

Steel River BESS Project

Soil and Water Management Plan

Document ID: 201085-SE-PLN-0003

Authority

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History

Revision	Date	Amended By (Name)	Details of Amendment
1	15/02/2026	Mick Harrison	Initial Issue - Soil and Water Management Plan prepared for Construction Phase
2	12/04/2026	Mick Harrison	Document update, post Client review
3	17/04/2026	Mark Burns	Reviewed, updated and endorsed by Chris Bonomini CPESC Reg. 9621.
4	21/04/2026	Mick Harrison	Review of additional information added (Spill Response, additional information in App. A and B)
5	18/05/2026	Mick Harrison	Amendment to Section 5.2

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Definitions and Abbreviations

Term / Acronym	Definition
Aspect	An element of an activity, product or service that can interact with or affect the environment, either positively or negatively.
ASS	Acid Sulphate Soils
Ancillary infrastructure	All project infrastructure with the exception of battery storage, including but not limited to the substation, switch room, permanent offices, site compounds, electricity transmission lines and internal roads
Blue Book	Managing Urban Stormwater: Soils and Construction (Landcom / NSW Government), including Volume 1 and relevant technical guidance.
Battery storage	Large scale energy storage system
CEMP	Construction Environmental Management Plan. The primary document governing environmental management, controls, monitoring and compliance during the construction phase of the Project.
Conditions of Consent (CoC)	Legally binding conditions attached to the State Significant Development approval that must be complied with. These conditions are contained in Schedule 2 of the Development Consent for SSD-77450458, dated 23 March 2026.
Construction	The construction of the development, including but not limited to, the carrying out of any earthworks on site and the construction of the battery storage and any ancillary infrastructure (but excludes maintenance works to the public road network and pre-construction minor works)
Council	Newcastle City Council
Department	Department of Planning, Housing and Infrastructure
Development	The development as described in the EIS
Development footprint	The area within the site on which the components of the project will be constructed (shown in Appendix 1 of the Conditions of Consent)
Dewatering	The removal or interception of surface water or groundwater from excavations, trenches or work areas during construction.
Dirty Water	Stormwater or runoff that has come into contact with disturbed soils, spoil, construction materials or pollutants and requires treatment prior to discharge.
EIS	The Environmental Impact Statement titled Steel River East Battery Energy Storage System dated 29 April 2025, Submissions Report dated 16 September 2025 and the additional information provided to the Department by the Applicant dated 18 December 2025 and 2 February 2026 This includes the Environmental Impact Statement Appendix J - Water Impact Assessment.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2021</i>
EPA	NSW Environment Protection Authority
Erosion	The wearing away of soil by water or wind, resulting in the mobilisation of sediment.
ERMP	Emergency Response Management Plan
ERT	Emergency Response Team

Term / Acronym	Definition
ESCP	Erosion and Sediment Control Plan prepared and implemented in accordance with the Blue Book.
FWMP	Flood Water Management Plan
Feasible	Feasible relates to engineering considerations and what is practical to build or implement
Groundwater	Water occurring beneath the ground surface in soils and rock formations.
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm to the environment, and as a consequence of that environmental harm, may cause harm to the health and safety of human beings, and which may or may not be or cause a non-compliance
LEP	Newcastle Local Environmental Plan 2012
Material harm	Is harm that: - involves actual harm to the environment that may include (but not be limited to) a leak, spill, emission other escape or deposit of a substance, and as a consequence of that environmental harm (pollution), may cause harm to the health or safety of people; or - results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment) Note: This definition excludes “harm” that is either authorised under the consent or any other statutory approval. Note: For the purposes of this definition, material harm excludes incidents captured by Work Health and Safety reporting requirements.
Minimise	Implement all reasonable and feasible mitigation measures to reduce the impacts of the development
Minister	Minister for Planning and Public Spaces, or delegate
Mitigation Measure	A control or action implemented to avoid, minimise or manage soil, water, erosion, sediment or stormwater impacts during construction.
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent but is not an incident
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
Operation	The operation of the development, but does not include commissioning, trials of equipment or the use of temporary facilities
Planning Secretary	Secretary of the Department, or nominee
POEO Act	Protection of the Environment Operations Act 1997
Pre-construction minor works	Includes the following activities: - artefact surveys and/or salvage; - overhead line safety marking; - building and road dilapidation surveys; - geotechnical drilling, excavation or salvage; - establishing temporary site office (in locations meeting the criteria identified in the conditions of the consent) - installation of environmental impact mitigation measures, fencing and enabling works; and - construction of minor access roads and minor adjustments to services/utilities, etc.

Term / Acronym	Definition
Project	The Steel River Battery Energy Storage System (BESS) Project.
Project Footprint	The area approved under the SSD consent within which construction activities are permitted to occur.
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting
Remedial Action Plan	Woodward-Clyde, Steel River Project - Remedial Action Plan Environmental Impact Statement, May 1997
Safety Data Sheet	A Safety Data Sheet (SDS), formerly known as Material Safety Data Sheet (MSDS), is a mandatory document providing comprehensive safety, health, and environmental information about hazardous chemicals. It includes hazard identification, first aid, handling, storage, and PPE requirements, ensuring safe workplace management.
Site	As shown in Appendix 1 and listed in Appendix 2 of the Conditions of Consent
Sediment	Soil particles that have been mobilised by erosion and transported by water.
Shall	Indicates a mandatory requirement that must be complied with.
Should	Indicates a recommended requirement that should be complied with unless there is a justified reason not to do so.
SRP	Spill Response Plan
SSD	State Significant Development approved under the <i>Environmental Planning and Assessment Act 1979 (NSW)</i> .
Surface Water	Water present on the ground surface, including stormwater runoff, drains and overland flow paths.
SWMP	Soil and Water Management Plan that defines soil, erosion, sediment, stormwater, drainage and dewatering controls implemented during construction.
Site Auditor	The Site Auditor accredited under Part 4 of the <i>Contaminated Land Management Act</i>
Steel River Certification Process	Newcastle City Council's Certification Process for confirmation that the Steel River Project Remedial Action Plan is not compromised
Water Group	Water Group within NSW DCCEEW
WMP	Waste Management Plan

1 General

1.1 Introduction

The Steel River Battery Energy Storage System (BESS) Project (the Project) involves the construction and operation of a 200 MW BESS at 1 McIntosh Drive, Mayfield West, NSW. The site is located approximately 7 km north-west of Newcastle CBD, and 2 km north-west of the town of Mayfield. The Project is State Significant Development (SSD) under the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and as such is subject to the Conditions of Consent for Development Application (DA) SSD-77450458.

The Project includes the development of the following infrastructure:

- Construction, operation, and maintenance of a BESS with a 200 MW maximum power output capacity with 2- hour duration (i.e. 400 MWh).
- Containerised battery units (112 Megapacks) and associated infrastructure, including inverters and 56 medium voltage transformers.
- 33 kV underground cable connection from the battery units to Mayfield West zone substation infrastructure.
- Combined switch room and control room building.
- Eight Ring Main Units (RMU).
- Onsite workshop facility.
- Two auxiliary transformers.
- Backup diesel generator.
- Two spaces for onsite car parking.
- Other ancillary infrastructure including fire suppression, stormwater management, 2.4 m high boundary security chain wire fencing, lighting and CCTV.

The operational lifetime of the BESS is expected to be approximately 50 years. The development must be carried out generally in accordance with the Development Layout in Appendix 1 of the Conditions of Consent (reproduced as Figure 1-1 - General layout of project).

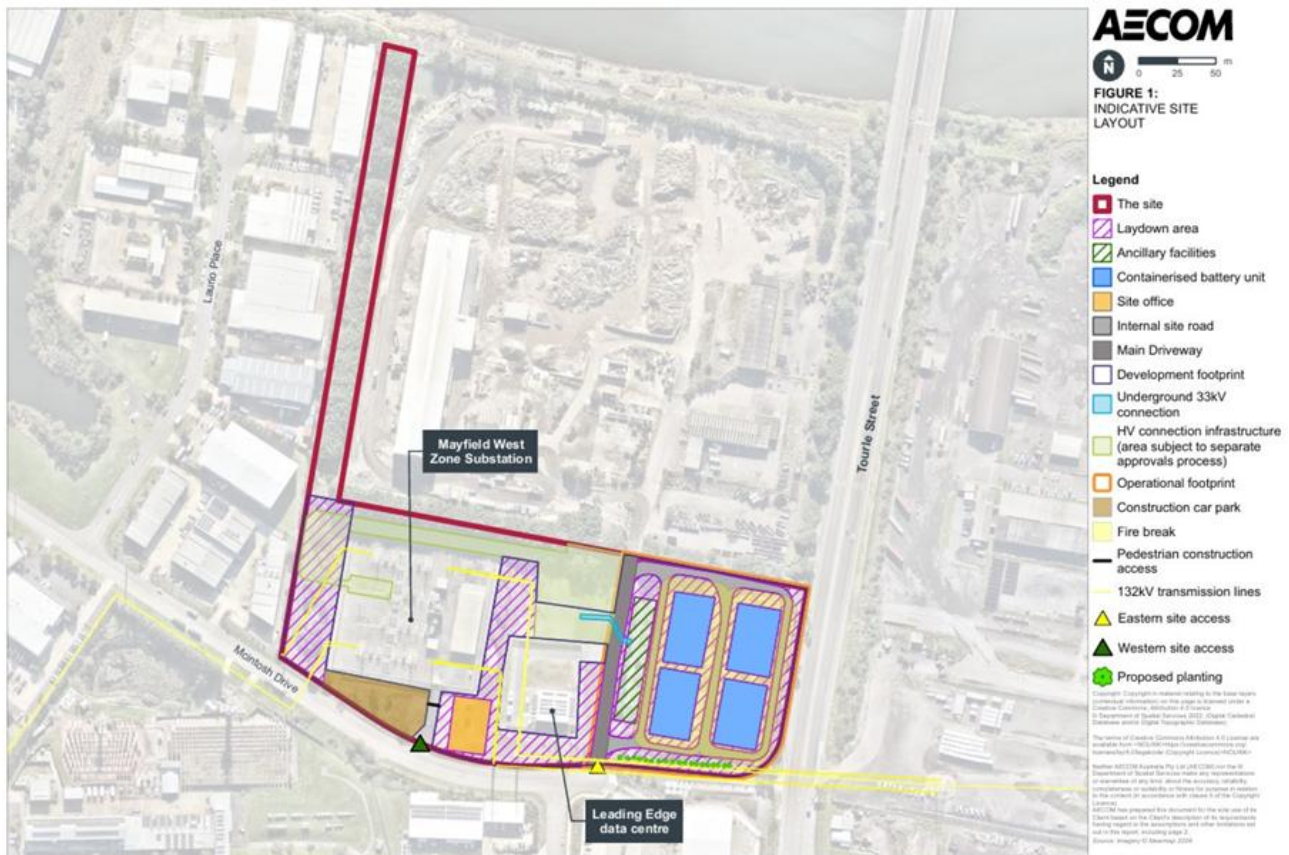


Figure 1-1 - General layout of project

1.2 Purpose

The purpose of this Soil and Water Management Plan (SWMP) is to document the structured approach to managing water and soil during the construction phase of the Project. In addition to this, the purpose of this SWMP is to:

- Guide the management of surface water, groundwater and soil throughout the construction and operation of the Project;
- Address the legislative requirements and guidelines relevant to the SWMP.
- Address the relevant Conditions of Consent such as;
 - Detail the management measures, controls, monitoring and responsibilities required to protect soil stability, surface water, groundwater and stormwater systems;
 - Include a description of the measures that would be implemented to ensure the objectives above are met;
 - Include procedures for the prevention and management of contaminated surface water on site;
 - Include detailed design of stormwater management, prepared in consultation with Council; and
 - Include details of who would be responsible for monitoring, reviewing and implementing the plan, and timeframes for completion of actions.
- Incorporate the relevant EIS mitigation measures.

As per the Conditions of Consent, this SWMP has been developed in consultation with DCCEEW Water Group. Refer to Appendix E for details of the consultation.

1.3 Objectives

The key objectives of the SWMP are set out in the Condition of Consent relevant to soil and water include:

- 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 the construction, commissioning, operation, upgrading, decommissioning or rehabilitation of the development;
- The development does not cause any water pollution, as defined under Section 120 of the Protection of the Environment Operations Act 1997 (POEO Act);
- Minimise any soil erosion and control sediment generation;
- Ensure the battery storage and ancillary infrastructure and any other land disturbance associated with the construction, upgrading or decommissioning of the development has appropriate drainage and erosion and sediment controls designed, installed and maintained in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction - Volume 2A (Landcom, 2008), or its latest version;
- Maintain separation between clean and dirty water management systems;
- Maximise the diversion of clean water around disturbed and/or exposed contaminated soils 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;
- Ensure the battery storage and ancillary infrastructure does not cause any increased water diversion off site or alter hydrology off site;
- Ensure the battery storage and ancillary infrastructure (including security fencing) are designed, constructed and maintained to reduce impacts on surface water, localised flooding (including associated risks to property) and groundwater at the site;
- Ensure the battery storage and ancillary infrastructure are designed, constructed and maintained to avoid causing any erosion on site;
- Provide for interception and removal of contaminants in the event of fire damage to the battery cells.

1.4 Scope of Work

This SWMP applies to all activities undertaken within the approved project footprint associated with the management of soil and water at the Project. This includes activities that have the potential to affect soil stability, surface water, groundwater, stormwater runoff or site drainage, disturb ground surfaces or modify existing drainage patterns. Construction activities covered by this SWMP include, but are not limited to:

- site establishment and enabling works.
- bulk and detailed earthworks, excavation and trenching.
- construction of foundations, hardstands, access roads and drainage infrastructure.

- stockpiling, handling and reuse or disposal of soils and spoil.
- temporary and permanent stormwater diversion, collection and treatment during construction.
- dewatering and groundwater interception, where required.
- installation, maintenance and removal of erosion and sediment controls.
- site stabilisation during and following construction.

SCEE is responsible for implementing this SWMP for construction activities within its scope of works, including the provision of labour, supervision, plant, equipment and materials necessary to implement the soil and water controls identified in this Plan. An overview of the project location and layout is provided in Figure 1-1 - General layout of project and Figure 1-2- Project Location.



Figure 1-2- Project Location

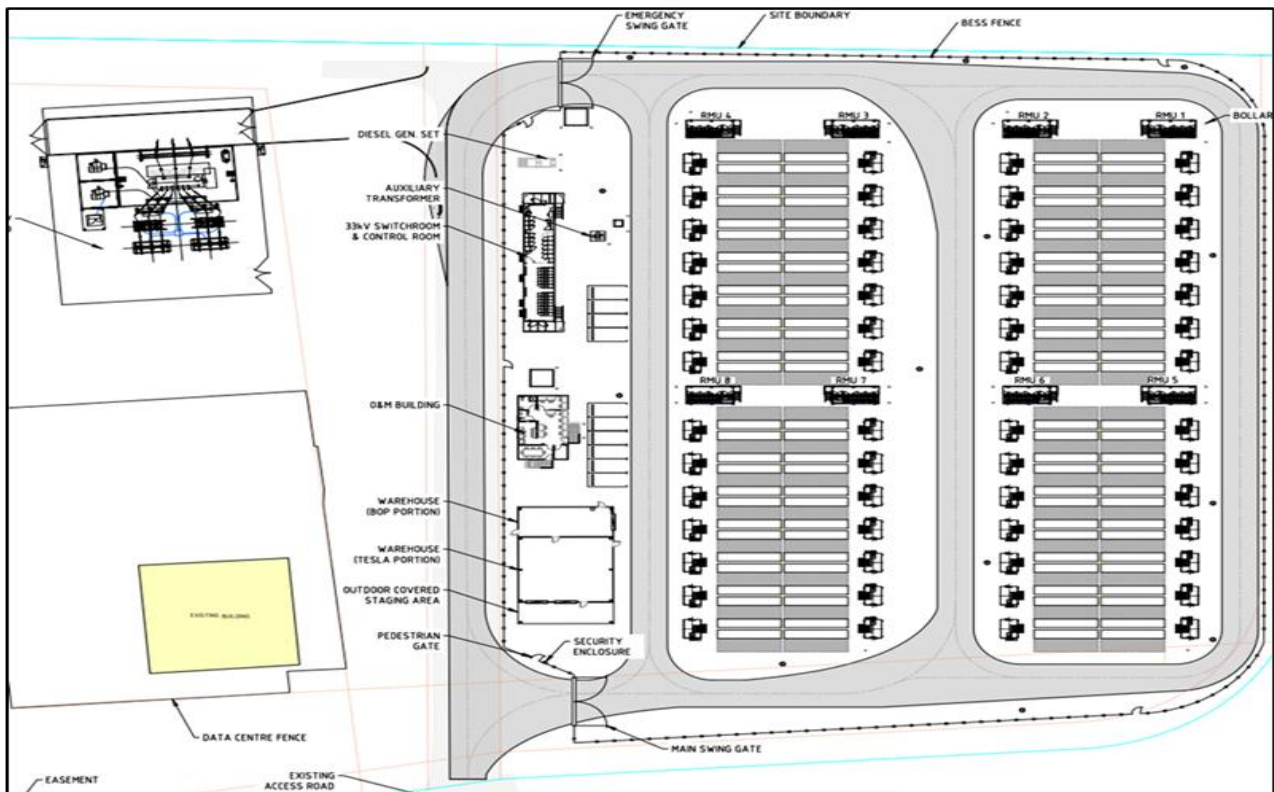


Figure 1-3 Project Layout

1.5 Relationship to Other Documents

This SWMP has been developed in accordance with the following approval hierarchy:

- Conditions of Consent - legally binding requirements applicable to construction.
- EIS - approved impacts, mitigation measures and commitment.
- The Steel River BESS Project Environmental Management Strategy (EMS) - provides overarching environmental governance for the Project. This SWMP supports the EMS by detailing construction-phase soil and water management controls.
- The Steel River BESS Project Construction Environmental Management Plan (CEMP) - the primary document governing environmental management, controls, monitoring and compliance during the construction phase of the Project.
- The SWMP (this document)
- Project procedures and contractor systems - supporting documents used to implement this SWMP.

Where any inconsistency occurs, the Conditions of Consent prevail, followed by the EIS and supporting technical assessments.

This SWMP interfaces with, but does not replace, other project management plans prepared in accordance with the Conditions of Consent, EIS or project scope, including:

- Construction Environmental Management Plan (CEMP).

- Emergency Response Plan.
- Waste Management Plan (water-related aspects only).
- The Site Management Plan (relating to contaminated land management)
- The Unexpected Contamination Finds Procedure

These documents provide supporting detail for specific activities but do not override the requirements of this SWMP for soil and water management.

1.6 Applicability and Exclusions (Construction Phase Only)

This SWMP applies to all construction activities undertaken for the Steel River BESS Project by SCEE and its subcontractors that have the potential to affect soil stability, surface water, groundwater, stormwater runoff, drainage or flooding behaviour during the construction phase.

This SWMP applies from the commencement of site establishment and enabling works through to completion of construction and stabilisation of disturbed areas. All personnel engaged in construction activities that may influence soil or water conditions are required to comply with the controls and requirements set out in this SWMP.

This SWMP does not apply to:

- detailed design activities undertaken prior to the commencement of construction.
- operational or maintenance activities following commissioning of the facility.
- permanent operational stormwater infrastructure following commissioning.
- electrical commissioning and testing activities managed under separate commissioning or operational procedures, except where soil or water controls are required by the Conditions of Consent.
- corporate-level environmental management systems or non-project-specific procedures, except where referenced to support implementation of this SWMP.

Where construction activities fall outside the scope of this SWMP but have the potential to impact soil or water, alternative project-specific plans, procedures or controls will be implemented in accordance with the Conditions of Consent and contractual requirements.

2 Legal and Other Requirements

2.1 Legislation

The following legislation is applicable to soil and water management for the Project:

- *Contaminated Land Management Act 1997* (CLM Act)
- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- Newcastle Local Environmental Plan 2012 (LEP)
- *Protection of the Environment Operations Act 1997* (POEO Act)
- Protection of the Environment Operations (General) Regulation 2022
- State Environmental Planning Policy (Resilience and Hazards) 2021
- *Water Act 1912*
- *Water Management Act 2000* (WM Act)

2.2 Policies and guidelines

The following guidelines and standards relating to soil and water management have been referenced within the EIS and during the development of this Plan:

- The NSW Water Quality and River Flow Objectives (DECCW 2006)
- The Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000 and ANZG 2018)
- The NSW Flood Risk Management Manual 2023 and NSW Flood Prone Land policy
- Australian Rainfall and Runoff (ARR) (Babister et al. 2019, as amended in 2024)
- Managing Urban Stormwater, Soils and Construction, Volume 1 (Landcom 2004) more commonly referred to as 'The Blue Book'

2.3 Conditions of Consent and EIS

The Project is State Significant Development (SSD) under the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and as such is subject to the Conditions of Consent for Development Application (DA) SSD-77450458.

The Conditions of Consent (CoC) for the Steel River BESS Project include specific requirements applicable to the construction phase relating to soil, surface water, groundwater, stormwater, drainage and flooding. Condition of Consent A2(c) specifies that the development may only be carried out in general accordance with the Environmental Impact Statement (EIS).

The EIS for the Steel River BESS Project identifies the potential impacts of construction activities on soil, surface water, groundwater, stormwater, drainage and flooding, and defines mitigation measures to avoid, minimise or manage those impacts. The following Appendices of the EIS contain specific information on soil or water:

- Appendix J - Water Impact Assessment
- Appendix G - Detailed Site Contamination Assessment

This SWMP has been developed to implement the construction-phase soil and water requirements of the Conditions of Consent and EIS through defined site controls, responsibilities, monitoring and records.

All construction activities undertaken by SCEE and its subcontractors that may affect soil or water must comply with the relevant Conditions of Consent at all times.

To ensure clear compliance and traceability:

- Construction-phase soil and water-related Conditions of Consent and EIS mitigation measures are addressed within the relevant sections of this SWMP and associated appendices.
- Compliance with each applicable condition is tracked through the Conditions of Consent Concordance Table provided in Appendix A.
- EIS soil and water mitigation measures applicable to construction have been mapped to specific SWMP controls. This mapping is provided in Appendix B - EIS Mitigation Measures to SWMP Controls.

Where a Condition of Consent or EIS mitigation measures require the preparation or implementation of a specific soil or water management measure, that requirement is either addressed within this SWMP or referenced to a supporting document, as appropriate.

Where any inconsistency arises between the EIS and the Conditions of Consent, the Conditions of Consent prevail. Where any conflict arises between this SWMP and the Conditions of Consent, the Conditions of Consent prevail. All construction activities will be undertaken in a manner consistent with the assumptions, commitments and mitigation measures assessed in the EIS.

2.4 Environmental Objectives and Performance Targets

The soil and water management objectives of the Steel River BESS Project during the construction phase are to ensure that construction activities are planned and undertaken in a manner that:

- prevents erosion, sedimentation and pollution of surface water and groundwater.
- manages stormwater runoff and drainage in accordance with approved design intent.
- avoids adverse flooding, scouring or offsite water impacts.
- complies with all applicable Conditions of Consent and EIS soil and water commitments, including Appendix J - Water Impact Assessment

Environmental performance objectives for soil and water management during construction are outlined below in Table 1.

Table 1: Environmental performance objectives

Environmental Objective	Performance Intent / Measure	Assessment
Compliance with approvals.	Construction activities comply with all applicable soil and water-related Conditions of Consent and EIS commitments.	Inspections, audits, CoC concordance tracking.

Environmental Objective	Performance Intent / Measure	Assessment
Effective erosion and sediment control.	Erosion and sediment controls are installed, maintained and effective at all times.	ESCP inspections, rainfall-trigger inspections.
Prevention of water pollution.	No uncontrolled discharge of sediment-laden or contaminated water from the site.	Site inspections, incident records.
Effective stormwater management.	Stormwater runoff is appropriately diverted, treated and discharged in accordance with the SWMP.	Inspections, monitoring records.
Controlled dewatering.	Dewatering activities (if required) are managed to prevent erosion, contamination or offsite impacts.	Dewatering records, inspections.
Protection of surrounding environments.	Construction activities do not adversely impact surrounding land, drainage networks or receiving waters.	Site inspections, monitoring results.
Timely corrective action.	Soil and water non-conformances are identified, reported and rectified promptly.	NCR tracking, corrective action register.
Continuous improvement.	Soil and water performance is reviewed and improved where required.	Audits, management review.

Performance against these objectives will be assessed through routine inspections, rainfall-triggered inspections, monitoring activities, incident reporting, audits and management review processes as outlined in this SWMP.

2.5 Responsibilities

SCEE Project Management is responsible for ensuring that soil and water management requirements are implemented in accordance with this SWMP, the Conditions of Consent, the EIS and applicable legislative obligations.

Project Management and supervisory personnel are responsible for ensuring that appropriate controls are established and maintained during construction, and that subcontractors operate in accordance with this SWMP and relevant approval requirements.

All personnel engaged on the Project are required to comply with the soil and water management requirements of this SWMP and to report any environmental incidents, hazards or non-conformances. Detailed roles and responsibilities for the implementation, monitoring and management of this SWMP are provided in Section 7.1.

Refer: [SCEE-BS-HS-PRO-0019 EMS Compliance Obligations Procedure](#)

3 Site Context and Existing Environment

The Environmental Impact Statement (EIS) titled Steel River East Battery Energy Storage System dated 29 April 2025 assessed the impacts of construction and operation of the Project on soils and water, within Section 6.3 (Soils) and 6.7 (Surface water, groundwater and flooding). A summary of these impacts is provided in Section 4 of this SWMP.

The EIS identified the potential for direct and indirect impacts on soils and water quality but concluded that provided the proposed mitigation and management measures are implemented, no significant long-term impacts would be expected. This section summarises the relevant information from the EIS.

3.1.1 Catchment

The site is situated in the Hunter River catchment, which has an area of approximately 21,500 square km². The topography of the catchment varies, ranging from 0 m Annual Height Datum (AHD) in floodplains to 1,500 m AHD in mountain ranges. The catchment features several significant wetland complexes important for waterbird habitats, including Kooragang Nature Reserve, Hexham Swamp, Hunter Wetlands Centre downstream, and upland swamps in Barrington Tops upstream.

3.1.2 Climate

The site is located within a temperate climate zone and does not typically experience a dry season. There is strong seasonality observed in the region of the site, with maximum temperatures exceeding 30 degrees Celsius (°C) during summer months and dropping to 15 °C in winter months. The average annual rainfall, as recorded at the Newcastle Nobbys Signal Station (061055), is 1,108.55 mm. February to June generally experiences slightly higher median rainfall. The maximum annual rainfall recorded is 1,765.7 mm in 1990, with a minimum annual rainfall of 666.6 mm recorded in 2019. The region experiences strong evapotranspiration throughout the year, with average annual levels of approximately 1,500 mm. December through to March experiences the highest monthly totals of evapotranspiration.

Moisture deficit (the difference between annual evapotranspiration and annual rainfall) is experienced in all months except June, with an overall annual moisture deficit of 391.43mm. This indicates that evapotranspiration predominantly controls moisture levels in the region throughout the year

3.1.3 Soils

The site is located across both 'Disturbed Terrain' and 'Beresfield' soil landscapes. Disturbed Terrain is classified as soil that has been heavily affected by human activity and exists in the north-west portion of the site. The Beresfield soil landscape exists in the south-east portion and is characterised by brownish black loams, sandy loams and clay.

The Newcastle Local Environment Plan (LEP) indicates the potential for Acid Sulphate Soils (ASS) to be present within the site. Class 2 and Class 5 ASS are indicated in the north-west and the south-east portions of the site.

3.1.4 Contamination

The EIS contains a Detailed Site (Contamination) Assessment prepared by RCA Australia to assess the potential contamination status of the site. The site was formerly within Platt's Channel and was formed by filling with steelworks waste and byproducts from between 1954 and 1966 when BHP Billiton (BHPB) acquired the land. The site was then used as an equipment hardstand as part of the operation of the steelworks and associated industries until the late 1990s when the steelworks closed. Remediation was undertaken at the site and the majority of the larger area of the Steel River Estate due to historical assessment of the presence of significant concentrations of polycyclic aromatic hydrocarbons (PAH) along with tar and oil residues. The site was remediated via the introduction of a 2m capping layer to render the site suitable for commercial / industrial land use in 2004.

3.1.5 Topography

The pre-construction topography of the site is generally flat, with a small mound in the eastern portion of the site adjacent to Tourle Street. The elevation of the site ranges from 13.3m AHD at its highest point to 9.4 m AHD at its lowest point. Some of the site features include:

- A grassy hill adjacent to Tourle Street reaches 13.3m AHD - The eastern slope reaching 9.4m AHD, with an 8% slope - The western slope reaching 10.7 m AHD, with a 4% slope
- The eastern edge of the site near Tourle Street experiences a steep drop from 10m AHD to 3.7m AHD on Tourle Street
- To the north of the site, the land gently slopes from south to north, towards the Hunter River.

3.1.6 Hydrology and drainage

The closest body of water to the Project, the Hunter River, is located 300m north of the site. The Hunter Estuary Wetlands, which is a Ramsar wetland, are located approximately 2.5km north. The site's runoff currently discharges east (towards Tourle Street) or west (towards the existing substation). Vegetated swales, culvert structures and a primary collection pit exist to the west of the site, where water flows through the swales and minor culvert structures before entering the local stormwater system.

3.1.7 Groundwater

Groundwater in the vicinity of the site is likely to flow towards the South Channel of the Hunter River. It is estimated that groundwater is more than 5m below the surface.

3.1.8 Water Quality

The nearest water quality data available for the Hunter River is from a sampling site approximately 36km from the site, located at Luskintyre (Station number 210009). A review of this data presented in the EIS indicated the Hunter River at Luskintyre is of poor quality (as per the Water Quality Index tool), with flooding as the main cause.

3.1.9 Flooding conditions

A review of the Newcastle City-wide Floodplain Risk Management Study and Plan (2012) indicated that the site is largely unaffected by flooding. This is due to the South Channel of the Hunter River being at a higher elevation than the northern bank, which generally pushes flooding north of the river rather than south. The NSW Flood Risk Management Manual (DPHI, 2023) defines flood prone land as land that is susceptible to a Probable Maximum Flood (PMF). In the PMF event, Tourle Street was projected to be subject to 2m of inundation, though this was not predicted to impact the site.

The estimated PMF for the site is 5.4m AHD, which was categorised as “riverine flooding where there is sufficient time to remove people from the risk to their lives by means of formal community evacuation plans”.

4 Environmental aspects and impacts

Construction of the Steel River BESS Project involves activities that have the potential to impact soil stability, stormwater runoff, surface water quality and the downstream drainage network, particularly during periods of rainfall.

The Project is located within an established industrial area and is connected to the City of Newcastle stormwater network. During construction, disturbance of soils, excavation, stockpiling and temporary modification of drainage paths increase the risk of erosion, sediment mobilisation, sediment-laden stormwater runoff, uncontrolled discharge to the stormwater network and localised ponding or flooding if drainage is impeded.

Consistent with the Environmental Impact Statement (EIS) and Appendix J – Water Impact Assessment, these risks are primarily associated with temporary disturbance of soils and alteration of drainage conditions during construction, rather than long-term operational impacts. The key aspects and potential impacts in relation to soil and water management are summarised in Table 2.

Table 2: Aspects and Impacts

Aspects	Impacts
Earthworks, excavation and disturbance of soils.	Erosion and mobilisation of sediments resulting in sedimentation of stormwater systems and downstream receiving environments
Stockpiling, handling and movement of soils and spoil.	Generation of sediment-laden runoff and dust, with potential discharge to stormwater network
Modification of existing drainage and installation of temporary drainage controls.	Altered flow paths leading to localised erosion, ponding or flooding if not properly managed
Stormwater runoff from disturbed and active work areas.	Transport of sediment and pollutants to the City of Newcastle stormwater network and downstream environments
Rainfall events during construction.	Increased erosion, sediment transport and potential failure or overtopping of erosion and sediment controls
Dewatering and groundwater interception (if required).	Discharge of sediment-laden or contaminated water to land or stormwater systems
Handling, storage and use of fuels, oils, chemicals and liquid wastes.	Contamination of soil, surface water and groundwater through spills or leaks
Plant and equipment maintenance and refuelling.	Localised contamination of soil and potential runoff to stormwater systems
Wastewater and site amenities.	Pollution of land or stormwater systems if not properly contained and removed
Inadequate installation or maintenance of erosion and sediment controls.	Uncontrolled sediment discharge and environmental harm
Extreme rainfall and flooding events during construction	Inundation of site, mobilisation of sediments and contaminants, failure of erosion and sediment controls, and discharge of polluted water to surrounding areas
Emergency incidents (e.g. fire, chemical spill)	Generation of contaminated runoff (including firewater) with potential to impact soil, stormwater systems and receiving environments

5 Environmental Mitigation and Management Measures

Construction activities will be planned and sequenced to minimise soil disturbance and reduce the potential for erosion, sedimentation, contamination and polluted stormwater runoff.

General soil and water management controls implemented during construction include, but are not limited to, the following:

- undertaking plant and equipment maintenance in designated or approved areas, where practicable, and away from drainage lines and stormwater inlets.
- managing fuels, oils, chemicals and liquid wastes in a manner that prevents contamination of land or water.
- implementing spill prevention and response measures in accordance with Section 8.
- using oil-water separators or equivalent controls where drainage from maintenance or washdown activities is generated.
- ensuring liquid wastes are collected, stored and removed from site by licensed contractors.
- preventing the uncontrolled discharge of sediment-laden or contaminated water from the site.

Erosion, sediment and stormwater controls associated with soil disturbance and runoff are addressed in Section 5.4- Erosion and Sediment Control

A range of environmental requirements and control measures are identified in the various environmental documents, including the EIS. Specific actions and processes which will be implemented to comply and address the requirements and measures outlined in Table 3.

Table 3: Soil and Water management and mitigation measures

ID	Measure/Requirement	Resources needed	Responsible	Timeframe	Reference
01	Implement erosion and sediment controls (ESCP) prior to and during earthworks	ESCP, sediment controls	Supervisor HSE Advisor	Pre-construction and construction	• EIS (Soil & Water Mitigation) • CoC (soil/water management) • SWMP Section 5.4
02	Stabilise exposed soils and stockpiles	Stabilisation materials	Supervisor	During construction	• EIS (erosion and sediment control measures) • SWMP Section 5.4.1
03	Manage stormwater to prevent sediment-laden runoff	Drainage controls	Supervisor HSE Advisor	During construction	• EIS Appendix J - Water Impact Assessment • CoC A2(c) • SWMP Section Error! Reference source not found.
04	Store and handle fuels, oils and chemicals to prevent contamination	Bunding, SDS, spill kits	Supervisor	At all times	• EIS (contamination mitigation) • SWMP Section 5.14 • Appendix C
05	Implement spill response procedures	Spill kits	All personnel	At all times	• EIS (pollution prevention) • SWMP Section 5.14 • ERP

ID	Measure/Requirement	Resources needed	Responsible	Timeframe	Reference
06	Manage contaminated soils and groundwater	Sampling, disposal	HSE Advisor	As required	- EIS Appendix G - Contamination Assessment - CoC (contamination management) - SWMP Section 5.11
07	Control dewatering activities	Pumps, treatment systems	Supervisor HSE Advisor	As required	- EIS Appendix J - SWMP Section 5.5
10	Respond to rainfall and flooding events	Monitoring, controls	Supervisor	During rainfall events	- EIS Appendix J (flooding) - CoC (flooding) - SWMP Section 6.2
11	Manage emergency incidents (incl. firewater runoff)	Spill kits, containment	Supervisor HSE Advisor	As required	- EIS (hazard/pollution risk) - ERP - SWMP Section 6

References include relevant Conditions of Consent, EIS mitigation measures and supporting SWMP sections. Detailed traceability is provided in Appendix A – Conditions of Consent Concordance Table and Appendix B – EIS Mitigation Measures to SWMP Controls. .

5.1 Construction Phase Soil and Water Risk Overview

This Section of the SWMP establishes the controls to manage these risks during construction by:

- preventing erosion and sediment mobilisation.
- separating clean and dirty water.
- managing stormwater runoff and drainage.
- preventing pollution of surface water and groundwater.
- ensuring construction-phase water management is consistent with the approved EIS and Conditions of Consent.

5.2 Water Supply

The Environmental Impact Statement (EIS) identifies that water is required during construction for activities including dust suppression, earthworks and workforce needs. The EIS and Conditions of Consent require that sufficient water be available for all stages of the Project. Where necessary, the scale of construction activities must be adjusted to align with available water supply.

The EIS estimates that approximately 4.8 megalitres (ML) of water will be required for dust suppression and landscaping over the 21-month construction period. Construction water will be sourced from Hunter Water and collected in line with their policies and procedures. A collection standpipe will be collected from Hunter Water and installed at a point along McIntosh Drive for use on the project (see figure below). The standpipe will be inspected every four months in line with Hunter Water terms of hire. Only inspected and approved collection vehicles will be authorised to utilise the standpipe. Hunter Water advises there are no

restrictions with this water supply, with supply charges being measured via the standpipe meter point, and billing undertaken quarterly per kL consumed.

Approximately 0.2ML of potable water will be required for the construction workforce (approximately 100 personnel over the construction period). Potable water will be supplied via mains connection, where available, or through bottled water. Water use will be managed to minimise demand, including efficient dust suppression practices and monitoring of water usage throughout construction.

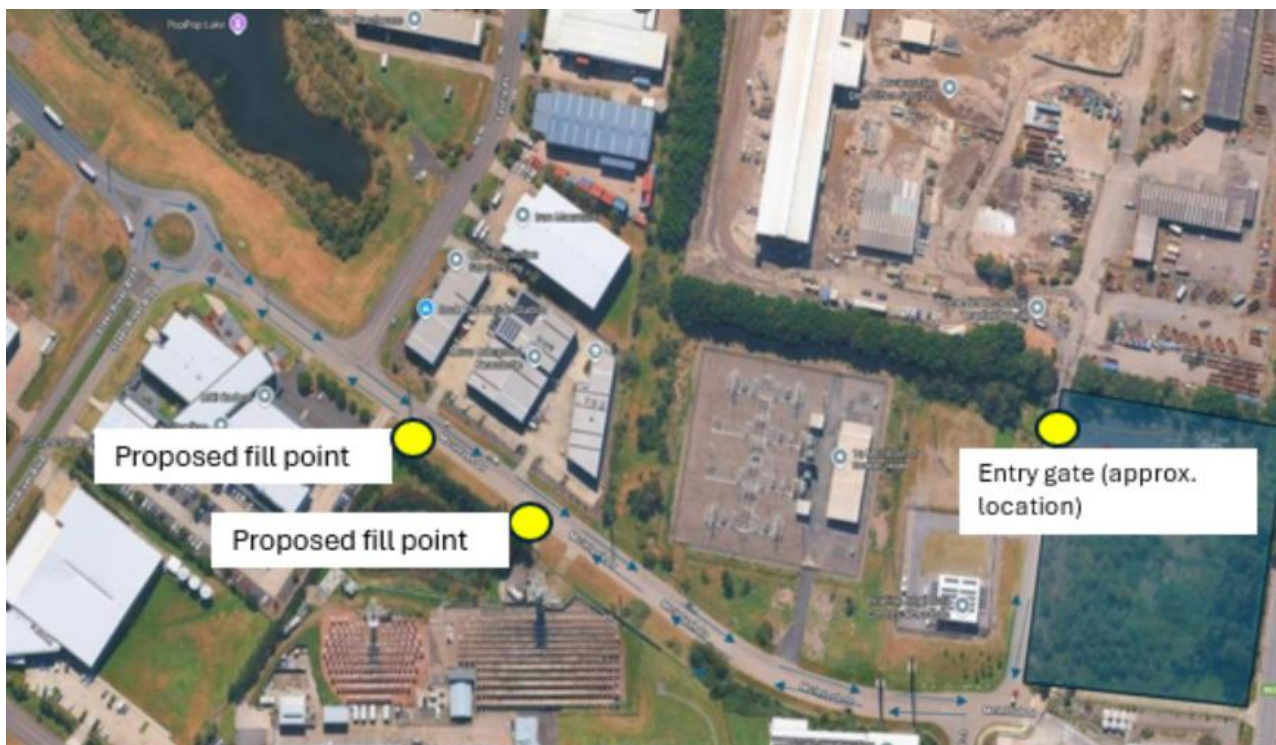


Figure 5-1 Construction Water Collection Point

5.3 Surface Water

The Environmental Impact Statement (EIS), including Appendix J – Water Impact Assessment, identifies that construction activities may temporarily alter drainage patterns and generate sediment-laden or contaminated runoff, with the potential to impact the City of Newcastle stormwater network and downstream receiving environments.

The EIS and Conditions of Consent require that surface water is managed to prevent contamination, minimise erosion and sediment transport, and ensure that stormwater discharge does not adversely impact surrounding environments.

Construction activities involve temporary modification of existing drainage arrangements and the installation of new drainage infrastructure to manage overland flow and runoff prior to discharge to the City of Newcastle stormwater network.

During the construction phase, and prior to commissioning of permanent drainage infrastructure, all works will be undertaken in a manner that prevents contamination of surface water.

Construction-phase surface water and groundwater management controls will include, as a minimum:

- preventing construction materials, soils, spoil or waste from entering drains, watercourses or the stormwater network.
- managing stormwater runoff to separate clean and dirty water
- managing dewatering, where required, in accordance with Section 5.5
- treating dewatered water where necessary prior to discharge or reuse.
- undertaking vehicle and plant servicing within approved facilities where practicable.

Where contamination of surface water or groundwater is suspected, works will cease in the affected area and the issue will be reported through site environmental reporting processes. Appropriate investigation and management actions will be implemented as required.

5.3.1 Water Management Hierarchy

Consistent with the Environmental Impact Statement (EIS) and industry best practice, including the *Managing Urban Stormwater: Soils and Construction (Blue Book)*, soil and water management during construction will be implemented in accordance with the following hierarchy:

Avoidance and Minimisation

Construction activities will be planned and sequenced to minimise disturbance to soils and existing drainage patterns, thereby reducing the potential for erosion, sediment mobilisation and contaminated runoff. This includes limiting the extent and duration of exposed areas and avoiding unnecessary disturbance wherever practicable.

Source Control

Where disturbance cannot be avoided, controls will be implemented at the source to prevent erosion and sediment generation. This includes progressive stabilisation of exposed soils, appropriate stockpile management, and the timely installation of erosion and sediment controls in accordance with the ESCP.

Containment and Treatment

Where runoff is generated, measures will be implemented to contain and treat sediment-laden or potentially contaminated water prior to discharge. This includes the separation of clean and dirty water, installation of sediment basins, diversion drains and other treatment controls as required.

Controlled Discharge

Discharge of water from the site will only occur in a controlled manner and, where required, in accordance with approval conditions and relevant guidelines. Water will be treated to an appropriate standard prior to discharge or reused on site where feasible.

This hierarchy ensures that soil and water impacts are managed proactively, with a focus on preventing environmental harm at the source, consistent with the mitigation measures and management principles identified in the EIS and Appendix J – Water Impact Assessment.

5.4 Erosion and Sediment Control Plan

This SWMP incorporates the requirements of an Erosion and Sediment Control Plan (ESCP) for the construction phase and establishes the framework for the design, installation, inspection and maintenance of erosion, sediment and stormwater controls across the site.

Consistent with the Environmental Impact Statement (EIS), soil disturbance during construction presents a risk of erosion, sediment mobilisation and contaminated runoff entering the stormwater network and downstream receiving environments.

All erosion, sediment and stormwater controls will be implemented in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Volume 2A: Installation of services (DECC, 2008) (the Blue Book), relevant approval requirements and the site-specific ESCP.

5.4.1 Erosion and Sediment Control Design Standard

5.4.1.1 Erosion Hazard Assessment

Soil loss class is used to indicate erosion hazard based on calculated soil loss (as tonnes/ha/year) in conjunction with the site rainfall distribution zone to identify the requirements for works timing restrictions and/or special erosion control measures. The 'Blue Book' defines 7 soil loss classes that equate to erosion hazards ranging from very low to extremely high based on the soil loss rate determined using the Revised Universal Soil Loss Equation (RUSLE) (refer to Table 4.2 of Volume 2A of the Blue Book). The annual soil loss rate for the site has been estimated using the RUSLE equation based on the parameters provided in Table 4.

Table 4: RUSLE Parameters

Parameter	Definition and Value Source	Value	Units
A	The Annual soil loss rate.	To be calculate	tonnes/ha/year
R	Rainfall erosivity. The R-factor for the site was calculated using Equation (2) in Appendix A of the Blue Book Volume 1.	2,453	-
K	The value of 0.04 for soil erodibility has been adopted as K-factor for the site from the eSpade NSW Soil and Land Information website (DPE, 2024).	0.04	-
LS	The slope length gradient factor. Sourced from Table A1 the Blue Book Volume 1 and is dependent on the maximum slope length (estimated at 80 m) and an existing average site slope of 7%.	1.76	-
C	The ground cover factor) is the ratio of soil loss from land under specified crop or mulch conditions to the corresponding loss from continuously tilled, bare soil. Sourced from Figure A5 of the Blue Book Volume 1 (assume worst case of no groundcover with entire site cleared and stripped).	1	-
P	Erosion control Practice factor. Sourced from Table A2 the Blue Book Volume 1 and is dependent on level of compaction and roughness of the disturbed surface (assume compacted and smooth).	1.3	-

RUSLE:

$$A = R \times K \times LS \times C \times P$$

$$A = 2,453 \times 0.04 \times 0.1.76 \times 1.0 \times 1.3$$

$$A = 225 \text{ tonnes/ha/year}$$

The calculated annual soil loss rate for the site (225 tonnes/ha/year) corresponds to a soil loss class of 2 which has a low erosion hazard (refer to Table 4.2 of Volume 1 of the Blue Book).

5.4.1.2 Erosion Control Standard

5.4.1.2.1 Timing Restrictions

Figure 4.9 of Volume 1 of the Blue Book shows that the site is located in rainfall distribution zone 1. Table 4.3 of Volume 1 of the Blue Book indicates that no construction works timing restrictions or special erosion control measures apply for sites in rainfall distribution zone 1 with soil loss class 2.

5.4.1.2.2 Drainage

The Blue Book requires that drainage controls be designed to have a non-erosive hydraulic capacity for a specific designed storm event based on the duration of the soil disturbance and sensitivity of the receiving environment. Drainage controls include (but are not limited to) diversion banks, perimeter banks, catch drains, level spreaders, check dams, batter drains and chutes. The drainage control design standard for the site is presented in Table 5 and is based on a sensitive receiving environment.

Internal access roads, where crossing watercourses, will be designed to have a non-erosive hydraulic capacity to convey runoff from a critical duration 10% annual exceedance probability (AEP) storm event.

Table 5: Drainage Design Standard

Duration of Disturbance	Design Storm Event
< 6 months	20% AEP
6 – 12 months	10% AEP
> 12 months	5% AEP

5.4.1.2.3 Stabilisation

Timing and cover requirements are provided in Table 6 of Volume 1 of the Blue Book shown below:

Table 6: Stabilisation Timing and Cover Requirements

Item/Area	Stabilisation Timing	Maximum C-Factor	Equivalent % Cover
Stockpile areas	Stockpiles are to be stabilised with an appropriate protective cover (e.g. synthetic, mulch, or vegetative) if they are to be in place and inactive for more than 14 days from completion of formation. Topsoil stockpiles that are to remain inactive for a long duration (i.e. more than 28 days (4 weeks)) will be protected with either a soil stabilising polymer or seeded with appropriate species to reduce the C-factor to 0.10 (~60% groundcover).	0.10	60%
Inactive areas	Applies after 28 days (4 weeks) of inactivity, even if works might continue later.	0.15	50%
Waterways and other areas subjected to concentrated flows	Applies after 14 days from completion of formation and before they are allowed to carry any concentrated flows (where possible).	0.05	>70%

Item/Area	Stabilisation Timing	Maximum C-Factor	Equivalent % Cover
Disturbed areas upon completion of works	Upon completion of works target a C-factor of less than 0.10 (equivalent to 60% cover) within 28 days (4 weeks) and a program is to be put in place to ensure the C-factor will drop permanently (by vegetation, paving, armouring, etc) to less than 0.05 within a further 84 days (12 weeks). Appropriate stabilisation for the site is achieved when the rehabilitated areas have a ground cover C-factor of less than 0.05 (greater than 70% ground cover).	0.05	> 70%

5.4.1.3 Sediment Control Standard

5.4.1.3.1 Sediment Basins

The Blue Book states that sediment basins are required to be used when the soil loss rate exceeds 150m³/year (approximately 200 tonnes/year) for the total disturbed area. Using the estimated soil loss rate of 225 tonnes/ha/year (refer to Section **Error! Reference source not found.**) and assuming the entire site is disturbed (i.e. approximately 1.6 ha), sediment basins will be required. The sediment dam design standard is presented in Table 7.

Further to capacity requirements presented in Table 7, the following management measures will be applied:

- Dewater to restore settling zone capacity within 5 days of runoff generating rainfall.
 - Target sediment removal when accumulated sediment level reaches 30% of design sediment zone capacity.
 - Dams to have a fixed staff gauge indicating the sediment zone full level and the maximum water inventory that allows for rainfall runoff inflows from design rainfall event without the dam overflowing.
- The construction works will be staged to enable progressive site stabilisation and given space limitations, sediment basins will require removal prior to complete site stabilisation. Sediment basins can be removed when the total site disturbance area is reduced to less than 0.9 ha (i.e. the disturbance area at which the soil loss rate falls below 200 tonnes/ha/year).

Table 7: Sediment Basin Design Standard

Duration of Disturbance	Settling Zone Capacity Design Rainfall Event	Design Rainfall Depth (mm) ¹	Volumetric Runoff Coefficient	Sediment Zone Capacity
<6 months	5 day, 75 th percentile	24.4	0.50	50% of Settling Zone Capacity or 6 months of soil loss as calculated using the RUSLE
6 months – 3 years	5 day, 85 th percentile	38.9	0.64	
>3 years	5 day, 95 th percentile	76.7	0.79	

¹ Rainfall depths for Newcastle sourced from Table 6.3a of the Blue Book volume 1.

In circumstances where the sediment control standards indicate the requirement for sediment basins but it is impractical to construct them, special erosion control measures may be applied as an alternative, for example:

- Should rainfall be forecast with a greater than 50% probability of exceeding 20 mm in 24 hours, management measures shall be in place to implement the following erosion controls as appropriate:
 - Achieve an average C-factor of 0.1 (approximately 60% groundcover) on batters and slopes greater than 1V:4H and stockpiles of erodible material (measures may include application of polymer soil stabilisers or geotextile to exposed surfaces).
 - Limit overland flow slope lengths to 20m (e.g. by cutting in temporary slope breaks parallel to the contour, installing mulch berms parallel to the contour).

5.4.1.3.2 Temporary Sediment Controls

All temporary sediment controls (e.g. sediment fences, stacked rock sediment traps etc.) should be constructed to be structurally stable for a specific design storm event based on the duration of the soil disturbance and sensitivity of the receiving environment.

Table 8: Temporary Sediment Controls Design Standard

Duration of Disturbance	Design Storm Event
< 6 months	20% AEP
6 – 12 months	10% AEP
> 12 months	5% AEP

5.4.1.3.3 Dewatering Standard

There is to be no controlled release of dirty water off-site. Dirty water captured in sediment basins and excavations (such as trenches) shall be utilised for construction demands within the site disturbance boundary or allowed to infiltrate (trenches).

Where the volume of water captured in sediment basins is surplus to construction water demands, discharge to the local stormwater drainage system from sediment basins is permitted only to enable the 5-day dewatering requirement to be achieved (i.e. to reduce the likelihood of subsequent rainfall resulting in discharges of lesser quality water) provided it meets the following criteria:

- 50 mg/L Total Suspended Solids
- 6.5<pH<8.5
- No visible oil and grease.

5.4.2 Erosion and Sediment Control Approach

5.4.2.1 Principles

Erosion and sediment control during construction will be based on the following principles:

- minimising the extent and duration of soil disturbance.
- diverting clean stormwater away from disturbed areas.
- containing and treating sediment-laden ("dirty") water prior to discharge.
- stabilising disturbed areas progressively and as soon as practicable.
- maintaining controls until all disturbed areas are stabilised and no longer pose a sediment risk.

5.4.2.2 General Site Management

The following is applicable to general site management:

- No ground disturbance (other than disturbance for the installation of required erosion and sediment controls (ESCs)) is to occur until the ESCs required for each work stage are installed and functional.
- Disturbance boundaries shall be clearly marked prior to the commencement of construction activities (e.g. via survey marks or similar).
- Construction activities including vehicle and machinery movements, stockpiling, temporary vehicle parking and material laydown will be restricted to designated work areas, where possible, to minimise ground disturbance.
- All access is to be controlled on the site and vehicles and plant will be kept to well defined access tracks to minimise ground disturbance and compaction.
- Works are to be staged as far as practicable, to minimise the extent of soil exposure and the duration of exposure. Disturbed areas must be progressively rehabilitated with stabilisation works commencing as soon as practicable following the completion of construction activities.
- Vehicle wash down is to occur in a designated bunded area. This bunded area is to be located at least 10 m from any on-site drain and 40 m from any watercourse. Excess debris from cleaning and washing is to be removed using hand tools.
- Any concrete washout undertaken on site will be in a bunded area that is outside of any flood prone area and at least 10 m from drains and 50 m from any watercourses.
- Fuels, chemicals and liquids must be stored in impervious bunded areas outside of any flood prone area and at least 50 m away from any areas of concentrated water flow, flooded or poorly drained areas, and areas where slope exceeds 10%.
- Refuelling of plant and equipment is to be undertaken in an impervious bunded area.
- Emergency spill kits must be kept on site at all times. All workers are to be made aware of the location of the spill kits and trained in their use.
- Site spoil must be disposed of in accordance with 201085-SE-PLN-0007 – Construction Environmental Management Plan (CEMP).
- Removal of temporary ESCs is only to occur after disturbed areas are stabilised appropriately in accordance with the requirements of this ESCP and the 'Blue Book.' Appropriate stabilisation for the site is considered to be achieved when the rehabilitated areas have a ground cover C-factor of less than 0.05

(greater than 70% ground cover) or a ground cover C-factor consistent with the pre-existing and landscape immediately surrounding the areas of disturbance.

5.4.2.3 General Works Staging Approach

The erosion and sediment controls that are planned to be established and maintained at each of the anticipated work stages are provided in Table 9.

Table 9: Works Staging

Activity	Erosion and Sediment Controls
Site Establishment: - Establish ESCs.	- Clearly delineate limits of disturbance using fencing, barrier tape or suitable alternate. - Installation of a sediment fence around the downslope boundary of the area to be disturbed as per the Blue Book standard drawing SD 6-8, Sediment Fence. - Installation of a stabilised access (as required for construction areas where a high number of vehicle movements in/out of the construction zone via a single or limited number of access points is likely) as per Blue Book standard drawing SD 6-14, Stabilised Site Access. - Install earth banks around the upslope of the boundary of the area to be disturbed as per the Blue Book standard drawing SD 5-5, Earth Bank (low flow). - Construct sediment basins and catch drains to direct disturbed catchment runoff into sediment basins.
Earthworks: - Site preparation (clearing and stripping). - Bulk earthworks including subgrade treatment/preparation.	- ESCs as described above. - Stockpiles to be managed in accordance with 'Blue Book' standard drawing SD 4-1.
Civil Construction: - Drain and culvert construction. - Access track construction. - Laydown area and hardstand construction. - Hardstand areas. - Pad construction (concrete).	- ESCs as described above. - Schedule drain and culvert construction for a dry period of sufficient duration to enable completion of construction and stabilisation works. - Establish protocols to enable stabilisation of drains under construction to achieve a C-factor of 0.1 or less (approximately 60% ground cover) prior to the onset of rainfall should the weather forecast prove inaccurate. Table A3 from Volume 1 of the 'Blue Book' provides guidance on the C-factors that can be achieved using various groundcover techniques. If using rolled erosion control products (RECPs) for stabilisation, they should be installed as per 'Blue Book' standard drawing SD 5-7, RECP Concentrated Flow. - Surface drains are to be constructed with a minimum 200 mm layer of non-dispersive topsoil above dispersive subsoils (if present). - Concrete washout must be undertaken on site in a bunded area that is at least 10 m from drains.
Mechanical and Electrical Installation Works: - Trenching and cable installation. - Installation of electrical equipment	- ESCs as described above. - When trenching, place spoil on upslope side of trench. - Subsoils used to backfill trenches should be ameliorated required (e.g. if dispersive) with gypsum as required (at dosage rates informed by laboratory testing) and appropriately compacted to limit the potential for future tunnel erosion.

Activity	Erosion and Sediment Controls
Final Site Stabilisation: - Landscaping. - Removal of ESCs.	- ESCs as described above. - Stabilise remaining disturbed areas by sealing, hard standing or revegetation to achieve ground cover requirements in accordance with the timing specified in Table 6. - Surfaces to be revegetated should have a minimum 100 mm layer of non-dispersive topsoil above dispersive subsoils (if present) in areas of sheet flow. - ESCs may be removed when a C-factor of 0.05 (approximately 70% groundcover) has been achieved. - Waste ESC materials should be disposed of in accordance with the CEMP for the Project.

5.4.2.4 Progressive Erosion and Sediment Control Drawings

Progressive erosion and sediment control drawings (PESCPs) will be prepared by a suitably experienced person for the various works areas across the Project site prior to commencement of disturbance works and be based on the design standards set out in Section **Error! Reference source not found.** PESCPs will include, but not be limited to, the following as relevant to the specific drawing:

- Site layout and the approximate locations of ESCs.
- Where drawings are to scale, the scale should be at 1:500 or larger.
- Location and type of proposed ESC measures.
- Timing of works including any timing restrictions (e.g. during periods of no flow in streams for drainage works).
- Locations of lands where a protective ground cover will, as far as is practicable, be maintained.
- The diversion of runoff from upslope lands around the disturbed areas.
- Location of all soil and other material stockpiles including topsoil storage, protection and reuse methodology.
- Site rehabilitation requirements, including schedules.
- Frequency and nature of inspection and maintenance program.
- Location of site boundaries and adjoining roads.
- Approximate grades and indications of direction(s) of fall.
- Approximate location of trees and other vegetation, showing items for removal or retention (consistent with any other plans relevant to the Project).
- Locations of site access, proposed roads and other impervious areas (e.g. parking areas and site facilities).
- Existing and proposed drainage patterns with stormwater discharge points.
- North point and scale.

5.4.2.5 Monitoring and Maintenance

5.4.2.5.1 Monitoring

All ESCs are to be inspected:

- Weekly (at least every 7 days).
- Prior to forecasted rainfall events greater than or equal to 20mm in a 24-hour period.
- After rainfall events greater than or equal to 20mm in a 24-hour period.
- Prior to site closure.

Rainfall forecasts will be sourced from publicly available sources such as the Bureau of Meteorology websites (the nearest BoM rainfall station to the site is Newcastle Nobbys (Station 061055)).

All inspections must be documented on the ESC inspection checklist (refer to Appendix E) and all actions identified are to be closed out within a reasonable and practical timeframe that ensures ESCs are in correct working order prior to the onset of forecast rain or no later than one week after the action was identified. The check sheet is to include:

- Recording of the condition of every sediment control employed.
- Recording maintenance requirements (if any) for each ESC.
- Recording the volumes of sediment removed from sediment retention systems (where applicable).
- Recording the site where the sediment is disposed.

A signed duplicate of the completed check sheet is to be provided to the Site Superintendent and HSE Advisor for their information. Inspection records will be maintained in accordance with project environmental management requirements.

5.4.2.5.2 Maintenance

The following is applicable to site maintenance:

- All ESCs shall be maintained in a functioning condition during construction until all construction activities are completed, and full stabilisation of the site is achieved.
- Sediment removed from sediment traps and places of sediment deposition must be disposed of on site in a manner that does not cause ongoing soil erosion or environmental harm or in accordance with the CEMP if being disposed of off-site.
- Required repairs to all controls, including remediation of areas where revegetation and stabilisation has been unsuccessful, are to be undertaken as soon as practical. Where the absence of the control requiring remediation could result in material harm to the environment, it will be repaired immediately where possible but no later than within seven days or prior to the onset of runoff generating rainfall.
- Ensure controls are put back in place if they are moved for any reason (e.g. for mobile plant access).
- All sediment fences are to be kept in good working condition. Attention is to be given to recent works to ensure they have not resulted in diversion of sediment laden water away from them, degradable products (e.g. sediment fence) to ensure they are replaced as required, and sediment removal as required.

- It is the responsibility of the Project Manager / Construction Manager to ensure maintenance activities are undertaken.

5.4.2.6 Erosion and Sediment Control Plan Revision and Update

Update of this ESCP and PESCPs is required if:

- Site conditions change from the conditions considered in this ESCP, or
- Installed ESCs are not operating effectively.

Additional erosion and/or sediment control works are to be constructed as necessary to ensure the desired protection is given to downslope lands and waterways. This ESCP and PESCPs should be updated where it proves inadequate in practice or is subject to changes in conditions at the work site.

Any revision to this ESCP and PESCPs, or the preparation of additional PESCPs, will be undertaken and/or reviewed and approved by a suitably experienced person and in consultation with the site management team.

5.5 Drainage and Stormwater Management

New stormwater drainage will be constructed to service the Project. This is separate to the existing stormwater infrastructure servicing the substation due to the topography of the site. The detailed design for the stormwater management is included in Appendix H, and evidence of consultation with Newcastle City Council is provided in Appendix I.

Consistent with the Environmental Impact Statement (EIS), including Appendix J – Water Impact Assessment, construction activities have the potential to alter drainage patterns, mobilise sediments and contaminants, and impact surface water and groundwater if not appropriately managed.

To address these risks, drainage, stormwater and dewatering management during construction will be implemented to:

- maintain separation between clean and dirty water systems.
- minimise disturbance to existing drainage conditions and prevent adverse offsite impacts.
- prevent erosion, sediment mobilisation and contamination of surface water and groundwater.
- manage stormwater and groundwater in a controlled manner prior to discharge or reuse.

5.5.1 Stormwater Management

Stormwater management during construction will include:

- diversion of clean water around disturbed areas to minimise the volume of water requiring treatment.
- separation of clean and dirty water systems in accordance with the water management hierarchy (refer Section 5.3.1).

- installation and maintenance of temporary drainage controls to manage runoff and prevent erosion or scouring.
- protection of existing drainage features and integration with permanent drainage design where required.
- implementation of stormwater infrastructure to ensure no increase in offsite flows or alteration of site hydrology.

Where required, water storage or containment measures (e.g. sediment basins or equivalent controls) will be installed and maintained to prevent unlicensed or uncontrolled discharge of water.

Stormwater management measures will be designed and implemented to minimise impacts on surface water, localised flooding and groundwater conditions during construction.

5.5.2 Dewatering Management

Groundwater levels are anticipated to be below the depth of excavation proposed for the site leveling activities undertaken during construction. It is therefore anticipated that groundwater would not be encountered during the construction phase and dewatering would not be required. Dewatering activities will be avoided where practicable through appropriate design, construction sequencing and work methods.

Minor nuisance water (e.g. rainfall accumulation within excavations) may be managed through localised pumping or drainage, provided water is free of visible contamination and managed in accordance with this SWMP.

Where dewatering is required:

- if the excavation requires dewatering, the volume removed will be monitored to determine whether a groundwater interception approval is required. Note: If dewatering was over 3 ML, a water access licence (WAL) would be required under the *Water Management Act 2000*.
- water will be treated (e.g. sediment removal, filtration or equivalent measures) prior to discharge or reuse, where required.
- discharge will occur only to approved locations and in accordance with applicable approval conditions and EPA guidance.
- activities will be managed to prevent erosion, scouring, sediment mobilisation or adverse offsite impacts.
- monitoring will be undertaken to verify effectiveness of controls and identify any emerging issues.

Where groundwater is encountered or dewatering extends beyond minor or temporary works, appropriate approvals will be obtained prior to commencement.

Dewatering will not proceed where there is a risk of contaminated groundwater being released without appropriate assessment and controls.

5.5.3 Contamination and Emergency Considerations

Measures will be implemented to prevent the release of contaminants to surface water or groundwater, including during emergency events. The Emergency Response Management Plan will be implemented during construction of the Project.

In the event of a fire or battery-related incident, controls will be implemented to contain and manage contaminated runoff (including firewater) to prevent impacts to soil, stormwater systems and receiving environments.

5.6 Rainfall Event Response

Rainfall events during construction present an increased risk of erosion, sediment mobilisation and polluted stormwater runoff. Rainfall-triggered planning, inspections and response actions will be implemented to minimise soil and water impacts and maintain compliance with the Conditions of Consent and EIS commitments.

5.6.1 Rainfall Forecasting and Planning

Weather forecasts will be monitored during the construction phase to identify upcoming rainfall events that may increase the risk of erosion, sedimentation or uncontrolled runoff.

Where moderate or heavy rainfall is forecast, pre-rainfall planning may include:

- review of planned works involving soil disturbance.
- verification that erosion, sediment and stormwater controls are in place and functioning.
- implementation of additional temporary controls where required.
- deferral or modification of high-risk activities, where practicable.

5.6.2 Rainfall Triggers

Rainfall events that may trigger additional inspections and response actions include:

- rainfall sufficient to generate surface runoff across disturbed areas.
- rainfall events following extended dry periods where soils may be highly erodible.
- consecutive rainfall events that increase the risk of control failure.

Specific rainfall thresholds are not prescribed; however, rainfall events resulting in runoff or visible ponding within disturbed areas will be treated as a trigger for inspection and response.

5.6.3 Post-Rainfall Inspections and Response

Following rainfall events that result in runoff, inspections will be undertaken to assess:

- the condition and effectiveness of erosion and sediment controls.
- evidence of erosion, sediment movement or uncontrolled discharge.

- the need for maintenance, repair or additional controls.

Any deficiencies identified during post-rainfall inspections will be rectified promptly. Where erosion or sediment control failures present a risk of offsite impact, works may be modified or temporarily suspended until controls are reinstated and effective.

5.6.4 Escalation and Incident Response

Where rainfall events result in uncontrolled discharge, erosion, sediment loss or pollution beyond the site boundary, the incident will be managed in accordance with the Environmental Incident Management procedures outlined in this SWMP, including notification to the Site HSE Advisor and Client environmental representative.

5.7 Waste Water Management

The Environmental Impact Statement (EIS) identifies that wastewater generated during construction has the potential to contaminate land, surface water and groundwater if not appropriately managed. The EIS requires that pollution is prevented and that no uncontrolled discharge occurs. The EIS specifies that wastewater will be collected and removed from site for appropriate off-site disposal.

Wastewater generated from site amenities (including ablutions and crib facilities) will be managed to prevent pollution, health risks and unauthorised discharge to land or stormwater systems.

Consistent with the EIS, wastewater will be:

- collected and contained on site.
- removed via pump-out by a licensed contractor.
- transported off site for disposal to an approved sewer system.

Wastewater volumes are expected to be low, with the EIS estimating up to approximately 500 litres per week during peak construction. To support these requirements

- no wastewater or greywater will be permitted to discharge to land, drains or the stormwater network.
- records of wastewater collection and disposal will be maintained.
- wastewater management practices will be monitored to verify compliance with EIS commitments and approval requirements.

Where practicable, existing approved amenities will be utilised to minimise wastewater generation and handling requirements.

5.8 Groundwater

The primary mechanism for groundwater impacts at the site include spills or leaks and excavation and potential exposure of groundwater requiring contaminated water management during construction.

No groundwater extraction is to be undertaken unless there is additional assessment into the suitability of the extracted groundwater for the proposed purpose. Any extracted groundwater is to be treated as contaminated unless confirmed otherwise i.e. implementation of occupational hygiene controls for workers and no release of groundwater to the environment.

Under the *Water Act 1912* and/or the *Water Management Act 2000*, the Project Proponent is required to obtain the necessary water licences for the development. A Water Access Licence is required for taking of more than 3 megalitres of groundwater from a groundwater source. Groundwater levels are anticipated to be below the depth of excavation proposed for the site leveling activities undertaken during construction. It is therefore anticipated that groundwater would not be encountered during the construction phase and dewatering would not be required.

Where groundwater is encountered or dewatering is required beyond minor or temporary works, approval will be obtained from the Client and relevant stakeholders prior to commencement. Dewatering will not proceed where there is a risk of contaminated groundwater being released without appropriate assessment, controls and approvals. Dewatering beyond minor nuisance water removal constitutes a construction hold point and must not commence until approval has been obtained from the Client and appropriate controls are confirmed by the Site HSE Advisor.

5.9 Dust Management

Consistent with the Conditions of Consent and Environmental Impact Statement (EIS), the following controls will be implemented to minimise dust generation during construction:

- Plant and vehicles will adhere to the Traffic Management Plan
- Construction activities will be planned with consideration of forecast weather conditions to minimise dust generation. This includes minimising windblown and traffic generated dust.
- Dust suppression measures on exposed surfaces and unsealed roads will be implemented using water trucks and/or sprinkler systems, as required based on site conditions, to minimise dust generation.
- Defined site entry and exit points will be used to minimise tracking of soil on surrounding roads, as shown in **Error! Reference source not found.** Shaker grids will be installed at site access points where there is a risk of offsite track out of dirt. Vehicles will be inspected and cleaned, as required, prior to leaving site.
- Development-related vehicles leaving the site must be in a clean condition to minimise dirt being tracked onto the sealed public road network.
- Heavy vehicles entering and leaving the site will be covered to prevent material escaping during transport.
- Surface area disturbance of the site will be minimised.
- The handling of spoil will be minimised when excavating and loading of vehicles.



Figure 5-2: Site access

5.10 Soil and Spoil Management

Soils and spoil generated during construction will be handled, stored, reused or disposed of in a controlled manner to minimise environmental impacts, prevent pollution, erosion and sedimentation, and maintain site stability.

Soil disturbance will be minimised where practicable through appropriate construction sequencing and design. Excavation activities will be limited to the minimum area and depth required to safely undertake the works. Where suitable, excavated material will be reused on site to reduce offsite disposal and minimise the importation of fill material.

Where soils or spoil are suspected or confirmed to be contaminated, acid sulphate, or otherwise unsuitable for reuse, they will be managed in accordance with applicable approval conditions, relevant regulatory requirements and any project-specific management measures triggered as a result.

Soil and spoil management controls implemented during construction will include, but are not limited to:

- stripping, stockpiling and reusing topsoil where practicable, with stockpiles stabilised and protected from runoff and erosion.
- minimising soil disturbance by limiting excavation footprints, depths and duration of exposure.
- locating soil and spoil stockpiles away from drainage lines, stormwater inlets and site boundaries.

- protecting stockpiles using appropriate erosion and sediment controls in accordance with Section 5.4.1- Erosion, Sediment and Stormwater Control.
- replacing or stabilising excavated material as soon as practicable to limit exposure to erosion and weathering.
- classifying and managing spoil in accordance with NSW EPA waste classification requirements where offsite disposal is required.
- Soil and spoil management activities will be monitored through routine inspections, with any deficiencies rectified promptly.
- Where soil is left exposed for more than three days, a soil binder will be used to help prevent erosion caused by wind or water. Binders would be used on stockpiles where these are in situ for more than 24 hours.
- Impermeable barriers will be placed between sources of contamination (e.g. contaminated stockpiles or certain materials) and the natural ground.

5.10.1 Waste Classification and Sampling

All waste materials generated during construction, including excavated soils, sediments and dewatered materials, will be classified in accordance with the NSW EPA Waste Classification Guidelines (2014 or latest version) prior to offsite disposal.

Where waste classification cannot be determined through process knowledge, representative sampling and laboratory analysis will be undertaken by a suitably qualified person to confirm the appropriate classification.

Detailed requirements for waste classification, sampling, testing and disposal are provided in the Project Waste Management Plan.

Waste will only be transported to facilities licensed to accept the relevant waste classification. Records of waste classification, transport and disposal will be maintained in accordance with project and regulatory requirements.

5.11 Site Contamination

As discussed in Section 3.1.4, contamination exists at the Project site. The Project will be carried out in accordance with the requirements of the Remedial Action Plan (RAP) and the Site Management Plan (SMP) and in consultation with the City of Newcastle Council. Prior to commencing construction, written evidence will be provided to the Planning Secretary from the Site Auditor confirming that all construction works associated with the Project would meet the requirements of the RAP and SMP.

The SMP will be implemented in conjunction with the CEMP for the Project for all intrusive works and details the day-to-day requirements of construction work relating to contamination and is incorporated with the Construction Management and Methodology Plan (CMMP). The SMP will be available on site at all times and provided to contractors undertaking works that may disturb the cap or underlying materials. Where design or construction plans change prior to construction, the SMP (and any supporting certification) will be

reviewed and updated to reflect the final construction methodology. The Unexpected Contamination Finds Procedure must be implemented in the event contamination outside of known areas is suspected.

Management of all excavation works, particularly those at depths below the 2m capping layer, will be needed to ensure exposure via inhalation of dust, ingestion of dust and soil (incidental from that adhered to skin) and dermal contact is minimised. Management procedures are also to prevent impact to the environment via dust or soil and water migrations.

All workers will be informed of the contamination status of the material below the 2m capping layer (free tar and slag) and be informed of the procedures and protocols to minimise the potential exposure to themselves and the environment.

All excavated soil must be either reinstated at the appropriate depth or removed from the site in accordance with the NSW EPA waste framework:

- Capping material: During construction, differential stockpiling of capping materials to any underlying materials will occur, prior to classification being undertaken. All material which is removed from site must be sampled, classified, transported and tracked in accordance with the NSW EPA waste framework (refer to the Steel River BESS Project Waste Management Plan).
- Contaminated material: The 2 m capping layer is to be maintained throughout construction of the Project. In the event that soil is excavated from below the capping layer, it must be reinstated. If this is not feasible or desirable, appropriate sampling and analysis will be undertaken to determine whether it is appropriate for this material to remain at the Operational Footprint and be subject to waste classification.

5.12 Acid Sulphate Soils (ASS)

Acid sulphate soils (ASS) are naturally occurring soils and sediments that contain iron sulphides. In an undisturbed state, these soils are generally stable; however, when exposed to oxygen through excavation, disturbance or dewatering, sulphides may oxidise and generate sulphuric acid. This process can result in environmental harm, including impacts to surface water, groundwater and surrounding soils, as well as corrosion of buried concrete and steel infrastructure.

Construction activities involving excavation, trenching, piling or dewatering have the potential to disturb ASS where present. For the Steel River BESS Project, works are generally confined to previously disturbed and capped areas. The capping extends from the surface to approximately 2 metres below ground level. No construction works are planned which would disturb this cap. Accordingly, the likelihood of encountering ASS is considered low and an Acid Sulphate Soils Management Plan is not required based on this assumption.

If works are planned below the current capping layer, SCEE will implement appropriate management measures should any ASS be identified or suspected during construction. A desktop assessment and, where required, site investigations will be undertaken prior to works to confirm the risk of acid sulphate soils in accordance with the NSW Acid Sulphate Soils Manual (1998) and relevant NSW guidance. Where the risk of

ASS is assessed as moderate or high, a project-specific Acid Sulphate Soil Management Plan (ASSMP) will be prepared prior to the commencement of excavation or dewatering works.

If required, the ASSMP will be prepared in accordance with:

- *NSW Acid Sulfate Soils Manual (1998).*
- *Protection of the Environment Operations Act 1997.*
- Conditions of Consent and approval documentation.
- Relevant EPA and local council requirements, where applicable.

As a minimum, the ASSMP will address:

- Identification and delineation of ASS risk areas.
- Procedures for excavation, soil disturbance and dewatering.
- Management of excavated spoil, including treatment, reuse or disposal.
- Neutralisation methods (e.g. liming rates and application procedures).
- Surface water and groundwater protection measures.
- Monitoring and inspection requirements.
- Contingency measures for unexpected discovery of ASS

The ASSMP will be reviewed and approved by SCEE and relevant stakeholders prior to works commencing in identified risk areas. Compliance with the ASSMP will be monitored for the duration of the works.

5.13 Site Stabilisation

SCEE will ensure that all temporary works, materials and construction-related disturbances within its scope are removed, stabilised or reinstated prior to demobilisation to prevent ongoing erosion, sediment generation or uncontrolled stormwater runoff.

Disturbed areas will be progressively stabilised during construction where practicable and fully stabilised prior to demobilisation so that they no longer pose a risk of erosion or sediment discharge.

Areas requiring stabilisation or rehabilitation will be identified in consultation with the Client's environmental representative. Stabilisation and rehabilitation measures may include, but are not limited to:

- removal of temporary works, materials and construction debris.
- stabilisation of disturbed surfaces using temporary or permanent surfacing, mulch, geofabric or equivalent measures.
- reinstatement or removal of temporary erosion, sediment and stormwater controls where appropriate
- reinstatement of drainage features to approved configurations.

The Client's environmental representative will review the scope and completion of stabilisation and rehabilitation works as part of the demobilisation and construction close-out process.

Erosion and sediment controls will be retained until stabilisation has been achieved and disturbed areas no longer present a risk of sediment-laden runoff.

5.14 Spill Prevention and Pollution Control

SCEE will implement pollution prevention measures to minimise the risk of spills, emissions or discharges to land, surface water and groundwater during construction activities.

Potential sources of pollution associated with construction activities include, but are not limited to:

- mobile plant and light vehicles.
- Small internal combustion engines
- refuelling and maintenance activities.
- storage and use of fuels, oils, lubricants and hydraulic fluids.
- concrete works and washout activities.

To minimise pollution risks:

- plant and equipment will be maintained in accordance with manufacturer recommendations to minimise leaks and failures.
- refuelling and maintenance activities will be undertaken in designated or approved areas, where practicable, and away from drainage lines and stormwater inlets.
- Refuelling trailers, generators, welders and stationary engines will be maintained in accordance with site standards and fitted with appropriate spill controls.
- Hazardous materials, hydrocarbons (e.g. fuels, oils) and chemicals will be stored in appropriate containers with secondary containment where required. The management of hazardous materials, hydrocarbons and chemicals is further defined in Section 7.5 Hazardous Materials, Hydrocarbon and Chemical Management of the CEMP.
- concrete washout will be managed to prevent discharge of alkaline wastewater to land or stormwater systems.
- appropriate spill response equipment and Spill Response Plan (SRP) available onsite as detailed in Section 6.2 and Appendix F. Locations of spill kits are detailed within the Project Emergency and Response Management Plan (ERMP).

The following practices are prohibited on site:

- uncontrolled discharge of liquids, wastewater or pollutants to land, drains or stormwater systems.
- refuelling or maintenance activities in locations where spills could directly enter drainage systems, unless appropriate controls are in place.

The effectiveness of spill prevention and pollution controls will be reviewed through routine inspections and following any spill or near-miss event, with corrective actions implemented where required.

6 Emergency Preparedness and Response

Emergency preparedness and response arrangements are in place to ensure that soil and water-related environmental emergencies are effectively managed during construction to minimise harm to people, the environment, property and the community, and to ensure compliance with the Conditions of Consent and relevant legislation.

Refer: [SCEE-BS-HS-PRO-0004 Event Management and Investigation](#)
[SCEE-BS-HS-MNP-0001 Crisis Management Plan](#)

6.1 Potential Soil and Water-Related Emergencies

Environmental emergencies relevant to this SWMP may include, but are not limited to:

- significant spills or releases of fuels, oils, hydrocarbons or chemicals with the potential to enter land, surface water, groundwater or stormwater systems.
- uncontrolled discharge of sediment-laden or contaminated stormwater from the site.
- failure of erosion, sediment or stormwater controls during rainfall events.
- flooding or inundation affecting the construction footprint and associated drainage controls.
- discovery of contaminated soil or groundwater requiring immediate containment to prevent water pathway impacts.

Emergencies unrelated to soil or water management (e.g. heritage or asbestos chance finds, fire response unrelated to water pollution) are managed under separate project procedures and plans.

6.2 Spill Response Plan

Any spill, leak or release of pollutants will be contained and cleaned up immediately to ensure the safety of workers and minimise the environmental impact in accordance with the Spill Response Plan (SRP) detailed in Appendix F and reported immediately to the Supervisor and Site HSE Advisor.

Where contamination of soil, surface water or groundwater is suspected, works will cease in the affected area and the issue will be escalated to the Site HSE Advisor and Client environmental representative for assessment and further management.

The effectiveness of the SRP will be reviewed through routine inspections and following any spill or near miss event, with corrective actions implemented where required.

6.3 Flood Emergency Response

Flood-related emergencies, including inundation, breakthrough flooding and uncontrolled stormwater discharge, will be managed in accordance with the Project Emergency Response Management Plan (ERMP) and the Flood Water Management Plan (FWMP).

The ERMP (refer Section 6.1 – Potential Soil and Water-related Emergencies) defines the emergency management framework, including notification, escalation, roles and responsibilities, and incident response actions applicable to flood events.

Project-specific flood response and recovery measures are detailed in the Flood Water Management Plan, including:

- monitoring of weather forecasts and flood conditions
- pre-event preparedness actions (e.g. securing plant, maintaining drainage paths)
- suspension or modification of works in flood-affected areas
- protection of drainage paths and prevention of contaminant mobilisation
- post-flood inspection, rectification and controlled recommencement of works

Flood-related incidents will be escalated and managed in accordance with the ERMP, including notification to the Site HSE Advisor, Project Manager and Client, and regulatory reporting where required.

6.4 Emergency Response Arrangements

Emergency response procedures relevant to soil and water management will be communicated to all personnel through site induction, toolbox talks and emergency response signage.

Emergency equipment relevant to soil and water incidents, including spill kits, bunding materials and temporary containment measures, will be provided, maintained and readily accessible where required.

In the event of a soil or water-related environmental emergency, the response will prioritise:

- immediate control of the source of the incident.
- containment of contaminants to prevent entry to drainage systems or receiving environments.
- protection of surface water and groundwater.
- notification in accordance with approval and legislative requirements.
- preservation of evidence where investigation is required.

Where required, works will cease in the affected area until the incident has been stabilised and appropriate controls are reinstated.

6.5 Escalation and Interface with Corporate Procedures

Soil and water-related environmental emergencies will be escalated to the Site HSE Advisor and Project Manager and managed in accordance with this SWMP and applicable project procedures.

Emergency response arrangements under this SWMP operate in conjunction with SCEE corporate emergency and incident management procedures, where applicable.

Refer: **SCEE-BS-HS-PRO-0004 - Event Management and Investigation**
 SCEE-BS-HS-MNP-0001 - Crisis Management Plan

7 Compliance Management

7.1 Environmental Roles and Responsibilities

This section defines the roles and responsibilities for the implementation, management, monitoring and continual improvement of this SWMP during the construction phase of the Steel River BESS Project.

Project Management shall ensure that all workers and subcontractors are informed of their soil, water, stormwater, erosion, sediment and drainage responsibilities through site induction and ongoing communication, including toolbox talks and pre-start meetings.

Copies of this SWMP and relevant soil and water management information shall be made available at the site office and work fronts and be accessible to all SCEE personnel and subcontractors whose activities may affect soil or water conditions.

7.1.1 Responsibilities for All SCEE Workers

All workers and subcontractors engaged by SCEE are responsible for complying with the requirements of this SWMP and shall:

- comply with soil, water, stormwater, erosion, sediment and drainage controls, procedures and site-specific directions applicable to their tasks.
- undertake works in accordance with approved SWMS, JHAs and task-specific controls that address soil and water risks.
- take reasonable care to prevent pollution, erosion, sedimentation or unauthorised discharge to land, surface water or groundwater.
- correctly use and maintain erosion and sediment controls, stormwater controls and spill response equipment provided.
- immediately report any water-related environmental incident, spill, uncontrolled discharge, near miss or hazard to their Supervisor or Leading Hand.
- participate in site inductions, toolbox talks and training relevant to soil and water management requirements.

7.1.2 Project Manager / Construction Manager

- ensure the SWMP is developed, approved, implemented, maintained and reviewed for the duration of construction.
- ensure construction activities comply with soil and water-related Conditions of Consent, EIS commitments (including Appendix J) and SWMP requirements.
- allocate adequate resources (personnel, training, equipment and funding) to enable effective implementation of soil and water controls.
- ensure subcontractors are inducted into and comply with SWMP requirements relevant to their scope of work.

- act as the primary point of contact with the Client and regulators on construction-phase soil and water matters, where required.
- review inspection findings, monitoring results and incident reports relating to soil and water performance.
- ensure water-related incidents and non-conformances are investigated and corrective actions implemented.
- promote a culture of compliance, accountability and continual improvement in soil and water management.

7.1.3 Site HSE Advisor

The Site HSE Advisor provides specialist support for the implementation of this SWMP and shall:

- provide advice on soil and water-related legislation, approvals, Conditions of Consent and compliance obligations.
- support the implementation, monitoring and periodic review of the SWMP.
- conduct routine inspections, audits and compliance checks focused on erosion, sediment, stormwater and dewatering controls.
- identify soil and water risks and recommend improvements to controls and work practices.
- assist with investigation, reporting and regulatory notification of water-related environmental incidents, where required.
- coordinate soil and water monitoring activities and record keeping.
- deliver or support inductions, toolbox talks and awareness training relating to SWMP requirements.

7.1.4 Superintendent / Supervisor

The Superintendent / Supervisor is responsible for day-to-day site implementation of this SWMP and shall:

- implement and enforce soil and water management requirements within their areas of control.
- ensure erosion, sediment and stormwater controls are in place prior to works commencing and maintained throughout construction.
- supervise workers and subcontractors to ensure compliance with SWMP requirements.
- monitor construction activities to minimise soil disturbance, erosion, sedimentation and water pollution risks.
- identify, address and escalate ineffective controls, non-conformances or emerging soil and water risks.
- ensure water-related incidents and near misses are reported promptly.
- stop or modify works where there is a risk of environmental harm related to soil or water.

7.1.5 HSEQ Manager

The SCEE HSEQ Manager reports to the Project Manager and is responsible for governance, oversight and assurance of SWMP implementation, including:

- providing technical and governance support to Project Management on soil and water management requirements.
- assisting with the preparation, review, approval and periodic update of the SWMP.
- facilitating ICAM investigations for significant water-related environmental incidents, where required.
- preparing and issuing environmental bulletins relating to soil and water incidents, lessons learned and improvements.
- conducting audits of SWMP implementation in accordance with the project audit schedule.
- supporting HSE Advisors and Supervisors with soil and water risk assessments.
- reviewing SWMP performance indicators and trends.
- undertaking site inspections to verify compliance and identify improvement opportunities.

7.1.6 Foreman / Leading Hand

The Foreman / Leading Hand is responsible for task-level implementation of SWMP controls and shall:

- ensure task-specific soil and water controls are implemented prior to and during works.
- supervise work crews to ensure SWMP requirements are followed at all times.
- verify erosion and sediment controls, stormwater controls and spill kits are correctly installed and maintained.
- communicate soil and water management requirements and expectations to workers.
- identify and immediately report water-related environmental incidents, near misses or risks to the Supervisor.
- assist with rectifying soil and water issues in accordance with the SWMP and supervisory direction.

7.2 Environmental Training and Awareness

Training and awareness are key controls for ensuring the effective implementation of this SWMP and compliance with the Conditions of Consent and EIS soil and water commitments, including Appendix J - Water Impact Assessment.

All personnel engaged on the Steel River BESS Project will receive a soil and water management component as part of the site induction, which will include:

- an overview of soil, water and stormwater obligations.
- relevant Conditions of Consent applicable to soil and water management.
- key soil, erosion, sediment and stormwater risks associated with construction activities.
- required controls and behaviours to prevent pollution and uncontrolled discharge.

Targeted training will be provided to personnel undertaking high-risk or specialist activities that may affect soil or water, including but not limited to:

- erosion and sediment control installation and maintenance.
- dewatering and management of groundwater or accumulated surface water.
- spill prevention and response where there is a risk of water pollution.

- management of soils, spoil and stockpiles to prevent erosion and sediment runoff.
- identification and response to potential acid sulphate soils, where triggered.

Ongoing awareness of soil and water management requirements will be reinforced through toolbox talks, pre-start meetings and task-specific briefings, particularly prior to high-risk works or forecast rainfall events.

Records of inductions, training and toolbox talks relevant to soil and water management will be maintained in accordance with Section 9 - Document Control of this SWMP.

7.3 Inspections, Monitoring, Maintenance and Hold Points

Inspections, maintenance and defined hold points will be implemented to verify the effectiveness of soil, erosion, sediment, stormwater, drainage and dewatering controls and to prevent environmental harm during construction.

7.3.1 Inspections

Routine inspections will be undertaken during construction activities involving soil disturbance or stormwater risk to verify that soil and water controls are correctly installed, functioning as intended and maintained in an effective condition.

Inspections will focus on active work areas and relevant controls to confirm that requirements identified in SWMS, JHAs and this SWMP are implemented and effective, and to identify any non-conformances, corrective actions or improvement opportunities.

Inspections will be undertaken during active construction works, following rainfall events that generate runoff, and prior to forecast rainfall where practicable.

Responsibilities include ensuring that:

- Supervisors and nominated workers participate in routine workplace inspections.
- soil and water inspection and checklist tools are utilised.
- completed inspections are retained for the duration of the Project.
- subcontractors participate in inspections alongside SCEE personnel where required.
- inspection findings and actions are recorded and tracked to close-out.

Inspection outcomes relevant to soil and water management will be communicated to the workforce through **toolbox talks and pre-start meetings**, where appropriate.

Table 10: Inspection requirements

Position	Type of Inspection	Frequency
Project Manager	Weekly Inspection	1 per week
Construction Manager	Weekly Inspection	1 per week

Position	Type of Inspection	Frequency
Superintendent	Weekly Inspection	1 per week
Supervisor	Daily Inspection (5 Star)	1 per day
HSE Advisor	Weekly inspection	1 per week
	Daily Inspection (5 Star)	1 per day

Inspection results will be reviewed by Project Management and the Site HSE Advisor to verify compliance and effectiveness of controls. Where inspections identify deficiencies or emerging risks, corrective actions will be implemented and tracked in accordance with Section 10.4.

Refer: [SCEE-BS-HS-PRO-0026 Star Inspection Procedure](#)
[SCEE-BS-HS-LIS-0005 Weekly Workplace Inspection Checklist](#)

7.3.2 Maintenance and Rectification

Soil and water management controls will be maintained for the duration of construction or until disturbed areas are stabilised and no longer pose a risk of erosion or sediment discharge. Where inspections identify damaged, ineffective or inadequate controls, corrective actions will be implemented promptly, including:

- repair or replacement of erosion and sediment controls.
- installation of additional controls where required.
- modification of work practices or sequencing.

7.3.3 Monitoring and Reporting Requirements

Environmental monitoring will be undertaken where required by the Conditions of Consent, EIS commitments or this SWMP to verify the effectiveness of soil and water controls.

Monitoring may include, where applicable:

- inspection of erosion, sediment and stormwater controls.
- visual monitoring of stormwater runoff and discharge points.
- monitoring associated with dewatering activities, where required.
- monitoring associated with contaminated land or acid sulphate soil management, if triggered.

Routine numerical water quality monitoring is not required unless specified by approval conditions, client requirements or where an incident or risk assessment identifies the need.

Monitoring requirements, responsibilities and frequencies are summarised in Appendix D - Monitoring and Inspection Schedules.

Monitoring results will be recorded, reviewed and reported in accordance with client and regulatory requirements. Where non-compliances or emerging risks are identified, corrective actions will be implemented promptly.

7.3.4 Water Quality Monitoring

Routine numerical surface water or groundwater quality monitoring is not proposed during the construction phase of the Steel River BESS Project, as this is considered appropriate given the industrial setting of the site, the temporary nature of construction activities, and the implementation of erosion, sediment and pollution controls in accordance with Managing Urban Stormwater: Soils and Construction (the Blue Book).

Environmental performance will be verified primarily through inspection based monitoring, rainfall triggered inspections and visual assessment of runoff quality. No Conditions of Consent or EIS commitments require routine numerical water quality sampling during construction.

Water quality monitoring may be implemented on a contingency basis where required by the Conditions of Consent or a regulatory authority, where dewatering is undertaken beyond minor nuisance water removal, following an environmental incident involving uncontrolled discharge, or where directed by the Client's environmental representative following a risk assessment.

Where monitoring is triggered, monitoring parameters, locations, frequency and reporting requirements will be confirmed with the Client and relevant stakeholders prior to implementation.

7.3.5 Hold Points and Stop-Work Triggers

Construction activities may be stopped, delayed or modified where soil or water management controls are found to be ineffective or where there is a risk of environmental harm, including:

- failure of erosion or sediment controls resulting in sediment mobilisation.
- uncontrolled discharge of stormwater, sediment or pollutants from the site.
- forecast or actual rainfall that increases the risk of control failure.
- dewatering activities that cannot be adequately controlled.

Works will not recommence until appropriate controls have been reinstated, verified as effective and, where required, reviewed with the Site HSE Advisor and Client environmental representative.

7.3.6 Escalation and Reporting

Significant control failures, repeated non-conformances or uncontrolled discharges will be escalated to the Project Manager and managed in accordance with the incident management procedures outlined in this SWMP.

7.4 Audits

Audits will be undertaken to verify compliance with the Conditions of Consent, EIS, this SWMP and applicable legislative and Client requirements.

7.4.1 Independent Environmental Audits

Independent Environmental Audits will be undertaken where required by the Conditions of Consent and in accordance with the Independent Audit Post Approval Requirements (IAPAR) issued by the Department.

Independent Environmental Audits will be conducted by a suitably qualified and independent third-party auditor, in accordance with IAPAR requirements. Independent audits will assess whether:

- construction activities comply with the Conditions of Consent, EIS and this SWMP
- Soil and water management controls are suitable, implemented and effective
- statutory and regulatory obligations are being met
- improvements or corrective actions are required

Audit findings and corrective actions will be documented, assigned and tracked to close-out in accordance with Section 8 of this SWMP.

7.4.2 Internal and Client Audits

SCEE will undertake internal and Client audits as part of the project assurance framework to verify implementation of this SWMP and compliance with project requirements.

The audits may include:

- internal self-assessment audits
- project benchmark audits
- Client audits

Internal and Client audits will be undertaken by suitably trained and competent personnel and in accordance with SCEE audit procedures and Client requirements.

Audit findings and corrective actions will be documented, assigned and tracked to close-out in accordance with Section 8 of this SWMP.

8 Environmental Incident Management and Response

Soil and water-related environmental incidents will be managed in accordance with the Project Construction Environmental Management Plan (CEMP), refer Section 12 – Environmental Incident Management and Response, which establishes the framework for incident management, reporting, investigation, complaints and non-compliance management.

For the purposes of this SWMP, soil and water-related environmental incidents may include, but are not limited to:

- spills or releases of fuels, oils, hydrocarbons or chemicals with potential to impact land or water.
- uncontrolled discharge of sediment-laden or contaminated stormwater.
- failure of erosion, sediment or stormwater controls resulting in offsite impact.
- unauthorised discharge to drains, watercourses or the stormwater network.
- dewatering-related incidents or uncontrolled groundwater release.

All incidents, near misses and hazards will be reported, managed and investigated in accordance with the CEMP and SCEE event management procedures. This includes:

- immediate notification to supervision and the Site HSE Advisor.
- implementation of containment and mitigation measures.
- recording and tracking within STEMS.
- investigation proportional to the severity of the incident.
- implementation and close-out of corrective actions.

Where a soil or water-related incident meets regulatory or approval notification thresholds, notifications will be made in accordance with the Conditions of Consent and relevant legislation via the Project Proponent.

Refer:

Refer: [SCEE-BS-HS-PRO-0004 Event Management and Investigation](#)
[SCEE-BS-HS-MNP-0001 Crisis Management Plan](#)

9 Document Control

This section describes the document control, registers and record-keeping arrangements used to support the implementation, monitoring and verification of compliance with this SWMP.

9.1 Registers

Registers relevant to soil, water, stormwater, erosion, sediment, drainage and dewatering compliance will be maintained for the duration of construction to record inspections, incidents, monitoring results and corrective actions arising from implementation of this SWMP.

The following soil and water-related registers will be maintained in STEMS:

Table 11: Registers

Register Name	Comments
Actions Register	Maintained in STEMS
Soil and water inspections (including ESCP inspections)	Maintained in STEMS
Water-related environmental incidents	Maintained in STEMS
Soil and water monitoring results	Maintained in STEMS
Dewatering records (if applicable)	Maintained in STEMS

Registers will be kept current and made available for internal review, Client inspection or regulatory audit, where required.

Refer: [SCEE-BS-HS-TEM-0065 SCEE Electrical Master EMS Registers](#)

9.2 Document and Data Control

All project documentation relevant to soil and water management and implementation of this SWMP shall be established, reviewed, approved, controlled and retained in accordance with SCEE document and data control procedures.

Project SWMP documents and records shall be scanned and stored within the project SharePoint folder to ensure appropriate version control, accessibility and audit readiness.

The Project HSE Advisor is responsible for the day-to-day management of SWMP-related documents and records and shall ensure these documents are readily accessible for compliance and audit purposes.

Refer: [SCEE-BS-PC-PRO-0010 Project Document and Data Control](#)

9.3 Review of this SWMP

This SWMP will be reviewed, and if necessary revised to the satisfaction of the Planning Secretary within three months of:

- Submission of an incident report made under C10 of the CoC.
- Submission of an audit report made under C13 of the CoC; or
- Any modification to the CoC.

The SWMP may be revised at any other time as needed, in consultation with the Project Proponent and any other relevant parties as appropriate to the Satisfaction of the Planning Secretary. A summary of the changes made in each revision will be documented, along with evidence of consultation and Planning Secretary approval, which will be appended to this SWMP.

9.4 Environmental Records

The Project Manager and Project HSE Advisor are responsible for ensuring that records demonstrating compliance with this SWMP are created, maintained and retained for the duration of the Project.

SWMP records shall be stored in a manner that ensures they are:

- readily retrievable for inspection or audit
- protected from damage, deterioration or loss

Records retained under this SWMP will include, but are not limited to:

- soil and water inspection checklists and reports.
- erosion and sediment control (ESCP) inspection records.
- rainfall-triggered inspection records.
- dewatering and discharge records (if applicable).
- soil and water monitoring results.
- spill and water-related environmental incident reports.
- non-compliance and corrective action records.
- photographic records of soil, erosion, sediment and stormwater controls.
- soil and water-related audit reports.

All SWMP records shall be retained and archived in accordance with SCEE quality management system requirements. As a minimum, records shall be stored electronically within the project SharePoint folder and retained for the life of the Project, plus any additional retention periods required by legislation or contractual obligations.

Refer: [SCEE-BS-PC-PRO-0007 SCEE Project Data Numbering Procedure](#)
[SCEE-BS-PC-LIS-0004 SCEE Project Documents Overview](#)

Appendix A Conditions of Consent Concordance Table

CoC ref	Condition requirement	Where to find information
Schedule 2 Part A Administrative Conditions		
OBLIGATION TO MINIMISE HARM		
A1	In meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and its prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction, commissioning, operation, upgrading, decommissioning, or rehabilitation of the development.	Section 1.3
TERMS OF CONSENT		
A2	The development may only be carried out: (a) in compliance with the conditions of this consent. (b) in accordance with all written directions of the Planning Secretary. (c) generally in accordance with the EIS; and (d) generally in accordance with the Development Layout in Appendix 1.	Section 2.3
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 listed in condition A2(c) or A2(d). In the event of any inconsistency, ambiguity or conflict between any of these documents listed in condition A2(c) of A2(d), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.	Section 2.3
OPERATION OF PLANT AND EQUIPMENT		
A10	The Applicant must ensure that all plant and equipment used on site, or in connection with the development, is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Section 5.14
COMPLIANCE		
A12	The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.	Section 2.5, 7.1 and 7.2
A13	Where conditions of this consent require consultation with an identified party, the Applicant must: (a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and (b) provide details of the consultation undertaken including: (i) the outcome of that consultation, matters resolved and unresolved; and (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.	Appendix E (placeholder for consultation evidence)
Part B Environmental Conditions - General		
Air		

CoC ref	Condition requirement	Where to find information
B6	The Applicant must ensure: (a) the internal roads are constructed and maintained as all-weather roads; (b) there is sufficient parking on site for all vehicles, and no parking occurs on the public road network in the vicinity of the site; (c) the capacity of the existing roadside drainage network is not reduced; (d) all vehicles are loaded and unloaded on site, and enter and leave the site in a forward direction; and (e) development-related vehicles leaving the site are in a clean condition to minimise dirt being tracked onto the sealed public road network.	Addressed in the CEMP. Condition B6(e) also addressed in Section 5.9 of this plan
B20	The Applicant must minimise the dust generated by the development, including measures ensuring: (a) activities are carried out on site in a manner that minimises dust generation, including emissions of windblown and/or traffic generated dust; (b) surface area disturbance of the site is minimised; (c) development-related vehicles leaving the site have any loads covered; and (d) water is sprayed on unsealed roads when practicable during construction and use.	Section 5.9 Addressed in this SWMP (dust and erosion controls) with interface to the Traffic Management Plan (vehicle movement and track-out).
SOIL AND WATER		
Water Supply		
B23	The Applicant must ensure that it has sufficient water for all stages of the development, and, if necessary, adjust the scale of the development to match its available water supply. Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain the necessary water licences for the development.	Section 5.2 Section 5.8
Water Pollution		
B24	The Applicant must ensure that the development does not cause any water pollution, as defined under Section 120 of the POEO Act.	Section 1.3 and 5.14
Operating Conditions		
B25	The Applicant must: (a) minimise any soil erosion and control sediment generation; (b) ensure the battery storage and ancillary infrastructure and any other land disturbance associated with the construction, upgrading or decommissioning of the development has appropriate drainage and erosion and sediment controls designed, installed and maintained in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction – Volume 2A (Landcom, 2008), or its latest version;	Addressed throughout this SWMP, with specific references in Section 1.3 and 5.4 and Error! Reference source not found.. There is also overlap to FWMP, ERMP and

CoC ref	Condition requirement	Where to find information
	(c) maintain separation between clean and dirty water management systems; (d) maximise the diversion of clean water around disturbed and/or exposed contaminated soils within the approved development area, except where clean water is captured for use by the development; (e) design, install and maintain water storage infrastructure to avoid unlicensed or uncontrolled discharge of water; (f) ensure the battery storage and ancillary infrastructure does not cause any increased water diversion off site or alter hydrology off site; (g) ensure the battery storage and ancillary infrastructure (including security fencing) are designed, constructed and maintained to reduce impacts on surface water, localised flooding (including associated risks to property) and groundwater at the site; (h) ensure the battery storage and ancillary infrastructure are designed, constructed and maintained to avoid causing any erosion on site; and (i) provide for interception and removal of contaminants in the event of fire damage to the battery cells.	drainage design documentation where relevant.
Soil and Water management Plan		
B26	Prior to commencing construction, the Applicant must prepare a Soil and Water Management Plan for the development in consultation with DCCEEW Water Group. This plan must: (a) be prepared by suitably qualified and experienced persons; (b) include a description of the measures that would be implemented to ensure that the objectives of condition B25 (a) – (i) above are achieved; (c) include procedures for the prevention and management of contaminated surface water on site; (d) include detailed design of stormwater management, prepared in consultation with Council; and (e) include details of who would be responsible for monitoring, reviewing and implementing the plan, and timeframes for completion of actions. The Applicant must implement the Soil and Water Management Plan.	This document. Appendix E for evidence of consultation with DCCEEW Water Group Refer to Condition B25 Section 0 Section 5.5 Section 7.1
CONTAMINATION		
Statutory Requirements		
B27	The Applicant must carry out the development in accordance with the requirements of the: (a) Remedial Action Plan; and Site Management Plan, as detailed in the Detailed Site (Contamination) Assessment (dated March 2025) and in consultation with Council.	Section 5.11 Refer to Site Management Plan (SMP)
B28	Prior to commencing construction, the Applicant must provide written evidence to the Secretary from the Site Auditor confirming that all construction works associated with the Development would meet the requirements of the documents listed in condition B27 above.	Section 5.11 Refer to Site Management Plan (SMP)
Unexpected Finds		

CoC ref	Condition requirement	Where to find information
B30	Prior to commencing construction, the Applicant must prepare an unexpected contamination finds procedure to ensure that potentially contaminated material is appropriately managed. The procedure must: (a) form part of the of the Environmental Management Strategy in accordance with condition C1; and (b) ensure any material identified as contaminated is managed in accordance with the POEO Act and its associated regulations. Details of the final management approach and the results of any associated testing must be submitted to the Planning Secretary within six weeks of the Applicant becoming aware of the contamination find, unless the Planning Secretary agrees otherwise.	Section 5.11 Refer to Unexpected Contamination Finds Procedure
HAZARDS		
B33	The Applicant must store and handle all chemicals, fuels and oils used on-site in accordance with: (a) the requirements of all relevant Australian Standards; and (b) the NSW EPA's Storing and Handling of Liquids; (c) Environmental Protection – Participants Handbook, if the chemicals are liquids. In the event of an inconsistency between the requirements listed from (a) and (b) above, the most stringent requirement must prevail to the extent of the inconsistency.	Refer to CEMP
Emergency Plan		
B35	Prior to commencing any construction works associated with the project, an emergency plan must be prepared for the development. The plan must: (a) be prepared and implemented prior to the commissioning of the battery storage facility; (b) be prepared in consultation with FRNSW; (c) be provided to the local Fire Control Centre, relevant local emergency management committee and FRNSW; (d) be prepared in accordance with the findings of the Fire Safety Study required under condition B31; (e) be consistent with the Department's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning' guideline; (f) include details on general emergency management planning, including: (i) details of how the battery storage and sub-systems can be safely isolated in an emergency; (ii) identification of fire risks and hazards and detailed measures for the development to prevent fires igniting; ((iii) availability of fire suppression equipment, access and water; (iv) flood emergency responses for the development; and (g) Include fire emergency management planning consistent with the Fire Safety Study required by condition B31, including: (i) details of the location, management and maintenance of the fire break; (ii) a list of works that must not be carried out during a total fire ban;	Section 6 Flood and water-related emergency aspects addressed in the ERMP and FWMP; supported by SWMP controls.

CoC ref	Condition requirement	Where to find information
	(iii) details of how FRNSW would be notified, and procedures that would be implemented in the event that: a. there is a fire on-site or in the vicinity of the site; or b. there are any activities on site that would have the potential to ignite surrounding vegetation; (h) include an Electrical Hazard Assessment prepared in consultation with Jemena that considers potential impacts on nearby high pressure gas mains; (i) include emergency management and evacuation procedures and identification of specific emergency exit routes to be used during a flood event or in the event there is a fire on site, including evidence of access agreements with relevant landowners (e.g. right of carriageway); and (j) include an Emergency Services Information Package in accordance with Emergency services information package and tactical fire plan (FRNSW, 2019). Two copies of the plan and the Emergency Services Information Package must be kept on-site in prominent positions adjacent to the site entry point(s) at all times.	
WASTE		
B36	The Applicant must: (a) minimise the waste generated by the development; (b) classify all waste generated on site in accordance with the EPA's Waste Classification Guidelines 2014 (or its latest version) and taken to a facility licenced to accept that waste; (c) store and handle all waste on site in accordance with its classification; (d) not receive or dispose of any waste on site; and remove all waste from the site as soon as practicable, and ensure it is reused, recycled or sent to an appropriately licensed waste facility for disposal.	Section 5.10.1 Refer to the WMP for further details.
Part C Environmental Management, Reporting and Auditing		
ENVIRONMENTAL MANAGEMENT		
Environmental Management Strategy		
C1	Prior to commencing construction, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Planning Secretary. This strategy must: (a) provide the strategic framework for environmental management of the development; (b) identify the statutory approvals that apply to the development; (c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; (d) set out the procedures that would be implemented to: (i) keep the local community and relevant agencies informed about the operation and environmental performance of the development;	Section 1.5 Refer to EMS

CoC ref	Condition requirement	Where to find information
	(ii) receive, handle, respond to, and record complaints; (iii) resolve any disputes that may arise; (iv) respond to any non-compliance; (v) respond to emergencies; and (e) include: (i) references to any strategies, plans and programs approved under the conditions of this consent; and (ii) a clear plan depicting all the monitoring to be carried out in relation to the development, including a table summarising all the monitoring and reporting obligations under the conditions of this consent. Following the Planning Secretary's approval, the Applicant must implement the Environmental Management Strategy.	
Revision of Strategies, Plans and Programs		
C2	The Applicant must: (a) update the strategies, plans or programs required under this consent to the satisfaction of the Planning Secretary prior to carrying out any upgrading or decommissioning activities on site; and (b) review and, if necessary, revise the strategies, plans or programs required under this consent to the satisfaction of the Planning Secretary within 3 months of the: (i) submission of an incident report under condition C10 of Schedule 2; ((ii) submission of an audit report under condition C13 of Schedule 2; or (a) any modification to the conditions of this consent.	Section 9.3
Staging, Combining and Updating Strategies, Plans or Programs		
C3	With the approval of the Planning Secretary, the Applicant may stage the development and may: (a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program); (b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and (b) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).	Refer to CEMP
C5	If approved by the Planning Secretary, updated strategies, plans or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan or program.	Refer to CEMP

CoC ref	Condition requirement	Where to find information
C6	If the Planning Secretary agrees, a strategy, plan or program may be staged without addressing particular requirements of the relevant condition of this consent if those requirements are not applicable to the particular stage.	Refer to CEMP
NOTIFICATIONS		
Incident Notification		
C10	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.	Section 8 Refer to CEMP
C11	The Applicant must provide the Department with a subsequent incident report in accordance with Appendix 5.	Refer to CEMP
Non-Compliance Notification		
C12	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing and must be submitted via the NSW planning portal (Major Projects). The notification must identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply, the reasons for the non-compliance (if known), and what actions have been undertaken, or will be undertaken, and when, to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 8 Refer to CEMP
INDEPENDENT ENVIRONMENTAL AUDIT		
C13	Independent Environmental Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020) or as updated from time to time and published on the Department's website.	Section 7.4.1
ACCESS TO INFORMATION		
C14	The Applicant must: (a) make the following information publicly available on its website as relevant to the stage of the development: (i) the EIS; (ii) the final layout plans for the development (iii) current statutory approvals for the development; (iv) approved strategies, plans or programs required under the conditions of this consent (other than the Fire Safety Study and Emergency Plan);	Section 1.1 Primarily addressed in the CEMP/EMS; SWMP aligns where relevant.

CoC ref	Condition requirement	Where to find information
	(v) the proposed staging plans for the development if the construction, operation and/or decommissioning of the development is to be staged; (v) a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; (vi) how complaints about the development can be made; (vii) a complaints register; (viii) compliance reports; (ix) any independent environmental audit, and the Applicant's response to the recommendations in any audit; (x) any other matter required by the Planning Secretary; and (b) keep this information up to date.	

Appendix B EIS Mitigation Measures to SWMP Controls

EIS ID	Mitigation Measure	Timing	Information in related Plan	SWMP Section(s)	Implementation / Evidence
Land and Soils / Contamination					
L-1	All workers will be informed of the contamination status of the material below the capping layer and be informed of the procedures and protocols to minimise the potential exposure to themselves and the environment.	All phases	Site Management Plan	Section 5.11	Inductions, toolbox talks
L-2	The Steel River certification process, regulated by City of Newcastle Council, includes a site management plan (SMP) which details the day-to-day requirements of construction work. The SMP will be part of the overall CEMP and will be implemented.	All phases	Site Management Plan and Construction Management and Methodology Plan.	Section 5.11	SMP referenced and implemented
L-3	All material which is removed from site must be sampled, classified, transported and tracked in accordance with the NSW EPA waste framework.	All phases	Site Management Plan	Section 5.10.1	Waste dockets, tracking register
L-4	During construction, differential stockpiling of capping materials to any underlying materials, prior to classification being undertaken.	Construction	Site Management Plan	Section 5.11	Stockpile controls, inspections
L-5	No groundwater extraction is to be undertaken unless there is additional assessment into the suitability of the extracted groundwater for the proposed purpose. Any extracted groundwater is to be treated as contaminated unless confirmed otherwise i.e. implementation of occupational hygiene controls for workers and no release of groundwater to the environment	All phases	Site Management Plan	Section 5.8	Dewatering controls, records
L-6	Additions to be made to the SMP as follows: – Training to ensure that all workers undertaking excavation works are aware of the potential for unexpected contamination to be present in the capping layer and the likely presence of contamination at depths beyond 2 mbgs, including free tar and slag. – Minimisation of potential exposure by dust and implementation of occupational hygiene controls to prevent dermal contact and incidental ingestion of soil adhered to skin when conducting any works below a depth of 2 m. – Stockpiling controls to manage the potential for contaminated material to leave the Operational Footprint via dust or erosion. – The 2 m capping layer is to be maintained throughout construction of the Project. Requirements will be established for the return of soil, in the event that soil is excavated from below the capping layer. If this is not feasible or desirable, appropriate sampling and analysis will be undertaken	All phases	Construction Management and Methodology Plan and Site Management Plan	Section 5.11	Training records, inspections

EIS ID	Mitigation Measure	Timing	Information in related Plan	SWMP Section(s)	Implementation / Evidence
	to w determine whether it is appropriate for this material to remain at the Operational Footprint and be subject to waste classification.				
L-8	Where soil is left exposed for more than three days, a soil binder will be used to help prevent erosion caused by wind or water. Binders would be used on stockpiles where these are in situ for more than 24 hours.	Construction		Section 5.10	Inspection records
L-9	A spill response plan (SRP) will be developed prior to construction, to outline the procedures to follow in the event of a spill to minimise environmental impact and ensure the safety of workers.	Construction		Section 6.2 and Appendix F	Spill kits, procedures
L-10	Impermeable barriers placed between sources of contamination (e.g. contaminated stockpiles or certain materials) and the natural ground.	Construction	Site Management Plan	Section 5.10	Stockpile lining, inspections
L-11	Hazardous materials such as chemicals, fuels and oils will be handled and stored in accordance with relevant Australia Standards and the NSW EPA's Storing and Handling of Liquids: Environmental Protection Participants Handbook (DECC, 2007).	Construction	Construction Environmental Management Plan	Section 5.14	Bunding, SDS, inspections
Surface Water, Groundwater and Flooding					
SW-1	A construction Soil and Water Management Plan (SWMP), including an Erosion and Sediment Control Plan (ESCP) prepared in accordance with the Blue Book, will be prepared and implemented during construction. The ESCP will be prepared by a Certified Practitioner of Erosion and Sediment Control or an accredited soil scientist. The ESCP will include a protocol for erosion control inspections to detect and mitigate construction phase impacts.	Construction		This document Section 5.4	SWMP/ESCP, inspections
SW-2	Include an ASS Management Plan (ASSMP) to minimise potential environmental impacts from development works that could disturb ASS.	Construction		Section 5.12	ASSMP, monitoring
SW-3	Prior to construction, a Flood Emergency Response Plan would be prepared. This would form part of the CEMP and would document how the risks to life and property within the Construction Footprint would be safely managed during construction.	Pre-construction	Emergency Response Management Plan	Section 6.3	Flood response arrangements incorporated within Emergency Response Management Plan

Appendix C Environmental Control Tables

Aspect / Activity	Potential Impact	Control Measures	Responsibility	Monitoring / Evidence
Hazardous Materials, Hydrocarbons and Chemicals				
Storage of fuels, oils and chemicals	Soil or water contamination	- Bunded storage ($\geq 110\%$ of largest container) - SDS available at point of use - Approved containers only	Supervisor / HSE Advisor	- Weekly inspections - SDS register
Refuelling activities	Spills to land or stormwater	- Spill kits at refuelling locations - Refuelling in designated areas where practicable - Supervision during refuelling	Supervisor	- Inspection records - Spill/incident reports
Handling of hazardous substances	Contaminated runoff	- Task risk assessments completed - Appropriate PPE used	Supervisor	- JHAs / SWMS - Toolbox record
Spill Prevention and Pollution Control				
Unplanned spills	Environmental contamination	- Immediate containment and clean-up - Notify Supervisor and HSE Advisor - Dispose contaminated materials appropriately	All workers / Supervisor	- Incident reports - STEMS incident records
Waste oils and residues	Pollution of land or water	- No burning of waste - Licensed disposal contractors	Supervisor	Waste dockets
Soil, Erosion, Sediment & Stormwater Management				
Excavation works	Sediment runoff	- Controls implemented per Blue Book - ESCP installed prior to works - Progressive stabilisation	Supervisor	- ESCP inspections - Photos
Stormwater runoff from disturbed areas	Offsite sediment discharge	- Divert clean water away from works - Treat dirty water prior to discharge	Supervisor / HSE Advisor	Inspection records
Soil and spoil stockpiles	Sediment runoff / contamination	- Stockpiles located away from drains - Stabilised or covered as required	Supervisor	Inspection records
Drainage & Dewatering				
Dewatering activities	Water contamination	- Treat water prior to discharge or reuse - Discharge only to approved locations	Supervisor / HSE Advisor	- Monitoring records - Discharge approvals
Temporary drainage modifications	Erosion or altered flows	- Install temporary drainage controls - Prevent scouring and erosion	Supervisor	Inspection records
Wastewater & Liquid Waste				
Construction waste	Environmental pollution	- Segregate waste streams - Covered bins and skips	Supervisor	Inspections
Hazardous waste	Environmental harm	- Licensed contractors only - Waste tracking	HSE Advisor	Waste dockets
Acid Sulphate Soils (If Triggered)				
Excavation in ASS risk areas	Acid generation	- Stop work if ASS suspected - Implement ASS controls as required	Supervisor / HSE Advisor	- Inspection records - Incident reports
Contaminated Land and Unexpected Finds				
Discovery of contaminated soil or groundwater	Environmental harm	- Stop work and isolate area - Prevent exposure to water pathways - Escalate to HSE Advisor	Supervisor / HSE Advisor	- Incident record - Consultant advice
Contaminated stockpiles	Leachate / runoff	- Impermeable liners beneath stockpiles - Covered stockpiles	Supervisor	Inspection records
Site Stabilisation & Close-Out				
Demobilisation and site close-out	Ongoing erosion or sediment	- Remove temporary works - Stabilise disturbed surfaces	Project Manager	- Final Inspections - Photos

Appendix D Monitoring and Inspection Schedules

Environmental Aspect	Inspection / Monitoring Activity	Frequency	Responsibility	Records / Evidence
Erosion, Sediment and Stormwater Controls	Inspection of erosion and sediment controls (ESCP), including perimeter controls and diversion measures	Weekly and following rainfall events	Supervisor / HSE Advisor	ESCP inspection logs, photos
Stormwater runoff	Visual inspection for sediment-laden or uncontrolled runoff from site	During works and following rainfall	Supervisor	Inspection records
Soil and Stockpile Management	Inspection of excavation areas, exposed soils and stockpiles for erosion or runoff risk	Weekly and during active excavation	Supervisor	Inspection records
Soil and spoil stockpiles	Verification of stockpile location, stabilisation and separation	Weekly	Supervisor	Inspection records
Drainage and Dewatering	Inspection of drainage paths, temporary drainage and flow controls	Weekly and post-rainfall	Supervisor	Inspection records
Dewatering activities	Verification of treatment, discharge location and control effectiveness	During dewatering activities	Supervisor / HSE Advisor	Monitoring records, discharge approvals
Hazardous Materials and Hydrocarbons	Inspection of fuel and chemical storage, bunding, SDS availability	Weekly	HSE Advisor	Hazardous materials inspection checklist
Refuelling activities	Verification of spill prevention controls and supervision	During refuelling	Supervisor	Inspection records
Spill Preparedness and Response	Verification of spill kits, absorbents and containment equipment	Weekly	Supervisor	Inspection records
Wastewater and Liquid Waste	Inspection of wastewater containment and removal arrangements	Weekly	Supervisor	Wastewater removal dockets
Contaminated Land (If Triggered)	Monitoring excavation works for signs of contaminated soil or groundwater	Continuous during excavation	Supervisor / HSE Advisor	Inspection notes, incident records
Acid Sulphate Soils (If Triggered)	Visual monitoring for ASS indicators during excavation	During excavation in risk areas	Supervisor / HSE Advisor	Inspection records
Site Stabilisation and Close-Out	Inspection of disturbed areas to verify stabilisation prior to demobilisation	At completion of works	Project Manager	Final inspection and close-out records

Appendix E Placeholder - Evidence of Consultation with DCCEEW Water Group

Appendix F Spill Response Plan

In the event of a spill or release of hazardous materials the following Spill Response Plan (SRP) will be followed to minimise the environmental impact and ensure the safety of workers.

Spill response equipment

Spill response equipment appropriate to the hazardous materials, hydrocarbons and chemicals present on site will be available to minimise the risks to human health and/or the environment and contain or control a spill. Equipment will include:

- Absorbent materials (e.g. pads, granules)
- Barriers, bunding or exclusion materials
- Shovels and collection tools
- Personal protective equipment such as gloves, eyeglasses, face masks, long sleeve, etc.

Spill response equipment will be located on mobile plant where required and at other locations within the Project site as specified in the Emergency and Response Plan.

Safety Data Sheets (SDS), manufacturer requirements and relevant legislation will be reviewed at regular intervals for all hazardous materials, hydrocarbons and chemicals present onsite to ensure appropriate spill response equipment is available onsite and spill response procedures remain up to date.

Following the cleanup of a spill, the Supervisor must ensure that all spill response equipment is restocked in a timely manner.

Procedure

The Spill Action Response Plan in Figure F-1 provides the high level process to be followed in the event of a spill. Further detail of each process is within the plan is described below.

In the event of a spill,

- Stop work where safe to do so
- Make the area safe and prevent further environmental harm by immediately implementing spill containment measures (if safe to do so) such as protecting drains, channels or other pathways for environmental release to waterways.
- Notify the Supervisor and Site HSE Advisor immediately
- Commence cleanup using appropriate materials as per site-specific spill response procedures developed in consultation with the Safety Data Sheets, manufacturer requirements and relevant legislation.
- Classify and dispose of contaminated soil and/or materials at an appropriately licensed facility.
- Report and investigate the incident in accordance with the Environment Incident Management process described in the CEMP.

In the event that a spill is **not safe** for onsite personnel to control:

- Immediately move out of the area
- Notify the Supervisor and Site HSE Advisor immediately
- Determine whether an Emergency Response Team (ERT) is required to manage the spill.
- Call Emergency Response and provide Safety Data Sheets (SDS) to ERT on arrival
- ERT to manage spill response and clean up in cooperation with SCEE personnel
- Report and investigate the incident in accordance with the Environment Incident Management process described in the CEMP.

Spill Response Action Plan

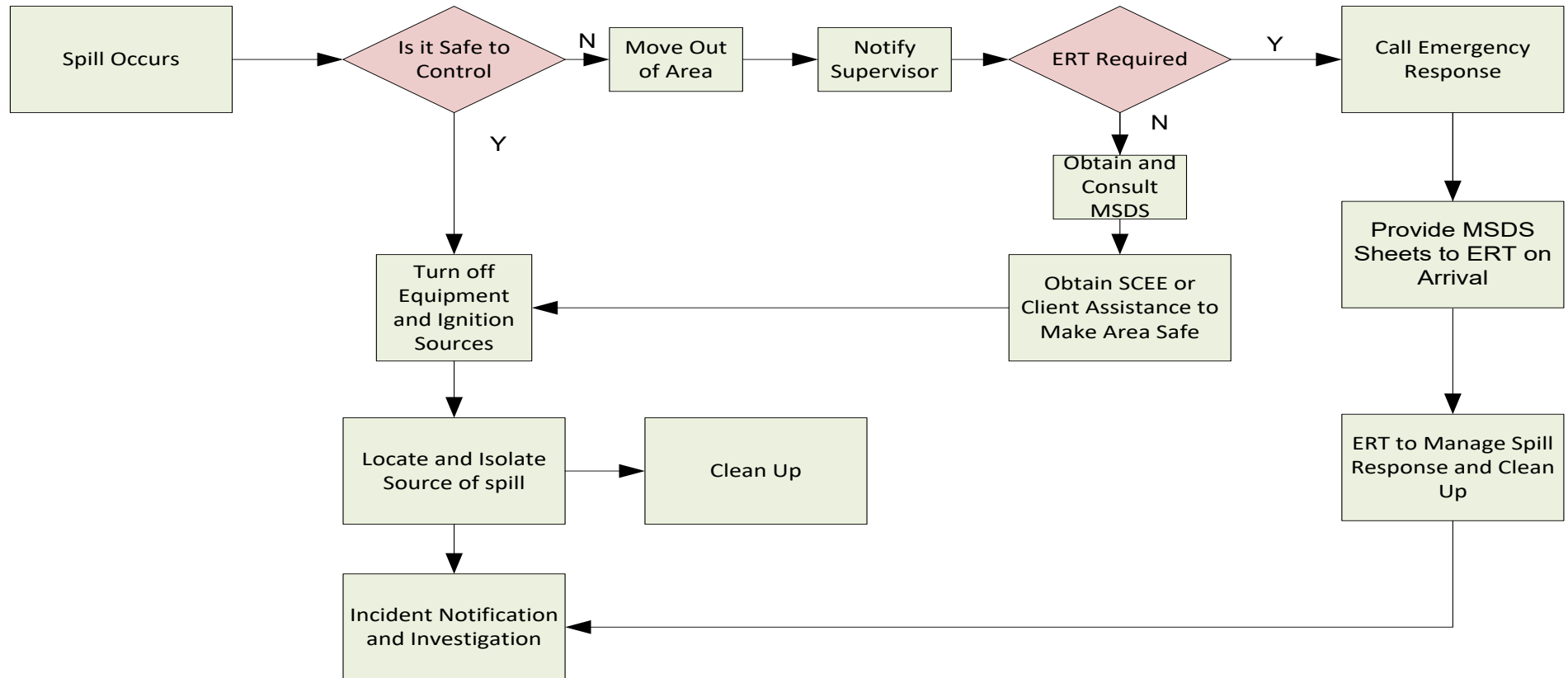


Figure F-1 Spill Response Action Plan

Appendix G CV for Chris Bonomini CPESC 9621



Chris Bonomini

PRINCIPAL ENGINEER – WATER, PROCESS AND RISK
DISCIPLINE LEADER – WATER (NSW)
Bachelor of Engineering (Chemical), Honours Class I
Certified Professional in Erosion and Sediment Control 9621)

Summary

Chris is a Water and Process Engineer and Certified Professional in Erosion and Sediment Control (CPESC) who has worked in industry for 27 years, gaining a wide range of hands-on experience and practical knowledge. For the last 17 years Chris has worked as a consulting engineer. Chris has extensive experience with surface water impact assessment, surface water management, water balance modelling, water quality, process engineering, qualitative and quantitative risk analysis, and resource efficiency. He has strong practical experience in plant installation and commissioning. These skills enable Chris to offer a comprehensive range of practical water, process and risk engineering services to a diverse client base.

Professional History

2023 to present	Engeny Australia, Principal Engineer/Discipline Leader
2021 to 2023	Umwelt (Australia), Principal Engineer – Water, Process and Risk
2011 to 2021	Umwelt (Australia), Senior Engineer – Water, Process and Risk
2006 to 2011	Advitech, Senior/Supervising Process Engineer
2005 to 2006	Koppers Carbon Materials and Chemicals, Plant Engineer
2001 to 2005	Onesteel Market Mills, Process Engineer
1996 to 2001	BHP Newcastle Steelworks, Cadet Chemical Engineer

Registrations / Affiliations

- International Erosion Control Association (Australasia) – Member

FEATURE PROJECTS

Hunter Gas Pipeline Soil and Water Management Plans (Santos, Ongoing)– Technical Lead and Project Manager

Chris is preparing and/or overseeing the delivery of management plans and studies that are required to be prepared the Hunter Gas Pipeline development consent. The documents include a Soil and Water Management Plan (inclusive of a primary erosion and sediment control plan), Soils Field Verification Plan (to identify and map dispersive, expansive and saline soils along the pipeline alignment) and a water sourcing investigation to identify suitable water sources (quality and quantity) to meet pipeline construction demands.

Blue Book Update Phase 1 (NSW DCCEEW, 2024)– Erosion and Sediment Control Specialist/Project Manager

Chris led the Blue Book Update Phase 1 project on behalf of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) in relation to a potential update of the current guidelines for erosion and sediment control in NSW. The project involved a review of contemporary erosion and sediment control guidelines for various jurisdictions, a literature review of the latest science and technology relating to erosion and sediment control and stakeholder engagement (NSW government agencies, local government and industry groups).

Kurri Kurri Lateral Pipeline Soil and Water Management Plan (APA, 2023) – Erosion and Sediment Control Specialist/Project Director

Chris prepared a Soil and Water Management Plan (SWMP) and for the Kurri Kurri Lateral Pipeline (KKLP) project which includes approximately 20 km of underground transmission pipeline, approximately 24 km of underground storage pipeline associated surface facilities. The project area traverses multiple watercourses and involves disturbance of approximately 104 ha. The SWMP includes erosion hazard assessments, soil loss class determination and sediment basin tests across the KKLP project area accounting for the varying topography and soil characteristics within the various watercourse catchments. Design standards for drainage, erosion and sediment controls, dewatering management measures as well as inspection, monitoring and maintenance requirements are also included in the SWMP.

Muswellbrook Rail Bridge Replacement Erosion and Sediment Control Plan (Laing O'Rourke, 2020) – Erosion and Sediment Control Specialist/Project Director

Chris was responsible for the preparation of a Primary ESCP and progressive ESCPs for the replacement of rail bridges spanning Bridge Street, Muswellbrook, Musclee Creek and the Hunter River. The construction works are ongoing and involve ground disturbing activities, including piling works, on waterfront land and within the two year ARI flood level of Musclee Creek and the Hunter River.

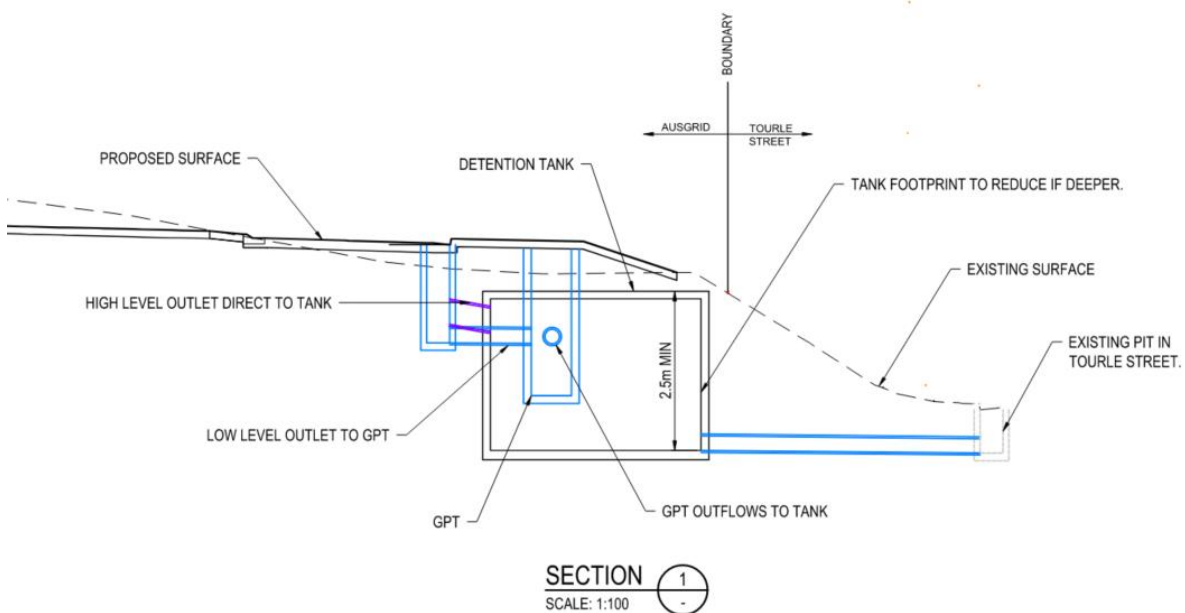
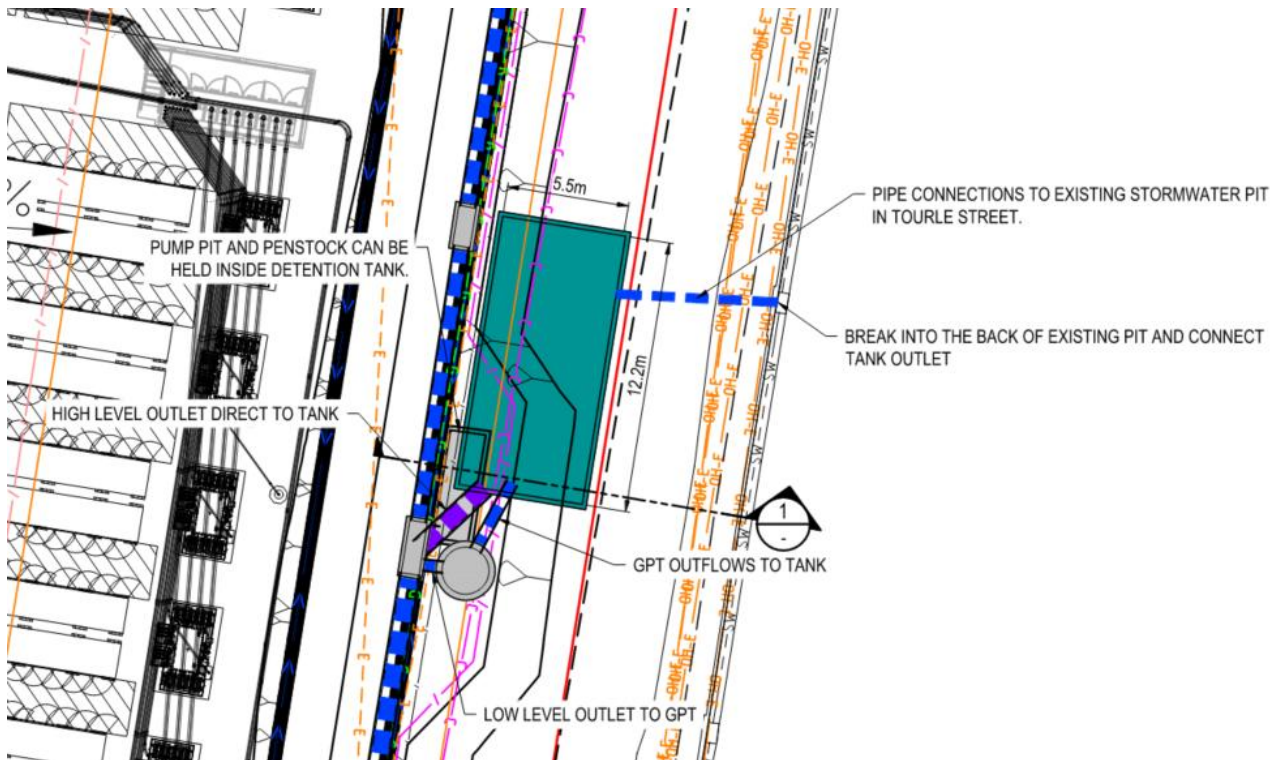
KEY PROJECTS

- Stone Ridge Quarry -Surface Water Impact Assessment | Australian Resource Development Group | 2024 | Balickera NSW
- Winterbourne Wind Farm Quarry -Surface Water Impact Assessment | Australian Resource Development Group | 2024 | Walcha NSW
- Liverpool Range Wind Farm Quarry -Surface Water Impact Assessment | Australian Resource Development Group | 2024 | Upper Hunter NSW
- Morans Creek, Stockton Creek, Mullards Creek, Clacks Creek, Melaleuca and Dora Creek Flood Study – Water Balance | Lake Macquarie City Council | 2024 | Lake Macquarie NSW
- Cadia Valley Operations – Dam Options Engineering | Newmont | 2024 | Cadia NSW
- Hunter Gas Pipeline - Post Approval Management Plans and Studies | Santos | 2024 | NSW
- Impact Assessment Criteria Exceedance Investigation | Crawford Freightlines | 2024 | Sandgate NSW
- Merrown Solar Farm - Erosion and Sediment Control Plan | RPS | 2024 | Merriown NSW
- Bendemeer Solar Farm– Flood Impact Assessment | ERM | 2023 | Bendemeer Vic
- Kurri Kurri Technical Centre -Independent Hazard Audit | Orica | 2024 | Richmondvale NSW
- Stockman Project – Water Balance | Aeris Resources | 2023 & 2024 | Bendemeer Vic
- Dianne Copper Mine – Water Management Plan | Revolver Resources | 2022 & 2024 | Dianne Qld
- Water Management Standard | Fitzroy Australia Resources | 2020 - 2021 | Qld
- Great Greta Colliery Passive Reactive Barrier - Surface Water Assessment | Glencore | 2021 | Glendon Brook NSW
- Martins Creek Quarry – Surface Water Impact Assessment | Daracon | 2020 | Martins Creek, NSW
- United Wambo Mine Complex – Water Management Plan Updates | United Wambo Joint Venture | 2020 | Jerrys Plains NSW
- Russell Vale Colliery Underground Expansion Project – Surface Water Impact Assessment | Wollongong Coal | 2020 | Russell Vale, NSW
- United Wambo Coal Mine Joint Venture – Erosion and Sediment Control Advice | Glencore | 2020 | Jerrys Plains NSW
- Invincible Colliery – Water Management and Erosion and Sediment Control Review | Castlereagh Coal | 2020 | Cullen Bullen, NSW
- Cullen Valley Mine –Erosion Review | Castlereagh Coal | 2020 | Cullen Bullen, NSW
- Queensland Government Flood Plain Planning Policy – Assessment of Potential Impacts on Mine Approvals | Glencore | 2019
- Bulga Extension Project – Water Balance Peer Review | Glencore | 2019 | Bulga, NSW
- Cooma Road Quarry – Water Management Plan | Holcim | 2019 | Queanbeyan, NSW
- Ravensworth Mine Complex – Annual Water Reporting | Glencore | 2012 - 2021 | Ravensworth, NSW
- Haerses Road Quarry and Old Northern Road Quarry – Soil and Water Management Plans | Dixon Sand | 2018 Maroota, NSW
- Due Diligence Assessment of Discharge Water Treatment Requirements | Manildra Group | 2018 | Cullen Bullen, NSW
- East Guyong Quarry Modification – Soil and Water Impact Assessment | Hanson | 2018 | Byng, NSW
- United Wambo Coal Mine Joint Venture – Surface Water Quality | Glencore | 2017 | Jerrys Plains NSW
- Invincible Coal Project – Environmental Impact Statement Water Balance | Castlereagh Coal | 2016 | Cullen Bullen, NSW
- Ulan Coal Mines – Reporting Water and Salt Balance | Glencore | 2011 to 2016 | Ulan NSW
- West Wallsend Colliery – Discharge Water Quality Criteria | Oceanic Coal | 2015 | West Wallsend, NSW | Oceanic Coal (OCAL) were
- United Wambo Coal Mine Joint Venture – Surface Water Management System | Glencore | 2015 | Jerrys Plains NSW
- Mount Owen Mine – Continued Operations Environmental Impact Statement Water Balance | Glencore | 2014 | Ravensworth, NSW
- Cooma Road Quarry - Continued Operations Water Resources Assessment | Holcim | 2011 - 2012 | Googong NSW
- Kurri Kurri Lateral Pipeline Soil and Water Management Plan | APA Group | 2023 | Kurri Kurri NSW
- Cundletown Interchange Upgrade Soil and Water Management Plan | Transport for NSW | 2022 | Cundletown NSW
- 105 Sydney Road Soil and Water Management Plan and Vegetation Management Plan | Structor | 2021 | Kelso NSW
- Muswellbrook Rail Bridge Replacement Erosion and Sediment Control Plan | Laing O'Rourke | 2020 - present | Muswellbrook NSW
- Power Station Ash Dam Dry Stack Erosion and Sediment Control Plan | Confidential | 2019 - present | NSW
- Concrush Expansion Water Management Plans | Concrush | 2020 | Teralba, NSW
- Concrush Resource Recovery Facility Expansion - Soil and Water Impact Assessment and Water Management Plans | Concrush | 2019 - 2020 | Teralba NSW
- Asphalt Plant Demolition and Construction | Downer | 2020 | Bathurst NSW
- Intersection Upgrade New England Highway and Cessnock Road | NSW Roads and Maritimes Services | 2019 - 2020 | Maitland NSW
- Industrial Drive and Werribi Street Intersection Upgrade | NSW Roads and Maritimes Services | 2019 | Mayfield West NSW
- Tourle Street and Industrial Drive Intersection Upgrade | NSW Roads and Maritimes Services | 2019 | Newcastle
- University Drive Left Turn Slip Lane Works | NSW Roads and Maritimes Services | 2019 | Newcastle NSW
- Collector Wind Farm – Groundwater Assessment | Civilex | 2019 | Collector NSW
- Mayfield West Concrete Batch Plant - Soil and Water Impact Assessment | Hanson | 2018 | Mayfield West NSW

- Confidential – Sediment Load Reduction Program | 2015 - 2018 | NSW | A large material handling organisation was issued with a
- Kurri Kurri Liquid Waste Handling Depot – Stormwater Management Plan | Toxfree | 2018 | Kurri Kurri, NSW
- Potable Water Discharge Advice | Central Coast Council | 2017 - 2018 | Central Coast NSW
- Groundwater Water Quality Assessment | Singleton City Council | 2017 | Lower Hunter Valley NSW
- Mayfield 4 Berth Stormwater Pollution Reduction Program | Newcastle Port Corporation | 2013 | Mayfield East, NSW
- Sandgate Ammonium Nitrate Storage and Handling Facility Operational Environmental Management Plan | Crawford's Freightlines | 2023 | Newcastle NSW
- Kurri Kurri Technical Centre Hazard Audit | Orica | 2021 | Richmondvale NSW
- Tallawang Solar Farm Preliminary Hazard Analysis | RES | 2021 | Tallawang NSW
- Liquefied Petroleum Gas Storage and Handling Audit | Hunter Valley Operations | 2020 | Ravensworth NSW
- Concrush Resource Recovery Facility Expansion - Emergency Management Plan | Concrush | 2020 | Teralba NSW
- Kooragang Island Fuel Terminal Hazard Constraints | Park Fuels Pty Ltd | 2019 | Kooragang NSW
- Mangoola Coal Continued Operations | Glencore | 2018 | Denman NSW
- Hydrocarbon Management System Audit | Mangoola Open Cut | 2016 | Denman NSW
- Major Hazard Facility Quantitative Risk Assessment | Toll North 2014 | Senior Process Engineer | Dubbo NSW
- Ammonium Nitrate Storage Facility PHA | Orica Mining Services | 2011 | Denman NSW
- Risk to Manufacturing and Product Quality | Ampcontrol | 2011 | Senior Process Engineer | Cameron Park NSW
- Heat Treatment Furnace Audit | Bisalloy Steels | 2010 | Port Kembla NSW
- Char Making Plant Explosion Investigation | Griffin Coal | 2009 | Collie WA
- Coal Tar Distillation Plant Operations | Koppers Carbon Materials and Chemicals | 2004 - 2005 | Mayfield, NSW
- Williamtown SAP Energy and Water Calculators | Hatch Roberts Day | 2020 - 2021 | Principal Process Engineer | Kooragang NSW
- High Nutrient Water Resource Recovery Exemption Application | Impact Fertilisers | 2019 | Senior Process Engineer | Kooragang NSW
- Umwelt Building Management | Umwelt (Australia) Pty Ltd | 2013 - Present | Teralba NSW
- Reboiler Burner Upgrade | Koppers Carbon Materials and Chemicals | 2005 | Plant Engineer | Mayfield West, NSW
- Dubbo Regional Council Energy Efficiency | NSW OEH | 2018 | NSW
- Resource Efficiency Module Delivery | NSW DECCW | 2008 | NSW
- Compressed Air System Audit | OneSteel | 2005 | Mayfield West, NSW

Appendix H Detailed Design – Stormwater Management

Please note: The following design detail is subject to revision throughout the ongoing design and council consultation processes. However, the overall design intent will remain unchanged; the intention is to connect to the stormwater system on Tourle Street without any planned overland flows.



Appendix I Evidence of Consultation with Newcastle City Council on Detailed Design of Stormwater Management

TBC

Appendix J **Flood Water Management Plan**

Please refer to 201085-SE-PLN-0013 – Flood Water Management Plan