

An aerial photograph of a large-scale infrastructure project. In the foreground, a long, straight concrete bridge pier extends from the bottom center towards the middle of the frame. To the left of this pier, there is a complex arrangement of several smaller, angled concrete piers. In the background, a long, multi-lane bridge or viaduct spans across the upper half of the image, supported by numerous vertical pillars. The surrounding landscape is flat and appears to be under construction or recently cleared, with some scattered debris and construction equipment visible. The sky is a pale, uniform color.

SECTION 8

METROPOLITAN COAL PROJECT ENVIRONMENTAL ASSESSMENT

TABLE OF CONTENTS

8	ABBREVIATIONS, ACRONYMS AND GLOSSARY	8-1
8.1	ABBREVIATIONS AND ACRONYMS	8-1
8.2	GLOSSARY	8-4

8 ABBREVIATIONS, ACRONYMS AND GLOSSARY

8.1 ABBREVIATIONS AND ACRONYMS

AADT	annual average daily traffic	CO ₂ -e	carbon dioxide equivalent
ABS	Australian Bureau of Statistics	CRG	Community Reference Group
ACHMP	Aboriginal Cultural Heritage Management Plan	CSIRO	Commonwealth Scientific and Industrial Research Organisation
ADG Code	<i>Australian Code for the Transport of Dangerous Goods by Road and Rail</i>	dBA	A-weighted decibel
AEMR	Annual Environmental Management Report	dB	linear decibel
AGO	Australian Greenhouse Office	DEC	Department of Environment and Conservation
AHD	Australian Height Datum	DECC	Department of Environment and Climate Change
AHIMS	Aboriginal Heritage Information Management System	DEH	Department of the Environment and Heritage
Al	aluminium	DET	Department of Education and Training
ANZECC	Australian and New Zealand Environment and Conservation Council	DEUS	Department of Energy, Utilities and Sustainability
AS	Australian Standard	DEWHA	Department of the Environment, Water, Heritage and the Arts
AWA	Allan Watson Associates	DMR	Department of Mineral Resources
AWBM	Australian Water Balance Model	DoC	Department of Commerce
BACI	Before, After, Control, Impact	DoP	Department of Planning
BFRMP	Bush Fire Risk Management Plan	DPI	Department of Primary Industries
BHPB-IC	BHP Billiton - Illawarra Coal	DPI-MR	Department of Primary Industries – Mineral Resources
BoM	Bureau of Meteorology	Drinking Water Catchments REP	<i>Drinking Water Catchments Regional Environmental Plan No 1</i>
Ca	calcium	DSC	Dams Safety Committee
CCL	Consolidated Coal Lease	DTRS	Department of Transport and Regional Services
CH ₄	methane	DUAP	Department of Urban Affairs and Planning
CHPP	coal handling and preparation plant	DWE	Department of Water and Energy
Cl	chloride	EA	Environmental Assessment
CLM Act	<i>Contaminated Land Management Act, 1997</i>	EARs	Environmental Assessment Requirements
CMP	Conservation Management Plan	ECRTN	Environmental Criteria for Road Traffic Noise
CO ₂	carbon dioxide	EEC	Endangered Ecological Community
		e.g.	for example

EGI	Environmental Geochemistry International	HFC	hydrofluorocarbon
EMP	Environmental Monitoring Programme	HVAS	high volume air sampler
ENCM	Environmental Noise Control Manual	IBRA	Interim Biogeographic Regionalisation of Australia
EPA	Environment Protection Authority	i.e.	that is
EP&A Act	<i>Environmental Planning and Assessment Act, 1979</i>	Illawarra BFMC	Illawarra Bush Fire Management Committee
EP&A Regulation	<i>Environmental Planning and Assessment Regulation, 2000</i>	Illawarra REP	<i>Illawarra Regional Environmental Plan No 1</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act, 1999</i>	INP	Industrial Noise Policy
EPL	Environment Protection Licence	IPCC	Intergovernmental Panel on Climate Change
ERA	Environmental Risk Analysis	K	potassium
ESAP	Energy Savings Action Plan	kg	kilogram
ESCMP	Erosion and Sediment Control Plan	km	kilometre
ESD	Ecologically Sustainable Development	km ²	square kilometre
EWG	Executive Working Group	km/hr	kilometre per hour
F	fluoride	kV	kilovolt
Fe	iron	L _{Aeq}	equivalent continuous sound pressure level
FEL	front end loader	LGA	local government area
FFMP	Flora and Fauna Management Plan	m	metre
g/m ² /month	grams per square metre per month	M	million
GHG	greenhouse gas	m ³ /s	cubic metres per second
GRP	Gross Regional Product	Major Projects SEPP	<i>State Environmental Planning Policy (Major Projects) 2005</i>
Greater Metropolitan REF	<i>Greater Metropolitan Regional Environmental Plan No 2—Georges River Catchment</i>	MCP	Mine Closure Plan
Gt	Giga tonnes	Mg	magnesium
H ₂ SO ₄	sulphuric acid	mg/L	milligrams per litre
ha	hectare	Mining SEPP	<i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>
HCO ₃	bicarbonate	ML	megalitre
HCPL	Helensburgh Coal Pty Ltd	MLA	Mining Lease Application
Heggies	Heggies Pty Ltd	ML/day	megalitre per day
		mm	millimetre
		mm/s	millimetres per second

mm/m	millimetres per metre	PFC	perhydrofluorocarbon
Mn	manganese	pH	measure of acid/alkaline condition
MOP	Mining Operations Plan	PHA	Preliminary Hazard Analysis
MREMP	Mining, Rehabilitation and Environmental Management Process	PM ₁₀	particulate matter less than 10 microns in size
MSB	Mine Subsidence Board	PO ₄	phosphate
MSDS	Material Safety Data Sheet	POEO Act	<i>Protection of the Environment Operations Act, 1997</i>
MSEC	Mine Subsidence Engineering Consultants	PRP	Pollution Reduction Programme
Mt	million tonnes	PUR	polyurethane
Mtpa	million tonnes per annum	RMZ	Risk Management Zone
MW	megawatt	ROM	run-of-mine
N ₂ O	nitrous oxide	RoTAP	Rare or Threatened Australian Plants
Na	sodium	RTA	Roads and Traffic Authority
NAF	non-acid forming	SADA	SADA Services Pty Limited
NEPM	National Environment Protection Measure	SCA	Sydney Catchment Authority
NGA Factors	<i>National Greenhouse Accounts Factors</i>	SCI	Southern Coalfield Inquiry
NGER Act	<i>National Greenhouse and Energy Reporting Act, 2007</i>	SCPR	Southern Coalfield Panel Report
NGO	non-government organisation	SD	Statistical Division
NH ₄ -N	ammonium nitrogen	SEPP	State Environmental Planning Policy
NHMRC	National Health and Medical Research Council	SEPP 33	<i>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development</i>
NPWS	National Parks and Wildlife Service	SEPP 44	<i>State Environmental Planning Policy No. 44 - Koala Habitat Protection</i>
NSESD	<i>National Strategy for Ecologically Sustainable Development, 1992</i>	SEPP 55	<i>State Environmental Planning Policy No. 55 (Remediation of Land)</i>
NSW	New South Wales	SESHS	South East Sydney and Illawarra Area Health Service
NTU	nephelometric turbidity units	SF ₆	sulphur hexafluoride
OHS	Occupational Health and Safety	SLA	statistical local area
OTDR	Optical Time Domain Reflector	SMCMA	Sydney Metropolitan Catchment Management Authority
ou	odour units	SMP	Subsidence Management Plan
PAD	potential archaeological deposit	So ₄	sulphate
Peabody Pacific	Peabody Pacific Pty Limited		

SWCM Act	<i>Sydney Water Catchment Management Act, 1998</i>	8.2 GLOSSARY	
SWGMP	Surface Water and Groundwater Monitoring Programme	Alluvial	A general term for clay, silt, sand and gravel transported by water and deposited, on the bed of a flood plain, river or stream.
SWMP	Surface Water Management Plan		
t	tonne		
TAPM	The Air Pollution Model	Ambient noise	The all-encompassing noise associated with a given environment. It is the cumulative result of sounds from many sources, both near and far.
TARP	Trigger and Response Plan		
tpa	tonnes per annum		
tph	tonnes per hour		
TSC Act	<i>Threatened Species Conservation Act, 1995</i>	Amenity	Useful and enjoyable quality.
TSP	total suspended particulates	Aquatic	Living in or on water, or concerning water.
TWG	Technical Working Group		
UNFCC	United Nations Framework Convention on Climate Change	Aquifer	A sub-surface rock formation containing water in recoverable quantities.
V	volt		
viz.	namely		
WBCSD	World Business Council for Sustainable Development	Background	The condition (e.g. noise levels) already present in an area before the commencement of a specific activity (e.g. the Snapper Mine).
WCC	Wollongong City Council		
Wollongong LEP	<i>Wollongong Local Environmental Plan, 1990</i>	Backfilling	The refilling of mined areas.
Wollongong Contributions Plan	<i>Wollongong City Council Section 94A Development Contributions Plan</i>	Baseflow	The discharge of sub-surface water into a stream (i.e. groundwater seepages).
WRI	World Resources Institute	Baseline studies	Studies conducted over time to collect a body of information to define specific characteristics of an area (e.g. species occurrence or noise levels) prior to an activity (e.g. a mining operation).
WRMP	Waratah Rivulet Management Plan		
WSAP	Water Savings Action Plan	Biological diversity	The diversity of different species of plants, animals and micro-organisms, including the genes they contain, in the ecosystem of which they are part.
µm	micrometre		
µg/m ³	micrograms per cubic metre		
µS/cm	microSiemens per centimetre		
°C	degrees Celsius		

Bund	An earth, rock or concrete wall or mound constructed to restrict the inflow or outflow of liquids or noise.	Drift	A passage driven through country rock to intersect a vein or seam.
Catchment	The entire land area from which water (e.g. rainfall) drains to a specific watercourse or water body.	Dyke	A sheetlike vertical intrusion of igneous rock cutting across the strata of older rocks.
Coking coal	Coal with more than 15% volatile matter and 80% carbon, which can produce a crush resistant coke.	Ecologically Sustainable Development (ESD)	Development that improves the quality of life, in a way that maintains the ecological processes on which life depends.
Conveyor	Fixed mechanical apparatus consisting of a continuous moving belt used to transport coal from one place to another.	Ecosystem	An interacting system of animals, plants, other organisms and non-living parts of the environment.
Cross section	A two-dimensional diagram of an object presented as if the object had been cut along its length.	Electrical Conductivity (EC)	The ability of a substance (either solid, liquid or gas) to transmit electricity.
Crusher	That part of a processing plant where material is mechanically crushed into smaller pieces.	Emission	The discharge of a substance (e.g. dust) into the environment.
Cyclone	A conical vessel that uses centrifugal action to separate particulate matter of differing specific gravity.	Endemic	Native plant or animal restricted to a specific locality or geographic region.
dB	Decibel; unit used to express sound intensity.	Fault	Major fracture of the earth's crust caused by the relative movement of the rock masses on either side.
dBA	Decibels; A-weighted scale; unit used for most measurements of environmental noise; the scale is based upon typical responses of the human ear to sounds of different frequencies.	Floristics	(phytogeography) The study of the geography of plants, particularly their distribution at different taxonomic levels, i.e. family, genus and species. Patterns of distribution are interpreted in terms of climatic and anthropogenic influence, but above all in terms of earlier continental configurations and migration routes.
dB(L)	Linear decibels; measurable effect of event (e.g. blast) on air pressure including measurement of generated energy which is below the limit of human hearing.	Gateroads	An underground roadway (tunnel) that provides access to a working longwall panel for continuous mining.

Greenhouse gases	Gases with potential to cause climate change (e.g. methane, carbon dioxide and non-methane volatile organic compounds). Usually expressed in terms of global warming potential carbon dioxide equivalent.	Income	The amount of money or its equivalent received during a period of time in exchange for labour or services, from the sale of goods or property, or as profit from financial investments.
Groundwater	All waters occurring below the land surface; the upper surface of the soils saturated by groundwater in any particular area is called the water table.	Indirect Regional Output	The gross value of business turnover that arises in other enterprises through production-induced linkages (other businesses supplying inputs to production) and consumption-induced linkages (other businesses supplying goods and services demand by employees of the enterprise).
Habitat	The particular local environment occupied by an organism.	Infrastructure	The supporting installations and services that supply the needs of the Project.
Hardstand areas	Flat or gently sloping surface that has been engineered such that it is suitable for trafficking by vehicles and/or for the construction of structures on it.	Input-output analysis	The analysis of the flows of good among industries.
Herpetofauna	Collective term for reptiles and amphibians.	<i>In-situ</i>	A term used to distinguish material (e.g. soils, minerals, fossils, etc.) found in its original position of formation, deposition, or growth, as opposed to transported material.
Hopper	A container/bin used for holding broken ore.	Inter-generational equity	That the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
Hydraulic Conductivity	A measure of the rate at which water moves through a soil mass. It is the volume of water that moves within a unit of time under a unit hydraulic gradient through a unit cross-sectional area that is perpendicular to the direction of flow.	Intra-generational equity	The concept that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of their own generation.
<i>ibid.</i>	In the same place.	L_{Aeq}	The equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period.
Igneous	A rock which originated as molten magma from beneath the earth's surface and subsequently came to the surface as an extrusion, or remained below ground as an intrusion.		

Land capability	A method of land use assessment used to estimate the ability of the land to support a particular land use. Classification is based on an assessment of the land's biophysical characteristics.	Reagents	Chemicals used as part of an industrial/mining process.
Lithology	Characteristics of rock including mineral composition, structure, grain-size and arrangement.	Recharge	The addition of water to an aquifer, directly from the surface, indirectly from the unsaturated zone, or by discharge from overlying or underlying aquifer systems.
Macroinvertebrate	Larger invertebrates (animals without backbones) which can be studied without a microscope.	Rehabilitation	The restoration of a landscape and especially the vegetation following its disturbance.
Overburden	Overburden material overlying target minerals that must be removed prior to mining of the target minerals.	Relative humidity	The ratio of actual moisture in the air to the amount the air could hold if saturated, at a given temperature.
Permeability	The ability of a rock or soil to allow fluid to pass through it.	Remnant vegetation	Native vegetation remaining after widespread clearing has taken place.
pH	A measure of the degree of acidity or alkalinity of a solution; expressed numerically (logarithmically) on a scale of 1 to 14, on which 1 is most acid, 7 is neutral acid, and 14 is most basic (alkaline).	Riparian	Pertaining to, or situated on, the bank of a body of water, especially a watercourse such as a river.
Population	A group of individuals of one species in an area.	Run-of-mine (ROM)	Run-of-mine ore, stockpiled and used to feed the crusher.
Portal	The surface entry or exit point of an underground access passage.	Runoff	That portion of precipitation (rain, hail and snow) that flows across the ground surface as water.
Potable water	Water of quality suitable for human consumption.	Salinity	The total content of dissolved solids in groundwater, commonly expressed as parts of dissolved solids per million parts of solution, or milligrams of dissolved solids per litre of solution (mg/L); the significance of salinity depends on the nature as well as the amount of the dissolved solids.
Quartz	The most abundant and common mineral, consisting of crystalline silica (silicon dioxide, SiO ₂), crystallizing in the trigonal system.		

Seepage

Liquid or fluid such as water, seeping or flowing from beneath the ground to the surface.

Spontaneous Combustion

Self heating and ignition of a combustible material such as coal.

Stratigraphic

Stratigraphy – The branch of geology concerned with the origin, composition, sequence, and correlation of rock strata.

Substrate

An underlying layer (e.g. of sediment under water).

Temperature inversion

An atmosphere phenomenon in which air temperature increases with height over a particular interval.

Terrestrial

Living or growing on the land.

Thermal Coal

The general term for coal used in energy generation.

Total suspended particulates (TSP)

Particulate matter suspended in solution of air.

Total suspended solids (TSS)

A common measure used to determine suspended solids concentrations in a waterbody and expressed in terms of mass per unit of volume (e.g. milligrams per litre).

Value-added

The difference between the value of a firm's output and the cost of the inputs of raw materials, components or services brought in to produce that output.

Ventilation Shaft

An opening on the land surface down to the underground workings in which fresh air is introduced.