Prepared for
AGL Macquarie Pty Ltd
ABN: 18167859494

AECOM

Stage 1A Liddell Future Land Use and Enabling Works

Water Management Plan

19-Feb-2026

aecom.com

Delivering a better world

Stage 1A Liddell Future Land Use and Enabling Works

Water Management Plan

Client: AGL Macquarie Pty Ltd

ABN: 18167859494

Prepared by

19-Feb-2026

Job No.: 60711271

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 and ISO45001.

Quality Information

Document	Stage 1A Liddell Future Land Use and Enabling Works
Ref	60711271
Date	19-Feb-2026
Originator	Kelly Mulhearn / Greg Matthews
Checker/s	Kyle Wilson/Alison ONeill
Verifier/s	James Jentz

Revision History

Rev	Revision Date	Details	Approved	
			Name/Position	Signature
A	22-Sep-2023	Draft	Kelly Mulhearn Project Manager	
B	06-Mar-2025	Draft	Kelly Mulhearn Project Manager	
C	22-Apr-2025	Draft	Kelly Mulhearn Project Manager	
0	23-Apr-2025	For Submission	Kelly Mulhearn Project Manager	
1	26-May-2025	For Submission - EPA Comments addressed	Kelly Mulhearn Project Manager	
2	02-Jun-2025	For Submission - EPA Comments addressed	Kelly Mulhearn Project Manager	
3	01-Jul-2025	For Submission - DPHI Comments addressed	Kelly Mulhearn Project Manager	
4	03-Jul-2025	Final	Kelly Mulhearn Project Manager	
5	19-Feb-2026	Final Draft for AGL Review	Kelly Mulhearn Project Manager	

Table of Contents

Glossary

Term	Definition
ACM	Asbestos-Containing Materials
AGL	AGL Energy Limited
AGLM	AGL Macquarie Pty Limited
AHD	Australian Height Datum
Blue Book	Managing Urban Stormwater – Soils and Construction, Volume 1
BoM	Bureau of Meteorology
BPS	Bayswater Power Station
CLM	Contaminated Land Management
CPESC	Certified Professional in Erosion and Sediment Control
Cv	Volumetric runoff coefficient
CW	Circulating Water
DA	Development Application
DECC	NSW Department of Environment and Climate Change (now referred to as DCCEEW)
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
DEMP	Demolition Environmental Management Plan
DPHI	NSW Department of Planning, Housing and Infrastructure
DPIE	NSW Department of Planning, Industry and Environment (now referred to as DPHI)
DPE	NSW Department of Planning and Environment (now referred to as DPHI)
EC	Electrical Conductivity
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPL	Environment Protection Licence
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act
ERM	Environmental Resources Management
ESCP	Erosion and Sediment Control Plan
GHD	GHD Group Pty Ltd
LAD	Liddell Ash Dam
LEP	Local Environmental Plan

Term	Definition
LLRA	Lake Liddell Recreation Area
LPS	Liddell Power Station
HDPE	High-density Polyethylene
HRSTS	Hunter River Salinity Trading Scheme
HSE	Health Safety and Environment
HVGT	Hunter Valley Gas Turbines
IEA	Independent Environmental Audit
IECA	International Erosion Control Association
ISO	International Organization for Standardization
mm	Millimetres
mg	Milligram
NATA	National Association of Testing Authorities Australia
NEM	National Energy Market
NHMRC	National Health and Medical Research Council
NRAR	Natural Resources Access Regulator
NSW	New South Wales
pH	Potential of hydrogen. A measurement of the level of acid or alkali in a solution or substance
PIRMP	Pollution Incident Response Management Plan
POEO	Protection of the Environment Operations Act
PSI	Preliminary Site Investigation
RUSLE	Revised Universal Soil Loss Equation
SAQP	Sampling & Analysis Quality Plan
SMF	Synthetic Mineral Fibre
SP2	Specified zone for infrastructure in the Muswellbrook Local Environmental Plan,2009
SSD	State Significant Development
SWC	Saltwater Creek
SWMP	Site Waste Management Plan
TARP	Trigger Action Response Plan
the Consent	SSD-24937520
WIA	Water Impact Assessment

Term	Definition
WM Act	Water Management Act
WMP	Water Management Plan
WQME	Water Quality Monitoring Event

1.0 Introduction

1.1 Background Information

The Liddell Power Station (LPS) was commissioned in 1971 and prior to closure operated as part of an integrated power generation complex located near Muswellbrook, NSW. Refer to **Figure 1-1** for site locality.

The complex also incorporates the Bayswater Power Station (BPS) which was commissioned in 1985, Hunter Valley Gas Turbines (HVGTs) and a range of supporting water supply, water management, coal ash management, coal supply, power supply and control system infrastructure. AGL Energy Ltd (AGL) acquired these assets from the NSW Government in September 2014 and in doing so formed the subsidiary AGL Macquarie Pty Limited (AGLM).

LPS ceased power generation operation on 28 April 2023 as part of AGLs transition towards a low-carbon future and commitment to the closure of its coal fired power stations at the end of their operating life.

The works required to remove the power station infrastructure and make ready the site for proposed future land uses, the Liddell Future Land Use and Enabling Works (the Development),has been declared a State Significant Development (SSD) in accordance with Section 4.36(2) of the Environmental Planning and Assessment Act 1979 (EP&A Act) and clause 2.5; 2.19 and 23(5) of Schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP). The Development is permissible with development consent.

An Environmental Impact Statement (EIS) was prepared and submitted to the Department of Planning, Housing, and Infrastructure (DPHI), which was exhibited 4 May to 31 May 2023. A Response to Submissions (RtS) Report (GHD, 2024a) was prepared 19 February 2024 to address submissions received during exhibition. An Amendment Report (GHD, 2024b) was subsequently submitted 11 June 2024 addressing minor changes to the development including a reduction in the disturbance footprint to reduce biodiversity and cultural heritage impacts. The development was approved by DPHI on 31 January 2025, with Development Consent SSD 24937520 (the Consent) issued.

This Water Management Plan (WMP) has been prepared in accordance with Condition B15 of the Consent.

The EIS (GHD, 2023a), EIS Appendix J – Water Impact Assessment (GHD, 2023b), Response to Submission Report (GHD, 2024b) and Amendment Report (GHD, 2023a) by GHD has been relied upon to produce this WMP and sections of the report have been replicated to ensure consistency.

1.2 Development Description

The works associated with the Development will be undertaken in multiple stages as summarised below.

Stage 1 comprises the initial enabling works to facilitate demolition and materials management activities, including:

- Demolition of LPS and associated redundant infrastructure.
- Demolition of the HVGTs and any related transmission infrastructure.
- Construction and operation of an Asbestos Disposal Facility incorporating containment cells and an associated access road. Establishment and operation of a Borrow Pit for the extraction of up to 1.5 million m^3 of material, including construction of an access road and implementation of water management controls.
- Rock crushing to generate material for the Liddell Ash Dam (LAD) capping works.
- Rerouting of the existing dual water supply pipeline from the Tinkers Creek area along the existing ash pipeline corridor to the Liddell Ash Dam (LAD) to supply water for dust suppression and rehabilitation works.

1.2.1 Stage 1A

The basis of the scope for this Stage 1A WMP, represents a defined subset of the Stage 1 works and includes:

- Construction and operation of the Borrow Pit to supply capping and recontouring material for the LAD.
- Establishment of an Asbestos Disposal Facility, including construction and operation of containment cells for asbestos-related waste generated from the LPS demolition.
- Rerouting and commissioning of a dual high-density polyethylene (HDPE) water pipeline to support dust suppression and capping activities within the LAD operations area.

However, the Stage 1A WMP excludes the LAD, LPS, and HVGTs demolition activities. Demolition of the LPS and HVGTs will be is addressed separately under the Demolition Environmental Management Plan (DEMP), prepared in accordance with Conditions C16 and C21 of the Development Consent.

1.2.2 Stage 2

The basis of the scope for this Stage 2 WMP, focuses on the LAD ancillary works to manage surface water including works on the Skimmer Dam:

- Rehabilitation works on the Skimmer Dam
- Drainage Access Works – Liddell Ash Dam and Levee Reprofiling
- Surface Water and Seepage Management – West of the LAD, the Liddell Ash Levee (LAL) and Seepage Ponds 2-5
- Drainage Access, and Liner works supporting reprofiling of the LAL at Seepage Pond 1

1.2.3 Stage 3

Stage 3, which is still pending, will focus on final remediation, recontouring, and rehabilitation of the site, including:

- Remediation (as required), recontouring and final landform works.
- Preparation of the former LPS area for ongoing industrial use following completion of demolition activities.
- Additional material extraction from the borrow pit, up to a cumulative total of 13.5 million m3).
- Rehabilitation of the Borrow Pit and Asbestos Disposal Facility to achieve a safe, stable, and non-polluting landform.
- Ongoing works within the LAD area to maintain the structural integrity of the ash retention structures.

1.3 Scope of the WMP

The primary objective of the Stage 1A WMP is to provide a framework for the management of surface water, groundwater and related environmental risks including erosion and sediment control and the prevention of pollution for all operational land associated with the Stage 1 Part A Works. (Stage 1A Works). The Stage 1A works are as defined by the inclusions and exclusions below in **Section 1.3.1**.). WMP Scope 1 Part A Inclusions

Key elements of Stage 1 of the Development known as ‘Stage 1A Works’ relevant to this WMP include:

- Construction and operation of a Borrow Pit for the extraction of material to be used in capping activities and associated civil works to support the establishment of the final landform. This includes recontouring of selected areas across the site.

- Construction and operation of an Asbestos Disposal Facility, designed to accommodate asbestos-contaminated soil, asbestos-containing materials (ACM), synthetic mineral fibre (SMF), and minor volumes of other materials deemed suitable for disposal. These materials will be placed in Containment Cells specifically designed for asbestos-related waste generated from the demolition of the former LPS and associated infrastructure. The Asbestos Disposal Facility Containment Cells will be referred to as the Containment Cells herein.
- Rerouting of an existing dual water supply pipeline, comprising high-density polyethylene (HDPE), to establish a water supply connection from the Fresh Water Dam supply source to the LAD operations area. The rerouted pipelines will supply water for ongoing capping operations at the LAD including water used for dust suppression in accordance with environmental and operational requirements.

1.3.1 WMP Scope Exclusions

Elements of Stage 1 of the Development that have established plans for the management of surface water and ground water established under other management plans have been excluded from this WMP to avoid duplication. The elements excluded from this WMP are:

- The demolition of the LPS and associated redundant infrastructure.
- The demolition of the HVGTs and any associated transmission lines and infrastructure.
- Rehabilitation works associated with the LAD (rock crushing associated with Liddell Ash Dam capping works).

The scope covered by this WMP excludes the Liddell Ash Dam (LAD), LPS and HVGTs demolition. Demolition activities for the LPS and HVGTs do not form part of the scope of this WMP and will be considered within the Demolition Environmental Management Plan (DEMP) prepared in accordance with Condition C16 and C21 of the Consent.

This WMP documents the existing and proposed management measures implemented by AGLM to meet the obligations under the current Environment Protection Licence (EPL 2122), the Consent and other relevant approvals associated with the Development as relevant to the Stage 1A Works. Where relevant, this WMP has been developed to maintain consistency with current environmental sampling programs and the Environmental Management Strategy (EMS) for LPS.

This WMP supports the scope of works as defined by Stage1A Works of the Development. The area (i.e. disturbance area) is as demarcated in **Figure 1-1** for the Borrow Pit and Containment Cells for Asbestos and Synthetic Mineral Fibre (SMF) and **Figure 1-2** or the rerouting of the water supply pipeline.

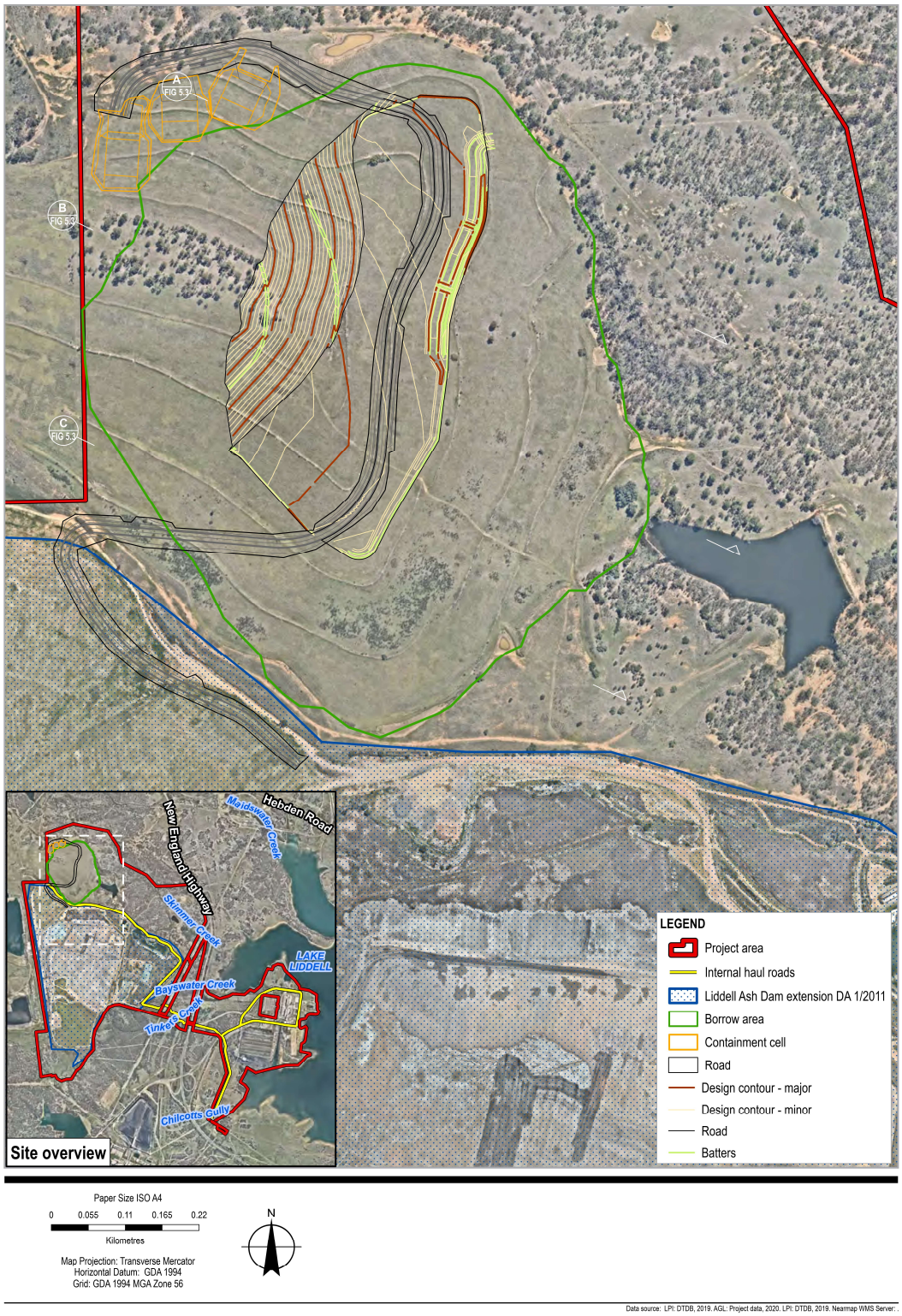


Figure 1-1 Borrow Pit and Containment Cells (GHD 2024a)

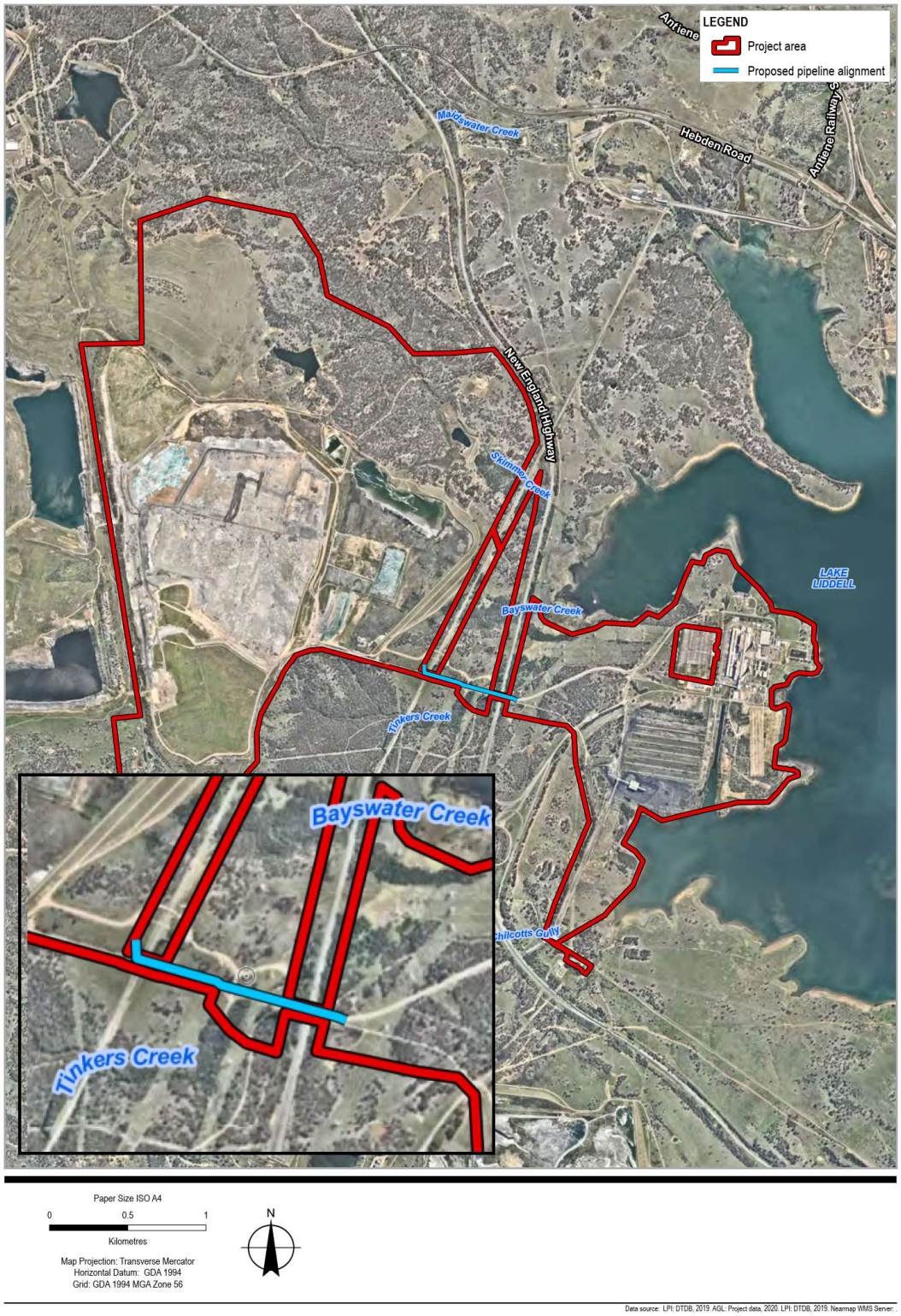


Figure 1-2 Pipeline (GHD, 2024a)

1.4 Stage 1A Works WMP Objectives

The primary objective of this WMP is to provide a framework for the management of surface water, groundwater, and related environmental risks including erosion and sediment control and the prevention of pollution, for all operational land associated with Stage 1A Works. The objectives are as follows:

- Ensure compliance with the relevant conditions of the Development Consent and EPL 2122.
- Detail all relevant statutory requirements associated with surface water, groundwater, erosion, and sedimentation management during the Stage 1A Works.
- Describe water management measures to be implemented during the Stage 1A Works.
- Detail the surface and groundwater monitoring program, any changes as needed or retain status quo.
- Describe circumstances in which the discharge of water from the Stage 1A Works area is to be authorised.
- Provide protocols for the investigation and response to exceedances of the adopted assessment criteria, should they occur.
- Detail reporting requirements for environmental incidents, community complaints, corrective actions, should they occur.
- Detail reporting requirements for compliance reporting as per Condition D2 of the Development Consent.
- Detail the process and schedule for ongoing review and refinement of the WMP.

1.5 Stage 1A Works Approval Requirements

This WMP has been prepared in accordance with condition B15 of the Consent and the applicable Statement of Commitments (SoC). The requirements of condition B15 of the Consent are provided in **Table 1** and the SoC are in **Table 2** with cross reference to the relevant sections within the WMP where the requirements have been addressed.

Construction works (other than demolition) will not commence until this WMP has been approved by the Planning Secretary in accordance with Consent Condition B16. Approval was granted 7/7/2025 by DPHI refer Appendix A.

Table 1 Requirements of Condition of Consent

Condition	Condition Requirement	Comment / WMP Section
Obligation to minimise harm to the environment		
A1	In addition to meeting the specific performance measures and criteria established under this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from preliminary works, construction or any other part of the development including, any rehabilitation required under this consent.	**7.0, 8.0, 9.0, 11.0, 12.0, 13.0**
Terms of consent		
A2	The Applicant may only carry out the development: a. in compliance with the conditions of this consent; b. in accordance with all written directions of the Planning Secretary; generally in accordance with the EIS; and c. generally in accordance with the EIS; and d. generally in accordance with the Development Layout in Appendix 1.	**10.0**, **Table 15**
A3	Consistent with the requirements in this consent, the Planning Secretary may make written directions in relation to: a. the content of any strategy, study, system, plan, program, review, audit, notification, report, or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and b. the implementation of any actions or measures contained in any such document referred to in condition A3(a).	
A4	The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition A2(c). In the event of any inconsistency, ambiguity, or conflict between any of the document/s listed in condition A2(c), the most recent document prevails to the extent of the inconsistency, ambiguity, or conflict.	

Condition	Condition Requirement	Comment / WMP Section
Evidence of consultation		
A16	Prior to submitting any environmental management document required by this consent to the Planning Secretary, any consultation with an identified party must be completed. Documentary evidence and a tabulated summary of the consultation must be submitted with the subject document via the Major Projects Website, including: a. dates of the consultation with the identified party, copies of the identified party's response, and a summary of the issues raised; b. the outcome of that consultation, including how the issues have been addressed in the subject document; and c. details of any disagreement remaining between the party consulted and the Applicant, and how the Applicant has addressed the matters not resolved.	**Appendix A** **15.0A, 13.1**
Part B – General Environmental Conditions		
B13	The development must comply with the performance measures in **Table 4**. **Table 4** – Water management performance measures **Water Management General** • Maintain separation between clean and dirty water management systems • Minimise the use of clean and potable water by the development • Maximise water recycling, reuse and sharing opportunities • Design, install, operate and maintain water management systems in a proper and efficient manner **Erosion and sediment control** • Design, install and maintain erosion and sediment controls generally in accordance with the guidance series Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book (Landcom, 2004), Volume 2A: Installation of Services (DECC, 2008), Volume 2C: Unsealed Roads (DECC,2008), Volume 2D: Main Road Construction (DECC, 2008) and Volume 2E: Mines and Quarries (DECC, 2008)	**5.2, 6.2, 7.0, 7.1, 7.2, 11.0, Table 13** **5.2, 7.0, 11.0**

Condition	Condition Requirement	Comment / WMP Section
	• Design, install and maintain sediment dams generally in accordance with the guidance series Managing Urban stormwater: Soils and Construction – Volume 1 (Landcom, 2004) and 2E Mines and Quarries (DECC, 2008).	**5.2, 7.0, 11.0**
	Water diversion and storage • Maximise the diversion of clean water around disturbed areas within the approved development area, except where clean water is captured for use by the development • Design, install and maintain water storage infrastructure to avoid unlicensed or uncontrolled discharge of water	**7.0, 11.0**
	Chemical and hydrocarbon storage • Chemical and hydrocarbon products stored in bunded areas in accordance with the relevant Australian Standard	NA
	Aquatic and riparian ecosystems • Negligible environmental consequences beyond those predicted in the documents listed in condition A2(c)	
	Alluvial Aquifers • Negligible impacts to the alluvial aquifer as a result of the Development, beyond those predicted in the document/s listed in condition A2(c), including: - Negligible change in groundwater levels - Negligible change in groundwater quality - Negligible impact to other groundwater users	**11.0**
	Works on waterfront land • All works within waterfront land is managed in accordance with the guidance series for Controlled Activities on Waterfront Land (DPE, 2022) • Minimise disturbance of banks and implement appropriate stabilisation mitigation	**9.2, 11.0**
B14	The performance measures in Table 3 apply to the entire approved development area, including all landforms constructed under previous development consents. However, these performance measures do not require any additional earthmoving works to be undertaken for landforms that have been approved and constructed under previous consents, except where those earthworks are required for the establishment of a stable and non-polluting landform.	**5.0**

Condition	Condition Requirement	Comment / WMP Section
B15	A water management plan must be prepared for the development, excluding the Liddell Ash Dam and demolition activities considered by the demolition environmental management plan. The plan must:	
	a. be submitted to the Planning Secretary for approval prior to the commencement of construction;	**15.0A**
	b. be prepared:	**15.0A**
	i. by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary; and	
	ii. in consultation with the NSW EPA;	
	c. include a development water balance;	**6.0**
	d. include a review of the water licensing strategy for the development in consultation with DCCEEW Water Group;	**2.1.3, 6.4**
	e. ensure all works carried out as part of the development comply with the performance measures detailed in Table 3;	See item B13 of this table
	f. address the risks identified in the environmental risk assessment undertaken in accordance with condition B1;	**1.6, 7.0 - 11.0**
	g. support the implementation of the relevant mitigation measures identified in the documents listed in condition A2(c);	**7.0 - 11.0, Table 15**
	h. include a monitoring and evaluation program to:	**5.3.2, 8.0, 9.0, 11.0**
	i. record surface water inflows and outflows from the approved development area including controlled and uncontrolled discharges;	
	ii. assess compliance with the relevant performance measures and conditions of this consent; and	
	iii. the achievement of the surface water and groundwater objectives;	
	i. include a TARP to respond to any exceedances of the relevant performance measures, objectives or performance indicators including reporting requirements and repair, mitigation and/or offsetting of any adverse surface water or groundwater impacts; and	**11.0 and Table 15**
	j. include processes to review the plan, including responding to non-compliances, incidents or complaints.	**13.0**
B16	Construction other than demolition must not commence until the water management plan is approved by the Planning Secretary.	**1.5, 13.1**
B17	The water management plan, as approved by the Planning Secretary, must be implemented for the development.	**13.1**

Condition	Condition Requirement	Comment / WMP Section
Part D – Reporting and Auditing		
Auditing		
D1	Independent Environmental Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020), or its latest version published on the Department's website.	**13.5.1**
Compliance reporting		
D2	By the end of March each year, after the date of commencement of development under this consent, or other timeframe agreed by the Planning Secretary, the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the Development.	**13.5.2**
D3	Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department of Planning, Industry and Environment, 2020) or its latest version published on the Department's website and must also: a. identify any trends in the monitoring data over the life of the Development; b. identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and c. describe what measures will be implemented over the next year to improve the environmental performance of the Development.	**13.5.2**
Compliance		
Non-compliance notification		
D4	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must: a. be in writing; b. submitted via the NSW planning portal (Major Projects); c. identify the Development (including the Development application number and name); d. set out the condition of this consent that the Development is non-compliant with;	**13.4**
	a. why it does not comply;	
	b. the reasons for the non-compliance (if known); and	
	c. what actions have been undertaken, or will be undertaken; and when, to address the non-compliance.	

Condition	Condition Requirement	Comment / WMP Section
	Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	
Incident notification		
D5	The Applicant must notify the Department within 24 hours of becoming aware of an incident. The notification must be made via the NSW planning portal (Major Projects) and address details of the incident including: a. date, time and location; b. a brief description of what occurred and why it has been classified as an incident; c. a description of what immediate steps were taken in relation to the incident; and d. identifying a contact person for further communication regarding the incident.	**13.4**
Revision of environmental management documents		
D7	Within three months of the following events: a. the submission of an incident report under conditions D5 or D6; b. the submission of a compliance report under condition D3; c. the submission of an Independent Environmental Audit under condition D1; d. the approval of any modification of the conditions of this consent (unless the conditions require otherwise); or e. notification of a change in the Development phase under condition A10; The suitability of the existing environmental management documents required under this consent must be reviewed. If the review concludes an update to an environmental management document is required, or to comply with a directive, the relevant environmental management document must be revised and submitted to the Planning Secretary for approval within three months of the review. *Note: This is to ensure environmental management documents are updated regularly and to incorporate any recommended measures to improve the environmental performance of the Development.*	**14.0**

Table 2 Statement of Commitments (GHD, 2024)

Condition	Condition Requirement	Comment / WMP Section
Erosion and Sediment SC1	Prior to construction/demolition commencing, a site-specific Soil and Water Management Plan (SWMP) will be prepared. The plan will include arrangements for managing wet weather events, specific controls, traffic controls and environmental inspection requirements. The SWMP will include an Erosion and Sediment Control Plan (ESCP) which will be prepared in accordance with the Blue Book -Managing Urban Stormwater: Soils and Construction Volume 1 (4th edition), (Landcom, 2004) and Volume 2 (DECC, 2008). Preparation of an Erosion and Sediment Control Plan (ESCP) as part of a SWMP will be in accordance with Blue Book - Managing Urban Stormwater: Soils and Construction (Volume 1 (4th edition) (Landcom, 2004) and Volume 2 (DECC, 2008). The ESCP must include the following: • All erosion and sediment control measures will be established before ground disturbance work commences and will remain in place until all surfaces have been fully restored and/or stabilised. • The process for stabilisation and progressive revegetation of all disturbed area inclusive of LPS, HVGTs, Borrow Pit area and the landfill area. • Include a maintenance and inspection program and checklist including: • Conditions that would trigger watering of exposed and revegetated areas. • Requirements for maintenance of revegetated areas. • Maintenance of erosion and sediment controls including clean out before 30% capacity remaining. • Progressive revegetation/stabilisation methodology for exposed areas that are susceptible to wind generated dust particles. Where vegetation is not yet possible, dust suppression by watering will occur. • Provide clean water diversions around disturbed areas. • Provide procedures for how any sediment laden water will be treated prior to leaving the project area. The ESCP must be prepared by appropriately qualified specialists (e.g. completed an International Erosion Control Association (IECA) endorsed course or passed the examination for Certified Professional in Erosion and Sediment Control (CPESC)) as a coordinated sub plan to the SWMP	**5.3.2, 5.3.3, 7.0, 7.1, 7.2, 12.3**
Erosion and Sediment SC2	Erosion and sediment controls will be established prior to works commencing.	**7.1**
Erosion and sediment	Temporary stabilisation of working areas as necessary in periods of inactivity which potentially may occur between stages.	**7.0**

Condition	Condition Requirement	Comment / WMP Section
SC3	Borrow area design considers a staged approach and a range of smaller volumes to ensure a stable landform can be achieved if a smaller volume is required	
Erosion and sediment SC4	A Rehabilitation Management Plan for the Borrow Pit and landfill areas will be developed by AGLM.	AGLM
Erosion and sediment SC9	A spill management plan will be prepared for demolition activities as part of the PEMS. The spill management plan will detail the requirements for management of potential spills and leaks from operational equipment during demolition activities.	AGLM Pollution Incident Response Management Plan PIRMP and DEMP.
PEMS - Erosion and sediment control plans WQ1	A Project Environmental Management Strategy (PEMS), inclusive of a site water management plan, will be prepared for the project with measures to mitigate the impact of soil and water associated with construction works.	**7.0, 8.2**
PEMS - Erosion and sediment control plans WQ2	The PEMS will include the following Erosion and Sediment Control measures: • Project erosion and sediment control will be developed in accordance with the erosion and sediment control framework. Any activities that result in ground disturbance associated with the project will have a detailed Erosion and Sediment Control Plan (ESCP) prepared based on specific construction methodologies. The objective of the ESCP is to ensure that appropriate structures and programs of work are in place to: - Identify activities that could cause erosion and generate sediment. - Describe the location, function and capacity of erosion and sediment control structures required to minimise soil erosion and the potential for transport of sediment downstream. - Ensure erosion and sediment control structures are appropriately maintained. - Minimise areas of disturbance and ensure that progressive revegetation/stabilisation is undertaken. - Fulfill the statutory conditions of the project approval. • Consider industry standard practice, specifically: - Landcom 2004. Managing Urban Stormwater – Soils and Construction, Volume 1, 4th Edition. • Department of Environment and Climate Change (DECC) 2008. Managing Urban Stormwater – Soils and Construction, Volume 2E – Mines and Quarries.	**2.2.3, 7.1, 7.2** **Table 1**

Condition	Condition Requirement	Comment / WMP Section
PEMS - Stockpile management WQ3	The PEMS will include the following stockpile management measures: • Measures to manage stockpiles including locations, separation of waste types, sediment controls and stabilisation. • Minimising the quantity, lifespan and size of stockpiles. • Stabilising stockpiles, establishing appropriate sediment controls and suppressing dust as required. • Locating stockpiles away from drainage lines, waterways and areas where they may be susceptible to wind erosion.	**7.1, 7.2**
PEMS - Sediment basin management WQ4	The PEMS will include processes for dewatering of water that has accumulated on site and from sediment basins, including relevant discharge criteria	**11.0**
PEMS – Monitoring WQ5	The PEMS will include details of surface water and groundwater quality monitoring to be undertaken prior to, throughout, and following construction.	**8.2, 8.3**
PEMS - Exclusion zones WQ6	The PEMS will include details of exclusion zones that will be established for construction plant and equipment. The PEMS will include details of spill management measures to be implemented including: • Measures to manage accidental spills including the requirement to maintain materials such as spill kits. • Procedures for spill incident management. Containment of spills and leaks shall be in accordance with EPA's guidelines section 'Bunding and Spill Management'. • Provision of preventative controls for spills such as alarm systems, regular training and routine inspection of potential contamination sources. – Measures to clean up any contamination sources and where possible removal of the contamination source related to project spills.	**7.2** **7.0, 7.1, 7.2**
Water reuse strategy WQ8	The current water reuse strategy will be amended for both construction and operational phases. This strategy will be updated during the detailed design stage and implemented throughout the project and will outline the construction and operational water requirements. Alternative water supply options to potable water will be investigated, with the aim of reusing water using recycled water where feasible. No additional water is deemed to be required for the project outside of AGLM's Water License Package.	**3.1, 5.2**
Riparian and waterfront land WQ9	Works within waterfront land will be managed in accordance with the relevant guideline as deemed appropriate	**2.2.4, 9.2, Table 15**

<table>
<tr><th>Condition</th><th>Condition Requirement</th><th>Comment / WMP Section</th></tr>
<tr><td>Riparian and waterfront land
WQ10</td><td>Implementing practices to minimise disturbance of banks and undertaken bank stabilisation.</td><td>2.2.4, 9.2, Table 15</td></tr>
<tr><td>Riparian and waterfront land
WQ11</td><td>Appropriate drainage features will be incorporated into the design of the project elements by a suitably qualified and experienced professional. All project elements will be designed and constructed in accordance with relevant guidelines.</td><td>Table 15</td></tr>
<tr><td>Groundwater
WQ12</td><td>Unexpected interactions with groundwater will include the following actions:</td><td>Table 15</td></tr>
<tr><td></td><td>• Works will cease in the immediate area and the date, location, level and depth of groundwater interception will be recorded.</td><td></td></tr>
<tr><td></td><td>• Unexpected interactions will be notified to the project hydrogeologist.</td><td></td></tr>
<tr><td></td><td>• The project hydrogeologist will review and determine an appropriate course of action in consultation with AGL Staff.</td><td></td></tr>
<tr><td></td><td>• The project hydrogeologist will review and determine an appropriate course of action in consultation with AGL Staff.</td><td></td></tr>
<tr><td>Leachate
WQ13</td><td>Detailed design of the Landfill will be in accordance with Environmental Guidelines: Solid Waste Landfills EPA (2016) which will be adhered to for operation of the Landfill pertaining to leachate management, water management and monitoring, and cover/capping requirements.</td><td>Table 15</td></tr>
<tr><td>Surface Water Monitoring
WQ14</td><td>Dewatering procedures from construction sediment basins will be outlined in the PEMS and will include (but not be limited to):
• Routine and pre-discharge sampling and analysis to confirm absence of contaminants exceeding applicable criteria.
• Pre-discharge confirmation of compliance with water quality performance criteria able to be analysed in real time.
• The methodology for dewatering including use of amphibian friendly flocculants and pH balancing agents as required.</td><td>Table 15</td></tr>
<tr><td>Surface Water Monitoring
WQ15</td><td>Discharges from the project during construction and operation will occur in accordance with EPL 2122 and project approval along with the required water quality monitoring as specified below.
<table>
<tr><th>Parameter</th><th>Units</th><th>Guideline value</th><th>Comments (reference)</th></tr>
<tr><td>pH</td><td>pH units</td><td>6.5-9.0</td><td>EPL 2122 water concentration limit</td></tr>
<tr><td>Oil and Grease</td><td>mg/L</td><td>10</td><td>EPL 2122 water concentration limit</td></tr>
</table></td><td>Table 11, 8.2, 13.4, Table 16</td></tr>
</table>

Condition	Condition Requirement	Comment / WMP Section
	It is recommended that monitoring is retained at existing EPL 2122 surface water monitoring locations for the activities associated with the project:	
	• SW28, to monitor potential sedimentation impacts of Borrow Pit area. • SW30, to monitor surface water discharge quality from the LPS main infrastructure area. • SW32, to monitor surface water discharge quality from the LPS Infrastructure Area reporting to the outfall canal coal stockpile area. • SW42, to monitor surface water quality of Lake Liddell as a reference point.	
	Where monitoring indicates a water quality exceedance in discharges off site, an investigation will be undertaken and a notification to the EPA shall be undertaken in accordance with the EPL. Monitoring will continue in accordance with the EPL until the site is suitably stabilised to an acceptable level as agreed with DPE and EPA.	

1.6 Related Reports and Plans

The Stage 1A WMP forms a component of the environmental management framework established at LPS. This includes the ongoing operation of AGLMs existing Environmental Management System (the System) in place at LPS. The existing System is consistent with the international environment management standard ISO 14001:2015.

An EMS (Synergy Environmental, 2025) has been prepared for the Development to provide an environmental framework to manage the impacts of the Development. As part of the EMS an Environmental Risk Assessment (ERA) was completed. An ERA is required to identify aspects and impacts, and assess the risk of development activities with the potential to cause environmental impact and harm. The risk events drawn from the EMS that pertain to the Stage 1A WMP area as depicted in the EMS include the following and are summarised in **Table 3**:

- Unauthorised discharge to surface water
- Unauthorised discharge to groundwater
- Authorised discharges exceed discharge criteria (technical non-conformance)

Table 3 ERA - Relevant to Water Management Plan

Risk Event	Controls	WMP Section
Unauthorised discharge to surface water	Removing unnecessary chemicals and hydrocarbons from site (to de-risk); secondary control basins (i.e. Oil and Grit Trap) to capture spill material before release to environment; Ash Dam seepage - pollution reduction study on the licence reducing requirement for regulatory involvement; EPL 2122 - authorised discharges in line with approved EPL criteria. Appropriate sizing, inspections and maintenance of sediment basins. Appropriate storage and bunding of chemicals and hydrocarbons in accordance with substance SDS Management plans and procedures (e.g. Erosion and sediment control plans).	**Table 13, 7.0, 8.0, 9.0, 10.0, 11.0**
Unauthorised discharge to ground water	Removing unnecessary chemicals and hydrocarbons from site (to de-risk); secondary control basins (i.e. Oil and Grit Trap) to capture spill material before release to environment; Ash Dam seepage - pollution reduction study on the licence reducing requirement for regulatory involvement; EPL 2122 - authorised discharges in line with approved EPL criteria. Appropriate sizing, inspections and maintenance of sediment basins. Appropriate storage and bunding of chemicals and hydrocarbons in accordance with substance SDS Management plans and procedures (e.g. Erosion and sediment control plans).	**Table 13, 7.0, 8.0, 9.0, 10.0, 11.0**
Authorised discharges exceed discharge criteria (technical non-conformance)	Chemical/hydrocarbon storage will be compliant with the requirements of the site and product SDS; removing unnecessary chemicals and hydrocarbons from site (to de-risk). Approvals with discharge limits and criteria. Monitoring and reporting.	**Table 13**

Note: The Ash Dam does not form part of Stage 1A works.

This WMP for Stage 1A should be read in conjunction with the following documents (or the version in force at the time of reading):

- AGLM corporate policies and procedures.
- LPS EMS (Synergy Environmental, 2025).
- LPS Demolition Environmental Management Plan (CMA, 2025).

AGLM Pollution Incident Response Management Plan (AGLM, 2024).

2.0 Legislation and Guidelines

2.1 NSW Legislation

2.1.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) provides the framework for development assessment in NSW. The EP&A Act and its regulations include provisions to ensure that the potential environmental impacts of a development are considered in the decision-making process before approval is granted.

The Liddell Future Land Use and Enabling Works Project was declared to be SSD and approval (SSD 24937520) was granted on 31 January 2025. AGLM will undertake the Stage 1A Works in accordance with the relevant conditions of the Development Consent.

2.1.2 Protection of the Environment Operations Act 1997

The Protection of the Environment Operations Act 1997 (POEO Act) is administered by the Environment Protection Authority (EPA) and prohibits the pollution of water, land or air. Under the POEO Act, there is a legal responsibility to ensure that runoff leaving a site meets an agreed water quality standard, including water being discharged from sedimentation ponds after storm events. Part 5.7 of the POEO Act includes a duty to notify relevant authorities of pollution incidents.

The POEO Act provides for the licensing of specific activities. AGLM currently holds EPL 2122 for LPS.

2.1.3 Water Act 1912 and Water Management Act 2000

The Water Act 1912 and the Water Management Act 2000 (WM Act) are the two key pieces of legislation for the management of water in NSW and contain provisions for the licensing of water access and use.

As the Development is a SSD, water use approvals under section 89, water management works approvals under section 90, or activity approvals (excluding aquifer interference approvals) under section 91 of the Water Management will not be required for the Stage 1A Works[1]. All water usage for Stage 1 will be obtained from the site sediment basins with a focus on reusing as much water as possible, therefore no additional water licences or approvals are required for Stage 1 of the works.

The water licences held by AGLM are associated with the entire site, including BPS which will continue to operate until its planned end of life between 2030 and 2033. No change to the current water licensing strategy is required for Stage 1A Works. Further information on the water licences timing and strategy will be provided with the management plans for Stage 2 of the Development as agreed with DPHI.

2.1.4 Contaminated Land Management Act 1997

Section 6(c) of the Contaminated Land Management (CLM) Act requires landowners and occupiers to take reasonable steps to prevent land contamination where they either know or ought to reasonably know that contamination would occur. Section 60 of the CLM Act required landowners to report to the EPA any contamination that represents a significant risk of harm to human health or the environment.

[1] Pursuant to Section 4.41(1)(g) of the EP&A Act

The LPS is listed on the EPA list of notified sites, however the EPA has determined that regulation under the CLM Act is not required at this point. During preparation of the EIS for the Development, three major environmental investigations were completed, including a Preliminary Site Investigation (PSI), a main Stage 2 Detailed Site Investigation on the accessible areas (DSI) and a supplementary Stage 2 Water Quality Monitoring Event (WQME).

Management measures recommended in the EIS, that were derived from these environmental investigations, are to be implemented for the Development to manage potential risks related to contamination. Additionally, activities associated with the fulfillment of Part C of the Consent conditions relevant to contamination, will be ongoing separate to this WMP.

2.2 Policies and Guidelines

2.2.1 NSW Water Quality and River Flow Objectives (DECCW, 2006)

The NSW Water Quality and River Flow Objectives (Department of Environment, Climate Change and Water (DECCW), 2006) are a set of high-level water quality objectives which entail the agreed environmental values and long-term goals for NSW's surface waters. They include the community values and use for a range of water bodies and a range of water quality indicators to assess whether the current condition of the waterway supports these values and uses. During the Development of the EI, waterways within the Development area were classified as 'uncontrolled streams' (GHD, 2023b). The following environmental values are nominated within the National Water Quality Management Strategy Volume 1 Australia and New Zealand Guidelines for Fresh and Marine Water Quality (October 2000) :

- Aquatic ecosystems.
- Primary industries (irrigation and general water uses, stock drinking water, aquaculture and human consumption of aquatic foods)
- Recreation and aesthetics
- Drinking water
- Industrial water (no water quality guidelines are provided for this environmental value)
- Cultural and spiritual values (no water quality guidelines are provided for this environmental value).

2.2.2 Guidelines for Managing Risks in Recreational Waters (NHMRC, 2008)

The Guidelines for Managing Risks in Recreational Waters (NHMRC, 2008) aim to protect human health from threats posed by the recreational use of coastal, estuarine and fresh waters. The guidelines provide recommended values for indicators that may pose a risk to human health. The indicators are relevant for waterways that are being used for recreation purposes and can potentially be polluted.

Lake Liddell is permanently closed to public access, and AGLM take appropriate measures to exclude unauthorised use. Recreational exposure scenarios are deemed not applicable for Stage 1 works.

2.2.3 Managing Urban Stormwater: Soils and Construction (Landcom, 2004)

The Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004) (also referred to as the Blue Book) outlines the basic principles for stormwater management during construction. It guides design and construction of sediment and erosion control measures to protect downstream water quality, thereby improving the health, ecology and amenity of rivers and streams.

2.2.4 Guidelines for Controlled Activities (NRAR)

Natural Resources Access Regulator (NRAR) has published several guidelines on types of controlled activities and the protection of waterfront land. Waterfront land includes the bed and bank of a river, lake or estuary, and all land within 40 m of the highest riverbank, lake or estuary. The guidelines provide recommendations for the design and construction of instream works and indicate the width of riparian zones to be considered.

The Development does not require any controlled activity approvals, given it is a SSD.

3.0 Roles and Responsibilities

The roles and responsibilities relevant to AGLM and their appointed Construction Contractor involved in the implementation of this WMP are outlined in the subsequent sections.

3.1 AGLM

The roles and responsibilities of key AGLM personnel in the Stage 1A Works is provided in **Table 4**.

Table 4 AGLM - Roles and Responsibilities

Roles	Responsibilities
General Manager Transition	• Managerial authority and responsibility for all water management practices within Stage 1 works. • Management of Liddell Transition Team. • Regular review of environmental performance against the management actions identified in this WMP including the establishment of environmental objectives and targets. • Monitoring and improving environmental performance. • Timely renewal of operating licences. • Compliance with all licence conditions and regulatory reporting requirements. • Manage maintenance of plant and equipment.
Site Manager – Liddell Transition	• Provide adequate resources for the implementation of this WMP. • Ensure all appropriate approvals have been obtained. • Ensuring that all staff and contractors under their control are aware of environmental compliance issues and environmental controls listed in the WMP. • Oversee project implementation. • Order stop-work for any activity that may cause environmental harm. • Management of site-based Liddell Transition Team. • Manage maintenance of plant and equipment.
Civil Project Manager – Liddell Transition	• Provide adequate resources for the implementation of this WMP. • Ensure all appropriate approvals have been obtained. • Ensuring that all staff and contractors under their control are aware of environmental compliance issues and environmental controls listed in the WMP. • Oversee project implementation. • Order stop-work for any activity that may cause environmental harm. • Manage maintenance of plant and equipment. • Ensure effective internal and external communication programs are in place. • Engage competent and licensed sub-contractors, as required by legislation, to undertake works. • Accountable for the effectiveness, suitability, and adequacy of the contractor Environmental Management System. • Carry out all work in a safe and efficient manner and report all hazards, incidents and accidents promptly. • Monitor performance trends and implement corrective actions.

Roles	Responsibilities
Senior Environment Manager Transition and Construction	• Manage environmental approvals process. • Ensure overall implementation and maintenance of this WMP. • Ensure works are conducted in accordance with regulatory requirements. • Overseeing the tracking of reports on environmental performance against the management actions identified in this WMP. • Overseeing review of monthly reports provided by Construction Contractor. • Notify incidents or non-compliances to relevant authorities as per **Section 13.0** • Communicating environmental performance. • Assisting in the management and investigation of incidents or non-compliances and ensure corrective actions are implemented to prevent a reoccurrence. • Implement adaptive management practices to continuously improve water management based on monitoring results. • Report to the Site Manager – Liddell Transition on the performance of the WMP and recommendations for improvement. • Initiating the external independent audit program. • Provide training and raising awareness among staff and contractors of best water management practices.
AGL Corporate Affairs	• Co-ordinate, in the context of standing emergency plans and procedures, a public relations/communication strategy to deal with environmental incidents. • Communicate with the public and/or Interested Parties on environmental issues and initiatives.
Liddell Transition Environment Team	• Assist the Manager – Environment and Approvals in carrying out their environmental management responsibilities. • Ensure overall implementation of this WMP. • Ensure works are conducted in accordance with regulatory requirements. • Manage relationships with Construction Contractor as required. • Review monthly reports provided by Construction Contractor. • Track and report on environmental performance against the management actions identified in this WMP. • Notify incidents or non-compliances to relevant authorities as per **Section 13.0.** • Investigate incidents or non-compliances and ensure corrective actions are implemented to prevent a reoccurrence.
AGLM personnel working on the Stage 1A Works (employees and contractors)	• AGLM personnel working on the Stage 1A Works t have a role in achieving a standard of environmental performance consistent with the documentation referenced in this WMP, including: - Comply with WMP, including all relevant procedures, processes, operating standards. - Complete environmental inductions and required training. - Maintain competencies relevant to activities. - Understand risks associated with activities. - Stop work immediately if a particular activity is carried out in an unsatisfactory manner. - Undertake activities in accordance with this WMP and specific instructions issued by your supervisor. • Report environmental incidents to your supervisor.

3.2 Construction Contractor

The responsibilities of key contractor roles involved in the Stage 1A Works is outlined in **Table 5**.

Table 5 Construction Contractor – Roles and responsibilities

Roles	Responsibilities
HSE Advisor	• Provide advice and assistance on environmental matters to the Project Manager, Project Site Manager and employees. • Ensure this WMP is effectively implemented. • Assisting in the management and investigation of major environmental incidents. • Implement corrective actions and evaluate their effectiveness. • Identify key environmental risks and opportunities to ensure high environmental performance. • Attendance at on-site meetings to ensure environment related issues are raised for review. • Manage and advise on training needs. • Plan for and respond to emerging environmental trends. • Support external independent environmental audits. • Manage the contractor's environmental management responsibilities, including the following: - Provide necessary technical input. - Co-ordinate environmental compliance. - Assist in developing and updating environmental objectives and targets and environmental management programs. - Provide information to the Independent Environmental Auditor. - Conduct investigations into incidents and non-conformance events. - Promote and demonstrate environmentally sound practices. - Assist in developing Safe Work Method Statements (SWMS) for all tasks and ensuring the required environmental measures are included and the work is monitored throughout.
Project Manager	• Ensure adequate resources are available for implementation of this WMP. • Ensure the WMP meets the requirements of NSW EPA and DCCEEW. • Ensure effective internal and external communication programs are in place. • Engage competent and licensed sub-contractors, as required by legislation, to undertake works. • Accountable for the effectiveness, suitability, and adequacy of the contractor Environmental Management System. • Carry out all work in a safe and efficient manner and report all hazards, incidents and accidents promptly. • Responsible for resourcing employee activities and ensuring plant is operated and maintained in a manner that minimises risk to the environment. • Monitor performance trends and implement corrective actions. • Promote continual improvement and provide support as required. • Ensure resources are available to support the WMP. • Ensure employees are equipped with sufficient skills to comply with the WMP throughout the delivery of the project. • Promote and demonstrate environmentally sound practices.
Project Site Manager	• Assist in the implementation of this WMP. • Ensure all project staff have adequate training and experience to manage the risks associated with their roles. • Carry out all work in a safe and efficient manner and report all hazards, incidents and accidents promptly. • Daily site coordination and management meetings across disciplines. • Complete worksite inspections and investigations and complete accurate and timely reporting. • Monitoring and improving environmental performance at a project level. • Compliance with all environmental and regulatory requirements and other reporting requirements.

Roles	Responsibilities
	• Undertake environmental related duties as directed by the Project Manager. • Ensure that accurate information reporting as requested by Project Manager is delivered. • Promote and demonstrate environmentally sound practices.
Area Supervisors	• Assist in the implementation of this WMP. • Other Environmental related duties as directed by the Project Manager. • Promote and demonstrate environmentally sound practices.
Project Engineers	• Comply with this WMP. • Other Environmental related duties as directed by the Project Manager. • Promote and demonstrate environmentally sound practices.
All Workers including subcontractors	• Comply with this WMP. • Raise any environmental issues or hazards. • Report all environmental incidents, hazards, non-compliances and near misses promptly.

4.0 Site Identification and Local Environmental Setting

4.1 Site Identification

The Site identification details for the LPS are provided in **Table 6**.

Table 6 Site Identification Details

Item	Description
Owner	The LPS site is owned by AGLM, which holds a landholding of approximately 10,000 hectares. The proposed Stage 1A Works, comprising the Borrow Pit and Containment Cells, will be constructed within a portion of AGLM-owned land that has been previously disturbed by mining activities. This area is situated to the north of the LAD.
Site Address	LPS is located approximately 15 km south-east of Muswellbrook, NSW on the eastern side of the New England Highway. The Borrow Pit and Containment Cells are located beyond the highway to the west of LPS and will be accessed via existing internal haul roads.
Current Land Use Zoning	The LPS and LAD lands, inclusive of the Borrow Pit and Containment Cells area, are zoned 'SP2: Infrastructure' in the Muswellbrook Local Environmental Plan (LEP) 2009 (LEP, 2009). Surrounding buffer areas are zoned as 'RU1: Primary Production'.
Site Area	The proposed Borrow Pit inclusive of the Containment Cells area is to have an approximate maximum disturbance area of 62 ha (GHD, 2023b).
Surrounding Land Use	The landscape surrounding the Site is heavily influenced by historical and ongoing mining and power generation activities. Local land use is characterised by large-scale infrastructure associated with BPS and the former LPS, as well as mining operations at Hunter Valley Operations, Mount Arthur Coal, and Maxwell Underground and Ravensworth Operations Pty Ltd. The nearby Liddell Coal Mine and the Ravensworth Underground Mine are currently in care and maintenance. Rural residential properties are located beyond the mining and buffer lands surrounding the site. The Development area is surrounded by various land uses such as power generation, coal mining, livestock grazing and rural dwelling associated with agricultural land holdings. Significant features of the surrounding landscape are the main northern railway to the northeast, Lake Liddell and LPS to the east and the LAD and BPS to the southwest. Open cut coal mining is the dominant landscape feature to the south-east and west of the Development area. There is extensive grazing land and remnant vegetation to the north of the site (GHD, 2023). The New England Highway runs through the Development area and provides access to the various Development components by means of a dedicated internal road network designed to service AGLM facilities. The closest residential area is the Antiene subdivision, which is located behind a ridge line around 3 km north of the Development area. The nearest sensitive receiver identified is an isolated dwelling approximately 1.8 km to the north of the proposed Borrow Pit and Containment Cells area and the next nearest sensitive receiver is a dwelling associated with the Lake Liddell Recreation Area (LLRA) which is located approximately 2 km to the northeast of the LPS. All Development components are located within the catchment of Lake Liddell (GHD, 2023).

4.2 Geological Setting

The LPS is in the northern sections of the Sydney Geological Basin. The 1:100 000 Hunter Coalfields Geological Map (Department of Mineral Resources, (1993)), indicate that the LPS is underlain by Permian Age conglomerate, sandstone, siltstone and claystone of the marine derived Maitland Group. Furthermore, the Quaternary age alluvial sediments are associated with the regional water courses.

The area associated with the LPS and areas to the north of Lake Liddell are underlain by Permian Age, Maitland Group, Mulbring siltstone consisting of dark-grey shale and siltstone (Muswellbrook 1:25 000 Geological Sheet (9033-II-N), Department of Mineral Resources (1987)).

GHD (2023b) cited ERM (2014) which provided a generalised description of the local geology describing disturbed areas at LPS as fill or reworked natural weathered soils and rock overlying bedrock.

The proposed Borrow Pit area is a rehabilitated mine spoil dump (GHD, 2023b). The spoil material encountered during the GHD (2022c) investigation includes mixtures of clayey gravel, sandy gravel, clay, and gravel with siltstone, sandstone, carbonaceous siltstone, coal, cobbles, and occasional boulders. The natural ground profile was not encountered. Various levels of carbonaceous siltstone and coal were recorded across the Borrow Pit area (GHD, 2023b).

The spoil material properties were similar to Hunter Valley mine waste rock, with low to medium plasticity and field moisture contents dry of the plastic limit. Standard Compaction testing showed the fill material was generally dry of the standard optimum moisture content. Emerson class tests indicated the material was dispersive (Emerson Class 2) in fresh water. Most samples were classified as Clayey Gravelly Sand. The mine spoil is situated over the Permian aged Maitland Group of the Sydney Basin, comprising siltstone, claystone, sandstone, and conglomerate (GHD, 2023).

4.3 Hydrogeological Setting

As a reference to groundwater upgradient of the LPS Infrastructure Area, excerpts from the conceptual hydrogeological model (GHD 2022b) for the LAD site is provided for context to locally expected hydrogeological conditions for the Development. The conceptual hydrogeological model developed by GHD (2022b) consists of three hydrostratigraphic units:

- A colluvial/alluvial aquifer: up to seven metres thick and is discontinuous in the LAD area
  - Associated with drainage lines.
- A shallow weathered bedrock/regolith aquifer: 3 to 10 m thick and consisting of the following Maitland Group formations:
  - Mulbring Siltstone: dark grey shale and sandstone.
  - Branxton Formation: pebbly sandstone, silty sandstone and siltstone.
- Permian aquifers within the Rowan Formation (Greta Coal Measures): sandstone, siltstone, shale and mudstone with coal seams.

Groundwater is recharged by rainfall infiltration, and groundwater levels are a subdued reflection of topography. Based on groundwater elevation monitoring data, GHD (2022b) reported groundwater flow to be to the east, towards Lake Liddell. Hydraulic gradients on the eastern side of the LAD were estimated to be between 0.03 m/m and 0.05 m/m (GHD 2022b).

The Borrow Pit and containment cell is located on a rehabilitated mine spoil dump that has been revegetated with grasses and a small stand of woody vegetation. GHD (2023b) cited investigations by (GHD 2022) where four boreholes were drilled in the proposed Borrow Pit area as part of the LAD Closure Geotechnical Investigation. The boreholes were drilled between 17.1 and 50.5 m below ground level (m bgl) and the natural ground profile was not encountered. No groundwater was encountered within the limit of investigation.

4.4 Topography and Surface Water Drainage

In a regional context the Borrow Pit and Containment Cells are located within the catchment area of the Hunter River.

The Stage 1A Works area is set within a natural basin, predominantly occupied by Lake Liddell, which is bounded by undulating hills to the west and north, and more prominent mountainous terrain to the east. Ground elevation varies from approximately 260 m AHD at the proposed Borrow Pit and Containment Cells, 200 m AHD at the LAD to approximately 140 m AHD at the New England Highway and LPS (GHD, 2023a).

The existing stormwater management at the Borrow Pit and Containment Cells comprise a series of contour banks laid in approximately 100m intervals (in plan) from an elevation of approximately 255m AHD down to 190 m AHD. The contour banks nominally flow from northwest to southeast. The channels formed by the banks are typically 9-10 m wide at the top and 0.5-0.7 m high.

All flow paths grade towards the existing Borrow Pit Settlement Dam located southeast of the proposed Borrow Pit area. The Borrow Pit Settlement Dam overflows to the Skimmer Dam and ultimately discharges to Lake Liddell via the EPL Discharge Point (GHD, 2022).

4.5 Surrounding Water Bodies

The major hydrological feature in the Hunter Valley is the Hunter River, which is located approximately 12km to the southwest of LPS. The watercourses and artificial water bodies within the surrounding landscape associated with the Borrow Pit and Containment Cells are depicted in **Figure 4-1** and include:

Bayswater Creek – located north west of LPS, this creek is a fifth order waterway which was dammed to create the Lake Liddell reservoir and has been highly modified downstream of the dam wall. Modifications include the construction of a diversion channel and a drop structure near the confluence of Bayswater Creek and the Hunter River. While discharges from Lake Liddell are the primary source of flow into Bayswater Creek, several other tributaries flow into Bayswater Creek. This creek acts as a transfer channel between Lake Liddell and the Hunter River which is located approximately 15 km downstream of the dam wall. Discharges from BPS to the Hunter River are regulated by the Hunter River Salinity Trading Scheme (HRSTS).

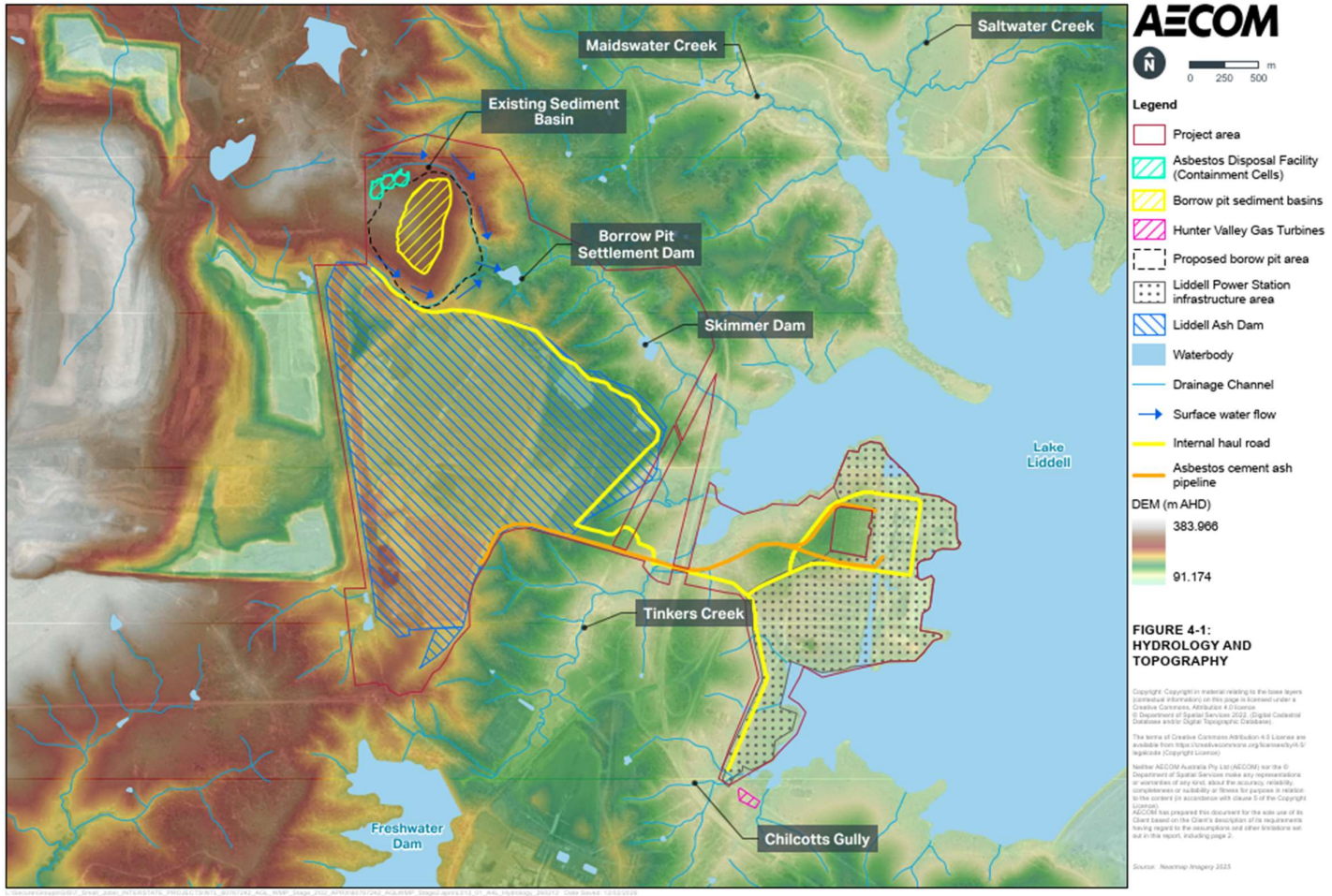


Figure 4-1 Hydrology and Topography

- Lake Liddell was constructed for cooling and water storage in the 1960s and is located downstream of the Development area. Lake Liddell receives water from a variety of sources including:
  - The LAD via the Skimmer Dam.
  - Bayswater Ash Dam.
  - Tinkers Creek.
  - Cooling water discharge from BPS.
  - Overflow from the Liddell and Bayswater coal handing settling ponds.
  - Various catchment stormwater runoff.
- Tinkers Creek – located south of the LAD, is a highly modified stream with the headwaters impounded by the Freshwater Dam, which is located directly to the west of BPS. Tinkers Creek discharges to Lake Liddell to the west of LPS.
- An unnamed creek from the Ash Dam spillway located to the east of the LAD (also referred to as Skimmer Pond Creek). Skimmer Dam overflows report to an unnamed creek which conveys flows to the western arm of Lake Liddell.
- Maidswater Creek – a fourth order stream (formally a tributary of Saltwater Creek and currently known as Wykes Gully for internal monitoring purposes) flow into the Antiene Arm of Lake Liddell (a northern bay of Lake Liddell).

Surface water flow from the Borrow Pit area is to the North East and South East to two drainage channels that traverse the Borrow Pit Area and drain to the Borrow Pit Settlement Dam. Overflow from the Borrow Pit Settlement Pond report via a drainage line to the Skimmer Dam and onto Lake Liddell. The Skimmer Dam, located to the northeast of the LAD, receives stormwater runoff from a small catchment area and is downstream of the spillway of the LAD (AGL 2018b). The LAD has a total catchment area of approximately 351 ha estimated by GHD (2022).

4.6 Sensitive Receiving Environments

Kleinfelder Australia Pty Ltd (Kleinfelder, 2024) were engaged by AGLM to prepare a Biodiversity Development Assessment Report (BDAR) to support the Liddell Future Land Use and Enabling Works Project.

Although the proposed Development modification (DA 1/2011) will impact areas of low condition native vegetation, the design of the Development is largely restricted to previously disturbed areas immediately adjacent to existing infrastructure proposed for demolition, tracks for access, and areas subject to land rehabilitation (Kleinfelder, 2024).

Areas of higher condition remnant native woodland/open forest, threatened species habitat, and Threatened Ecological Communities within the north-western and south-western portions of the Development Site have been largely avoided. Potential direct and indirect impacts associated with the proposed development would be further avoided and/or minimised through the implementation of mitigation and management measures outlined in the BDAR (Kleinfelder, 2024) and subsequently the Biodiversity Management Plan for Stage 1A.

4.7 Water Quality

Waterways within the wider Hunter River catchment area are affected by high salinity. Sources of salt within waterways in the catchment include rainfall runoff off weathered rock entering streams via surface runoff pathways and groundwater sources.

AGLM have a water management system at the site, consisting of features within the LPS Infrastructure Area and are to be managed under the DEMP and are therefore not managed under this WMP. Discharges from Lake Liddell licenced discharge point (LDP) 23 are regulated under the Bayswater EPL 779 and HRSTS (GHD, 2023) and are therefore not applicable or managed under this WMP.

Water quality discharges associated with the former LPS are regulated under EPL 2122, which specifies concentration limits for key contaminants.

5.0 Water Management Systems

5.1 Potential Impacts

During construction, water will be required for activities such as construction water, dust suppression, concrete works, progressive rehabilitation, temporary stabilisation and/or rehabilitation of erosion management. Water will be sourced from existing onsite sources in accordance with existing AGLM water access licences. (GHD, 2023) where required and there will be a preference to reuse water from the sediment basins constructed as part of the project.

Potential impacts to water quality and hydrology associated with construction and use of the Borrow Pit, Containment Cells and reroute of water supply pipeline for the Stage 1A Works include:

- Removal of vegetation, general earthworks, including stripping of topsoil and excavation could result in the mobilisation of exposed soils, increased erosion and sedimentation.
- Stockpiling of topsoil and vegetation leading to the discharge of sediment-laden water.
- Transportation of cut and/or fill materials and the movement of heavy vehicles across exposed earth.
- Potential for spills and leaks of chemicals such as petroleum, oils and other toxicants from construction machinery, plant equipment, refuelling, vehicles travelling to and from the Stage 1A Works area, herbicide usage could impact drainage sources.
- Concreting works resulting in concrete dust, concrete slurries or washout water entering downstream waterways.
- Potential for asbestos mobilisation related to the transport and storage of asbestos at the Containment Cells that could impact drainage sources.
- Changes to flood behaviour from modified landforms leading to ponding water, increased flows, velocities that could increase scour and erosion potential.
- Modification and construction of water management structures such as swales, dams, ponds and diversions could reduce environmental flows to support aquatic ecosystems.
- Works occurring within and/or associated with traversing watercourses (e.g. Tinkers Creek).

A description of the existing and proposed water management systems and the management measures to be implemented to minimise potential impacts to surface water and hydrology, is provided in **Sections 5.2** through **5.3**.

The performance measures in accordance with B13 of the Consent (Table 3) apply to the entire approved development area, including all landforms constructed under previous development consents.

However, these performance measures do not require any additional earthmoving works to be undertaken for landforms that have been approved and constructed under previous consents, except where those earthworks are required for the establishment of a stable and non-polluting landform.

5.2 Stormwater Management

The current Stormwater Management arrangement on site is as described in the following sections.

5.2.1 Borrow Pit area and Asbestos Disposal Facility (Containment Cells)

The existing material emplacement area in which the Borrow Pit and Containment Cells are located has been revegetated with grasses and a small stand of woodland vegetation. Contour banks are laid in at around 100 m intervals with an approximate slope of 28 degrees. The contour banks drain to sediment basins around the toe of the emplacement area which generally 'fill and spill' to the Borrow Pit Settlement Pond. The Skimmer Dam is located downstream of the Borrow Pit Settlement Pond and would receive discharges from the Borrow Pit area supplemented with seepage discharge from the LAD.

5.2.2 Liddell Ash Dam (not part of this WMP)

The LAD stores ash, which was previously pumped from LPS to two disposal points (one for fly-ash and the other for bottom ash) on the southern side of the LAD. The LAD works are already approved under DA 1/2011 until surrendered and consolidated into SSD 24937520 and are excluded from this WMP and do not form part of the Stage 1A Works. However, some of the water from the haul road may need to be managed through the LAD and then via the Skimmer Dam.

5.2.3 Dual Water Supply Pipeline

The rerouting of an existing dual water supply pipeline, comprising high-density polyethylene (HDPE), from the existing Fresh Water Supply Line to the LAD, is required to supply water for ongoing capping operations at the LAD. This includes water used for dust suppression in accordance with environmental and operational requirements.

Water management associated with the pipeline works should be able to be managed via source control in accordance with the Blue Book given the small disturbance area.

5.3 Proposed Water Management System

5.3.1 Water Use

Construction activities are likely to require short-term water demands during the Stage 1A for the following uses:

- Dust suppression for construction activities, unsealed roads, stockpiles and the Borrow Pit and Containment Cells.
- Road compaction works.
- Ground improvement for vegetation, stabilisation of stockpiles, capping material and regarding works to recontour to an acceptable landform.
- Washdown of vehicles and plant for reduction of sediment and contaminant spread.

The reuse of water from the basins will be prioritised, where this is unavailable water will be sourced from AGLM water allocations. Temporary pumping infrastructure and associated pipelines may be installed to enable the abstraction of water from the Borrow Pit Settlement Dam for dust suppression and construction water supply purposes.

5.3.2 Sediment Basins

The Stage 1A Works has the potential to result in erosion and sediment-laden runoff due to ground disturbance and sediment mobilisation during construction. To minimise the potential impacts associated with these land disturbing activities, and until such time that the borrow pit is activated, sediment basins have been designed and will be constructed and managed generally in accordance with the Blue Book (Landcom, 2004). AGLM will also seek to reuse existing infrastructure where practicable as in the case of the construction of the containment cells refer **Section 5.3.3**. Sediment basins for the Borrow Pit are on-hold status until such time that the Borrow Pit is activated.

Sediment Basins will be designed to manage sediment-laden runoff from disturbed areas and will be typically constructed in areas where disturbance activities are expected to result in soil loss greater than 150 m^3/yr. Sediment basin details would be included in the Progressive Erosion and Sediment Control Plan. This is generally relevant to the Borrow Pit area. The design of sediment basins has considered maintenance requirements (e.g. sediment removal), stabilisation of banks, and pump out facilities.

The water intercepted by the sediment basin must be tested prior to discharge and will preferentially be reused for dust suppression or discharged off site in accordance with the EPL 2122 where appropriate. The following is the methodology for sizing sediment basins. **Table 7** summarises the site constraints considered in calculating the RUSLE two month soil loss and corresponding settling zone capacity.

To mitigate the risk of uncontrolled discharges, automated float switches will be installed and maintained on the sediment basins to regulate pumping operations. Pumping activities aimed at reducing basin water levels for dust suppression and maintaining design sediment storage capacity will be monitored. All pump rates and associated discharge volumes will be systematically recorded to ensure compliance with environmental management protocols and operational efficiency.

Table 7 Sediment Basin Constraints (WIA GHD 2023)

Aspect	Factor	Reference
Design rainfall depth	90th percentile, 5 day rainfall event – 35.9mm	Blue Book, Table 6.3a for Muswellbrook
Soil landscape	Liddell (SH-1d)	eSpade (DPIE, 2022)
Soil type	F (fine dispersible material)	Most conservative factor chosen due to unavailability of soil hydraulic group in Landcom (2004)
Soil hydrologic group	D	Most conservative factor
Soil erodibility – K factor	0.045	eSpade (DPIE, 2022)
Rainfall – R Factor	1500	Blue Book, Appendix B – Map 8: Rainfall Erosivity of the Singleton 1:250,000 topographic Sheet
Volumetric Runoff Coefficient	0.64	Blue Book, Appendix F - Table F2

The total volume of a 'Type F' sediment basin is the sum of the following two components:

- A settling zone, within which flow velocity is reduced and/or water is stored allowing the settlement of suspended sediment.
- A sediment storage zone, where deposited sediment is stored until the basin is cleaned out.

The settling zone volume is determined from the 90th percentile, 5-day rainfall event of 35.9 mm, with a volumetric runoff coefficient (Cv) of 0.64. The adopted Cv is described to have a runoff potential of high.

Where water quality is not suitable for discharge via a licensed discharge point under EPL 2122, the water will be management onsite through internal transfer of water or treated to comply with the agreed discharge criteria.

5.3.3 Containment Cells

Changes to the operation of the water management system in the Containment Cells will be required as part of the Stage 1A Works and include, but are not limited to the following:

- Runoff generated from disturbed surfaces, along with incidentally captured flows from adjacent undisturbed catchments, will be hydraulically conveyed to an existing constructed sediment basin via culverts beneath the construction access road via a designated dirty-water drainage line. The final landform has established a controlled flow path directing water from the sediment basin through the valley corridor formed between the natural topographic ridgeline and the rehabilitated mine spoil dump. Conveyance will occur through a sequence of existing check dams functioning as energy dissipation and sediment attenuation structures before final discharge into the existing Borrow Pit Settlement Dam.
- Construction of a clean-water diversion will be undertaken to route upstream clean stormwater around the Containment Cells. The diversion system will comprise engineered cut batters, earthen bunds, and a defined drainage channel designed to intercept and convey clean surface water away from the exposed cell face. This configuration ensures clean-water runoff is segregated from disturbed work areas, while all sediment-laden runoff generated within disturbed areas is directed to the sediment basin for appropriate treatment. A culvert will be required to facilitate the conveyance of clean water flows beneath the construction access road.

5.3.4 Construction Road Access

Changes to the operation of the water management system for the construction of the road access will be required as part of the Stage 1A Works and include, but are not limited to the following:

- Installation of a stormwater pipe at the interface between the LAD northern wall and the rehabilitated mine spoil dump will be undertaken to provide controlled conveyance of upstream clean-water catchment flows through the area and beneath the construction road access.
- Construction of new contour bunds will be undertaken in locations where existing bunds are removed, to re-establish controlled overland flow paths. The reconfigured bunding will direct clean- and dirty-water flows toward an appropriate collection point for conveyance beneath the construction access road via an existing contour drainage alignment to a stabilised check dam and sediment control fencing, before ultimately discharging into the Borrow Pit Settlement Dam.
- Any flows directed to the east of the construction access road will be intercepted and filtered by a silt fence before being captured within the existing bund drainage system, which ultimately conveys runoff to the Borrow Pit Settlement Dam.

5.3.5 Borrow Pit Area

- Runoff from disturbed areas and runoff from undisturbed areas incidentally collected, will be directed to constructed sediment basins with final landform directing flow into the existing Borrow Pit Settlement Dam refer **Figure 1-1**.
- Construction of a clean water diversion to divert stormwater around the Borrow Pit area, which will consist of cut batters, bunds and a drainage path to direct clean surface water away from pit's face cut and dirty water to sediment basins. Runoff from disturbed areas is to be directed to the Borrow Pit Sediment Basins and clean water to direct water away from the face of the cut.

5.3.6 Temporary stabilisation of the Borrow Pit area is to be undertaken in periods of inactivity as required. Dual Water Supply Pipeline

The placement of an above ground dual water supply pipeline has the potential to result in erosion and sediment laden runoff with ground disturbance and sediment mobilisation during placement. With works occurring within and/or associated with traversing watercourses (e.g. Tinkers Creek). To minimise the potential impacts of the land disturbance these will be managed in accordance with the Blue Book.

5.3.7 Leachate Management

As per Condition A6 of the Consent, the Containment Cells are to be used for the storage of asbestos waste, ACM, SMF. There may be instances where ACM or SMF may be contained within materials such as: metal components (i.e. Flanges), IBC's or plastic wrapping, contaminated waste disposal (i.e. contaminated waste associated with ACM and/or SMF). In these instances, before disposing of these materials within the containment cell, their suitability would be confirmed with the Site Auditor to ensure they comply with the cell design criteria. All the proposed wastes are considered non-leaching materials and are not expected to form leachate to an extent requiring leachate management in the form of storage, treatment, disposal and monitoring. However, during the Development's detailed design phase, the specific design of the landfill must comply with the Environmental Guidelines: Solid Waste Landfills (EPA 2016).

5.3.8 Groundwater

No significant quantities of groundwater are expected to be encountered/extracted as a result of the Stage 1A works detailed in Section 1.2.1. Groundwater is not expected to be encountered during excavation of the material from the Borrow Pit as the material to be used consists of overburden material, overlying the natural surface (GHD, 2024).

Similarly, groundwater is not expected to be encountered during the construction of the Containment Cells associated with the Containment Cells and the above ground rerouting of the water supply pipeline.

In the unlikely event that groundwater is encountered, and groundwater take is required, any groundwater take above the exemption limits of the NSW Aquifer Interference Policy will need to be appropriately licensed under a water access licence prior to any such groundwater extraction occurring.

6.0 Site Water Balance

A site water balance was developed by GHD for the Environmental Impact Statement (EIS) (GHD WIA, 2023) and has been partially incorporated into this WMP. The water balance quantifies potential impacts under a range of rainfall scenarios and accounts for all major surface water interactions and demands associated with the Borrow Pit, which is expected to generate longer-term water management requirements. The GHD model was used to estimate average annual transfers between water cycle components under proposed conditions, with a focus on stages beyond Stage 1A Works of the Borrow Pit operation. This stage represents the greatest deviation from baseline conditions, involving the largest disturbance footprint and highest water demand.

For Stage 1A Works, the principal sources of water include runoff from disturbed catchments, which will be captured and contained, as well as direct rainfall onto the Borrow Pit Sediment Basins. Primary water losses are expected to occur through evaporation, evapotranspiration, and water used for dust suppression. These inputs and outputs are expected to vary in response to prevailing climatic conditions.

A preliminary water balance was also developed to assess the storage capacity requirements of the Containment Cells, ensuring sufficient capacity to manage rainfall events without uncontrolled discharge. There are no active water demands associated with the Containment Cells. Water collected in these cells will be dewatered to a sediment basin and retained onsite until discharge. Containment cells will be monitored prior to and during dewatering activities as and when deemed necessary for the operation of the containment cells (refer to Section 8.0). Dewatering will involve the movement of water using a 2-stage filter system to remove sediment (25-micron filter) and asbestos fibres (5-micron filter) prior to movement of water into a sediment basin or to a holding tank for use as dust suppression. Asbestos filtering will be completed using a 5-micron filter in accordance with the SafeWork Australia – Hazardous Chemical Information System (HCIS) which identifies asbestos fibres as being 5 -micron in width and 3 microns in length which will in turn capture fibres that would be considered respirable if airborne. Routine maintenance will be undertaken for the 2-stage filter system including regular changing of filters as required.

6.1.1 Borrow Pit Settlement Dam

The catchment areas and land uses reporting to the Borrow Pit Settlement Dam were estimated in the WIA 2023 report and characterised as vegetated (all undisturbed bush land and vegetated areas) and disturbed/hardstand (roads, working pad, buildings areas, Borrow Pit disturbance extent).

The capacity and the maximum surface area of the Borrow Pit Settlement Dam was estimated in the WIA (GHD WIA 2023) from a detailed bathymetric survey provided by AGLM. The stage-storage of the Borrow Pit Settlement Pond was derived from the bathymetric survey is provided in **Table 8**.

It is noted that smaller sediment basins to be provided at the toe of the Stage 1 Borrow Pit area during the Borrow Pit activity, however these storages have not been considered in this assessment as they have been designed in line with the Blue Book and **Table 7** above and documented in the ESCP.

It is noted that the Borrow Pit Settlement Dam for the Stage 1 works will only receive stormwater from the Borrow Pit in the event that the Borrow Pit Sediment Basins capacity exceed the design rainfall event.

Table 8 Catchment Area – Borrow Pit Settlement Dam (GHD, 2023b)

Water Management Feature	Vegetated	Disturbed Area (Borrow Pit)	Total Catchment Area	Dam Capacity	Maximum surface area
Borrow Pit Settlement Dam	83.47 ha	45.78 ha	129.95 ha	117.8 ML	3.8 ha

6.1.2 Containment Cells)

The Containment Cells are turkeys nests, a clean water drain is to be provided upslope to direct clean water catchments around the cells. The details of the catchments of the Containment Cells are as provided in **Table 9**.

Table 9 Catchment Areas - Containment Cells

Water Management Feature	Area of Containment Cell (m^2)
Cell 1	6800
Cell 2	6177
Cell 3	6400
Cell 3 (enlarged)	9600

6.2 Water Use

Dust suppression has been identified as the primary water demand on stormwater generated from the contributing catchment associated with the Borrow Pit given the extent of disturbed area and long-term lifespan. Other water demands associated with the Borrow Pit are deemed negligible in comparison to dust suppression.

The demand for dust suppression is based off a typical year (annualised average) for operation of the Borrow Pit. The WIA GHD report assumed that 20% of the Borrow Pit total disturbance area will require dust suppression from the Borrow Pit Settlement Dam at any one time. The other 80% is assumed to be the addition of undisturbed area and progressively rehabilitated (vegetated) area.

It is noted that water from the Borrow Pit Sediment Basins and other appropriate Stage 1 basins will be preferentially used for dust suppression

6.3 Water Balance Outputs

An assessment of the Containment Cells was undertaken to determine the required storage capacity for stormwater containment without overflow. Given the nature of the proposed activities within the Containment Cell area, there are no active water demands. Water captured in the cells will be dewatered using a 2-stage filter system to remove sediment (25-micron filter) and asbestos fibres (5-micron filter) prior to movement of water into a sediment basin or to a holding tank for use as dust suppression.

A daily time-step modelling approach was applied to estimate water volumes within the Containment Cells. This model assumes that the Containment Cells are empty at start of operations. Daily data drill (Bureau of Meteorology (BoM)) was downloaded for Latitude -32.35'S longitude 150.95'E, that provided rainfall and evaporation from 2010 to 2025. A peak volume of 440-620 m^3 dependant on the area of the Containment Cell refer **Table 10**. These volumes account for evaporation based on the daily data drill downloaded. Neglecting evaporation altered the peak volume to 448-632m^3 dependant on the area of the Containment Cell. These volumes are calculated assuming that the containment cell is constructed in its entirety before material is placed for disposal. This volume can be accommodated within the deepest portion of the Containment Cell, which is approximated to be 3.5 m from the base on the Containment Cell to the underside of the proposed capping layers with a base at 10 % slope. The estimated holding capacity is provided in **Table 10**.

Sediment basins located at the toe of the Borrow Pit have been designed in accordance with the Blue Book guidelines, as outlined in **Table 7**. Refer to the ESCP developed by others. It is noted that the Borrow Pit Settlement Dam associated with Stage 1 works will only be utilised in the event that runoff exceeds the design capacity of the sediment basins.

Additionally, the site water balance model (GHD WIA, 2023) incorporated simulation of the Borrow Pit's primary operational demand (i.e. dust suppression) for later stages of development. The WIA (GHD 2023) estimated that the annual dust suppression demand ranges between 100 and 160ML/yr. It was simulated that this demand would be met by reusing water from the Borrow Pit Settlement Dam in about 70% of the years. In the remaining 30%, up to 100ML of additional external water would be needed to meet the demand. This additional water would be sourced from AGLMs existing water licences approvals.

Table 10 Containment Cell Monthly Storage Volume

Water Management Feature	Area of Containment Cell (m^2)	Volume for storage provided in Containment Cell (m^3)	Volume of water storage required (m^3) 95^{th} %ile
Cell 1	6800	2940	440
Cell 2	6177	3185	400
Cell 3	6400	3185	414
Cell 3 (enlarged)	9600	5206	620

6.4 Use and On-Site Management

All water required for Stage 1A Works will be sourced from onsite sediment basins, with an emphasis on maximising water reuse. In future stages it is noted that dust suppression may require additional external water to meet the demand. This additional water would be sourced from AGLMs existing water licences approvals. As a result, no additional water licences or regulatory approvals are required for Stage 1A Works.

7.0 Erosion and Sediment Control Measures

Erosion and sediment control measures will be planned and installed before any ground disturbance activities occur documented within AGLM Ground Vegetation Disturbance Approval (GVDA). This section provides a framework for the implementation of an Erosion and Sediment Control Plan (ESCP). As the site will be changing during the construction phase the ESCP/s will need to be proactively managed by the contractor, incorporating suggested treatments on a case-by-case basis.

ESCPs are to be prepared and reviewed by a Certified Professional in Erosion and Sediment Control (CPESC)).

Erosion and sediment control activities will be undertaken in accordance with the Development Consent, guidelines from the Blue Book. All required erosion and sedimentation controls are to be properly installed prior to commencement of any site works and maintained in a functional and effective condition throughout the construction activities until the site is stabilised.

Containment of spills and leaks shall be in accordance with EPA's guidelines section 'Bunding and Spill Management' and AGLM's Emergency Response Plan AGLM-HSE-PLN-010.02.

7.1 General Erosion and Sediment Control Guidelines

Erosion and sediment control guidelines include the following:

- Minimise soil disturbance (i.e. limit the area of exposure to reduce erosion).
- Separation/diversion of 'clean' water catchments from disturbed areas (i.e. 'dirty' water catchments) to minimise sediment laden water volumes for management.
- Collection and management of runoff sediment control devices.
- Appropriate storage and handling of topsoil materials.
- Stabilising topsoil stockpiles and suppressing dust as required.
- Locating stockpiles away from drainage lines, waterways and areas where they may be susceptible to wind erosion where practicable.
- Separation of soil types in stockpiles.
- Revegetation of disturbed areas as soon as is practicable, inclusive of the reroute of water supply pipeline, Borrow Pit area and the Containment Cells area.
- Conditions that would trigger watering of exposed and revegetated areas for dust suppression.
- Procedures for how any sediment laden water will be treated prior to leaving the Stage 1A Works area.
- Effective maintenance program (inclusive of an inspection program and checklist) for the Stage 1A Works area to include regular inspection and cleaning of catch drains and structures following storm events or other activities such as vehicle movements that may result in damage.

7.2 Erosion and Sediment Control Structures

When initiating new ground disturbances, the site will, on an as needs basis, implement a combination of the following water management control structures to mitigate environmental impacts:

- Earth diversion banks to be constructed upgradient of the stockpiles/disturbance areas to divert water around these areas. The clean water is to be diverted into the nearest permanent clean water catchment area by construction of shallow excavated channels located upgradient of the diversion banks.
- Exclusion zones for construction plant and equipment, i.e. outside areas of existing vegetation and stabilisation works, away from stockpiles, drainage channels and areas with steep slopes prone to erosion.
- Measures to manage accidental spills such as spill kits.

- Sediment fencing or mulch bunds to be constructed immediately downstream of stockpiles/ disturbance areas.
- Stockpile management, by way of location selection, height and slope management, stabilisation of the stockpile for periods exceeding 10 days (Blue Book SD 4-1), regular inspections, and runoff control.
- Check dams to be constructed across a swale, drain or waterway.
- Sediment traps which may include the use of geotextile material secured with aggregate bags or rock bunds.
- Sediment basins in accordance with **Section 5.3.2**.

8.0 Water Monitoring Program

8.1 Water Monitoring Documentation

Field observations and measurements are to be documented including recording conditions at the site through a photographic record. All field notes are to be kept for future reference.

8.2 Surface Water Monitoring Program

8.2.1 Monitoring Locations

For the Stage 1A Works associated with this WMP, the water quality monitoring of surrounding water bodies will be undertaken downstream of the Stage 1A Works.

Monitoring will be retained at existing surface water monitoring locations during the Stage 1A Works. The surface water monitoring locations to be incorporated in the surface water monitoring program as part of this WMP are depicted in **Figure 8-1**.

The rationalisation for inclusion of these locations is summarised in **Table 11**.

As sediment basins are constructed, they will be monitored in in accordance with this surface water monitoring program (i.e. incorporated into the water monitoring plan).

For each discharge and monitoring point identified in **Table 11** the corresponding pollutants for monitoring are provided in **Appendix A**, AGLM is required to monitor and report pollutant concentrations in accordance with EPL 2122 conditions.

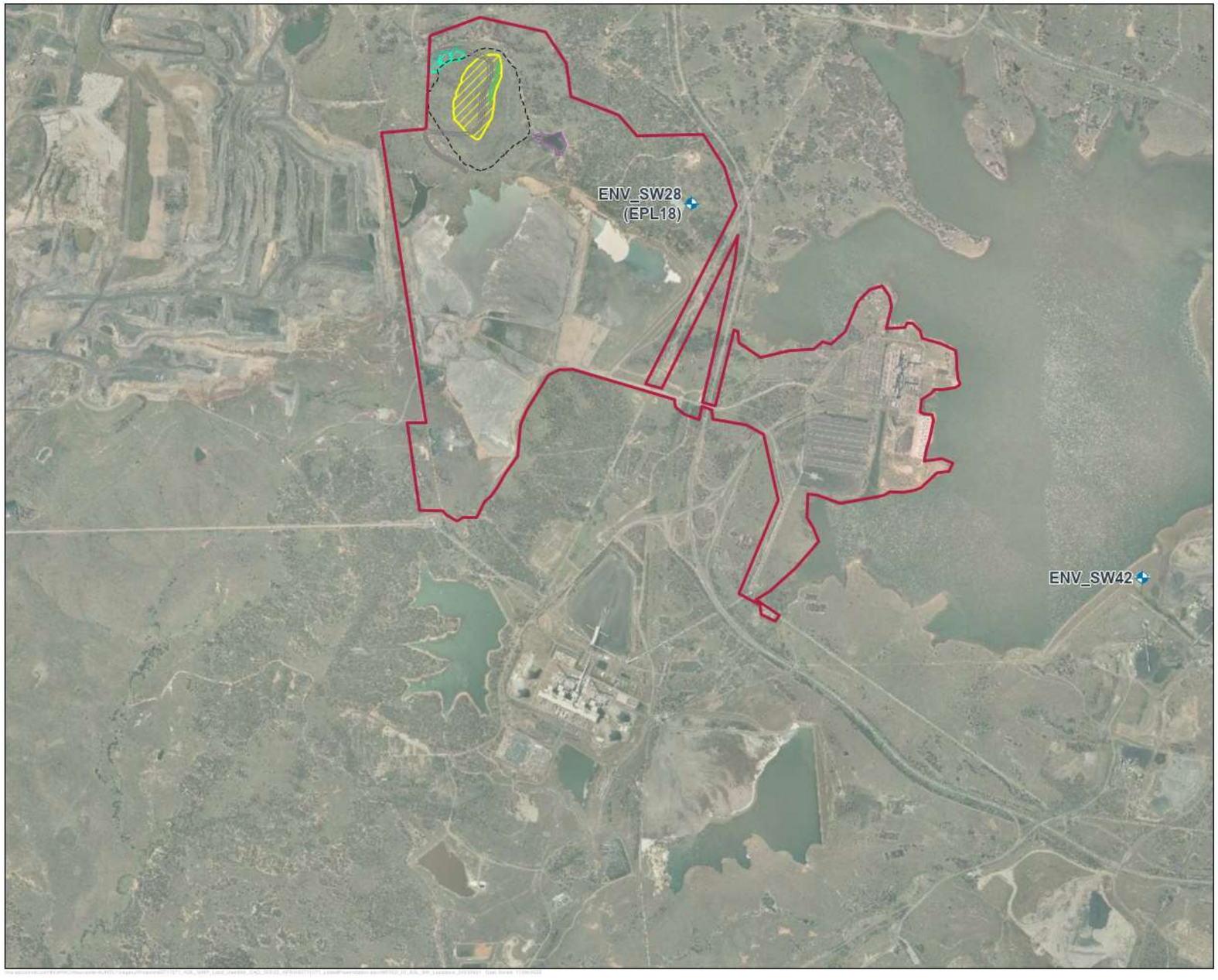
Table 11 Surface Water Monitoring Location, Description and Rationale

Sampling Location	Description	Rationale
ENV_SW28 (EPL 18)	Skimmer Dam Spillway	Discharge from Skimmer Dam overflow spillway to Lake Liddell. Monitor potential impacts of run-off from the Borrow Pit Area and the Liddell Ash Dam.
ENV_SW42	Lake Liddell Release	Monitor surface water quality of Lake Liddell being released to Bayswater Creek.
Borrow Pit Sediment Basin (EPL 26)	Borrow Pit Sediment Basin	Monitor the impacts of run-off from the proposed Borrow Pit and Containment Cell area.

8.2.2 Monitoring Frequency

Surface water monitoring frequency for the Stage 1A Works will be undertaken as follows:

- Monthly, prior to commencement of and excavation works.
- Monthly during construction and excavation works.
- Following significant rainfall events (greater than 20mm in 24 hours).
- During discharge events.



AECOM

N

0 0.5 1 km

FIGURE 8-1:
SURFACE WATER
MONITORING LOCATIONS

PROJECT:
LIDDELL FUTURE LAND USE AND
ENABLING WORKS – WATER
MANAGEMENT PLAN

Legend

- Access Track
- Borrow Pit Sediment Basins
- Borrow Pit Settlement Dam
- Project Area
- Borrow Area
- Asbestos Disposal Facility (Containment Cells)
- Borrow Pit Area
- Surface Water Monitoring Location

Source: Imagery © Department of Customer Service, 2023.

Figure 8-1 Surface Water Monitoring Locations

8.2.3 Sampling Methodology

Routine surface water monitoring will be undertaken and in accordance with the NSW EPA Approved Methods of Sampling and Analysis of Water Pollutants in NSW (EPA, 2022), EPL 2122 conditions, and due diligence obligations. Surface water sampling should be conducted in accordance with the following Australian Standards:

- AS NZS 5667.1 – 1998: Water Quality - Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.
- EPA Victoria, 2000, A Guide to the Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 441, March 2000.
- NEPC, 2013. National Environmental Protection (Assessment of site contamination) Measure. Schedule B (2): Guideline on data collection, sample design and reporting. National Environment Protection Council, Canberra. Analysis by NATA Accredited lab (e.g. Asbestos Check - Accredited Organisation (Site No. 20525) - NATA)
- Water Analysis for asbestos fibres by USEPA Method 100.2 (Asbestos in Water Methods: EPA's 100.1 & 100.2 and AWWA's Standard Method 2570).
- Discharge Monitoring

Discharge water will continue to be monitored in accordance with EPL 2122. The frequency and method as specified in EPL 2122 are provided in **Table 12**. The following monitoring will be undertaken:

- The volume of liquids discharged to water or applied to the area.
- The mass of solids applied to the area.

Table 12 Frequency and Method of Discharge Water Monitoring (EPL 2122)

Sampling Location	Frequency	Units	Method
ENV_SW28 (EPL 18) (Skimmer Dam)	Daily	Kilolitres per day	Level sensor and continuous logger

8.3 Groundwater Monitoring

No groundwater monitoring has been considered as part of the construction activities; however, the implementation of a groundwater monitoring program associated with the Containment Cells will need to be addressed once they become operational.

Although not anticipated, any potential groundwater encountered as part of the works will need to be managed in accordance NSW Aquifer Interference Policy will require an appropriate licence under water access licences prior to any such extraction occurring.

9.0 Key Performance Indicators and Assessment Criteria

9.1 Performance Measures

The effectiveness of the water management actions implemented during the Stage 1A Works can be assessed based on the key performance indicators (KPI) set for each performance measure derived from Condition B13 of the Consent (**Table 13**).

9.2 Water Quality Assessment Criteria

The potential water quality impacts associated with Stage 1A Works will relate primarily to increased turbidity and suspended solids as a result of ground disturbance. However, the following are also noted:

- Chemical contamination from transportation of hazardous materials such as asbestos and SMF for storage in the Containment Cells.
- Potential for accidental spills with the use of machinery and on site.

Table 13 Key Performance Indicators

Feature	Performance Measure	KPI
Water management – general	• Maintain separation between 'clean' and 'dirty' water management systems. • Minimise the use of clean and potable water by the Stage 1A Works. • Maximise water recycling, reuse and sharing opportunities. • Design, install, operate and maintain water management systems in a proper and efficient manner.	• No incidents of cross-contamination between clean and dirty water systems. • No water related non-compliances or environmental non-conformances. • No complaints relating to water use or water management.
Erosion and sediment control works	• Design, install and maintain erosion and sediment controls generally in accordance with the guidance series Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book (Landcom, 2004), Volume 2A: Installation of Services (DECC, 2008), Volume 2C: Unsealed Roads (DECC,2008), Volume 2D: Main Road Construction (DECC, 2008) and Volume 2E: Mines and Quarries (DECC, 2008) • Design, install and maintain sediment dams generally in accordance with the guidance series Managing Urban stormwater: Soils and construction – Volume 1 (Landcom, 2004)and 2E Mines and Quarries (DECC, 2008).	• All sediment basins constructed and maintained in accordance with Blue Book sizing and design criteria. • Sediment removal from basins completed before capacity drops below 70% of design volume. • No recorded incidents of off-site sediment discharge. • No non-compliances relating to erosion and sediment control measures.
Water diversion and storage	• Maximise the diversion of clean water around disturbed areas within the approved Stage 1A Works area, except where clean water is captured for use by the Stage 1A Works. • Design, install and maintain water storage infrastructure to avoid unlicensed or uncontrolled discharge of water.	• No unlicensed or uncontrolled discharges from water storage infrastructure per reporting period. • No exceedances of adopted water quality assessment criteria. • No incidents or complaints related to water quality or storage infrastructure or storage infrastructure.

Feature	Performance Measure	KPI
Chemical and hydrocarbon Storage	• Chemical and hydrocarbon products stored in bunded areas in accordance with the relevant Australian Standard.	• No uncontained spills or bund overflows reported per quarter. • No non-compliances associated with storage and bunding
Aquatic and riparian ecosystems	• Negligible environmental consequences beyond those predicted in the documents listed in condition A2(c).	• No environmental incidents resulting in off-site impacts or unpredicted consequences. • No non-compliances or exceedances against impact thresholds outlined in the EIS or approved management plans.
Alluvial aquifers	• Negligible impacts to the alluvial aquifer as a result of the Stage 1A Works, beyond those predicted in the document/s listed in condition A2(c), including: - Negligible change in groundwater levels. - Negligible change in groundwater quality. - Negligible impact to other groundwater users.	• Should groundwater be encountered, assessment of groundwater in accordance with the NSW Aquifer Interference Policy. • No incidents or complaints related to groundwater.
Works on waterfront land	• All works within waterfront land is managed in accordance with the guidance series for Controlled Activities on Waterfront Land (DPE, 2022). • Minimise disturbance of banks and implement appropriate stabilisation mitigation.	• No incidents or complaints within waterfront land.

To assist with the interpretation of potential impact posed, analytical results will be compared against the Blue Book that states that treated discharge waters should not contain more than 50 mg/L of suspended solids in the design rainfall event.

Table 14 provides the surface water impact assessment criteria which will be used as trigger values for assessing the water impacts works associated with the proposed Stage 1A Works.

Table 14 EPL Concentration Limits and Blue Book Criteria

Pollutant	Unit of measure	Concentration limit	Comment
pH	pH	6.5 – 9.0	EPL 2212 water concentration limit discharge point 16,17,18.
Oil and Grease	mg/L	10	EPL 2212 water concentration limit discharge point 16,17,18.
Total Suspended Solids (TSS)	mg/L	50	Blue Book

10.0 Water Management Measures

Management and mitigation strategies that will be implemented during earthworks to mitigate the Stage 1A Works impacts on water quality and hydrology are presented in **Table 15**. **Table 15** includes mitigation measures as provided in the EIS Appendix J Water Impact Assessment (GHD, 2023b) to address Consent Condition B15(g).

11.0 Trigger Action Response Plan

The Trigger Action Response Plans (TARPs) for surface water and groundwater management establish a structured framework for responding to exceedances of the performance measures and assessment criteria outlined in performance measures (**Section 9.1**) or assessment criteria (**Section 9.2**). These plans provide clear procedures and define the actions to be taken to mitigate, rectify or offset any adverse environmental impacts associated with the Stage 1A Works.

The surface water TARP, presented in **Table 16**, outlines the response steps in the event of identified exceedances during construction works. It includes escalation protocols for internal and external notifications, along with required mitigation actions to minimise water quality impacts. The objective of the TARP is to ensure that appropriate and timely measures are implemented to maintain compliance and environmental protection.

Groundwater is considered contaminated where any substance or waste is present at concentrations above natural background levels and poses, or potentially poses, an adverse health or environmental impact, as defined by the Guidelines for the Assessment and Management of Groundwater Contamination (NSW DECC, 2007). Any undesirable change in groundwater quality is therefore treated as an environmental impact requiring action.

Post formal establishment of a groundwater monitoring network associated with the Containment Cells following construction, a TRAP for the assessment of groundwater will need to be developed. The groundwater TARP will outline the relevant assessment criteria and response protocols to be followed where trigger values are exceeded. This will ensure a consistent and compliant approach to groundwater management throughout the Stage 1A Works.

Table 15 Water Management Measures

Measure	Timing	Responsibility
Erosion and sediment control measures will be installed prior to construction work commencing and will be implemented in accordance with the ESCP prepared for the Stage 1A Works and Landcom's Managing Urban Stormwater: Soil and Construction Volume 1, 4th Edition and Managing Urban Stormwater – Soils and Construction, Volume 2E – Mines and Quarries.	Prior to and during construction until site is adequately stabilised.	Project Manager (Contractor)
The objective of the ESCP will be to ensure that appropriate structures and programs of work are in place to: • Identify activities that could cause erosion and generate sediment. • Describe the location, function and capacity of erosion and sediment control structures required to minimise soil erosion and the potential for transport of sediment downstream. • Ensure erosion and sediment control structures are appropriately maintained. • Minimise areas of disturbance and ensure that progressive revegetation/stabilisation is undertaken. • Fulfill the statutory conditions of the Development Consent.	Any activities that result in ground disturbance greater than 250m^2 (Blue Book, 2004) will require an Erosion and Sediment Control Plan (ESCP).	Project Manager (Contractor)
Any water collected from the construction worksites will be preferentially reused or sent to the Borrow Pit Settlement Dam as required or discharged as appropriate and in accordance with relevant discharge criteria (refer to **Section 9.2**) to avoid potential contamination of waterways.	During Construction.	Project Manager (Contractor)
All stockpiles will be managed to minimise the potential for mobilisation and transport of dust, sediment and leachate in runoff, including: • Separation of waste types, sediment controls and stabilisation. • the number and size of stockpiles will be minimised. • stockpiles will be located away from drainage lines, waterways and areas of high wind erosion. • stockpiles will be stabilised in accordance with the ESCP, with appropriate erosion and sediment controls established. • dust suppression techniques will be used as required.	Prior to and during construction.	Project Manager (Contractor)
Surface water and groundwater monitoring will be implemented as outlined in **Section 8.2** and **Section 8.3** respectively. The objective of the surface water and groundwater monitoring program will be to identify potential changes in water quality and if changes in downstream water quality are observed. The procedures outlined in **Section 11.0** will be implemented.	Prior to and during construction.	Manager Environment and Approvals – Liddell Transition (AGLM).

Measure	Timing	Responsibility
Site to be delineated, including exclusion zones that will be established for construction plant and equipment i.e outside areas of existing vegetation and stabilisation works, away from stockpiles, drainage channels and areas with steep slopes prone to erosion.	Prior to works commencing	Project Manager (Contractor)
Clean up spills that may occur using spill kits appropriate for the type of spill, provision of preventative controls, regular training and routine inspections. Containment of spills and leaks shall be in accordance with EPA's guidelines section 'Bunding and Spill Management', and AGLM Spills Response Procedure	During Construction.	Project Manager (Contractor)
Water will be sourced from existing onsite sediment basins established during the Stage 1A Works for the Borrow Pit.	During Construction.	Project Manager (Contractor)
Construction works in proximity to waterways will be undertaken with the aim of minimising disturbance of banks. Where impacts can't be avoided, bank stabilisation practices will be implemented to stabilise the banks as soon as possible. Works within waterfront land will be managed in accordance with the relevant guideline as deemed appropriate	During Construction.	Project Manager (Contractor)
If temporary crossings on waterways are required, these will be constructed to minimise the disturbance of banks. Following completion of construction, the temporary crossings will be removed and the area rehabilitated.	During Construction.	Project Manager (Contractor)
If unexpected interactions with groundwater occur, the following actions will be undertaken: • Cease work in the immediate area and the date, • location, level and depth of groundwater interception will be recorded. • Unexpected interactions will be notified to a hydrogeologist. • The hydrogeologist will review and determine an appropriate course of action in consultation with AGL Staff. • Consideration will be given to re-locating excavation work to areas of higher elevation and/or deeper groundwater. • Consideration will be given to undertaking routine monitoring of the monitoring bores in the vicinity of the works.	During Construction.	Project Manager (Contractor)

Measure	Timing	Responsibility
Landfill design be in accordance with Environmental Guidelines: Solid Waste Landfills EPA (2016) and will be adhered to for operation of the Landfill pertaining to, where relevant, leachate management, water management and monitoring, and cover/capping requirements. Containment Cells will be used for storage of water and filtered to remove asbestos fibres as required.	Pre-Construction / Construction.	Project Manager (Contractor)
Dewatering procedures from construction sediment basins will include (but not be limited to): • Routine and pre-discharge sampling and analysis to confirm absence of contaminants exceeding applicable criteria. • Pre-discharge confirmation of compliance with water quality performance criteria analysed in real time. • The methodology for dewatering including use of amphibian friendly flocculants and pH balancing agents as required.	Pre-Construction/, Construction.	Project Manager (Contractor)

Table 16 Surface Water - Trigger Action Response Plan

Trigger	Action	Response	Plan	Responsibility
Forecasts of significant rain (greater than 20mm predicted over a 24 hour period)	• Undertake weekly inspection to ensure erosion and sediment controls are installed correctly and maintained. • Conduct post rainfall inspection following a rainfall event when safe to do so.	• Inadequacies in erosion and sediment control measures are to be rectified as soon as possible.	• Document inspections of erosion and sediment controls and action undertaken.	• Construction Contractor – inspection. • Site Environmental Team.
Routine Water monitoring indicates high turbidity, or oil and grease exceed EPL and Blue Book criteria at discharge points	• Notify Environment and Approvals Manager or delegate. • Where exceedances of EPL limits or consent conditions AGLM are suspected, AGL to undertake necessary notifications to the EPA and DPHI as per **Section 13.4.** • Initiate an investigation to review erosion and sediment control measures. • Identify corrective actions or additional control measures to be implemented where relevant to mitigate potential water quality impacts.	• If required, implement corrective actions or install additional erosion and sediment control measures where required.	• A summary of monitoring results, investigations, corrective actions and notification to regulatory authorities to be retained onsite with Stage 1A Works documentation. • If required, amend the WMP, DEMP and ESCP to reflect changes to construction methodology.	• Environmental specialist reports to the Environment and Approvals Manager. • Environment and Approvals Manager to initiate investigation and assign responsibility.
Water monitoring indicates exceedance of the EPL Discharge criteria	• Initiate investigation to determine the cause of the exceedance and if attributable to Stage 1A Works activities. • Report to the AGLM Incident Management System if deemed necessary. • Where incidents result in exceedances of EPL limits or consent conditions AGLM to notify the EPA and DPHI of the exceedance as per **Section 13.4**. • Conduct additional monitoring to confirm water quality parameters. • Identify corrective actions where relevant.	• Implement corrective actions or additional mitigation measures. • Continue water quality monitoring to assess the effectiveness of corrective actions.	• Monitoring results, investigations, corrective actions and notification to regulatory authorities to be retained onsite with Stage 1A Works t documentation.	• Environmental specialist reports to the Environment and Approvals Manager. • Environment and Approvals Manager to initiate investigation and assign responsibility.
Uncontrolled discharge to water or sensitive environment	• Initiate investigation to determine cause of the incident and if attributable to Stage 1A Works activities. • AGLM to notify the EPA and DPHI of the incident immediately after becoming aware of the incident. • Contain water to prevent further discharge • Where it is suspected that pollution of waters has occurred, conduct further sampling immediately to confirm water quality parameters.	• If required, implement corrective actions to address the investigation findings. • Continue water quality monitoring to assess the effectiveness of corrective actions. • Submit to EPA and DPHI a summary of the investigation findings and corrective actions implemented.	• Monitoring results, investigations, corrective actions and notification to regulatory authorities. to be retained onsite with Stage 1A Works documentation.	• Project Manager or Principal Contractor to advise Environment and Approvals Manager. • Environment and Approvals Manager to notify regulatory agencies and initiate investigation.

12.0 Environmental Inspections

Environmental inspections will be undertaken for the Stage 1A Works. This will include:

- Weekly inspections of the site including;
  - Inspection of erosion and sediment control devices by a suitably qualified (Blue Book trained) individual.
  - Inspections prior to and following predicted significant rainfall events as defined in **Section 8.2.2**.

If site conditions are considered unsafe for driving or walking to the relevant inspection location or if heavy rainfall has made the locations inaccessible, then inspections should be undertaken at the soonest available opportunity when the risks can be appropriately managed.

Site inspection reports will be prepared to document the findings of these environmental inspections and will be retained.

12.1 Water Storages

Water storages and associated infrastructure must be visually inspected for water levels, presence of oily sheens, ensure free flow of water, sediment build up, pump and pipe work for any potential defects, presence of leaks, embankment vegetation, embankment integrity, and clear of debris. Where issues are identified, corrective actions will be developed as required to address issues.

12.2 Equipment Testing

If applicable, insitu measurement/monitoring equipment should be calibrated as per relevant standards. Any hand-held equipment must be tested and calibrated as per manufacturer periodic intervals prior to use. Calibration certificates and records should be kept for a period of not less than five years.

12.3 Maintenance and monitoring of erosion and sediment controls

Areas of construction (areas of surface disturbance) are to be risk assessed via AGLMs GVDA prior to commencement and where relevant have controls implemented to ensure effective erosion and sediment control.

Where required, post construction inspections will be undertaken of the Stage 1A Works area to ensure integrity of any permanent erosion structures or until land is revegetated to a level that prevents erosion or sediment loss. Additional inspections will be undertaken after significant rainfall events as defined in **Section 8.2.2**. A summary of the regular monitoring is provided in **Table 17**.

Table 17 ESCP Monitoring Schedule

Element	Management / Monitoring Strategy	Frequency	Responsibiity
Sediment ponds/dams.	Inspect sediment build-up and integrity of structures. De-silt dams as required – clean out before 30% sediment capacity reached.	Quarterly and following significant rainfall event (refer **Section 8.2.2**).	Project Manager (Contractor)
Rehabilitation areas.	Inspect rehabilitation areas for adequate surface protection; ensuring sediment build-up in drainage lines is not adversely affecting drain capacity.	Quarterly (or after a significant rainfall event (refer **Section 8.2.2** until the site is established.	Project Manager (Contractor) Manager Environment and Approvals – Liddell Transition (AGLM) or delegate.
Temporary sediment controls (silt fence, sandbag weirs etc.).	Inspect sediment control structures for sediment build up and clean out as required to maintain adequate capacity.	Weekly and following significant rainfall events (refer **Section 8.2.2**).	Project Manager (Contractor) Manager Environment and Approvals – Liddell Transition (AGLM) or delegate.
Reporting of ESCP findings and inspections.	Results of Contractor's ESCP inspections, maintenance activities and construction of erosion and sediment control structures are to be reported to AGLM.	Weekly	Project Manager (Contractor) Manager Environment and Approvals – Liddell Transition (AGLM).

13.0 Compliance and Reporting Requirements

13.1 Water Management Plan Approval

Construction other than demolition must not commence until the water management plan is approved by the Planning Secretary in accordance with condition B16 of the Consent. The water management plan, as approved by the Planning Secretary, must be implemented for the development in accordance with condition B17 of the Consent.

13.2 Water Management Plan Consultation

As per Condition B15, AGLM are required to consult with the EPA and the DCCEEW Water Group for the development of this plan. In accordance with condition A16 of the Consent, any consultation with an identified party must be completed. Providing details of the consultation that took place, including the outcome, matters resolved or unresolved, and details of remaining disagreements and how the AGLM or the Contractor will address any matter raised refer Appendix A.

13.3 Reporting of Monitoring Results

Surface and groundwater monitoring undertaken during the Stage 1A Works will be carried out by suitably trained person. Monitoring will be undertaken in accordance with the Water Monitoring Program detailed in **Section 8.0**.

13.4 Environmental Incidents

All incidents resulting in potential or actual pollution are to be investigated and reported using the AGLM Incident Management System. Where incidents may cause material harm or have the potential to cause harm to the environment, they must also be reported to the EPA and DPHI in accordance with the requirements of Part D Condition D5 of the Development Consent, EPL 2122 Condition R2.2, and Section 148 of the POEO Act.

In accordance with condition D5 of the Development Consent the applicant must notify the DPHI within 24 hours of becoming aware of the incident and must include the information as set out in condition D5. Notification to the EPA and DPHI must occur **immediately after becoming aware of an incident** causing or threatening material harm to the environment. DPHI must be notified in writing via the Major Projects website and the EPA must be notified immediately by telephone on 131 555. Written details of the incident notification must be provided to the EPA and DPHI **within seven days**, as per condition R2.2 of EPL 2122 and Appendix **6 (Incident Notification and reporting Requirements)** of the Consent.

In accordance with condition D4 of the Consent, DPHI must be notified in writing via the Major Projects website **within seven days of becoming aware of a non-compliance** against the conditions of consent and must include the information as set out in condition D4 of the Consent. Exceedances of concentration limits included in the conditions of EPL 2122 must be reported to the EPA **within five days** of becoming aware of the exceedance, as per condition R4.1 of EPL 2122. Further details of the exceedance must be provided to the EPA **within 20 days** of the initial notification and must include the information set out in condition R4.2 of EPL 2122.

13.4.1 Corrective Actions

Corrective actions may be identified through investigations of any environmental incidents (refer to **Section 13.4**) or non-compliances. Any non-conformance resulting in an environmental incident will be managed in accordance with **Section 13.4**.

Environmental non-conformances are identified from audits, routine inspections, risk reviews, alarm systems, external complaints, or monitoring. An internal incident review meeting may be conducted to discuss corrective and preventative actions by senior management.

13.5 Audit and Compliance Reporting

13.5.1 Independent Environmental Audit

Condition D1 of the Consent require an Independent Environmental Audit (IEA) of the Stage 1A Works. IEAs must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020), or its latest version published on the Department's website.

13.5.2 Compliance Reporting

Conditions D2 to D3 of the Consent require Compliance Reports to be submitted to the Planning Secretary by the end of March each year, after the date of commencement of Stage 1A Works under the Consent, or another timeframe agreed by the Planning Secretary

The Compliance Reports review the environmental performance of the Stage 1A Works and outline the compliance status of the Stage 1A Works in relation to the conditions of the Consent.

Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department of Planning, Industry and Environment, 2020) or its latest version published on the Department's website and must also:

a. identify any trends in the monitoring data over the life of the Stage 1A Works.

b. identify any discrepancies between the predicted and actual impacts of the Stage 1A Works, and analyse the potential cause of any significant discrepancies.

c. describe what measures will be implemented over the next year to improve the environmental performance of the Stage 1A Works.

14.0 WMP Review

The WMP will be reviewed and updated as necessary and in accordance with condition D7 of the Consent during the lifespan of the Stage 1A Works to allow new or changing environmental risks relating to the works to be addressed.

Condition D7 of the Consent require revision of environmental management documents within three months of the following events:

a. the submission of an incident report under conditions D5 or D6.

b. the submission of a compliance report under condition D3.

c. the submission of an Independent Environmental Audit under condition D1.

d. the approval of any modification of the conditions of this consent (unless the conditions require otherwise).

e. notification of a change in the Stage 1A Works phase under condition A10.

The suitability of the existing environmental management documents required under this consent must be reviewed. If the review concludes an update to an environmental management document is required, or to comply with a directive, the relevant environmental management document must be revised and submitted to the Planning Secretary for approval within three months of the review.

Note: This is to ensure environmental management documents are updated regularly and to incorporate any recommended measures to improve the environmental performance of the Stage 1A Works.

15.0 References

AECOM 2016. Water balance Assessment Bayswater and Liddell Ash Dams. AECOM Australia Pty Ltd (AECOM), dated 28 June 2016

AECOM 2019. AGL Water Management Project - Concept Water Balance Report. AECOM Australia Pty Ltd (AECOM), dated 20 June 2019,

AECOM 2020. Water Management System Review - Select Sites at Liddell and Bayswater Power Stations. AECOM Australia Pty Ltd (AECOM), dated 31 August 2020.

AECOM 2021. Water Management System - Water Quality Review. AECOM Australia Pty Ltd (AECOM), dated 27 October 2021.

AECOM 2022. Liddell Ash Dam - Water Monitoring Program. AECOM Australia Pty Ltd (AECOM), dated 11 May 2022.

AECOM 2022a. Bayswater Power Station Upgrade Project – Water Characterisation Assessment. AECOM Australia Pty Ltd (AECOM), dated 12 October 2022.

ANZG 2018 Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Governments and Australian state and territory governments (ANZG) Canberra, Act, Australia.

EPA Victoria, 2000. Publication 669: Groundwater Sampling Guidelines. Environment Protection Authority. State Government of Victoria.

EPA, 2022. Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales. Environmental Protection Authority, dated January 2022.

ERM 2014. Project Symphony, Liddell Power Station - Stage 2 Environmental Site Assessment, Environmental Resources Management Australia Pty Ltd Quality System (ERM), dated 31 January 2014.

GHD, 2023a. Liddell Future Land Use and Enabling Works Environmental Impact Statement. GHD Australia Pty Ltd, dated 7 March 2023.

GHD, 2023b Appendix J Water Impacts Assessment, Environmental Impact Statement GHD Australia Pty Ltd, dated May 2023.

GHD, 2024a Liddell Future Land Use and Enabling Works Amendment Report GHD Australia Pty Ltd, dated 7 July 2024.

GHD, 2024b Liddell Future Land Use and Enabling Works Response to submissions GHD Australia Pty Ltd, dated 15 February 2024.National Environment Protection Council (December, 1999) National Environment Protection (Assessment of Site Contamination) Measure (NEPM) (as amended 2013).

DECCW 2006. NSW Water Quality and River Flow Objectives, Department of Environment, Climate Change and Water, NSW Government, Sydney

DPE 2020. Independent Audit Post Approval Requirements, Department of Planning, Industry and Environment (now known as Department of Planning and Environment), NSW Government, Sydney.

DPE 2020. Compliance Reporting Post Approval Requirements, Department of Planning, Industry and Environment (now known as Department of Planning and Environment), NSW Government, Sydney.

Landcom 2004. Managing Urban Stormwater: Soils and Construction – Volume 1 (also known as the Blue Book), Landcom, Sydney.

NHMRC 2008. Guidelines for Managing Risks in Recreational Water, National Health and Medical Research Council, Australian Government, Canberra.

Appendix A

Agency Consultation

Table 18 Agency Consultation Summary

EPA / DPHI Correspondence	Condition Requirement	Comment / WMP Section
EPA 16 May 2025	Section 5.2.5 of the Draft WMP states that "As per Condition A6 of the Consent, the Containment Cells are to be used for the storage of asbestos waste, ACM, SMF, and other associated waste authorised by the Site Auditor". Further details should be provided regarding the 'other associated waste' planned for disposal in the Containment Cells, including identification of the waste and justification as to the appropriateness of the water management and monitoring program to handle the waste in an environmentally sound manner.	Refer **Section 5.3.7**
EPA 16 May 2025	Section 6.0 of the Draft WMP states that water collected in the Containment Cells will be retained on-site until tested and, if required, treated for the removal of asbestos fibres prior to removal or disposal. The EPA notes that limited information has been provided on monitoring and potential treatment options for asbestos-contaminated water. Further details should be provided regarding Containment Cell water management, analyte testing, treatment and compliance criteria.	Refer **Section 6.0** and **6.3**
DPHI June 2025	B14. The performance measures in Table 3 apply to the entire approved development area, including all landforms constructed under previous development consents. However, these performance measures do not require any additional earthmoving works to be undertaken for landforms that have been approved and constructed under previous consents, except where those earthworks are required for the establishment of a stable and non-polluting landform.	Paragraph added to **Section 5.0**
DPHI June 2025	B15. (c) include a development water balance;	A paragraph has been added to the water balance **Section 6.0**. The WIA GHD 2023 estimated that the annual dust suppression demand ranges between 100 and 160ML/yr. It was simulated that this demand would be met by reusing water from the Borrow Pit Settlement Dam in about 70% of the years. In the remaining 30%, up to 100ML of additional external

EPA / DPHI Correspondence	Condition Requirement	Comment / WMP Section
		water would be needed to meet the demand. This additional water would be sourced from AGLMs existing water licences approvals.
DPHI June 2025	B15 (f) address the risks identified in the environmental risk assessment undertaken in accordance with condition B1;	Risks from EMS provided in **Table 3**. Note that the Ash Dam works for not from part of the Stage 1a works.
DPHI June 2025	B15 (g) support the implementation of the relevant mitigation measures identified in the documents listed in condition A2(c)	Sentence added to **Section 10.0** and Table 15 currently identifies the mitigation measures in the EIS
DPHI June 2025	B15. (h) include a monitoring and evaluation program to: (i) record surface water inflows and outflows from the approved development area including controlled and uncontrolled discharges;	Paragraph added to **Section** Error! Reference source not found. To mitigate the risk of uncontrolled discharges, automated float switches will be installed on sediment basins to regulate pumping operations. Pumping activities aimed at reducing basin water levels for dust suppression and maintaining design sediment storage capacity will be monitored. All pump rates and associated discharge volumes will be systematically recorded to ensure compliance with environmental management protocols and operational efficiency.
DPHI June 2025	(iii) the achievement of the surface water and groundwater objectives;	**Table 15** does note surface and groundwater management measures. Rewording of row 5 states the objectives of the surface and groundwater monitoring program. **Section 8.3** states that no groundwater monitoring has been considered as part of the construction activities; however, the implementation of a groundwater monitoring program associated with the Containment Cells will need to be addressed once they become operational. Although not anticipated, any potential groundwater encountered as part of the works will need to be managed in accordance NSW Aquifer Interference Policy will require

EPA / DPHI Correspondence	Condition Requirement	Comment / WMP Section
		an appropriate licence under water access licences prior to any such extraction occurring.
DPHI June 2025	i. (i) include a TARP to respond to any exceedances of the relevant performance measures, objectives or performance indicators including reporting requirements and repair, mitigation and/or offsetting of any adverse surface water or groundwater impacts; and	Removal of section 0. **Table 15** notes the TARP.
DPHI June 2025	B16. Construction other than demolition must not commence until the water management plan is approved by the Planning Secretary	Noted and added to Consent Conditions Table reference to **Section 1.5** and **13.1**
DPHI June 2025	B17. The water management plan, as approved by the Planning Secretary, must be implemented for the development.	Noted and added to Consent Conditions Table reference to **Section 13.1**
DPHI June 2025	EPA 16 May 2025 comment - Complimentary to this, the EPA intends to include the outcomes of the water characterisation study at the Liddell Power Station, prepared in accordance with Licence condition U1 – PRS 20, into the Licence to contemporise water monitoring requirements, which may alter the Licence water quality monitoring program. The Draft/Final WMP may need to be reviewed and amended to ensure consistency with any variation to the licence.	The water characterisation study completed at part of U1 – PRS 20 referred to relates to the Liddell Ash Dam which is not included as part of the Stage 1a works. The water monitoring program associated with the outcomes of U1 – PRS 20 will be included in the Stage 2 Water Management Plan.

AECOM Australia Pty Ltd
Awabakal and Worimi Country
Level 8, 6 Stewart Avenue
Newcastle West NSW 2302
PO Box 73
Hunter Region MC NSW 2310
Australia
www.aecom.com

+61 1800 868 654 tel

ABN 20 093 846 925

19 February 2025

Minister for Planning and Public Spaces
NSW Government Department of Planning, Housing and Infrastructure
Attention: Chris Ritchie

Dear Chris,

Water Management Plan - Endorsement of Experienced Person - SSD-24937520

Application Number:	**SSD-24937520**
Applicant:	**AGL Macquarie PTY Ltd. (AGLM)**
Consent Authority:	**Minister for Planning and Public Spaces**
Development:	**Liddell Future Land Use and Enabling Works Project**
Condition:	**Condition B15.b**

Please find enclosed a curriculum vitae for approval in response to condition B15.a

b. *be prepared:*
   i. *By a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary; and*
   ii. *In consultation with the NSW EPA:*

for Kelly Mulhearn and Greg Matthews as intended authors of the Water Management Plan for the above works and James Jentz and Alison O'Neill as AECOM verifiers for approval.

Yours faithfully

Kelly Mulhearn
Principal Environmental Engineer
kelly.mulhearn@aecom.com

Mobile: +61 431 931 413

Direct Fax: +61 431 931 413

encl: CV Kelly Mulhearn
CV Greg Matthews
CV Alison O'Neill
CV James Jentz

DOC25/332590-3

Department of Planning, Housing, and Infrastructure

Via the Major Projects Portal

16 May 2025

Attention: The Proper Officer,

EPA Response to the Draft Water Management Plan- Stage 1A Liddell Future Land Use and Enabling Works - SSD-24937520-PA-13

I refer to your email, dated 23 April 2025, to the NSW Environmental Protection Authority (EPA) seeking the EPA's advice on the draft document 'Stage 1A Liddell Future Land Use and Enabling Works - Water Management Plan' for Liddell Power Station - SSD-24937520 (Project), dated 23 April 2025, prepared by AECOM Australia Pty Ltd (Draft WMP).

The EPA understands that the SSD-24937520 has been approved under the *Environmental Planning and Assessment Act 1979* (EP&A Act). Condition B15 of the development consent requires the preparation of a water management plan, excluding the Liddell Ash Dam (LAD) and demolition activities. The development consent states that a plan must be prepared in consultation with the EPA.

As a regulatory authority, the EPA generally does not review or endorse post-approval management plans/programs. However, given the circumstances of the Liddell SSD- 24937520, the EPA has reviewed the Draft WMP and provides comments for your consideration.

The EPA understands the Draft WMP is for Stage 1 Part A of the Project, which includes:

- construction and operation of a Borrow Pit for the extraction of material for capping activities
- construction and operation of an asbestos disposal facility (Containment Cells)
- rerouting of an existing dual water supply pipeline to establish a water supply connection from the freshwater dam supply source to the LAD operations area.

Environment Protection Licence

AGL Macquarie Pty Limited (AGLM) currently holds Environment Protection Licence 2122 (Licence) issued under the *Protection of the Environment Operations Act 1997* (POEO Act) to undertake scheduled activities at the Liddell Power Station. As the Project will continue to be regulated through the Licence, AGLM will be required to submit a licence variation to lawfully permit any new discharges from the Premises or where the Licence may require other variations should the Project (and final WMP) be inconsistent with existing conditions.

EPA comments on the Draft WMP

The EPA acknowledges that the Draft WMP prioritised re-use of dirty water collected in sediment basins over discharge to receiving waters.

NSW Environment Protection Authority
As the environmental steward and regulator of our State we are committed to a sustainable future. Join us on our mission to protect tomorrow together.

Phone: 131 555
Email: info@epa.nsw.gov.au
Website: epa.nsw.gov.au

Visit: 6&8 Parramatta Square 10 Darcy Street PARRAMATTA NSW 2150
Mail: Locked Bag 5022 PARRAMATTA NSW 2124

The EPA notes the Draft WMP incorporates advice the EPA provided during other stages of the Project, in particular:

- a 'preliminary site water balance' including volumes from the catchments, water demands, and site water management
- source controls, erosion and sediment control structures
- the development of a Trigger Action Response Plan (TARP) which identifies appropriate triggers, notifications, response actions and protocols.

Section 5.2.5 of the Draft WMP states that "*As per Condition A6 of the Consent, the Containment Cells are to be used for the storage of asbestos waste, ACM, SMF, and other associated waste authorised by the Site Auditor*". Further details should be provided regarding the 'other associated waste' planned for disposal in the Containment Cells, including identification of the waste and justification as to the appropriateness of the water management and monitoring program to handle the waste in an environmentally sound manner.

Section 6.0 of the Draft WMP states that water collected in the Containment Cells will be retained on-site until tested and, if required, treated for the removal of asbestos fibres prior to removal or disposal. The EPA notes that limited information has been provided on monitoring and potential treatment options for asbestos-contaminated water. Further details should be provided regarding Containment Cell water management, analyte testing, treatment and compliance criteria.

The EPA notes that the Skimmer Dam would receive discharges from the Borrow Pit area and from the Borrow Pit Settlement Pond. The Skimmer Dam eventually discharges to Lake Liddell via the overflow spillway under the Licence. The EPA intends to review the Licence's monitoring program to ensure that it appropriately aligns with the final WMP, including review of the monitoring frequency, analytes and limits.

Complimentary to this, the EPA intends to include the outcomes of the water characterisation study at the Liddell Power Station, prepared in accordance with Licence condition U1 - PRS 20, into the Licence to contemporise water monitoring requirements, which may alter the Licence water quality monitoring program. The Draft/Final WMP may need to be reviewed and amended to ensure consistency with any variation to the Licence.

If you have any further questions about this issue, please contact Nirmala Dharmarathne on 02 62229 7029 or at info@epa.nsw.gov.au.

Yours sincerely,

ADAM PLANT
A/Unit Head - Operations
Environment Protection Authority

2

Liddell Future Land Use
WMP Stage 1A (SSD-24937520-PA-13)
Post Approval Review

Department of Planning, Housing and Infrastructure

Document: Water MP
Revision: Version 2 dated XX Month Year
Reviewed: Charissa Pillay on June 2025

Condition XX, Schedule XX	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
B13 The development must comply with the performance measures in Table 3. **Table 3 – Water management performance measures** Feature: Water management – general Performance measure: • Maintain separation between clean and dirty water management systems • Minimise the use of clean and potable water by the development • Maximise water recycling, reuse and sharing opportunities • Design, install, operate and maintain water management systems in a proper and efficient manner	Yes	Table 12 addresses the conditions with KPI		

1

Liddell Future Land Use
WMP Stage 1A (SSD-24937520-PA-13)
Post Approval Review

Department of Planning, Housing and Infrastructure

Document: Water MP
Revision: Version 2 dated XX Month Year
Reviewed: Charissa Pillay on June 2025

Feature	Performance measure				
Erosion and sediment control	• Design, install and maintain erosion and sediment controls generally in accordance with the guidance series *Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book* (Landcom, 2004), *Volume 2A: Installation of Services* (DECC, 2008), *Volume 2C: Unsealed Roads* (DECC,2008), *Volume 2D: Main Road Construction* (DECC, 2008) and *Volume 2E: Mines and Quarries* (DECC, 2008) • Design, install and maintain sediment dams generally in accordance with the guidance series Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004) and 2E Mines and Quarries (DECC, 2008)				
Water diversion and storage	• Maximise the diversion of clean water around disturbed areas within the approved development area, except where clean water is captured for use by the development • Design, install and maintain water storage infrastructure to avoid unlicensed or uncontrolled discharge of water				
Chemical and hydrocarbon storage	• Chemical and hydrocarbon products stored in bunded areas in accordance with the relevant Australian Standard				
Aquatic and riparian ecosystems	• Negligible environmental consequences beyond those predicted in the documents listed in condition A2(c)				
Alluvial aquifers	• Negligible impacts to the alluvial aquifer as a result of the development, beyond those predicted in the document/s listed in condition A2(c), including: ○ Negligible change in groundwater levels ○ Negligible change in groundwater quality ○ Negligible impact to other groundwater users				
Works on waterfront land	• All works within waterfront land is managed in accordance with the guidance series for Controlled Activities on Waterfront Land (DPE, 2022) • Minimise disturbance of banks and implement appropriate stabilisation mitigation				

2

Liddell Future Land Use
WMP Stage 1A (SSD-24937520-PA-13)
Post Approval Review

Department of Planning, Housing and Infrastructure

Document: Water MP
Revision: Version 2 dated XX Month Year
Reviewed: Charissa Pillay on June 2025

B14. The performance measures in Table 3 apply to the entire approved development area, including all landforms constructed under previous development consents. However, these performance measures do not require any additional earthmoving works to be undertaken for landforms that have been approved and constructed under previous consents, except where those earthworks are required for the establishment of a stable and non-polluting landform.	No	The plan does not include the condition.	Include the condition B14 in the plan	
B15. A water management plan must be prepared for the development, excluding the Liddell Ash Dam and demolition activities considered by the demolition environmental management plan. The plan must:	Yes	Section 1.3.2 addresses the requirement.	-	
(a) be submitted to the Planning Secretary for approval prior to the commencement of construction;	Yes	-	-	
(b) be prepared: (i) by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary; and	Yes	Letter dated 26 March 2025	-	
(ii) in consultation with the NSW EPA;	Yes	Consultation undertaken		
(c) include a development water balance;	Partial	Section 6.0 partially discusses the inputs and outputs of site water. It is unclear on the amount of water used for dust suppression and whether water on site will be sufficient for dust suppression without carting water onto site.	Illustrate the inputs and outputs demonstrating water on site will be balanced.	
(d) include a review of the water licensing strategy for the development in consultation with DCCEEW Water Group;	Noted	Sections 2.1.3, 6.4 The water licences held by AGLM are associated with the entire site, including BPS which will continue to operate until its planned end of life between 2030 and 2033. No change to the current water licensing	-	

3

Liddell Future Land Use
WMP Stage 1A (SSD-24937520-PA-13)
Post Approval Review

Department of Planning, Housing and Infrastructure

Document: Water MP
Revision: Version 2 dated XX Month Year
Reviewed: Charissa Pillay on June 2025

		strategy is required for Stage 1A Works. Further information on the water licences timing and strategy will be provided with the management plans for Stage 2 of the Development as agreed with DPHI		
(e) ensure all works carried out as part of the development comply with the performance measures detailed in Table 3;	Yes	Table 12 addresses the conditions with KPI	-	
(f) address the risks identified in the environmental risk assessment undertaken in accordance with condition B1;	No	Section 7.0 does not discuss the risks identified in the ERA and how they are addresses.	Consider transferring the risk identified from the EMS.	
(g) support the implementation of the relevant mitigation measures identified in the documents listed in condition A2(c)	No	Section 7.0 discusses erosion and sediment control measures and not details to address condition (g).	Include information to support the implementation of the relevant mitigation measures identified in the documents listed in condition A2(c)	
(h) include a monitoring and evaluation program to: (i) record surface water inflows and outflows from the approved development area including controlled and uncontrolled discharges;	No	Sections 8.0, 9.0,0,11.0 are not clear if the surface water inflows and outflows from the approved development area including controlled and uncontrolled discharges are recorded.	Confirm if the inflows and outflows are recorded.	

4

Liddell Future Land Use
WMP Stage 1A (SSD-24937520-PA-13)
Post Approval Review

Department of Planning, Housing and Infrastructure

Document: Water MP
Revision: Version 2 dated XX Month Year
Reviewed: Charissa Pillay on June 2025

(ii) assess compliance with the relevant performance measures and conditions of this consent; and	Yes	Table 12 addresses the condition.	-	
(iii) the achievement of the surface water and groundwater objectives;	No	Table 14 discuses ESCP objectives. It is not clear what are the groundwater objectives and how they will be achieved.	Discuss the achievement of the surface water and groundwater objectives	
(i) include a TARP to respond to any exceedances of the relevant performance measures, objectives or performance indicators including reporting requirements and repair, mitigation and/or offsetting of any adverse surface water or groundwater impacts; and	Partial	There is no Section 0, section 11.0 and Table 14 addresses the requirement.	Remove reference to section O	
(j) include processes to review the plan, including responding to non-compliances, incidents or complaints.		Section 13.0 addresses the requirement.		
B16. Construction other than demolition must not commence until the water management plan is approved by the Planning Secretary	No	There is no detail to address the condition.	Include the commitment to commence construction once the Water MP is approved.	
B17. The water management plan, as approved by the Planning Secretary, must be implemented for the development.	No	There is no detail to address the condition	Include a commitment to implement an approved Water MP.	
Condition XX, Schedule XX	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
D1. Independent Environmental Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020), or its latest version published on the Department's website	Yes	Section 13.4.1 addresses the requirement.	-	
D2. By the end of March each year, after the date of commencement of development under this consent, or other timeframe agreed by the Planning Secretary, the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development	Yes	Section 13.4.2 addresses the requirement.	-	

5

Liddell Future Land Use
WMP Stage 1A (SSD-24937520-PA-13)
Post Approval Review

Department of Planning, Housing and Infrastructure

Document: Water MP
Revision: Version 2 dated XX Month Year
Reviewed: Charissa Pillay on June 2025

D3 Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department of Planning, Industry and Environment, 2020) or its latest version published on the Department's website and must also: a. identify any trends in the monitoring data over the life of the development; b. identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and c. describe what measures will be implemented over the next year to improve the environmental performance of the development.	Yes	Section 13.4.2 addresses the requirement.	-	
General Comments			**Action Required**	**Company Response**
The WMP is in draft version. Only final documents are to be submitted to the Department for review.			Update the management plan to plan.	
Other Agency Comments			**Action Required**	**Company Response**
The Department name has been updated to the NSW Department of Planning, Housing and Infrastructure (DPIH). Please update in the document.				
EPA				

6

Liddell Future Land Use
WMP Stage 1A (SSD-24937520-PA-13)
Post Approval Review

Department of Planning, Housing and Infrastructure

Document: Water MP
Revision: Version 2 dated XX Month Year
Reviewed: Charissa Pillay on June 2025

The EPA notes the Draft WMP incorporates advice the EPA provided during other stages of the Project, in particular: • a 'preliminary site water balance' including volumes from the catchments, water demands, and site water management • source controls, erosion and sediment control structures • the development of a Trigger Action Response Plan (TARP) which identifies appropriate triggers, notifications, response actions and protocols.	Section 5.2.5	
Section 5.2.5 of the Draft WMP states that "*As per Condition A6 of the Consent, the Containment Cells are to be used for the storage of asbestos waste, ACM, SMF, and other associated waste authorized by the Site Auditor*". Further details should be provided regarding the 'other associate waste' planned for disposal in the Containment Cells, including identification of the waste and justification as to the appropriateness of the water management and monitoring program to handl the waste in an environmentally sound manner. Section 6.0 of the Draft WMP states that water collected in the Containment Cells will be retained on-site until tested and, if required, treated for the removal of asbestos fibres prior to removal or disposal. The EPA notes that limited information has been provided on monitoring and potential treatment options for asbestos-contaminated water. Further details should be provided regarding Containment Cell water management, analyte testing, treatment and compliance criteria.	Section 6.0 and section 6.3	
The EPA notes that the Skimmer Dam would receive discharges from the Borrow Pit area and fro the Borrow Pit Settlement Pond. The Skimmer Dam eventually discharges to Lake Liddell via the overflow spillway under the Licence. The EPA intends to review the Licence's monitoring program to ensure that it appropriately aligns with the final WMP, including review of the monitoring frequency, analytes and limits.	Section 8.2.3	
Complimentary to this, the EPA intends to include the outcomes of the water characterisation stu at the Liddell Power Station, prepared in accordance with Licence condition U1 - PRS 20, into the Licence to contemporise water monitoring requirements, which may alter the Licence water qualit monitoring program. The Draft/Final WMP may need to be reviewed and amended to ensure consistency with any variation to the Licence. If you have any further questions about this issue, please contact Nirmala Dharmarathne on 02 62229 7029 or at info@epa.nsw.gov.au.	Include a commitment to revise the WMP to address the EPA comment.	

7

Department of Planning, Housing and Infrastructure

Our ref: SSD-24937520-PA-13

Matthew Parkinson
Manager Environment and Approvals
AGL Macquarie Pty Ltd
New England Highway
Muswellbrook, NSW, 2333

7 July 2025

Liddell Future Landuse Project – Stage 1A Water Management Plan

Dear Mr. Parkinson

Thank you for submitting the Water Management Plan in accordance with Condition B15, Schedule 2 of the consent for the Liddell Future Landuse Project (SSD-24937520). I also acknowledge your response to the Department's review comments and request for additional information.

I note the Water Management Plan has been prepared in consultation with the EPA; and contains the information required by the conditions of approval.

Accordingly, as nominee of the Planning Secretary, I approve the revised Stage 1A Water Management Plan (Rev. 3, July 2025).

You are reminded that if there are any inconsistencies between the Plan and the conditions of approval, the conditions prevail.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Charissa Pillay on 02 99955944.

Yours sincerely

Stephen O'Donoghue
Director Resource Assessments
As nominee of the Planning Secretary

Appendix B

Monitoring of Pollutants Discharged

Table 19 Point 18 (relevant to EPL 18 only)

Pollutant	Units of measure	Frequency	Sampling method	EPL Point Applicable
Oil and Grease	Milligrams per litre	Special Frequency 1	Grab sample	18
pH	Milligrams per litre	Special Frequency 1	Grab sample	18
Total suspended solids	Milligrams per litre	Special Frequency 1	Grab sample	18

Special frequency 1 means:

a. weekly during the discharge from point 18.

Table 20 Point 26 (relevant to EPL 26 only)

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium	Milligrams per litre	Quarterly	Grab sample
Antimony	Milligrams per litre	Monthly	Grab sample
Arsenic (III)	Milligrams per litre	Monthly	Grab sample
Arsenic (total)	Milligrams per litre	Monthly	Grab sample
Arsenic (V)	Milligrams per litre	Monthly	Grab sample
Barium	Milligrams per litre	Quarterly	Grab sample
Beryllium	Milligrams per litre	Quarterly	Grab sample
Boron	Milligrams per litre	Monthly	Grab sample
Cadmium	Milligrams per litre	Quarterly	Grab sample
Calcium	Milligrams per litre	Quarterly	Grab sample
Chloride	Milligrams per litre	Quarterly	Grab sample
Chromium (hexavalent)	Milligrams per litre	Quarterly	Grab sample
Chromium (total)	Milligrams per litre	Monthly	Grab sample
Chromium (trivalent)	Milligrams per litre	Quarterly	Grab sample
Cobalt	Milligrams per litre	Monthly	Grab sample
Copper	Milligrams per litre	Quarterly	Grab sample
Cyanide (total)	Milligrams per litre	Quarterly	Grab sample
Dissolved organic carbon	Milligrams per litre	Quarterly	Grab sample
Electrical conductivity	Milligrams per litre	Monthly	Probe
Fluoride	Milligrams per litre	Quarterly	Grab sample
Hardness (as calcium carbonate	Milligrams per litre	Quarterly	Grab sample
Iron	Milligrams per litre	Quarterly	Grab sample
Lead	Milligrams per litre	Quarterly	Grab sample
Magnesium	Milligrams per litre	Quarterly	Grab sample

Pollutant	Units of measure	Frequency	Sampling Method
Manganese	Milligrams per litre	Quarterly	Grab sample
Mercury	Milligrams per litre	Quarterly	Grab sample
Molybdenum	Milligrams per litre	Monthly	Grab sample
Nickel	Milligrams per litre	Monthly	Grab sample
Nitrogen (ammonia)	Milligrams per litre	Quarterly	Grab sample
Nitrogen (total)	Milligrams per litre	Quarterly	Grab sample
Nitrogen Oxides	Milligrams per litre	Quarterly	Grab sample
pH	Milligrams per litre	Monthly	Probe
Phosphorus (dissolved reactive)	Milligrams per litre	Quarterly	Grab sample
Phosphorus (total)	Milligrams per litre	Quarterly	Grab sample
Potassium	Milligrams per litre	Quarterly	Grab sample
Selenium	Milligrams per litre	Quarterly	Grab sample
Silver	Milligrams per litre	Quarterly	Grab sample
Sodium	Milligrams per litre	Quarterly	Grab sample
Sulfate	Milligrams per litre	Monthly	Grab sample
Total suspended solids	Milligrams per litre	Quarterly	Grab sample
Turbidity	Milligrams per litre	Quarterly	Probe
Vanadium	Milligrams per litre	Monthly	Grab sample
Zinc	Milligrams per litre	Monthly	Grab sample