Kerosene Vale Ash Repository Stage 2 compliance achieved during the reporting period is provided in Table 1. Any non-compliance during the reporting period is briefly detailed in Table 2, with an extended review of compliance with the Conditions of Approval (CoA) presented in Appendix A.

Table 1: Statement of Compliance During 2016-17 Reporting Period

Were all conditions of the relevant approval(s) complied with?	
Project Approval #07_0005	~~YES~~/**NO**
Environment Protection Licence #766	**YES**/~~NO~~
Water Access Licence #10AL116411	**YES**/~~NO~~

Table 2: Details of Non-Compliance during 2016-17 Reporting Period

Relevant Approval	Condition No.	Summary of Condition	Compliance Status	Comment	Section where addressed within AEMR
PA 07_0005	2.1	Ash re-use	Low	The goal of 40% ash reuse was not achieved by 31 December 2013, as required.	Section 11
EPL 766	NA	NA	NA	NA	NA
10AL116411	NA	NA	NA	NA	NA

In assessing compliance with CoAs the key for compliance assessment provided in Table 3 was used, in accordance with the NSW Government's Independent Audit Guideline.

Table 3: Compliance Status Key

Risk Level	Colour Code	Description
High		Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence.
Medium		Non-compliance with: • Potential for serious environmental consequences, but is unlikely to occur; or • Potential for moderate environmental consequences, but is likely to occur.
Low		Non-compliance with: • Potential for moderate environmental consequences, but is unlikely to occur; or • Potential for low environmental consequences, but is likely to occur.
Administrative non-compliance		Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).
Compliant		The intent and all elements of the requirement of the regulatory approval have been complied with.

An acceptable standard of environmental performance has been achieved during the reporting period as evidenced by the following:

- One non-compliance recorded during the reporting period
- Noise from the Kerosene Vale Ash Repository site was inaudible at sensitive receivers during the reporting period.
- Air quality monitoring results were well below the OEMP assessment criteria for depositional dust gauges located in Wallerawang and Lidsdale townships.
- There were no surface water discharge events during the reporting period.
- Water monitoring results were compliant with Environment Protection Licence 766 and relevant OEMP assessment criteria.
- There were no incidents that caused or threatened material harm to the environment.

2. Introduction

2.1 Background

The Kerosene Vale Ash Repository (KVAR) is owned and operated by EnergyAustralia NSW and is located approximately 2.5 kilometres north-east of Wallerawang Power Station and approximately 10 kilometres north-west of the city of Lithgow, which is 150 kilometres west of Sydney (Figure 1). KVAR is situated in the centre of the Sawyers Swamp Creek (SSC) catchment, and receives rainfall runoff from the surrounding areas.

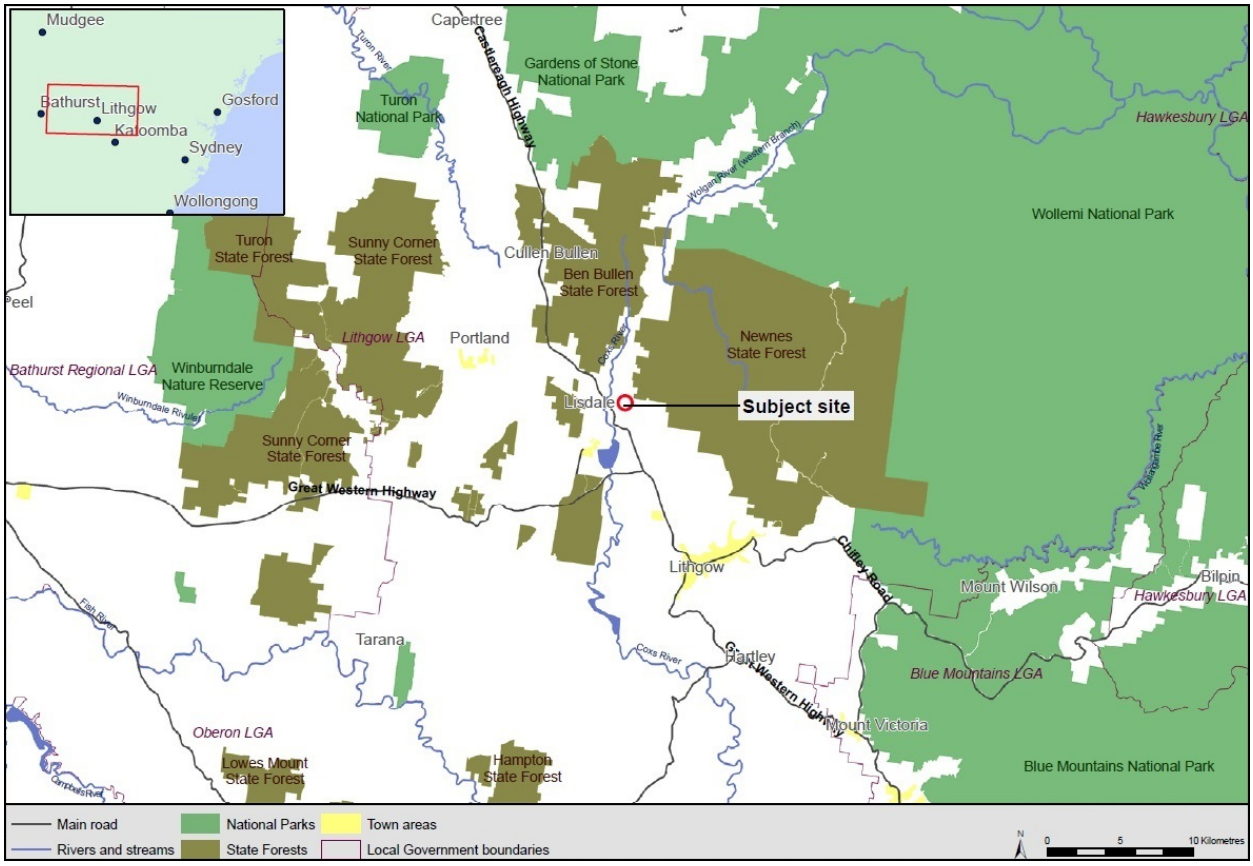

Figure 1: Regional context map

The original ash placement operations were at the Kerosene Vale Ash Dam (KVAD). The void was filled with ash transported from the Wallerawang Power Station as slurry (i.e. wet ash placement). When the KVAD was full, it was capped with a clay capping and then ash placement operations began at the Sawyers Swamp Creek Ash Dam (SSCAD), which saw wet ash placement take place from 1980 to 2003.

The need to further develop the KVAR area in order to maintain power-generation operations at Wallerawang Power Station was identified in 2001. The existing wet ash storage area (i.e. the Sawyers Swamp Creek Ash Dam) was approaching its design capacity. The placement of dry ash at the KVAR was identified as a viable alternative. The extent of both stages is outlined in Figure 2.

Conversion from wet to dry ash placement aimed to minimise environmental and social impacts potentially resulting from heavy metal accumulation. Key benefits of a dry ash handling facility included:

- The potential for ash to be beneficially reused in its dry form;
- An approximate 80% decrease in the water required to transport ash;
- Discharges to the Coxs River are decreased in the long term;
- The SSCAD can be progressively rehabilitated; and
- There would be a decreased flood risk for Kerosene Vale, Lidsdale and surrounding areas (Hyder Consulting, 2001)

In 2002 Project Approval was granted by the Minister of Planning to change from wet to dry ash-producing activities and to use the Kerosene Vale Ash Repository (KVAR) area for dry ash storage. On 26 November 2008, Project Approval was granted by the Minister of Planning for the extension of the existing KVAR area to permit the continued disposal of ash generated by the Wallerawang Power Station under Section 75J of the *Environmental Planning and Assessment Act 1979*. The KVAR Stage 1 placement works were completed and capped in February 2009. The KVAR Stage 2 placement works commenced soon after in April 2009 (Aurecon, 2011).

The original ash placement strategy, as outlined within the Operation Environmental Management Plan (OEMP) (Parsons Brinckerhoff, 2008b), was as follows:

- Stage 2A as an extension of Stage 1;
- Stage 2B to allow time for the re-alignment of Sawyer's Swamp Creek and for material to be obtained from the pine plantation area to reinforce the stabilisation berm to the north of KVAR Stage 1; and
- Stage 2C as a final ash placement area once reinforcements of a proposed stabilisation berm with creek realignment had been carried out.

Since the first AEMR was submitted in 2011, the ash placement strategy for Kerosene Vale Stage 2 Ash Repository has been updated to reflect changes from the three stage process outlined above, to a two-staged approach. This change in strategy was in response to Centennial Coal relinquishing their right to extract coal from the areas of mining interest within the KVAR Stage 2 proposal (Figure 2).

In January 2014, Wallerawang Power Station's Unit 7 was removed from service and deregistered from the market; whilst in March 2014, Unit 8 was placed in long term storage. However, in November 2014, EnergyAustralia announced that Unit 8 was also removed from service and deregistered from the market. As a consequence, EnergyAustralia is currently negotiating with NSW Treasury to produce a plan for the decommissioning, deconstruction and rehabilitation (DDR) of the entire operational facility at Wallerawang, including the ash placement areas.

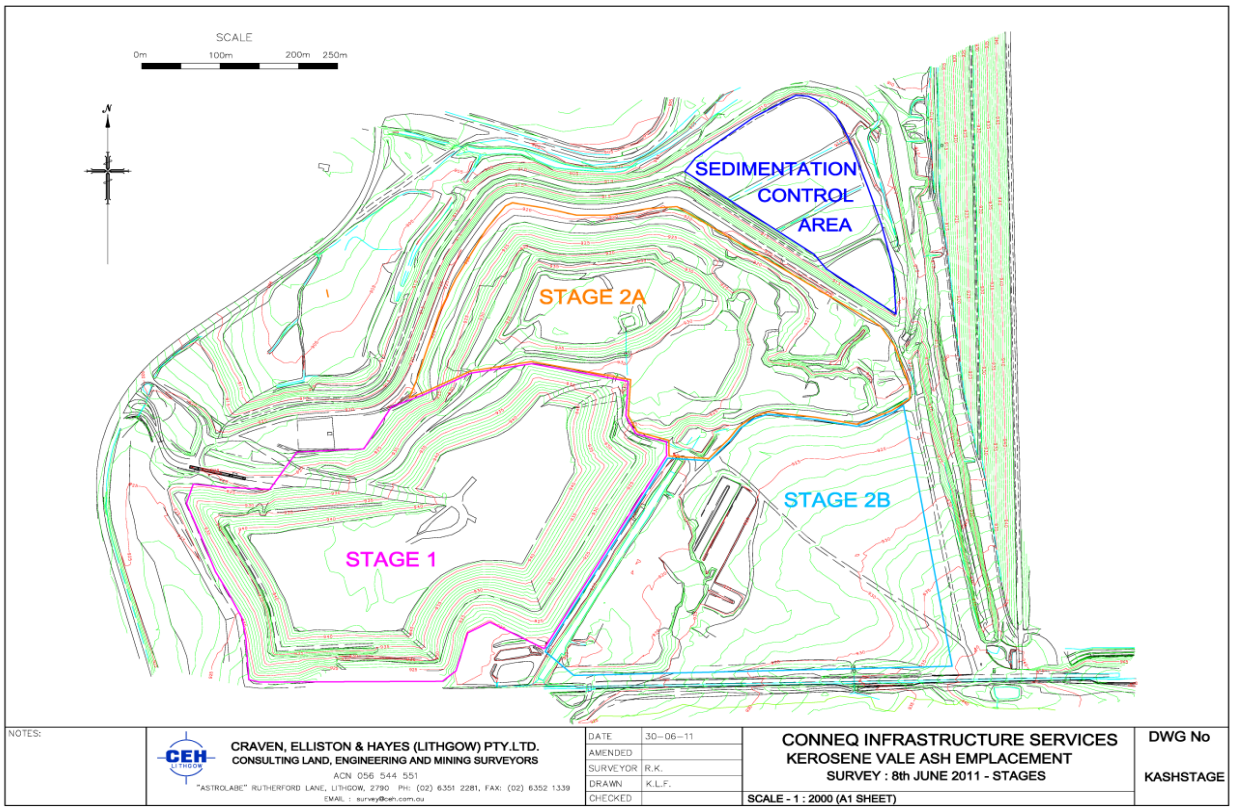

Figure 2: Revised ash placement strategy for KVAR- Stages 1, 2A and 2B

2.2 Purpose of the AEMR

The Project Approval contains a number of conditions that need to be complied with by EnergyAustralia NSW, as the proponent, at different stages of the Project (Section 3). Condition 7.3 of the Project Approval (DP&I, 2008) requires that EnergyAustralia NSW prepare and submit an Annual Environmental Management Report (AEMR) for the approval of the Director-General, Department of Planning (DP&I).

This Annual Environmental Management Report (AEMR) has been prepared in order to satisfy Condition 7.3 of the Project Approval 07_0005 (DP&I, 2008). This report covers the operations and environment and community performance of the Kerosene Vale Ash Repository from April 2016 and March 2017 (reporting period).

The AEMR has been prepared in accordance with the NSW Government's *Post-approval requirements for State significant mining developments Annual Review Guideline* dated October 2015.

2.3 Project contacts

The contact details for Kerosene Vale Ash Repository Stage 2 are listed in Table 4.

Table 4: Kerosene Vale Ash Repository Contact

Contact Person	Position	Telephone
Mr Ben Eastwood	NSW Environment Leader & KVAR Environment Representative	(02) 6354 8111

3. Consents, Leases and Licences

This AEMR has been prepared to address the relevant conditions of the project approval and the Statement of Commitments which have been triggered during the reporting period. The operation of the KVAR project must comply with the following statutory requirements (Table 5):

Table 5: Key Consents, Leases, Licences and Permits

Approval/Lease/Licence	Issue Date	Expiry Date	Details/Comments
Project Approval 07_0005	29 July 2005 (Renewed 26 November 2008)	26 November 2013	Granted by Minister for DoP, Section 75J of the EP&A Act.
Environment Protection Licence (EPL) No. 766	20 December 2016	20 December 2021 (Review Date)	EPL held by EnergyAustralia NSW for Wallerawang Power Station
Water Access Licence No. 27428	28 February 2014	-	Granted by DPI Water, under the *Water Management Act 2000*
Water Supply Work and Water Use Approval 10CA117220	28 February 2014	-	Granted by DPI Water, under the *Water Management Act 2000*

There have been no changes to the approvals during the reporting period. A summary of compliance against the applicable statutory requirements is provided Section 1.

3.1 Operations Environmental Management Plan

The Operations Environmental Management Plant (OEMP) provides the framework to manage the environmental aspects associated with the operation of the KVAR. The OEMP outlines the requirements associated with the project as stipulated in the relevant provisions of the Project Approval 07_0005 administered by the NSW Department of Planning and Environment, the Environment Protection Licence 766 (EPL) administered by the NSW Environment Protection Authority (EPA), and the Statement of Commitments (SoC) presented in the Submissions Report (Parsons Brinckerhoff, 2008b).

The scope of the OEMP covers all operations involving the movement and placement of ash from Wallerawang Power Station (WWPS) to the KVAR Stage 2 area of the Kerosene Vale Ash Repository and has been reviewed by EnergyAustralia NSW to ensure that it reflects the current Care and Maintenance activities.

3.2 Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) for KVAR Stage 2B was developed in consultation with EnergyAustralia NSW's Western Environment Section and approved by the DP&I in August 2011. The CEMP meets the requirements of CoA's 6.2 and 6.3, providing the framework to manage the environmental aspects associated with construction works during KVAR Stage 2B operations. The CEMP has been written to address the requirements associated with the project as stipulated in the relevant provisions of the Project Approval 07_0005 issued by the NSW Department of Planning (DoP).

4. Operations during reporting period

Due to the non-operational status of Wallerawang, no ash has been generated for disposal at KVAR during the reporting period. As such, KVAR has been placed in care and maintenance.

Care and maintenance activities continue to be performed through contract with LLS Industrial Pty Ltd (Lend Lease's services business). Lend Lease provide maintenance services for relevant aspects of ash and dust management at Wallerawang, which includes overall management of the KVAR.

During the 2016-17 reporting period, work has been performed on the top capping resulting in an additional 3 hectares of previously exposed ash being capped (Table 6).

Table 6: Operations Summary

Activity	Previous reporting period	This reporting period	Next reporting period
Ash delivered to site (T)	0	0	0
Ash reused (T)	0	0	0
Total Ash Footprint (ha)	37.7	37.7	37.7
Area of repository capped (ha)	29	32	32

4.1 Normal operating hours

The normal hours of operation for the Project are between 7 am and 10 pm Monday to Sunday, in accordance with Condition 2.8. Operations outside these hours are defined as abnormal or emergency operating conditions and are subject to specific requirements (Section 4.2).

No works occurred at KVAR outside the normal operating hours during the reporting period.

4.2 Abnormal or emergency operating conditions

Conditions under which operations outside the normal hours of operation can occur have been specified in the Project Approval (CoA 2.10) and can be described as follows:

- Where it is required to avoid the loss of lives, property and/or to prevent environmental harm
- Where a breakdown of plant and/or equipment at the repository or the Wallerawang Power Station can affect or limit the capacity of ash storage at the power station itself outside the normal operating hours
- Where a breakdown of an ash haulage truck(s) prevents haulage during the operating hours stipulated under '*Normal Conditions*' combined with insufficient storage capacity at the Wallerawang Power Station to store ash outside of the normal operating hours

- In the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs EnergyAustralia NSW (as a licensee) under the National Electricity Rules to maintain, increase or be available to increase power generation for system security and there is insufficient ash storage capacity at the Wallerawang Power Station to allow for the ash to be stored.

Under these circumstances, EnergyAustralia NSW is required to notify the OEH, formerly DECC, and nearby sensitive receivers prior to any emergency ash haulage or placement operations, as well as the Secretary of the DP&E, formerly DoP, within 1 week after the emergency operations have occurred.

No operating conditions have occurred outside the normal operating hours during the reporting period.

4.3 KVAR Stage 2B construction activities

No construction activities were carried out during the reporting period.

4.4 Wallerawang DDR Works

The NSW Environment Protection Licence (EPL 766) remains valid and will continue to cover the activities associated with the Closure of Wallerawang power station and the ash placement areas. There is a three phase plan for the closure of the Wallerawang Power Station that involves the decommissioning, deconstruction and rehabilitation (DDR) of the site including the ash repository and SSCAD.

A detailed Closure and Rehabilitation Plan is being developed for the KVAR Stage 2 area and will form part of the reclamation works. EA NSW will be able to update relevant stakeholders in due course once it is developed.

Care and maintenance activities will continue to be undertaken in a manner that is consistent with the relevant provisions of the Project Approval and Environmental Protection Licence, and as such will be monitored regularly to ensure compliance with regulated air and noise emission levels. The management of the groundwater, surface water and landscape aspects of the operations will also be under constant review and monitoring to provide all stakeholders to the Project assurance that the environmental impacts have been recognised and continue to be managed appropriately.

5. Actions required from previous AEMR review

In a letter dated 17 February 2017, the DP&E stated that with regards to the 2015-2016 Annual Review, the Department is generally satisfied that it adequately addresses the relevant requirements of the approval. Ten actions were requested by DP&E, which are detailed in Table 7. A response to these actions was submitted to the DP&E in a letter dated 28 February 2017 and the status of these actions is discussed in the relevant sections of this Annual Review.

Table 7: Actions required from last Annual Review

Item	Action required from 2016 Annual Review	Requested by	Action taken	Where discussed in AEMR
1	***Reporting*** *– A date for submission of the report has not been defined in the approval, however the submission of the AEMR is generally required three months after the reporting period, i.e. 30th June of each year.*	DP&E	This and all future AEMRs will be submitted by 30th June each year.	NA
2	***Ash reuse*** *– it is noted that in accordance with Condition 2.1, the goal for the reuse of ash by 31 December 2013 was 40%. While total ash placed is only 40% of the original approval, this does not meet the goal. Further explanation is requested how EnergyAustralia is progressing in achieving this goal.*	DP&E	The goal of 40% ash reuse was not achieved by 31st December 2013, with a total of only 0.32% ash reuse occurring from Wallerawang Power Station by the end of 2013. In March 2014, when it was announced that Wallerawang Power Station was being put out of service, the ash reuse from Wallerawang had remained at 0.32%. However, ash utilisation has been an ongoing program for the power station. Since then, more research and development to develop markets have been performed, rather than to solely focus on servicing established market opportunities. Generally the major limitation to further market development is a lack of rail, building and industrial infrastructure, particularly for the storage of ash at Wallerawang.	Section 11, Appendix A

Item	Action required from 2016 Annual Review	Requested by	Action taken	Where discussed in AEMR
3	***Comparison of results*** *- Provide a comparison of results from all monitoring for at least three years, and discuss long term trends.*	DP&E	A comparison of results from all monitoring for the previous three (3) years, with a discussion of long term trends, has been provided for air quality, surface water quality and groundwater quality data.	Sections 6 & 7
4	***Rehabilitation areas*** *– Include a plan that shows the location and status of rehabilitated areas.*	DP&E	A plan indicating the location and status of rehabilitated areas has been provided in Section 8.	Section 8.1.2, Figure 21
5	***Post rehabilitation*** *– Include the agreed post rehabilitation land uses, closure/rehabilitation criteria and a discussion of rehabilitation performance against rehabilitation/closure criteria.*	DP&E	A detailed Closure & Rehabilitation Plan is currently being developed for the KVAR Stage 2 area and will form part of the reclamation works for Wallerawang Power Station. However, Landscape & Revegetation criteria, as per the OEMP Landscape & Revegetation sub-plan, will be used in the interim.	Section 8.1.2, Table 17
6	***Sediment pond*** *– Provide clarification of whether the new sediment pond was new disturbance or within an already disturbed area. This is not clear and there is no increase in the total active disturbance in Table 12.*	DP&E	The new sediment pond (SW Pond 3) was developed to service the upslope catchment from the exposed soil area of the unfinished Stage 2B and was constructed within the approved disturbance boundary in the north-east corner of Stage 2B, i.e. within an already disturbed area. Therefore the total active disturbance has not increased.	Section7.4.2, Figure 20
7	***Community*** *– Include details of community engagement activities undertaken during the reporting period, which is particularly relevant with the impending rehabilitation/closure of the facility.*	DP&E	Details of community engagement activities undertaken during the reporting period are provided within Community (Section 9).	Section 9.3

Item	Action required from 2016 Annual Review	Requested by	Action taken	Where discussed in AEMR
8	***Improvement activities*** *– combine all improvement activities identified in separate sections within the AEMR into Section 12.1 and provide timeframes for completion, and provide completion of identified improvement activities from previous reporting period.*	DP&E	Section 12.1 has been updated to combine all improvement activities and provide timeframes for completion. Improvement activities from the previous reporting period have also been included.	Section 12.1
9	***OEMP*** *– It is noted that the Operational Environmental Management Plan (OEMP) is dated 2008. It is requested in accordance with Condition 7.3 of Schedule 2 that the OEMP is updated to reflect current activities at Kerosene Vale Ash Repository site and submitted to the Department by 30 June 2017.*	DP&E	EnergyAustralia NSW is currently reviewing the OEMP to reflect current activities at KVAR, with a copy to be submitted to DP&E by 30 June 2017.	Section 3.1
10	***Environmental Representative*** *– It is noted that Mr Ben Eastwood has been nominated for the role of Environmental Representative for the site in accordance with Condition 6.1 of Schedule 2. The nomination is noted in the covering letter however the qualifications of Mr Ben Eastwood have not been provided.*	DP&E	Mr Ben Eastwood's CV was submitted to the DP&E for the Secretary's approval as an attachment to the letter dated 28 February 2017.	Section 5, Table 7

6. Environmental management and performance

Environmental monitoring for the KVAR and specifically for the KVAR Stage 2 operations is designed to comply with the regulatory requirements specified in Section 3 of this AEMR, and also to provide an ongoing analysis of the condition of the environment surrounding the site. Environmental monitoring is performed as part of the monitoring program at the sites indicated shown in Figure 3. The results are used as indicators of the effectiveness of the environmental controls, and as guidelines for the management and maintenance of key environmental procedures.

Detailed procedures outlining the environmental monitoring responsibilities of key stakeholders and the impacts to be mitigated can be found within the individual sub-plans of the OEMP, and include:

- Ash Delivery and Placement Sub-plan
- Operational Noise and Vibration Management Sub-Plan
- Surface Water Quality Sub-Plan
- Groundwater Management Sub-plan
- Air Quality Management Sub-plan
- Landscape and Revegetation Sub-Plan
- Waste Management Sub-plan

A summary of the environmental management measures and associated performance is provided in Table 8. Detailed discussions of the key environmental performance indicators are presented in the sections below (6.1 – 6.7).

Table 8: Environmental Performance

Aspect	Approval Criteria	EA Prediction	Performance during reporting period	Trends / Management Implications	Management Actions
Noise	Site 1 – Site 3 Criteria 40 dB(A) LAeq	Site 1 33 Site 2 33 Site 3 31 dB(A) LAeq	Site 1 Nil detected Site 2 Nil detected Site 3 Nil detected	NA – no operational noise generated.	Nil additional management actions required

Aspect	Approval Criteria	EA Prediction	Performance during reporting period	Trends / Management Implications	Management Actions
Ecological	Minimal impacts on ecology of Sawyers Swamp Creek following its realignment.	Potential impacts associated with realignment of Sawyers Swamp Creek	Sawyers Swamp Creek was not realigned therefore no ecological monitoring is required.	NA – Sawyers Swamp Creek was not aligned.	Nil additional management actions required
Air Quality	Maximum total deposited dust 4 g/m^2/month annual	Annual average of 3.5 g/m^2/month deposited dust	Annual average range 0.3 to 3.5 g/m^2/month deposited dust	Annual average dust levels show a slight decreasing trend.	Nil additional management actions required.
Waste	Waste disposal to reflect EPL 766.	Wastes disposed of accordingly.	Approximately 1,763 m^3 of settling pond sediments were disposed of at the repository in accordance with EPL 766.	Disposal of settling pond sediments as per EPL 766.	Nil additional management actions required.
Heritage	Minimal impact on heritage values of the area.	Heritage impacts considered to be minimal and are manageable with appropriate and well established procedures.	No additional heritage sites were identified.	No additional heritage sites have been identified throughout KVAR operation.	Nil additional management actions required.

Performance against environmental monitoring and compliance requirements are provided by Lend Lease as a monthly Client Service Report and through external consultant and internal data and reports. Summaries of these reports are provided in the sections below (6.1 – 6.7) and in Appendices B – F.

Figure 3: Environmental monitoring locations

6.1 Ash delivery and placement

Due to the non-operational status of Wallerawang Power Station, no ash has been placed at KVAR Stage 2 within the reporting period.

In a survey performed in January 2015, the ash footprint areas were as follows:

- 8.7 ha of exposed ash
- 13.1 ha of footprint
- 9.93 ha of batters
- 2.54 ha laybacks
- 2.8 ha top level

During the 2016-17 reporting period, work has been performed on the top capping with capping material being placed but not yet completed (Figure 4). As such, the ash footprint details have been updated to:

- 5.8 ha of exposed ash
- 13.1 ha of footprint
- 9.93 ha of batters
- 2.54 ha laybacks
- 5.7 ha top level

Figure 4: Area of exposed ash remaining at Kerosene Vale Ash Repository Stage 2

Operations of the KVAR Stage 2 are considered to have met the following targets of the Ash Delivery and Placement Sub Plan of the OEMP.

All management and mitigation measures specified in the approved OEMP were found to be complied with.

6.2 Operational Noise Monitoring

6.2.1 Environmental Management

The KVAR Stage 2 Operational Noise and Vibration Management Plan (ONVMP) has been developed in accordance with Condition 6.5 of Project Approval 07_005 for the KVAR Stage 2 area.

The Operational Noise and Vibration Management Plan identifies measures to minimise and mitigate noise impacts on surrounding land uses from the proposed works. The level of noise generated during the proposed works program will depend on the location of the receiver, the type and duration of works and intervening topography, and existing building structures between the noise emission source and receiver.

The residential community of Lidsdale is located to the west of the private haul road and ash repository site. The following residential properties, located within 300m from the haul road, have been identified as the nearest potentially affected sensitive receivers to noise from the repository site:

Table 9: Representative noise measurement locations

Sensitive Receiver	Distance to Haulage Road (m)*
60 Skelly Road	300
10 Skelly Road	270
21 Neubeck Street	145

During the reporting period compliance monitoring was conducted during the early morning and evening periods as per the requirements outlined in the ONVMP. The applicable operational noise criteria are outlined in the Project Approval (No. 07_0005), the Environment Protection Licence (EPL) No. 766, the OEMP and the ONVMP. The criteria are summarised as follows:

> *The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed a $L_{Aeq\ (15\ minute)}$ of 40 dBA at the nearest most affected sensitive receiver during normal operating hours as defined in condition 2.8.*
>
> *This criterion applies under the following meteorological conditions:*
>
> *a) Wind speeds up to 3 m/s at 10 meters above ground; and/or*
>
> *b) Temperature inversion conditions of up to 3°C/100 m and source to receiver gradient winds of up to 2 m/s at 10 m above ground level*

6.2.2 Environmental Performance

Due to the non-operational status of Wallerawang Power Station, no fly ash trucks have been hauling to the ash placement area. Minor earthworks and maintenance activities at the ash placement area were the only activities undertaken with the potential to cause noise impacts to sensitive receivers.

Aurecon was engaged by EnergyAustralia NSW to carry out ongoing operational noise monitoring for the KVAR Stage 2 located in Wallerawang, NSW (2016a; 2016b; 2017a). The noise measurements were performed on three occasions throughout the reporting period – in May 2016, November 2016 and again in March 2017 (Appendices B – D). Noise monitoring for KVAR Stage 2B was performed in accordance with the methods described in the approved OEMP.

Noise from the ash placement area was inaudible at the sensitive receivers. This was primarily due to the KVAR being in care and maintenance. There were no truck movements associated with the haulage of ash to the repository area. The minor activities on the ash placement area including light vehicle movements and auxiliary equipment was inaudible and did not contribute to the background noise levels recorded at the sensitive receivers.

Based on site observations and information reviewed potential noise impacts from the operation and maintenance of the KVAR Stage 2 are considered to have been effectively mitigated and managed, with no noise complaints received for the KVAR during the reporting period.

6.2.3 Reportable Incidents

No reportable incidents have been recorded against operational noise for the reporting period.

6.2.4 Further Improvements

There were no exceedences of the operational noise criteria during the reporting period, as such there are no further improvements required.

EA will review the scope of the noise monitoring assessment commensurate with the level of activity while the site is in care and maintenance. Any review will be undertaken to ensure compliance with the Project Approval.

6.3 Ecological Monitoring

EnergyAustralia NSW has determined that there is no longer any need to realign SSC. Therefore ecological monitoring as required under CoA 3.7 is not required.

6.4 Air Quality Monitoring

6.4.1 Environmental Management

The Repository Site Management Plan (Lend Lease, 2012) for KVAR Stage 2 operations contains an Implementation Strategy in accordance with the Air Quality Monitoring Program, as required under the CoAs as stipulated by DP&E and as outlined in the OEMP. The strategy includes specific site management pertaining to the transport and emplacement of ash, managing dust within the ash repository using an extensive sprinkler system and water cart applications, and continuous monitoring for dust/airborne particulates.

Dust management at KVAR is included in the responsibilities of all activities, including:

- Wash-down of security roadways, haul road/s and vehicle access roads;
- Use of perimeter sprays at the ash placement area;
- Mobile sprinkler system;
- Ash placement operations;
- Final and temporary capping of ash; and
- General maintenance of the ash placement area (Lend Lease, 2012).

6.4.1.1 Dust suppression – KVAR sprinkler system

Water application (measured in sprinkler hours) is based on wind velocity, humidity and temperature. The water used for dust suppression in KVAR is sourced from the Sawyer's Swamp Creek Ash Dam return water system. This maximises the recycling of water for dust suppression, no additional clean water is used in this application.

The updated Repository Management Plan (Lend Lease, 2012) provides a guide for sprinkler hours at an optimum of 4 hours per day during low evaporation at less than 3 mm per day to ensure that a target of 5 mm by irrigation application is not exceeded (Table 10).

Table 10: Guide for sprinkler hours

Water use guidelines	**Water use guidelines**
>25^{o} >20km/hr (10hrs/day)	15^{o} <20km/hr (<4 hours/day)
15-24^{o} <20km/hr (8 hrs/day)	
15^{o} <20km/hr (4 hours/day)	
Evaporation 3-7 mm per day	**Evaporation < 3 mm per day**
Oct, Nov, Dec, Jan, Feb, Mar,	April, May, June, July, Aug, Sept
* Operation of sprinklers in extreme hot and dry conditions requires extended irrigation hours.	

6.4.1.2 Dust deposition monitoring

Air quality is monitored at the seven depositional dust gauges listed within the OEMP. These gauges are situated close to residential areas outside of the KVAR area (Figure 5). Data collection commenced in March 2009, with results recorded on a monthly basis with colour and textural observations. Data from these gauges provide an indicative assessment of potential air quality impacts from KVAR Stage 2. It should be noted that the levels at these locations includes dust from all land use practices in the local area and not only from KVAR.

Additional dust gauge monitors are installed on and around KVAR (Figure 6) and data from these gauges have been provided to provide a comprehensive assessment of potential air quality impacts from KVAR Stage 2.

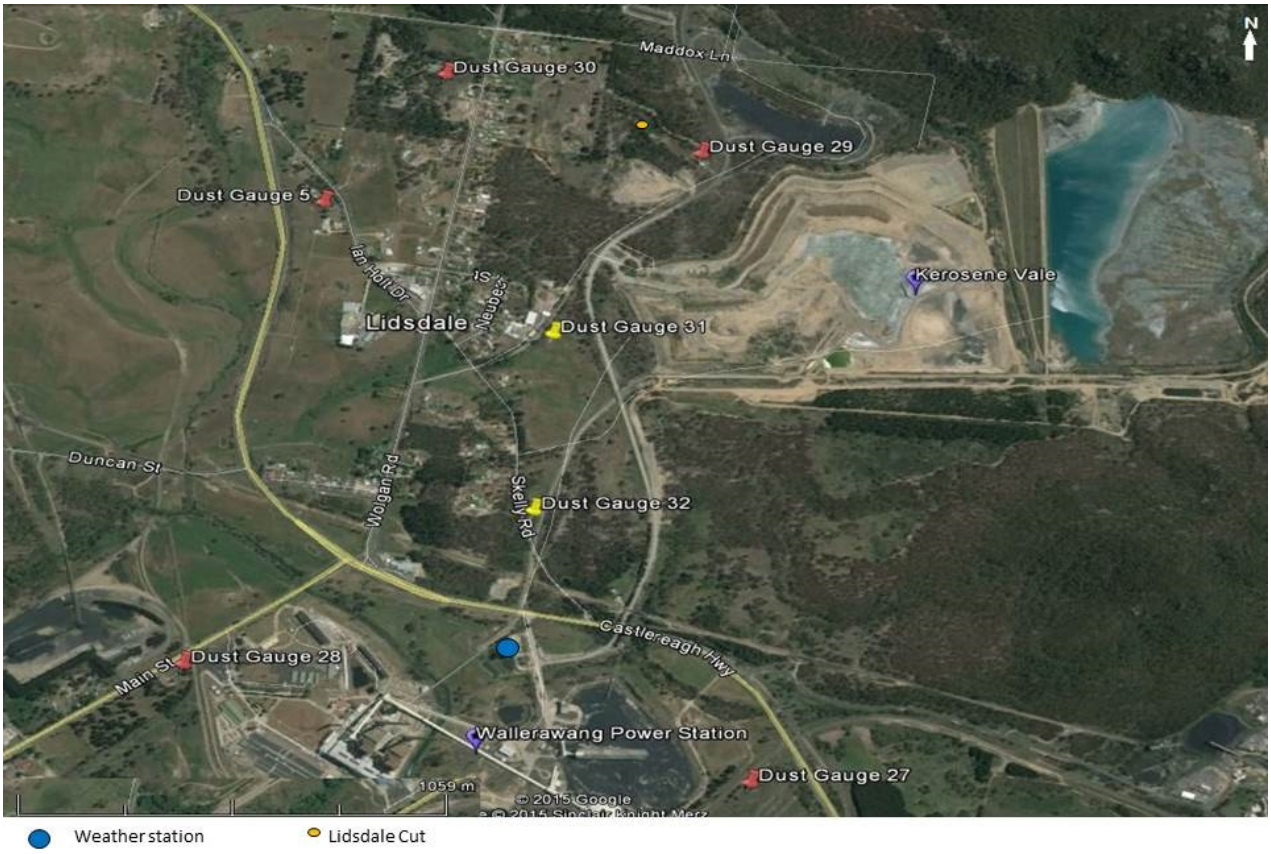

Figure 5: Regional dust gauge network for Kerosene Vale monitoring purposes

Figure 6: Location of KVAR Stage 2B dust gauges

6.4.2 Environmental Performance

6.4.2.1 Dust suppression – KVAR sprinkler system

Figure 7 reflects the relationship between sprinkler application and evaporation to identify that the target or maximum application rates for irrigation at 5 mm / day was achieved for the majority of the reporting period. Net irrigation was calculated by subtracting the daily evaporation from the daily sprinkler irrigation.

Sprinkler application rates did reach above the maximum target between September 2016 and February 2017, but equally high evaporation rates resulted in a net irrigation rate below the maximum application rate for irrigation.

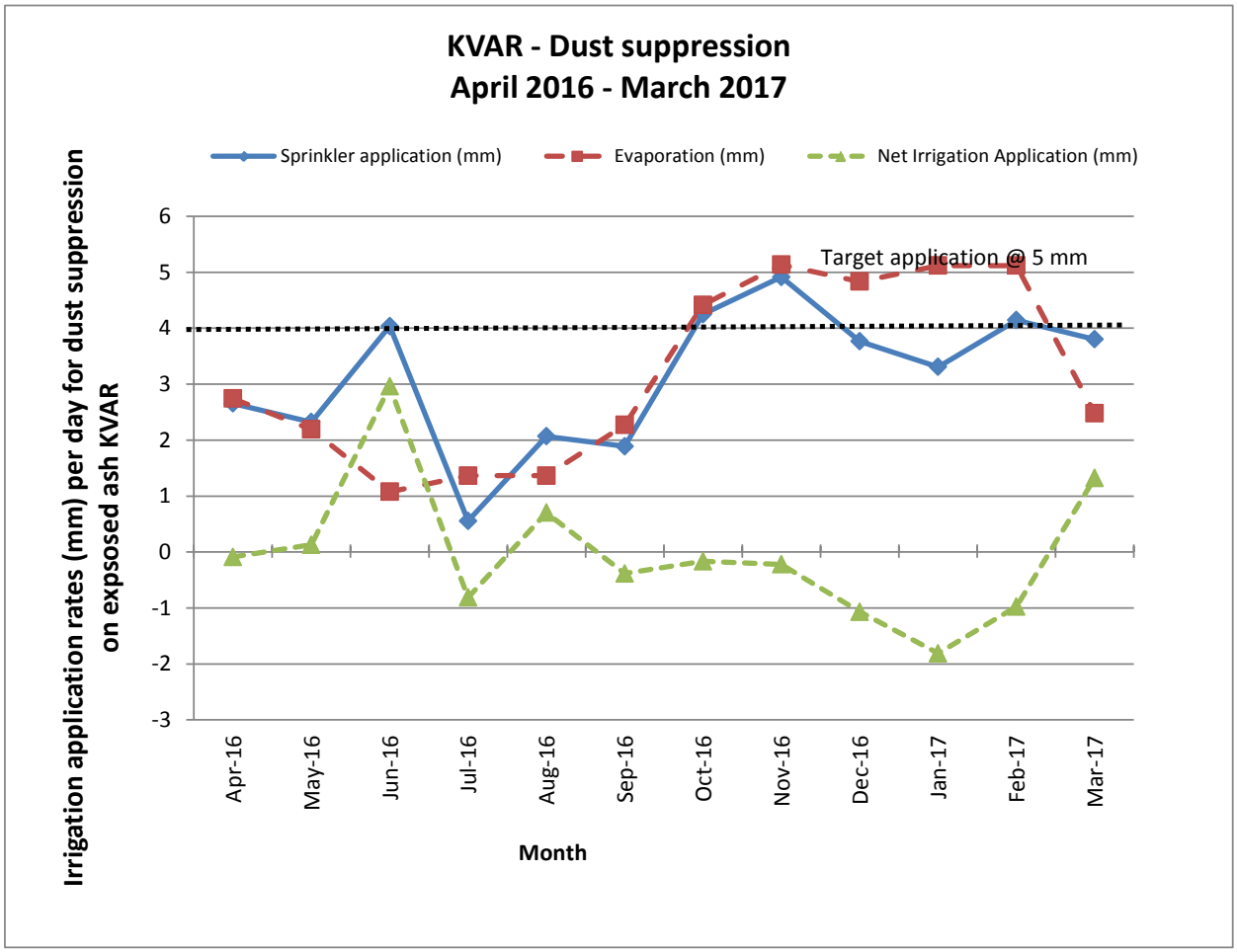

Figure 7: Efficacy of irrigation operations April 2016 – March 2017

6.4.2.2 Dust deposition monitoring

Dust gauge data from the 2016-2017 period of KVAR Stage 2 operations do not indicate that KVAR Stage 2 operations have resulted in dust deposition above the OEMP levels that trigger the requirement to implement additional control measures.

Comparative annual average depositional dust data for the combined average over the previous three year period is presented in Figure 8. Additional comparative annual average depositional dust data for each of the seven OEMP dust deposition gauges are presented in Figures 9-16.

An examination of the historical data indicates a slight decrease in the depositional dust concentrations at the site during the period April 2014 to Mar 2017. Operations at Wallerawang and in turn Kerosene Vale Ash Repository, ceased in April 2014, with a reduction in depositional dust concentrations reflected during the Care and Maintenance phase (2014 onwards). All depositional dust results are shown to be considerably lower than the concentrations predicted in the Environmental Assessment (predicted annual average of 3.5 g/m^2/month deposited dust).

Historical exceedences have generally been the result of fires, dust storms and hazard reduction burning occurring in the Central West, Blue Mountains, Hawkesbury and even the Sydney Region. These events are known to affect particulate levels by increasing the levels above the standard requirements across the state. As such, to account for natural events, the national goal for particulates excludes exceptional events such as these (OEH, 2017). Hazard reduction burns are generally performed in the aforementioned areas in July to September, with the bushfire season commencing in October. Conversely, peaks in the combined averages of the 7 depositional dust gauges generally align within the hazard reduction or bushfire season.

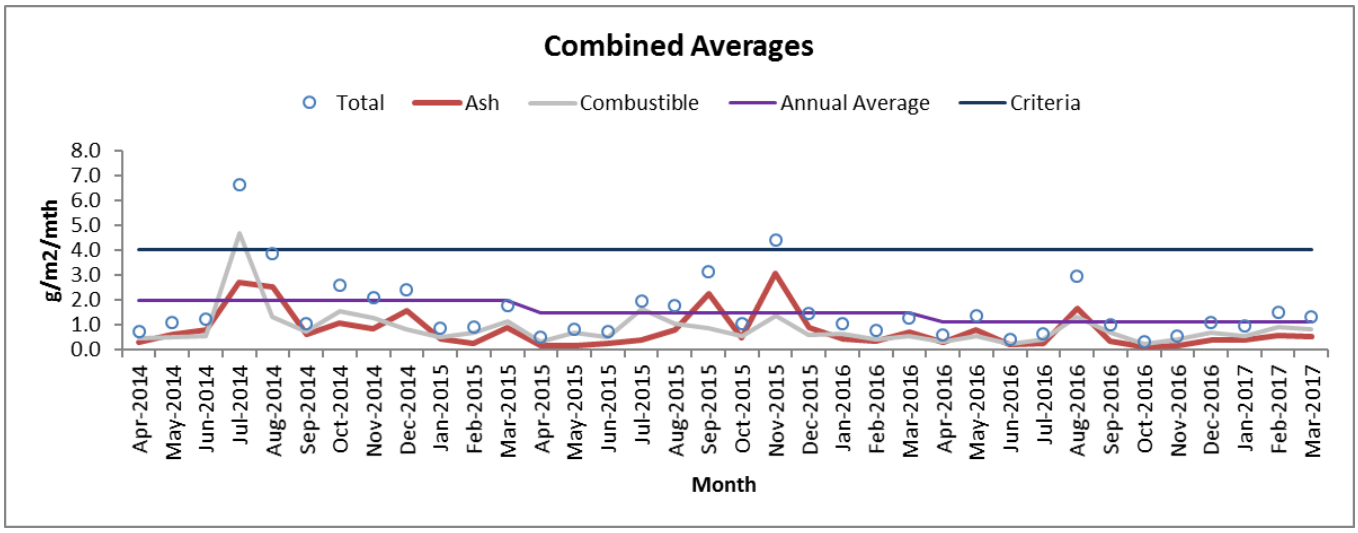

Figure 8: Combined averages for the 7 OEMP depositional dust gauges

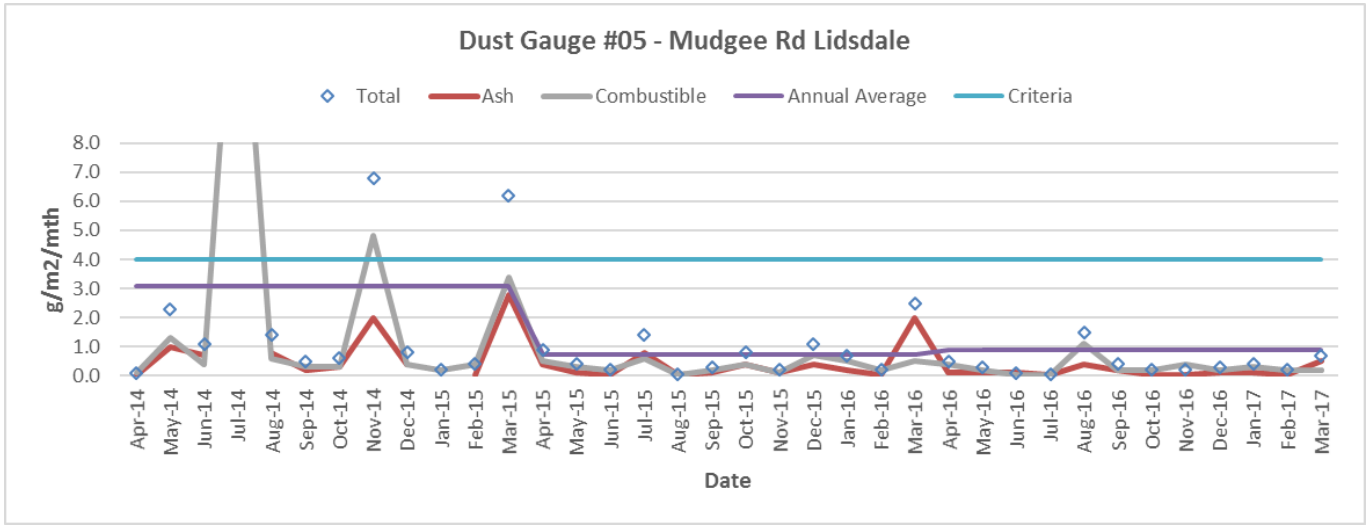

Figure 9: Depositional Dust Summary - Dust Gauge 5

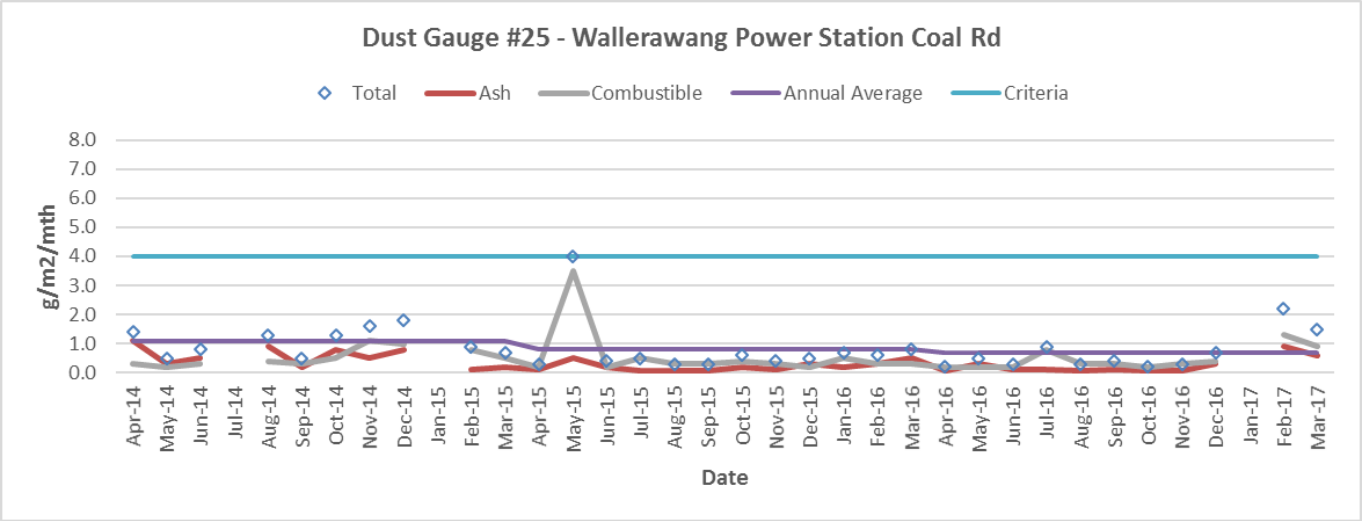

Figure 10: Depositional Dust Summary - Dust Gauge 25

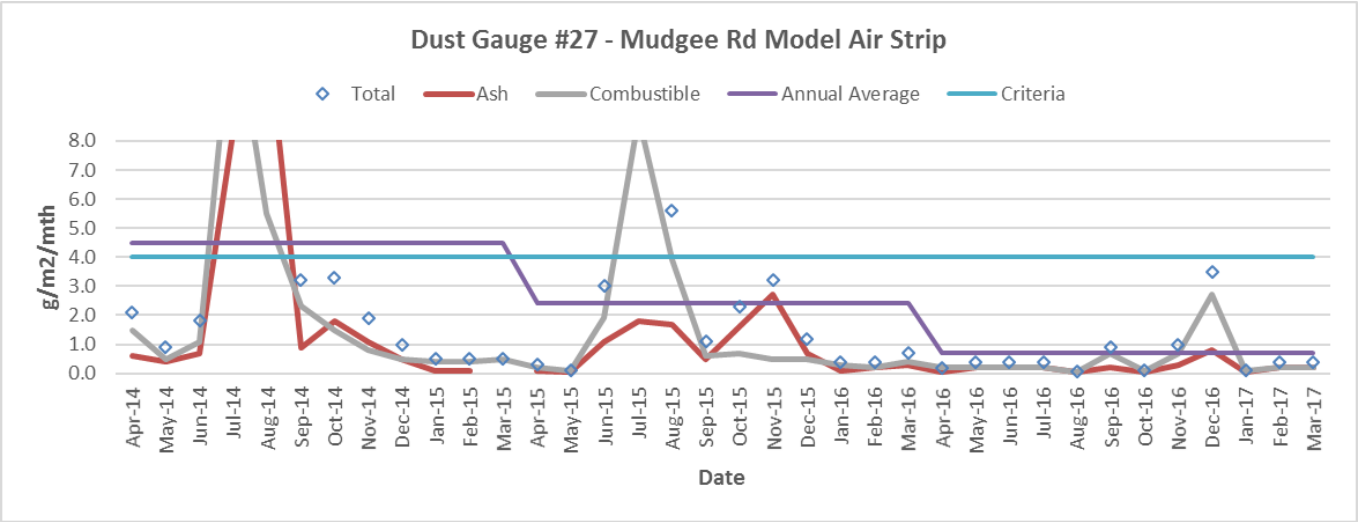

Figure 11: Depositional Dust Summary - Dust Gauge 27

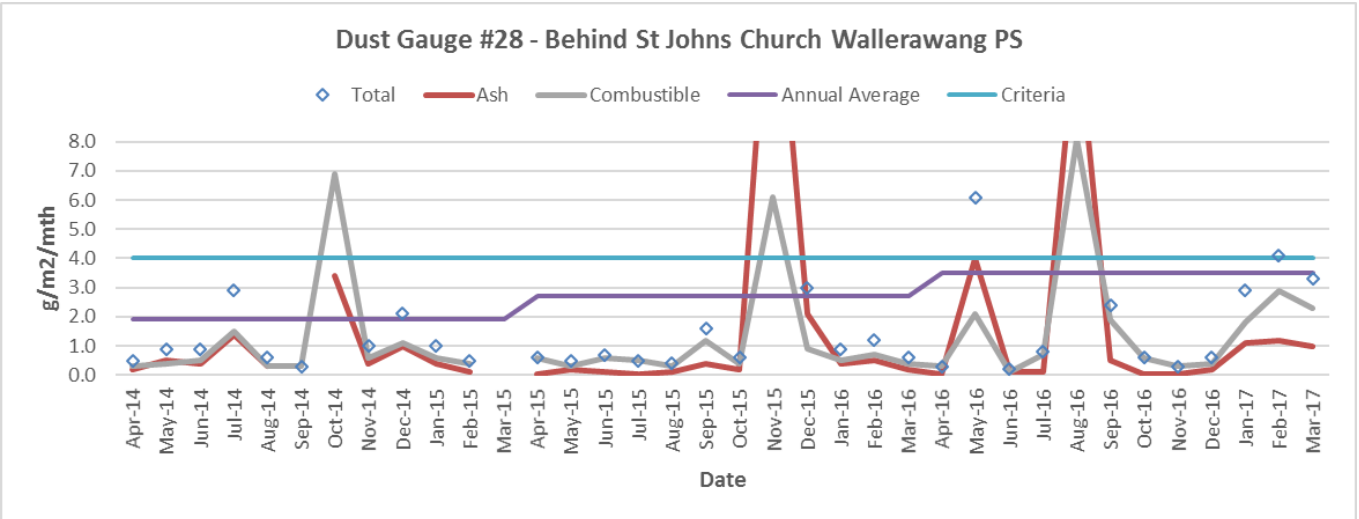

Figure 12: Depositional Dust Summary - Dust Gauge 28

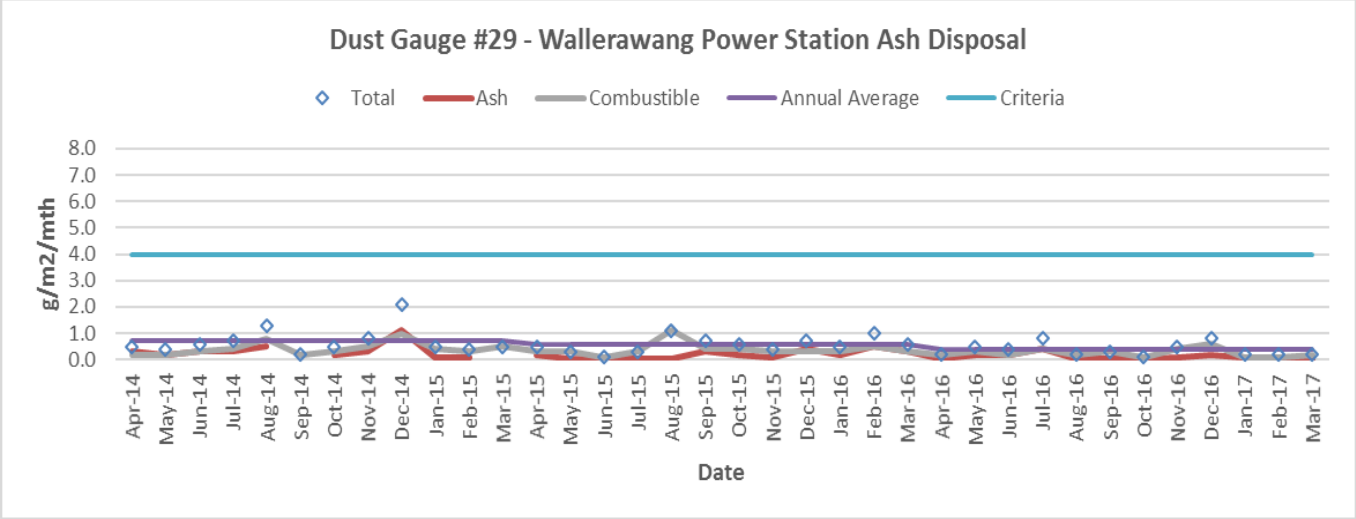

Figure 13: Depositional Dust Summary - Dust Gauge 29

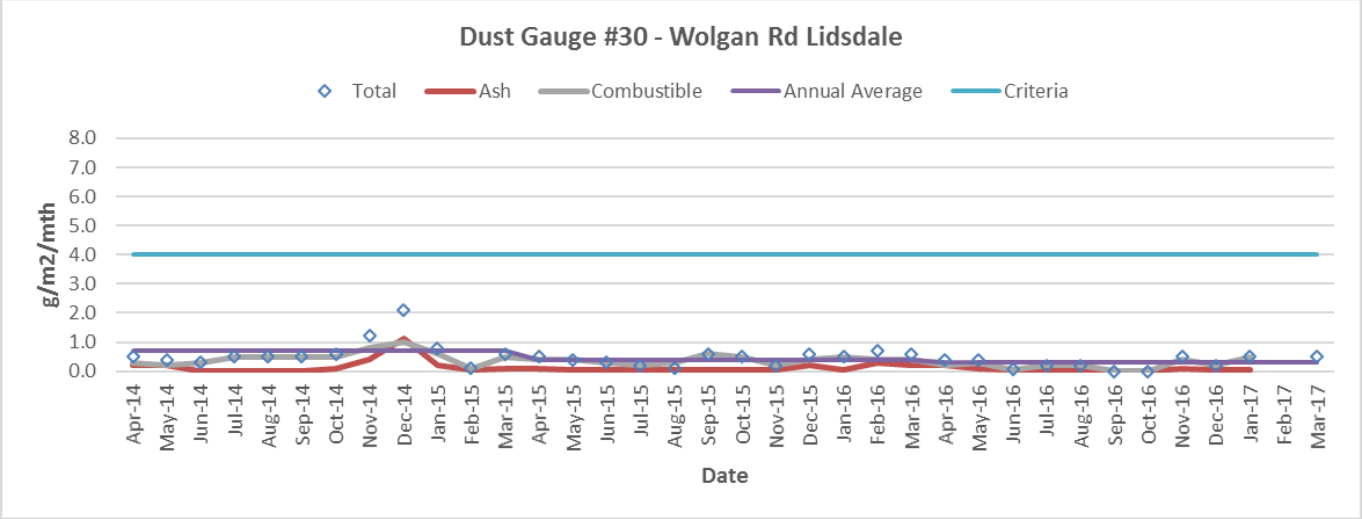

Figure 14: Depositional Dust Summary - Dust Gauge 30

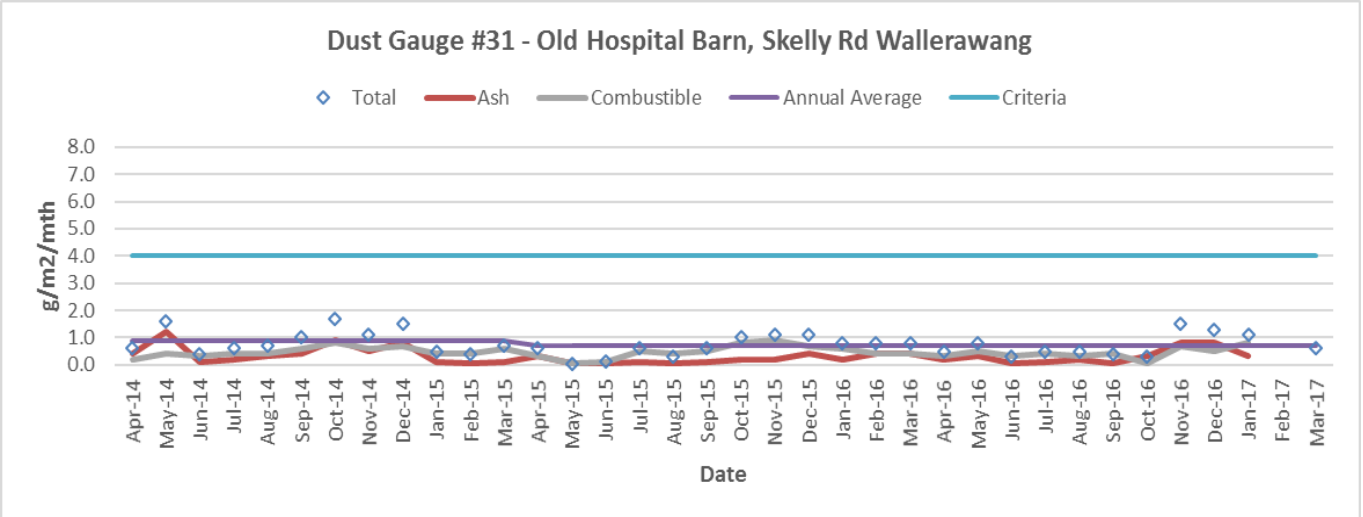

Figure 15: Depositional Dust Summary - Dust Gauge 31

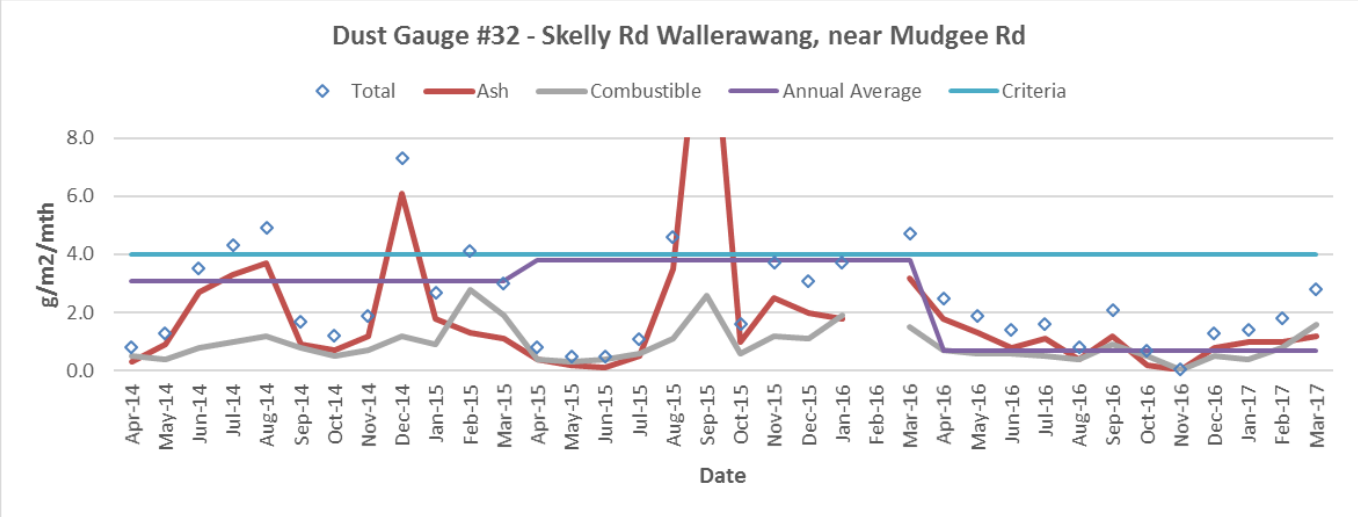

Figure 16: Depositional Dust Summary - Dust Gauge 32

Gauges located within the perimeter of the KVAR Stage 2 recorded annual average deposition rates of 2.3 g/m^2/month (as insoluble solids), or 3.6 with the addition of gauge 12 in September 2016 (Figure 17). The rolling average for the period was 2.14 g/m^2/month Monthly Average insoluble Solids and 1.45 g/m^2/month Monthly Average Incombustible matter (Table 11).

Internal dust monitor 5 has historically recorded inherently and anomalously high readings compared to the rest of the internal dust monitors. To investigate these results, an additional unit (dust monitor 12) was installed downslope and west of monitor 5 in September 2016 and has also recorded high results. However, it is evident that both monitors are not reading dust from the exposed ash as all observations indicate a *fine brown dust and coarse brown, black dust'* instead of fine or coarse grey, green dust as anticipated for ash. Several options to explain the high dust levels are being considered, including that the dust may be from the traffic areas of the road-base haul road or could be coal dust from adjacent areas.

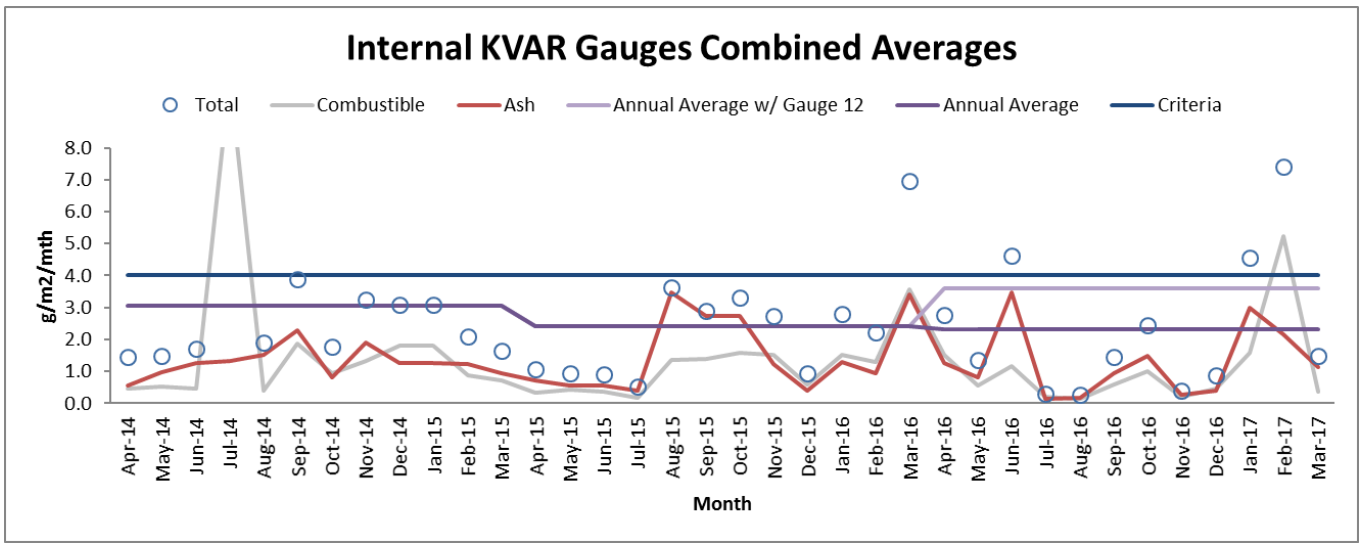

Figure 17: Combined averages for the dust gauges located within KVAR.

Table 11: Rolling Average depositional rates for Internal KVAR Static Dust Gauges

Reporting Period (April to March)	Monthly Average Insoluble Solids ($g/m^2/month$)	Combustible Matter ($g/m^2/month$)	Incombustible matter ($g/m^2/month$)
2010-2011	4.3	1.5	2.8
2011-2012	4.3	1.5	2.8
2012-2013	5.6	2.2	3.4
2013-2014	2.9	0.8	2.1
2014-2015	3.1	1.8	1.3
2015-2016	2.7	0.84	1.86
2016-2017	2.14	0.84	1.45

Having reviewed all available information/data and from site inspections, the requirements of the OEMP were compliant through 2016-2017. These results indicate that KVAR is managed effectively for dust and as such is in compliance with CoAs 2.33 and 3.8.

6.4.3 Reportable Incidents

During the months of September, October 2016 and February 2017, a sample was unable to be collected from dust gauge 30 (Figure 14) as the sample bottle was missing. This gauge is located along the Wolgan Road at Lidsdale and is prone to being stolen. Upon discovery of the missing bottle, a replacement was sourced and installed in the same position on the following day.

Similarly during the month of February 2017 a sample was unable to be collected from dust gauge 25 (Figure 10) and gauge 31 (Figure 15) as the bottles were either missing or broken. Gauge 25 is located along the Haul Road between Wallerawang Power Station and Angus Place Mine; while gauge 31 is located along Skelly Road in Wallerawang. Upon discovery, replacement bottles were sourced and installed in the same positions on the following day.

6.4.4 Further Improvements

Investigate if methods are available to minimise vandalism (e.g. stealing or breaking) to dust gauge bottles, particularly gauges located near residential areas.

6.5 Waste Management

6.5.1 Environmental Management

Waste disposal practices at the Kerosene Vale Ash Repository are managed in accordance with Environmental Protection Licence 766 and the Waste Management Sub-Plan (OEMP Section 6.9). Waste materials are assessed, classified, managed and disposed of in accordance with Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes (EPA, 1999).

EnergyAustralia NSW and associated contractors are not to cause, permit or allow any waste generated outside the ash repository to be received at the ash repository for storage, treatment, processing, reprocessing or disposal, including no wastes other than those as stated on the licence approval to be kept on the site. Waste generated by site personnel shall (including maintenance wastes such as oils and greases) are collected on a regular basis to be recycled or disposed of to an appropriate facility.

Staff and contractors involved in the KVAR Stage 2 operations are made aware of the waste management procedures as outlined in the OEMP sub-plan. Waste-related documents and records reflect adherence to these protocols, thereby providing the foundations for a transparent approach to waste management. The OEMP provides further guidance and detail on specific waste streams and applicable management measures (OEMP Section 6.9).

6.5.2 Environmental Performance

An estimated 3,000 tonnes (1,795 m^3) pond sediments were co-placed at the ash repository during the reporting period. Pond sediments are sourced from settling basins located within the licenced premises at the Wallerawang Power Station. Settling pond sediments are licenced to be disposed of at the premises under EPL766 condition L4.2. The activities at the KVAR Stage 2 were deemed to have met the OEMP targets for waste management for the 2016-17 year. In addition, no non-conformances were identified and the OEMP requirements with respect to waste management were found to be complied with.

6.5.3 Reportable Incidents

No reportable incidents have been recorded against waste management for the reporting period.

6.5.4 Further Improvements

No further improvements have been identified for the next reporting period.

EnergyAustralia NSW is currently developing a closure and rehabilitation plan for the KVAR. The existing approved OEMP rehabilitation sub-plan describes the use of capping material to cover and rehabilitate the surface of KVAR. As part of the closure and rehabilitation strategy it has been recognised that additional capping material may be required to achieve the rehabilitation objectives and targets. As such, EnergyAustralia NSW is investigating the use Virgin excavated Natural material (VENM) and Excavated Natural Material (ENM) for use in the rehabilitation and closure of KVAR.

6.6 Heritage Management

6.6.1 Environmental Management

The OEMP provides guidance surrounding the management methods required to comply with CoA's 2.37-2.38 regarding the protection of Aboriginal and non-indigenous heritage sites. Specifically this is addressed in the Ash delivery and placement sub-plan.

The Environmental Assessment performed by Parsons Brinckerhoff (2008a) for KVAR Stage 2 included a preliminary archaeology and heritage assessment. The assessment concluded that the KVAR Stage 2 works pose no threat to the Aboriginal archaeological or heritage values and would not result in any further impact on Aboriginal archaeological potential. Based on these findings, the following statements of commitment, in regards to heritage sites, were made:

- Disturbance to the western portion of the ash repository shall be limited to reduce the potential for inadvertent disturbance of the Aboriginal heritage values of the area.
- In the event that any heritage sites or items be discovered during operation, all works likely to affect the area are to cease immediately. The EnergyAustralia Environmental representative is to be notified immediately and relevant stakeholders including the OEH Regional Archaeologist, the Bathurst Local Aboriginal Land Council, or the NSW Heritage Office, so that an appropriate course of action can be determined.

All construction and earthworks personnel are informed on their obligations in respect of the protection of Aboriginal and non-indigenous heritage sites and items as part of the site induction.

6.6.2 Environmental Performance

No known Aboriginal and non-indigenous heritage sites were impacted during the reporting period and no additional sites were discovered or identified.

6.6.3 Reportable Incidents

No reportable incidents have been recorded against heritage management for the reporting period.

6.6.4 Further Improvements

No further improvements have been identified for the next reporting period.

7. Water management

7.1 Groundwater Monitoring

7.1.1 Environmental Management

The ground waters of Kerosene Vale are monitored regularly to determine the extent of impacts, if any, of KVAR Stage 2 operations on regional waters, and to examine the movement of water beneath the site and through the catchment.

The OEMP (Parsons Brinckerhoff, 2008b) includes a Groundwater Management Plan for KVAR and adjacent KVAD. The focus of the Management Plan was to understand water quality impacts on the immediate area and the influence of regional groundwater on the stability of the KVAR Stage 2 operations, due to the placement of the site over the reclaimed ash dam.

On site dry ash placement management has mainly involved limiting rainfall infiltration and reducing seepage from KVAD into the local groundwater. The effectiveness of these activities was demonstrated by improved water quality in the local groundwater during Stage I placement, from 2003 to 2006, before the toe drains of the Ash Dam became blocked (Aurecon, 2011). The report (Aurecon, 2011) indicates that the quality of groundwater beneath KVAR is not being negatively impacted by ash placement operations, thus meeting the OEMP performance target.

Blocked toe drains of KVAD were cleared in February 2010, and further monitoring of groundwater levels within the Ash Dam and KVAR Stage 2 were instigated. This included subsurface investigations.

Subsurface investigations and subsurface drainage works (for seepage collection) and installation of additional water monitoring points (Appendix E) have provided for management and assessment of water levels beneath the Stage 1 repository (Golder Associates, 2013).

The groundwater monitoring network includes six regional bores – WGM1/D1 (DW1), WGM1/D2 (DW2), WGM1/D3 (DW3), WGM1/D4 (DW4), WGM1/D5 (DW5) and WGM1/D6 (DW6) (Figure 18). Additional sites sampling the local Kerosene Vale Ash Dam and Repository (KVAD/R) seepage and SSCAD, offer further information in regards to the local groundwater quality under SSCAD, KVAD and the KVAR.

Figure 18: Surface and groundwater monitoring sites for SSCAD and KVAR

7.1.2 Environmental Performance

EnergyAustralia NSW engaged independent specialist consultants Aurecon to undertake a detailed Water Quality Assessment for the April 2016 to March 2017 reporting period for the KVAR. In summary the groundwater assessment found that there have been no significant effects of the KVAR dry ash placement area on the local groundwater aquifers. The Water Quality Assessment is provided in full in Appendix L.

This, and more detailed measurements in Sawyers Swamp Creek, indicated no significant effects on the groundwater receiving water.

In order to assess the effects of the KVAD/R groundwater on the water quality at the receiving groundwater bores D5 and D6 (Table 12), the average water quality for the bores inside the KVAD and its seepage points for the reporting period are provided in Table 13.

The assessment of groundwater quality found that:

All of the trace metal concentrations at D5 have decreased from the previous reporting periods but the majority still remain above the Local/ANZECC trigger values, in contrast to the conditions at the commencement of ash placement. Those that remained the same were already below the guidelines. The majority of trace metals in bore D6, including aluminium and excluding selenium, have also shown increases since the 2012/13 reporting period. Throughout the current reporting period, there has been a continued increase in iron and aluminium but slight decreases in cadmium and zinc within bore D6. These changes are considered to be the result of the reduction in groundwater levels following the installation of the subsurface drains in 2010, and potentially due to the reduction in the water level of the Lidsdale Cut Pond since 2012.

All of the salinity characteristics and the majority of the trace metals within the KVAD/R seepage had higher concentrations than at the receiving groundwater bore D5. The high salinity recorded in KVAD/R is most likely due to the generation of sulphate through the oxidation and dissolution of the coal waste/chitter pyrites, which can result in acidic conditions causing the release of trace metals into the seepage and groundwater under the KVAR.

The lack of significant selenium concentrations in the KVAR seepage detection bores indicate that leachates and seepage from the KVAD/R long-held ash deposits have had no overall effect on the local groundwater. This is also supported by the significant differences in salinity (conductivity) and sulphate between the KVAD and KVAR seepage bores and the detection monitoring bores.

Based on this data it appears that the quality of groundwater underlying the site is not significantly impacted by KVAR Stage 2 operations.

Table 12: Groundwater Quality for KVAD/R seepage bores WGM1/D5 and D6*.

Element (mg/L)	KVAD & KVAR Monitoring Bores								Background April 2016 to March 2017	Baseline Pre-Stage I 90th Percentile	ANZECC Guideline Goals for Ground-water
	KVAR Stage 2 Feb 2012 to Mar 2013		KVAR Stage 2 Apr 2012 to Mar 2015		Decommissioned KVAR Apr 2015 to Mar 2016		Decommissioned KVAR Apr 2016 to Mar 2017				
	D5	D6	D5	D6	D5	D6	D5	D6	D2	D5	
pH	3.7	3.4	3.9	3.3	4.0	3.8	3.8	4.0	4.2	4.5	6.5-8.0
Cond (µS/cm)	580	1300	717	1475	1020	1328	773	1600	444	810	2600
TDS	430	885	533	1007	752	1010	556	1294	274	550	2000
SO4	240	530	330	658	495	678	341	807	147	328	1000
Cl	13	47	19.2	40	26.1	29.2	19	44.0	22	24	350
Al	7.5	1.35	16.7	3.55	18.9	4.5	15.0	5.51	0.23	-	**5.1**
As	0.001	0.002	0.007	0.005	0.005	0.003	0.003	0.001	<0.001	0.008	**0.024**
B	0.80	0.63	1.06	0.85	1.76	0.76	1.23	0.88	<0.0001	1.7	**1.7**
Cd	0.001	0.0002	0.0334	0.002	0.036	0.002	0.0058	0.0014	0.001	0.004	0.001
Cr	0.002	0.0015	0.005	0.002	0.0046	0.002	0.0049	0.002	0.001	0.041	0.004
Cu	0.003	0.005	0.034	0.005	0.045	0.008	0.022	0.0107	0.76	0.058	0.005
Fe	0.35	54.5	0.79	80.7	1.83	66.6	1.20	103.1	0.44	14.7	**1.7**
Mn	3.5	4.45	4.13	4.75	5.12	3.4	3.58	4.85	0.09	2.5	1.9
Mo	0.01	0.01	0.007	0.001	0.002	<0.001	0.002	<0.001	0.02	-	0.010
F	0.60	0.30	1.28	0.51	0.67	0.46	0.41	0.40	<0.001	0.65	1.5
Ni	0.230	0.345	0.316	0.496	0.354	0.50	0.271	0.490	0.051	0.137	**0.137**
Pb	0.002	0.002	0.0625	0.012	0.072	0.015	0.026	0.010	0.001	0.021	**0.010**
Se	<0.002	0.002	0.003	0.001	0.002	<0.001	0.002	0.0002	<0.0001	0.002	0.005
Zn	0.560	0.920	1.62	1.30	2.07	1.30	0.883	1.220	0.061	0.505	**0.505**

* Long-term Groundwater Quality changes from Initial Stage 2 Placement to current decommissioned period compared to background Bore D2, Bore D5 90th Percentile Baseline and Groundwater Guidelines. Excerpt from Aurecon (2017b)

Table 13: Average Water Quality KVAD/R Groundwater quality for 2016/17*

Element (mg/L)	KVAD/R Groundwater / Seepage 2016/17					D5	Groundwater Guidelines or Goals
	AP09	GW11	AP17	North Wall (Site 86)	South-west Wall (Site 94)		
pH	5.9	6.5	3.7	2.9	3.3	3.8	6.5-8.0
Cond (µS/cm)	2722	208	5090	4318	3741	773	2600
TDS	2224	179	4562	3440	3122	556	2000
SO4	1456	30.5	3236	2337	2099	341	1000
Cl	29.8	14.3	16.0	19.1	39.0	19	350
Al	0.35	1.5	70.9	17.4	52.9	15.0	5.10
As	0.072	<0.001	0.046	0.004	0.007	0.003	0.024
B	2.3	0.06	12.61	9.0	8.61	1.23	1.7
Cd	<0.0001	0.0001	0.0015	0.0002	0.011	0.0058	0.001
Cr	<0.001	<0.001	0.001	0.001	0.005	0.0049	0.004
Cu	0.0013	0.004	0.006	0.001	0.014	0.022	0.005
F	0.43	0.065	85.3	17.8	14.8	0.41	1.5
Fe	93.1	0.53	196	52.2	28.1	1.20	1.7
Mn	8.65	0.006	12.65	16.1	21.0	3.58	1.9
Mo	0.106	<0.001	0.009	0.001	0.001	0.002	0.01
Ni	0.557	0.003	1.81	1.15	1.615	0.271	0.137
Pb	0.001	0.002	0.002	0.001	0.006	0.026	0.010
Se	0.0003	<0.001	0.053	0.002	0.007	0.002	0.005
Zn	0.237	0.016	5.40	2.16	2.47	0.883	0.505

* Groundwater quality of KVAR Stage 2 groundwater and seepage bores compared to groundwater quality at seepage detection bore D5 for 2016-17 reporting period. adapted from Aurecon (2017b)

7.1.2.1 Lidsdale Cut

The Lidsdale Cut mine void pond acts as a collection basin for most of the KVAD groundwater seepage as a result of the toe drains and pipeline from the Collection Pond. This includes rainfall infiltration through the KVAR dry ash placement and surface water runoff from the KVAR, which is collected in pits.

EnergyAustralia has been managing the water level within the Lidsdale Cut pond by pumping the level down to between 0.4 to 0.6 m above the bottom of the pond, generally in response to rainfall (Figure 19). Previous Water Quality Assessments (Aurecon, 2015) have indicated that there have been increases in trace metal concentrations within the pond as a result of the pumping down of the water level and suggested that EnergyAustralia NSW investigate maintaining a higher water level in the Lidsdale Cut pond to minimise trace metal release from pyrites in the coal waste/chitter. However, higher water levels in Lidsdale Cut present other water management issues for EnergyAustralia.

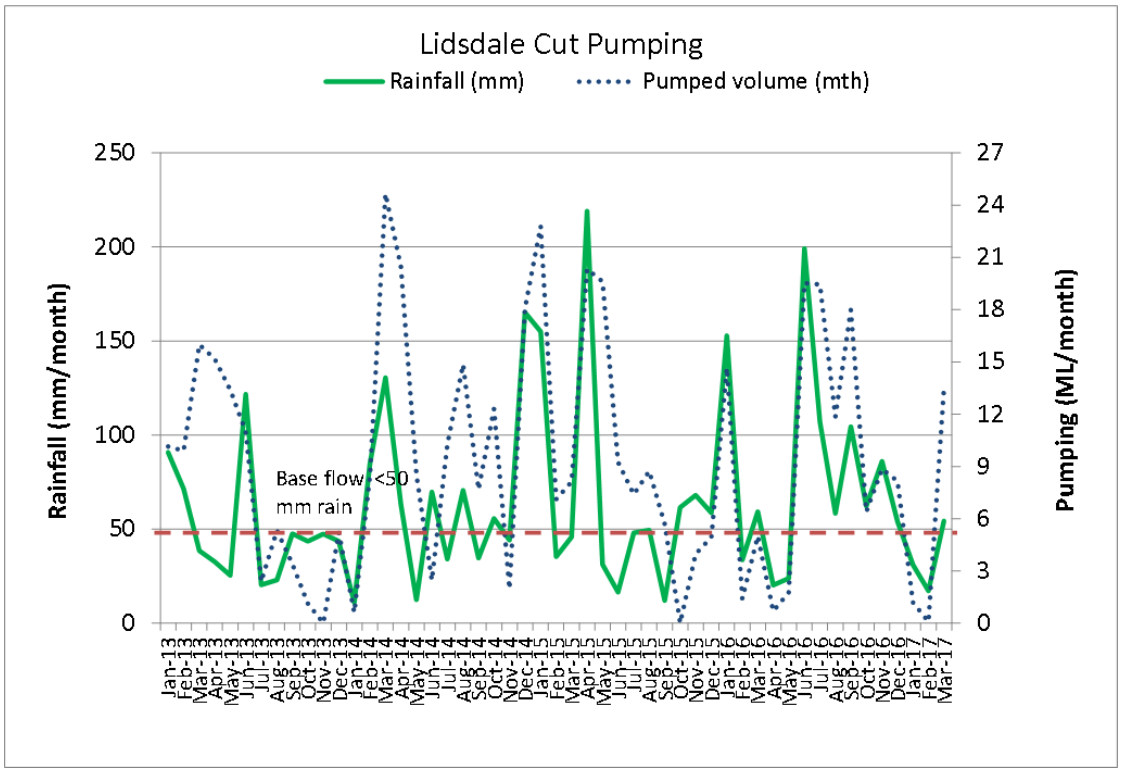

Figure 19: Rainfall at Wallerawang compared to the amount pumped from Lidsdale Cut since January 2013.

As indicated in Table 14, there have been increases in trace metal concentrations within the Lidsdale Cut until the 2014/15 reporting period, when concentrations peaked. It is expected that these increases were the combined effect of pyrite oxidation from the coal waste/chitter that forms the void and surrounding areas, and the release of previously held trace metals from the dense aquatic vegetation (reeds) in the upper reaches of the Lidsdale Cut Mine void pond due to the decrease in water level.

In the 2015/16 reporting period, trace metal concentrations and aluminium had decreased, with a further decrease in trace metal concentrations recorded in the 2016/17 reporting period. It is expected that these decreases are the result of the improved water management within the pond, which in turn has potentially minimised the effects of coal pyrites in the open-cut mine void.

7.1.3 Reportable Incidents

No reportable incidents have been recorded against groundwater managed for the reporting period.

7.1.4 Further Improvements

- Continue monthly water quality monitoring at the routine groundwater monitoring sites.
- Continue to monitor the water quality in the Lidsdale Cut pond to see if the current decrease in concentrations continues

Table 14: Long-term water quality changes for Lidsdale Cut Mine Void Pond

Element (mg/L)	Lidsdale Cut Mine Void Pond (Site 40)						
	Pre-placement (1992-2003) 90th percentile	Initial KVAR Stage 2 (Apr 2009 – Mar 2010)	KVAR Stage 2A (Apr 2010 – Jan 2012)*	KVAR Stage 2* (Apr 2013 – Mar 2014)	KVAR Stage 2 (Apr 2014 – Mar 2015)	Decommissioned (Apr 2015 – Mar 2016)	Decommissioned (Apr 2016 – Mar 2017)
pH	6.9	3.4	4.8	3.4	3.5	3.4	3.4
Cond (µS/cm)	952	1965	1011	3917	4146	2549	2435
TDS	650	1500	740	4083	4633	2089	2094
SO4	359	970	460	2900	3148	1529	1311
Cl	34	19	21	28.7	33	21.1	19.5
Al	2.43	-	9.7	155	198	61.1	49.9
As	<0.001	0.002	0.002	0.020	0.030	0.013	0.009
B	2.16	5.20	2.4	13.3	14.8	6.6	5.57
Cd	<0.001	0.0008	0.0013	0.047	0.059	0.0156	0.011
Cr	<0.006	0.0013	0.001	0.020	0.0337	0.006	0.005
Cu	<0.005	0.003	0.004	0.031	0.068	0.016	0.011
F	1.99	6.70	2.60	28.7	30.0	13.2	10.23
Fe	0.7	3.05	0.04	-	-	8.27	6.52
Mn	2.12	6.30	4.10	2.5	2.53	8.48	9.62
Mo	-	0.010	<0.010	0.001	0.004	0.001	0.001
Ni	-	0.540	0.280	1.08	1.129	0.752	0.748
Pb	0.004	0.003	0.002	0.015	0.006	0.013	0.006
Se	0.001	0.001	0.002	0.058	0.072	0.022	0.0558
Zn	0.304	1.20	0.520	2.84	2.815	1.62	1.427

7.2 Surface Water Quality Monitoring

7.2.1 Environmental Management

The surface waters of Kerosene Vale are mostly comprised of runoff generated within the ash repository site. All runoff from KVAR is restricted from entering SSC, and is contained for reuse for the conditioning of ash and dust suppression. The CoAs stipulate that a monitoring program must be implemented to record and observe water quality and potential impacts from repository operations on regional surface waters. This monitoring included a program following the realignment of SSC- however, as the creek has not been realigned, this aspect of monitoring is no longer necessary.

The design concept for managing surface water for the repository is outlined in the Repository Management Plan(Lend Lease 2012, and based on reducing water pooling or ponding on exposed ash benches, and eliminating flow from these areas over batters managed by controlled outflow structures..

The Operational Environment Management Plan for KVAR Stage 2 requires sampling within SSC at four locations, this includes: two (2) on SSC, one (1) on Dump Creek to the northwest of the repository, and one (1) in SSC Ash Dam. The purpose of the surface water monitoring program is to ensure operations are not impacting on catchment surface waters, and to comply with Section 120 of the *Protection of the Environment Operations Act 1997*.

Sampling has been undertaken at Site ID numbers 38, 39, 40 and 41 (Appendix E, shaded cells) since January 2003.

7.2.2 Environmental Performance

There were no impacts to surface water resources from KVAR identified during the reporting period.

In order to assess the effects, if any, of the KVAR dry ash placement during the reporting period on the surface water receiving site at WX7, the other potential sources of water quality and trace metal inputs to the creek need to be considered. Selenium has been used as an indicator for ash leachates due to its naturally occurring high concentrations within ash. Table 15 shows the water quality and trace metals at the surface water receiving site on Sawyers Swamp Creek at WX7 (Figure 18), and compares it to the water within Dump Creek (at WX11, background) and the upstream monitoring point (site 158).

Table 15: Surface water quality in Sawyers Swamp Creek (WX7)*

Element (mg/L)	Sawyers Swamp Creek (WX7)							Dump Creek (WX11)	Sawyers Swamp Creek Upstream (158)	ANZECC Surface Water Guidelines / Local Goals
	Pre-placement (1991 – 2003) 90th percentile	Pre-Springvale Mine Water Discharge (May 2003 – July 2007)	Initial KVAR Stage 2A (Apr 2010 – Jan 2012)	KVAR Stage 2 Placement (Feb 2012 – Mar 2013)	KVAR Stage 2 Placement (Apr 2013 – Mar 2015)	Decommissioned (Apr 2015 – Mar 2016)	Decommissioned (Apr 2016 – Mar 2017)	Apr 2016 – Mar 2017	Apr 2016-Mar 2017	
pH	7.6	6.3	7.3	7.5	8.7	8.8	8.7	3.4	8.0	6.5 – 8.0
Cond (µS/cm)	760	1070	1100	828	1129	1154	1167	1419	1186	2200
TDS	584	774	690	553	696	659	661	927	925	1500
SO4	323	496	300	156	36	38	27	596	28.9	1000
Cl	27	26.5	16	11	5.3	5.9	5.5	22.2	5.5	350
Alk	20	20	162	257	557	590	604	0.54	626	-
Al	-	0.274	10.5	23.8	0.20	0.42	0.42	3.29	0.31	5.25
As	<0.01	0.015	0.004	0.007	0.022	0.023	0.025	0.001	0.0272	0.024
B	2.33	2.26	1.4	0.634	0.091	0.143	0.17	2.28	0.087	1.25
Cd	<0.001	0.0006	0.0007	0.0011	0.0001	0.0001	0.0001	0.0005	<0.0001	0.0015
Cr	<0.001	0.0003	0.0025	0.0128	0.0013	0.001	0.001	0.0011	-	0.005
Cu	<0.007	0.0004	0.003	0.0099	0.0021	0.001	0.001	0.0048	0.0086	0.005
F	1.1	0.89	1.7	1.7	1.10	1.17	1.10	1.48	1.24	1.5
Fe	0.507	0.065	0.02	0.26	-	0.025	0.03	7.35	0.30	0.3
Mn	0.829	1.12	1.7	0.72	-	0.017	0.01	4.47	0.0126	1.9
Mo	-	0.005	0.02	0.014	0.043	0.045	0.040	<0.001	0.041	0.01
Ni	-	0.142	0.16	0.059	0.006	0.005	0.004	0.362	0.003	0.05
Pb	0.003	0.004	0.002	0.003	0.0011	0.001	0.001	0.0048	0.001	0.005
Se	0.003	0.002	<0.002	<0.001	0.001	<0.001	<0.001	<0.001	0.0002	0.005
Zn	0.153	0.144	0.45	0.035	0.025	0.012	0.009	1.008	0.001	0.153

* Long-term Surface water Quality changes in Sawyers Swamp Creek at WX7 from Initial Stage 2 Placement to current decommissioned period compared to Dump Creek (WX11), upstream monitoring site (Site 158) and the ANZECC Guidelines and local goals. Excerpt from Aurecon (2017b)

The assessment of groundwater quality found that:

- The water quality and trace metal concentrations in Sawyers Swamp Creek at WX7 have been affected by the continuous discharge of water from the Springvale Coal Mine. Springvale Coal Mine commenced discharging water into SSC in February 2009. Approximately 20 ML of water per day is discharged by the mining operations into Sawyers Swamp Creek. This limits the assessment of the impacts of KVAR/D on Sawyers Swamp Creek and must be considered when assessing compliance with relevant ANZECC guidelines.
- The water quality at WX7 continues to meet the local/ANZECC (2000) guideline goals for the majority of analytes, with the exception of arsenic and molybdenum. Arsenic and molybdenum were slightly above the ANSECC guideline and is consistent with the results measured at the upstream monitoring site (Table 15). As these concentrations differ to those of KVAD/R Seepage (Table 13), it is likely that these are associated with other landuse practices in the area and are not directly related to KVAD/R.
- The lack of significant selenium concentrations in the surface water receiving site (WX7) indicate that leachates and seepage from the KVAD/R long-held ash deposits have had no overall effect on the local surface water. This is also supported by the significant differences in salinity (conductivity) and sulphate between the KVAD and KVAR seepage bores and the surface water receiving site.

Based on site observations and information reviewed potential surface and groundwater impacts from the operation of the KVAR Stage 2 have been effectively mitigated and managed. Operations of the KVAR Stage 2 are considered to have met the target of zero environmental incidents relating to pollution of waters at SSC.

7.2.3 Reportable Incidents

No reportable incidents have been recorded against surface water management for the reporting period

7.2.4 Further Improvements

- Continue monthly water quality monitoring at the EnergyAustralia NSW routine surface water monitoring sites in accordance with the approved OEMP.

7.3 Hydrological Monitoring

EnergyAustralia NSW has determined that there is no longer any need to realign SSC. As such, hydrological monitoring as required under CoA 3.6 is not required.

7.4 Erosion and Sediment Control

7.4.1 Environmental Management

The management, collection and monitoring of surface water to ensure site runoff is undertaken as part of the operational and development activities of the KVAR, and is addressed within the surface water quality sub-plan of the OEMP. Site specific management practices are used to prevent site runoff from exposed ash surfaces from entering Sawyers Swamp Creek. Site surface water management measures include:

- Sediment and erosion controls:
    - Works in disturbed areas restricted during heavy rainfall events;
    - Operations-related earthworks not undertaken within 50m of Sawyers Swamp Creek where reasonable and feasible;
    - Cleared vegetation is mulched, chipped or re-used onsite for sediment filter fences or other uses, where appropriate.
- Development of a retention basin (or use of the existing basin) to capture site surface water runoff;
- Placement of ash with designated slopes to direct water to retention areas;
- Diversion of clean water away from disturbed areas to existing surface water drains and Sawyers Swamp Creek to provide environmental flows (Figure 20); and
- Capping and revegetating completed areas to enable the diversion of clean water to site drainage systems.

An additional clean water detention pond (SW Pond 3) was excavated in the already disturbed area of exposed soil at the north-eastern corner of KVAR Stage 2B in the 2015-16 reporting period (Figure 20).

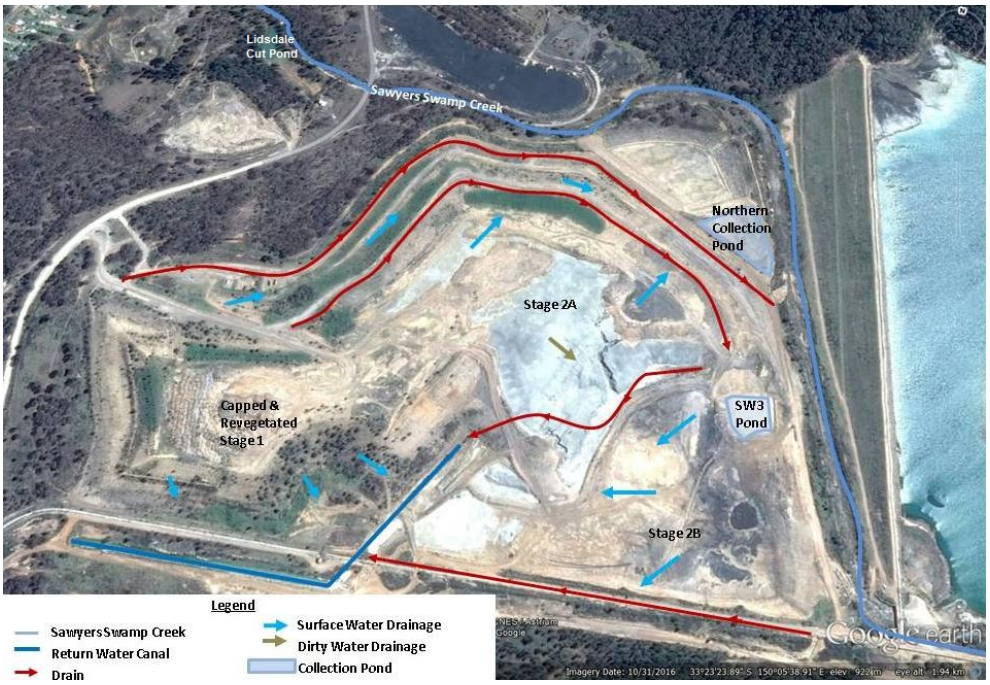

Figure 20: Existing site drainage system

7.4.2 Environmental Performance

The KVAR site (50.7 ha) has two catchments: one reporting to the north and one reporting to the south. Both catchments have been designed to hold sediment laden water during operations and will capture clean water as per the water management plan for the final landform design. The northern catchment has a plan area of 28.5 ha and the southern catchment has a plan area of 19.7 ha, including the 7.2 ha of partial excavation for KVAR Stage 2B.

During the reporting period, rainfall runoff flows directed to the north reported into the North Holding Pond. Outflow from the North Holding Pond was managed via a pump-back system to the Sawyers Swamp Creek Ash Dam and was also used for dust suppression irrigation and as a water cart fill point. Other flows from the North Holding Pond were directed into the collection system which reports to Lidsdale Cut and subsequently pumped back to the Southern water management area for pumping back to Sawyers Swamp Creek Ash Dam.

In the beginning of the reporting period, the water pumped to the Southern water management area (at the return water canal) was re-directed to the Wallerawang Power Station Caustic Injection Ponds. However, the need to pump back to the power station was partially eliminated with the clean out of the collection ponds within the Southern water management area. The sediments in the Return Water Canal and collection ponds were removed during the 2016-17 reporting period, with disposal of the removed sediments at Sawyers Swamp Creek Ash Dam, and pump-back of the water within the Southern Water Management Area to the Sawyers Swamp Creek Ash Dam recommenced.

7.4.3 Reportable Incidents

No reportable incidents have been recorded against erosion and sediment control for the reporting period.

7.4.4 Further Improvements

- Implement effective sediment and erosion control measures and undertake any rehabilitation works in accordance with approved management plans.

8. Landscape and Revegetation

8.1.1 Environmental Management

The scope of landscape and revegetation environmental management is provided in the Site Repository Plan (Lend Lease, 2012) and in the Landscape and Revegetation sub-plan of the OEMP. The Landscape and Revegetation plan is based on an overall requirement to integrate the ash repository into the existing landscape.

As the repository takes shape, landscape and revegetation works occur along the batters only, with an opportunity to plant the top surface arising as part of the final site requirements. As such, revegetation occurs intermittently, constrained by seasonality and the development of the repository.

8.1.2 Environmental Performance

Landscaping and revegetation at the KVAR for the reporting period 2016-17 has been limited to maintaining the previous planting and weed management. The previous planting was conducted in August 2014 to conclude the landscape planting expected in conjunction with ash placement, i.e. pro-rata completion of ash to completed capping. Previously reported planting includes areas of Stage 1 western batter, which was performed in 2013. On this site, composted organic waste materials were used to cover the batters to reduce soil loss. Trees and shrub planting has established well as shown in Plates 1 & 2.

Plate 1: Kerosene Vale Ash Repository Stage 1 rehabilitation works [view east] (planted August 2014, photo taken 31st May 2017)

Plate 2: Kerosene Vale Ash Repository Stage 1 rehabilitation works (planted August 2014, photo taken 31st May 2017)

As detailed within Table 16 and Figure 21, of the total area that has been capped, approximately 6.6 ha have had final planting and soil cover completed and is actively growing. Additionally, 3.4 ha require remedial soil cover of between 1-2 m placement to reach final form and grade and a further 10.1 ha requires a dress soil cover of approximately 0.5 – 1 m of topsoil or similar before revegetation can take place. Rehabilitation work is also recommended to include an organic soil layer, such as compost or mulch, on all completed capping. Use of mulch significantly reduces the cost required to build sediment control ponds as using a mulch layer will directly contribute to achieving water of a quality that will be suitable for direct inflow to the catchment.

Table 16: Rehabilitation Area Summary

Area Type	Previous Reporting Period Apr 2015 – Mar 2016	This Reporting period Apr 2016 – Mar 2017	Next Reporting period Apr 2017 – Mar 2018
Total footprint of KVAR (Stage 1 & 2)	50.7	50.7	50.7
Total active disturbance	44.1	44.1	44.1
Land being prepared for rehabilitation	40.3	40.3	40.3
Land under active rehabilitation	6.6	6.6	6.6
Completed rehabilitation	0.0	0.0	0.0

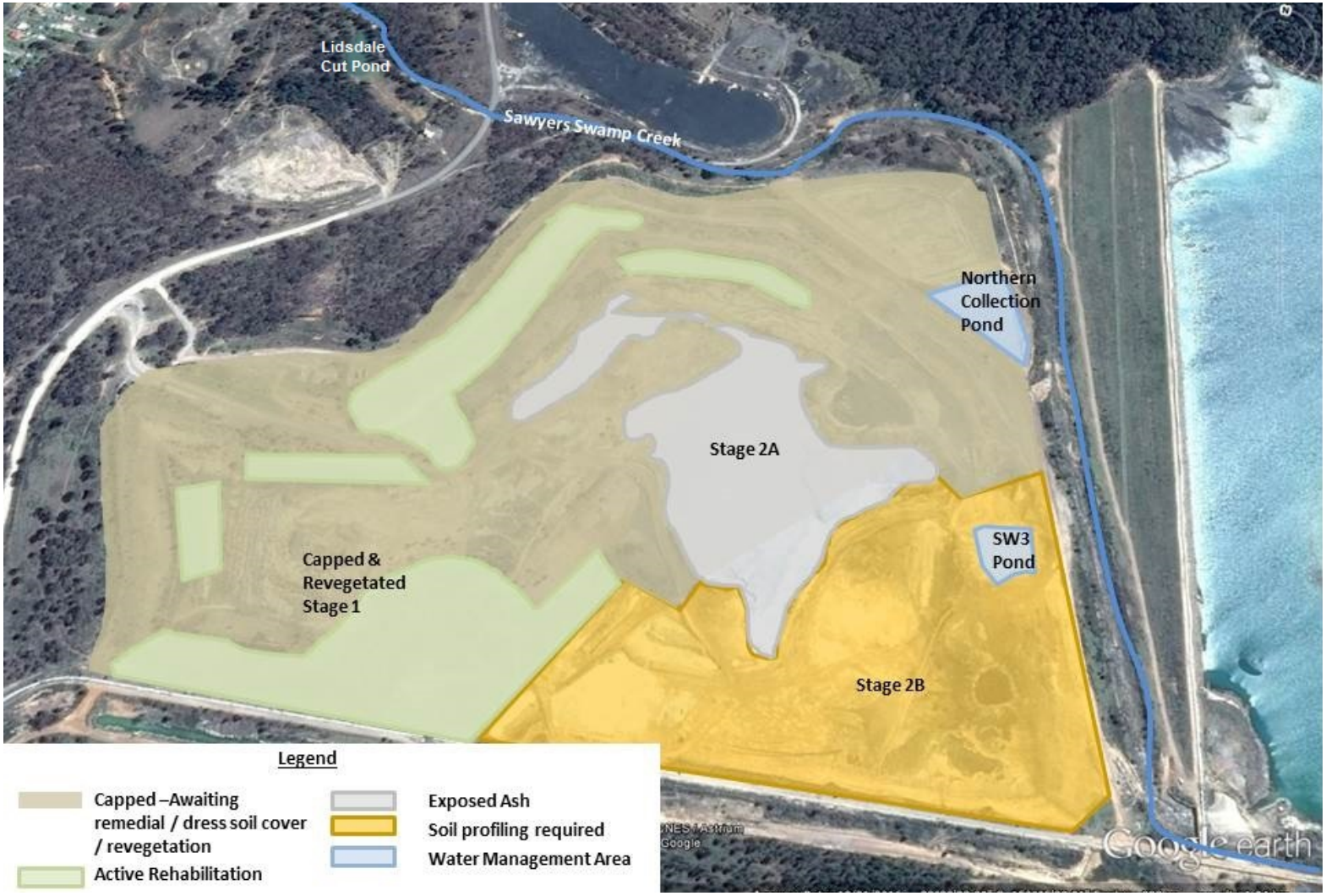

Figure 21: Current status of rehabilitation at Kerosene Vale Ash Repository

The process of capping over the remaining exposed ash is subject to available soil material. This is being sourced through access to material via the resource recovery general exemption for Virgin Excavated Natural Material (VENM) and Excavated Natural Material (ENM).

The site has an area that was excavated for ash placement, which has not occurred as a result of the Wallerawang Power Station being decommissioned, and remains with approximately 7.2 ha of exposed soils and coal settling pond sediments (Plate 3). Work and soil placement needs to be undertaken to re-establish the soil profile across this area.

Plate 3: Excavated area of KVAR Stage 2B, containing 7.2 ha of exposed soil and coal, that requires a soil profile reinstated.

The site requires soil placement within a 'capping and rehabilitation program' to cover a plan area of 20.7 ha (excluding the exposed ash area that is not capped). The amount of soil material that is needed to address the requirements of the capping and rehabilitation program is 20.7 ha x 0.5-1 m ~ 103,500 - 207,000 m3 of soil.

Final rehabilitation progress is subject to decisions about the water management design (including management of acidic groundwater pumped-back from Lidsdale Cut); the potential for accessing the ash for manufacturing; the availability and access to engineering fill, topsoil and the organic amendments needed to complete the planting works.

No non-conformances were identified.

As indicated in Table 17, the majority of the OEMP requirements with respect to landscaping/revegetation were found to be satisfactory or not applicable as ash has yet to reach the design RL (940 m AHD). However, the interim landscaping/revegetation activities undertaken are considered to be in line with the relevant OEMP target, given the project's progress to date.

Table 17: Rehabilitation Status Summary.

Performance Indicator	Completion Criteria*	Current Status (2016/17 Reporting Period
Visual impact	Measures to reduce the visual impact implemented as soon as practical.	**Satisfactory** – Batters located closest to residents have been revegetated.
	Ash Placement will be concentrated on the Eastern face of the KVAR Stage 2 ash repository in order to shield the residents from future ash placement activities.	**Not Applicable** – Ash placement no longer performed due to decommissioning of Wallerawang Power Station.
Capping	Ash to be capped to a depth of 0.75 m and contour ripped to preclude soil movement during rainfall or other erosion events.	**Satisfactory** – No soil loss or erosion identified in capped areas.
	Capping shall be conditioned to facilitate revegetation, which may include the use of cover crop grasses.	**Satisfactory** – Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) used for capping and conditioned using a mix of oats and rye-corn.
Revegetation	Develop a broad acre planting strategy on slopes at a 1 to 4 ratio.	**Satisfactory** – As detailed in the Repository Management Plan (Lend Lease, 2012).
	A developed revegetation procedure in place and implemented.	**Satisfactory** Procedure detailed in the Repository Management Plan (Lend Lease, 2012).
	Grass cover revegetation to include perennial grasses.	**Satisfactory** – Perennial grasses planted include Couch, Phalaris and Poa.
	Planting of shrubs and trees undertaken using tube stock of local provenance tree species to be performed after establishment of perennial grasses.	**Satisfactory** – Red Stringy Bark, Narrow-leaved Peppermint, Western Scribbly Gum, Silver Wattle and Red Stem Wattle tube stock planted in August 2014.
	Plant establishment (trees and shrubs) to minimise soil loss and erosion.	**Satisfactory** – No soil loss or erosion identified in revegetated areas.
Irrigation	Irrigation undertaken at establishment and as required thereafter.	**Satisfactory** – Irrigation performed through the use of water cart sprays and sprinklers already installed on and around Kerosene Vale Ash Repository.
Animal Control	Threats to vegetation such as grazing by animals managed accordingly.	**Satisfactory** – No evidence of animal grazing on revegetated areas.
Rehabilitation	All new batters rehabilitated as soon as practicable.	**Not Applicable** – No new batters have been developed.
	All areas of ash placement that have reached RL 940 m to be rehabilitated or in the process of rehabilitation as per revegetation plan.	**Ongoing** - 13.5 ha require remedial soil cover or a dress soil cover, prior to planting.

* Completion Criteria taken from the OEMP Landscape and Re-vegetation Plan

8.1.3 Reportable Incidents

No reportable incidents have been recorded against landscape and revegetation management for the reporting period.

8.1.4 Further Improvements

- Progress development of the closure and rehabilitation management plan for KVAR.

9. Community

9.1 Community Engagement

During the reporting period Community Reference Group meetings were held on 8th March 2016, 30th June 2016, 21st September 2016, 30th November 2016 and 22nd February 2017. The Community Reference Group comprises representatives from the local community and EnergyAustralia NSW. The Group meets on a quarterly basis to discuss matters relating to operations at Mt Piper and Wallerawang Power Stations, including activities at the ash repositories. The Community Reference Group minutes are made publically available via the Mt Piper and Wallerawang Community page on the Company's website www.energyaustralia.com.au.

9.2 Community Contributions

Wallerawang Power Station and the associated Kerosene Vale Ash Repository has contributed to the economy of the district and State through the purchase of materials and services from local and regional suppliers, and by direct and indirect employment. EnergyAustralia continues to support a number of community groups and organisations through in-kind support and financial sponsorship programs. During the reporting period, EnergyAustralia had the opportunity to support up to 60 different community organisations and events during the reporting period. A comprehensive list of these organisations and events are included in Appendix G.

9.3 Community complaints

During the 2016-17 reporting period one complaint was recorded, whereby the complainant had contacted the EPA indicating their concern regarding potential radiation emissions at the KVAR Stage 2. EnergyAustralia NSW responded to the EPA indicating that there is no known radiation emissions associated with the ash at KVAR Stage 2. No further actions have been required to date.

EnergyAustralia NSW maintains a 24 hour hotline for the public to report incidents, complaints or enquiries with contact details available on the EnergyAustralia website. EnergyAustralia records the details of all complaints received in a Complaints Register.

The Contract Administrator, Site Manager and the Environment Representative ensure that the community relations protocols are communicated to all project personnel involved in the complaints process and that appropriate training covering the protocols is established in site inductions.

The key elements of the on-site complaints management protocol include:

- All persons wishing to register a complaint to operations personnel will be politely directed to the Support Services Leader, in line with EnergyAustralia NSW's existing complaints procedure.

- The Support Services Leader will deal with the complaint and take down particulars of the complaint as per the criteria listed on the complaints register. Action will then be taken to resolve the issue whilst ensuring that all correspondence relating to the issue is documented. All attempts will be made to resolve the issue on the same day, however if this is not possible, the complainant will be updated regularly on the progress of the matter where practical.

9.4 Website Information

A project specific webpage has been developed to keep the broader community up to date with recent activities at the Kerosene Vale Ash Repository in accordance with Schedule 5, Condition 5.1 of the Project's Conditions of Approval. Copies of the following documents are made publically available on the EnergyAustralia website:

- Environment Assessment
- Project Approval 07_0005
- Construction Environment Management Plan
- Operation Environmental Management Plan
- Annual Environmental Management Reports
- Environment Protection Licence 766
- Pollution Incident Response Management Plan
- Community Reference Group Minutes

10. Independent Audit

There was no independent environmental audit undertaken during the reporting period. There is no requirement under Project Approval 07_0005 to perform an independent audit on the KVAR Stage 2 activities. Despite this, KVAR Stage 2 is subject to EnergyAustralia NSW's internal environmental audit and inspection schedule.

10.1 Internal Environmental Audits & Inspections

Environmental audits and inspections are undertaken by the Environment representative and Site Manager, in accordance with the program outlined in Table 18. The inspections assist to identify areas where improvements to the environmental performance of the KVAR Stage 2 activities can be achieved. Further detail is provided in section 3.7 of the OEMP. Reports from inspections undertaken are submitted to and reviewed by EnergyAustralia NSW monthly, with all areas discussed in detail during regular client/contractor meetings.

Table 18: Environmental inspection program

Potential impact	Locations	Technique	Frequency	Reporting	Responsibility
General Environmental Impacts	All KVAR Stage 2 operational areas	Site environmental inspections	Daily	Daily site environmental checklists	Contractor
			Monthly	Monthly site environmental checklists	Environmental representative

11. Incidents and non-compliances during the reporting period

As the KVAR is in care and maintenance there is limited vehicle and people movements at the site. As such the potential for environmental incidents and non-compliances is substantially reduced.

During the 2016-17 reporting period there was one instance of non-compliance in relation the project approval 07_005 Condition 2.1. The goal of 40% ash reuse was not achieved by 31st December 2013, with a total of only 0.32% ash reuse occurring from Wallerawang Power Station by the end of 2013. In March 2014, when it was announced that Wallerawang Power Station was being put out of service, the ash reuse from Wallerawang had remained at 0.32%.

Ash utilisation has been an ongoing program for the power station. Since then, more research and development of products and potential markets have been performed by external third parties. Generally the major limitation to further market development is a lack of rail, building and industrial infrastructure, particularly for the storage of ash at Wallerawang. Despite this EnergyAustralia NSW is supporting a number of initiatives that are looking to utilise the stored ash.

There were no reportable incidents, official cautions, warning letters, penalty notices or prosecution proceedings by any regulatory body during the reporting period.

There were no environmental incidents recorded during the 2016-17 reporting period.

12. Activities to be completed in the next reporting period

KVAR will continue under care and maintenance arrangements while the final closure and rehabilitation plan is developed. Activities to be completed in the next reporting period will include:

- Environmental compliance monitoring for air quality, noise emissions and water quality;
- Water management works including the maintenance of sediment and erosion control structures;
- Dust suppression activities to minimise potential air quality impacts from the KVAR;
- Minor earthworks including road maintenance and drain works as required;
- Ash management works as required to stabilise slopes and minimise potential impacts;
- Environmental assessments and other specialist studies to inform the development of the final closure and rehabilitation plan. These may include additional groundwater, surface water and ecological assessment as required.

EnergyAustralia will be assessing the repurposing of the Wallerawang Power Station which may include the KVAR. This assessment is ongoing and will form part of the final closure and rehabilitation plan. It should be noted that a development application may be required to be submitted to either the Lithgow Shire Council or the DP&E. EnergyAustralia NSW will consult with the relevant regulatory authority at the appropriate time as required.

12.1 Environmental Management Targets and Strategies for the Next Year

Environmental measures to be implemented in the 2017-2018 reporting period are detailed in Table 19.

Table 19: Measures to be implemented in the Next Reporting Period

Environment Management Area	Target / Strategy	Timeframe
Noise	Review the scope of independent noise monitoring in light of KVAR being in care and maintenance.	By March 2018.
Air Quality	Investigate if methods are available to minimise vandalism to depositional dust gauges.	By March 2018
Water Quality	Continue water quality monitoring at the licenced ground and surface water sites	Monthly, until advised otherwise.
	Manage the water level in Lidsdale Cut pond to maintain and improve water quality where possible.	2017/18 reporting period
Erosion & Sedimentation	Implement effective sediment and erosion control measures and undertake any rehabilitation works in accordance with approved management plans.	2017/18 reporting period.
Landscape & Revegetation	Progress development of the closure and rehabilitation management plan for KVAR.	To be performed as part of DDR rehabilitation works.

13. References

ANZECC. (2000). *Australian Water Quality Guidelines for Fresh and Marine Waters.* Australian and New Zealand Environmental Conservation Council, ACT.

Aurecon. (2011). *Kerosene Vale Ash Repository Stage 2 - Ongoing Water Monitoring Assessment.* Aurecon Australia Pty Ltd, NSW.

Aurecon. (2015). *Kerosene Vale Ash Dam & Dry Ash Repository Water Quality Assessment April 2014 - March 2015.*

Aurecon. (2016a). *Kerosene Vale Ash Repository - Stage 2 Ongoing Operational Noise Measurements. May 2016.* Aurecon Australia Pty Ltd, NSW.

Aurecon. (2016b). *Kerosene Vale Ash Repository Stage 2B - Ongoing Noise Monitoring Assessment - November 2016.* Aurecon Australia Pty Ltd, NSW.

Aurecon. (2017a). *Kerosene Vale Ash Repository - Stage 2 Ongoing Operational Noise Measurements. March 2017.* NSW: Aurecon Australia Pty. Ltd. .

Aurecon. (2017b). *Kerosene Vale Ash Dam and Dry Ash Repository - Water Quality Assessment from April 2016 to March 2017.* NSW: Aurecon Australasia Pty. Ltd.

Conneq. (2010). *Repository Site Management Plan for Ash Placement Area, Wallerawang Power Station.* Conneq Industrial Infrastructure Pty Ltd, NSW.

Conneq. (2011). *Kerosene Vale Stage 2B Construction Environment Management Plan.* Conneq Industrial Infrastructure (Australia) Pty Ltd.

DMC. (2010). *Fly Ash: Strategy Development for Aggregates and Other Bulk Use Applications.* DMC Advisory Pty Ltd, NSW.

DP&I. (2008). *Director-General's Conditions of Approval for Kerosene Vale Ash Repository Stage 2.* Department of Planning & Infrastructure, NSW.

EPA. (1999). *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes .* Environment Protection Authority, NSW.

Golder Associates. (2013). *Kerosene Vale Ash Repository Factual Report on Installation of Groundwater Monitoring Bores and Instrumentation - Stage 1 Repository.* Golder Associates Australia.

Hyder Consulting. (2001). *Wallerawang Ash Management Proposed Dry Ash Handling Facility.* Hyder Consulting (Australia) Pty Ltd.

Lend Lease. (2012). *Ash & Dust Repository Management Plan - Wallerawang Power Station, MP-PL-702 Version 05.* 1st June 2012. LLS Industrial Pty Ltd, NSW.

OEH. (2017). *Towards Cleaner Air: NSW Air Quality Statement 2016.* Retrieved from State of NSW & Office of Environment and Heritage: www.environment.nsw.gov.au/resources/air/nsw-annual-air-quality-statement-2016-170013.pdf

Parsons Brinckerhoff. (2008a). *Kerosene Vale Stage 2 Ash Repository Area Environmental Assessment.* Parsons Brinckerhoff Australia Pty Ltd, NSW.

Parsons Brinckerhoff. (2008b). *Kerosene Vale - Stage 2 Ash Repository Operation Environmental Management Plan.* Parson Brinckerhoff Australia Pty Ltd, NSW.

Parsons Brinckerhoff. (2009). *Stage 2 Kerosene Vale Ash Repository Operational Noise Review.* Parsons Brinckerhoff Australia Pty Ltd, NSW.

14. Glossary of Terms

AEMR	Annual Environmental Management Report
CEMP	Construction Environmental Management Plan
CoA	Condition of Approval (also known as MCoA – Minister's CoA)
DDR	Decommissioning, Deconstruction & Rehabilitation
DE	Delta Electricity
DECC	Department of Environment & Climate Change
DoP	Department of Planning
DP&E	Department of Planning and Environment (formerly DP&I / DoP)
DP&I	Department of Planning and Infrastructure
EPL	Environment Protection Licence
KVAD	Kerosene Vale Ash Dam
KVAD/R	Kerosene Vale Ash Dam and Repository
KVAR	Kerosene Vale Ash Repository
mAHD	Metres Australian Height Datum
NEMMCO	National Electricity Market Management Company
OEH	Office of Environment & Heritage (formerly DECC)
OEMP	Operation Environmental Management Plan
ONVMP	Operational Noise and Vibration Management Plan
RL	Relative Level
SSC	Sawyers Swamp Creek
SSCAD	Sawyers Swamp Creek Ash Dam

Appendix A
Detailed review checklist and Recommendations for Conditions of Approval

Administrative Conditions

Terms of approval

Minister's Condition of Approval 1.1
The proponent shall carry out the project generally in accordance with the: ***a) Major Project Application 07_0005;*** ***b)* Kerosene Vale – Stage 2 Ash Repository Area *(two volumes)* – Environmental Assessment, *prepared by Parsons Brinckerhoff and dated 1 April 2008;*** ***c)* Kerosene Vale – Stage 2 Ash Repository Area – Submissions Report, *prepared by Parsons Brinckerhoff and dated 30 May 2008; and*** ***d)* The conditions of this approval.**
Compliance Assessment Observations and Comments Based on the review undertaken, the KVAR Stage 2 operations have been carried out in accordance with the above requirements.
Compliance Assessment Finding – Compliant
Minister's Condition of Approval 1.2
In the event of an inconsistency between: ***a) The conditions of this approval and any document listed from condition 1.1a) – 1.1c) inclusive the conditions of this approval shall prevail to the extent of the inconsistency; and*** ***b) Any of the documents listed from the condition 1.1a) – 1.1c) inclusive, the most recent document shall prevail to the extent of the inconsistency.***
Compliance Assessment Observations and Comments No inconsistencies were observed between the documents listed above during implementation of the project or during the course of the review of operations in preparing this AEMR.
Compliance Assessment Finding – Compliant

Minister's Condition of Approval 1.3
The proponent shall comply with the reasonable requirements of the Director-General arising from the Department's assessment of: ***a) Any reports, plans or correspondence that are submitted in accordance with this approval; and*** ***b) The implementation of any actions or measures contained in these reports, plans or correspondence.***
Compliance Assessment Observations and Comments In a letter dated 17 February 2017, the DP&E made ten comments in regards to the 2015-2016 AEMR. The response to these actions are provided within Table 7, Section 5 of this report. No further requests from the Secretary of the DP&E were received in the 2016-17 reporting period.
Compliance Assessment Finding – Compliant

Limits of approval

Minister's Condition of Approval 1.4
This approval shall lapse five years after the date on which it is granted, unless the works that are the subject of this approval are physically commenced on or before that time.
Compliance Assessment Observations and Comments The Project Approval for KVAR Stage 2 is dated 26 November 2008, indicating a 26 November 2013 lapse date. Works on the KVAR Stage 2B project commenced June 2013, well before the 'deadline' date.
Compliance Assessment Finding – Compliant

Statutory requirements

Minister's Condition of Approval 1.5
The Proponent shall ensure that all licences, permits and approvals are obtained as required by law and maintained as required with respect to the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals.
Compliance Assessment Observations and Comments The project complies with the requirements of EnergyAustralia NSW's EPL 766. (See Table 1).
Compliance Assessment Finding – Compliant

Specific Environmental Conditions

Ash management

Minister's Condition of Approval 2.1
The Proponent shall prepare a long-term ash-management strategy including a program for investigation and assessment of alternative ash management measures with a goal of 40% reuse of ash by 31 December 2013. The report shall be submitted to the Director-General within six months of the commencement of operations. The Proponent shall report on the status and outcomes of its investigations to the Director-General every two years from the commencement of the operation of the project, unless otherwise agreed by the Director-General.
Compliance Assessment Observations and Comments EnergyAustralia NSW commissioned the report *Fly Ash: Strategy Development for Aggregates and Other Bulk Use Applications* (DMC, 2010). The reports were submitted to DP&I in September 2011. Ash reuse progress is communicated via the Lend Lease Monthly Compliance Report and tracked in EnergyAustralia's Annual Sustainability Report. The goal of 40% ash reuse was not achieved by 31st December 2013, with a total of only 0.32% ash reuse occurring from Wallerawang Power Station by the end of 2013. In March 2014, when it was announced that Wallerawang Power Station was being put out of service, the total ash reuse from Wallerawang had remained at 0.32%. However, ash utilisation has been an ongoing program for the power station. Since then, more research and development to develop markets have been performed, rather than to solely focus on servicing established market opportunities. Generally the major limitation to further market development is a lack of rail, building and industrial infrastructure, particularly for the storage of ash at Wallerawang.
Compliance Assessment Finding – Non-Compliant
Minister's Condition of Approval 2.2
To facilitate assessment of the viability of coal resources in the project area and provide a finite opportunity for their extraction, the Proponent shall undertake revised staging of ash placement activities as described in the document referred to in condition 1.1c) of this approval
Compliance Assessment Observations and Comments Centennial Coal declined to extract the coal resources in the project area. Ash will not be placed over the coal resource in the project area as a result of the non-operational status of Wallerawang Power Station, which is finite opportunity. As outlined in this report, the pine plantation area now constitutes KVAR Stage 2B.
Compliance Assessment Finding - Compliant

Noise impacts

Minister's Condition of Approval 2.3
Construction activities associated with the project shall only be undertaken during the following hours: ***a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;*** ***b) 8:00 am to 1:00 pm on Saturdays; and*** ***c) At no time on Sundays or public holidays.***
Compliance Assessment Observations and Comments A CEMP was prepared for the works associated with the development of KVAR Stage 2B in preparation for ash placement and included a Construction Noise Management Plan and Noise Monitoring Program. This was submitted to DP&I in August 2011 and approved on the 16th December 2011. No construction activities have occurred during the reporting period.
Compliance Assessment Finding – Not Applicable
Minister's Condition of Approval 2.4
Activities resulting in impulsive or tonal noise emission (such as rock breaking or rock hammering) shall be limited to 8:00 am to 12:00 pm, Monday to Saturday and 2:00 pm to 5:00 pm Monday to Friday. The Proponent shall not undertake such activities for more than three continuous hours and must provide a minimum one-hour respite period.
Compliance Assessment Observations and Comments No activities resulting in tonal or impulsive noise emission have occurred during the monitoring period.
Compliance Assessment Finding - Not Applicable

Minister's Condition of Approval 2.5
Construction outside the hours stipulated in condition 2.3 of this approval is permitted in the following circumstances: ***a) Where construction works do not cause audible noise at any sensitive receiver; or*** ***b) For the delivery of materials required outside these hours by the Police or other authorities for safety reasons; or*** ***c) Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.***
Compliance Assessment Observations and Comments No construction activities have taken place during the reporting period.
Compliance Assessment Finding - Not Applicable
Minister's Condition of Approval 2.6
The hours of construction activities specified under condition 2.3 of this approval may be varied with the prior written approval of the Director-General. Any request to alter the hours of construction specified under condition 2.3 shall be: ***a) Considered on a case-by-case basis;*** ***b) Accompanied by details of the nature and need for activities to be conducted during the varied construction hours; and*** ***c) Accompanied by any information necessary for the Director-General to reasonably determine that activities undertaken during the varied construction hours will not adversely impact on the acoustic amenity of sensitive receivers in the vicinity of the site.***
Compliance Assessment Observations and Comments There has been no requirement to vary hours of construction during the reporting period, as no construction activities have taken place.
Compliance Assessment Finding - Not Applicable
Minister's Condition of Approval 2.7
The construction noise objective for the proponent is to manage noise from construction activities (as measured by $_{LA10\ (15minute)}$ descriptor) so as not to exceed the background L_{A90} noise level by more than 10dB(A) at any sensitive receiver. ***Any activities that have the potential for noise emissions that exceed the objective must be identified and managed in accordance with the Construction Noise Management Plan (as referred under condition 6.3B) of this approval). The Proponent shall implement all reasonable and feasible noise mitigation measures with the aim of achieving the construction noise objective.***
Compliance Assessment Observations and Comments No construction activities with the potential to exceed background noise levels were undertaken during the reporting period.
Compliance Assessment Finding – Not Applicable

Minister's Condition of Approval 2.8
Operational activities associated with the project shall only be undertaken from 7:00am to 10:00pm Monday to Sunday.
Compliance Assessment Observations and Comments Lend Lease have advised that no operational activities have taken place during or outside the hours designated above. Aurecon reported that: "No ash truck movements were noticed during the entire noise survey."
Compliance Assessment Finding - Compliant
Minister's Condition of Approval 2.9
Within six months of commencement of operation of the project the Proponent shall prepare and submit to the Director-General a review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation. If, as a result of the review, it is determined that ash haulage and placement times can commence later and/or finish earlier, the Proponent shall aim to observe the reduced hours whenever possible.
Compliance Assessment Observations and Comments The review was conducted within six months of commencement of operations and submitted to the DP&I on the 26th April 2012. The review determined that ash haulage and placement times could not commence later or finish earlier. This review was not submitted to the Director-General.
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 2.10
Operations outside the hours stipulated in condition 2.8 of this approval are only permitted in the following emergency situations: ***a) Where it is required to avoid the loss of live, property and/or to prevent environmental harm; or*** ***b) Breakdown of plant and/or equipment at the repository or the Wallerawang Power Station with the effect of limiting or preventing ash storage at the power station outside the operating hours defined in condition 2.8; or*** ***c) A breakdown of an ash haulage truck(s) preventing haulage during the operating hours stipulated in condition 2.8 combined with insufficient storage capacity at the Wallerawang Power Station to store ash outside of the project operating hours; or*** ***d) In the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs the Proponent (as a licensee) under the National Electricity Rules to maintain, increase or be available to increase power generation for system security and there is insufficient ash storage capacity at the Wallerawang Power Station to allow for the ash to be stored.*** ***In the event of conditions 2.10b) or 2.10c) arising, the Proponent is to take all reasonable and feasible measures to repair the breakdown in the shortest time possible.***
Compliance Assessment Observations and Comments Lend Lease have advised that no operational activities have taken place outside the hours.
Compliance Assessment Finding - Not Applicable

Minister's Conditions of Approval 2.11, 2.12, 2.13 and 2.14
2.11- In the event that an emergency situation as referred to under condition 2.10b) or 2.10c) occurs more than once in any two month period, the Proponent shall prepare and submit to the Director-General for approval a report including, but not limited to: ***a) The dates and a description of the emergency situations;*** ***b) An assessment of all reasonable and feasible mitigation measure to avoid recurrence of the emergency situations;*** ***c) Identification of a preferred mitigation measure(s); and*** ***d) Timing and responsibility for implementation of the mitigation measure (s).*** ***The report is to be submitted to the Director-General within 60 days of the second exceedence occurring. The Proponent shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Director-General.*** ***2.12- The Proponent shall notify the DECC prior to undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition 2.8 of this approval and keep a log of such operations.*** ***2.13- The Proponent shall notify the Director-General in writing within seven days of undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition 2.8 of this approval.*** ***2.14- The Proponent shall notify nearby sensitive receivers (as defined in the Operational Noise Management Plan required under condition 6.5a) of this approval) prior to 8.00pm where it is known that emergency ash haulage or placement operations will be required outside of the hours of operation stipulated in condition 2.8 of this approval.***
Compliance Assessment Observations and Comments No emergency situations have occurred during the reporting period.
Compliance Assessment Finding - Not Applicable

Minister's Condition of Approval 2.15
The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed an $L_{Aeq\ (15\ minute)}$ of 40 dB(A) at the nearest most affected sensitive receiver during normal operating hours as defined in condition 2.8 of this approval. ***This noise criterion applies under the following meteorological conditions:*** ***a) Wind speeds up to 3m/s at 10 metres above ground; and/or*** ***b) Temperature inversion conditions of up to 3^0C/100m and source to receiver gradient winds of up to 2m/s at 10m above ground level.*** ***This criterion does not apply where the Proponent and the affected landowner have reached a negotiated agreement in regard to noise, and a copy of the agreement has been forwarded to the Director-General and the DECC.***
Compliance Assessment Observations and Comments Measured noise levels during May 2016, November 2016 and March 2017 indicate KVAR Stage 2 operations are compliant with operational noise criteria (Aurecon, 2016a; 2016b; 2017a) EnergyAustralia NSW has not entered into any agreements regarding noise from KVAR with any potentially affected landholders, nor had any noise related complaints regarding the KVAR Stage 2 project. (See Section 6.3).
Compliance Assessment Finding - Compliant
Minister's Condition of Approval 2.16
The Proponent shall implement measures to ensure noise attenuation of trucks. These measures may include, but are not limited to, installation of residential class mufflers, engine shrouds, body dampening, speed limiting, fitting of rubber stoppers to tail gates, limiting the use of compression breaking, and ensuring trucks operate in a one-way system at the ash repository where feasible.
Compliance Assessment Observations and Comments Lend Lease has engaged a fleet of Mercedes-Benz Actros trucks which are compliant with the noise emission standards outlined above. No compression braking is used on the repository, trucks are well maintained with engines enclosed, mufflers in place, and proceed in a unidirectional format according to enforced speed limits. Minimal ash truck movements have occurred during the reporting period as a result of minimal ash being placed within Kerosene Vale Ash Repository due to the operational status of Wallerawang Power Station.
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 2.17
The Proponent shall liaise with the owner/operator of Angus Place Coal Mine with the aim of preparing a protocol which provides for a co-operative approach for the management and mitigation of noise impacts associated with coal and ash truck movements along the private haul road.
Compliance Assessment Observations and Comments EnergyAustralia NSW regularly liaises with Centennial Coal through monthly fuel supply meetings. The protocol developed between EnergyAustralia and Centennial includes the restriction of movement of trucks along the haul road between 6pm and 7am daily- trucks are diverted from the haul road passage during these hours as necessary. Centennial Coal reports to EnergyAustralia with any instances that may impact on background noise caused by truck movement through the monthly meetings, and are bound by their Environment Protection Licence 467. Information provided to EnergyAustralia by Centennial regarding potential Angus Place noise impacts associated with coal and ash truck movements underneath this licence included hours of operation, noise level limits and pollutants. In 2015, Angus Place Coal Mine was placed into Care and Maintenance functionality. As a result, no coal truck movements have occurred on the private haul road. In addition, minimal ash truck movements have occurred along the private haul road during the reporting period as a result of minimal ash being placed within Kerosene Vale Ash Repository due to the operational status of Wallerawang Power Station.
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 2.18
Where noise monitoring (as required by conditions 3.2 or 3.3 of this approval) identifies any non-compliance with the operational noise criterion specified under condition 2.15 of this approval the Proponent shall prepare and submit to the Director-General for approval a report including, but not limited to: **a) An assessment of all reasonable and feasible physical and other mitigation measures for reducing noise at the source including, but not limited to –** **i. Construction of a noise barrier along the haulage road** **ii. Alternative ash haulage routes, and** **iii. Alternative methods of ash conveyance to the repository; and** **b) Identification of the preferred measure(s) for reducing noise at the source;** **c) Feedback from directly affected property owners and the DECC on the proposed noise mitigation measures; and** **d) Location, type, timing and responsibility for implementation of the noise mitigation measure(s).** **The report is to be submitted to the Director-General within 60 days of undertaking the noise monitoring which has identified exceedences of the operational noise criterion specified under condition 2.15, unless otherwise agreed to by the Director-General. The Proponent shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Director-General.**
Compliance Assessment Observations and Comments EnergyAustralia NSW has implemented six-monthly noise monitoring assessments. No non-compliances were identified during the reporting period. Refer to Appendices B-D for further details.
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 2.19
If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 2.18, the noise generated by the project exceeds the criterion stipulated in condition 2.15 at: ***a) Any sensitive receiver in existence at the date of this approval; or*** ***b) Any residential dwelling for which an approval has been sought or obtained under the* Environmental Planning and Assessment Act 1979 *no later than six months after the confirmation of operational noise levels;*** ***Upon receiving a written request from an affected landowner (unless that landowner has acquisition rights under condition 2.20 of this approval and has requested acquisition) the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, air conditioning and or other building acoustic treatments at any residence on the land, in consultation with the landowner.*** ***For the purpose of this condition and condition 2.20, confirmation of operational noise levels means:*** ***a) Completion of the operational noise review required under condition 3.2 this approval; and*** ***b) Implementation of any source controls, as required under condition 2.18 of this approval, should the operational noise review indicate noise levels in excess of the operational noise criterion specified in condition 2.15; and*** ***c) Monitoring of operational noise levels, as required under condition 3.3b) of this approval, following the implementation of any source controls.*** ***The additional mitigation measures must be reasonable and feasible. If within three months of receiving this request from the landowner the Proponent and landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution, whose decision shall be final.***
Compliance Assessment Observations and Comments EnergyAustralia NSW has implemented six-monthly noise monitoring assessments. No non-compliances were identified during the reporting period. Refer to Appendices B-D for further details. EnergyAustralia NSW has received no written requests from affected landowners regarding noise mitigation measures.
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 2.20
If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 2.18, the noise generated by the project exceeds the criterion stipulated in condition 2.15 by more than 5dB(A): ***a) At a sensitive receiver in existence at the date of this approval; or*** ***b) At any residential dwelling for which an approval has been sought or obtained under the* Environmental Planning and Assessment Act 1979 *prior to the landholder receiving written notification that they are entitled to land acquisition rights, as per condition 2.25 of this approval; or*** ***c) Over 25% or more of the area of a vacant allotment in existence at the date of this approval, and where a dwelling is permissible under the* Environmental Planning and Assessment Act 1979 *at that date, with the exception of land that is currently used for industrial or mining purposes;*** ***The Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 2.22 to 2.24 of this approval.*** ***Any landowner that has agreed to, or property that has been the subject of, the application of additional noise mitigation measures under condition 2.19 of this approval waives the right to land acquisition.***
Compliance Assessment Observations and Comments EnergyAustralia NSW has received no written or verbal requests from landowners to acquire their land.
Compliance Assessment Finding - Compliant
Minister's Condition of Approval 2.21
The land acquisition rights under condition 2.20 of this approval do not apply to landowners who have sought approval to subdivide their land after the date of this approval, unless the subdivision is created pursuant to condition 2.24 of this approval.
Compliance Assessment Observations and Comments No landholders have applied for approval to subdivide their land according to the land acquisition rights.
Compliance Assessment Finding - Not Applicable

Minister's Condition of Approval 2.22
Within three months of receiving a written request from a landowner with acquisition rights under condition 2.20 of this approval, the Proponent shall make a binding written offer to the landowner based on: ***a) The current market value of the landowner's interest in the property at the date of this written request, as if the property were unaffected by the project which is the subject of the project application, having regard to the:*** ***i. Existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and*** ***ii. Presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of condition 2.19 of this approval;*** ***b) The reasonable costs associated with:*** ***i. Relocating within the Lithgow local government area, or to any other local government area determined by the Director-General;*** ***ii. Obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and*** ***c) Reasonable compensation for any disturbance caused by the land acquisition process.*** ***However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.*** ***Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.*** ***Within 14 days of receiving an independent valuer's determinations, the Proponent shall make a written offer to purchase the land at a price not less than the independent valuer's determination.*** ***If the landowner refuses to accept this offer within six months of the date of the Proponent's offer, the Proponent's obligations to acquire the land shall cease, unless otherwise agreed by the Director-General.***
Compliance Assessment Observations and Comments No landholders have applied for approval to subdivide their land according to the land acquisition rights.
Compliance Assessment Finding - Not Applicable

Minister's Conditions of Approval 2.23, 2.24 and 2.25
2.23- The Proponent shall bear the costs of any valuation or survey assessment requested by the independent valuer or the Director-General and the costs of determination referred to above. ***2.24- If the Proponent and landowner agree that only part of the land shall be acquired, then the Proponent shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.*** ***2.25- The Proponent shall provide written notice to all landowners that are entitled to rights under conditions 2.19 and 2.20 within 21 days of determining the landholdings were additional noise mitigation measures or land acquisition apply. For the purpose of condition 2.20b), this condition only applies where operational noise levels have been confirmed in accordance with the definition in condition 2.19.***
Compliance Assessment Observations and Comments No landholders have applied for approval to subdivide their land according to the land acquisition rights.
Compliance Assessment Finding - Not Applicable

Sawyers Swamp Creek realignment

EnergyAustralia NSW decided upon commencement of the Project that the realignment of SSC was not necessary. Therefore, the CoAs relating to SSC realignment are not applicable. This refers to CoAs 2.26 (a – m), 2.27, 2.28 and 2.29.

Surface water quality

Minister's Condition of Approval 2.30
The Proponent shall take all reasonable and feasible measures to prevent discharge of sediments and pollutants from the construction and operation of the project entering waterways. ***Note: Section 120 of the* Protection of the Environment Operations Act 1997 *prohibits the pollution of water except where expressly provided by an Environmental Protection Licence.***
Compliance Assessment Observations and Comments No surface waters from KVAR Stage 2 are allowed to enter the SSC catchment. Measures to prevent surface water discharge include a series of collection ponds on site, with water reticulated around KVAR for the treatment of ash and dust suppression.
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 2.31
Earthworks not associated with the realignment of Sawyer Swamp Creek shall not be undertaken within 50m of the creek where reasonable and feasible.
Compliance Assessment Observations and Comments A minimum buffer zone of 50m has been maintained along the riparian area of SSC for all operations.
Compliance Assessment Finding - Compliant
Minister's Condition of Approval 2.32
All equipment, machinery and vehicles associated with the construction and operation of the project shall be operated and maintained in a manner that minimises the potential for oil and grease spills/leaks.
Compliance Assessment Observations and Comments Lend Lease supply EnergyAustralia NSW with Monthly Client Service Reports detailing site safety, ash placement, operations, environmental and maintenance aspects of site management. These maintenance records include general operations (truck maintenance and hours, ash analyses, sensor repairs, vent lines, line trips etc.), projects (unit outages, silo repairs and maintenance, valve repairs and maintenance etc.), incidents /near misses, training and safety. Monthly Client Service Reports may be viewed upon request.
Compliance Assessment Finding - Compliant

Air quality impacts

Minister's Condition of Approval 2.33
The Proponent shall construct and operate the project in a manner that minimises dust impacts generated by construction works and operational activities, including wind-blown and traffic generated dust, on the receiving environment. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, the Proponent shall identify and implement all practicable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.
Compliance Assessment Observations and Comments Dust management within the site is included in the responsibilities of all operations, including: • Use of perimeter sprays at the ash placement area; • Water cart (20,000 L) on site during all ash placement operations 8 am to 5 pm Mondays to Sundays; • Ash placement operations; • Final capping of ash; and • General maintenance and rehabilitation of the ash placement area.
Compliance Assessment Finding - Compliant
Minister's Condition of Approval 2.34
The Proponent shall ensure that the load carrying compartment(s) of all ash haulage trucks are covered at all times except when loading or unloading ash material.
Compliance Assessment Observations and Comments No issues with load coverings were recorded for the 2016-2017 reporting period.
Compliance Assessment Finding - Compliant

Lighting emissions

Minister's Condition of Approval 2.35
***The Proponent shall take all practicable measures to mitigate off-site lighting impacts from the project and ensure all external lighting associated with the project complies with* Australian Standard AS4282 1997 – Control of the Obtrusive Effects of Outdoor Lighting.**
Compliance Assessment Observations and Comments Lend Lease Work Procedures Manual contains procedures that apply to all personnel and equipment operating at Kerosene Vale, including mobile lighting towers for ash placement operations, and details the responsibilities, application and procedures for using outdoor lighting for the project, within the project area. Lights used to illuminate the tipping area must face south or east, operators must ensure the horizontal distance of the illuminated area is not less than 40m and as access to the repository for ash transport is between 7am and 10pm lights must be extinguished by 10pm. The lights used at KVAR are the HILITE 4000 hired from Coates Hire Operations Pty Ltd. The specification sheets for these lights form part of the Work Procedures Manual for lighting.
Compliance Assessment Finding - Compliant

Construction traffic and transport impacts

Minister's Condition of Approval 2.36
The Proponent shall ensure that construction vehicles associated with the project: ***a) Minimise the use of local roads (though residential streets and town centres) to gain access to the site;*** ***b) Adhere to any nominated haulage routes identified in the Construction Traffic Management Plan as referred to in condition 6.3a) of this approval; and*** ***c) Adhere to a Construction Vehicle Code of Conduct prepared to manage driver behaviour along the local road network to address traffic impacts (and associated noise) along nominated haulage routes.***
Compliance Assessment Observations and Comments A Construction Traffic Management Plan was submitted to and approved by the DP&I as part of the Construction Environment Management Plan.
Compliance Assessment Finding - Compliant

Heritage impacts

Minister's Condition of Approval 2.37
The Proponent shall ensure that all construction personnel are educated on their obligations in respect of the protection of Aboriginal and non-indigenous heritage sites and items.
Compliance Assessment Observations and Comments The Lend Lease Work Procedures Manual includes Environmental Management Controls for Cultural Heritage and applies to all personnel. No aboriginal or other cultural heritage sites have been identified at Kerosene Vale. All of EnergyAustralia NSW's cultural sites are listed in the Section 170 Heritage and Conservation Register.
Compliance Assessment Finding - Compliant
Minister's Condition of Approval 2.38
If any previously unidentified heritage sites or items (Aboriginal and/or non-indigenous) are discovered during construction works or operational activities, all work likely to affect the heritage sites or item(s) is to cease immediately and the discovery of the objects shall be reported to DECC or the Department as relevant.
Compliance Assessment Observations and Comments No previously unidentified heritage sites or items were discovered during the reporting period.
Compliance Assessment Finding - Not applicable

Waste management

Minister's Condition of Approval 2.39
All waste materials shall be assessed, classified, managed and disposed of in accordance with* Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes *(EPA, 1999).
Compliance Assessment Observations and Comments Lend Lease provides Monthly Ash Placement Work Instructions to address all issues of routine site maintenance as part of a monthly work program. Waste management is conducted in accordance with EPA guidelines.
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 2.40
All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.
Compliance Assessment Observations and Comments Lend Lease utilises EnergyAustralia NSW's waste management facilities for wastes generated in the operation of the repository, including waste oils, general waste and materials for recycling. These are stored in intermediate storage facilities at Wallerawang Power Station and routinely removed by EnergyAustralia NSW's waste contractors. No additional waste materials were removed from the site during the reporting period.
Compliance Assessment Finding - Compliant
Minister's Condition of Approval 2.41
The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the* Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste.
Compliance Assessment Observations and Comments No wastes generated outside the Kerosene Vale site are allowed to enter the area. To prevent the unlawful access to the repository area, regular security patrols are conducted across the site. Both Lend Lease and EnergyAustralia NSW security personnel are required to report if they encounter any rubbish or wastes outside those that are allowed during routine operations.
Compliance Assessment Finding - Compliant

Environmental Monitoring

Construction noise monitoring

Minister's Condition of Approval 3.1
The Proponent shall prepare and implement a Construction Noise Monitoring Program to confirm the predictions of the noise assessment detailed in the document referred to under condition 1.1b) of this approval and assess compliance against the construction noise criterion stipulated in condition 2.7 of this approval. The noise monitoring program shall be prepared in consultation with, and to the satisfaction of, the DECC. The monitoring program shall form part of the Construction Noise Management Plan referred to in condition 6.3b) of this approval and must include monitoring of the construction noise generated during: ***a) The realignment of Sawyers Swamp Creek;*** ***b) Construction of the stabilisation berm;*** ***c) Excavation of the former pine plantation area;*** ***d) Relocation and construction of surface water management structures; and*** ***e) Concurrent construction activities.*** ***The Proponent shall forward to the DECC and the Director-General a report containing the results of each noise assessment and describing any non-compliance within 14 days of conducting a noise assessment.***
Compliance Assessment Observations and Comments A CEMP was prepared for the construction works associated with the development of KVAR Stage 2B in preparation for ash placement, including a Construction Noise Management Plan and Noise Monitoring Program. This was submitted to DP&I in August 2011 and approved on the 16th December 2011. No construction activities took place during the reporting period.
Compliance Assessment Finding - Compliant

Operational noise review

Minister's Condition of Approval 3.2
Within 60 days of the commencement of operation of the project, unless otherwise agreed to by the Director-General, the Proponent shall submit for the approval of the Director-General an Operational Noise Review to confirm the operational noise impacts of the project. The Operational Noise Review must be prepared in consultation with, and to the satisfaction of, the DECC. The Review shall: ***a) Identify the appropriate operational noise objectives and level for sensitive receivers;*** ***b) Describe the methodologies for noise monitoring including the frequency of measurements and location of monitoring sites;*** ***c) Document the operational noise levels at sensitive receivers as ascertained by the noise monitoring program;*** ***d) Assess the noise performance of the project against the noise criterion specified in condition 2.15 of this approval and the predicted noise levels as detailed in the report referred to under condition 1.1b) of this approval; and*** ***e) Provide details of any entries in the Complaints Register (as required under condition 5.4 of this approval) relating to noise impacts.*** ***Where monitoring indicates noise levels in excess of the operational noise criterion specified in condition 2.15 of this approval, the Proponent shall prepare a report as required by condition 2.18 of this approval.***
Compliance Assessment Observations and Comments The Operational Noise Review (Parsons Brinckerhoff, 2009) was submitted to the DP&I on 16 September 2009, and the Department acknowledged its satisfaction that CoA 3.2 had been met on 18 September 2009.
Compliance Assessment Finding - Compliant

Ongoing operational noise monitoring

Minister's Condition of Approval 3.3
The Proponent shall prepare and implement an Operational Noise Monitoring Program to assess compliance against the operational noise criterion stipulated in condition 2.15 of this approval, throughout the life of the project. The noise monitoring program shall be prepared in consultation with, and to the satisfaction of, the DECC. ***The noise monitoring program shall be prepared in accordance with the requirements of the* New South Wales Industrial Noise Policy *(EPA, 2000) and must include, but not be limited to:*** ***a) Monitoring during ash placement in the far western area of the site adjacent to the haul road; and*** ***b) Monitoring of the effectiveness of any noise mitigation measures implemented under condition 2.18 of this approval, against the noise criterion specified in condition 2.15 of this approval.*** ***Noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise criterion stipulated in condition 2.15 of this approval. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the* NSW Industrial Noise Policy*). The modification factors in Section 4 of the* NSW Industrial Noise Policy *shall also be applied to the measured noise levels where applicable.*** ***The Proponent shall forward to the DECC and the Director-General a report containing the results of any non-compliance within 14 days of conducting a noise assessment.*** ***Where monitoring indicates noise levels in excess of the operational noise criterion specified in condition 2.15 of this approval, the Proponent shall prepare a report as required by condition 2.18 of this approval.*** ***The monitoring program shall form part of the Operational Noise Management Plan referred to in condition 6.5a) of this approval.***
Compliance Assessment Observations and Comments An Operational Noise Monitoring Program in the form of the Operational Noise sub-plan was developed as part of the OEMP (Parsons Brinckerhoff, 2008b) and provided to Delta to determine the minimum monitoring requirements for groundwater following receipt of approval from the DP&I. EnergyAustralia NSW continue to implement the required noise monitoring assessments. No non-compliances were identified during the reporting period.
Compliance Assessment Finding - Compliant

Groundwater monitoring

Minister's Condition of Approval 3.4
The Proponent shall prepare and implement a Groundwater Monitoring Program to monitor the impacts of ash placement activities on local groundwater quality and hydrology. The program shall be developed in consultation with, and to the satisfaction of, the SCA, and shall describe the location, frequency, rationale and procedures and protocols for collecting groundwater samples, as well as the parameters analysed and methods of analysis. The monitoring program shall be ongoing for the life of the project and include, but not be limited to: ***a) Monitoring at established bore sites (or replacement bore sites in the event that existing sites are damaged or lost) as described in the document referred to under condition 1.1b) of this approval; and*** ***b) A schedule for periodic monitoring of groundwater quality, depth and flow at all monitoring sites, at an initial frequency of no less than once every month for the first 12 months of operation.*** ***The monitoring program shall form part of the Groundwater Management Plan referred to in condition 6.5b) of this approval.***
Compliance Assessment Observations and Comments A Groundwater Monitoring Program in the form of the Groundwater Quality sub-plan was developed as part of the OEMP (Parsons Brinckerhoff, 2008b) and provided to EnergyAustralia NSW, then Delta, to determine the minimum monitoring requirements for groundwater following receipt of approval from the DP&I.
Compliance Assessment Finding - Compliant

Surface water quality monitoring

Minister's Condition of Approval 3.5
The Proponent is to implement a surface water quality monitoring program to monitor the impacts of the ash placement activities on, and the realignment of, Sawyers Swamp Creek. The Program shall be developed in consultation with and to the satisfaction of the DPI (Fisheries) and SCA, and shall describe the location, frequency, rationale and the procedures and protocols for collecting water samples as well as the parameters analysed and methods of analysis. The program shall include, but not necessarily be limited to: ***a) Monitoring at the four existing water quality monitoring sites as described in the document referred to under 1.1b) of this approval;*** ***b) Monitoring downstream of the realigned section of Sawyers Swamp Creek;*** ***c) Monitoring at groundwater discharge points into Sawyers Swamp Creek;*** ***d) Wet weather monitoring with a minimum of two events recorded within the first 12 months of both the operation of the project and post realignment of Sawyers Swamp Creek; and*** ***e) A schedule for periodic monitoring of surface quality at all sites throughout the life of the project, at an initial frequency of no less than once every month for the first 12 months and must include, but not be limited to, dissolved oxygen, turbidity, total phosphorus and total nitrogen.*** ***The monitoring program shall form part of the Surface Water Management Plan referred to in condition 6.5c) of this approval.***
Compliance Assessment Observations and Comments A surface water Monitoring Program in the form of the surface water Quality sub-plan was developed as part of the OEMP (Parsons Brinckerhoff, 2008b) and provided to Delta to determine the minimum monitoring requirements for surface water following receipt of approval from the DP&I.
Compliance Assessment Finding - Compliant

Sawyers Swamp Creek realignment monitoring

EnergyAustralia NSW decided upon commencement of the Project that the realignment of SSC was not necessary. Therefore, CoAs 3.6 and 3.7 relating to SSC realignment are not applicable.

Air quality monitoring

Minister's Condition of Approval 3.8
The Proponent shall prepare an Air Quality Monitoring Program, in consultation with, and to the satisfaction of, the DECC. The Program shall include but not necessarily be limited to, monitoring for dust at the monitoring sites identified in the document referred to under condition 1.1b) of this approval. The air quality monitoring program shall be ongoing for the life of the project, including final rehabilitation and stabilisation of the site. ***The monitoring program shall form part of the Air Quality Management Plan referred to in condition 6.5d) of this approval.***
Compliance Assessment Observations and Comments An air quality monitoring program in the form of the air quality sub-plan was developed as part of the OEMP (PB, 2009) and provided to Delta to determine the minimum monitoring requirements for air quality following receipt of approval from the DP&I. Dust monitoring results are recorded monthly with colour and textural observations. These results indicate that KVAR is managed effectively for ash dust and as such is in compliance with CoAs 2.33 and 3.8.
Compliance Assessment Finding - Compliant

Compliance Monitoring and Tracking

Minister's Condition of Approval 4.1
Prior to each of the events listed below, the Proponent shall certify in writing to the satisfaction of the Director-General that it has complied with all conditions of this approval applicable prior to that event: ***a) Commencement of any construction works on the land subject of this approval; and*** ***b) Commencement of operation of the project.***
Compliance Assessment Observations and Comments The DP&I indicated its satisfaction that EnergyAustralia NSW had met the relevant pre-operational requirements of this project before commencement in 2009. This included submission of a Pre-Operation Compliance Report, Compliance Tracking Program, and the Operation Environmental Management Plan.
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 4.2

The Proponent shall develop and implement a Compliance Tracking Program for the project, prior to commencing operations, to track compliance with the requirements of this approval and shall include, but not necessarily be limited to:

- ***a) Provisions for periodic review of the compliance status of the project against the requirements of this approval and the Statement of Commitments detailed in the document referred to in condition 1.1c) of this approval;***
- ***b) Provisions for periodic reporting of the compliance status to the Director-General;***
- ***c) A program for independent environmental auditing in accordance with* AS/NZ ISO 19011:2003 – Guidelines for Quality and/or Environmental Management Systems Auditing*;***
- ***d) Procedures for rectifying any non-compliance identified during environmental auditing or review of compliance;***
- ***e) Mechanisms for recording environmental incidents and actions taken in response to those incidents;***
- ***f) Provisions for reporting environmental incidents to the Director-General during construction and operation; and***
- ***g) Provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.***

The Compliance Tracking Program shall be implemented prior to operation of the project with a copy submitted to the Director-General for approval within four weeks of commencement of the project, unless otherwise agreed by the Director-General.

Compliance Assessment Observations and Comments

Environmental incidents that may occur in respect to KVAR Stage 2 operations are reported in accordance with the Operation Environmental Management Plan (Parsons Brinckerhoff, 2008b) and are captured within the Environmental Management System. Annual reporting requirements are covered by the preparation of the AEMR.

Sections of the Minister approved OEMP that relate to this Condition include:

- Section 3.8 Environmental Audits (CoA 4.2c);
- Section 3.8 Environmental Audits and Section 3.8.1 Non-Compliances (CoA 4.2d);
- Section 3.9 Environmental Incidents Management (CoA 4.2e);
- Section 3.9 Environmental Incidents Management (CoA4.2f); and
- Section 3.5 Environmental Awareness Training and Site Inductions (4.2g).

Lend Lease have included the directive in the Repository Site Management Plan (Conneq, 2010) that formal site management processes be documented monthly and weekly in line with the OEMP and the Repository Management Plan. The Monthly Client Service Reports are used as a method for recording any incidences.

Compliance Assessment Finding - Compliant

Minister's Condition of Approval 4.3 and 4.4
CoA 4.3 – Nothing in this approval restricts the Proponent from utilising any existing compliance tracking programs administered by the Proponent to satisfy the requirements of condition 4.2. In doing so, the Proponent must demonstrate to the Director-General how these systems address the requirements and/or have been amended to comply with the requirements of the condition. ***CoA 4.4 – The Proponent shall meet the requirements of the Director-General in respect of the implementation of any measure necessary to ensure compliance with the conditions of this approval, and general consistency with the documents listed under condition 1.1 of this approval.***
Compliance Assessment Observations and Comments This project has a Minister approved OEMP (April, 2009), which is currently under review by EnergyAustralia NSW and will be submitted to the DP&E for approval upon completion. The project also operates under EnergyAustralia NSW's ISO14001 accreditation and Environmental Management System. The Secretary has not issued any requests to implement any additional measure to ensure compliance with the relevant CoAs for the KVAR Stage 2 project.
Compliance Assessment Finding - Not applicable

Community Information and Complaints Management

Provision of Information

Minister's Conditions of Approval 5.1 and 5.2
Prior to the commencement of the project, the Proponent shall establish and maintain a website for the provision of electronic information associated with the project. The Proponent shall, subject to confidentiality, publish and maintain up-to-date information on this website or dedicated pages including, but not necessarily limited to: ***a) The documents referred to under condition 1.1 of this approval;*** ***b) This project approval, Environment Protection Licence and any other relevant environmental approval, licence or permit required and obtained in relation to the project;*** ***c) All strategies, plans and program required under this project approval, or details of where this information can be viewed;*** ***d) Information on construction and operational progress;*** ***e) The outcomes of compliance tracking in accordance with the requirements of this project approval.*** ***5.2 – The Proponent shall make all documents required to be provided under condition 5.1 of this approval publicly available.***
Compliance Assessment Observations and Comments EA have developed a specific project website for Kerosene Vale Ash Repository that enables the provision of electronic information listed within CoA 5.1. A link to this web page is below. https://www.energyaustralia.com.au/about-us/energy-generation/wallerawang-power-station-closure/kerosene-vale-ash-repository The website includes: • Major Project Application 07_0005 • Kerosene Vale – Stage 2 Ash Repository Area (two volumes) – Environmental Assessment prepared by Parsons Brinckerhoff and dated 1 April 2008. • Kerosene Vale – Stage 2 Ash Repository Area – Submissions Report prepared by Parsons Brinckerhoff and dated 30 May 2008. • Project Approval (Conditions of Approval) File S07/00001, dated 26 November 2008. • Construction Environment Management Plan (Conneq, 2011) • Operation Environment Management Plan (Parsons Brinckerhoff, 2008b) • Copies of previous Annual Environment Management Reports
Compliance Assessment Finding - Compliant

Complaints and enquiries procedure

Minister's Condition of Approval 5.3
Prior to the commencement of the project, the Proponent shall ensure that the following are available for community complaints and enquiries during construction and operation: ***a) A 24 hour contact number(s) on which complaints and enquiries about construction and operational activities may be registered;*** ***b) A postal address to which written complaints and enquiries may be sent; and*** ***c) An email address to which electronic complaints and enquiries may be sent; and*** ***d) An email address to which electronic complaints and enquiries may be transmitted.*** ***The telephone number, postal address and email address shall be published in a newspaper circulating in the local area prior to the commencement of the project. The above details shall also be provided on the website required by condition 5.1 of this approval.***
Compliance Assessment Observations and Comments The website: https://www.energyaustralia.com.au/about-us/energy-generation/mt-piper-power-station lists the following contact details for the project: 24 hour contact number - via the Switchboard on 02 6354 8111 Postal address: Environment Specialist EnergyAustralia NSW Locked Bag 1000, Portland NSW 2847 Email: contactus@energyaustraliansw.com.au
Compliance Assessment Finding - Compliant

Minister's Condition of Approval 5.4
The Proponent shall record the details of all complaints received through the means listed under condition 5.3 of this approval in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to: ***a) The date and time of the complaint;*** ***b) The means by which the complaint was made (e.g. telephone, email, mail, in person);*** ***c) Any personal details of the complainant that were provided, or if no details were provided a note to that effect;*** ***d) The nature of the complaint;*** ***e) The time taken to respond to the complaint;*** ***f) Any investigations and actions taken by the Proponent in relation to the complainant; and*** ***g) If no action was taken by the Proponent in relation to the complaint, the reason(s) why no action was taken.*** ***The Complaints Register shall be made available for inspection by the Director-General upon request.***
Compliance Assessment Observations and Comments Any complaints called in to EnergyAustralia NSW go via the switchboard (02 6354 8111) and are then redirected to the appropriate area of EnergyAustralia NSW operations. All complaints are recorded in the Ellipse system in the Incidents and Complaints Register with all details captured including actions to be taken if necessary. If actions were necessary, a review of those actions is undertaken before the work order is closed. No complaints were received regarding KVAR for the reporting period.
Compliance Assessment Finding - Compliant

Environmental Management

Environmental representative

Minister's Condition of Approval 6.1
Prior to the commencement of any construction or operational activities, or as otherwise agreed by the Director-General, the Proponent shall nominate for the approval of the Director-General a suitably qualified and experienced Environmental Representative(s) independent of the design, construction and operation personnel. The Proponent shall engage the Environmental Representative(s) during any construction activities, and throughout the life of the project, or as otherwise agreed by the Director-General. The Environmental Representative(s) shall: ***a) Oversee the implementation of all environmental management plans and monitoring programs required under this approval, and advise the Proponent upon the achievements of these plans/programs;*** ***b) Have responsibility for considering and advising the Proponent on matters specified in the conditions of this approval and the Statement of Commitments as referred to under condition 1.1c) of this approval;*** ***c) Oversee the implementation of the environmental auditing of the project in accordance with the requirements of condition 4.2 of this approval and all relevant project Environmental Management System(s); and*** ***d) Be given the authority and independence to recommend to the Proponent reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts, and, failing the effectiveness of such steps, to recommend to the Proponent that relevant activities are to be ceased as soon as reasonably practicable if there is a significant risk that an adverse impact on the environment will be likely to occur.***
Compliance Assessment Observations and Comments In March 2009 EnergyAustralia NSW nominated the Environment Manager- Western Nino Di Falco as the Environmental Representative. The Environment Manager oversees the implementation of all operations at KVAR through attendance at Monthly Client Meetings with Lend Lease and regular liaison with the External Plant Manager. The Environment Manager guides the project through site visits, sampling and other regulatory activities to ensure compliance with the environmental requirements of the CoAs and all relevant licences. In February 2015, EnergyAustralia NSW notified the DP&E of Mr Di Falco's retirement and nominated the new Environment Manager, Peter Griffiths, as the Environmental Representative. Furthermore, in a letter dated 19 January 2017, EnergyAustralia NSW notified the DP&E of Peter Griffiths appointment to Safety Leader within the Organisation and nominated the new NSW Environment Leader, Ben Eastwood, as the Environmental Representative, which was agreed to be the Secretary in a letter dated 28 February 2017.
Compliance Assessment Finding - Compliant

Construction environmental management

Minister's Conditions of Approval 6.2 and 6.3
6.2 – Prior to the commencement of construction work, the Proponent shall prepare and implement a Construction Environmental Management Plan (CEMP). The CEMP shall outline the environmental management practices and procedures to be followed during construction. The CEMP shall be prepared in accordance with **Guideline for the Preparation of Environmental Management Plans** ***(DIPNR, 2004).*** ***The Construction Environmental Management Plan for the project (or any stage of the project) shall be submitted to the Director General for approval at least four weeks prior to the commencement of any construction work associated with the project (or stage as relevant), unless otherwise agreed by the Director-General. Construction shall not commence until written approval has been received from the Director-General.*** ***6.3 – As part of the Construction Environmental Management Plan for the project, the Proponent shall prepare and implement the following plans:*** ***a) A Construction Traffic Management Plan, prepared in consultation with the RTA, the relevant Council and emergency services to manage the construction traffic impacts of the project, including but not limited to:*** ***i. Identifying construction vehicle volumes (construction staff vehicles, heavy vehicles and oversized loads) and haulage routes;*** ***ii. Identifying any road closures and/or traffic detours during the haulage of oversized loads as agreed to by the relevant roads authority;*** ***iii. Detailing a Construction Vehicle Code of Conduct to set driver behaviour controls to minimise impacts on the land uses along haulage routes (including noise minimisation measures); and*** ***iv. Complying with the document*** **Procedures for Use in the Preparation of a Traffic Management Plan** ***(RTA, 2011).*** ***b) A Construction Noise Management Plan to detail how construction noise impacts would be minimised and managed. The Strategy shall be developed in consultation with, and to the satisfaction of, the DECC and shall include, but not necessarily be limited to:*** ***i. Details of construction activities and an indicative schedule for construction works;*** ***ii. Identification of construction activities that have the potential to generate noise impacts on sensitive receivers;*** ***iii. Procedures for assessing noise levels at sensitive receivers and compliance;*** ***iv. Details of the reasonable and feasible actions and measures to be implemented to minimise noise impacts and, if any noise exceedence is detected, how any non-compliance would be rectified; and*** ***v. Procedures for notifying sensitive receivers of construction activities that are likely to affect their noise amenity.*** ***c) An Erosion and Sediment Control Plan to detail measures to minimise erosion and the discharge of sediment and other pollutants to land and/or water during construction works. The Plan must include, but not necessarily be limited to:*** ***i. Identification of the construction activities that could cause soil erosion or discharge sediment or water pollutants from the site;***

ii. A description of the management methods to minimise soil erosion or discharge of sediment or water pollutants from the site, including a strategy to minimise the area of bare surfaces, stabilise disturbed areas, and minimise bank erosion; and
Demonstration that the proposed erosion and sediment control measures will conform with, or exceed, the relevant requirements of* Managing Urban Stormwater: Soils and Construction *(Landcom, 2004).
Compliance Assessment Observations and Comments
A Construction Environmental Management Plan for KVAR Stage 2B was developed in consultation with EnergyAustralia NSW's Western Environment Section and approved by the DP&I in August 2011.
Compliance Assessment Finding - Compliant

Operational environmental management

Minister's Conditions of Approval 6.4 and 6.5
6.4 – The Proponent shall prepare and implement and Operation Environmental Management Plan to detail an environmental management framework, practices and procedures to be followed during operation of the project. The Plan shall be consistent with* Guideline for the Preparation of Environmental Management Plans *(DIPNR, 2004) and shall include, but not be limited to:
a) Identification of all statutory and other obligations that the Proponent is required to fulfil in relation to operation of the project, including all approvals, licences and consultations;
b) A description of the roles and responsibilities for all relevant employees (including contractors) involved in the operation of the project;
c) Overall environmental policies and principles to be applied to the operation of the project
d) Standards and performance measures to be applied to the project, and a means by which environmental performance can be periodically reviewed and improved, where appropriate;
e) Management policies to ensure that environmental performance goals are met and to comply with the conditions of this approval;
f) The additional plans listed under condition 6.5 of this approval; and
g) The environmental monitoring requirements outlined under conditions 3.3 to 3.5 inclusive and 3.8 of this approval.
The Plan shall be submitted for the approval of the Director-General no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Director-General. Operation shall not commence until written approval has been received from the Director-General.
Nothing in this approval precludes the Proponent from incorporating the requirements of the Operational Environmental Management Plan into existing environmental management systems and plan administered by the Proponent.
6.5 – As part of the Operation Environmental Management Plan for the project, required under condition 6.4 of this approval, the Proponent shall prepare and implement the following Management Plans:

a) An Operational Noise Management Plan to detail measures to mitigate and manage noise during operation of the project. The Plan shall be prepared in consultation with, and to the satisfaction of, the DECC and include, but not necessarily be limited to:

- ***i. Procedures to ensure that all reasonable and feasible noise mitigation measures are applied during operation of the project;***
- ***ii. Identification of all relevant sensitive receivers and the applicable criteria at those receivers commensurate with the noise limit specified under condition 2.15 of this approval;***
- ***iii. Identification of activities that will be carried out in relation to the project and the associated noise sources;***
- ***iv. Noise monitoring procedures (as referred to in condition 3.3 of this approval) for periodic assessment of noise impacts at the relevant receivers against the noise limits specified under this approval and the predicted noise levels as detailed in the report referred to under condition 1.1b) of this approval;***
- ***v. Details of all management methods and procedures that will be implemented to control individual and overall noise emissions from the site during operation;***
- ***vi. Procedures and corrective actions to be undertaken if non-compliance against the operational noise criteria is detected; and***
- ***vii. Provisions for periodic reporting of results to DECC.***

b) A Groundwater Management Plan to detail measures to mitigate and manage groundwater impacts. The Plan shall be prepared in consultation with, and to the satisfaction of, the SCA and include, but not necessarily be limited to:

- ***i. Baseline data on groundwater quality, depth and flow in the project area;***
- ***ii. Groundwater objectives and impact assessment criteria;***
- ***iii. A program to monitor groundwater flows and groundwater quality in the project area as required by condition 3.4 of this approval;***
- ***iv. A protocol for the investigation of identified exceedences of the groundwater impact assessment criteria;***
- ***v. A response plan to address potential exceedences and groundwater impacts; and***
- ***vi. Provisions for periodic reporting of results to the SCA.***

c) A Surface Water Management Plan to outline measures that will be employed to manage water on the site, to minimise soil erosion and the discharge of sediments and other pollutants to land and/or waters throughout the life of the project. The Plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, the SCA and DPI (Fisheries). The Plan shall include, but not necessarily be limited to:

- ***i. Baseline data on the water quality and flow in Sawyers Swamp Creek up to the date of this approval;***
- ***ii. Water quality objectives and impact assessment criteria for Sawyers Swamp Creek;***
- ***iii. A program to monitor surface water quality in Sawyers Swamp Creek as referred to in condition 3.5 of this approval;***
- ***iv. A protocol for the investigation of identified exceedences in the impact assessment criteria;***
- ***v. A response plan to address potential adverse surface water quality exceedences;***
- ***vi. A site water management strategy identifying clean and dirty water areas for Stage A, B and C of the project and the associated water management measures including erosion and sediment controls and provisions for recycling/reuse of***

water and the procedures for decommissioning water management structures on the site; and

vii. Provisions for periodic reporting of results to the DPI (Fisheries) and the SCA.

d) An Air Quality Management Plan to outline measures to minimise impacts from the project on local air quality. The Plan shall be prepared in consultation with, and to the satisfaction of, the DECC and include, but not necessarily be limited to:

i. Baseline data on dust deposition levels;

ii. Air quality objectives and impact assessment criteria;

iii. An air quality monitoring program as referred to in condition 3.8 of this approval;

iv. An assessment of alternative methods of ash placement to minimise the exposure of active placement areas to prevailing winds;

v. Mitigation measures to be incorporated during emplacement activities and haulage of ash;

vi. An operating protocol for the repository irrigation system including activation rates, application rates and area of coverage;

vii. A protocol for the investigation of visible emissions from the repository area;

viii. A response plan to address visible emissions from the repository area; and

ix. Provisions for periodic reporting of results to the DECC.

e) A Landscape/Revegetation Plan to outline measures to minimise the visual impacts of the repository and ensure the long-term stabilisation of the site and compatibility with the surrounding land fabric and land use. The Plan shall include, but not necessarily be limited to:

i. Identification of design objectives and standards based on local environmental values, vistas, and land uses;

ii. A description of short- and long-term revegetation measures;

iii. A schedule of species to be used in revegetation;

iv. Timing and progressive implementation of revegetation works as placement areas are completed, including landscape plans; and

v. Procedures and methods to monitor and maintain revegetated areas during the establishment phase and long-term.

Revegetation works must incorporate the use of local native species.

Compliance Assessment Observations and Comments

The Operation Environmental Management Plan was prepared by Parsons Brinckerhoff. Approval was granted in April 2009 and operations at KVAR Stage 2 commenced in September 2009. The OEMP is currently undergoing review by EnergyAustralia NSW to ensure that it reflects the current care and maintenance activities at KVAR.

Compliance Assessment Finding - Compliant

Environmental Reporting

Environmental incident reporting

Minister's Conditions of Approval 7.1 and 7.2
7.1 – The Proponent shall notify the Director-General of any environmental incident within 12 hours of becoming aware of the incident. The Proponent shall provide full written details of the incident to the Director-General within seven days of the date on which the incident occurred. ***7.2 – The Proponent shall meet the requirements of the Director-General to address the cause or impact of any environmental incident, as it related to this approval, reported in accordance with condition 7.1 of this approval, within such period as the Director-General may require.***
Compliance Assessment Observations and Comments No environmental incidents requiring notification of the Secretary occurred within the April 2016- March 2017 reporting period
Compliance Assessment Finding - Not applicable

Annual performance reporting

Minister's Condition of Approval 7.3
The Proponent shall, throughout the life of the project, prepare and submit for the approval of the Director-General, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the project against the Operation Environmental Management Plan (refer to condition 6.4 of this approval) and the conditions of this approval. The AEMR shall include, but not necessarily by limited to: ***a) Details of compliance with the conditions of this approval;*** ***b) A copy of the Complaints Register (refer to 5.4 of this approval) for the preceding twelve-month period (exclusive of personal details), and details of how these complaints were addressed and resolved;*** ***c) Identification of any circumstances in which the environmental impacts and performance of the project during the year have not been generally consistent with the environmental impacts and performance predicted in the documents listed under condition 1.1 of this approval, with details of additional mitigation measures applied to the project to address recurrence of these circumstances;*** ***d) Results of all environmental monitoring required under conditions 3.3 to 3.8 of this approval, including interpretations and discussion by a suitably qualified person; and*** ***e) A list of all occasions in the preceding twelve-month period when environmental goals/objectives/impact assessment criteria for the project have not been achieved, indicating the reason for failure to meet the criteria and the action taken to prevent recurrence***

of that type of failure. ***The Proponent shall submit a copy of the AEMR to the Director-General every year, with the first AEMR to be submitted no later than twelve months after the commencement of operation of the project. The Director-General may require the Proponent to address certain matters in relation to the environmental performance of the project in response to review of the Annual Environmental Report. Any action required to be undertaken shall be completed within such period as the Director-General may require. The Proponent shall make copies of each AEMR available for public inspection on request.***
Compliance Assessment Observations and Comments This AEMR satisfies the requirements of CoA 7.3.
Compliance Assessment Finding - Compliant

Appendix B
KVAR Stage 2 Noise Report – May 2016
(Refer to CD for Full Appendix)

Appendix C
KVAR Stage 2 Noise Report – November 2016
(Refer to CD for Full Appendix)

Appendix D
KVAR Stage 2 Noise Report – March 2017
(Refer to CD for Full Appendix)

Appendix E
Current water sampling points

Current water sampling points surface water monitoring KVAR 2010 - 2017

Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting	Northing
2	Lend Lease	Clean Water Runoff & Holding Pond	North Pond	CW Pond Runoff 2	Monthly	230112	6302059
3	88	Surface Water Runoff Collection	Internal ash surface runoff	SW Pond 1	Monthly		
4	87	West KVAD Wall subsurface	Groundwater through-flow	WX 50 Outflow	Monthly	229661	6302244
5	Lend Lease	Clean Water Collection near compound	Clean Water Runoff Pond 1	Clean Water Runoff-1	Monthly	229396	6301834
6	Lend Lease	KVAR North Holding Pond	Groundwater seepage, and stormwater runoff	North Holding Pond	Monthly	230225	6302106
7	38	Sawyers Swamp Creek Ash Dam	Dam water	Return Water Canal	Monthly	229765	6301461
8	79	Sawyers Swamp Creek Ash Dam	SSCAD seepage into SSC	Seepage @ V notch	Monthly	230260	6302287
9	41	Sawyers Swamp Creek Lower	Catchment Quality Comparison	SSC @ WX7	Monthly	228957	6302712
10	Lend Lease	Inflow of Sawyers Swamp Ck 0 m	Catchment Quality Comparison	SSC Upstream @ 0 m	Indicative	230386	6301545
11	Lend Lease	Sawyers Swamp Creek @ 300 m	Catchment Quality Comparison	SSC @ 300m	Monthly	230284	6301969
12	Lend Lease	Sawyers Swamp Creek @ 600 m	Catchment Quality Comparison	SSC @ 600m	Monthly	230253	6302120
13	84	Sawyers Swamp Creek @ 800 m	Catchment Quality Comparison	SSC @ 800m	Monthly	229954	6302256
14	83	Sawyers Swamp Creek @ 1250 m (nr D5)	Catchment Quality Comparison	SSC @ 1200 m	Monthly	229650	6302253
16	39	Dump Creek	Catchment Quality Comparison	DC	Monthly	229112	6302668
17	80	West KVAD Wall surface right	KVAD Toe Drain seepage	Right	Monthly	229662	6302177
18	81	West KVAD Wall s surface left	KVAD Toe Drain seepage	Left	Monthly	229688	6302194
40	40	Lidsdale Cut	Catchment Quality Comparison	LC @ WX5	Monthly	229490	6302227

Groundwater level monitoring for KVAR 2010 - 2017

Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting[2]	Northing[2]
8	75	Groundwater Bore GW10	KVAD West Wall	GW10[2]	Toe Drains	229754	6302228
9	76	Groundwater Bore GW11	KVAD West Wall	GW11[2]	Toe Drains	229612	6301994
11	78	Groundwater Bore AP17	KVAD North Wall	AP17[2]	Toe Drains	229915	6302193
19	Lend Lease	South West KVAR subsurface	Groundwater through-flow	Sump 1	Monthly	229441	6301496
20	Lend Lease	East KVAD Wall subsurface	Groundwater through-flow1	Sump 2	Monthly	230218	6302032
21	32	Groundwater Bore WGM1/D1	Regional	D12	Upstream	231988.5	6301410
22	33	Groundwater Bore WGM1/D2	Regional	D22	South East	229680	6301387.7
23	34	Groundwater Bore WGM1/D3	Regional	D32	East below SCAD	230276.1	6301753.2
24	35	Groundwater Bore WGM1/D4	Regional	D42	NE corner SSC	230160.7	6302349.8
27	85	Groundwater Bore GW6	KVAD	GW62	North West at SSC	229754	6302228
31	86	North KVAD Wall subsurface	Groundwater through-flow	North Wall	Monthly	229908	6302216
32	Lend Lease	Groundwater Well APA02	KVAR Stage 2A – Level	APA02	Stage 1A KVAR	229890	6301839.4
33	Lend Lease	Groundwater Well APA09A	KVAR Stage 2A - Level	APA09A	KVAR Stage 2A above clay cap north	229849	6302125.4
34	Lend Lease	Groundwater Well APA09B	KVAR Stage 2A - Level	APA09B	KVAR Stage 2A KVAD north	229849.5	6302125.7
35	Lend Lease	Groundwater Well APA10	KVAR Stage 2A - Level	APA10	KVAR Stage 2A KVAD west	229694.1	6302054.4
36	36	Groundwater Bore WGM1/D5	Regional	D52	Downstream	229642.5	6302205.9
36	Lend Lease	Groundwater Well APA11	KVAR Stage 2A - Level	APAD11	KVAR Stage 2A KVAD subsurface drain	229930	6301886
37	37	Groundwater Bore WGM1/D6	Regional	D62	Up dip coal seam	229412	6302027.8

Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting[2]	Northing[2]
37	Lend Lease	Groundwater Well APA12	KVAR Stage 2A - Level	APAD12	KVAR Stage 2A KVAD subsurface drain	229916	6301846
38	Lend Lease	Groundwater Well APA13	KVAR Stage 2A - Level	APAD13	KVAR Stage 2A KVAD subsurface drain	229985	6301931
39	Lend Lease	Groundwater Well APA14	KVAR Stage 2A	APAD14	KVAR Stage 2A KVAD subsurface drain	230024	6301949
41	Lend Lease	Groundwater Well APA16A	KVAR Stage 2A	APAD16	KVAR Stage 2A KVAD subsurface drain	230174	6301968
42	Lend Lease	Groundwater Well APA17	KVAR Stage 2A	APAD17	KVAR Stage 2A KVAD subsurface drain	230169	6301969
43	Lend Lease	Groundwater VWP[1] APA08	KVAR Stage 2A	APA08	KVAR Stage 2A above clay cap	229731.2	6301943.1
44	Lend Lease	Groundwater VWP[1] APA07	KVAR Stage 2A	APA07	KVAR Stage 2A above clay cap	229891.3	6302057.1
45	Lend Lease	Groundwater VWP[1] APA06	KVAR Stage 2A	APA06	KVAR Stage 2A above clay cap	230019.4	6302054.3
46	Lend Lease	Groundwater VWP[1] APA04	KVAR Stage 2A	APA04	KVAR Stage 2A above clay cap	229955.8	6301987.5
47	Lend Lease	Groundwater BH Cent KV_MB	Regional	KV_MB1D	Upslope adjacent to SSCAD	230604.2	6301288.2
48	Lend Lease	Groundwater BH Cent KV_MB	Regional	KV_MB1S	Upslope adjacent to SSCAD	230600	6301290
49	Lend Lease	Groundwater BH Cent KV_MB	Regional	KV_MB6D	KVAR Stage 2B	229982.9	6301782.6
50	Lend Lease	Groundwater BH Cent KV_MB	Regional	KV_MB6S	KVAR Stage 2B	229986.9	6301784.6
51*	Lend Lease	Groundwater BH Cent KV_MB	Regional	KV_MB8A	Offsite comparison un-disturbed	229166.4	6301607.4
52	Lend Lease	Centre APA Stage 1 and KVAR Stage 2	KVAR Stage 2A	Sump 3	KVAR Stage 2B		
53	Lend Lease level only	Groundwater Well 01	Groundwater through-flow	2012-PVC01	KVAR Stage 1	229468.21	6301620.1

Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting[2]	Northing[2]
54	Lend Lease level only	Groundwater Well 02	Groundwater through-flow	2012- PVC-02	KVAR Stage 1	229612.67	6301629.2
55	Lend Lease level only	Groundwater Well 03	Groundwater through-flow	2012- PVC-03	KVAR Stage 1	229564.84	6301717.9
56	Lend Lease level only	Groundwater VWP[1] 04	Groundwater through-flow	2012-VWP-04	KVAR Stage 1	229708.16	6301675.2
57	Lend Lease level only	Groundwater VWP[1] 05	Groundwater through-flow	2012-VWP-05	KVAR Stage 1	229815.42	6301684.6
58	Lend Lease level only	Groundwater VWP[1] 06	Groundwater through-flow	2012-VWP-06	KVAR Stage 1	229768.96	6301784.4
59	Lend Lease level only	Groundwater VWP[1] 07	Groundwater through-flow	2012-VWP-07	KVAR Stage 1	229683.52	6301792.7
60	Lend Lease level only	Groundwater Well 08	Groundwater through-flow	2012- PVC-08	KVAR Stage 1	229811.22	6301829.9
61	Lend Lease level only	Groundwater VWP[1] 09	Groundwater through-flow	2012-VWP-09	KVAR Stage 1	229851.8	6301752.8
62	Lend Lease	Groundwater Well APA15	KVAR Stage 2A	APAD15	KVAR Stage 2A KVAD subsurface drain	230159	6301948

[1] VWP – Vibrating Wire Piezometer – Pressure Transducer located in fly ash

[2] Water Quality Monitoring Results Available Groundwater KVAR Site - 2010 to 2011

* Previously Centennial Coal bores- now sampled by EnergyAustralia NSW Water level measured only

Appendix F
KVAR Stage 2 Water Quality Assessment – June 2017

(Refer to CD for Full Appendix)

Appendix G
EnergyAustralia Community Sponsorships and Donations – 2016/17

Recipient	Reason	Month / Year
Ironfest	Sponsorship of Annual Community Event	March 2016
Portland Art Show	Local Art Exhibition raising funds for Portland and buying work from local artists	April 2016
Lithgow Show Society	Donation to 2016 Lithgow Show	April 2016
St. Josephs School Portland	Hire of Amusement Ride for School Fete	April 2016
Sea Bees Fishing Club	Sponsorship for Annual Fishing Tournament at Lake Lyell	May 2016
Power To Engineering	Sponsorship of Event at Charles Sturt University Bathurst	May 2016
Lithgow City Council	Sponsorship for Halloween Event	June 2016
Barton Park	Assist with creation of sunken oriental garden	July 2016
Mitchell Conservatorium	Provision of Scholarships to local music students	July 2016
Lithgow Pony Club	Refurbishment of Amenities Block	July 2016
Lithgow District Car Club	Development of Motor Sport Park	July 2016
COC Limited	Development of Wolgan Valley Wilderness Rail Trail	July 2016
Cancer Council	Match monies raised by Staff for Cancer Council Biggest Morning Tea	July 2016
Lithgow Community Nursery	Assist with Frost Protection Project	August 2016
Mingaan Aboriginal Corporation	Naidoc Day Celebrations	August 2016
Portland Pool	Assist with supply and installation of solar panels	August 2016
Lithgow High School	Annual Presentation Day	September 2016
La Salle Academy	Annual Presentation Day	September 2016
Zig Zag School	125 Year Anniversary Celebrations	September 2016
Wallerawang Central Acclimatisation Soc	2016 Gone Fishing Day	September 2016
Careflight	Matching Staff Donations 1/1/15 - 31/12/15	September 2016
The Smith Family	Matching Staff Donations 1/1/15 - 31/12/15	September 2016
Lithgow PCYC	Matching Staff Donations 1/1/15 - 31/12/15	September 2016
Hats On For Zara	Matching Staff Donations	September 2016
Lithgow Swimming Club	Twilight Meet 2016	October 2016
Cancer Council	Matching Staff Donations - Daffodil Day	October 2016
Ironfest	Sponsorship of Lithgow Festival of Valley 2016	November 2016
Rydal Show Society	Sponsorship of Annual Show	November 2016

Recipient	Reason	Month / Year
Cullen Bullen Public School	Sponsorship of Annual Award Presentation Day	November 2016
Hampton Public School	Sponsorship of Annual Award Presentation Day	November 2016
Lithgow Public School	Sponsorship of Annual Award Presentation Day	November 2016
Portland Central School	Sponsorship of Annual Award Presentation Day	November 2016
St. Josephs School Portland	Sponsorship of Annual Award Presentation Day	November 2016
Zig Zag Public School	Sponsorship of Annual Award Presentation Day	November 2016
Capertee Public School	Sponsorship of Annual Award Presentation Day	November 2016
Meadow Flat Public School	Sponsorship of Annual Award Presentation Day	November 2016
Wallerawang Public School	Sponsorship of Annual Award Presentation Day	November 2016
Cooerwull Public School	Sponsorship of Annual Award Presentation Day	November 2016
Hartley Advisory Committee	Back to Hartley 2016	November 2016
Royal North Shore	Matching Staff Donations - 01/01/15 - 31/12/15	November 2016
St Patricks School	Sponsorship of Annual Award Presentation Day (Accrued)	December 2016
Highlands Steam & Vintage Fair	Sponsorship of Annual Fair (Accrued)	December 2016
Lithgow Oberon Landcare Association	Sponsorship local environment project (Accrued)	December 2016
St.Patricks/St Vincents Days for Girls	Purchase Hygiene Kits for women Timor Leste (Accrued)	December 2016
Bathurst WaterPolo	Purchase Electronic Scoreboard (Accrued)	December 2016
Portland Colts Football Club	Assist with 100 Year Celebrations	December 2016
Mingaan Wiradjuri Aboriginal Corp	Assist with conservation works at 'Blackfellow Hands' (Accrued)	December 2016
Lithgow Show Society	Assist with Annual Show (Accrued)	December 2016
Portland Mens' Shed	Assist with expenses to attend Central West Conference (Accrued)	December 2016
Lithgow Army Cadet Unit	Update infrastructure to enable inclusion of disabled youth (Accrued)	December 2016

Recipient	Reason	Month / Year
Cullen Bullen Rural Fire Service	Assist with repairs to Meeting Room (Accrued)	December 2016
Portland Sport & Recreation Club	Assist with purchase of Trailer (Accrued)	December 2016
Lithgow Business Networking Group	Production of maps outlining tourism activities in local area (Accrued)	December 2016
Multiple Sclerosis	Matching Staff donations - Sydney to the Gong Cycle Ride	December 2016
Josephite Foundation	Donation to No Interest Loan Scheme	February 2017
Ironfest	Annual Sponsorship	March 2017