

**Kerosene Vale Ash Repository Stage 2  
Annual Environment Management Report  
April 2012 – March 2013**

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### Annual Environmental Management Report (AEMR) Approvals:

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**Approved for Issue:** Nino Di Falco (Nominated Environmental Representative) **Status:** Final

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## List of acronyms

AEMR	Annual Environmental Management Report
CoA	Condition of Approval (also known as MCoA – Minister’s CoA)
DP&I	Department of Planning and Infrastructure
EPL	Environment Protection Licence
KVAD	Kerosene Vale Ash Dam
KVAR	Kerosene Vale Ash Repository
mAHD	Metres Australian Height Datum
OEMP	Operation Environmental Management Plan
RL	Relative Level
SSCAD	Sawyers Swamp Creek Ash Dam

## 1. Introduction

In 2002 Delta Electricity was granted approval to change from wet to dry ash-producing activities and to use the Kerosene Vale Ash Repository (KVAR) area for dry ash storage. Stage 1 of the storage facility was designed to operate for a period of five years in a limited area over the KVAR.

On 26 November 2008, Delta Electricity received Project Approval from 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 project is commonly known as Kerosene Vale Ash Repository Stage 2 (KVAR Stage 2).

Condition 7.3 of the Project Approval (NSW DP&I, 2008) requires that Delta Electricity prepare and submit an Annual Environmental Management Report (AEMR) for the approval of the Director-General, Department of Planning (DP&I).

## 2. Purpose of the AEMR

This Annual Environmental Management Report has been prepared in order to satisfy Condition 7.3 of the Project Approval (DP&I, 2008). The AEMR is to include, but not necessarily be limited to:

- The Proponent shall, throughout the life of the project, prepare and submit for the approval of the Director-General, an AEMR. The AEMR shall review the performance of the project against the Operation Environmental Management Plan (OEMP) (Conditions of Approval (CoA) 6.4) and the Conditions of this Approval;
- Details of compliance with CoAs;
- A copy of the Complaints Register (refer to CoA 5.4) for the preceding twelve-month period (exclusive of personal details), and details of how these complaints were addressed and resolved;
- 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 CoA 1.1, with details of additional mitigation measures applied to the project to address recurrence of these circumstances;
- Results of all environmental monitoring required under CoA 3.3 to 3.8, including interpretations and discussion by a suitably qualified person; and
- 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.

## 2.1 Project setting

Ash placement within the KVAR Stage 2 area commenced in April 2009. No construction activities were required to facilitate the placement of ash in the Stage 2 area as the operation was a progression of ash placement from Stage 1 and utilised existing facilities and infrastructure.

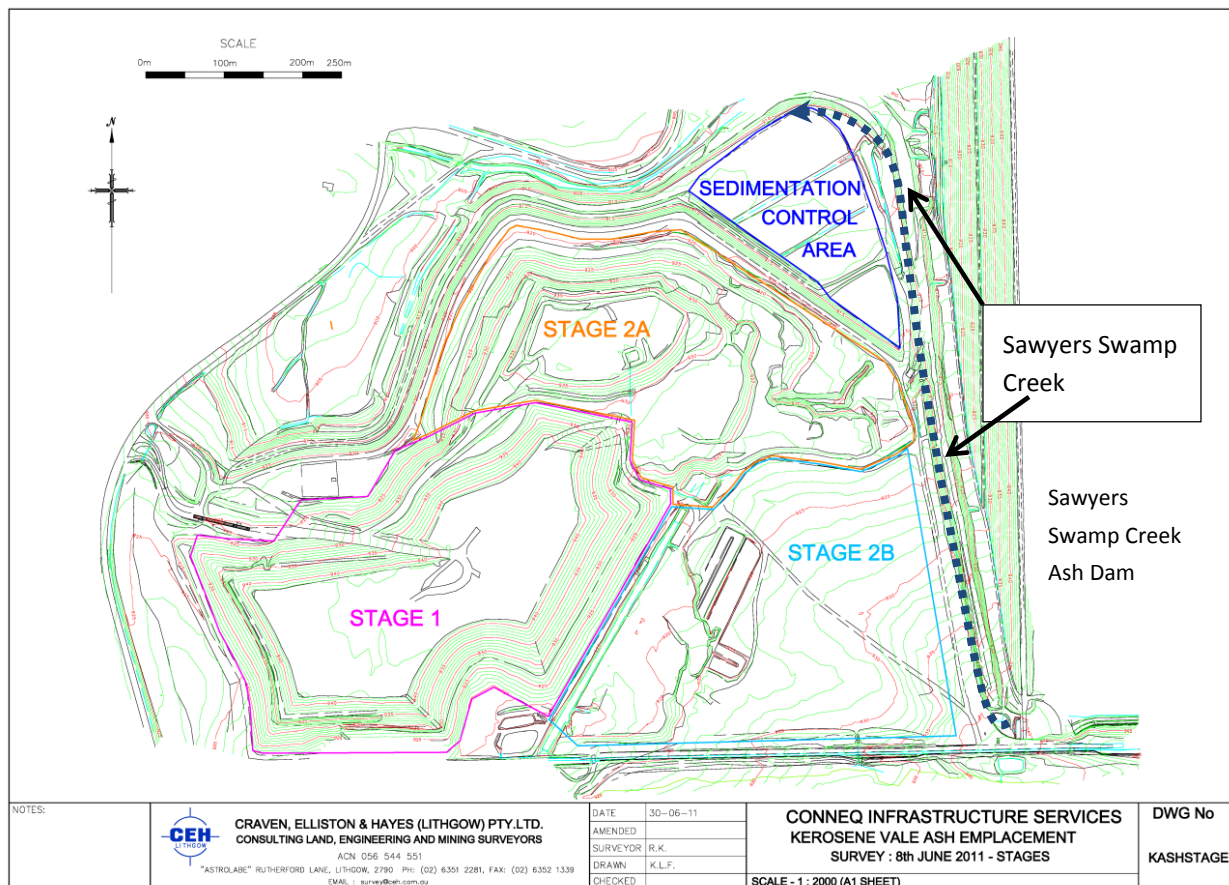
The original ash placement strategy for KVAR Stage 2 comprised three stages:

- Stage 2A as an extension of Stage 1;
- Stage 2B to allow time for the re-alignment of Sawyer's 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 had been carried out.

Since the first AEMR was submitted, the ash placement strategy for Kerosene Vale Stage 2 Ash Repository has been updated to reflect changes to the ash placement strategy from three stages as outlined in the Operational Environmental Management Plan (OEMP), to a two-staged approach.

The change in strategy was in response to Centennial Coal relinquishing their right to extract coal from the areas of mining interest within KVAR Stage 2 (Figure 1). As ash placement had commenced in Stage 2A, Delta Electricity's structural engineers reviewed the ash placement strategy and determined that moving the northern boundary of the repository at least 60m from the dam wall, at a depth of no more than 12 m, removed the necessity for the stabilisation berm. Berm stabilisation was no longer required and it was deemed unnecessary to realign SSC.

A Construction Environmental Management Plan (CEMP) for KVAR Stage 2B was developed in consultation with Delta Electricity's Western Environment Section and approved by the DP&I in August 2011.



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

## 2.2 Site characteristics and context

KVAR is situated in the centre of the Sawyers Swamp Creek (SSC) catchment, and receives significant runoff from the surrounding areas. The catchment area upstream of Sawyers Swamp Creek Ash Dam (SSCAD) is recognised as being highly diverse, with numerous threatened species and ecological communities.

A report produced by Aurecon (2011) on behalf of Delta Electricity provides some detail on the chemical and geomorphic complexity of the site, given past and present activities, as well as the naturally mineralised nature of the catchment:

*The original ash placement operations were at the Kerosene Vale Ash Dam (KVAD) which was built around a former coal mine void which had deposits of coal waste known as chitter. 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. The next ash placement operation was at the SSCAD which saw wet ash placement take place from 1980 to 2003. At this time ash placement operations were converted to dry ash placement.*

*The first dry ash placement area was at KVAR Stage 1, which was located on top of the clay capping of the KVAD. The KVAR Stage 1 placement works were completed in January 2010. The KVAR Stage 2 placement works commenced in April 2009.*



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

- 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 Cox's 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).

### 3. Assessment of compliance with conditions of approval

In assessing compliance with CoAs the following compliance categories were used:

- Compliance;
- Partial compliance;
- Non-compliance; and
- Not applicable.

A detailed review checklist for each CoA is presented in Appendix A.

The following is a summary of the compliance assessment findings against the CoAs for the management period from April 2012 to March 2013.

- Compliance findings – 44
- Not applicable findings – 18
- Partial compliance findings – 1
- Non-compliance findings – 0

#### 3.1 Partial compliance

**CoA 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.*

A review of logistical arrangements was conducted and determined that a reduction in hours was not feasible. This review has not been submitted to the Director-General.

## 4. Compliance with other licences, permits and approvals that apply to the project

The project area is located within the operating area of Delta Electricity's Wallerawang Power Station, which holds an Environment Protection Licence (EPL) No. 766.

The following sections of the EPL are relevant with respect to the operations of KVAR Stage 2 (See Table 1):

- **L1 Pollution of waters:** Except as may be expressly provided in any other condition of the Licence (EPL 766) the licensee must comply with Section 120 of the *Protection of the Environment Operations Act 1997* (POEO Act): Prohibition of pollution of waters;
- **L5 Waste:** The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence;
- **L6 Noise limits:** Operational noise from the KVAR area must not exceed 40dB(A)  $L_{Aeq}$ (15 minute), at the nearest most affected noise sensitive location; and
- **L7 Hours of operation:** Operational activities associated with the KVAR must only be carried out between the hours of 0700 and 2200 Monday to Sunday.

**Table 1 EPL compliance assessment**

EPL requirements	Finding	Relevant Section of AEMR
<b>L1 Pollution of waters</b>	Compliant	Section 6.1.2 Surface and groundwater monitoring
<b>L5 Waste</b>	Compliant	Section 6.2.7 Waste management
<b>L6 Noise limits</b>	Compliant	Detailed review checklist for CoA 3.2 (Appendix A), Section 5 complaints register and Section 6.1.1 ongoing operational noise monitoring
<b>L7 Hours of operation</b>	Compliant	Detailed review checklists for CoA 2.8 and CoA 2.10 (Appendix A)

## 5. Complaints register (May 2012 to April 2013)

No complaints were recorded against operations at KVAR Stage 2 in the period from April 2012 to March 2013.

## 6. Project environmental performance

For the purpose of this report, performance against the OEMP and CoAs are reviewed separately as Sections 6.1 and 6.2.

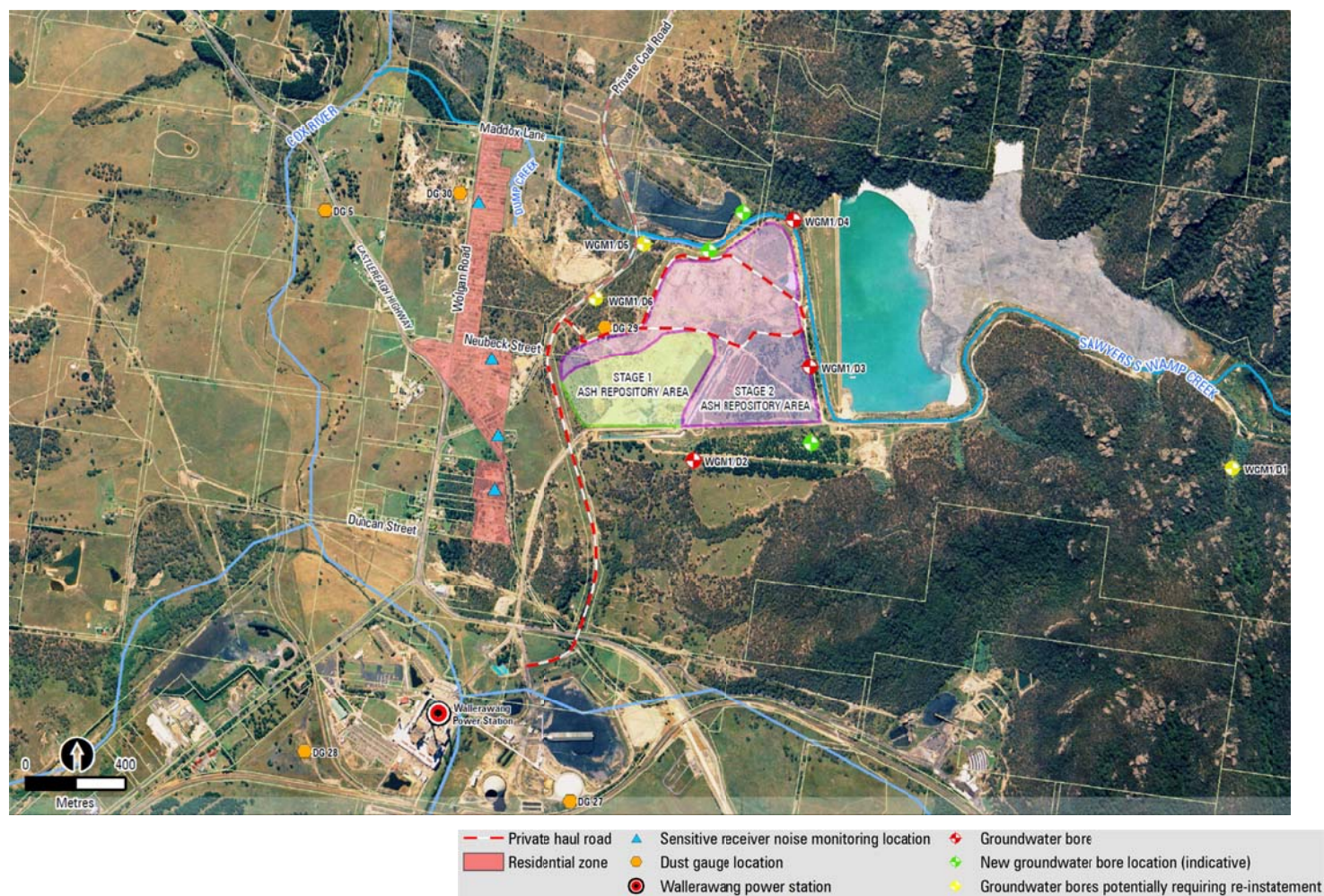
Details of environmental monitoring are provided by Lend Lease as a monthly Client Service Report, comprising part of the Lend Lease Environmental Management System and facilitating continual improvement as a process of adaptive management (Aiken, 2012).

## 6.1 Environmental monitoring - conditions of approval

Environmental monitoring associated with CoA 3.3 to 3.8 includes the following:

- CoA 3.3 – Ongoing noise monitoring;
- CoA 3.4 – Groundwater monitoring;
- CoA 3.5 – Surface water quality monitoring;
- CoA 3.6 – Hydrological monitoring with respect to SSC realignment;
- CoA 3.7 – Ecological monitoring with respect to the SSC realignment; and
- CoA 3.8 – Air quality monitoring.

Figure 2 outlines the various locations and categories of environmental monitoring that were to be established at KVAR, as a minimum, for the duration of the Stage 2 operations as outlined in the OEMP.



**Figure 2 Environmental monitoring locations**

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### 6.1.1 Ongoing operational noise monitoring (CoA 3.3)

DP&I reviewed and approved the Kerosene Vale Ash Repository Operational Noise Review in 2009, indicating that the relevant requirements of CoA 3.2 of the Minister's approval had been met. DP&I supported the following recommendations as outlined in Section 9 of the Operational Noise Review to ensure ongoing noise compliance:

- Routine maintenance of fly ash trucks is to be carried out to ensure engine and mechanical component efficiency, minimisation of exhaust noise breakout and appropriate tyre pressure and tread requirements;
- As required by CoA 3.3 and as part of due diligence practice, routine monitoring of ambient noise levels will be undertaken in the surrounding environment for the determination of potential operational influence on noise environs and compliance with the adopted 40 dB(A) LAeq, 15min noise criterion;
- Periodic operational noise monitoring shall be carried out at a minimum 6 monthly frequency. Within 14 days of completing the noise monitoring any non-compliance with the noise criterion shall be reported to the DECC and the Director-General;
- Where Stage 2 fly ash truck operations are increased from typical existing daily movements resulting in an increased frequency of peak 15-minute pass by events daytime 7 trucks day time period or evening 6 trucks evening period; monitoring of ambient noise levels will be undertaken at nearest receiver locations for the determination of compliance with the adopted operational noise criteria;
- The noise monitoring methodology in the KVAR OEMP be amended to include the measurement of fly ash truck sound exposure level pass by events at the nearest receiver locations; and
- Further monitoring of fly ash truck source noise levels is to be undertaken adjacent to the haul road to, where feasible, identify dominant truck operational noise influence and refine fly ash truck sound power level adopted in the operational noise propagation model.

These recommendations were addressed in the Repository Site Management Plan (Lend Lease, 2010).

The Noise Monitoring Report (Aurecon, 2012) found that:

*The primary contributors to the background and ambient noise levels at all the locations were the traffic noise. The noise contribution from KVAR Stage 2 activities alone could not be determined based on ambient noise measurements due to contamination from other ambient noises. Additional Sound Exposure Level measurements of individual truck pass-by events at a closer distance to the truck haulage road were carried out on 22 April 2013 noise monitoring. Based on the sound exposure level measurement results and observations of truck movements on site, a LAeq (15 min) noise level was predicted at each of the assessment sensitive noise receivers. The predicted noise levels took into account ash trucks and light commercial vehicle movement associated with Stage 2 KVAR works and distance of the noise source from the receivers. The predicted noise level at each of the noise receivers showed compliance with assessment criteria, thus the operational noise emissions from the Stage 2 KVAR are considered compliant with the Conditions of Approval.*

### 6.1.2 Surface and groundwater monitoring

The Aurecon Water Quality Assessment for February 2012 to March 2013 (2013) aimed to determine:

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- The changes, if any, in surface and groundwater quality due to the seepage collection and diversion systems at:
  - The SSCAD v-notch pump-back system o sub-surface drains in KVAD under the dry ash KVAR;
  - Diversion of the KVAD groundwater to Lidsdale Cut via the unblocked KVAD toe drains; and
  - Diversion of the Lidsdale Cut discharge from SSC to the SSCAD.
- The effects of the Stage 1 and Stage 2A dry ash placements on surface and groundwater receiving waters with the effects of the local coal mining and the Springvale Mine water discharge taken into account.

The assessment of surface and groundwater quality found that the seepage collection and diversion systems have reduced the salinity (conductivity), sulphate and trace metals in the local groundwater bores at the KVAD/R such that, other than the local mineral effects, the water quality and trace metals met the local/ANZECC (2000) guidelines. The resulting conditions in Lidsdale Cut were greatly improved so that all the elements met the local/ANZECC (2000) guidelines. These reductions provided evidence that the Stage 1 and Stage 2 dry ash placements are not measurably affecting the groundwater quality.

This, together with the local KVAD/R seepage and more detailed measurements in SSC, indicated no significant effects on the creek receiving waters. In addition, although the seepage from the SSCAD was found to influence the salinity (conductivity) in SSC, the creek salinity was decreasing and there was no significant effect on the trace metals.

In contrast with the improved water quality and trace metals in the groundwater and Lidsdale Cut, the water quality at the SSC receiving water site was elevated in trace metals. This appeared to be associated with mine spoil groundwater seepage into the creek after a heavy rainfall event.

#### **Groundwater monitoring (CoA 3.4)**

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

The original Repository Management Plan (Lend Lease, 2010) included a Groundwater Management Plan for KVAR and adjacent KVAD. The main focus of this Management Plan was to not only understand water quality impacts on the immediate area, but to understand the influence of regional groundwater on the stability of the Stage 2A operations, due to the placement of the site over the reclaimed ash dam. This process has continued with continued monitoring assessments commissioned for the site (e.g. Aurecon 2011, 2013).

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 blocked toe drains of KVAD were cleared in February 2010, and further monitoring of groundwater levels within the Ash Dam and Stage 2 repository were instigated. This included subsurface investigations, which resulted in the installation of additional water monitoring points (Table 2 and Figure 3) and more recently, assessment of water levels beneath the Stage 1 repository (Golder Associates 2013).



**Figure 3 Surface and groundwater monitoring sites for SSCAD and KVAR**

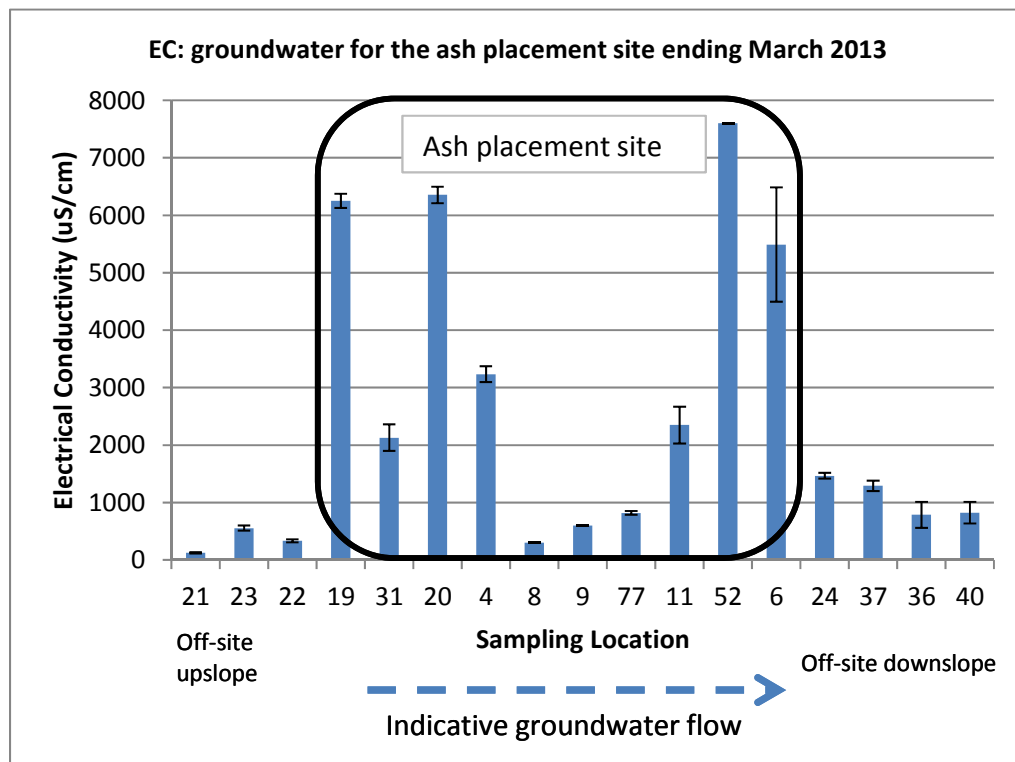
Monthly Client Reports supplied by Lend Lease provide rolling averages of the results from water samples taken at the main regional bores- WGM1/D2 (DW2), WGM1/D3 (DW3), WGM1/D5 (DW5) and WGM1/D6 (DW6) (Table 3). These bores provide information about groundwater flow under KVAD and the dry repository storages of KVAR Stage 1 and Stage 2A.

Key observations of groundwater in relation to the KVAD dam-wall drains are as follows:

- Post unblocking of the toe drains (19/2/2010) drain levels have stabilised and main drain outflow indicates levels rise after rainfall and return to normal levels within 7 days;
- Regional groundwater flows (as measured at DW2) from the south-west can be linked to patterns of level change in the Ash Dam at the drain piezometers before outflowing to DW5 and then on to the Lidsdale Cut; and
- Drain levels in the dam wall are constant along the northern boundary and rise and fall on the western boundary.
- Regional groundwater flows from the east (bore DW3) to the north-west (DW5), and from the south (DW2) to the north-west. This south to north-west flow most likely occurs due to the Lithgow coal seam; and
- Stage 1 and 2 KVAR is located directly on top of the old KVAD, separated by a clay cap. Water quality and flow data show that collection and diversion installations since 2010 by sub-surface drains across the site contain flow from entering SSC.

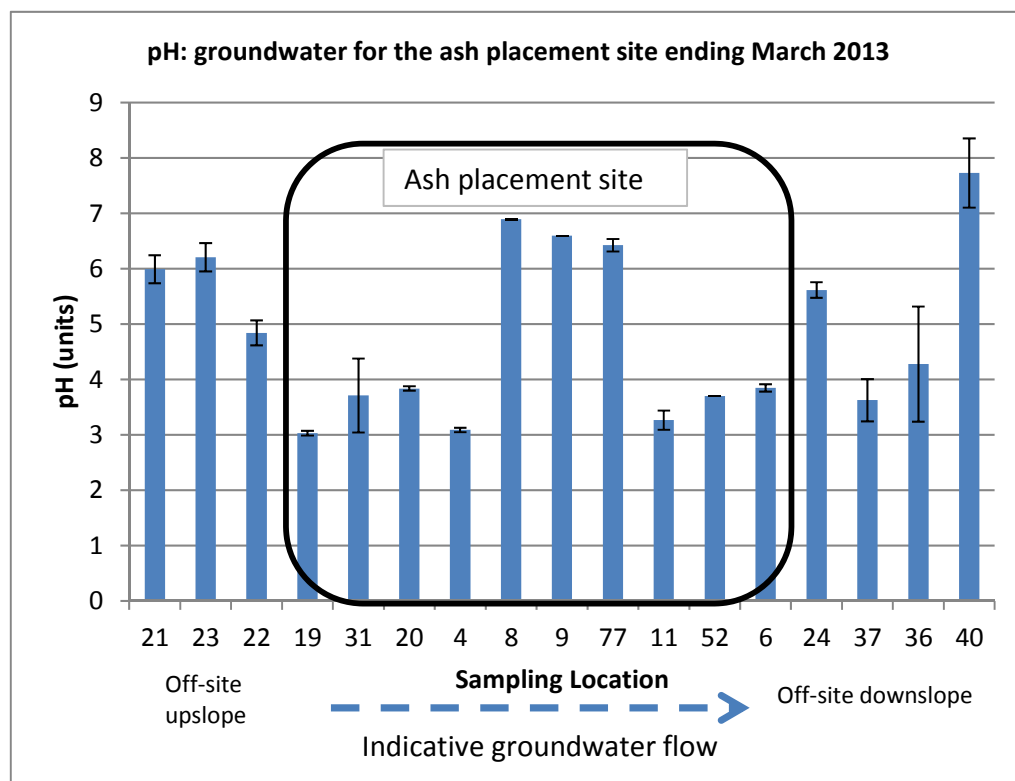
This movement of water has potential impacts on local groundwater quality. Impacts of operations on groundwater quality and interpretation of impacts of groundwater movement (Figure 4 and Figure 5) are presented as pH and electrical conductivity respectively. Data represent annual averages with 95% confidence intervals and identify the ash placement site is represented by acidic and saline groundwater underlying the site is not significantly impacted by Stage 2 operations. Comparison between data provide for the general observation that very acidic water (pH 4) is associated with very high soluble salts.

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



**Figure 4 Electrical conductivity of groundwater for the KVAR ash placement area**





**Figure 5 pH of groundwater within and surrounding the KVAR ash placement area**

#### Surface water quality monitoring (CoA 3.5)

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 original design concept for managing surface water for the repository was outlined in the Repository Management Plan (Lend Lease, 2010), 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. Current repository management plan objectives also reiterate this design concept (Lend Lease January 2012).

The Operational Environment Management Plan for KVAR Stage 2 requires sampling within SSC at four locations- two (2) on SSC, one (1) on Dump Creek to the northwest of the repository, and one (1) in SSC Ash Dam, 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 Nalco Site ID numbers 38, 39, 40 and 41 (Table 2, shaded cells) since January 2003. Sampling commenced at sites 79, 80, 81, 83 and 84 in January 2010. Sampling at the remaining Nalco sites (86, 87 and 88) commenced in May 2010.

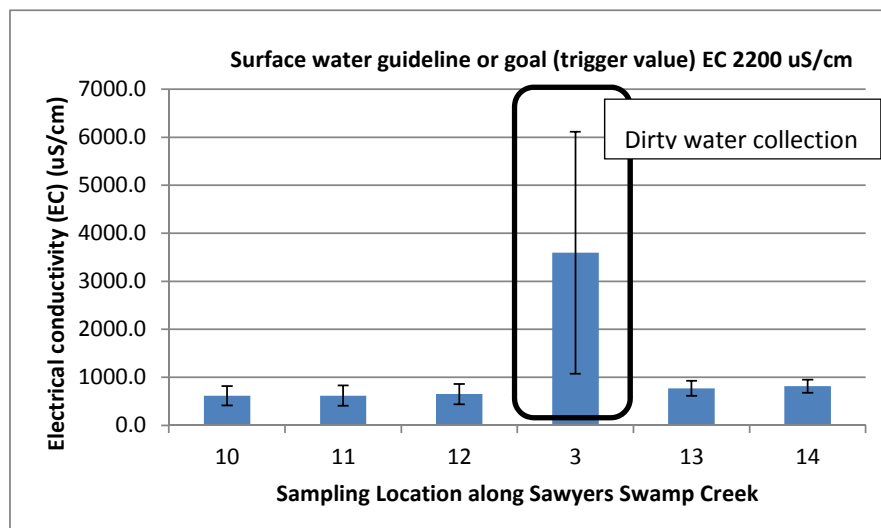
The other sites (Table 2, unshaded cells) form part of the Lend Lease monthly water sampling routine for a combined total of 18 locations that are regularly monitored for the project.

Note that SSC realignment did not take place. The other sites (Table 2, unshaded cells) form part of the Lend Lease monthly water sampling routine that are regularly monitored for the project, with tests performed providing the following information:

- pH;
- Alkalinity (CaCO<sub>3</sub>);
- Sulfate (SO<sub>4</sub>);
- Conductivity;
- Total dissolved solids; and
- Trace metals- including Mercury (Hg), Chloride (Cl), Fluoride (F), Aluminium (Al), Arsenic (As), Barium (Ba), Beryllium (Be), Boron (B), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Copper (Cu), Lead (Pb), Magnesium (Mg), Molybdenum (Mo), Nickel (Ni), Potassium (K), Selenium (Se), Silver (Ag), Sodium (Na), Zinc (Zn), Iron (Fe), Manganese (Mn).

Tests for dissolved oxygen (O<sub>2</sub>), turbidity, total phosphorus (TP) and total nitrogen (TN) were considered unnecessary by the previous AEMR due to SSC not requiring realignment. However, these tests are conducted for surface waters upon specific request to the Nalco laboratory, and have been incorporated into routine sampling at the Environment- Western team's request, as of August 2011.

Though no contaminated surface water is allowed to enter the catchment, surface waters are tested to ensure compliance with ANZECC guidelines. For repository close-out, it is proposed that all clean-water collected from capped batters be directed into a constructed wetland for filtration, before eventual release into the catchment. This proposal was approved by the Department on 16<sup>th</sup> December 2011, within the KVAR Construction Environmental Management Plan. The following graph (Figure 6) indicates through electrical conductivity levels that the surface waters of the adjacent SSC both up- and downstream of the ash placement area (Site 2) remain non- affected by ash emplacement operations. The water quality of the site 2 is water collected from the internal dirty water collection pond which collects surface runoff and groundwater seepage. Data represent averages of monthly sampling with 95% confidence intervals.



**Figure 6 Electrical conductivity of surface waters up- and downstream of the ash placement area**

**Table 2 Current water sampling points surface water monitoring KVAR 2010 - 2013**

Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting	Northing
1	86	North KVAD Wall subsurface	Groundwater through-flow	North Wall	Monthly	229908	6302216
2	87	West KVAD Wall subsurface	Groundwater through-flow	WX 50 Outflow	Monthly	229661	6302244
3	Lend Lease	Dirty Water Storage Pond	Ash Placement Surface Water Collection Pond	Dirty Water Storage	Monthly		
4	Lend Lease	KVAR North Holding Pond	Groundwater seepage, and stormwater runoff	North Holding Pond	Monthly	230225	6302106
5	Lend Lease	Clean Water Collection near compound	Clean Water Runoff Pond 1	Clean Water Runoff-1	Monthly	229396	6301834
6	Lend Lease	Clean Water Runoff & North Holding Pond	Runoff permanent capping to northern Holding Pond CW Pond 2	CW Pond Runoff 2	Monthly	230112	6302059
7	Lend Lease	Inflow of Sawyers Swamp Creek	Catchment Quality Comparison	SSC Upstream @ 0m	Indicative	230386	6301545
8	Lend Lease	Sawyers Swamp Creek Upper	Catchment Quality Comparison	SSC @ 300m	Monthly	230284	6301969
9	Lend Lease	Sawyers Swamp Creek Upper	Catchment Quality Comparison	SSC @ 600m	Monthly	230253	6302120

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Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting	Northing
10	Lend Lease	Sawyers Swamp Creek Upper	Catchment Quality Comparison	SSC @ 800m	Monthly	229954	6302256
11	83	Sawyers Swamp Creek Lower	Catchment Quality Comparison	SSC @ D5 (1200 m)	Monthly	229650	6302253
12	38	Sawyers Swamp Creek Ash Dam	Dam water	Return water canal	Monthly	229765	6301461
13	79	Sawyers Swamp Creek Ash Dam	SSCAD seepage into SSC	Seepage @ V notch	Monthly	230260	6302287
14	41	Sawyers Swamp Creek Lower	Catchment Quality Comparison	SSC @ WX7	Monthly	228957	6302712
15	40	Lidsdale Cut	Catchment Quality Comparison	LC @ WX5	Monthly	229490	6302227
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

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**Table 3** Groundwater level monitoring for KVAR 2010 - 2013

Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting	Northing
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	D1 <sup>2</sup>	Upstream	231988.5	6301410
22	33	Groundwater Bore WGM1/D2	Regional	D2 <sup>2</sup>	South East	229680	6301388
23	34	Groundwater Bore WGM1/D3	Regional	D3 <sup>2</sup>	East below SCAD	230276.1	6301753
24	35	Groundwater Bore WGM1/D4	Regional	D4 <sup>2</sup>	NE corner SSC	230160.7	6302350
25	36	Groundwater Bore WGM1/D5	Regional	D5 <sup>2</sup>	Down-stream	229642.5	6302206
26	37	Groundwater Bore WGM1/D6	Regional	D6 <sup>2</sup>	Up dip coal seam	229412	6302028
27	85	Groundwater Bore GW6	KVAD	GW6 <sup>2</sup>	NW at SSC	229754	6302228

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Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting	Northing
28	75	Groundwater Bore GW10	KVAD West Wall Toe Drain	GW10 <sup>2</sup>	Toe Drains	229612	6301994
29	76	Groundwater Bore GW11	KVAD West Wall Toe Drain	GW11 <sup>2</sup>	Toe Drains	229649	6302093
30	77	Groundwater Bore AP09	KVAD North Wall Toe Drain	AP09 <sup>2</sup>	Toe Drains	229833	6302182
31	78	Groundwater Bore AP17	KVAD North Wall Toe Drain	AP17 <sup>2</sup>	Toe Drains	229915	6302193
32	Lend Lease level only	Groundwater Well APA02	KVAR Stage 2A	APA02	Stage 1A KVAR	229890	6301839
33	Lend Lease level only	Groundwater Well APA09A	KVAR Stage 2A Above clay cap	APA09A	Stage 2A above clay cap north	229849	6302125
34	Lend Lease level only	Groundwater Well APA09B	Stage 2A below clay cap	APA09B	Stage 2A KVAD water level north	229849.5	6302126
35	Lend Lease level only	Groundwater Well APA10	Subsurface drain KVAD	APA10	Stage 2A KVAD water level west	229694.1	6302054
36	Lend Lease level only	Groundwater Well APA11	Subsurface drain KVAD	APAD11	Stage 2A KVAD subsurface drain	229930	6301886
37	Lend Lease level only	Groundwater Well APA12	Subsurface drain KVAD	APAD12	Stage 2A KVAD subsurface drain	229916	6301846
38	Lend Lease	Groundwater Well APA13	Subsurface drain KVAD	APAD13	Stage 2A KVAD	229985	6301931

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Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting	Northing
	level only				subsurface drain		
39	Lend Lease level only	Groundwater Well APA14	Subsurface drain KVAD	APAD14	Stage 2A KVAD subsurface drain	230024	6301949
40	Lend Lease level only	Groundwater Well APA15	Subsurface drain KVAD	APAD15	Stage 2A KVAD subsurface drain	230159	6301948
41	Lend Lease level only	Groundwater Well APA16	Subsurface drain KVAD	APAD16	Stage 2A KVAD subsurface drain	230174	6301968
2	Lend Lease level only	Groundwater Well APA17	Subsurface drain KVAD	APAD16B	Stage 2A KVAD subsurface drain	230169	6301969
43	Lend Lease level only	Groundwater VWP <sup>1</sup> APA08	KVAR Stage 2A Above clay cap	APA08	Stage 2A above clay cap	229731.2	6301943
44	Lend Lease level only	Groundwater VWP APA07	KVAR Stage 2A Above clay cap	APA07	Stage 2A above clay cap	229891.3	6302057
45	Lend Lease level only	Groundwater VWP APA06	KVAR Stage 2A Above clay cap	APA06	Stage 2A above clay cap	230019.4	6302054
46	Lend Lease level only	Groundwater VWP APA04	KVAR Stage 2A Above clay cap	APA04	Stage 2A above clay cap	229955.8	6301988

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Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting	Northing
47*	Lend Lease level only	Groundwater BH Cent KV_MB	Regional (Centennial Coal)	KV_MB1D	Upslope adjacent to SSCAD	230604.2	6301288
48*	Lend Lease level only	Groundwater BH Cent KV_MB	Regional (Centennial Coal)	KV_MB1S	Upslope adjacent to SSCAD	230600	6301290
49*	Lend Lease level only	Groundwater BH Cent KV_MB	Regional (Centennial Coal)	KV_MB6D	KVAR Stage 2B	229982.9	6301783
50*	Lend Lease level only	Groundwater BH Cent KV_MB	Regional (Centennial Coal)	KV_MB6S	KVAR Stage 2B	229986.9	6301785
51*	Lend Lease level only	Groundwater BH Cent KV_MB	Regional (Centennial Coal)	KV_MB8A	Offsite comparison-undisturbed	229166.4	6301607
52	Lend Lease quality only	KVAR Stage 2B/1B abutment	Groundwater through-flow	Sump 3	Monthly quality		
53	Lend Lease level only	Groundwater Well 01	Groundwater through-flow	2012-PVC01	KVAR Stage 1	229468.21	6301620.14
54	Lend Lease level only	Groundwater Well 02	Groundwater through-flow	2012- PVC-02	KVAR Stage 1	229612.67	6301629.18
55	Lend Lease level only	Groundwater Well 03	Groundwater through-flow	2012- PVC-03	KVAR Stage 1	229564.84	6301717.9

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Site #	Nalco site ID	Reported origin	Aspect	Sample ID	Note	Easting	Northing
56	Lend Lease level only	Groundwater VWP <sup>1</sup> 04	Groundwater through-flow	2012-VWP-04	KVAR Stage 1	229708.16	6301675.19
57	Lend Lease level only	Groundwater VWP 05	Groundwater through-flow	2012-VWP-05	KVAR Stage 1	229815.42	6301684.58
58	Lend Lease level only	Groundwater VWP 06	Groundwater through-flow	2012-VWP-06	KVAR Stage 1	229768.96	6301784.44
59	Lend Lease level only	Groundwater VWP 07	Groundwater through-flow	2012-VWP-07	KVAR Stage 1	229683.52	6301792.71
60	Lend Lease level only	Groundwater Well 08	Groundwater through-flow	2012- PVC-08	KVAR Stage 1	229811.22	6301829.92
61	Lend Lease level only	Groundwater VWP 09	Groundwater through-flow	2012-VWP-09	KVAR Stage 1	229851.8	6301752.8

<sup>1</sup> VWP – Vibrating Wire Piezometer – Pressure Transducer located in fly ash

<sup>2</sup> Water Quality Monitoring Results Available Groundwater KVAR Site - 2010 to 2011

\* Previously Centennial Coal bores- now sampled by Delta

Water level measured only

### 6.1.3 Hydrological monitoring (CoA 3.6)

Delta Electricity 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.

### 6.1.4 Ecological monitoring (CoA 3.7)

Delta Electricity has determined that there is no longer any need to realign SSC. Ecological monitoring as required under CoA 3.7 is not required.

### 6.1.5 Air quality monitoring (CoA 3.8)

The Repository Site Management Plan (Lend Lease, 2010) for KVAR Stage 2 operations proposes an Implementation Strategy in accordance with the Air Quality Monitoring Program, as required under the CoAs as stipulated by DP&I 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 within the site is also included in the responsibilities of all operations, 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).

#### 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- no clean water is used in this application.

The 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 4).

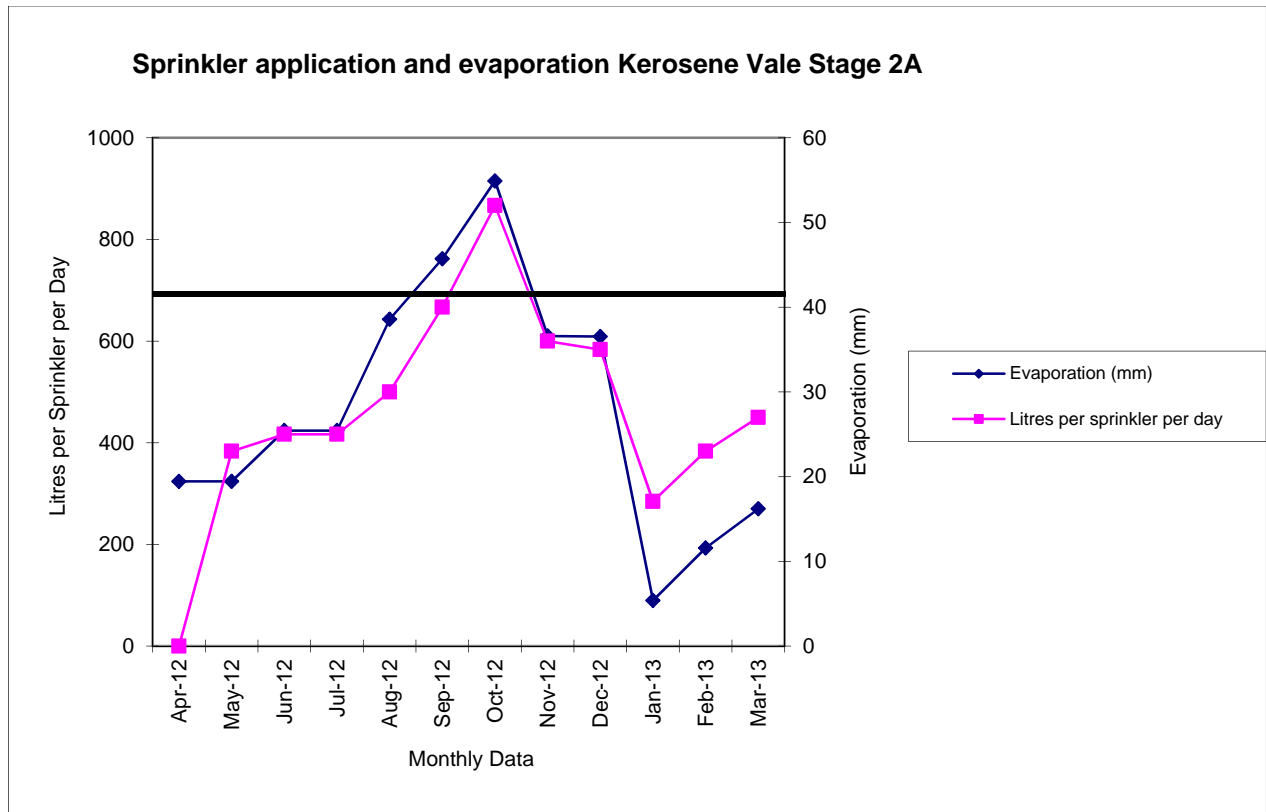
**Table 4 Guide for sprinkler hours**

Water use guidelines	Water use guidelines
>25° >20km/hr (10hrs/day)	15° <20km/hr (≤4 hours/day)
15-24° <20km/hr (8 hrs/day)	
15° <20km/hr (4 hours/day)	
<b>Evaporation 3-7 mm per day</b>	<b>Evaporation &lt; 3 mm per day</b>
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

Figure 7 reflects the effectiveness of sprinkler application in minimising trace metal infiltration to surface and groundwater of the site area. Note that water usage follows seasonal evaporative trends.

No evaporation value was obtained for April 2013, and appears as a zero entry on the graph. Data for the November – December 2012 period was provided as one figure and has been roughly halved to provide input to this graph.



**Figure 7 Litres of water used April 2012 – March 2013**

### Dust deposition monitoring

Dust monitoring results are recorded monthly with colour and textural observations. These results indicate that KVAR is managed effectively for dust and as such is in compliance with CoAs 2.33 and 3.8.

Eight dust monitors are installed on and around KVAR (Figure 8). Data collection commenced in March 2009, with results reported as a rolling site average ( $\text{g m}^{-2}$ ) unless otherwise stated.

Data from these depositional dust gauges provide a comprehensive assessment of potential dust impacts from Kerosene Vale Stage 2 Ash Repository. Gauges located within the perimeter of the Kerosene Vale Stage 2 Ash Repository recorded annual average deposition rates of  $3.4 \text{ g/m}^2/\text{month}$  (as insoluble solids).

Delta undertakes a series of ambient dust deposition gauges outside the KVAR area, closer to residential areas. All results for the 2012-13 year for total insoluble solids have been  $40.8 \text{ g/m}^2/\text{month}$  or less. The locations of these offsite dust monitors are depicted in Figure 9 below.

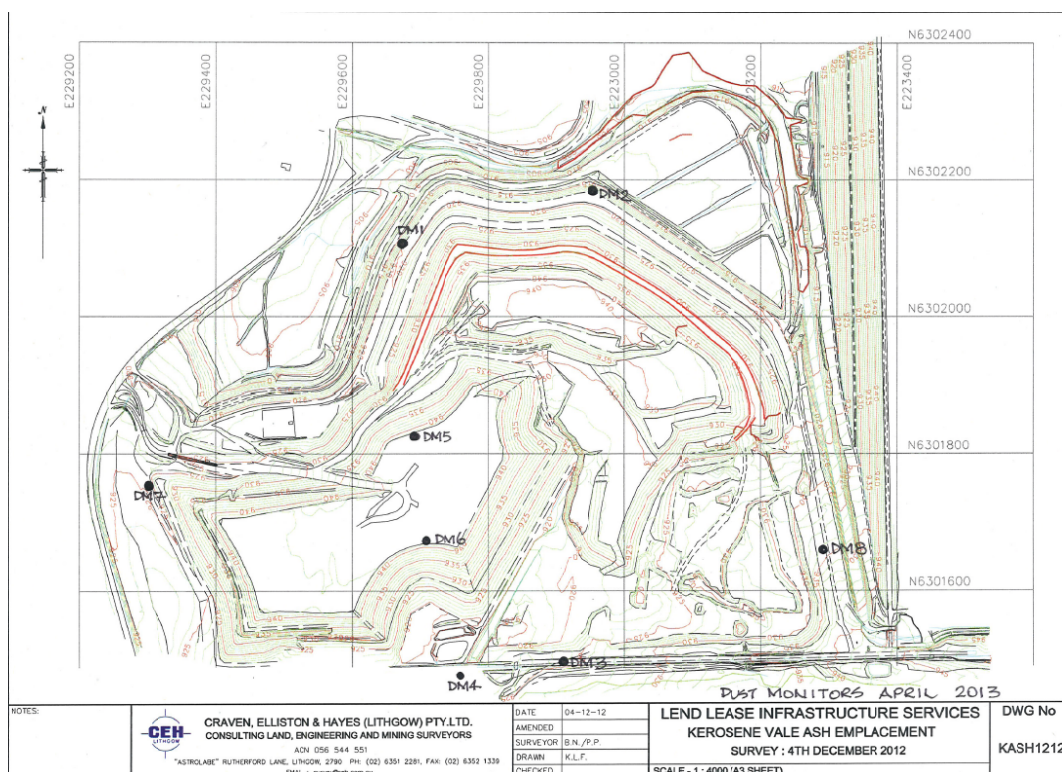


Figure 8 Location of KVAR Stage 2 dust gauges

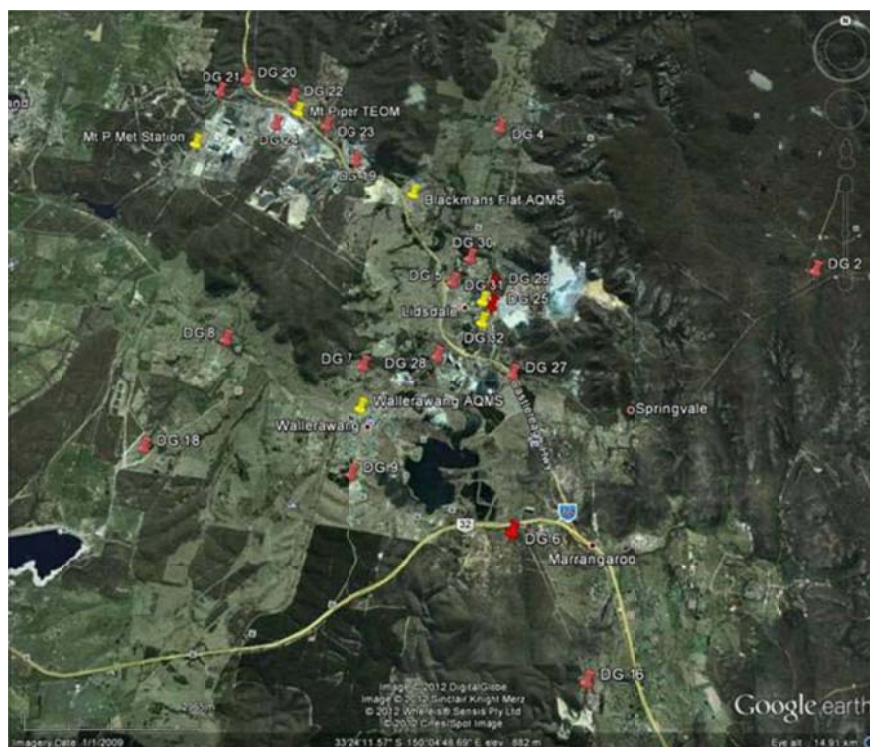


Figure 9 Regional dust gauge network

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## 6.2 Environmental monitoring- OEMP

The OEMP incorporates seven management sub-plans:

- Ash delivery and placement;
- Operational noise and vibration;
- Surface water quality;
- Groundwater management;
- Air quality;
- Landscape and revegetation; and
- Waste management.

Each sub-plan consists of overarching target(s) and a series of management and mitigation measures. An assessment of all relevant documentation and several site visits were undertaken to determine whether the overarching target(s) were met and whether the management and mitigation measures were implemented.

### 6.2.1 Ash delivery and placement

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

- Compliance with the normal hours of operation condition for at least 98% of the year and its stretch target of 100% of the year- operation records show the Stretch Target has been achieved, i.e. 100% within normal hours; and
- Reduction in the number of days operating under emergency conditions (less than 5 days/year and its stretch target of 0 days/year) - Stretch Target of 100% also achieved.
- Compliance with the ash placement and compaction procedures - target of 92% dry density ratio exceeded at monthly testing from April 2012 to March 2013 averaging 88.6%. Note that the average compaction ratio of 92% was met for the period of March 2012 to April 2013.

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

### 6.2.2 Operational noise and vibration

Noise monitoring at the three most affected sensitive receiver locations was conducted by Aurecon as per the Project Approval assessment criteria.

Monitoring took place on Sunday 25 November and Monday 26 November 2012, and found that:

*The primary contributors to the background and ambient noise levels at all the locations were from the traffic noise and hum from Delta Electricity Power Station. The noise contribution from KVAR Stage 2 activities alone could not be determined based on ambient noise measurements due to contamination from other ambient noises. Additional Sound Exposure Level measurements of individual truck pass by events at a closer distance to the truck haulage road were carried out during the November 2011 noise monitoring. Based on the previous sound exposure level measurement results and observations of truck movements on site, a LAeq (15 min) noise level was predicted at each of the assessment sensitive noise receivers. The predicted noise levels took into account only ash trucks movement associated*

*with Stage 2 KVAR works, distance of the noise source from the receivers. The predicted noise level at each of the noise receivers showed compliance with assessment criteria, thus the operational noise emissions from the Stage 2 KVAR are considered compliant with the Conditions of Approval.*

Further monitoring was conducted on 18 – 19 June 2013. Results were found to comply with stipulated noise criteria.

There have been no emergency operations as defined in the Project Approval's associated CoAs. The operations of the Stage 2 KVAR were found to meet the OEMP target of achieving a significant reduction in the number of noise-related complaints during emergency operations (less than 5 per year, stretch target = zero). No noise complaints were recorded for the period of May 2012 – April 2013.

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

### 6.2.3 Surface water quality

The Surface water quality sub-plan as outlined in the OEMP is comprised of the following targets:

- The water quality within Sawyer's Swamp Creek is not impacted by Stage 2 operations; and
- Zero environmental incidents that relate to pollution of waters at SSC.

Indicators:

- Surface water monitoring results and assessment of water quality in accordance with ANZECC guidelines;
- No visual evidence of erosion and sedimentation impacts on SSC following significant rain events; and
- Records of trend analysis, management procedures and observations for each of the nominated monitoring locations.

Operations of the Stage 2 KVAR are considered to have met the target of zero environmental incidents relating to pollution of waters at SSC.

### 6.2.4 Groundwater management

Dry ash placement management has mainly involved limiting rainfall infiltration and reducing seepage from the ash dam into the local groundwater (Aurecon, 2011). The effectiveness of these activities has been demonstrated by improved water quality in the local groundwater during the Stage 1 placement from 2003 to 2006, before the toe drains (of KVAD) became blocked. Examination of processes determining groundwater quality showed that improved water quality was due to reduced seepage from KVAD relative to background groundwater flows (as discussed in Section 6.1.2.2).

The report (Aurecon, 2011) indicates that the quality of groundwater beneath KVAR is not being negatively impacted by ash placement operations.

### 6.2.5 Air quality

Dust gauge data from the 2012-2013 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.

Having reviewed all available information/data and from site inspections, the requirements of the OEMP were found to be complied with for 2012-2013.

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### 6.2.6 Landscape and revegetation

Landscaping and revegetation at the KVAR to date has been limited to the permanent capping of Stage 1. As operations are still continuing for Stage 2, no revegetation works have commenced. Once the Stage 2 area of the repository reaches the design RL of 940 m AHD extensive rehabilitation works will commence.

Interim landscaping and revegetation activities have included a series of tree and shrub trials to determine best practice techniques for rehabilitating the whole site upon its completion and in the interim, the use of a composted soil material to cover exposed soil surfaces (Fig. X) as a growth medium.

Assessment of current plantings at Mount Piper and Kerosene Vale has informed the selection of local species for site revegetation. Local seed collection has enabled the production of tube-stock (250 trees, 360 shrubs) in anticipation of July 2013 planting, if the final shaping of permanent capping can be completed by that date.

Based on the information reviewed and the site observations made, the interim landscaping/revegetation activities undertaken are considered to be in line with the relevant OEMP target, given the project's progress to date.

The majority of the OEMP requirements with respect to landscaping/revegetation were found to be not applicable given, as ash has yet to reach the design RL (940 m AHD).

No non-conformances were identified.

### 6.2.7 Waste management

Based on the Monthly Client Reports and information reviewed (including discussion with site security and the Security Manager) and site observations made, the operations of the Stage 2 KVAR have met the OEMP targets for waste management for the 2012-13 year.

The majority of the OEMP requirements with respect to waste management were found to be complied with.

No non-conformances were identified.

### 6.2.8 Inspections and audits

The project OEMP provides guidance on inspections and audits to be undertaken during the operation of the Stage 2 KVAR. The specific sections of the OEMP that deal with inspections and audits are:

- Section 3.7.1 Environmental Inspections; and
- Section 3.8 Environmental Audits.

Inspections and reviews currently undertaken by Delta include the following:

- Daily Inspection undertaken by the Delta's Contract Administrator; and
- Monthly review of the project's overall progress and performance based on the Monthly Client Service Report prepared by Lend Lease.

These reports are submitted to and reviewed by Delta monthly, with all areas discussed in detail during regular client/contractor meetings.

## 6.3 Environmental assessment impacts and performance predictions

The following key potential environmental impacts were identified (Chapter 16 of the Environmental Assessment) in association with the proposal:

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- Noise impacts on the local community;
- Aquatic ecology impacts associated with the realignment of SSC;
- Water quality impacts; and
- Dust and air emission impacts.

The Environmental Assessment and design process identified mitigation and management measures related to these impacts.

### 6.3.1 Noise impacts

Based on site observations and information reviewed potential noise impacts from the operation of the Kerosene Vale Stage 2 Ash Repository are considered to have been effectively mitigated and managed.

No noise related complaints were received regarding KVAR Stage 2 throughout the 2012 – 2013 project year.

### 6.3.2 Aquatic ecology impacts

Delta Electricity advised that there are no longer any plans to realign SSC. As such the anticipated aquatic ecological impacts associated with the creek re-alignment will not eventuate.

### 6.3.3 Water quality impacts

Based on site observations and information reviewed potential surface and groundwater impacts from the operation of the Kerosene Vale Stage 2 Ash Repository have been effectively mitigated and managed.

### 6.3.4 Dust and air impacts

Based on site observations and information reviewed potential dust/air impacts from the operation of the Kerosene Vale Stage 2 Ash Repository have been effectively mitigated and managed.

## 7. Conclusions

The majority of Conditions of Approval for the 2012-2013 reporting period were complied with, or were found to be no longer applicable to the project.

Delta Electricity has been found to comply partially with Condition of Approval 2.9. A review of logistical arrangements has been conducted by principal contractors Lend Lease, but the report has not been formalised or submitted to the Director-General. The review indicated that the capacity for overnight storage at Wallerawang Power Station meant the hours of operation could not be reduced without overloading the available space. As such Lend Lease have successfully implemented the use of an additional ash haulage truck when ash volumes increase due to electricity production increases, and this option will achieve the required capacity for overnight storage within the ash silo after 10 pm and until 7 am. The findings of the logistics review were discussed and reviewed by the nominated Environmental Representative for the project and deemed to be reasonable and feasible.

The majority of Conditions of Approval and environmental requirements of the Operation Environmental Management Plan were found to be either complied with or no longer applicable to operations at KVAR Stage 2.



## 8. References

- Aurecon (2011) *Kerosene Vale Ash Repository Stage 2 – Ongoing Water Monitoring Assessments*, Aurecon Australia Pty Ltd, NSW
- Aurecon (2012) *Kerosene Vale Ash Repository Stage 2 – Ongoing Noise Monitoring Assessments*, Aurecon Australia Pty Ltd, NSW
- Aurecon (2013) *Kerosene Vale Ash Repository Stage 2 Ongoing Operational Noise Measurements*, Aurecon Australia Pty Ltd, 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 (2010) *Repository Site Management Plan for Ash Placement Area, Wallerawang Power Station*, Lend Lease Pty Ltd, NSW
- Lend Lease (2012) *Ash & Dust Repository Management Plan – Wallerawang Power Station*, Lend Lease Pty Ltd, NSW
- Parsons Brinckerhoff (2008) *Kerosene Vale- Stage 2 Ash Repository Operation Environmental Management Plan*, Parsons Brinckerhoff Australia Pty Ltd, NSW

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## **Appendix A**

### **Detailed review checklist and Recommendations for Conditions of Approval**

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## Administrative conditions

### Terms of approval

<b>Minister's Condition of Approval 1.1</b>
<p><i>The proponent shall carry out the project generally in accordance with the:</i></p> <ul style="list-style-type: none"> <li><i>a) Major Project Application 07_0005;</i></li> <li><i>b) Kerosene Vale – Stage 2 Ash Repository Area (two volumes) – Environmental Assessment, prepared by Parsons Brinckerhoff and dated 1 April 2008;</i></li> <li><i>c) Kerosene Vale – Stage 2 Ash Repository Area – Submissions Report, prepared by Parsons Brinckerhoff and dated 30 May 2008; and</i></li> <li><i>d) The conditions of this approval.</i></li> </ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Based on the review undertaken, the Kerosene Vale Stage 2 operations have been carried out in accordance with the above requirements.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 1.2</b>
<p><i>In the event of an inconsistency between:</i></p> <ul style="list-style-type: none"> <li><i>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</i></li> <li><i>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.</i></li> </ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>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.</p>
<b>Compliance Assessment Finding - Compliant</b>

<b>Minister's Condition of Approval 1.3</b>
<i>The proponent shall comply with the reasonable requirements of the Director-General arising from the Department's assessment of:</i> <i>a) Any reports, plans or correspondence that are submitted in accordance with this approval; and</i> <i>b) The implementation of any actions or measures contained in these reports, plans or correspondence.</i>
<b>Compliance Assessment Observations and Comments</b> No requests from the Director-General of the DP&I were received in the 2012-13 reporting period.
<b>Compliance Assessment Finding - Not Applicable</b>

#### Limits of approval

<b>Minister's Condition of Approval 1.4</b>
<i>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.</i>
<b>Compliance Assessment Observations and Comments</b> The Project Approval for KVAR Stage 2 is dated 26 November 2008. This approval will lapse on 26 November 2013.
<b>Compliance Assessment Finding - Compliant</b>

#### Statutory requirements

<b>Minister's Condition of Approval 1.5</b>
<i>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.</i>
<b>Compliance Assessment Observations and Comments</b> The project complies with the requirements of Delta Electricity's EPL 766. (See Section 4).
<b>Compliance Assessment Finding - Compliant</b>

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## Specific environmental conditions

### Ash management

<b>Minister's Condition of Approval 2.1</b>
<i>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 2012. 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.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Delta Electricity commissioned the report <i>Fly Ash: Strategy Development for Aggregates and Other Bulk Use Applications</i> (DMC, 2010). The reports were submitted to DP&amp;I in September 2011.</p> <p>Ash reuse progress is communicated via the Lend Lease Monthly Compliance Report and tracked in Delta Electricity's Annual Sustainability Report.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.2</b>
<i>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</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Centennial Coal declined to extract the coal resources in the project area.</p> <p>Ash will not be placed over the coal resource in the project area for another 2 years, which is finite opportunity.</p> <p>As outlined in this report, the pine plantation area now constitutes Stage 2B of KVAR.</p>
<b>Compliance Assessment Finding - Compliant</b>

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**Noise impacts**

<b>Minister's Condition of Approval 2.3</b>
<p><i>Construction activities associated with the project shall only be undertaken during the following hours:</i></p> <ul style="list-style-type: none"> <li><i>a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;</i></li> <li><i>b) 8:00 am to 1:00 pm on Saturdays; and</i></li> <li><i>c) At no time on Sundays or public holidays.</i></li> </ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>A CEMP was prepared for the construction works associated with the development of Stage 2B in preparation for ash placement and included a Construction Noise Management Plan and Noise Monitoring Program. This was submitted to DP&amp;I in August 2011 and approved on the 16<sup>th</sup> December 2011.</p> <p>Construction activities have not occurred outside of the hours listed above.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.4</b>
<p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>No activities resulting in tonal or impulsive noise emission have occurred during the reporting period.</p>
<b>Compliance Assessment Finding - Not Applicable</b>

<b>Minister's Condition of Approval 2.5</b>
<p><b><i>Construction outside the hours stipulated in condition 2.3 of this approval is permitted in the following circumstances:</i></b></p> <ul style="list-style-type: none"> <li><b><i>a) Where construction works do not cause audible noise at any sensitive receiver; or</i></b></li> <li><b><i>b) For the delivery of materials required outside these hours by the Police or other authorities for safety reasons; or</i></b></li> <li><b><i>c) Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.</i></b></li> </ul>
<p><b><i>Compliance Assessment Observations and Comments</i></b></p> <p>No construction activities have taken place outside the hours stipulated in condition 2.3 of this approval.</p>
<b>Compliance Assessment Finding - Not Applicable</b>
<b>Minister's Condition of Approval 2.6</b>
<p><b><i>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:</i></b></p> <ul style="list-style-type: none"> <li><b><i>a) Considered on a case-by-case basis;</i></b></li> <li><b><i>b) Accompanied by details of the nature and need for activities to be conducted during the varied construction hours; and</i></b></li> <li><b><i>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.</i></b></li> </ul>
<p><b><i>Compliance Assessment Observations and Comments</i></b></p> <p>There has been no requirement to vary hours of construction during the reporting period.</p>
<b>Compliance Assessment Finding - Not Applicable</b>

<b>Minister's Condition of Approval 2.7</b>
<p><i>The construction noise objective for the proponent is to manage noise from construction activities (as measured by <math>L_{A10(15\text{minute})}</math> descriptor) so as not to exceed the background <math>L_{A90}</math> noise level by more than 10dB(A) at any sensitive receiver.</i></p> <p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>No activities with the potential to exceed background noise levels were undertaken during the reporting period.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.8</b>
<p><i>Operational activities associated with the project shall only be undertaken from 7:00am to 10:00pm Monday to Sunday.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Lend Lease have advised that no operational activities have taken place outside the hours designated above.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.9</b>
<p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>The review was conducted within six months of commencement of operations. 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.</p>
<b>Compliance Assessment Finding - Partially compliant</b>



Minister's Condition of Approval 2.10
<p><b><i>Operations outside the hours stipulated in condition 2.8 of this approval are only permitted in the following emergency situations:</i></b></p> <ul style="list-style-type: none"> <li><b><i>a) Where it is required to avoid the loss of live, property and/or to prevent environmental harm; or</i></b></li> <li><b><i>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</i></b></li> <li><b><i>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</i></b></li> <li><b><i>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.</i></b></li> </ul> <p><b><i>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.</i></b></p>
<p><b><i>Compliance Assessment Observations and Comments</i></b></p> <p>Lend Lease have advised that no operational activities have taken place outside the hours.</p>
<p><b>Compliance Assessment Finding - Not Applicable</b></p>

Minister's Conditions of Approval 2.11, 2.12, 2.13 and 2.14
<p><b>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:</b></p> <ul style="list-style-type: none"> <li><b>a) The dates and a description of the emergency situations;</b></li> <li><b>b) An assessment of all reasonable and feasible mitigation measure to avoid recurrence of the emergency situations;</b></li> <li><b>c) Identification of a preferred mitigation measure(s); and</b></li> <li><b>d) Timing and responsibility for implementation of the mitigation measure (s).</b></li> </ul> <p><b>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.</b></p> <p><b>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.</b></p> <p><b>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.</b></p> <p><b>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.</b></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>No emergency situations have occurred during the reporting period.</p>
<p><b>Compliance Assessment Finding - Not Applicable</b></p>

<b>Minister's Condition of Approval 2.15</b>
<p><i>The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed an <math>L_{Aeq}</math> (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.</i></p> <p><i>This noise criterion applies under the following meteorological conditions:</i></p> <ul style="list-style-type: none"> <li><i>a) Wind speeds up to 3m/s at 10 metres above ground; and/or</i></li> <li><i>b) Temperature inversion conditions of up to 3°C/100m and source to receiver gradient winds of up to 2m/s at 10m above ground level.</i></li> </ul> <p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Measured noise levels during April 2013 indicate Stage 2 operations are compliant with operational noise criteria (Aurecon, 2013).</p> <p>Delta Electricity 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 4).</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.16</b>
<p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>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. Ash haulage operations comply with all noise emission requirements on the haul road.</p>
<b>Compliance Assessment Finding - Compliant</b>

<b>Minister's Condition of Approval 2.17</b>
<b><i>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.</i></b>
<b><i>Compliance Assessment Observations and Comments</i></b> <p>Delta Electricity regularly liaises with Centennial Coal through monthly fuel supply meetings. The protocol developed between Delta 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 Delta 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 Delta 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.</p>
<b>Compliance Assessment Finding - Compliant</b>

**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**

Delta Electricity has implemented annual noise monitoring assessments. No non-compliances were identified during the reporting period.

**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**

The Stage 2 Kerosene Vale Ash Repository Operational Noise Review determined that no additional noise control or mitigation measures were required (Aurecon, 2013).

**Compliance Assessment Finding - Compliant**

<b>Minister's Condition of Approval 2.20</b>
<p><i>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):</i></p> <ul style="list-style-type: none"> <li><i>a) At a sensitive receiver in existence at the date of this approval; or</i></li> <li><i>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</i></li> <li><i>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;</i></li> </ul> <p><i>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.</i></p> <p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Delta Electricity has received no written or verbal requests from landowners to acquire their land.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.21</b>
<p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>No landholders have applied for approval to subdivide their land according to the land acquisition rights.</p>
<b>Compliance Assessment Finding - Not Applicable</b>

**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**



<b>Minister's Conditions of Approval 2.23, 2.24 and 2.25</b>
<p><b>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.</b></p> <p><b>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.</b></p> <p><b>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 where 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.</b></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>No landholders have applied for approval to subdivide their land according to the land acquisition rights.</p>
<b>Compliance Assessment Finding - Not Applicable</b>

#### Sawyers Swamp Creek realignment

Delta Electricity 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

<b>Minister's Condition of Approval 2.30</b>
<p><b>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.</b></p> <p><b>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.</b></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>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.</p>
<b>Compliance Assessment Finding - Compliant</b>

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<b>Minister's Condition of Approval 2.31</b>
<i>Earthworks not associated with the realignment of Sawyer Swamp Creek shall not be undertaken within 50m of the creek where reasonable and feasible.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>A minimum buffer zone of 50m has been maintained along the riparian area of SSC for all operations.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.32</b>
<i>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.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Lend Lease supply Delta 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.</p>
<b>Compliance Assessment Finding - Compliant</b>

**Air quality impacts**

<b>Minister's Condition of Approval 2.33</b>
<i>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.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Dust management within the site is included in the responsibilities of all operations, including:</p> <ul style="list-style-type: none"> <li>• Use of perimeter sprays at the ash placement area;</li> <li>• Water cart (20,000 L) on site during all ash placement operations 8 am to 5 pm Mondays to Sundays;</li> <li>• Ash placement operations;</li> <li>• Final capping of ash; and</li> <li>• General maintenance and rehabilitation of the ash placement area.</li> </ul>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.34</b>
<i>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.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>No issues with load coverings were recorded for the 2012-2013 reporting period.</p>
<b>Compliance Assessment Finding - Compliant</b>

### Lighting emissions

<b>Minister's Condition of Approval 2.35</b>
<i>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.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>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.</p> <p>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.</p> <p>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.</p>
<b>Compliance Assessment Finding - Compliant</b>

### Construction traffic and transport impacts

<b>Minister's Condition of Approval 2.36</b>
<p><i>The Proponent shall ensure that construction vehicles associated with the project:</i></p> <ul style="list-style-type: none"> <li><i>a) Minimise the use of local roads (though residential streets and town centres) to gain access to the site;</i></li> <li><i>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</i></li> <li><i>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.</i></li> </ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>A Construction Traffic Management Plan was submitted to and approved by the DP&amp;I as part of the Construction Environment Management Plan.</p>
<b>Compliance Assessment Finding - Compliant</b>

**Heritage impacts**

<b>Minister's Condition of Approval 2.37</b>
<i>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.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>The Lend Lease Work Procedures Manual includes Environmental Management Controls for Cultural Heritage and applies to all personnel.</p> <p>No aboriginal or other cultural heritage sites have been identified at Kerosene Vale. All of Delta Electricity's cultural sites are listed in the Section 170 Heritage and Conservation Register.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.38</b>
<i>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.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>No previously unidentified heritage sites or items were discovered during the reporting period.</p>
<b>Compliance Assessment Finding - Not applicable</b>

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**Waste management**

<b>Minister's Condition of Approval 2.39</b>
<i>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).</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>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.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.40</b>
<i>All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Lend Lease utilises Delta'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 Delta Electricity's waste contractors. No additional waste materials were generated during the reporting period.</p>
<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 2.41</b>
<i>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.</i>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>No wastes generated outside the Kerosene Vale site are allowed to enter the area.</p> <p>To prevent the unlawful access to the repository area, regular security patrols are conducted across the site. Both Lend Lease and Delta Electricity security personnel are required to report if they encounter any rubbish or wastes outside those that are allowed during routine operations.</p>
<b>Compliance Assessment Finding - Compliant</b>

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## 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 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 16<sup>th</sup> December 2011.

#### Compliance Assessment Finding - Compliant

## Operational noise review

Minister's Condition of Approval 3.2
<p><i>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:</i></p> <ul style="list-style-type: none"> <li><i>a) Identify the appropriate operational noise objectives and level for sensitive receivers;</i></li> <li><i>b) Describe the methodologies for noise monitoring including the frequency of measurements and location of monitoring sites;</i></li> <li><i>c) Document the operational noise levels at sensitive receivers as ascertained by the noise monitoring program;</i></li> <li><i>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</i></li> <li><i>e) Provide details of any entries in the Complaints Register (as required under condition 5.4 of this approval) relating to noise impacts.</i></li> </ul> <p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>The Operational Noise Review (PB, 2009) was submitted to the DP&amp;I on 16 September 2009, and the Department acknowledged its satisfaction that CoA 3.2 had been met on 18 September 2009. (See Section 6.1.1).</p>
<p><b>Compliance Assessment Finding - Compliant</b></p>

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**Ongoing operational noise monitoring**

<b>Minister's Condition of Approval 3.3</b>
<p><i>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.</i></p> <p><i>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:</i></p> <ul style="list-style-type: none"> <li><i>a) Monitoring during ash placement in the far western area of the site adjacent to the haul road; and</i></li> <li><i>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.</i></li> </ul> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>The monitoring program shall form part of the Operational Noise Management Plan referred to in condition 6.5a) of this approval.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Delta Electricity implements annual noise monitoring assessments. No non-compliances were identified during the reporting period.</p>
<p><b>Compliance Assessment Finding - Compliant</b></p>

**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 (PB, 2009) and provided to 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
<p><b><i>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:</i></b></p> <ul style="list-style-type: none"> <li><b><i>a) Monitoring at the four existing water quality monitoring sites as described in the document referred to under 1.1b) of this approval;</i></b></li> <li><b><i>b) Monitoring downstream of the realigned section of Sawyers Swamp Creek;</i></b></li> <li><b><i>c) Monitoring at groundwater discharge points into Sawyers Swamp Creek;</i></b></li> <li><b><i>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</i></b></li> <li><b><i>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.</i></b></li> </ul> <p><b><i>The monitoring program shall form part of the Surface Water Management Plan referred to in condition 6.5c) of this approval.</i></b></p>
<p><b><i>Compliance Assessment Observations and Comments</i></b></p> <p>Sampling has been undertaken at Nalco Site ID numbers 38, 39, 40 and 41 since January 2003. Sampling commenced at sites 79, 80, 81, 83 and 84 in January 2010. Sampling at the remaining Nalco sites (86, 87 and 88) commenced in May 2010.</p> <p>The other sites form part of the Lend Lease monthly water sampling routine for a combined total of 18 locations that are regularly monitored for the project.</p> <p>Note that SSC realignment did not take place.</p>
<p><b>Compliance Assessment Finding - Compliant</b></p>

### Sawyers Swamp Creek realignment monitoring

Delta Electricity 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.

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**Air quality monitoring**

<b>Minister's Condition of Approval 3.8</b>
<p><i>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.</i></p> <p><i>The monitoring program shall form part of the Air Quality Management Plan referred to in condition 6.5d) of this approval.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>In February 2009, eight dust monitors were installed on and around KVAR, with an additional monitor located at the silo. Data collection commenced in March 2009. 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.</p>
<b>Compliance Assessment Finding - Compliant</b>

**Compliance monitoring and tracking**

<b>Minister's Condition of Approval 4.1</b>
<p><i>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:</i></p> <ul style="list-style-type: none"> <li><i>a) Commencement of any construction works on the land subject of this approval; and</i></li> <li><i>b) Commencement of operation of the project.</i></li> </ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>The DP&amp;I indicated its satisfaction that Delta Electricity 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.</p>
<b>Compliance Assessment Finding - Compliant</b>

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**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 (PB, 2009) and are captured within Delta's 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 (Lend Lease, 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.

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<b>Compliance Assessment Finding - Compliant</b>
<b>Minister's Condition of Approval 4.3 and 4.4</b>
<p><i>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.</i></p> <p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>This project has a Minister approved OEMP (April, 2009), and operates under Delta Electricity's ISO14001 accreditation and Environmental Management System. The Director-General has not issued any requests to implement any additional measure to ensure compliance with the relevant CoAs for the KVAR Stage 2 project.</p>
<b>Compliance Assessment Finding - Not applicable</b>

## Community information and complaints management

### Provision of Information

<b>Minister's Conditions of Approval 5.1 and 5.2</b>
<p><i>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:</i></p> <ul style="list-style-type: none"> <li><i>a) The documents referred to under condition 1.1 of this approval;</i></li> <li><i>b) This project approval, Environment Protection Licence and any other relevant environmental approval, licence or permit required and obtained in relation to the project;</i></li> <li><i>c) All strategies, plans and program required under this project approval, or details of where this information can be viewed;</i></li> <li><i>d) Information on construction and operational progress;</i></li> <li><i>e) The outcomes of compliance tracking in accordance with the requirements of this project approval.</i></li> </ul> <p><b>5.2 – The Proponent shall make all documents required to be provided under condition 5.1 of this approval publicly available.</b></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>A link to the relevant web page for KVAR Stage 2 operational information is below.</p> <p style="text-align: center;"><a href="http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx">http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx</a></p> <p>A link to the DP&amp;I project page is included on the website where the following documents can be accessed:</p> <ul style="list-style-type: none"> <li>• Major Project Application 07_0005</li> <li>• Kerosene Vale – Stage 2 Ash Repository Area (two volumes) – Environmental Assessment prepared by Parsons Brinckerhoff and dated 1 April 2008.</li> <li>• Kerosene Vale – Stage 2 Ash Repository Area – Submissions Report prepared by Parsons Brinckerhoff and dated 30 May 2008.</li> <li>• Project Approval (Conditions of Approval) File S07/00001, dated 26 November 2008.</li> </ul>
<b>Compliance Assessment Finding - Compliant</b>

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### Complaints and enquiries procedure

Minister's Condition of Approval 5.3
<p><i>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:</i></p> <ul style="list-style-type: none"> <li><i>a) A 24 hour contact number(s) on which complaints and enquiries about construction and operational activities may be registered;</i></li> <li><i>b) A postal address to which written complaints and enquiries may be sent; and</i></li> <li><i>c) An email address to which electronic complaints and enquiries may be sent; and</i></li> <li><i>d) An email address to which electronic complaints and enquiries may be transmitted.</i></li> </ul> <p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>The website:</p> <p style="text-align: center;"><a href="http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx">http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx</a></p> <p>lists the following contact details for the project:</p> <p>After hours complaints - call Wallerawang Power Station on 02 6352 8611</p> <p>Postal address:</p> <p>Western Environment Manager Delta Electricity PO Box Q863, QVB NSW 1230</p>
<b>Compliance Assessment Finding - Compliant</b>



**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 Delta go via the switchboard (02 6352 8611) and are then redirected to the appropriate area of Delta Electricity 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 Delta Electricity 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.

#### Compliance Assessment Finding - Compliant

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### 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 exceedance 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;**

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- 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 Delta Electricity'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.**

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**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.

**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 Director-General occurred within the April 2012- March 2013 reporting period

**Compliance Assessment Finding - Not applicable**

**Annual performance reporting**

<b>Minister's Condition of Approval 7.3</b>
<p><i>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 be limited to:</i></p> <ul style="list-style-type: none"> <li><i>a) Details of compliance with the conditions of this approval;</i></li> <li><i>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;</i></li> <li><i>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;</i></li> <li><i>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</i></li> <li><i>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.</i></li> </ul> <p><i>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.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>This AEMR satisfies the requirements of CoA 7.3.</p>
<p><b>Compliance Assessment Finding - Compliant</b></p>