# Wallerawang Power Station Capping Project

Environmental assessment of importation of clean fill to Wallerawang Ash Repository

## **EnergyAustralia NSW Pty Ltd**

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## **Executive summary**

The Wallerawang Power Station (WWPS) is a coal-fired power station owned by EnergyAustralia NSW Pty Ltd (EnergyAustralia) that is currently undergoing decommissioning. This process includes the decommissioning and rehabilitation of Wallerawang Ash Repository which is collectively made up of the Kerosene Vale Ash Repository (KVAR), Sawyers Swamp Creek Ash Dam (SSCAD), Lidsdale Cut and associated infrastructure areas.

The Kerosene Vale Ash Repository (KVAR) has been used since the 1960's to store ash generated from the WWPS and has only been partially capped and rehabilitated. KVAR was used since the 1960's to store both wet and dry ash from WWPS. SSCAD was used since the 1980's to store wet ash and is a prescribed dam under the *Dam Safety Act 1978*. Both SSCAD and KVAR have been partially capped and rehabilitated, although continuation of these activities is not possible as capping material has been exhausted from within the WWPS and Wallerawang Ash Repository, and approval is required to import it to the site.

EnergyAustralia proposes to import capping material to the SSCAD and KVAR (the project). The project will allow capping and rehabilitation of these sites to continue. Capping material to be used for this will be sourced from various locations across NSW and will comprise virgin excavated natural material (VENM) and excavated natural material (ENM).

Trucks transporting capping material would access the Wallerawang Ash Repository via the existing heavy vehicle access entrance to WWPS on the Castlereagh Highway. Trucks would travel between WWPS and the capping sites on the private roads that link the WWPS to Angus Place Colliery and SSCAD.

The project will be carried out generally in accordance with the existing PA 07\_0005. However, the project seeks to modify the existing PA 07\_0005 to allow for the following:

- The importation of VENM and ENM to SSCAD and KVAR, and placement of capping material on SSCAD. These materials are defined by the EPA Waste Classification Guideline 2014 and referred to as capping material in this EA.
- Sourcing capping material from any available location(s) within NSW.

The project does not involve changes to any other activities at KVAR or SSCAD and is not part of the overall DDR project. Capping activities at KVAR and SSCAD are undertaken as part of the same operation, and will continue in this manner.

Overall, any negative impacts associated with the project are considered to be outweighed by the long-term benefits associated with the completion of capping at SSCAD and KVAR. These sites currently contain areas of exposed coal ash which have potential to create dust impacts. Dust at the sites is controlled through use of water sprays, which draw water from the SSCAD dam. The project will allow for a long-term dust control to be applied to the site and for future rehabilitation and closure activities associated with the WWPS to progress. It should be noted that the closure and rehabilitation of the Wallerawang Ash Repository will be subject to additional approvals that will be sought at a later date.

This EA concludes that the environmental impacts associated with the project will be minimal and are not expected to increase the impacts from the already approved operational activities the Wallerawang Ash Repository. The Project is not expected to impact sensitive receivers beyond what is already experienced by the currently approved operational activities. EnergyAustralia has implemented an Operational Environmental Management Plan (OEMP) at the Wallerawang Ash Repository and this would effectively manage any environmental risks associated with the project. A project specific Construction Environmental Management Plan (CEMP) would be developed to provide explicit guidance for any contractors or staff working specifically on the project and any additional management measures required.

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## 1 Introduction

### 1.1 Background

The Wallerawang Power Station (WWPS) is a coal-fired power station owned by EnergyAustralia NSW Pty Ltd (EnergyAustralia) that is currently undergoing decommissioning. WWPS is located adjacent to the township of Wallerawang, approximately 14 kilometres (km) north-west of Lithgow and 160 km west of Sydney (refer to Figure 1-1).

In November 2014, EnergyAustralia announced it would permanently close WWPS due to ongoing reduced energy demand, lack of access to competitively priced coal and the high operating cost of the power station. The WWPS has since been deregistered as an electricity generation facility and EnergyAustralia has commenced its decommissioning, demolition and rehabilitation (DDR). During operation of the WWPS fly ash, a dust by-product from the burning coal to fire the boilers at the power station, was disposed of to the Wallerawang Ash Repository. The Wallerawang Ash Repository is collectively made up of the Kerosene Vale Ash Repository (KVAR), Sawyers Swamp Creek Ash Dam (SSCAD), and the Lidsdale Cut landfill area.

KVAR is located to the west of the SSCAD (See Figure 1-2) and has been used as an ash dam since its construction in 1960. KVAR has been filled with a combination of coal ash from the WWPS and mining spoil, and was capped in 1990 when it reached capacity. Ash placement at KVAR was initially done using a slurry transfer system. This changed to dry ash placement in the early 2000's as dry placement was found to reduce potential environmental risks.

The SSCAD, which has been used since at least the early 1980's to store ash generated from the operations of the WWPS, is to be decommissioned and rehabilitated as part of the WWPS DDR project. The SSCAD is located approximately 2.5 km north east of the WWPS (See Figure 1-2). Over the last 38 years, the SSCAD has been progressively filled, capped and rehabilitated as the ash deposit reached its final height within the ash dam. The SSCAD currently has one main ash pond that remains in an operational state (Pond D) and three areas (Ponds A, B and C) to the east and north east that have been filled with ash. Ponds A and B have been capped and rehabilitated, while Pond C has been partially capped and rehabilitated. These ponds are no longer operational. A raised berm and access track was previously constructed as part of a strategy to increase the ash storage capacity of the ash dam. The berm also separates the operational pond from the rehabilitated ponds.

This Environmental Assessment (EA) has been prepared to support an application under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to modify Project Approval (PA) 07\_0005 to allow for the importation of capping material to SSCAD and KVAR (the project).

The project will allow for completion of capping and rehabilitation on the uncapped sections of the SSCAD and KVAR. Capping is required to prevent windborne dust generation at these sites. Currently, a sprinkler system operates in uncapped parts of these sites to manage dust generation. Capping of these areas will remove the need for routine use of these sprinklers. It was originally envisaged that capping material would be won from on-site or local sources, however; these supplies have since been exhausted and there is a need to now import material from other sources.

The proposed capping material would comprise virgin excavated natural material (VENM) and excavated natural material (ENM) from available locations across NSW. It is expected that the majority of capping material for the project will be obtained from major construction projects in Sydney and will comprise crushed shale and sandstone. Such material would be brought to the site via the Great Western Highway Access to WWPS would be from the Castlereagh Highway at the existing WWPS heavy vehicle access point. Trucks would travel between WWPS and the capping sites on the private roads that link the WWPS to Angus Place Colliery and the SSCAD.

### 1.2 The project area

SSCAD is located within Lot 5, DP829137 (440 hectares) and is owned by EnergyAustralia (refer to Figure 1-3). KVAR is located within Lot 5, DP829137 and Lot 2, 1139982 (45 hectares) and is owned by EnergyAustralia. The combined KVAR and SSCAD sites are referred to in this EA as the 'project area'.

SSCAD and KVAR are located in the suburb of Lidsdale in the local government area (LGA) of Lithgow City Council (LCC). Lot 5, DP839137 is located partially within the south-western portion of the Angus Colliery Holding Boundary (CCL704) and the north-western portion of the Springvale Holding Boundary (ML1303) that are both held by Centennial Coal.

There are a series of operational underground coal mines that lie to the north of the project area. There are no private properties located adjacent to the project area. The closest residential properties are located approximately 250 metres (m) west of KVAR, along Skelly Road, Neubeck Street and Wolgan Road, Lidsdale.

The land to the north, east and south of the project area is well vegetated on moderately sloped ridges, the majority of which is Newnes State Forest. To the north-east of KVAR is Lidsdale Cut. Further east from KVAR is the township of Lidsdale.

Storm water runoff from the south and east sub-catchments above the SSCAD (around 60% of the catchment) is diverted around the ash dam to Sawyers Swamp Creek by a diversion channel. Of the remaining 40% of the catchment, located on the northern side of the SSCAD, most runoff enters the upper ponds of the dam, which have previously been capped (Aurecon 2013). Storm water entering these areas is contained behind berms and eventually evaporates.

KVAR is located west of the embankment of the SSCAD. The south-east corner of KVAR has a slope of about four percent whilst the remainder is relatively flat. Clean water (rainfall runoff from undisturbed areas) is diverted around exposed ash surfaces and disturbed areas in the surface drains and is discharged to Sawyers Swamp Creek to the east. Dirty water (water collected from disturbed areas) is collected within open drains around the perimeter of the ash repository areas and discharged to a collection pond located at the north-east corner of the site.

## 1.3 Project justification and need

EnergyAustralia is responsible for ensuring it minimises the environmental impacts of its operations, including the ash disposal areas associated with its coal fired power stations. It achieves this through a program of progressive capping and rehabilitation of ash disposals that have been filled or are no longer in use. The SSCAD has been operational for almost 40 years. During this time, large parts of the site were capped and rehabilitated, although recently this practice had to cease as local sources of capping material had become exhausted. KVAR has been operational since 1960 and has been partially capped. As with the SSCAD, on-site sources of capping material are no longer available and off-site sources must be used to ensure ash disposal areas can be capped and, eventually, rehabilitated.

The project is needed to ensure that capping of the SSCAD and KVAR can continue and the subsequent rehabilitation and closure of the Wallerawang Ash Repository (which will be subject to separate approvals) can proceed as part of the overall decommissioning of the WWPS.

The project is considered to be justified as it can be carried out with minimal environmental impacts (refer to Section 4) and will result in a number of benefits. The benefits of the project include that it will result in the long-term stability of the SSCAD and KVAR and reduce energy consumption associated with continual operation of dust suppression sprays.

## 1.4 Purpose and structure of this report

#### 1.4.1 Purpose of this report

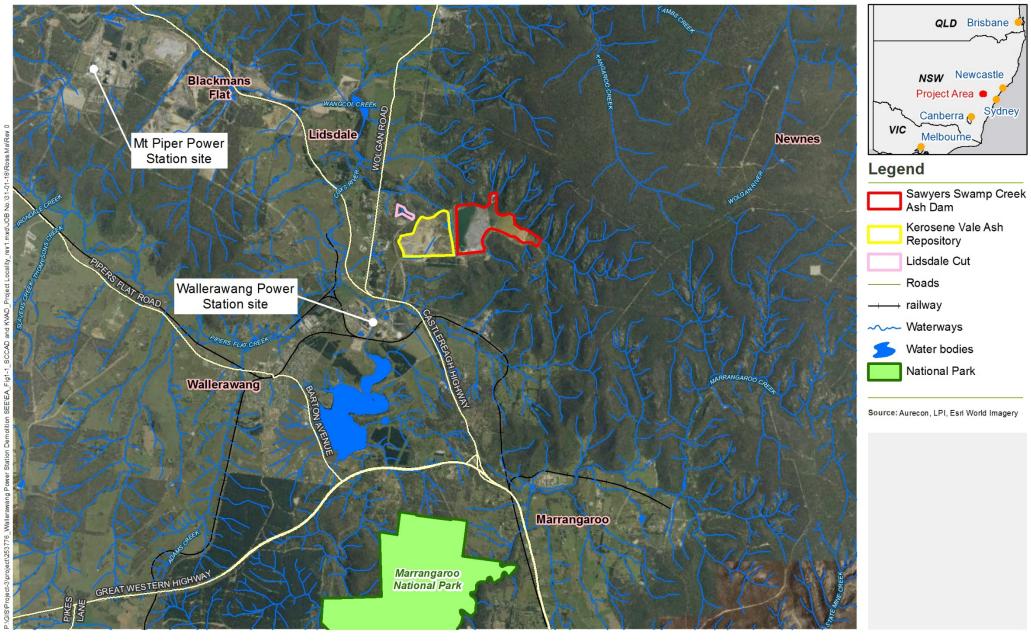
This EA has been prepared to support an application under Section 75W of the EP&A Act to modify Project Approval (PA) 07\_0005 to allow for the importation of capping material to SSCAD and KVAR (the project). This EA has been prepared to consider the implications of the proposed modification in accordance with the requirements of the EP&A Act and Environmental Planning and Assessment Regulation 2000.

#### 1.4.2 Structure of this report

The structure and content of this EA is presented below.

- Chapter 1 Project identification and description
- Chapter 2 The project
- Chapter 3 Statutory and planning framework
- Chapter 4 Environmental assessment
- Chapter 5 Summary of safeguards and mitigation measures
- Chapter 6 Conclusion
- Chapter 7 Glossary of terms
- Chapter 8 References.







SCADD and KVAR Capping Environmental Assessment

Projection: GDA 1994 MGA Zone 56

FIGURE 1-1: Project locality

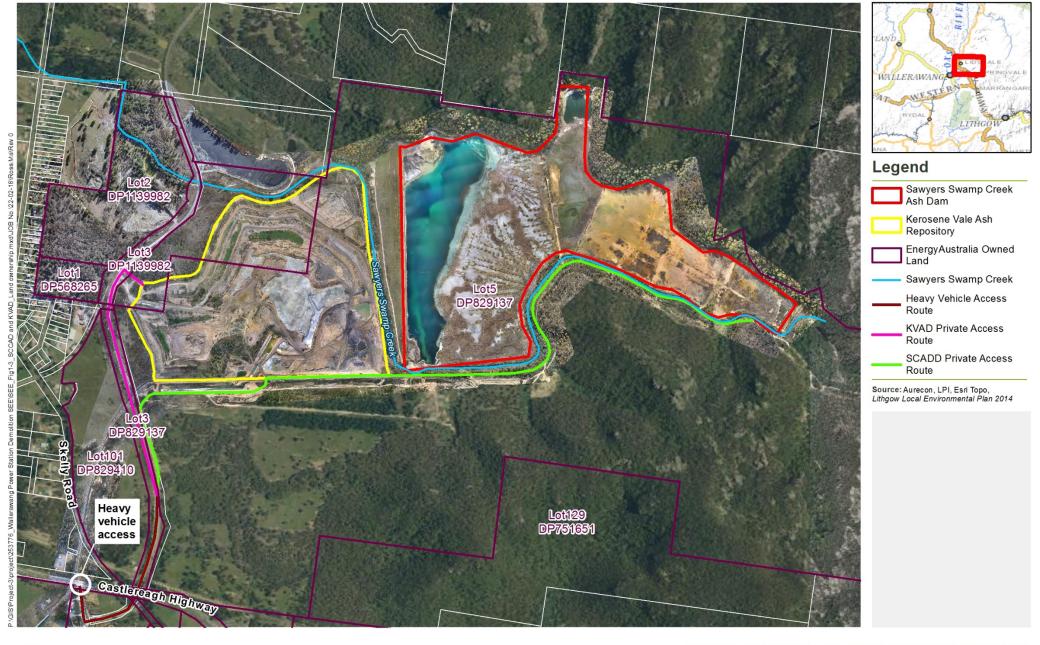




Projection: GDA 1994 MGA Zone 56

FIGURE 1-2: Project overview







1:15,000

SCADD and KVAR Capping Environmental Assessment

Frojection: GDA 1994 MGA Zone 56

FIGURE 1-3: Land ownership

## 2 The project

## 2.1 Project options

The consideration of options for the project were limited to the 'do nothing' option, and other options for sourcing fill for use as capping material.

Under the 'do nothing' option, EnergyAustralia would continue to operate water sprays for dust control on the SSCAD and KVAR indefinitely, and sources of clean fill that are currently available offsite may be exhausted, leading to increased costs and impacts if the project is undertaken in the future. Currently, large quantities of clean fill are available from infrastructure construction projects in the Sydney region. As WWPS is now closed and being rehabilitated, the 'do nothing' option would delay the project until the overall Wallerawang Ash Repository is rehabilitated, likely leading to increased costs as described above. The 'do nothing option' was not considered further for this reason.

Options for using alternative capping materials and sources of fill were considered, such as:

- Use of recycled materials, such as crushed concrete and biosolids due to the potential environmental risks associated with placement of these materials at the SSCAD and KVAR and limited availability of large quantities of clean fill, this option was not considered further.
- Excavation of clean fill from within the Wallerawang Power Station site a review of available on-site sources of fill determined that insufficient quantities were available to satisfy the project's needs and therefore this option was not considered further.
- Obtaining fill from local and regional sources (e.g. sites within Lithgow and Bathurst Local Government Areas) – a review of sources of clean fill within these areas determined that insufficient quantities were available to satisfy the project's needs and therefore this option was not considered further.

## 2.2 Project description

The project will be carried out generally in accordance with the existing PA 07\_0005. The project seeks to modify the existing PA 07\_0005 to allow for the following:

- The importation of VENM and ENM to SSCAD and KVAR, and placement of capping material at SSCAD. These materials are defined by the EPA Waste Guideline Classification Guidelines 2014 and referred to as capping material in this EA.
- Sourcing capping material from any available location(s) within NSW.

The project does not involve changes to any other activities at KVAR or SSCAD and is not part of the overall DDR project.

Imported capping material would be used for the continuation of capping and rehabilitation activities at SSCAD and KVAR. Capping material would be used to upgrade internal access roads, if suitable, in the vicinity of KVAR and SSCAD as part of maintaining those roads. Capping activities at KVAR and SSCAD are undertaken as part of the same operation, and will continue in this manner.

Trucks transporting capping material would access the Wallerawang Ash Repository via the existing heavy vehicle access entrance to WWPS on the Castlereagh Highway. Trucks would travel between WWPS and the capping sites on the private roads that link the WWPS to Angus Place Colliery and SSCAD (refer to Figure 1-2). It is envisaged that up to 150 deliveries of capping material could occur to the site per day from areas outside the Lithgow and Bathurst Local Government Areas (LGAs).

It is anticipated the majority of the material would be sourced from major infrastructure construction projects occurring in the Sydney Region.

#### 2.2.1 Virgin excavated natural material and excavated natural material

The clean fill that would be used for the project as capping material would be certified as ENM or virgin excavated natural material VENM.

VENM is defined in the Protection of the Environment Operations Act 1997 (POEO Act) as:

natural material (such as clay, gravel, sand, soil or rock fines):

- (a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities, and
- (b) that does not contain any sulfidic ores or soils or any other waste.

The use of VENM as capping material is excluded from the definitions of 'resource recovery' and 'waste disposal (application to land)' under Clauses 34 and 39 of Schedule 1 of the POEO Act, and therefore a number of requirements of the POEO Act and Protection of the Environment Operations (Waste) Regulation 2014 (the Waste Regulation) do not apply.

The NSW Environment Protection Authority (EPA) has established a certification process for waste generators to follow in order to certify excavated material as VENM.

Excavated natural material (ENM) is defined under the Waste Regulation as:

naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

- (a) been excavated from the ground, and
- (b) contains at least 98% (by weight) natural material, and
- (c) does not meet the definition of Virgin Excavated Natural Material in the Act.

Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate Soils (PASS) or sulfidic ores.

ENM is the subject of a resource recovery exemption under Part 9 of the Waste Regulation (the excavated natural material exemption 2014). This makes ENM exempt from a number of requirements of the POEO Act and Waste Regulation, including:

- Requirements for an environmental protection licence under Section 48 of the POEO Act
- Waste tracking requirements under Part 4 of the Waste Regulation
- Requirements to pay the EPA for waste received at a site under Section 88 of the POEO Act
- Notification and reporting requirements under clauses 109 and 110 of the Waste Regulation.

The NSW EPA has established a certification process for waste generators to follow in order for excavated material to be classified as ENM. This is outlined in the Excavated Natural Material Order 2014.

## 2.3 Community and stakeholder engagement

#### 2.3.1 Regulatory Authorities

Preliminary consultation was undertaken with LCC on 16 August 2017 to discuss approval expectations and options for the project. LCC indicated support for the project. Further meetings were held with LCC in late 2017 and early 2018, where potential approval pathways for the project were discussed.

Meetings were held with the Department of Planning and Environment (DP&E) to discuss the project on 18 October 2017 and 15 February 2018 to discuss the need for the project and potential approval pathways.

#### 2.3.2 Neighbouring Landholders

Neighbouring landholders would be informed of the project prior to its commencement.

### 2.3.3 Community Representation

EnergyAustralia host the Western Community Reference Group (CRG) which was formed in 2007 to share information and build relations with the local community. The group meets quarterly. EnergyAustralia has consulted with the CRG since 2016 regarding the Wallerawang DDR project. EnergyAustralia has provided the CRG with a briefing on the project at its November 2017 meeting.

## 3 Statutory and planning framework

## 3.1 Existing approvals

The following approvals and licences that are the relevant to this EA:

- PA 07\_0005 issued under Part 3A of the EP&A Act on 26 November 2008. This approval allowed for the extension of the existing KVAR area to permit the continued disposal of ash generated by the WWPS.
- Environmental Protection Licence (EPL) 766. This licence covers the WWPS and Wallerawang Ash Repository site and allows for the following scheduled activities which are listed under Schedule 1 of the Protection of the Environment Operations Act 1997 (POEO Act):
  - Electricity generation
  - Chemical storage facilities
  - Coal works
  - Crushing, grinding or separating works
  - Energy recovery
  - Waste storage.

The EPL also allows for the receival of VENM and ENM to be used for the capping of ash dams provided the material meets the following conditions:

Material to be generated from within the Bathurst and Lithgow local government areas only, or from other locations in New South Wales with approval from the relevant consent authority.

As described in Section 2, the proposed modification of PA 07\_0005 is required to allow for the importation of capping material on parts of the SSCAD and KVAR from outside the Bathurst and Lithgow LGAs, to allow for capping of these areas to continue.

## 3.2 Commonwealth legislation

#### 3.2.1 Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The Aboriginal and Torres Strait Islander Heritage Protection Act 1984 promotes the preservation and protection from injury or desecration of areas and objects in Australia and in Australian waters, being areas and objects that are of particular significance to Aboriginals in accordance with Aboriginal tradition. The Act allows the Environment Minister, on the application of an Aboriginal person or group of persons, to make a declaration to protect an area, object or class of objects from a threat of injury or desecration.

The project involves the importation of capping materials to an existing power generation site, to be used for ongoing rehabilitation of areas that have previously been disturbed. This is not expected to result in disturbance of any known Aboriginal sites (refer to Section 4.7 for detailed consideration of Aboriginal heritage). Therefore, this Act does not apply and has not been considered further.

#### 3.2.2 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires any action that has, or is likely to have, a significant impact on Commonwealth land or a matter of national environmental significance (MNES) to obtain approval of the Commonwealth Minister for the Environment.

In addition, approval is required under the EPBC Act for actions taken by the Commonwealth or by anyone on Commonwealth land that will have or are likely to have significant impacts on the environment.

A search of the EPBC Act Protected Matters Search Tool using a 3 km radius was undertaken on 7 November 2017 for the project area. The results of the search are summarised in Table 3-1 below and provided in Appendix A.

Table 3-1: EPBC Act protected matters search results

Protected matters	Search results
World heritage properties	None
National heritage places	None
Wetlands of international importance	None
Listed threatened species and ecological communities	39
Migratory species	12
Commonwealth marine areas	None
The Great Barrier Reef National Marine Park	None
Nuclear actions (including uranium mines)	None
A water resource, in relation to coal seam gas development and large coal mining development.	N/A

The search identified that three threatened ecological communities, 36 threatened species and 12 migratory species have been recorded within 3 km of the project area. No Threatened species or threatened ecological communities are known to occur on the ash repository as the area is heavily modified. Section 4.2 provides an assessment of the potential impacts to biodiversity as a result of the project and concludes that biodiversity impacts are considered unlikely.

As such, the project is not considered to have an impact on any of the nine MNES and a referral to the Commonwealth under the EPBC Act is therefore not required.

#### 3.2.3 Native Title Act 1993

The *Native Title Act 1993* (NT Act) provides native title claimants and appropriate Aboriginal groups with the opportunity to be involved and make comments on proposals that may affect native title. The Australian Attorney-General is responsible for administrating the NT Act.

Native title may be extinguished by actions such as private freehold land, valid grants of private freehold land or waters, residential or commercial leases, community purpose leases, public works and crown land.

A search of the National Native Title Tribunal register returned one registered native title claim covering the entire Lithgow LGA, including the project area 'NC2017/001 – Warrabinga-Wiradjuri # 7'. This claim was registered on 1 September 2017. As the project area is freehold land, native title is not expected to be an issue.

## 3.3 NSW State Legislation

#### 3.3.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) regulates development in NSW and provides the statutory context for the project. Under this act, development includes 'the carrying out of a work' which is not exempt or complying development, which covers the project as described in Chapter 2.

KVAR operates under an approval issued under Part 3A of the EP&A Act in 2008. Operations at SSCAD are not regulated by an approval issued under the EP&A Act.

Part 3A was repealed on 1 October 2011 by the *Environmental Planning and Assessment Amendment Act* 2011 (the Repeal Act). Schedule 6A of the EP&A Act defines certain projects as 'transitional Part 3A projects'. These include 'an approved project (whether approved before or after the repeal of Part 3A)'.

The proposed modification is therefore a transitional Part 3A project as it involves an approved project to which Part 3A applies. Clause 3 of Schedule 6A of the EP&A Act provides that Part 3A continues to apply to transitional Part 3A projects following its repeal.

Approval for the proposed modification is therefore sough under Section 75W of the EP&A Act. Section 75W states:

#### 75W Modification of Minister's Approval:

- The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under the Part.
- The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.
- The Minister may modify the approval (with or without conditions) or disapprove of the modification.

Section 75W(2) states that Minister's approval is not required where the modified project will be consistent with the approved project. It is not considered that the proposed modification is entirely consistent with the project approval. Accordingly, a modification to the project approval is considered necessary under Section 75W of the EP&A Act.

The proposed modification does not represent a substantial change to the existing approval, consequently it is considered that the Minister is able to modify the approval under Section 75W of the EP&A Act.

#### 3.3.2 Other NSW state legislation

Other relevant state legislation is discussed in Table 3-2.

Table 3-2: Relevant legislation applicable to the project

Legislation	Applicable Y/N?	Comment
Biodiversity Conservation Act 2016	N	The Biodiversity Conservation Act 2016 (BC Act) provides a framework to avoid, minimise and offset impacts on biodiversity.  The BC Act introduces the Biodiversity Assessment Method (BAM), a consistent method for the assessment of biodiversity on a proposed development. The BAM must be applied by an accredited assessor and a Biodiversity Development Assessment Report (BDAR) prepared for all proposals assessed under Part 4 of the EP&A Act (excluding complying development) which:  Exceed the relevant clearing threshold as set out in Section 7.2 of the Biodiversity Conservation Regulation 2017 (The Regulation) – the project does not exceed this threshold as it does not involve any clearing – note: the project is located on a lot that is 438.8 hectares
		<ul> <li>Are located within an area identified on the 'Biodiversity Values Map' – the project is not in an area identified on this mapping</li> <li>Are located in a declared Area of Outstanding Biodiversity Values (AOBVs). Note listed areas of declared critical habitat under the now repealed TSC Act have become AOBVs under the new legislation – the project is not in an AOBV</li> </ul>
		<ul> <li>Are considered to "likely to significantly affect threatened species" using the test of significance in Section 7.3 of the Act – the project is considered unlikely to affect threatened species as it involved no clearing (refer to Section 4.2.1).</li> <li>The BC Act is therefore not considered applicable to the project.</li> </ul>
Dam Safety Act 2015	Y	This act empowers the Dam Safety Committee and lists certain dams and prescribes certain dams as 'declared dams'. The SSCAD is a declared dam and requires ongoing safety inspections in accordance with the requirements of the Dam Safety Committee.

Legislation	Applicable Y/N?	Comment
		The project will not trigger specific approval requirements under the <i>Dam Safety Act 201</i> 5 as it will not create affect a prescribed dam. EnergyAustralia will however, liaise with the Dam Safety Committee regarding the project prior to its commencement as part of its ongoing reporting and notification requirements.
Contaminated Land Management Act 1997	N	The Contaminated Land Management Act 1997 (CLM Act) provides a regime for investigating and, where appropriate, remediating land affected by contamination which represents a significant risk of harm to human health or the environment.  The project will not involve the handling of any suspected contaminating materials and therefore is not subject to this Act.
Crown Lands Act 1989	N	The project area is not known to contain any crown lands. Therefore, this Act does not apply.
Dangerous Goods (Road & Rail Transport) Act 2008	N	The project is not expected to require the transport or use of any dangerous goods requiring a licence under this Act. Therefore, this Act does not apply.
Environmentally Hazardous Chemicals Act 1985	N	This Act regulates certain chemicals by prescribing chemical control orders and licences. Chemical control orders apply to:  Aluminium smelter wastes containing fluoride and/or cyanide  Dioxin-contaminated waste materials  Scheduled chemical wastes  Organotin waste materials  Polychlorinated biphenyl (PCB) waste and materials.  The project would not involve the handling or disposal of any of these chemicals. Further consideration of this act is therefore not required.
Fisheries Management Act 1994	N	Approval will be required under this Act if the project is predicted to result in blockage to fish passage in any waterways or any impacts to threatened aquatic species or their habitat.  The project is not expected to result in any direct impacts to any waterways or aquatic habitat. Approval is therefore not expected to be required under this Act.
Heritage Act 1977	N	Under Section 139 of the Act, a person must not disturb or excavate any area if there is a known or suspected likelihood of the excavation resulting in a relic being discovered, exposed, moved, damaged or destroyed.  The project does not involve any ground disturbance and therefore this act is not considered to apply.
National Parks and Wildlife Act 1974	N	The project is not expected to result in any impacts to Aboriginal heritage or any National Parks or Reserves.  The project does not involve any ground disturbance and therefore this act is not considered to apply.
Native Vegetation Act 2003	N	This act was replaced by the BC Act, although still applies to projects for which environmental assessment studies commenced prior to August 2017.  The Act does not apply to areas zoned SP2 Infrastructure. The project will not require clearing of any native vegetation and therefore this Act does not apply.
Protection of the Environment Operations Act 1997 and Regulations	Y	The principal legislation governing pollution and waste management in NSW is the Protection of the Environment Operations Act 1997 (POEO Act). All scheduled activities as listed in Schedule 1 of the POEO Act require an EPL to be obtained prior to commencement of construction of the scheduled development work. EnergyAustralia holds EPL No. 766 over the WWPS and ash repository site, covering 'electricity generation' as an activity listed in Schedule 1 of the POEO Act The licence also applies to the following ancillary activities: chemical storage facilities; coal works; crushing, grinding or separating works; energy recovery; and, waste storage.

Legislation	Applicable Y/N?	Comment
		All activities associated with the project must be carried out in accordance with the existing Environmental Protection Licences (EPL 766) that covers the SSCAD and KVAR. A draft variation to the EPL has recently been received from the NSW EPA, which includes for the importation of capping material (ENM and VENM) from Lithgow LGA and Bathurst LGA to WWPS, as required.  As discussed in Section 2.2.1, VENM and ENM are exempt from the definitions of
		resource recovery' and 'waste disposal – application to land' under Schedule 1 of the POEO Act, and therefore are not scheduled activities.
Roads Act 1993	N	Approval under this Act will be required if the project requires works within a public roadway. In this case, a Section 138 approval road would need to be obtained from the relevant authority (either LCC or Roads and Maritime Services).
		Consent would also be required for the transportation of large items and if road closures are required due to the transportation of large items.
		It is not anticipated that the project would require works to be undertaken within a public road or that transportation of any large objects or road closures would be required.
Sydney Water Act 1994	Y	The project is located within the catchment of Sydney Water's drinking supplies. Issues associated with potential impacts to Sydney's Drinking Water catchments are addressed through <i>State Environmental Planning Policy (Sydney Drinking Water Catchment)</i> 2011, which is discussed in Section 3.4.1.
Waste Avoidance and Resource Recovery Act	Y	The primary aim of the <i>Waste Avoidance and Resource Recovery Act 2001</i> (WARR Act) is to reduce the volume of waste disposed of in NSW and to establish a hierarchy of avoidance, reuse, recycling and reprocessing and disposal.
2001		The project involves the importation of clean fill to allow for existing capping operations to continue. The project will not, in itself, generate any waste streams although this act applies to all operations at Wallerawang Ash Repository.
Water Management Act 2000 (WM Act)	N	The WM Act regulates access to and management of water resources in NSW. The WM Act controls the extraction of water, how water can be used, and the carrying out of activities on or near water sources. Further provisions of this act apply to water resources for which a Water Sharing Plan (WSP) has been gazetted.
		The project is located in an area partly covered by the following WSPs:
		<ul> <li>WSP for the Greater Metropolitan Region Groundwater Sources (2011). The Sydney Basin Coxs River Groundwater Source is relevant to this project.</li> </ul>
		WSP for the Greater Metropolitan Region Unregulated River Water Sources (2011). The Upper Nepean and Upstream Warragamba Water Source are relevant to this project. The project falls within the Wywandy Management Zone.
		Under the WM Act, should water need to be extracted from a surface water source defined in these WSP's the following approvals may need to be obtained:
		An Access Licence to obtain access to a share of the water source
		A Water Supply Works Approval to obtain permission to construct and operate water supply works (i.e. pumps, bores) for water supply, drainage or flood mitigation work.
		<ul> <li>An Aquifer Interference Approval may be required for extraction or dewatering activities</li> </ul>
		A Water Use Approval to obtain permission for how the water will be used.
		The project involves the importation of clean fill to allow for existing capping operations to continue. The project will therefore not involve any activities that may require approval under this act.
Rural Fires Act 1997	N	Section 63 of the <i>Rural Fires Act 1997</i> requires owners and occupiers of land to take practicable steps to prevent the occurrence of bush fires on, and to minimise the danger of the spread of a bushfire on or from land in their control.

Legislation	Applicable Y/N?	Comment
		Bushfire prone lands are generally those forests or grasslands that, by virtue of their bushfire hazard and proximity to existing and proposed development, hold a significant risk to property in the event of a bushfire.
		The project area is mapped as bushfire prone land under the LLEP, however; as the project only involves the importation of clean fill to the site, this act is not considered to apply. Issues associated with bushfire risk as considered further in Section 4.2.

## 3.4 Environmental planning instruments

#### 3.4.1 State environmental planning policies

#### State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011

This SEPP commenced on 1 March 2011 and replaced the Drinking Water Catchments Regional Environmental Plan No 1.

The SEPP states that a consent authority must not grant consent to any development under Part 4 of the EP&A Act without the concurrence of the Sydney Catchment Authority (SCA) (now WaterNSW). A neutral or beneficial effect on water quality (NorBE) assessment needs to be undertaken for any such project in line with the Neutral or Beneficial Effect on Water Quality Assessment Guidelines 2011 (SCA 2011a) and the Neutral or Beneficial Effect on Water Quality Assessment Tool 2011 (SCA 2011b).

The project is located within the catchment of the Coxs River, and is within the boundary of the Warragamba Drinking Water Catchment. Consequently, the SEPP (Sydney Drinking Water Catchment), although as the project is being assessed under Part 3A of the EP&A Act, concurrence with WaterNSW is not required. A qualitative NorBE assessment has been undertaken and found that the project is likely to have a neutral or beneficial effect on water quality within the Sydney drinking water catchment. Appendix B.1 shows the boundaries of the drinking water catchment and Appendix B.2 provides the qualitative NorBE assessment for the project.

## State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

Activities that are exempt from planning approval requirements or are determined to be 'complying development' are described under *State Environmental Planning Policy (Exempt and Complying Development Codes)* 2008 (the Exempt and Complying Development SEPP).

Part 2 of the Exempt and Complying Development SEPP describes activities that are exempt from planning approval. Subdivision 15 includes 'earthworks', although this activity must occur more than 40 m from a natural waterway to be exempt from approval. As the project involves work within 40 m of Sawyers Swamp Creek, approval is required.

Part 2 of the Exempt and Complying Development SEPP describes complying development. Subdivision 15 includes 'earthworks', although complying development approval cannot be issued to a site that is subject to an EPL. Wallerawang Ash Repository is covered by EPL 766 and therefore the project cannot be complying development.

#### 3.4.2 Local planning policies and strategies

#### **Lithgow Local Environmental Plan 2014**

Under Section 75R of the EP&A Act, environmental planning instruments, other than SEPPs, do not apply to Part 3A projects. Notwithstanding, local environmental plans (LEPs) are relevant for consideration of the permissibility of the proposed modification.

The Lithgow Local Environmental Plan (LLEP) provides planning controls for land, including the project area, within the Lithgow LGA. The project area is located in Zone SP2 Infrastructure, on land designated for 'Electricity Generating Works' (refer to Figure 3-1).

Under the LLEP, works that are ancillary to development or operation a power station is permissible with development consent. As described above, approval for the proposed modification is being sought under Part 3A of the EP&A Act and therefore development consent is not required.

Nonetheless, the project is considered consistent with the aims of the LLEP, as outlined in Table 3-3.

Table 3-3: Project consistency with the aims of the LLEP

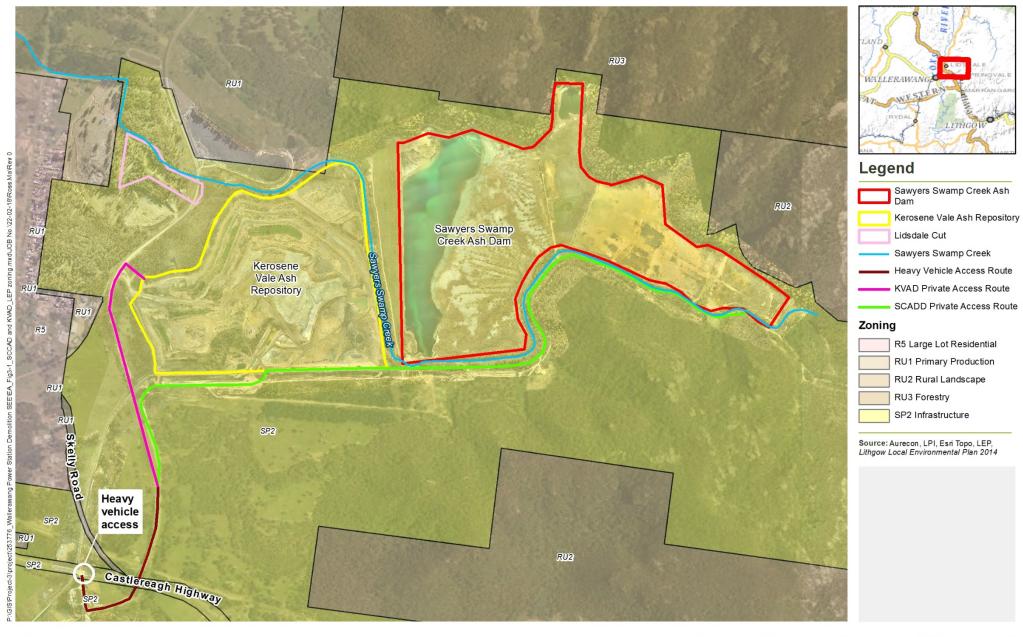
Clause 1.2 of LLEP	Consistency of the project with this aim				
(2) The particular aims of this Plan are as follows:					
(a) to encourage sustainable and planned development that complements the unique character and amenity of Lithgow and enhances its towns, villages and rural areas,	The project involves the importation of clean fill for use as capping material on an existing ash dam. This will enhance the sustainability of the site and improve the amenity of the nearby area.				
(b) to provide for a range of development opportunities that contribute to the social, economic and environmental resources of Lithgow in a way that allows the needs of present and future generations to be met by implementing the principles of ecologically sustainable development,	An assessment of the project's alignment with the principles of ecologically sustainable development (ESD) has been undertaken (refer to Section 5.1), which determined that the project is consistent with these principles.				
(c) to manage, facilitate and encourage sustainable grow	vth and development that:				
(i) promotes the efficient and effective delivery of utilities, infrastructure and service and minimises long-term costs to government, authorities and the community, and	The project will promote the efficient use of clean fill material by using readily available sources of this material that can be obtained with minimal impacts, rather than utilising local sources of material that have either been exhausted or would benefit local projects.				
(ii) protects, enhances and conserves mineral and extractive resources lands, forests and agricultural lands and the contributions they make to the local, regional and State economy, and	The project will not result in any long-term environmental impacts and will not reduce the environmental values or resource value of the Wallerawang Ash Repository.				
(iii) allows for the orderly growth of land uses while minimising conflict between land uses in a zone and land uses in adjoining zones, and	The project will not conflict with any land uses at the Wallerawang Ash Repository or in surrounding areas.				
(iv) encourages a range of housing choices in planned urban and rural locations to meet population growth and the diverse needs of the community, and	The project does not involve any residential development and will not affect any nearby residences, or potential residential development sites.				
(v) preserves and protects land that has been identified for future long term urban development from inappropriate fragmentation and development, and	The project does not involve works within any lands that have been identified for future urban development.				
(vi) protects and enhances environmentally sensitive areas, ecological systems, areas of high scenic, recreational, landscape or conservation value and	The project is contained within the overall WWPS site and will not affect any environmentally sensitive areas or areas of high environmental values.				

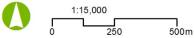
Clause 1.2 of LLEP	Consistency of the project with this aim
areas that have the potential to contribute to improved environmental outcomes, and	
(vii) protects and enhances places and items of environmental, archaeological, cultural or heritage significance, including Aboriginal relics and places, and	The project is contained within the overall WWPS site, and no impacts to archaeological or cultural heritage sites or items are expected.
(viii) avoids or minimises the impact of development on drinking and environmental water catchments to protect and enhance water availability and safety for human consumption and the maintenance of environmental and recreational values, and	<ul> <li>The project will be contained within the overall WWPS site which has an established water management system that will capture any run-off from areas subject to the project.</li> <li>A neutral or beneficial effect on water quality assessment has been conducted for the project and determined that it is not expected to cause any reduction of surface water quality to local water resources (refer to Appendix B).</li> </ul>
(ix) strengthens and promotes employment land opportunities and appropriate tourism development and growth, and	The project will use existing labour and plant resources employed at WWPS, providing for extension of employment at the site.
(x) creates resilience to natural hazards through local land use planning.	The project will not increase the site's exposure to, or risk associated with natural hazards.

#### **Lithgow Development Control Plan**

Lithgow City Council has repealed all DCPs as of 20 January 2017. There were no draft DCPs in force at the time of preparing this EA. Therefore, there are no DCP's relevant to the project.







SCADD and KVAR Capping Environmental Assessment

FIGURE 3-1: LEP zoning

Projection: GDA 1994 MGA Zone 56

## 4 Environmental assessment

This section assesses the potential impacts associated with the project including consideration of impacts that may occur as a result of capping material importation activities. It should be noted however, that this EA does not consider the final rehabilitation and closure of the SSCAD and the KVAR and issues associated with its management in-perpetuity, as that forms part of the broader WWPS DDR project which will be subject to a separate approvals process.

For most potential impacts, EnergyAustralia's existing environmental management systems at the Wallerawang Ash Repository are considered to provide adequate controls to mitigate any impacts. EnergyAustralia has implemented an OEMP that would manage potential impacts from the project. A project specific Construction Environmental Management Plan (CEMP) would be prepared to provide specific direction for staff of contractors working on the importation of capping material. The CEMP would include any mitigation measures provided in this EA or developed subsequently.

## 4.1 Hydrology and groundwater

#### 4.1.1 Existing environment

The project area is located within the upper catchment of the Coxs River which forms part of the Hawkesbury-Nepean River system. Sawyers Swamp Creek is the closest natural waterway and flows in a westerly direction through the project area eventually draining into the Coxs River to the north-west.

The SSCAD is an integral part of the WWPS water management system. Water from the Wallerawang Ash Repository drains to Lidsdale Cut is returned to the SSCAD, while water is also transferred between the SSCAD and the WWPS as part of the power station's overall water management scheme. Water can be released from SSCAD after treatment in the Caustic Injection Plant at WWPS. At the treatment plant the water is neutralised before being directed to settling ponds and if necessary, is discharged to the Coxs River under the existing environment protection licence (EPL).

Water management at Wallerawang Ash Repository is based on the principle of separation of clean and dirty water. Clean water, is diverted around disturbed areas and is discharged into sawyers Swamp Creek. Dirty water is collected in perimeter drain perimeter of the ash repository area and is discharged into a collection pond. In the collection pond the water is treated through sediment removal and is reused onsite for dust suppression and moisture control of the ash.

The SSCAD and KVAR are not located within a flood planning area as designated under the LLEP. However, it is identified as an environmentally sensitive area (groundwater vulnerable) under the LLEP (refer to Figure 4-1). As such, potential impacts to groundwater have been considered in this EA.

#### 4.1.2 Potential impacts

The project is not expected to cause any impacts to hydrology as it only involves the importation of capping material from off-site sources. Once on-site, capping movement and placement activities would be undertaken as part of the site's normal operations.

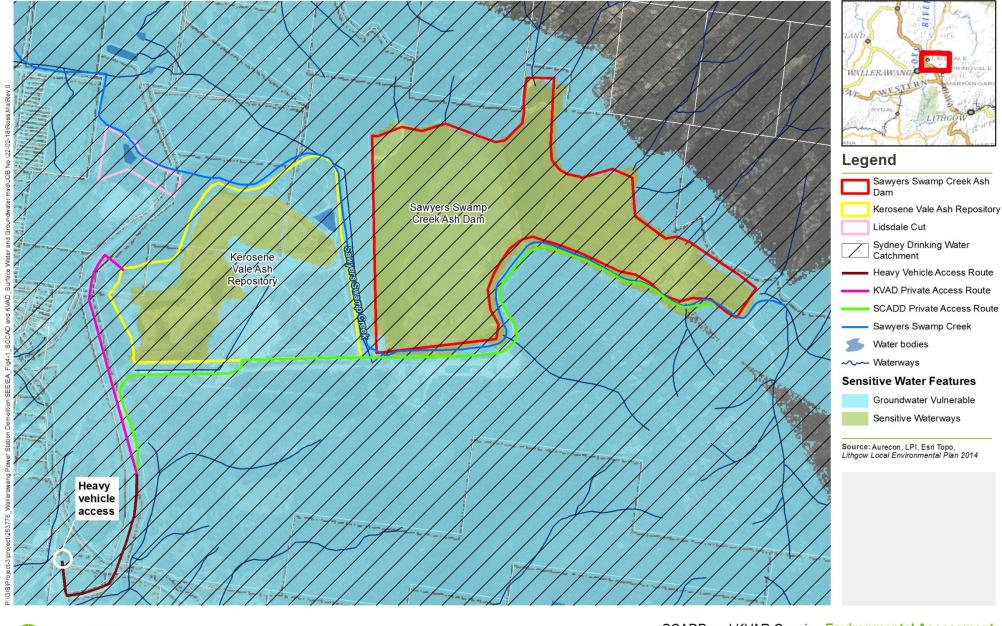
The existing water management system in the project area is a closed system, whereby water is unable to leave the site without first being treated. This process ensures that untreated water is not discharged to Sawyers Swamp Creek.

The project is not expected to cause any impacts to groundwater as only involves the importation of capping material for use in existing operations. The placement of capping material and leachate from capped material is not expected to affect water quality, as only VENM and ENM would be used. The placement of a layer of capping on the SSCAD and KVAR is expected to reduce infiltration of rainwater into ash deposits, which will benefit groundwater resources in the area in the long-term.

#### 4.1.3 Safeguards and management measures

Existing site water management practices will continue to be maintained and therefore, no additional management measures are considered necessary to manage potential hydrology or groundwater impacts.

## aurecon





1:15,000 0 250 500

Projection: GDA 1994 MGA Zone 56

SCADD and KVAR Capping Environmental Assessment

FIGURE 4-1: Surface water and groundwater features

## 4.2 Biodiversity and bushfire

#### 4.2.1 Existing environment

#### **Biodiversity**

The project area is owned and managed by EnergyAustralia. The areas to the north, east and south of the project area are tall open forest (*E. Radiata and E. Sieberi*) covering the ridges that are part of Newnes State Forest. There are also patches of open woodland (*E. mannifera*) to the north east of the project area (Aurecon 2013). Vegetation mapping is shown on Figure 4-2. This mapping appears to correspond to vegetation associated with remnant patches of bushland that occur in the area.

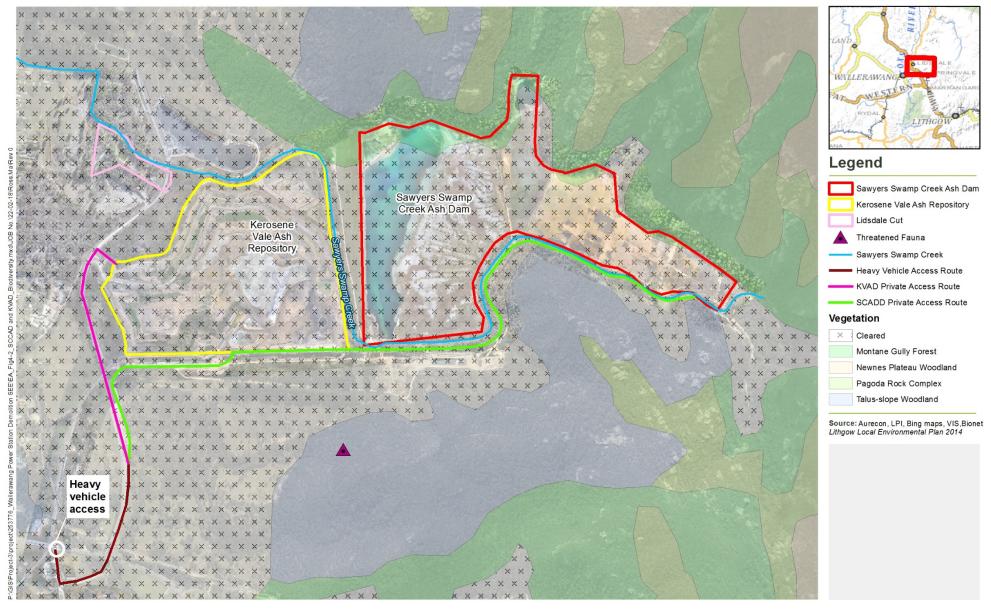
Regeneration of some sedge and groundcover species has occurred in Ponds A and B. Pond C has been partially capped and the capped areas support some sedge and groundcover species (Aurecon 2013). They are separated from the operational pond by a berm. There are isolated trees located within the KVAR site that are likely to be consistent with remnant open woodland.

Sawyers Swamp Creek is the primary aquatic environment in the project area. The Sawyers Swamp Creek channel is an artificial watercourse running through the project area, which was constructed as part of the realignment undertaken in the 1970s to allow for development of KVAR and SSCAD.

#### **Bushfire**

Part of the SSCAD is mapped as 'Buffer Area' and part of the KVAR is mapped as 'Vegetation Category 1' under LLCs bushfire prone land mapping (refer to Figure 4-3). 'Vegetation Category 1' is considered to be the highest risk for bushfire and is given a buffer area of 100 metres. Section 63 of the *Rural Fires Act 1997* requires owners and occupiers of land to take practicable steps to prevent the occurrence of bush fires on, and to minimise the danger of the spread of a bushfire on or from land in their control. Bushfire prone lands are generally those forest or grasslands that, by virtue of their bushfire hazard and proximity to existing and proposed development, hold a significant risk to property in the event of a bushfire.







250 500 m Projection: GDA 1994 MGA Zone 56

SCADD and KVAR Capping Environmental Assessment

FIGURE 4-2: Biodiversity





SCADD and KVAR Capping Environmental Assessment

Projection: GDA 1994 MGA Zone 56

#### 4.2.2 Potential impacts

#### **Biodiversity**

The project is not expected to cause any impacts to biodiversity as it only involves the importation of capping material from off-site sources and does not include any clearing or habitat disturbing activities.

#### **Bushfire**

The project would not increase the risk of bushfire occurrence at the SSCAD or KVAR. EnergyAustralia's existing bushfire management systems would apply to the project and provide a range of measures that are implemented at the site to manage bushfire risk.

#### 4.2.3 Safeguards and management measures

As the project would occur within cleared and modified lands with some regenerating vegetation, impacts to biodiversity are not expected. The following mitigation measures are recommended to reduce any unlikely impacts to biodiversity:

- Access for workers, their equipment and vehicles would be restricted to the designated roads and access tracks roads
- Site inductions for staff and contractors working on the project would include awareness training about fire prevention strategies.

#### 4.3 Soils and contamination

#### 4.3.1 Existing environment

The main soil landscape in the area is mapped as Disturbed Terrain. Disturbed terrain indicates areas which have been mined or filled or have been subjected to other significant soil disturbance activities. This soil landscape varies from level plains to undulating terrain and has been disturbed by human activity to a depth of at least 100 cm (Aurecon 2013). Landfill includes a wide variety of soil, rock, building and waste material. The original soil within the project area has been removed, buried or greatly disturbed.

The project area is not mapped as having identified risk of acid sulfate soil (ASS) occurrence. There are no known sources of contamination in the project area.

#### 4.3.2 Potential impacts

The project is not expected to cause any soil or contamination impacts as it only involves the importation of capping material from off-site sources. Once on-site, capping movement and placement activities would be undertaken as part of the site's normal operations.

Potential risks from the importation of contaminated material would be avoided by only importing material certified as VENM or ENM. No other material would be accepted on-site.

#### 4.3.3 Safeguards and management measures

Mitigation and management measures that would be implemented to avoid, minimise or manage potential soil and contamination impacts would include:

- Review all soil assessment and classification reports prior to the delivery of capping material onsite.
- Regularly monitor capping material deliveries for any anomalies against the ENM and VENM criteria.

- Inspect the capping material source facilities to ensure soil stockpiles are managed to avoid potential contamination.
- The refuelling of plant and maintenance of machinery would be carried out in existing designated refuelling areas.
- Minimise transfer of soils into public areas through use of wheel wash or shaking facilities as required.

#### 4.4 Traffic and access

#### 4.4.1 Existing environment

The roads surrounding the project area that connect Lidsdale to other townships include Wolgan Road, Ian Holt Drive and the Castlereagh Highway, as shown on Figure 1-2.

Trucks carrying capping material would access the project area via the WWPS heavy vehicle access that runs off the Castlereagh Highway near Lidsdale. Access to the KVAR and SSCAD would either be via the access roads shown on Figure 1-2.

Trucks would generally travel to the site from the south (Sydney area), travelling to WWPS via the Great Western Highway and Castlereagh Highway.

The intersections between the Great Western Highway and Castlereagh Highway maintain continuous flows for traffic heading both to and from Sydney. The intersection between the Castlereagh Highway and Main Street provide continuous flow for traffic coming from Sydney to Wallerawang. Vehicles travelling back to Sydney are required to stop and cross oncoming traffic on the Castlereagh Highway at this intersection. A similar arrangement occurs at the entrance to WWPS on Main Street. Both the Castlereagh Highway and Main Street have been observed to carry low traffic flows in the areas around WWPS.

Prior to cessation of operations at WWPS in 2014, large numbers of both light and heavy vehicles would travel to and from the site each day. Haulage of coal between Angus Place Colliery and WWPS also was approved at a rate of up to 270 50-ton coal haul trucks per day under MP 06\_0021 (Angus Place Colliery), on the road that would be used for the project to access KVAR. PA 07\_0005 also included for 30 loads (60 truck movements) per day of trucks carrying ash from the power station to KVAR on this road. The approval for Mt Piper Power Station also provides for road haulage of coal between WWPS and Mt Piper Power Station. None of these vehicle movements occur now that the power station has ceased operations.

Current activities at WWPS generate small volumes of traffic and typically include light vehicle movements for the small number of staff and contractors who remain working at the site, and one-off movements of heavy vehicles when transporting salvaged items from the power station to other sites.

#### 4.4.2 Potential impacts

As described in Section 2, trucks transporting capping material for the project would access the Wallerawang Ash Repository via the existing heavy vehicle access entrance to WWPS on the Castlereagh Highway.

Access to the SCCAD site would occur via the SCADD private access road and access to the KVAR would either be via that road or the KVAR private access road shown on Figure 1-2 (this is also the Angus Place Colliery haul road described above).

It is anticipated that up to 150 deliveries of capping material would occur per day, using road registered trucks with a capacity of around 20 cubic metres.

Roads and Maritime Services operates a traffic counter on the Great Western Highway at Hartley, about 16 km to the south-east of the project area. Data from this counter viewed on 9 November 2017 showed that 8,687 vehicles travel on this section of the highway on an annual average daily (AADT) basis. About 20% of these vehicles (1,737) are heavy vehicles. Based on the maximum anticipated delivery rate of 150 trucks per day and assuming all deliveries came from one source, the project would result in an increase of 1.7% (all vehicles) and 8.6% (heavy vehicles) at that section of the Great Western Highway. This level of change is not expected to be noticeable by users of this section of the highway.

Existing traffic volumes on the Castlereagh Highway between the Great Western Highway and WWPS, would be lower than on the Great Western Highway and increases of traffic volumes on these roads would be more noticeable. However, as these routes are subject to much lower traffic volumes, potential traffic impacts associated with increased truck movements from the project would also be lower. Laden trucks travelling to the site may travel at lower speeds than other traffic, although other vehicles can overtake slow vehicles at a number of locations along the Castlereagh Highway.

Impacts to the intersections between the Great Western Highway and Castlereagh Highway and Castlereagh Highway and the WWPS heavy vehicle entrance are expected to be low. Laden trucks travelling to the site would typically travel through these intersections at lower speeds, potentially delaying other vehicles on these routes. As these intersections provide for continuous flows and two turning lanes are provided at the Great Western Highway and Castlereagh Highway intersection, any impacts would be considered minor. Overall, traffic impacts would be expected to be lower than when the WWPS was operational.

#### 4.4.3 Safeguards and management measures

The following traffic and access safeguards and management measures would be implemented for the project:

- Site traffic rules would be developed for the project and included in the CEMP, including:
  - A maximum speed limit of 20km/hr would apply to vehicles within the WWPS and Wallerawang Ash Repository sites
  - Trucks would be restricted to the designated access roads and project area boundaries as defined in this EA.

#### 4.5 Noise and vibration

#### 4.5.1 Existing environment

Areas adjacent to the project area generally consist of bushland, ash emplacement areas and associated operations of the WWPS. Dominant noise sources in the area come from the Castlereagh Highway, adjoining coal mines and operational activities at within the project area.

The residential area of Lidsdale is located approximately 250 m west of the project area and contains the nearest sensitive receivers to the project. EnergyAustralia operates a noise monitoring program under the project approval for operation of KVAR (PA 07\_0005). This program involves six-monthly background noise monitoring at the three closest residences to the Wallerawang Ash Repository, which are:

- 21 Neubeck Street 260 m to the west
- 10 Skelly Road 350 m to the west
- 60 Skelly Road 480 m to the south-west.

The KVAR project approval requires that the cumulative noise levels from ash haulage and emplacement activities at KVAR should not exceed 40 dBA ( $LA_{eq\ 15\ min}$ ) at any of these residences.

The key source of noise from KVAR that could potentially affect these residents is truck movements on the private road running from WWPS to KVAR. During operation of the WWPS, this haul road was heavily used to transport ash to KVAR and coal from Angus Place Colliery to the power station. EnergyAustralia's noise monitoring program did not identify any exceedances of noise goals when the power station was operating, and has not since. The latest monitoring report (Aurecon 2017) found that activities at KVAR are inaudible at these residences.

#### 4.5.2 Potential impacts

The only noise generating activity associated with the proposal is the movement of road registered vehicles to the WWPS site on the public road network. Once on-site, the transportation and placement of capping

material is considered to be a normal activity associated with operation of SSCAD and KVAR. Hence, on-site capping movement and placement activities would be subject to EnergyAustralia's existing approvals and noise management systems.

The PA 07\_0005 assumed that 30 loads (60 truck movements) per day would travel on the private haul road between WWPS and KVAR. MP 06\_0021 also assumed that up to 270 movements of coal haul trucks would occur per day on this road from Angus Place Colliery to the power station. As the WWPS is no longer operating, these vehicle movements no longer occur.

The project is not expected to cause any exceedances of the noise goals established by the PA 7\_0005, as exceedance of these goals did not occur during operation of the power station, when vehicle movements in areas close to nearby residents at Lidsdale were much higher. Generally, separation distance between the Wallerawang heavy vehicle access point and the nearest residential areas of Lidsdale, transportation noise impacts are not expected.

There are several rural residences located near the Castlereagh Highway between its intersection with the Great Western Highway and the Wallerawang Power Station heavy vehicle entrance. A number of residential and rural-residential areas adjoin the Great Western Highway throughout western Sydney and the Blue Mountains. These residences are subject to existing road noise generated by vehicles using these highways. The minor increase in truck movements that would be caused by the project is not expected to substantially increase existing road noise levels on these roads.

EnergyAustralia will continue with the noise monitoring program implemented under the PA 07\_0005 and the noise goal of 40 dBA (LA<sub>eq 15 min</sub>) will continue to apply. If unexpected noise impacts are generated by the project, they will be identified and addressed through this process and EnergyAustralia's existing noise management procedures.

It is not anticipated that the project will result in significant noise impacts to nearby residential receivers.

#### 4.5.3 Safeguards and management measures

EnergyAustralia will continue to implement the noise management procedures it has established through the Wallerawang Ash Repository OEMP. No additional noise management measures are considered necessary.

## 4.6 Visual amenity

#### 4.6.1 Existing environment

The KVAR has been in operation since the 1960s and the SSCAD has been in operation since the early 1980s. All associated land uses around the site including power generation, mining operations and landfill have occurred over the last century. The project area is surrounded by dense bushland to the north, east and south, whilst the township of Lidsdale is located to the west.

There are no private properties located adjacent to the project area. The closest residential properties are located about 250 m west in the town of Lidsdale. These properties may have limited views of the project area due to the vegetation screening present along Skelly Road and the private access road located off the Castlereagh Highway.

The land to the north, east and south of the project area is well vegetated on moderately sloped ridges that shield the project area from these viewing directions.

No private properties or public areas have views that cover the surface of the project area.

#### 4.6.2 Potential impacts

The project is considered to have negligible potential to cause visual impacts or negative changes to the landscape character of the area.

#### 4.6.3 Safeguards and management measures

No specific safeguards and management measures are considered necessary to manage this issue.

## 4.7 Aboriginal heritage

#### 4.7.1 Existing environment

Advisian, in conjunction with Biosis, were engaged by EnergyAustralia NSW Pty Ltd to prepare a Cultural Heritage Survey investigation of the WWPS and Wallerawang Ash Repository areas.

A search of the Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) did not identify any AHIMS sites located within the project area. The survey did not identify any culturally modified trees, grinding grooves, rock shelters or potentially archaeological deposits (PAD) located within the project area.

The closest located Aboriginal heritage items were identified within the WWPS. These are not located within areas that would be accessed as part of this project.

#### 4.7.2 Potential impacts

The project is considered to have negligible potential to cause impacts to Aboriginal heritage.

#### 4.7.3 Safeguards and management measures

No additional safeguards and management measures are considered necessary to manage Aboriginal Heritage.

### 4.8 Non-Aboriginal heritage

#### 4.8.1 Existing environment

A search of the following heritage registers, databases and schedules was undertaken as part of the Cultural Heritage Survey investigation of the WWPS and Wallerawang Ash Repository areas, to identify non-Aboriginal heritage items within proximity to the project area:

- Department of the Environment Australian Heritage Database
- NSW State Heritage Register
- NSW State Heritage Inventory
- Schedule 5 of the LLEP.

There are no statutory listed heritage items, heritage conservation areas or archaeological sites located within the project area.

#### 4.8.2 Potential impacts

The project is considered to have negligible potential to cause impacts to non-Aboriginal heritage.

#### 4.8.3 Safeguards and management measures

No specific safeguards and management measures are considered necessary to manage this issue.

## 4.9 Air quality and energy

#### 4.9.1 Existing environment

The project area is surrounded by dense bushland and ash emplacement areas associated with the WWPS in a region dominated by State Forest, power generation facilities, ash dams and mining. The nearest sensitive receivers identified for the project are located 250 m west of the project area, within the township of Lidsdale (refer to Figure 1-1). The project area itself is located in an area surrounded by activities related to coal mining, coal stockpiling, ash placement and power stations. All of these activities contribute to the quality of the air in the region.

EnergyAustralia has implemented dust control system at the Wallerawang Ash Repository that covers the SSCAD and KVAR. This system includes the use of water sprays and water carts to control dust generated from ash disposal areas and exposed surfaces.

EnergyAustralia's current air emission limits are identified by EPL 766. The existing air quality around the KVAR is monitored by a network of dust deposition gauges. The three ambient air monitoring sites are located at Blackmans Flat, Wallerawang and on the Newnes Plateau (EPL Monitoring Points 15, 16 and 17). Results of the dust monitoring is reported on an annual basis in the Annual Environmental Monitoring Report for KVAR.

Energy consuming activities during construction would largely be in the form of duel (petrol and diesel) for the delivery trucks and plant and equipment used for capping.

#### 4.9.2 Potential impacts

Fugitive dust is defined as dusts that become airborne due to the forces of wind or human activity. Fugitive dust emissions from activities associated with the project may be generated due to transport of capping materials.

Transportation activities would also result in exhaust emissions. Most of the fuel consumed for the project would be diesel to power the delivery trucks to / from the project area. It is likely that the majority of the trucks used to transport fill to the site will come from locally or regionally located transport companies. These companies transport goods and materials to Sydney from the Lithgow area and will carry capping material from Sydney construction projects on their return trip. The project is not expected to cause a major increase in exhaust emissions from transport movements in the region. Fuel and energy use during construction will be minimised as far as possible through the use of well-maintained vehicles and effective planning.

The project is expected to result in an overall long-term improvement in air quality, as it would see uncapped areas of ash covered and therefore reduce the potential for dust generation from the Wallerawang Ash Repository. Coal ash is a very fine material that readily generates airborne dust if not managed effectively. A water spray system is currently used at Wallerawang Ash Repository to control dust. Capping will provide a more permanent solution to managing this issue.

#### 4.9.3 Safeguards and management measures

The following control measures will be implemented to control dust from the transport activities associated with the project:

- All spoil trucks must have loads covered
- All truck drivers must ensure that any lose spoil material is removed from their truck prior to leaving site
- Vehicles will travel along existing roads where possible.

#### 4.10 Waste management

#### 4.10.1 Existing environment

WWPS is licensed to dispose of certain wastes on-site, under EPL 766. The following types of waste are currently permitted to be disposed of at the SSCAD and KVAR:

- Ash
- Mill pyrites
- Demineralisation and polisher plant effluents
- Chemical clean solutions
- Cooling tower sediments
- Ion exchange resins
- Biomass co-firing ash
- Settling pond sediments (including from the settling ponds of the Springvale Water Transfer Scheme)
- Oil and grit trap sediments.

The disposal of waste at WWPS and the Wallerawang Ash Repository is regulated by the *Waste Avoidance* and Resource Recovery Act 2001. This Act established a hierarchy of waste management (avoid, recover, dispose) that encourages the efficient use of resources, aims to minimise or avoid environmental harm and provides for continual reduction in the volumes of waste generated.

#### 4.10.2 Potential impacts

The project is not expected to generate any substantial waste streams. Minor quantities of general waste may be generated by transport operations, although these would be disposed of through the existing waste management facilities as outlined in the OEMP.

#### 4.10.3 Safeguards and management measures

The following control measures will be implemented to manage potential waste impacts associated with the project:

All working areas will be maintained in an orderly manner and kept free of rubbish.

### 4.11 Cumulative impacts

Cumulative impacts have the potential to arise from the interaction of individual elements within the project and the additive effects of other external projects.

As the potential impacts of the project are envisaged to be minor, short term and localised, it is expected that the project contribution to any cumulative environmental impact would be negligible, on both a local or regional scape, provided that the safeguards and mitigation measures identified in this EA are implemented.

The project is expected to commence mid-2018, depending on relevant approvals being obtained. This timing will not overlap with any other major demolition or remediation activities associated with the WWPS DDR project. There are no known future projects located in the areas surrounding the project.

#### 5 Conclusion

#### 5.1 Ecologically sustainable development

The four principles of ecologically sustainable development (ESD) are defined in Section 6(2) of the *Protection of the Environment Operations Act 1997* and Schedule 2 of the Environment and Planning Regulation 2000. In summary, the principles are:

- The precautionary principle if there are threats of serious or irreversible damage, a lack of full
  scientific uncertainty should not be used as a reason for postponing measures to prevent environmental
  degradation.
- Intergenerational equity the present generation should ensure that the health, diversity and productivity of the environment are maintained or enriched for the benefit of future generations.
- Conservation of biological diversity and ecological integrity the diversity of genes, species, populations and their communities, as well as the ecosystems and habitats they belong to, should be maintained or improved to ensure their survival.
- Improved valuation, pricing and incentive mechanisms environmental factors should be included in the valuation of assets and services.

Table 5-1 provides an assessment of how these principles apply to the project.

Table 5-1: Applicability of the project to the principles of ESD

Principle	How addressed by the project
The precautionary principle	The project is not expected to cause any serious or irreversible environmental damage that will result in impacts of a permanent nature.
	Impact assessments have been undertaken for this EA, to predict potential impacts associated with the proposed modification.
	<ul> <li>All measures considered to be necessary to safeguard environmental values have been identified and included in preparation of this assessment.</li> </ul>
Intergenerational equity	Environmental investigations have been undertaken for the proposed modification during the preparation of the EA and mitigation measures have been developed where necessary to minimise any potential impacts on the health, diversity and productivity of the environment and therefore maintain benefits for future generations.
	The project will contribute towards the ongoing employment of EnergyAustralia staff and contractors, and will provide benefits for local, regional and state wide communities through direct and indirect employment, expenditure and royalties.
	The proposed modification will not sterilise any land from future development and will provide for the long-term stabilisation of the SSCAD, reducing impacts on adjacent areas and enabling potential use of the site in the future.
Conservation of biological diversity and ecological integrity	The project is not expected to cause any impacts to any flora and fauna species, populations or communities.
Improved valuation, pricing and incentive mechanisms	The project will use existing equipment, infrastructure and staff associated and will therefore provide for efficient resource use.

#### 5.2 Conclusion

This EA has been prepared to support the modification of PA 07\_0005 under Section 75W of the EP&A Act for the importation of capping material to the former ash repository (specifically SSCAD and KVAR) used by WWPS. This will allow capping and rehabilitation of these sites to continue, as existing sources of capping material have been exhausted.

The project is considered to be consistent with all relevant legislation, including the EP&A Act and the LLEP as outlined in Section 3.

The assessment carried out as described in Chapter 4 establishes that the project is consistent with the objectives contained in the LLEP and is an appropriate form of development which has merit within the context of the locality.

Environmental impacts associated with the project are not expected to increase the impacts already associated with the existing site operations and are not expected to be noticeable to any nearby residents. EnergyAustralia has implemented an effective OEMP at the Wallerawang Ash Repository and this would effectively manage any environmental risks associated with the project. A project specific CEMP would be developed to provide explicit guidance around how this system would be implemented for the project as well as outline any management measures identified in this EA.

Overall, any negative impacts associated with the project are considered to be outweighed by the long-term benefits associated with stabilisation and rehabilitation of the SSCAD and KVAR, resulting in a safe, stable landform that effectively controls the potential for dust emissions from the SCADD and KVAR.

### 6 Glossary of terms

Term	Definition
AADT	Annual average daily traffic
ASS	Acid Sulfate Soils
AHIMS	Aboriginal Heritage Information Management System
BC Act	Biodiversity Conservation Act 2016 (NSW)
BAM	Biodiversity Assessment Method
BDAR	Biodiversity Development Assessment Report
CEMP	Construction Environmental Management Plan
CLM Act	Contaminated Land Management Act 1997
dBA	decibel "A" weighting
DCP	Development Control Plans
DDR	Decommissioning, demolition and rehabilitation
DP&E	NSW Department of Planning and Environment
EA	Environmental Assessment
EMP	Environmental Management Plan
EnergyAustralia	Energy Australia Pty Ltd
ENM	Excavated Natural Material
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
EPL	Environmental Protection Licence
ESD	Ecologically sustainable development
km	kilometres
KVAR	Kerosene Vale Ash Repository
LAeq 15 min	The time averaged C-weighted sound pressure level for a 15-minute time interval, as defined in AS1055.1.
LCC	Lithgow City Council
LEP	Local Environmental Plan
LLEP	Lithgow Local Environmental Plan
LGA	Local Government Area
NorBE	Neutral or Beneficial Effect on Water Quality Assessment Guidelines 2011
NT Act	Native Title Act, 1993
MNES	Matter of National Environmental Significance
NSW	New South Wales
OEH	Office of the Environment and Heritage
OEMP	Operational Environmental Management Plan
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
PASS	Potential Acid Sulfate Soils
PAD	Potentially archaeological deposits
RU1	Primary Production

Term	Definition
RU2	Rural Landscape
RU3	Rural Forestry
R5	Large Lot Residential
SCA	Sydney Catchment Authority (now WaterNSW)
SSCAD	Sawyers Swamp Creek Ash Dam
SP2 zone	Special purpose (Infrastructure)
SEPP	State Environmental Planning Policy
Sydney Water Act	Sydney Water Act 1994
TSC Act	Threatened Species Conservation Act 1995
VENM	Virgin Excavated Natural Material
WARR Act	Waste Avoidance and Resource Recovery Act 2001
WM Act	Water Management Act 2000
WSP	Water Sharing Plan
WWPS	Wallerawang Power Station

#### References 7

Aurecon 2013, Sawyers Swamp Creek Ash Dam – Diversion of Stormwater from Capped Areas of the Dam Review of Environmental Factors. Report prepared for Delta Electricity. April 2013.

Environmental Protection Licence (EPL) 766.

Environmental Planning and Assessment Act (EP&A Act) Schedule 6A and Section 75W.

Lithgow Local Environmental Plan 2014 (LLEP) Clause 1.2

Landcom 2004, Managing Urban Stormwater: Soils & Construction.

NSW Environment Protection Authority: Protection of the Environment Operations Act 1997

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

Sydney Catchment Authority (SCA) 2011a, Neutral or Beneficial Effect on Water Quality Assessment Guidelines 2011.

Sydney Catchment Authority (SCA) 2011b, Neutral or Beneficial Effect on Water Quality Assessment Tool 2011.

A

# EPBC Protected Matters Search Report

# Appendix A EPBC Protected Matters Search Report



### **EPBC Act Protected Matters Report**

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 07/11/17 16:58:36

Summary

**Details** 

Matters of NES

Other Matters Protected by the EPBC Act

Extra Information

Caveat

<u>Acknowledgements</u>



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates Buffer: 3.0Km



#### Summary

#### Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
<u>Listed Threatened Ecological Communities:</u>	3
Listed Threatened Species:	36
Listed Migratory Species:	12

#### Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

#### Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1	
Regional Forest Agreements:	None	
Invasive Species:	32	
Nationally Important Wetlands:	None	
Key Ecological Features (Marine)	None	

#### Details

#### Matters of National Environmental Significance

Listed Threatened Ecological Communities		[ Resource Information ]	
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.			
Name	Status	Type of Presence	
Natural Temperate Grassland of the South Eastern Highlands Upland Basalt Eucalypt Forests of the Sydney Basin	Critically Endangered Endangered	Community may occur within area Community may occur	
Bioregion White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	within area Community may occur within area	
Listed Threatened Species		[ Resource Information ]	
Name	Status	Type of Presence	
Birds	Glatus	Type of Fresence	
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	
Grantiella picta			
Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	
Lathamus discolor			
Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	
Numenius madagascariensis			
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	
Rostratula australis			
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	
Fish			
Macquaria australasica			
Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	
Prototroctes maraena			
Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area	
Frogs			
Heleioporus australiacus			
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat may occur within area	

Name	Status	Type of Presence
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
<u>Litoria littlejohni</u> Littlejohn's Tree Frog, Heath Frog [64733]	Vulnerable	Species or species habitat may occur within area
Insects		
Paralucia spinifera Bathurst Copper Butterfly, Purple Copper Butterfly, Bathurst Copper, Bathurst Copper Wing, Bathurst- Lithgow Copper, Purple Copper [26335] Mammals	Vulnerable	Species or species habitat likely to occur within area
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland populat Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	i <mark>on).</mark> Endangered	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	NSW and the ACT) Vulnerable	Species or species habitat known to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Acacia bynoeana Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area
Asterolasia elegans [56780]	Endangered	Species or species habitat may occur within area
Boronia deanei Deane's Boronia [8397]	Vulnerable	Species or species habitat likely to occur within area
<u>Cryptostylis hunteriana</u> Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Eucalyptus aggregata Black Gum [20890]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus pulverulenta Silver-leaved Mountain Gum, Silver-leaved Gum [21537]	Vulnerable	Species or species habitat known to occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
<u>Leucochrysum albicans var. tricolor</u> Hoary Sunray, Grassland Paper-daisy [56204]	Endangered	Species or species

Name	Status	Type of Presence
		habitat likely to occur within
		area
Pelargonium sp. Striatellum (G.W.Carr 10345)		
Omeo Stork's-bill [84065]	Endangered	Species or species habitat
** ***********************************		likely to occur within area
Philotheca ericifolia		
[64942]	Vulnerable	Species or species habitat
		may occur within area
Prasophyllum petilum		
Tarengo Leek Orchid [55144]	Endangered	Species or species habitat
		may occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269)		
a leek-orchid [81964]	Critically Endangered	Species or species habitat
		may occur within area
Pultenaea glabra		
Smooth Bush-pea, Swamp Bush-pea [11887]	Vulnerable	Species or species habitat
		likely to occur within area
		THE RESIDENCE OF THE PROPERTY
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat
		likely to occur within area
		Hadder Harden (▼ Hadder print generationer attende fatter buttaken på tilberek i attende staten bette./e
Xerochrysum palustre		
Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat
		likely to occur within area
Reptiles		
Eulamprus leuraensis		
Blue Mountains Water Skink [59199]	Endangered	Species or species habitat
		may occur within area
		,
A CONTRACTOR OF THE CONTRACTOR		
Hoplocephalus bungaroides		
Hoplocephalus bungaroides Broad-headed Snake [1182]	Vulnerable	Species or species habitat
Hoplocephalus bungaroides Broad-headed Snake [1182]	Vulnerable	Species or species habitat
	Vulnerable	Species or species habitat likely to occur within area
Broad-headed Snake [1182]	Vulnerable	likely to occur within area
	Vulnerable	
Broad-headed Snake [1182]  Listed Migratory Species		[ Resource Information ]
Broad-headed Snake [1182]  Listed Migratory Species  * Species is listed under a different scientific name on	the EPBC Act - Threatened	likely to occur within area  [ Resource Information ] I Species list.
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Broad-headed Snake [1182]  Listed Migratory Species  * Species is listed under a different scientific name on Name  Migratory Marine Birds	the EPBC Act - Threatened	likely to occur within area  [ Resource Information ] I Species list.
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Name Threatened Type of Presence

habitat may occur within

area

Sharp-tailed Sandpiper [874] Species or species habitat

may occur within area

Calidris ferruginea

Calidris acuminata

Curlew Sandpiper [856] Critically Endangered Species or species habitat

may occur within area

Calidris melanotos

Pectoral Sandpiper [858] Species or species habitat

may occur within area

Gallinago hardwickii

Latham's Snipe, Japanese Snipe [863] Species or species habitat

may occur within area

Numenius madagascariensis

Eastern Curlew, Far Eastern Curlew [847] Critically Endangered Species or species habitat

may occur within area

#### Other Matters Protected by the EPBC Act

Listed Marine Species	[ Resource Information ]

Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name Threatened Type of Presence

Birds

Actitis hypoleucos

Common Sandpiper [59309] Species or species habitat

may occur within area

Apus pacificus

Fork-tailed Swift [678] Species or species habitat

likely to occur within area

Ardea alba

Great Egret, White Egret [59541] Species or species habitat

likely to occur within area

Ardea ibis

Cattle Egret [59542] Species or species habitat

may occur within area

Calidris acuminata

Sharp-tailed Sandpiper [874] Species or species habitat

may occur within area

Calidris ferruginea

Curlew Sandpiper [856] Critically Endangered Species or species habitat

may occur within area

Calidris melanotos

Pectoral Sandpiper [858] Species or species habitat

may occur within area

Gallinago hardwickii

Latham's Snipe, Japanese Snipe [863] Species or species habitat

may occur within area

Haliaeetus leucogaster

White-bellied Sea-Eagle [943] Species or species habitat

likely to occur within area

Hirundapus caudacutus

White-throated Needletail [682] Species or species habitat

likely to occur

Name	Threatened	Type of Presence
Lathamus discolor		within area
Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat
Nambow Bee-catel [6/6]		may occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Species or species habitat likely to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

#### Extra Information

State and Territory Reserves	[ Resource Information ]
Name	State
Forestry Management Areas in Bathurst	NSW
Invasive Species	[ Resource Information ]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis		
Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos		
Mallard [974]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Carduelis carduelis	Giaius	Type of Freschied
European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus		
Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus		200 00 00 00 00 00
Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Plants		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum		
African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana		
Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma		
Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp.		
Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata		
Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate		
Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x	reichardtii	
Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Senecio madagascariensis		
Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area

#### Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

#### Coordinates

-33.38573 150.1079

#### Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- -Office of Environment and Heritage, New South Wales
- -Department of Environment and Primary Industries. Victoria
- -Department of Primary Industries, Parks, Water and Environment, Tasmania
- -Department of Environment, Water and Natural Resources, South Australia
- -Department of Land and Resource Management, Northern Territory
- -Department of Environmental and Heritage Protection, Queensland
- -Department of Parks and Wildlife, Western Australia
- -Environment and Planning Directorate, ACT
- -Birdlife Australia
- -Australian Bird and Bat Banding Scheme
- -Australian National Wildlife Collection
- -Natural history museums of Australia
- -Museum Victoria
- -Australian Museum
- -South Australian Museum
- -Queensland Museum
- -Online Zoological Collections of Australian Museums
- -Queensland Herbarium
- -National Herbarium of NSW
- -Royal Botanic Gardens and National Herbarium of Victoria
- -Tasmanian Herbarium
- -State Herbarium of South Australia
- -Northern Territory Herbarium
- -Western Australian Herbarium
- -Australian National Herbarium, Canberra
- -University of New England
- -Ocean Biogeographic Information System
- -Australian Government, Department of Defence
- Forestry Corporation, NSW
- -Geoscience Australia
- -CSIRO
- -Australian Tropical Herbarium, Cairns
- -eBird Australia
- -Australian Government Australian Antarctic Data Centre
- -Museum and Art Gallery of the Northern Territory
- -Australian Government National Environmental Science Program
- -Australian Institute of Marine Science
- -Reef Life Survey Australia
- -American Museum of Natural History
- -Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
- -Tasmanian Museum and Art Gallery, Hobart, Tasmania
- -Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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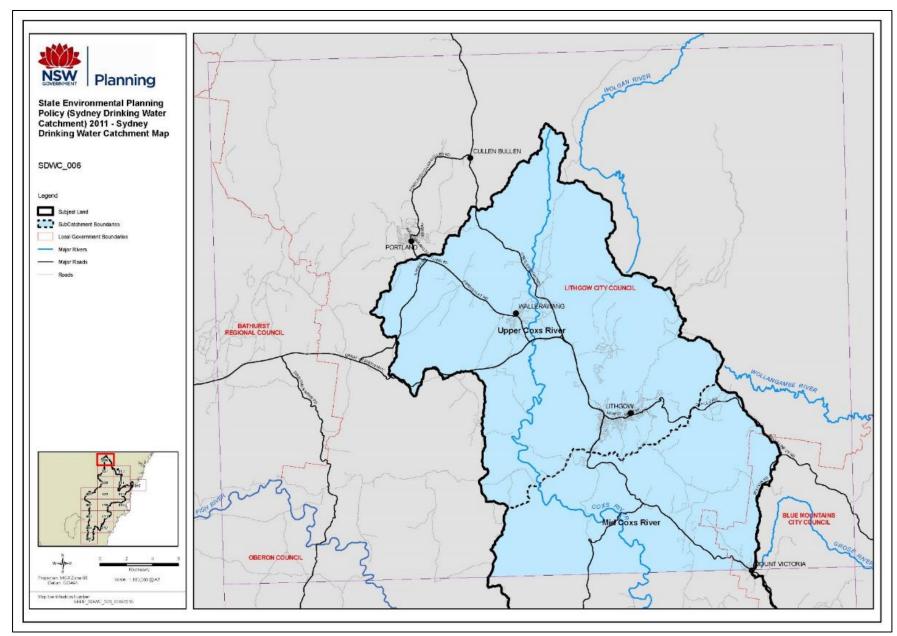
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B

# Neutral or Beneficial Effect Assessment

## Appendix B Neutral or Beneficial Effect Assessment

**Appendix B.1 – Sydney Drinking Water Catchment Map** 



#### Appendix B.2 – Neutral or Beneficial Effects on Water Quality Assessment

A qualitative NorBE assessment has been undertaken for the project (refer to Table B2).

Table B2 NorBE assessment for public authorities that will be assessment under Part 4 of the EP&A Act, as specified in Clause 12 of State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011

	NorBE Assessment – will there be a neutral or beneficial effect on water quality?				
(Assessment must consider surface and ground waters and must consider construction and operation stages)					
1.	Are there any identifiable potential impacts on water quality? What pollutants are likely? Major potential pollutants are sediments (fine and course), nitrogen, phosphorus, pathogens and hazardous chemicals and contaminates such as oil/fuel. During construction and/or post construction?	The main potential impacts to surface water quality would be during the proposed transport activities, when potential spills of waste materials or fuels could occur.  These risks would be mitigated through the implementation of the existing water management system established at WWPS and Wallerawang Ash Repository. This is discussed in more detail in Section 4.1.3 and Section 4.3.3 of this EA. As long as these measures are effectively implemented, it is expected that there would be no impacts to water quality resulting from the project.			
2.	For each pollutant list the <b>safeguards</b> needed to prevent or mitigate potential impacts on water quality (these may be SCA endorsed current recommended practices (CRPs) and/or equally effective other practices)?	Safeguards that would be implemented to mitigate potential impacts on water quality are identified in Section 4.1.3 and Section 4.3.3 of this EA.  The project will occur within existing ash repositories which have water management systems that will capture any runoff.  Run-off from the project area is captured and contained within the Wallerawang Ash Repository.  Measures implemented within the project area as part of normal operational of the Wallerawang Ash Repository include:  erosion and sediment controls based on the Blue Book (Landcom 2004 and DECC 2008b) which are endorsed by the SCA as "current recommended practice".  best practice handling and storage of fuel and oils (in bunded areas) as well as appropriate spill response procedures.			
3.	Will the safeguards be adequate for the time required? How will they need to be maintained?	The safeguards to be implemented are standard erosion and sediment controls and spill safeguards, and are considered to be adequate for the nature of the works and the time required on site.			
4.	Will all <b>impacts</b> on water quality be effectively <b>contained on the site</b> by the identified <b>safeguards</b> (above) and not reach any watercourse, waterbody or drainage depression?  Or will <b>impacts</b> on water quality be <b>transferred outside the site</b> for treatment?  How? Why?	All potential impacts from the project are expected to be contained at the SSCAD and KVAR.  The disposal of all liquids would be undertaken in accordance with the site's EPL.			

# NorBE Assessment – will there be a neutral or beneficial effect on water quality? (Assessment must consider surface and ground waters and must consider construction and operation stages)

5. Is it likely that a **neutral** or **beneficial** effect on water quality will occur? Why?

Given that the project would be confined to transport of materials to support existing rehabilitation operations, the project is not considered likely to cause any impacts to water quality.

Standard safeguards as outlined in Chapter 4 of this EA would be implemented to minimise the risk of any potential impacts to water quality.

Overall, the project will result in the stabilisation of the SSCAD and KVAR and this is expected to have a beneficial result on water quality in surrounding areas in the long-term.

#### Document prepared by

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