Mount Piper to Wallerawang Transmission

Soil and Water Management Plan

Zinfra

Reference: P528945

Revision: 0.1

2026-10-28



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Document control record

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Document control		aurecon				
Report title		Soil and Water Management Plan				
Document code		528945-W00001-PLN-EN-0001	**Project number**		P528945	
Client		Zinfra				
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
A	2026-02-13	Draft for review	J. Norman	M. Donaldson	N. Kaur	S. Rackley
B	2026-03-06	Addressing Zinfra comments	J. Norman	M. Donaldson	N. Kaur	S. Rackley
C	2026-04-10	Incorporating draft conditions	M. Jones	B. McDonald	B. McDonald	S. Rackley
D	2026-04-15	Incorporating Zinfra feedback	M. Jones	B. McDonald	B. McDonald	S. Rackley
E	2026-05-08	Addressing Transgrid comments	J Norman	B. McDonald	B. McDonald	S. Rackley
F	2026-05-15	Addressing Zinfra comments	J Norman	B. McDonald	B. McDonald	S. Rackley
G	2026-05-25	Addressing Zinfra comments	J Norman	B. McDonald	B. McDonald	S. Rackley
H	2026-06-01	Issued for Consultation	J Norman	B. McDonald	B. McDonald	S. Rackley
I	2026-07-15	Update following Consultation	M. Jones	B. McDonald	B. McDonald	S. Rackley
J	2026-07-21	Update following Consultation	M. Jones	B. McDonald	B. McDonald	S. Rackley
K	2026-08-13	Update following Zinfra comments	M. Jones	B. McDonald	B. McDonald	S. Rackley
L	2026-09-23	Update following Environmental Representative review	M. Jones	B. McDonald	B. McDonald	S. Rackley
M	2026-09-29	Update following Environmental Representative review	M. Jones	B. McDonald	B. McDonald	S. Rackley
0	2026-10-08	Final submitted for ER review and endorsement	M. Jones	B. McDonald	B. McDonald	S. Rackley
0.1	2026-10-28	Updated in response to RFI from DPHI	M. Jones	B. McDonald	B. McDonald	S. Rackley
Current revision		**0.1**				

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Definitions

Term	Definition
AEC	Areas of Environmental Concern
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AMP	Asbestos Management Plan
ANZG	Australian and New Zealand Guideline
ARI	Annual Recurrence Level
ASC	Australian Soil Classification
ASS	Acid Sulphate Soils
ASSMAC	Acid Sulfate Soil Manual
ASSMP	Acid Sulphate Soil Management Plan
bgl	below ground level
Blue Book	Managing Urban Stormwater: Soils and Construction, Volume 1 (4th Edition) (Landcom, 2004)
BMP	Biodiversity Management Plan
BoM	Bureau of Meteorology
CCS	Community Consultation Strategy
CEMP	Construction Environmental Management Plan
CLM Act	Contaminated Land Management Act 1997
CoA	Conditions of Approval
COPCs	Contaminants of Potential Concern
CPESC	Certified Professional in Erosion and Sediment Control
CPHR	Conservation Programs, Heritage and Regulation Group
DCCEEW – Cth	Department of Climate Change, Energy, the Environment and Water (Cth) (formerly DAWE)
DCCEEW – NSW	Department of Climate Change, Energy, the Environment and Water (NSW) (formerly DPE)
DMP	Dewatering Management Plan
DPE	Department of Planning and Environment (formerly DPIE)
DPHI	Department of Planning, Housing and Infrastructure (formerly DPE)
DPI	Department of Primary Industries
DPIRD	Department of Primary Industries and Regional Development
EAT	Emerson Aggregate Test
EC	Electrical Conductivity
ECM	Environmental Control Maps
EIS	Environmental Impact Statement
EMS	Environmental Management Systems
ENM	Excavated Natural Materials
Environmental BP	Environmental Business Partner
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
ER	Environmental Representative

Term	Definition
ESCP	Erosion and Sediment Control Plan
FRMP	Flood Risk Management Plan which forms Appendix F of the Traffic and Transport Management Plan
GSG	Great Soil Group
HSE	Health Safety & Environment
HSEQ	Health, Safety, Environment and Quality
IECA	International Erosion Control Agency
km	Kilometres
kV	Kilovolts
LOR	Limit of Reporting
NCST	National Committee on Soil and Terrain
NEMP	National Environmental Management Plan
NPWS	National Parks and Wildlife Service
NVMP	Noise and Vibration Management Plan
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PESCP	Progressive Erosion and Sediment Control Plan
PFAS	per-and-poly fluoroalkyl substances
POEO Act	Protection of the Environment Operations Act 1997
PPE	Person Protective Equipment
RAP	Remedial Action Plan
REMM	Revised Environmental Mitigation Measures
RIS	Reduced Inorganic Sulphur
RL	Reduced Level
RMP	Rehabilitation Management Plan
SCA	State Conservation Area
SDS	Safety Data Sheet
SES	NSW State Emergency Services
SPR	Source-pathway-receptor
SQP	Suitably Qualified Person
SWMP	Soil and Water Management Plan
SWMS	Safe Work Method Statement
TARP	Trigger Action Response Plan
TRH	Total Recoverable Hydrocarbons
TSS	Total Suspended Solids
TTMP	Traffic and Transport Management Plan
UCFP	Unexpected Contamination Finds Protocol
VENM	Virgin Excavated Natural Materials
VRZ	Vegetated Riparian Zone
WAL	Water Access Licence
WM Act	*Water Management Act* 2000
WMP	Waste Management Plan
WSP	Water Sharing Plans

1 Introduction

Transgrid proposes to deliver approximately eight kilometres of new 330 kilovolt transmission line and double circuit transmission structures located between the Mount Piper and Wallerawang 330 kV substations (the Project). The Project would incorporate sections of an existing, single-circuit 132 kV transmission line, where the two transmission lines would share a widened easement and transmission structures. The project is located within the Lithgow Local Government Area (LGA), which is part of the Central West region of NSW. The Project would provide the additional capacity required to reliably transmit power to the Greater Sydney region.

This Soil and Water Management Plan (SWMP or Plan) applies to civil infrastructure works, including access tracks, construction pads, and laydown areas associated with the Project (refer to Figure 1). The SWMP outlines the measures to manage soil erosion, sedimentation, and water quality during construction to ensure compliance with relevant environmental management requirements and best practice standards. This SWMP will be approved by the Planning Secretary prior to the commencement of construction of the Project. Once the SWMP had been approved, it will be implemented.

It should be noted that a separate project-specific erosion and sediment control plan (ESCP) is currently being developed for the Project and will be progressively refined throughout the planning phase and finalised before works commence on site.

This plan has been prepared and certified by Marguerite Donaldson, a Certified Professional in Erosion and Sediment Control (CPESC #11521), a member of Soil Science Australia, and accredited under Category S2 Erosion, Sedimentation and Soil Conservation Consultancy Services with unrestricted registration for prequalification contracts R1 to R5. In accordance with REMM SC1, this plan has been reviewed and approved by Ms. Navjot Kaur. Ms Kaur specialises in contaminated land and is a Certified Professional Soil Scientist (CPSS).

1.1 Purpose

The purpose of this SWMP is to define the framework, technical requirements, and procedures for the management of soil, erosion, sedimentation, and water quality impacts during the design and construction of the Project.

This Plan has been prepared to address the relevant soil and water Conditions of Approval (CoAs) for the Mount Piper to Wallerawang Transmission project (SSI-70279722) under the *Environmental Planning and Assessment Act 1979 (NSW)*, as summarised in **Table 1**, and the mitigation measures outlined in the Environmental Impact Statement (EIS), as summarised in **Table 2**. This shall provide a mechanism to ensure that all soil and water management activities are planned, implemented, and maintained in accordance with relevant legislative obligations and best practice environmental management principles.

The SWMP has been developed in accordance with the guidance provided in *Managing Urban Stormwater: Soils and Construction, Volume 1 (4th Edition)* (Landcom, 2004) (Blue Book), and incorporates the principles of the *International Erosion Control Association (IECA, 2025) Best Practice Erosion and Sediment Control Guidelines*. The Plan also supports compliance with the *Protection of the Environment Operations Act 1997 (NSW)* and the *Water Management Act 2000 (NSW)*.

This SWMP establishes the basis for the preparation of site-specific erosion and sediment control plans (ESCPs) and progressive erosion and sediment control plans (PESCPs) for the Project works, ensuring consistent application of soil and water management measures across all project stages.

Figure 1: Project location and scope of works - Overview

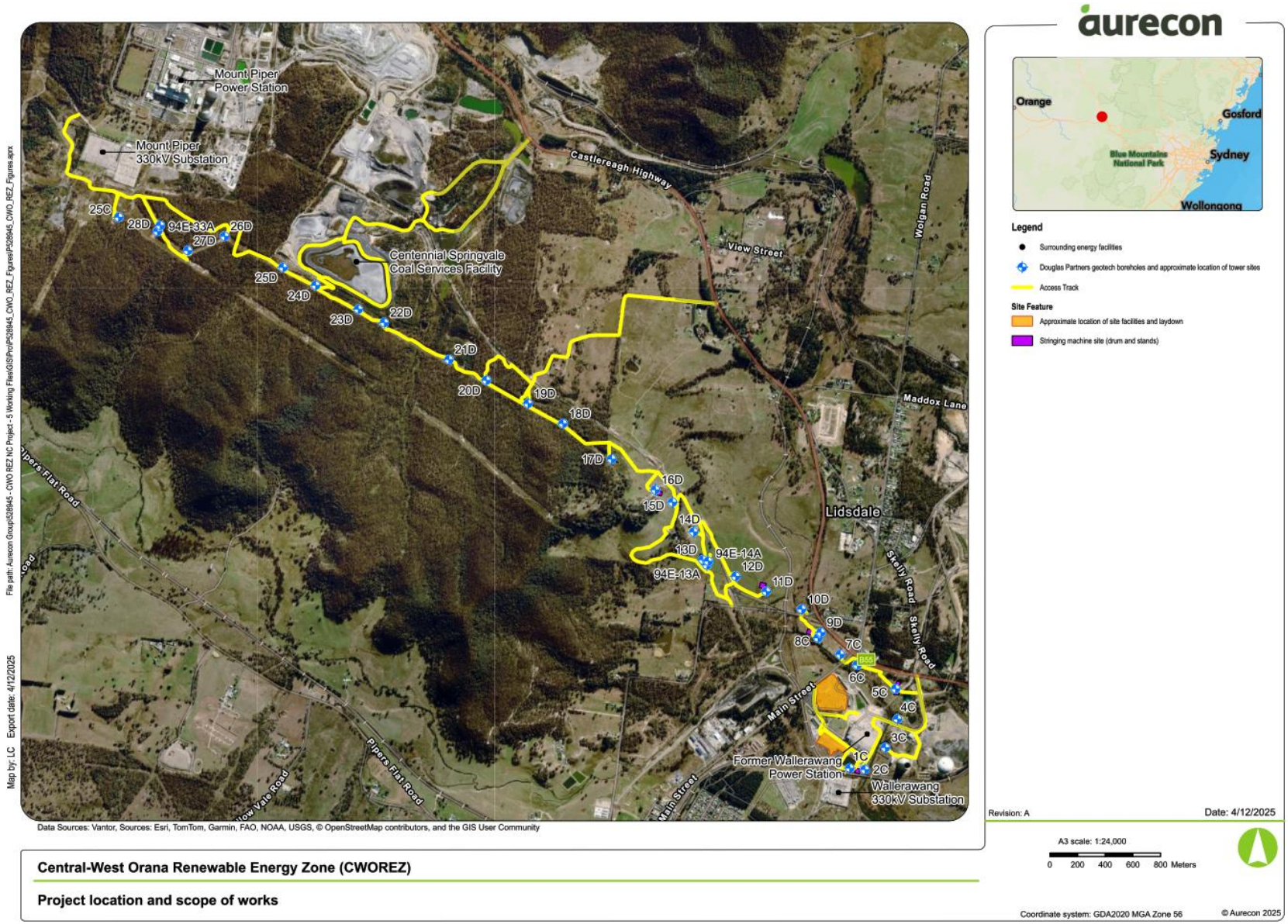


Table 1 - Conditions of Approval

ID	Condition	Where addressed	How addressed
A1	In meeting the specific performance measures and criteria established under this approval, all reasonable and feasible measures must be implemented to prevent, or if prevention is not reasonable and feasible, to minimise any material harm to the environment that may result from pre-construction minor works or the construction and operation of the development, and any rehabilitation or decommissioning required under this approval.	This Plan	This document outlines reasonable and feasible measures to prevent harm to the environment with regard to soil and waterways.
A2	The development must be carried out: a) in compliance with the conditions of this approval; 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.	a) Section 1.1 b) Section 9 c) Sections 1.1 and 2.1 d) Section 1.1 and 2.1	Section 1.1 identifies the conditions and EIS mitigation measures relevant to this Plan and where each is addressed. No SWMP-specific directions have been issued by the Planning Secretary to date. Section 9 requires the Plan to be updated if one is received. Sections 1.1, 1.3 and 2.1 describe the project scope and layout, consistent with the EIS and the approved Development Layout.
A15	The Proponent must not construct any buildings, structures, roadway, pavement, pipeline, fence, or any other improvement on or under the land within the Fish River Water Supply Scheme infrastructure easement without prior written agreement from WaterNSW.	■ Section 6.1	Section 6.1 calls out this requirement for a written agreement with Water NSW for any improvement on or under the land within the Fish River Water Supply Scheme infrastructure easement.
B12	In addition to the performance outcome, commitments and mitigation measures specified in the EIS, the Proponent must take all reasonable steps to: a) minimise the dust generated by the development; and b) minimise the surface disturbance of the site.	■ Section 8.2	Section 8.2 limits disturbance to approved areas, requires progressive stabilisation, controls dust through suppression and stockpile management, monitors wind conditions and requires additional controls or cessation where dust is observed leaving the site boundary.
B13	The Proponent 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 Proponent is required to obtain the necessary water licences before commencing any works which intercept or extract groundwater or surface water (unless an exemption applies).	■ Section 7.1.4	Section 7.1.4 identifies forecast potable and non-potable demand, proposed sources and water-reuse priorities. Water use will be monitored against available supply, and works will pause while required licensing is obtained if additional unassessed sources or extraction beyond an exemption are required.
B14	The Proponent must: a) minimise erosion and control sediment generation; and b) ensure all land disturbances have appropriate drainage and erosion and sediment controls designed, installed and maintained in accordance with *Best Practice Erosion and Sediment Control* (IECA, 2008), *Managing Urban Stormwater – Soils and Construction Volume 1* (Landcom, 2004), *Managing Urban Stormwater – Soils and Construction Volume 2A Installation of Services* (DECC, 2008) and *Managing Urban Stormwater – Soils and Construction Volume 2C Unsealed Roads* (DECC, 2008), or their latest versions.	■ Section 8.2	Section 8.2 requires site-specific ESCPs and PESCPs, a pre-disturbance hold point, and drainage, erosion and sediment controls designed, installed, inspected and maintained in accordance with the Blue Book and applicable IECA guidance.

ID	Condition	Where addressed	How addressed
B15	Unless otherwise authorised by an EPL, the Proponent must ensure the development does not cause any water pollution, as defined under Section 120 of the POEO Act.	▪ Section 8.1	Section 8.1 requires all reasonable and feasible measures to prevent water pollution, including controls for sediment, fuels, chemicals, concrete washout, waste, contaminated water, dewatering and discharge. Water will only be reused or discharged after assessment against approved criteria.
B16	The Proponent must: a) design, construct and maintain an appropriate water management system at all construction compounds to prevent pollution; b) minimise any spills of hazardous materials or hydrocarbons and clean up any spills as soon as possible after they occur.	a) Section 8.1.1, Section 8.5 b) Section 8.1.1, Section 8.4.2, Section 8.5, Section 8.7.7	Section 8.1.1 sets out the design, construction and maintenance requirements for the compound water management system. Sections 8.4.2 and 8.5 minimise spills through storage, handling, spill kit and training controls. Section 8.7.7 requires spills to be contained, cleaned up and reported as soon as practicable.
B17	The Proponent must ensure all activities on waterfront land are constructed in accordance with the *Guidelines for Controlled Activities on Waterfront Land* (DPE 2022), *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (NSW Fisheries 2003) and the *Policy and Guidelines for Fish Habitat and Conservation and Management* (NSW Fisheries, 2013), unless Water Group and DPIRD Fisheries agrees otherwise.	▪ Sections 7.1.1, 8.1 and 8.5	Section 7.1.1 shows how each B17 guideline is applied in design and construction, including site-specific controls on waterfront land. Sections 8.1 and 8.5 require compliance with the guidance unless Water Group and DPIRD Fisheries agree otherwise.
B18	The Proponent must ensure that the development does not materially alter the flood storage capacity, flows or characteristics in the development area or off-site.	▪ Sections 7.1.3, 8.1 and 8.2	Section 7.1.3 documents the flood assessment and requires design and construction measures for flood-liable structures. Sections 8.1 and 8.2 require natural drainage and overland-flow paths to remain unobstructed and temporary controls to avoid material changes to flood storage, flows or off-site characteristics.
B19	Prior to the commencement of construction the Proponent must prepare a Soil and Water Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:	▪ Section 1	Section 1 states that this SWMP will be approved by the Planning Secretary prior to the commencement of construction.
B19(a)	be prepared in consultation with the relevant Council, CPHR, Water Group and WaterNSW;	▪ Section 4.1	Section 4.1 details the consultation undertaken with all the identified stakeholders.
B19(b)	detail how the Proponent would:	▪	
B19(b)(i)	ensure the requirements in conditions B13 to B18 are met;	▪ Sections 8.1, 8.2, 8.3, 8.4, 8.5 and 8.6	Measures to address Conditions B13 to B18 are detailed throughout the Plan, including erosion and sediment controls (Section 8.1), water quality management (Section 9.2), soil management (Section 8.3), contamination and hazardous material management (Sections 8.4 and 8.5) and groundwater management (Section 8.6). Relevant environmental risks and mitigation measures are identified in Sections 6 and 7

ID	Condition	Where addressed	How addressed
B19(b)(ii)	manage flood risk during construction and operation;	▪ Sections 7.1.3 and 8.7.6 ▪ Appendix F of the TTMP	Flood risk management requirements are addressed through the risk assessment and control measures in Section 7.1.3, implementation controls in Section 8.7.6, and application of the project Flood Risk Management Plan and associated Trigger Action Response Plan (TARP). These measures include planning, monitoring, response actions and contingency arrangements for flood events.
B19(b)(iii)	investigate, assess and manage contaminated land, soils and groundwater the development area;	▪ Section 6.4.5, 7.4, 8.4, 8.6, Appendix D and E.	Management of contaminated land, soils and groundwater is addressed through the contamination assessment in Section 6.4, environmental risk assessment in Section 7.4, contamination management measures in Section 8.4, groundwater management requirements in Section 8.6, and supporting procedures contained in Appendices D and E.
B19(b)(iv)	investigate, assess and manage the potential for asbestos and other hazardous materials in the development area;	▪ Section 6.4.3, 8.4, Appendix C	Management of asbestos and hazardous materials is addressed in Section 6.4.3, Section 8.4, and supporting procedures contained within Appendix C, including requirements for identification, handling, storage, transport and disposal of hazardous materials and asbestos-containing materials.
B19(b)(v)	manage any unexpected and / or suspected contaminated land and asbestos excavated, disturbed or otherwise discovered during construction;	▪ Section 8.4, 8.5, Appendix C	Management of unexpected and/or suspected contaminated land and asbestos is detailed in Section 8.4, 8.5 and Appendix C
B19(c)	detail how the Proponent would manage groundwater inflows and extraction during construction including groundwater trigger action response measures if groundwater inflows are greater than 3 ML / year; and	▪ Section 7.1.2, 7.1.4, 8.5, Appendix D	Groundwater inflow, extraction, monitoring and response requirements are detailed in Section 7.1.4, Section 7.6.1 and Appendix D. These sections establish monitoring requirements, trigger levels, corrective actions and TARP responses for groundwater inflows, extraction activities and management of inflows exceeding applicable thresholds.
B19(d)	include a program to monitor and report on the impacts and environmental performance of the development.	▪ Section 8.6.1	Section 8.6.1 details all monitoring programs relevant for the project along with the responsible person and the frequency/ trigger for these monitoring events.
B19	Following approval, the Proponent must implement the Soil and Water Management Plan.	▪ Section 1	Section 1 states that this Plan will be implemented following approval.
B36	The proponent must ensure that the project related upgrades to trails within the Gardens of Stone Conservation Area are completed to the satisfaction of NPWS. Upon finalisation of construction activities, trails in the Gardens of Stone Conservation Area must be completed to meet the standards in the Department of Land & Water Conservation guideline entitled "Guidelines for the Planning, Construction and Maintenance of Trails" and in accordance with the Blue Book Volume 2C - Erosion and Sediment Control on Unsealed Roads (NSW Govt,	▪ Section 8.5	Section 8.5 requires trail works within the Gardens of Stone Conservation Area to be undertaken in consultation with and to the satisfaction of NPWS and completed in accordance with the nominated trail and erosion and sediment control guidance.

ID	Condition	Where addressed	How addressed
	Office of Environment & Heritage, 2012) and applicable sections of Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004). If there is a dispute about the scope of any upgrades or the implementation of these works, then either party may refer the matter to the Planning Secretary for resolution.		
B47	Waste generated during pre-construction minor works, road upgrades, construction, operation, upgrading and decommissioning must be dealt with in accordance with the following priorities: a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	■ Section 8.3 ■ WMP	Section 8.3 and the WMP prioritise waste avoidance and reduction, followed by reuse, recycling or recovery, with treatment or lawful disposal used where higher-order options are not practicable.
B48	The importation of waste and storage, treatment, processing, reprocessing or disposal of such waste must comply with the Protection of the Environment Operations Act 1997, the Protection of the Environment Operations (Waste) Regulation 2014, and orders or exemptions under the regulation.	■ Section 8.3 ■ WMP	Section 8.3 and the WMP require waste importation, storage, treatment, processing and disposal to comply with the POEO Act, Waste Regulation and applicable resource recovery orders and exemptions.
B49	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	■ Section 8.3 ■ WMP	Section 8.3 and the WMP require waste to be transported by appropriately authorised contractors to facilities licensed or otherwise lawfully able to receive the relevant waste, with licences verified before transport.
B50	All waste that is removed from site must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	■ Section 8.3 ■ WMP	Section 8.3 and the WMP require waste removed from site to be classified under the NSW EPA Waste Classification Guidelines, with transport records, waste tracking information and disposal dockets retained for audit purposes.
C3	If updates to an environmental management document are required: a) to include new information or changes to the development as a result of: i) a modification of project approval; or ii) a change in the phase of development as notified under condition C10; b) to update risk controls or mitigation measures in response to a change in risk level identified by the annual review of the environmental risk assessment required by condition C1; c) to address the findings of an Independent Environmental Audit under condition C14;	■ Section 9	Section 9 requires the SWMP to be reviewed and updated following approval modifications, phase changes, risk reviews, audit findings, incident findings or a Planning Secretary direction, and resubmitted within the applicable timeframe.

ID	Condition	Where addressed	How addressed
	d) to implement the findings of an incident report required by condition C16; e) to comply with a directive by the Planning Secretary; *Note: This is to ensure that environmental management documents are updated regularly and to incorporate any recommended measures to improve the development's environmental performance.*		
C7	With the approval of the Planning Secretary, the Proponent may: a) prepare any environmental management document required by this approval on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the document applies, the relationship of the stage to any future stages and the trigger for updating the document); b) combine environmental management documents if the Proponent can demonstrate a clear nexus between the nominated documents, the impact of combining the nominated documents and how the nominated documents will still comply with the conditions of this approval; c) update any environmental management document required by this approval (to ensure the strategies, plans and programs required under this approval are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).	■ Section 2.2 ■ Section 9	Section 2.2 defines the construction-stage scope and relationship to future stages. Section 9 provides the process for updating the SWMP where staging, project information, risks or environmental performance requirements change, subject to the applicable approval requirements.
C14	Independent Environmental Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements published on the Department's website.	■ Section 8.6.2	Section 8.6.2 requires independent environmental audits in accordance with the Independent Audit Post Approval Requirements, identifies construction-phase timing and provides for responses and corrective actions arising from audit findings.
C15	Within seven days of becoming aware of a non-compliance, the Proponent must notify the Department of the non-compliance. The notification must: a) be in writing b) submitted via the NSW planning portal (Major Projects) c) identify the development (including the development application number and name) d) set out the condition of this approval that the development is non-compliant with e) why it does not comply f) the reason for the non-compliance (if known); and g) what actions have been undertaken or will be undertaken, and when, to address the non-compliance *Note: A non-compliance that has been notified as an incident does not need also to be notified as a non-compliance.*	■ Section 8.7.5	Section 8.7.5 requires Transgrid to notify the Department through the Major Projects Portal within seven days of becoming aware of a non-compliance and identifies the information to be included. Zinfra will provide the supporting information required for the notification.
C16	The Proponent must notify the Department and NPWS within 24 hours of becoming aware of an incident. The notification to the Department must be made	■ Section 8.7.2	Section 8.7.2 requires Transgrid to notify DPHI and NPWS within 24 hours through the NSW Planning Portal and

ID	Condition	Where addressed	How addressed
	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 c) identifying a contact person for further communication regarding the incident.		specifies the incident date, time, location, description, immediate response and contact details to be provided.
C17	The Proponent must provide the Department and NPWS with a subsequent incident report in accordance with Appendix 5. *Note: NPWS can be notified to NPWS Kanangara Area via npws.kanangra@environment.nsw.gov.au and Blue Mountains Branch Duty Officer or as otherwise advised by NPWS.*	▪ Section 8.7.2, 8.7.3	Sections 8.7.2 and 8.7.3 require a subsequent incident report to be provided to the Department and NPWS through the NSW Planning Portal, including detection, awareness, compliance implications, investigation outcomes, causes, corrective and preventive actions and stakeholder communications.

Table 2 - Revised Environmental Mitigation Measures

ID	Impact	Environmental measures	Where addressed	How addressed
W1	Water quality	A Soil and Water Management Plan (SWMP) will be prepared and implemented as part of the CEMP.	▪ Sections 1.1 and 1.3	This SWMP establishes the framework, technical requirements and procedures for managing soil, erosion, sedimentation, surface water and groundwater impacts during construction and will be implemented with the CEMP.

ID	Impact	Environmental measures	Where addressed	How addressed
		The SWMP will include an outline of relevant legislation, policies and guidelines relevant to the handling and storage of hazardous materials.	■ Section 3	Section 3 identifies the legislation, standards and guidelines relevant to hazardous materials, including the POEO Act, WHS legislation, AS 1940 and applicable Transgrid requirements
		The SWMP will include ESCPs prepared in consultation with a CPESC, or Registered Soil Practitioner (RSP, CPESC), or similarly qualified professional.	■ Section 1, Section 8.2 Appendix B	Section 1 provides the details of the personnel who were involved in developing this plan. Section 8.2 addresses future professional preparation or review of site-specific and progressive ESCPs.
		The SWMP will include detail on processes such as regular inspection, monitoring, auditing and maintenance of erosion and sediment controls, roles and responsibilities and measures to manage potential soil and water quality impacts during construction.	■ Section 5.2, Section 8.1, Section 8.2 and Section 8.6	Sections 5.2, 8.1, 8.2 and 8.6 define responsibilities, control measures, inspection and monitoring frequencies, audit requirements, maintenance and corrective-action processes for soil and water management.
		The SWMP will include hold points for installation of erosion and sediment controls.	■ Section 8.2	Section 8.2 establishes a hold point requiring primary erosion and sediment controls to be installed and inspected by the Environmental BP against the relevant ESCP before ground-disturbing works commence.
		The SWMP will include measures to minimise the potential for chemical spills, including storage in bunded areas.	■ Section 8.4.2, Section 8.5 and Section 8.7.7	Sections 8.4.2, 8.5 and 8.7.7 require fuels, oils and chemicals to be stored in compliant bunded areas, spill kits to be available, and spills to be stopped, contained, cleaned up and reported promptly.
		The SWMP will include an outline of the frequency and type of water quality monitoring, if required, in relation to sensitive environments and high-risk landforms.	■ Section 8.6.1	Section 8.6.1 sets out monitoring types, frequencies, responsibilities and records, including dewatering water-quality testing, AEC-specific monitoring, sensitive-receptor monitoring and post-discharge inspections.
		The SWMP and ESCP will be prepared in accordance with the principles and requirements, in the following publications: ■ Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004), Volume 2A (DECC, 2008) and Volume 2C (DECC, 2008a) ■ Best Practice Erosion and Sediment Control (IECA, 2008) ■ Guidelines for controlled activities on waterfront land (DPE 2022)	■ Section 3.1 ■ Section 8.2	The governing standards are identified in Section 3.1 and applied through Section 8.2 noting that the latest version of IECA (2025) has been adopted in accordance with CoA B14.
W2	Flooding	An Emergency Management Plan will include a Flood Risk Management Plan (FRMP), which will be prepared in consultation with the SES. The FRMP will include a Trigger Action Response Plan to detail how and when actions will be taken. The plan will also outline the following: ■ Workers and visitors will be inducted onto the Plan.	■ Section 8.7.6 and Appendix F of the TTMP	Section 8.7.6 confirms that the Emergency Management Plan includes a Flood Risk Management Plan and TARP prepared in consultation with the SES. Personnel will be inducted, works will not proceed in areas at flood risk, and people, plant and materials will be relocated before predicted flood impacts.

ID	Impact	Environmental measures	Where addressed	How addressed
		▪ Works will not commence or continue in construction areas that are at risk of flooding. ▪ People, machinery and materials will be removed from construction areas prior to any flood event that is predicted to impact the construction area. The construction program will schedule and carry out works in flood-risk areas in periods of dry, stable weather as far as practicable. To further manage risk, resources will be made available to reduce the duration of works within flood-risk areas.		
W3	Flooding	Structures within flood liable areas will be designed and constructed to withstand a 1 in 100 AEP event.	▪ Section 7.1.3	Section 7.1.3 documents the 1% AEP flood assessment and requires flood-liable structures to incorporate appropriate design measures, including scour protection and raised tower pads where applicable.
W4	Flooding	No maintenance activities will be undertaken where flood risk exists. Rainfall and catchment conditions will be monitored during maintenance activities to ensure safety of people and environment. As soon as it is safe and practicable after flood events, structures will be checked for damage. Remediation work will be undertaken if required.	▪ Section 2.2	This requirement applies to the operation phase and is outside the construction-stage scope of this SWMP. Operational requirements will be addressed in the relevant future-stage environmental management document in accordance with Section 2.2.
W5	Groundwater impacts and dewatering	A groundwater dewatering procedure will be prepared and implemented as part of the SWMP.	▪ Appendix D	Appendix D provides the Dewatering Management Procedure, including permit, supervision, monitoring, reuse, discharge, record-keeping and escalation requirements for intercepted groundwater.
		The procedure will define measures for the appropriate management of extracted groundwater. Including reviewing groundwater volumes, such as inflows and extraction.	▪ Appendix D	Appendix D requires groundwater inflows and extraction volumes to be estimated, recorded and cumulatively reviewed. Dewatering activities will be supervised and managed through an approved Dewatering Permit.
		Including identifying licencing requirements	▪ Appendix D	Appendix D identifies the applicable 3 ML annual exemption, mandatory monitoring and reporting requirements, TARP triggers and the requirement to obtain a WAL where the exemption may be exceeded.
		Including water quality testing of intercepted groundwater to inform treatment (if required), disposal and/or discharge requirements	▪ Appendix D	Appendix D requires visual assessment and water-quality testing against approved criteria before reuse or discharge. AEC-specific additional analytes are required where contamination risks apply, and unsuitable water will be treated or disposed of lawfully.
		Including a groundwater trigger action response plan that will be implemented in the event that groundwater inflows are greater than expected.	▪ Appendix D	Appendix D includes a TARP requiring cumulative extraction to be reviewed and the matter escalated where inflows or extraction approach trigger levels, including assessment and

ID	Impact	Environmental measures	Where addressed	How addressed
				procurement of any required licence before the exemption is exceeded.
W6	Waterfront land	Detailed design and construction for works on waterfront land be in accordance with the Guidelines for Controlled Activities on Waterfront Land (DCCEEW, 2025).	▪ Section 7.1.1, Section 8.1 and Section 8.5	Sections 7.1.1, 8.1 and 8.5 require waterfront-land and instream works to be designed and undertaken in accordance with the applicable DCCEEW 2025 guidelines, with site-specific controls incorporated into the ESCPs.
SC1	Soil and groundwater contamination	Disturbance to AECs identified as having a potentially complete source-pathway-receptor linkage in the Contamination Assessment, will be managed in accordance with a SWMP that will include	▪ Appendix E	Appendix E identifies AEC-specific contamination risks and prescribes controls for soil disturbance, dewatering, PPE, testing, stockpiling, reuse and disposal. Ground disturbance in applicable AECs will be minimised and managed under these requirements.
		➢ Procedures for dewatering, specifying capture, storage, and testing requirements.	▪ Appendix E	Appendix E requires potentially contaminated water to be captured and screened, with additional contaminant testing where specified. Contaminated groundwater will not be discharged to the environment and will be treated or disposed of lawfully.
		➢ Measures to minimise exposure and migration of potentially contaminated soil in excavated spoil, including handling and storage procedures.	▪ Appendix E, Section 8.4.1	Appendix E requires suspect soil to be segregated, classified and, where applicable, lined or covered. Section 8.4.1 also controls stockpile siting, labelling, run-on, runoff, leachate and off-site disposal.
		➢ Relevant HSE requirements, including staff inductions and PPE to minimise the risk of dermal contact and inhalation.	▪ Section 8.5, Section 8.9.3	Sections 8.5 and 8.9.3 require contamination-awareness training and task-appropriate PPE for personnel working within applicable AECs or handling potentially contaminated material.
		➢ Requirements for soil testing where excavating imported soils in accordance with EPA's waste classification guidelines, ASC NEPM (2013) and where applicable PFAS NEMP 3.1 (2025), to identify opportunities for onsite reuse or offsite disposal (e.g. contaminated material) at licenced facility.	▪ Section 7.3; ▪ Appendix E	Section 7.3 and Appendix E require soil testing and classification in accordance with the NSW EPA Waste Classification Guidelines, ASC NEPM and, where applicable, PFAS NEMP 3.1 before reuse or off-site disposal.
		➢ Contaminated groundwater will not be released to the surrounding environment and will be disposed of at a licenced facility.	▪ Section 8.5; ▪ Appendix E	Appendix E and Section 8.5 prohibit release of contaminated groundwater to the surrounding environment. Water that does not meet the applicable criteria will be treated or transported to a facility lawfully able to receive it.
		Elements of the SWMP relating to contamination will be prepared or reviewed and approved by a suitably certified consultant.	▪ Section 1	Section 1 records that the contamination-related components of the SWMP were reviewed and approved by a Certified Professional Soil Scientist.
		In AECs with potentially complete source-pathway-receptor linkages, ground disturbance will be minimised to the extent practicable, and	▪ Section 8.5	Section 8.5 requires ground disturbance within relevant AECs to be minimised, construction activities to be staged

ID	Impact	Environmental measures	Where addressed	How addressed
		construction staged with progressive rehabilitation to minimise the amount of disturbed land at any one time.		and progressive rehabilitation to be implemented to minimise exposed or disturbed land at any one time.
SC2	Soil contamination – compound sites	At the construction compound sites, the avoidance and minimisation of ground disturbance will consider the importation and placement of engineering fill, Excavated Natural Materials (ENM) or Virgin Excavated Natural Materials (VENM) as a construction base to avoid disturbance of potentially contaminated soils in these areas.	■ Section 8.5	Section 8.5 requires ground disturbance at compounds to be minimised and allows verified engineering fill, ENM or VENM to be used as a construction base to avoid or minimise disturbance of potentially contaminated surface soils.
		If excavation and earthworks is required, the contamination status of the surface soils will be assessed and management, if necessary, will be undertaken in accordance with procedures detailed in the CEMP.	■ Section 8.4.1 and Section 8.5	Sections 8.4.1 and 8.5 require surface-soil contamination status to be assessed before disturbance, with identified or suspected contamination managed through Appendix C and other applicable contamination controls.
SC3	Soil and groundwater contamination	The CEMP will include an adaptive management approach to reduce human health risk and environment risk. The approach will respond to soil contamination test results and if additional contamination-related information becomes available, for example contamination reports relating to AEC 10, which may inform the need for further assessment and additional management measures in accordance with: ■ The Assessment of Site Contamination (NEPC 2013) ■ The Waste Classification Guidelines (NSW EPA 2014).	■ Section 8.4.4 ■ CEMP Section 4.6.2	Section 8.4.4 applies the CEMP adaptive management framework (CEMP Section 4.6.2) to soil and groundwater contamination. Monitoring and test results, and any new information such as further AEC 10 reports, are assessed against ASC NEPM (2013) and the Waste Classification Guidelines. Where triggers are reached, controls are adjusted or added to reduce human health and environmental risk.
		An Asbestos Management Plan (AMP) will be prepared to outline management measures to prevent the mobilisation of airborne asbestos fibres.	■ Asbestos Management Plan, Appendix C	Addressed through the separate Asbestos Management Plan, with unexpected-find support in Appendix C.
		Any remediation of the construction work area as a result of accidental spills or encountering contaminated materials, will be undertaken based on a site-specific Remedial Action Plan (RAP). The RAP will define remedial goals and objectives, performance criteria for remedial effort and remediation methodology. A validation report will be prepared after remedial effort and be in accordance with the NSW EPA Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020b).	■ Section 8.7.7	Section 8.7.7 and Appendix C require remediation arising from spills or contaminated material encountered to be undertaken under a site-specific RAP, with validation reporting prepared in accordance with the relevant NSW EPA guideline.
SC5	Storage and handling of hazardous substances	Chemicals, fuels, oils or other hazardous substances will be stored, handled and used in accordance with relevant legislation, Australian Standards and other applicable guidelines, including Transgrid procedures.	■ Section 8.1.1 ■ Section 8.4.2	Section 8.4.2 adopts the Transgrid Environmental Handbook (2021). This section also shows how it meets the relevant legislation and standards and sets out the handling and storage controls. Section 8.1.1 applies these controls at compounds.

ID	Impact	Environmental measures	Where addressed	How addressed
		A spill response procedure will be developed and implemented as part of the SWMP. Spill kits will contain materials suitable for the work being undertaken. Portable spill kits will be easily accessible and available to onsite construction, maintenance personnel and contractors when accessing transmission lines. All onsite construction and operational maintenance personnel will be inducted in spill response procedures.	■ Section 8.5 ■ Section 8.7.7 ■ Section 8.9.3	Section 8.7.7 sets out the Spill Response Procedure and spill kit materials. SW31 requires spill kits to be accessible and maintained. SW33 and Section 8.9.3 require spill response training before works involving fuels, oils or chemicals.
SC6	Unexpected contamination	The discovery of any unexpected contamination during construction will be managed in accordance with an Unexpected Contamination Finds Protocol which will be prepared as part of the SWMP prior to construction. This protocol will be prepared by or reviewed and approved by a suitably certified consultant.	■ Appendix C	Appendix C contains the unexpected-find process, stop-work, specialist assessment, remediation, reporting and recommencement requirements which was developed by the same person who developed the SWMP.
SC7	Acid sulfate soils	Prior to ground disturbance in areas of potential acid sulfate soils or rock occurrence, testing will be carried out to determine the presence of actual and/or potential acid sulfate soils or rocks. If acid sulfate soils or rocks are encountered, they will be managed in accordance with the Acid Sulfate Soil Manual (ASSMAC, 1998) and Transgrid's Health, Safety and Environment Guideline.	■ Section 8.4.1 ■ Appendix F	Section 8.4.1 and Appendix F require testing before disturbance in identified ASS-risk areas and management in accordance with the Acid Sulfate Soil Manual, Transgrid guidance and site-specific ASS management requirements.
AQ1	Dust generation	A construction dust control protocol will be prepared and implemented as part of the CEMP and SWMP that details management measures, a method for recording dust complaints, and monitoring the effectiveness of controls.	■ Sections 8.1, 8.2 and 8.6.1 ■ Dust Control Protocol	Dust is managed under the Dust Control Protocol, with the relevant measures in Sections 8.1 and 8.2, and monitored continuously during earthworks. Dust complaints are recorded and managed under the Dust Control Protocol and the Community Communication Strategy.
		The dust control protocol will include locating dust generating activities away from sensitive receptors	■ Sections 8.1 and 8.2	Sections 8.1 and 8.2 require dust-generating and ground-disturbing activities to be located away from sensitive receptors where practicable.
		Dust suppression measures such as water sprays, water extension agents, soil stabilising polymers or other media on: – on unpaved work areas and tracks subject to traffic or wind - on spoil and aggregate stockpiles – during loading and unloading of dust generating materials.	■ Sections 8.1 and 8.2	Sections 8.1 and 8.2 require suppression or stabilisation of unsealed work areas, access tracks, spoil and aggregate stockpiles, and dust-generating loading and unloading activities
		Provide adequate water supply on site for dust suppression	■ Sections 7.1.4 and 8.2	Section 7.1.4 identifies the non-potable water demand for dust suppression (up to 60 kL/day after the first seven months) and the supply sources, in order of preference. Section 8.2 requires adequate supply to be maintained on site and demand to be reviewed against available supply.
		Wind monitoring and forecasting using Bureau of Meteorology AWS forecasts, to identify conditions where winds are over 10 m/s and the additional controls required to reduce dust if observed to be leaving the site boundary	■ Sections 8.1, 8.6.1 and 8.7.8	Sections 8.1, 8.6.1 and 8.7.8 require BoM forecasts and wind conditions to be monitored daily. Where winds exceed 10 m/s and dust is observed leaving the site boundary,

ID	Impact	Environmental measures	Where addressed	How addressed
				additional controls are applied and the activity is modified or stopped.
		Implement measures to minimise the tracking of dust generating material onto paved roads	▪ Section 8.2	Section 8.2 limits access and egress points and require them to be stabilised and managed so soil and mud are not tracked onto public roads. Any material tracked onto roads is swept up, not washed into drains. Vehicle washdown is managed under the TTMP.
		Minimising the extent of ground disturbance at any one time as far as practicable, such as planning and scheduling vegetation clearing and grubbing activities to minimise areas of open and exposed soil	▪ Sections 8.1 and 8.8.1	Sections 8.1 and 8.8.1 limit disturbance to approved work areas and the minimum area required. Clearing is staged and progressive rehabilitation is used to reduce the area of exposed soil.
		Disturbed land will be stabilised as soon as practicable after completion of construction works and will also include: ▪ Construction benches, where not in riparian zones, to be left in a stable, weed free condition ▪ Brake and winch sites to be restored to previous condition ▪ access tracks not required for operation to be returned to previous condition unless otherwise agreed with the relevant landowner ▪ disturbed areas in riparian zones to be rehabilitated to ensure bank stability and minimise ecological impacts in accordance with a Rehabilitation Management Plan.	▪ Sections 8.2 and 8.8	Sections 8.2 and 8.8 require disturbed areas to be stabilised and progressively rehabilitated. Benches outside riparian zones are left stable and weed-free, and brake and winch sites and non-operational tracks are reinstated. Riparian areas are rehabilitated under the RMP.
		Stockpile management to minimising the amount of material stockpiled, protecting stockpiles from wind erosion, and positioning stockpiles as far as practicable from nearby receptors	▪ Sections 8.2 and 8.4.1	Sections 8.2 and 8.4.1 limit the number, size and duration of stockpiles. Erodible stockpiles are covered or stabilised, and stockpiles are located away from receptors, waterways and overland flow paths.
		Covering of transport loads of spoil, earthwork materials, waste and other loose materials when leaving the site to prevent escape of materials during transport.	▪ Sections 8.2 and 8.3	Sections 8.2 and 8.3 require all loads of spoil, earthwork materials, waste and other loose materials to be covered, with tailgates secured, before leaving site.
		The CEMP will also include a routine review of project activities against schedule 1 of the POEO Act to ensure an EPL is obtained before project activities exceed thresholds.	▪ Section 5`.2	Section 5.2 covers the responsibility of the Environmental Business Partner to review project activities monthly against Schedule 1 of the POEO Act to assess if an EPL is required to be obtained before project activities exceed thresholds.
B04	Impacts on riparian vegetation	The BMP will identify opportunities to minimise impacts on shrub or ground stratum vegetation within riparian zones when reviewing final construction methods and staging. Riparian vegetation clearing methods will retain root balls and trunk bases in situ and undertaken in a manner that minimises ground disturbance. Riparian buffers will be clearly marked onsite in accordance with recommended VRZs from the *Guidelines for riparian corridors on waterfront land* (DCCEEW, 2025) and the *Policy and*	▪ Sections 7.1.1, 8.1 and 8.5 ▪ BMP	Consideration of riparian buffers are detailed in Riparian vegetation will be avoided where practicable and works on waterfront land will be placed on previously cleared land (Section 7.1.1). Riparian corridors and VRZs will be managed in accordance with DCCEEW (2025) (Section 8.1).

ID	Impact	Environmental measures	Where addressed	How addressed
		Guidelines for Fish Habitat Conservation and Management (Update 2013). Riparian areas within the project footprint and not within construction work zones will be delineated and managed as exclusion zones wherever possible in accordance with mitigation measure B03.		Clearing methods, including retaining root balls and trunk bases in situ, are addressed in the BMP.
B17	Removal of riparian vegetation around Coxs River	Following construction, consider initiatives to improve riparian zones for aquatic biota, such as revegetation, in consultation with DPIRD -Fisheries and WaterNSW (for flooding perspective) and other relevant stakeholders. Where feasible and reasonable initiatives exist, they are to be implemented during post-construction site restoration.	Sections 7.1.1 and 8.5	Section 8.5 commits to considering riparian enhancement opportunities, including revegetation and ecological improvement measures, in consultation with DPIRD-Fisheries, WaterNSW and other relevant stakeholders, and incorporating feasible initiatives into restoration works.
B18	Instream works in minimal key fish habitat of watercourses	Construction activities occurring in or adjacent to watercourses providing key fish habitat, including Class 1 (major) 'Coxs River' to Class 3 (minimal) fish habitat 'Unnamed tributaries of Wangcol Creek (a) and (c)', are to minimise any additional restriction to fish passage from current conditions and be undertaken in accordance with: ■ the Policy and guidelines for fish habitat conservation and management (DPI 2013) ■ the Controlled activities – Guidelines for watercourse crossings on waterfront land (DCCEEW 2025b).	Section 8.5	Section 8.5 requires works within or adjacent to the Coxs River and unnamed Wangcol Creek tributaries to maintain hydraulic connectivity and minimise disturbance to beds, banks and aquatic habitat in accordance with the nominated fish-habitat and watercourse-crossing guidelines.
B20	Surface water dewatering at culvert crossings	Consult with NSW Department of Primary Industries and Regional Development (DPIRD) on the management of aquatic biota for any proposed dewatering of the Coxs River oxbow for construction of the culvert crossing, and any proposed discharge of surface water to/ from waterways.	Section 7.1.1	No surface water dewatering at the culvert crossing on the Coxs River oxbow is required for the project. If construction methodology changes which could involve dewatering at the culvert crossing on the Coxs River oxbow, consultation with DPIRD would occur.
LU8	Land rehabilitation	Vegetation clearance is to be minimised to prevent further degradation of land. Vegetation clearing methods will be determined based on vegetation.	Section 8.5	Section 8.5 requires disturbance to be limited to approved work areas and the minimum area necessary, with existing vegetation and stable groundcover retained where practicable. Clearing methods will be coordinated with the Biodiversity Management Plan.
LU9	Land rehabilitation	Woody material from vegetation clearing that is weed free will be considered for beneficial reuse as part of rehabilitation works.	Section 8.5	Section 8.5 requires weed-free woody material generated during clearing to be considered for beneficial reuse in rehabilitation works where practicable.
LU10	Land rehabilitation	Topsoil would be scraped off, stockpiled separately for possible reuse in resurfacing and rehabilitation at end of the construction work.	Section 8.2, Section 8.5	Sections 8.2 and 8.5 require topsoil and subsoil to be stripped and stockpiled separately, protected from contamination, erosion and compaction, and reused for reinstatement and rehabilitation where practicable.
WM1	Construction waste	A Waste Management Plan (WMP) will be prepared and implemented. The WMP will outline processes, responsibilities, and measures to manage waste and resource use:	Section 5.1 Section 8.3	Section 8.3 requires implementation of the project WMP and applies the waste hierarchy, lawful classification and disposal, waste tracking, licensed transport and receiving

ID	Impact	Environmental measures	Where addressed	How addressed
		■ In line with circular economy principles and the waste hierarchy contained in the Waste Avoidance and Resource Recovery Act 2001 ■ In compliance with the EPA's Waste Classification Guidelines, Resource Recovery Orders and other statutory requirements ■ In consultation with Lithgow City Council and waste receivers to confirm receipt of project waste types and volumes, and to consider cumulative impacts from multiple construction projects proposing to utilise Council's waste facilities ■ Include identification of disposal location based on the types and quantities of waste generated ■ Include systems to sort, track and record the actual types and quantities of waste generated including contaminated waste, a stockpile register, waste re-used, recycled and transported for offsite disposal ■ Include portable amenity facilities to store wastewater from construction compounds and disposal to licenced facilities by a licensed contractor ■ Include record keeping for all offsite waste disposal (where required) and for the importation of materials, such as engineering fill and ENM or VENM ■ Include measures for separating waste based on classification of management options, such as colour coded bins ■ Include routine inspection and visual monitoring of waste management activities, such as ensuring waste receptacles are covered and wind-blown rubbish is collected and disposed of appropriately.		facilities, material-import records, wastewater controls, inspections and housekeeping requirements.

1.2 Objectives and targets

The primary objective of this SWMP is to avoid and minimise soil and water impacts, where practicable, through the implementation of relevant and effective mitigation and management measures. Soil and water performance objectives and targets are described in **Table 3**.

Table 3 - Objectives and targets for this SWMP

Performance objective	Targets	Records
Compliance with legislation, statutory approvals and the Infrastructure Approval	Full compliance with any approvals. No regulatory infringements (penalty infringement notices (PINs) or prosecutions) or formal regulatory warnings.	Audit findings environmental inspection records, monitoring records. Number of regulatory infringements (PINs or prosecutions), formal regulatory warnings.
Implement and comply with the SWMP	Zero non-compliances identified during any compliance audits of the SWMP	Audit findings environmental inspection records, monitoring records.
Minimise erosion and sedimentation. Ensure that the Project does not cause water pollution as defined under section 120 of the POEO Act	100% completion of scheduled inspections and 100% compliance with Dewatering Procedure.	Environmental inspection audits, dewatering records.
Provide adequate training to ensure construction activities are undertaken safely and with minimal risks to the environment	100% completion of environmental training requirements in accordance with the CEMP, including training relevant to project activities and associated soil and water risks.	Records of inductions, toolbox talks, and daily pre-start meetings with soil and water focus.
Ensure timely communication of incident. Minimise the risk of an incident by identifying risks	All incidents reported in accordance with the CEMP, All risks reviewed in accordance with the Project's EMS.	Incident reports.

1.3 Scope and limitations

This SWMP applies to construction activities associated with the Project, including activities such as enabling works, access track upgrades, laydown and construction compounds, earthworks, foundation excavation, stringing operations, and rehabilitation.

The scope of this Plan includes:

- Identification of soil and water management objectives and performance criteria for the Project. Assessment of potential impacts on soil stability, surface water, and groundwater arising from construction activities
- Identification and management of water supply requirements to ensure sufficient water is available for all stages of the Project and that Project activities remain commensurate with available water supply.
- Specification of management and mitigation measures to prevent erosion, sedimentation, and contamination of receiving waters during the Project
- Measures to investigate, assess and manage any contaminated land, soils and groundwater in the Project area
- Measures to investigate, assess and manage the potential for asbestos and other hazardous materials in the Project area
- Framework for the preparation and implementation of site-specific erosion and sediment control plans (ESCPs) for each stage of construction, incorporating design drawings for temporary and permanent controls

- Requirements for progressive stabilisation, maintenance, and monitoring of control measures throughout the construction lifecycle
- Consideration of flooding risks
- Roles, responsibilities, and reporting requirements to ensure compliance with the CoAs, EIS and relevant regulatory standards.

This Plan applies for the duration of the construction phase and remains active until all disturbed areas have been stabilised and certified as meeting the completion criteria. The SWMP operates in conjunction with other environmental management subplans, as per Section 5.1.

2 Project description

2.1 Project overview

The Project involves construction of approximately eight kilometres (km) of new 330 kilovolt (kV) transmission line between the Mount Piper and Wallerawang 330 kV Substations. The Project will incorporate sections of an existing single-circuit 132 kV transmission line, where both transmission lines would share a widened easement and transmission structures.

The Project will deliver:

- 28 new steel lattice towers and 4 pole structures
- Installation of new conductors, earth and optical ground wire
- Removal and replacement of redundant structures
- Upgraded and new access tracks (27 km)

Construction includes:

- Demolition and removal of redundant transmission structures, including two steel lattice towers, a gantry, and wood pole structure from the existing 132 kV transmission line
- Construction of double circuit 330 kV steel lattice towers and three 132 kV concrete pole structures to accommodate 5.3 km of 132 kV and 330 kV transmission line on a widened easement
- Construction of 2.7 km of new 330 kV transmission line on a new easement
- Upgrade of existing tracks as well as creation of new tracks to facilitate efficient construction access
- Other ancillary works required to support construction of the Project, including establishment of temporary construction compounds and laydown areas.

Construction is expected to commence in Q4 2026 with completion expected by early-2028.

The construction methodology includes works involving the formation of and upgrade to access tracks, and various construction works around the towers.

The different access track works include:

- Major and minor upgrades to existing permanent tracks
- New permanent and temporary access tracks

The works around the towers include:

- Access track formation and construction works (vary with each site see Appendix A)
- Cut and fill activities to level each tower site (vary with each site see Appendix A)
- Preparation of the laydown areas at the site office area, near the MT Piper Substation and at each tower for construction activities
- Preparation of crane pads
- Preparation of foundation drill pads
- Establishment of brake and winch sites
- Reinstate and stabilise post-construction.

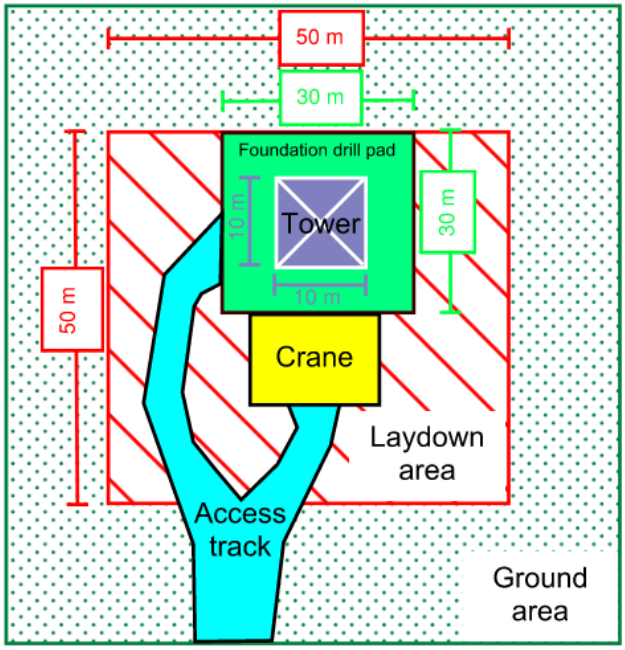
Other works involved in the Project, which are significant for soil and water management, include:

- Works within riparian vegetation zones (refer Section 7.1.1)
- Stabilisation of disturbed riparian areas (as per the Blue Book and Controlled Activity Guidelines for riparian works on waterfront land (DCCEEW, 2025b), refer to the ESCP)
- Waterway crossings (refer Section 7.1.1 and the ESCP).

The total Project footprint encompasses approximately 90.4 ha. Within the Project footprint some areas are expected to undergo complete clearing while other areas are only expected to undergo partial clearing, and other areas are to remain undisturbed. The construction methodology and project design are currently at the 85% design hurdle; the future location and design of proposed disturbance activities will need to be confirmed at the 100% design.

The overall Project layout, including location of access tracks and pads, is provided in Figure 1 and a general layout proposed for tower locations is provide in Figure 2. It should be noted that there are variations in size of laydown area and placement of tower infrastructure for each tower location depending on the slope gradient, the position of the existing overhead 132kV line and space available.

Figure 2: Typical layout around the tower locations for the Project (not to scale)



Typical Pad Layout

Ground conditions: located on flat to gently undulating ground (with some locations located on steeper slopes).

Combined access: a graded access track must be constructed to connect and service each of the pads (consisting of crane and foundation drilling pad). Existing access tracks to be utilised where possible, given that existing access track condition is suitable.

Laydown/assembly area: designated space for tower assembly and materials storage, approximately 50 x 50 m (though size and extent varies per pad and is to be determined onsite).

Crane pad: location for crane set up. Final pad size is dependant on crane specifications required for lifting operations.

Foundation drill pad: drilling platform area, typically sized to be at least 10 metres wider than the tower design footprint for adequate workspace.

Location of pad and laydown areas to be determined onsite.

2.2 Project staging

A Staging Report has been developed in accordance with CoA C4-C6. Revision 2.1 of the Staging Report was endorsed by the Environmental Representative (ER) on 8 September 2026.

The Staging Report identified 3 stages. These Stages have the same meaning as the terms defined in the Infrastructure Approval. The Stages are;

- Pre-Construction
- Construction
- Operation

Future stages, including upgrading and decommissioning will be addressed through future revisions of the Staging Report, as required. Following endorsement of the Staging Report, Transgrid submitted a Staging Request to the Planning Secretary for staging specific to the SWMP in accordance with Condition C7 which was approved by DPHI on 28 August 2026.

In accordance with the Staging Request, this Management Plan addresses the construction stage only. As such, operational impacts to soil and water, and operation measures and monitoring do not fall within the scope of this SWMP and are not addressed within the processes contained within this plan. Requirements applicable to the remaining stages, including operation, upgrading and decommissioning, will be addressed in a separate document prior to commencement of the relevant stage.

The Staging Report and Staging Request are subject to update where the project staging arrangements are revised or further stages are progressed.

3 Legal and compliance requirements

The SWMP has been prepared in accordance with the legislative, regulatory, and policy framework applicable to State Significant Infrastructure (SSI) projects under Division 5.2 of the *Environmental Planning and Assessment Act 1979 (EP&A Act)*. The Project was declared Critical State Significant Infrastructure and assessed through an environmental impact statement (EIS) approved under the *EP&A Act*. This Plan responds to the relevant soil, water, and contamination management requirements identified in the EIS and the conditions of approval received on 16 of May 2026.

3.1 Relevant policies, standards, guidelines, and codes of practice

Additional policies, guidelines, and guidance materials used to develop this SWMP include the following:

- Landcom (2004) *Managing Urban Stormwater: Soils and Construction, 4th Edition* ('Blue Book')
- International Erosion Control Association (2025) *Best Practice Erosion and Sediment Control*
- Department of Environment and Climate Change (2008) *Managing Urban Stormwater – Soils and Construction Volume 2A Installation of Services*
- DECC (2008) *Managing Urban Stormwater – Soils and Construction Volume 2C Unsealed Roads*
- Acid Sulfate Soils Management Advisory Committee (1998) *Acid Sulfate Soil Guidelines*
- Department of Agriculture and Water Resources (2018) *National Acid Sulfate Soil Sampling and Identification Methods Manual*
- Department of Land & Water Conservation guideline (1994) *Guidelines for the Planning, Construction and Maintenance of Tracks*
- Australian and New Zealand Governments (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*
- DCCEEW (2025) *Guidelines for Controlled Activities on Waterfront Land – Guidelines for riparian corridors on waterfront land*
- DCCEEW (2025) *Guidelines for Controlled Activities on Waterfront Land – Guidelines for instream works on waterfront land*
- DCCEEW (2025) *Guidelines for outlet structures on waterfront land*
- DCCEEW (2025) *Guidelines for vegetation management plans on waterfront land*
- DCCEEW (2025) *Guidelines for laying pipes and cables in watercourses on waterfront land*
- DCCEEW (2025) *Guidelines for Controlled Activities on Waterfront Land – Guidelines for watercourse crossings on waterfront land*
- WaterNSW (2026) *Developments in the Sydney Drinking Water Catchment – Water Quality Information Requirement*
- NSW EPA (2022) *Waste Classification Guidelines*
- National Environment Protection Council (2013) *Assessment of Site Contamination Measure (NEPM)*
- NSW EPA (2020) *Guidelines for Consultants Reporting on Contaminated Land*
- NSW EPA (2015) *Duty to Report Contamination under the CLM Act*
- DECC (2008) *Managing Urban Stormwater: Volume 4 – Dryland Salinity*
- Australian Standard AS 1940 – *The Storage and Handling of Flammable and Combustible Liquids*
- National Transport Commission (2018) *Australian Code for the Transport of Dangerous Goods by Road and Rail*

- NSW Fisheries (2003) *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings*
- NSW Fisheries (2013) *Policy and Guidelines for Fish Habitat Conservation and Management*
- SafeWork NSW (2020) *Code of Practice: How to Manage and Control Asbestos in the Workplace*
- Transgrid, Environmental Handbook, 2021.
- WaterNSW (2026) Developments in the Sydney Water Catchment – Water Quality Information Requirements
- NSW EPA (2024) *Guide to the NSW Resource Recovery Framework*
- NSW EPA (2024) *Guide to the NSW Resource Recovery orders and exemptions policy framework*
- Lithgow City Council (2021) *Lithgow City Council Development Control Plan 2021*

3.2 Key legislation

Legislation and government policy relevant to this Plan include:

- *Environmental Planning and Assessment Act 1979 (EP&A Act) – NSW*
- *Protection of the Environment Operations Act 1997 (POEO Act) – NSW*
- *Protection of the Environment Operations (Waste) Regulation 2014 (POEO Act) - NSW*
- *Water Act 1912 - NSW*
- *Water Management Act 2000 (WM Act) - NSW*
- *Water Management (General) Regulation 2025 - NSW*
- *Waste Avoidance and Resource Recovery Act 2001 - NSW*
- *Contaminated Land Management Act 1997 (CLM Act) - NSW*
- *Pesticides Act 1999 - NSW*
- *Work Health and Safety Act 2011 - NSW*
- *Work Health and Safety Regulation 2025 - NSW*
- *National Parks and Wildlife Act 1974 - NSW.*

- **Minister's Conditions of Approval (NSW)**

SSI-70279722 - Development for the Mount Piper to Wallerawang Transmission Line Upgrade Project as described in Section 38 of Schedule 5 of *State Environmental Planning Policy (Planning Systems) 2021.* Conditions of Approval relevant to this plan are listed in **Table 1**.

- **Revised Environmental Mitigation Measures**

Relevant revised environmental mitigation measures (REMMs) are listed in **Table 2**. A cross reference is also included to indicate where the REMM is addressed in this plan or other project management documents.

- **Sydney drinking water catchment requirements**

As the Project is within the Sydney drinking water catchment, consideration has been given to the recommended practices as outlined in *Developments in the Sydney Drinking Water Catchment – Water Quality Information Requirement* (WaterNSW, 2026). Developments within the Sydney water catchment must have a neutral or beneficial effect on water quality and to achieve this the Project must satisfy one of the following outcomes:

- Have no identifiable impact on water quality
- Contain any water quality impacts onsite and prevent effects to surrounding watercourses, waterbodies or drainage depression on site

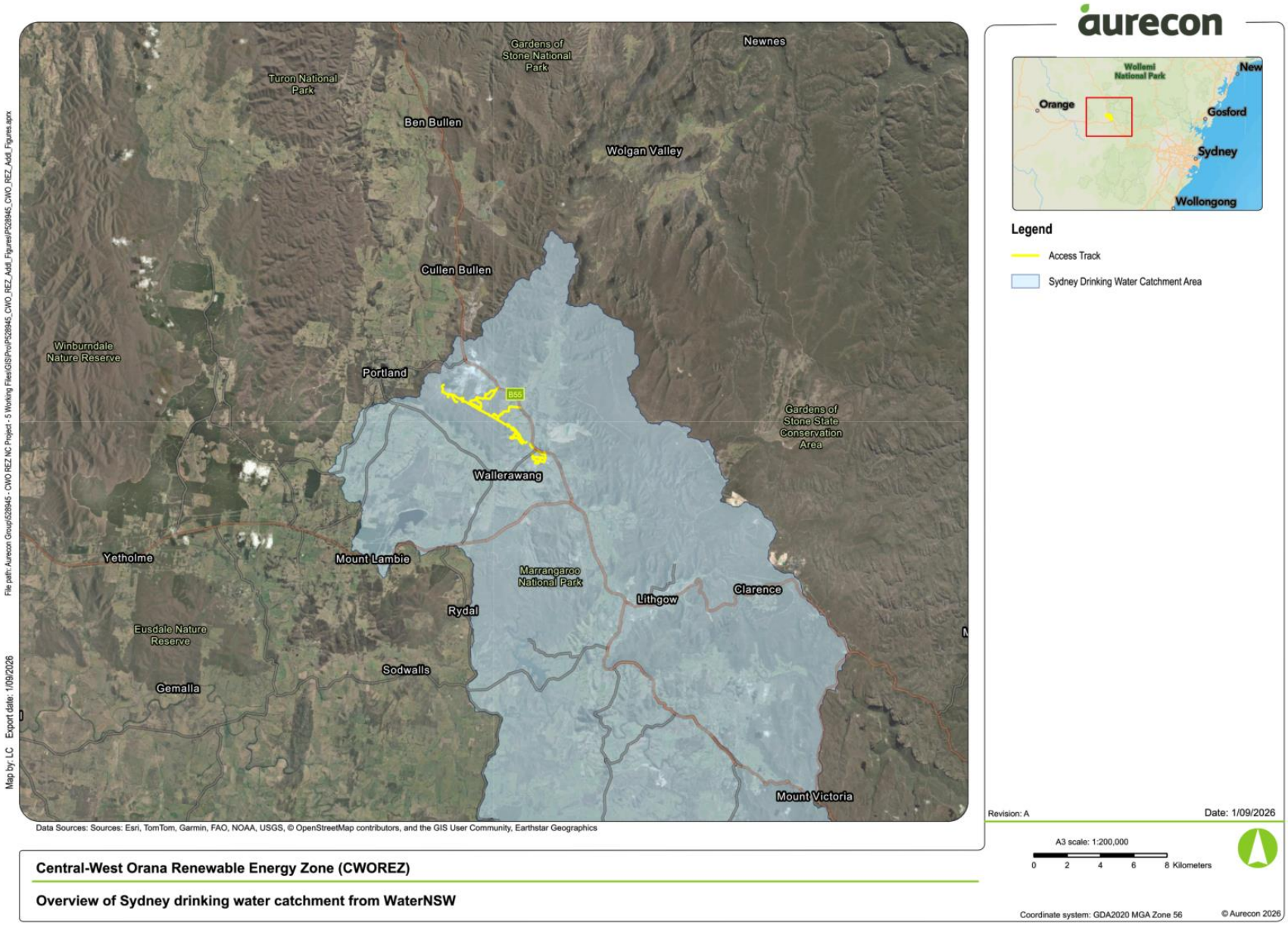
- Transfer any water quality impacts for treatment to the approved standards by the consent authority (as this development is State Significant infrastructure. The relevant policies, standards and guidelines outlined in Section 3.1 has been used to derive the water quality criteria in Appendix D to satisfy CoA B15).

As per recommended practice from WaterNSW (2026), as the project requires over 2,500 m^2 of disturbance a SWMP (this document) has been prepared and is compliant with the Blue Book. An outline of relevant considerations for the Sydney drinking water catchments from WaterNSW (2026) and where they have been addressed in this SWMP, is shown in **Table 4**.

Table 4 - Sydney water catchment requirements

Requirement	Where addressed in this document
Site features including surface and subsurface hydrology, existing erosion control measures and any constraints or opportunities for water cycle management	Sections 6.3, Section 8.1 and Section 8.2 which provide the framework, parameters and general ESC measures upon which ESCP' have been developed.
Consideration of environmental effects or an environmental impact statement	Section 7 has considered impacts to water quality, soils, waste and contamination.
Description of the current situation showing the management of existing drainage in relation to contours or topography	Section 6.3 described the existing environment and landforms of the site with the contours shown in Appendix B of the ESCP
Contamination considerations	Sections 6.4, Section 7.4 and Section 8.4
Flood assessment	Sections 6.3, Section 7.1.3, and Section 8.1
A summary and location of the stormwater quality improvement device(s) proposed as part of the development	Section 8.2 provides the framework, parameters and general ESC measures upon which ESCPs have been developed. These ESCPs will be further refined through the CEMP

Figure 3: Overview of Sydney drinking water catchment



3.3 Databases

- BoM (2024), Climate data – Station 072161 (Cabramurra SMHEA AWS)
- DCCEEW (2024), *The Central Resource for Sharing and Enabling Environmental Data (SEED) In NSW*, SEED map, Available at: https://geo.seed.nsw.gov.au/vertigisstudio/web/?app=cabd04d595ec43c1aaf4298e80e83ec2
- Department of Planning, Industry and Environment (2021), eSPADE mapping database, *Soil and land resources online*, Available at: **https://www.environment.nsw.gov.au/eSpade2Webapp/**
- NSW Planning Portal. Spatial Viewer database. Available at **NSW Planning Portal Spatial Viewer**.

3.4 Reports

- ADE Consulting Group (2026). Baseline Contamination Report. Proposed Transgrid Work Areas at Wallerawang Old Power Station, NSW. Version 1d (Reference A101025.0663.00).
- Aurecon (2026a). CWO REZ Hydrology and Hydraulic Assessment. Central West Orana Renewable Energy Zone. Revision B (Reference: P528945).
- Aurecon (2026b). CWO REZ NC Project. Memorandum: CWO REZ – Soil Leachate Testing (Contamination). (Reference P528945).
- Douglas Partners (2025b). Report on Acid Sulfate Soil Assessment. CWO REZ 330 kV Transmission Line. Mt Piper to Wallerawang (SP5 and SP5a), Rev 2, NSW
- Douglas Partners (2025a). Report on Geotechnical Investigation. CWO REZ 330 kV Transmission Line. Mt Piper to Wallerawang (SP5 and SP5a), NSW
- Douglas Partners (2025c). Material Test Report. CWO REZ 330 kV Transmission Line. Mt Piper to Wallerawang (SP5 and SP5a), NSW
- GHD (2025a). Technical Paper 1 – Water Impact Assessment. Mount Piper to Wallerawang Transmission Line Upgrade. Available at: **https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-70279722%2120250821T040357.789+GMT**
- GHD (2025b). Technical Paper 3 – Aquatic Ecology Impact Assessment. Mount Piper to Wallerawang Transmission Line Upgrade. Available at: **https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-70279722%2120250821T040357.436+GMT**
- GHD (2025c). Technical Paper 11 – Contamination Assessment. Mount Piper to Wallerawang Transmission Line Upgrade. Available at: **https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-70279722%2120250821T040606.802%20GMT**
- Transgrid (2021). Transgrid Environmental Handbook.
- Transgrid (2025). Mount Piper to Wallerawang Transmission Line Upgrade Project. Environmental Impact Statement. Available at: **Mount Piper to Wallerawang Transmission Line Upgrade Project**.
- Transgrid (2025). Mount Piper to Wallerawang Transmission Line Upgrade Project. Amendment Report. Available at: **Mount Piper to Wallerawang Transmission Line Upgrade Project**

4 Consultation

4.1 Consultation during preparation of this Plan

In accordance with Condition B19(a) of the Infrastructure Approval, this SWMP has been prepared in consultation with Lithgow City Council, the Conservation Programs, Heritage and Regulation Group (CPHR), the DCCEEW Water Group and WaterNSW. [NPWS was also consulted because the Project interfaces with the Gardens of Stone State Conservation Area.]. Appendix G summarises the consultation undertaken, detailing the comments received, how each comment was addressed and where the Plan was updated.

In accordance with Condition A20, a summary of the consultation, including responses received and how the issues raised were addressed, has been provided to the Environmental Representative and the Planning Secretary with this Plan.

4.2 Consultation during Construction

The following consultation will be undertaken during construction where triggered:

- WaterNSW: Prior written agreement will be obtained before constructing any improvement on or under land within the Fish River Water Supply Scheme infrastructure easement (CoA A15). No such works will commence until the agreement is in place.
- NPWS: Project-related upgrades and rehabilitation of trails within the Gardens of Stone State Conservation Area will be undertaken in consultation with, and to the satisfaction of, NPWS (CoA B36).
- DPIRD-Fisheries, WaterNSW and DCCEEW NSW: Following construction, opportunities to improve riparian zones for aquatic biota will be considered in consultation with these agencies (REMM B17).
- DPIRD: DPIRD will be consulted on the management of aquatic biota before any proposed discharge of surface water to or from waterways (REMM B20).

Records of this consultation will be kept and made available to Transgrid, the ER and the Department on request.

4.3 Community engagement

Community notification, enquiries and complaints relating to soil and water matters will be managed in accordance with the Project's Community Communication Strategy (CCS), prepared under Condition A23. The CCS sets out the processes for notifying landowners and stakeholders of upcoming works, and for receiving, recording, responding to and reporting complaints.

5 Environmental management framework

5.1 Relationship to existing EMS

Zinfra's Environmental Management System (EMS) is certified to AS/NZS ISO 14001:2015. The EMS is implemented through the following key steps:

- Adoption of the Health, Safety, Environment and Quality (HSEQ) Policy
- Appointment of personnel responsible for environmental coordination
- Identification of interactions between construction activities and the environment
- Identification of actual and potential environmental impacts
- Identification of applicable legal and regulatory requirements
- Establishment of environmental objectives, targets, and programs
- Monitoring, inspection, and measurement of performance against objectives
- Review of system effectiveness and environmental performance
- Ongoing improvement of environmental performance

An overview of the subplans to be read and implemented in conjunction with this SWMP are shown in **Table 5** below.

Table 5 - Overview of other plans relevant to this SWMP

Plan	Relevant interfaces with this plan
Construction Environmental Management Plan (CEMP)	Provides the framework for identifying and managing all environmental impacts during construction of the Project including: ■ Timing and staging ■ Inductions ■ Training ■ Toolbox talks ■ Compliance and incident management, notifications and reporting ■ Inspection checklists and schedules ■ Where relevant, information required for this plan has been extracted from the CEMP.
Noise and Vibration Management Plan (NVMP)	Provides the framework for managing construction noise for the Project. It also provides the majority of the mitigation measures used to protect the *Fish River Water Supply Scheme Infrastructure* found within the easement, refer Section 8.1.
Biodiversity Management Plan (BMP)	Provides the framework for managing biodiversity for the Project. Specific interfaces include: ■ Impacts on riparian vegetation (REMM B04 and B17, refer Section 8.1) ■ Spread of weeds (REMM B14, refer Sections 8.1, 8.2 and 8.8 and the ESCP) ■ Impacts on fish habitat (REMM B18 and B19, refer Sections 7.1.1, 8.1 and 8.5) ■ Works within National Parks
Erosion and Sedimentation Control Plan (ESCP)	This document provides the framework for ESC measures which have been implemented within the ESCP.
Waste Management Plan	Provides the primary framework for managing waste for the Project. This document provides some waste management as it relates to soil and contamination including spoil, spills and contaminant management and consideration of the potential for waste to impact waterways, (refer Sections 8.3,

Plan	Relevant interfaces with this plan
	and 8.4). Specific interfaces include waste tracking, removal, re-use/recycling, documentation, classification and monitoring.
Traffic and Transport Management Plan (TTMP)	Provides the primary framework for managing traffic and transport for the Project. Specific interfaces include: ■ Vehicle washdowns and minimizing dirt and debris spread to public roads (refer CoA B35) ■ Dust generation from vehicle movement (refer CoA B35) ■ Drive to conditions ■ Emergency management
Flood Risk Management Plan (FRMP)	Provides the primary framework for managing flood risk as per REMM W2. Flooding has been considered within this document, in as far as it relates to transmission structures and flood management, as per CoA B19, and ESC maintenance and management. Other considerations such as evacuations and health and safety are considered in the FRMP. The FRMP comprises Appendix F of the TTMP.
Rehabilitation Management Plan (RMP)	Provides the primary framework for rehabilitation of areas disturbed by the Project. Specific interfaces include: ■ Timely rehabilitation of disturbed areas to minimise soil exposure (refer Section 8.8) ■ Rehabilitation of riparian areas (refer Section 8.8)
Dust Control Protocol	Provides the primary framework for dust control across the Project with management measures where relevant to the SWMP incorporated into Sections 8.1 and 8.2.
Emergency Response and Management Plan	Provides the primary framework for managing emergency scenarios the Project.
Asbestos Management Plan (AMP)	Provides the primary framework for asbestos management for the Project as per EMM SC3. Transgrid maintains an asbestos management plan for works (Transgrid, 2021). The main interface is any unexpected asbestos finds covered by Section 8.4.1 and Appendix C.

Other Project documentation that will interface with the CEMP to ensure the environmental requirements of the Project are met includes safety plans, Project management plans, construction plans, Project induction presentations, and design reports.

As part of Zinfra's Project Management System, a range of corporate procedures, standards, and Project-specific documents inform the development, implementation, and ongoing management of this CEMP and its associated sub-plans. These documents provide the framework for environmental risk management, compliance with legislative and client requirements, and alignment with industry best practice.

5.2 Key roles and responsibilities

An overview of the key roles and responsibilities of Zinfra Project personnel including subcontractors and visitors for the Project is shown in **Table 6**.

Table 6 - Key roles and responsibilities

Role	Responsibilities
Project Director	• Ensure adequate resources are allocated to effectively implement the SWMP • Ensure effective lines of communication with the proponent, the business, the Project team, stakeholders, and subcontractors. • Ensure all Project personnel receive environmental inductions and training to ensure competency.
Project Manager	• Accountable for overall implementation of this SWMP • Notify environmental harm and non-compliances to Transgrid when identified, and within required timeframes. • Ensure all environmental incidents and non-compliances are fully investigated and corrected, and preventative measures applied where practicable. • Regularly check environmental performance and advising relevant parties. Also intervening on environmental matters where performance is sub-par. • Support the implementation of agreed Project environmental controls to occur within a timely manner. • Ensure relevant environmental expectations and newly identified risks from Transgrid and/or authorities are promptly communicated to Project personnel. • Facilitate access and resources for Departmental visits, and periodic Project compliance audits.
Construction Manager	• Ensures upcoming work is checked against the SWMP and control measures are implemented. • Implement soil and water controls identified in the SWMP. • Maintain stockpile register. • Monitor general environmental performance and regularly advising the Project Manager. • Promptly advise Transgrid and the Project Manager of any environmental incident and non-compliance matters. • Minimise environmental risk and acting to prevent or mitigate environmental harm should situations arise (e.g. stop work) and promptly seek assistance from HSE Project support.
Environmental Manager	• Ensure SWMP is developed in accordance with CoA and REMM's. • Facilitate internal HSE audits
Certified Professional in Erosion and Sediment Control	• Develop Erosion Sediment Control Plans for the site. • Develop Progressive Erosion Sediment Control Plans for work areas as required. • Prepare the Soil and Water Management Plan (this Plan).
Environmental Business Partner	• Provide environmental advice and support to the Project Manager and construction personnel on the implementation of the SWMP and associated erosion, sediment and water quality management requirements. • Ensure soil and water management controls are designed, installed, maintained and monitored in accordance with approved Erosion and Sediment Control Plans (ESCPs), Conditions of Approval, and relevant guidelines. • Undertake or coordinate environmental inspections and monitoring activities to verify the effectiveness of erosion and sediment controls, water management measures and contamination controls. • Verify that excavation, stockpiling, dewatering and groundwater management activities are undertaken in accordance with project requirements, licences, permits and the SWMP. • Maintain a record of all dewatering activities • Provide advice regarding the classification, reuse, transport and disposal of soils and spoil material in accordance with relevant environmental requirements and EPA guidelines.

	• Ensure appropriate spill prevention, storage and handling controls are implemented for fuels, chemicals and hazardous substances, and coordinate environmental incident response where spills or contamination events occur. • Manage soil and water related incidents, complaints, non-conformances and corrective actions, including coordinating investigations and regulatory notifications where required. • Maintain records of inspections, monitoring, incidents, corrective actions, water quality data and compliance evidence associated with the SWMP. • Deliver or coordinate environmental inductions, toolbox talks and awareness training relating to erosion and sediment control, contamination management, spill response and water quality protection • Review project activities monthly against Schedule 1 of the POEO Act to assess if an EPL is required to be obtained before project activities exceed thresholds.
Supervisor	• Promote employee awareness to the Project CEMP, this plan and EMS and incorporate requirements into work areas and activities. • Plan and ensure preventative behaviours and field mitigations are applied to lessen the likelihood of environmental issues and incidents. • Check employees for site compliance and environmental awareness (e.g. inductions, weed hygiene, spill kits, etc.). • Advise delays or work changes to management such that environmental factors con be considered.
Subcontractors, Workers & Visitors	• Adhere to Duty of Care principals and following Project environmental compliance requirements. • Report environmental incidents, near misses and non-conformances to Supervisors and Environmental BP • Attend required environmental awareness, induction and training sessions.

6 Existing environment

6.1 Locality

The Project extends from Transgrid's Mt Piper 500/330kV Substation in a general southeast direction towards Transgrid's Wallerawang 330/132kV Substation, located west of the Castlereagh Highway. The substations are located in Portland and Wallerawang, respectively, and are approximately 7.5 km apart with approximately 8 km of new transmission line expected to be constructed as part of the Project. The regional location of the Project works is shown in Figures 4 (a – e).

The area is part of the Lithgow Local Government Area and the Bathurst Local Aboriginal Land Council (Spatial Viewer, 2025). The surrounding area is varied and encompasses several varied zoning codes including the following:

- SP2 – Infrastructure (Electricity generating, rail, road, sewerage system)
- RU1 – Primary production
- RU3 – Forestry
- E4 – General Industry (Spatial Viewer, 2025).

The Site falls under the Lithgow Local Environmental Plan 2014, which identifies the area as environmentally sensitive due to its classification as 'Sensitive Groundwater Land'.

The site is within the Coxs River catchment which contributes to Lake Burragorang, which is impounded by Warragamba Dam, part of Sydney's drinking water supply. Therefore, the Project is required to meet set requirements by WaterNSW as described in Section 3.2. No improvement will be constructed on or under the easement without WaterNSW's prior written agreement.

As per the Waterway Impact Assessment, specialist report prepared as part of the EIS by GHD (2025a), the site also interacts with multiple ground and surface water sharing plans (WSPs) governed under the WM Act. An overview of the relevant WSPs for the Project is shown in **Table 7**.

Current calculations indicate it is unlikely that the scope of works will intercept more than 3 ML per year of groundwater and as such no water access licences will be required for the project under the WM Act. However, if a larger quantity of groundwater is extracted than expected the Trigger Action Response Plan will be followed as detailed in Section 7.1.4 and Appendix D.

The Site also intersects with areas of the Fish River Water Supply Scheme infrastructure easement, refer Figure 5. The interactions with this easement were considered in the technical working paper, *WaterNSW Fish River Water Supply Scheme*, produced by Transgrid in December 2025. Potential impacts from the Project on the pipeline include:

- Loading and vibration impacts from vehicles and machinery driving over and nearby the pipeline
- Vibration impacts from construction activities such as earthworks and drilling/boring
- Erosion of surface cover resulting in reduced protections for the pipeline
- Sedimentation potentially covering service and maintenance points on the pipeline
- Wear and tear on access tracks affecting WaterNSW access for pipeline maintenance
- Placement of materials over the pipeline limiting WaterNSW access
- Electrification of the metal pipeline by the high-voltage transmission lines (Transgrid, 2025b).

All the above potential impacts are to be managed should they occur within the Project. The majority of these impacts are considered in the Noise and Vibration Management Plan and the Traffic and Transport Management Plan, as detailed in the technical working paper (Transgrid, 2025b). However, the management measures detailed in Section 8.5 of this SWMP and the ESCP (Aurecon, 2026a) have been designed through industry best practice standards and manage the potential for impacts of erosion and sedimentation for the entire site, including the areas with to the pipeline, have been considered in this SWMP and the ESCP as per Condition A15 of the approval.

Although the Site is covered by the Lithgow City Council Development Control Plan (2021), the Project is classified as State Significant Infrastructure (SSI) under the *Environmental Planning and Assessment Act 1979* and is therefore exempt from local planning provisions.

The Project is expected to directly impact 90.4 hectares (ha) during construction.

Table 7 - Relevant WSPs for the Project

Relevant WSP	Source	Relevance to project
Groundwater		
Greater Metropolitan Region Groundwater Sources 2023	Sydney Basin West Groundwater Source	Underlies the project footprint
Greater Metropolitan Region Groundwater Sources 2023	Lachlan Fold Belt Greater Metropolitan Groundwater Source	Underlies the project footprint
Surface Water		
Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources 2023	Wywandy Water Source	Surface water sharing plan governing the project footprint

Figure 4: Regional location and planning scheme details - Project area overview

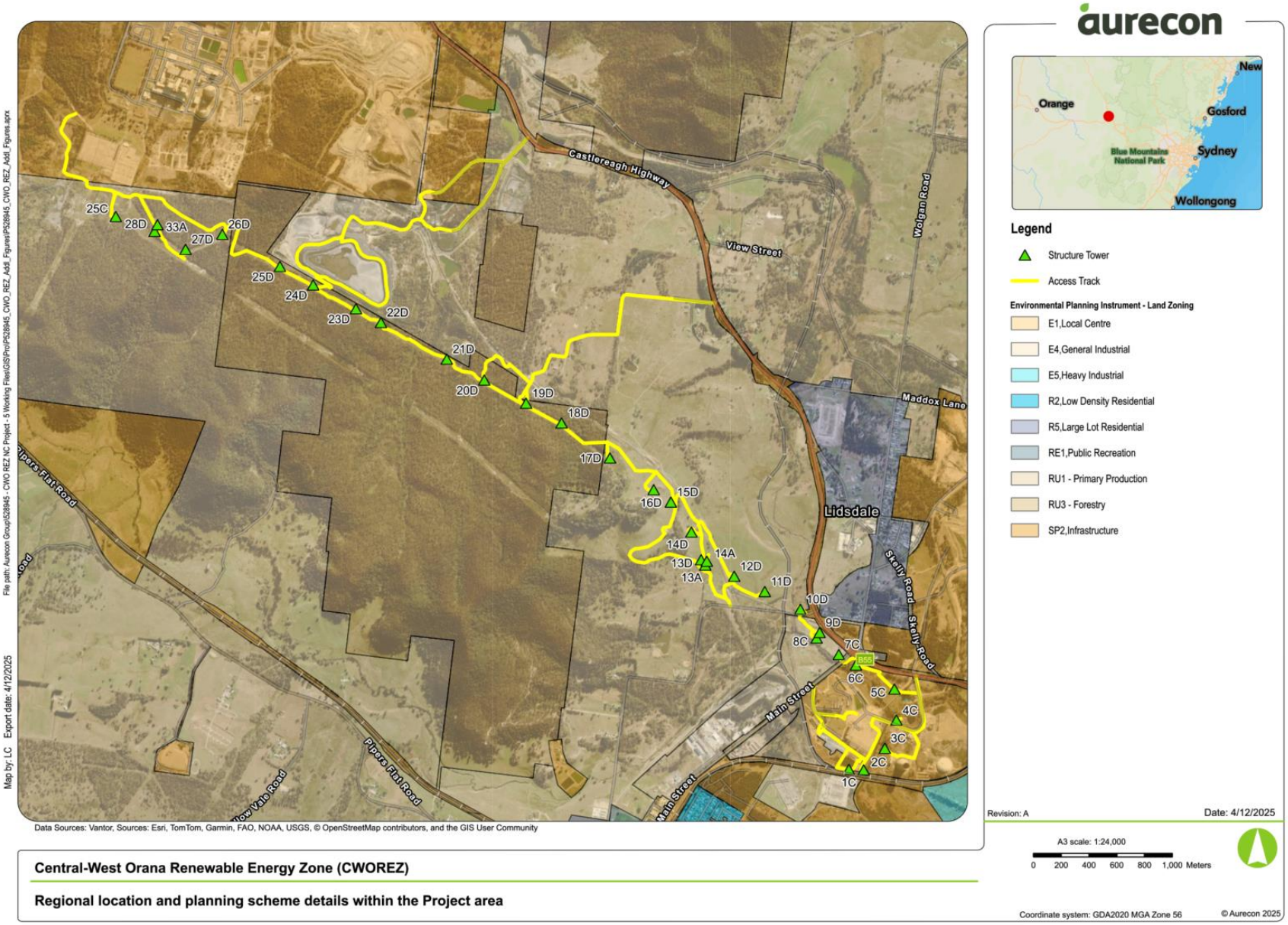


Figure 4a: Regional location and planning scheme details within Project area – Regional detail map 1

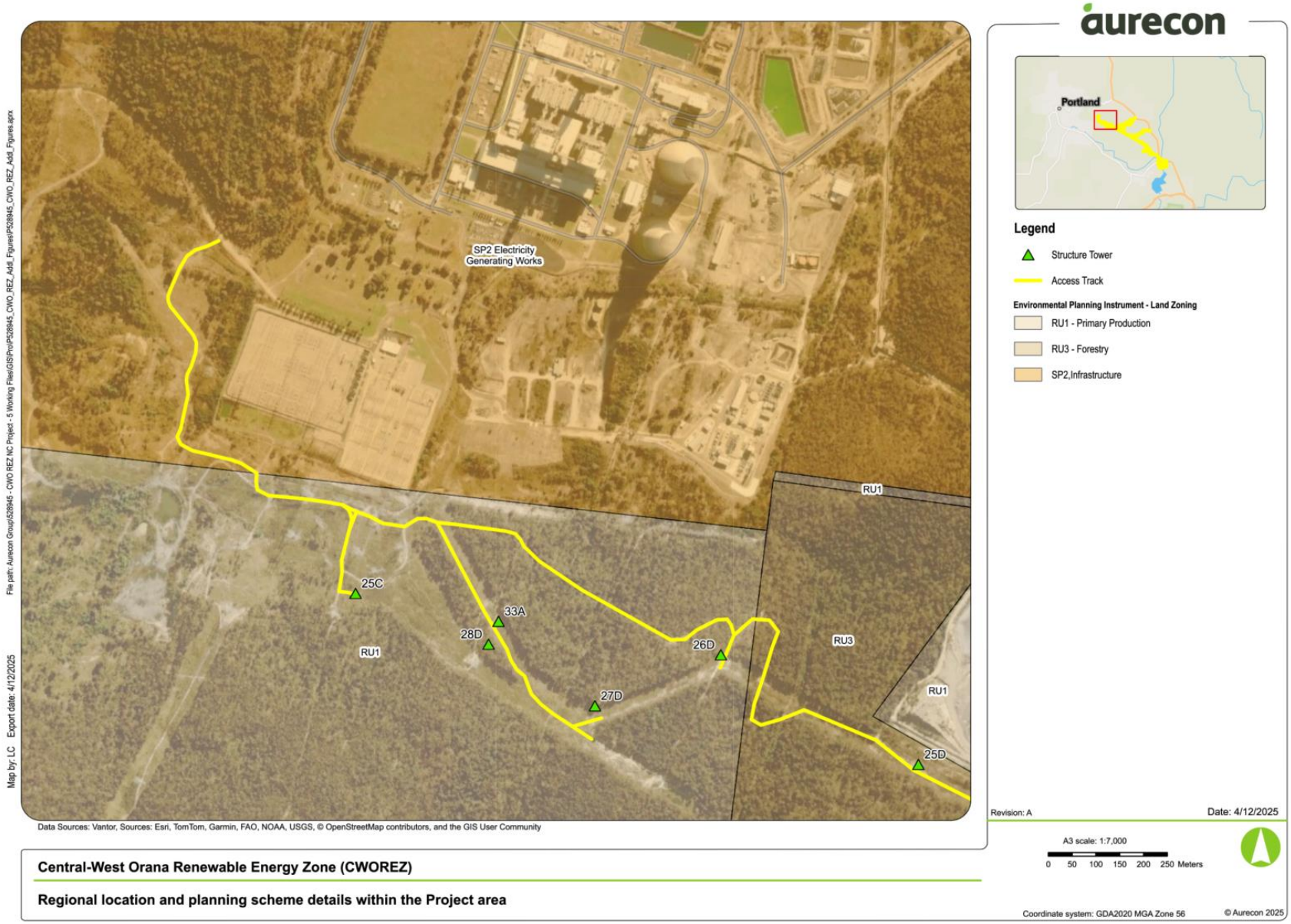


Figure 4b: Regional location and planning scheme details within the Project area – Regional detail map 2

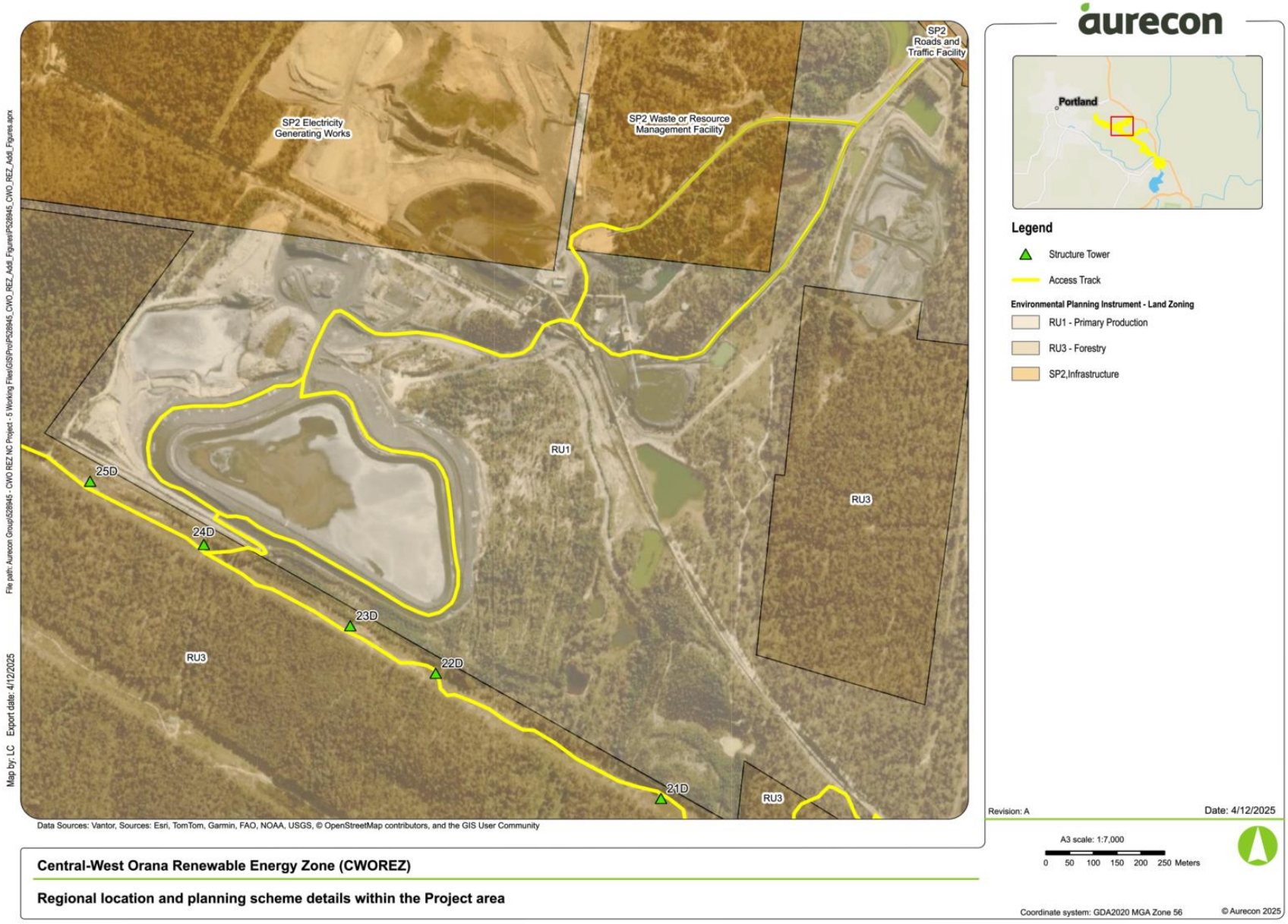


Figure 4c: Regional location and planning scheme details within the Project area – Regional detail map 3

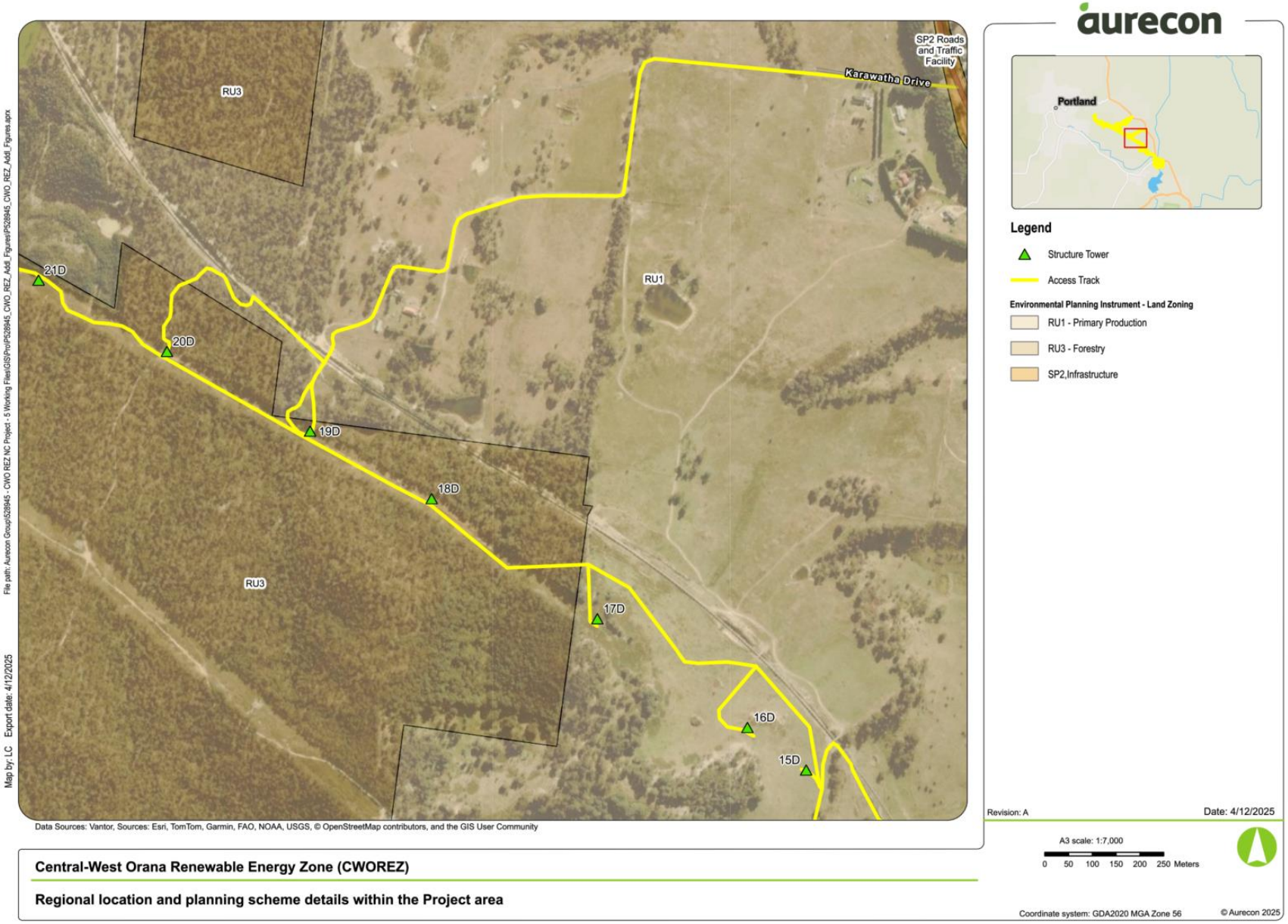


Figure 4d: Regional location and planning scheme details within the Project area – Regional detail map 4

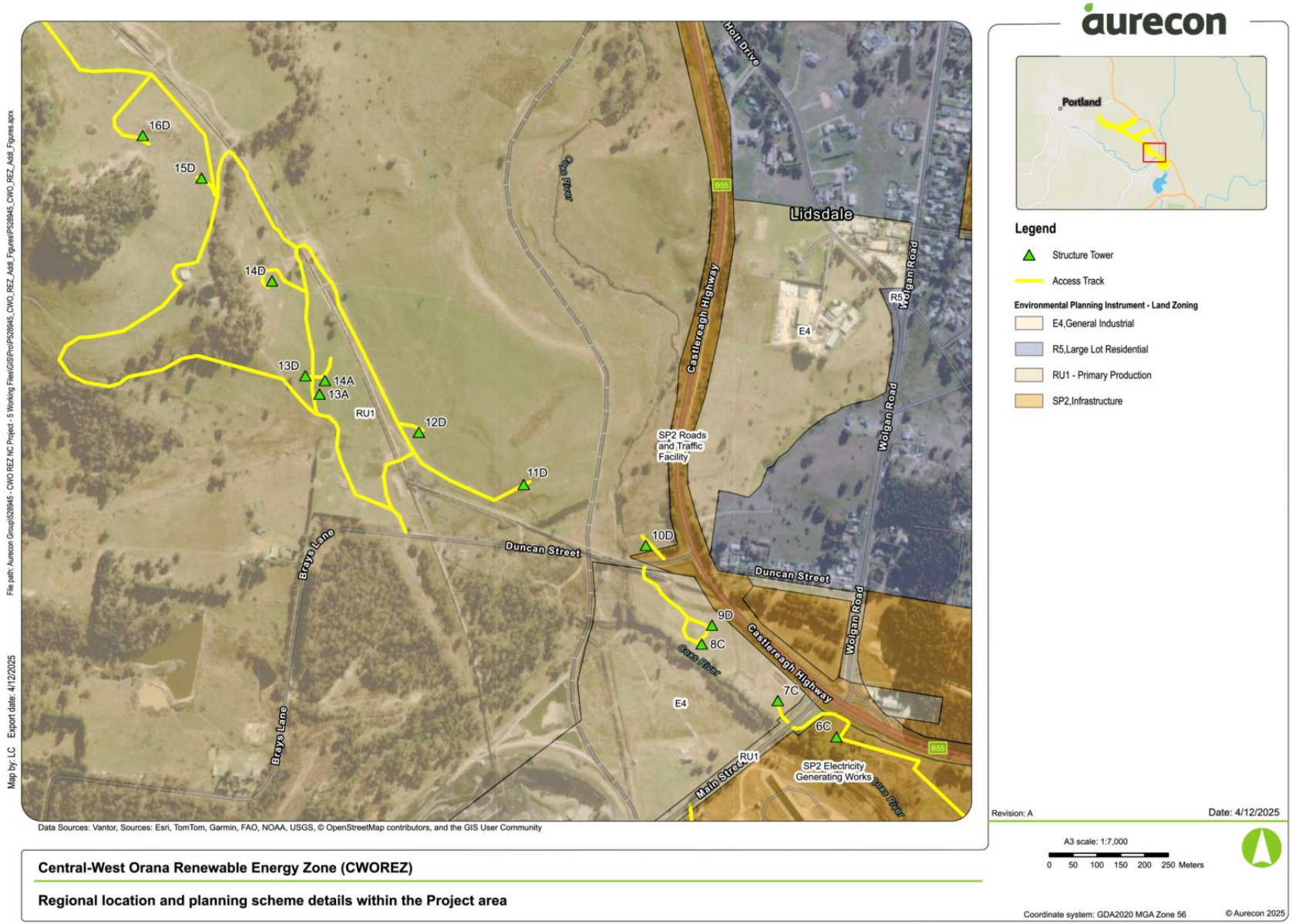


Figure 4e: Regional location and planning scheme details within the Project area – Regional detail map 5

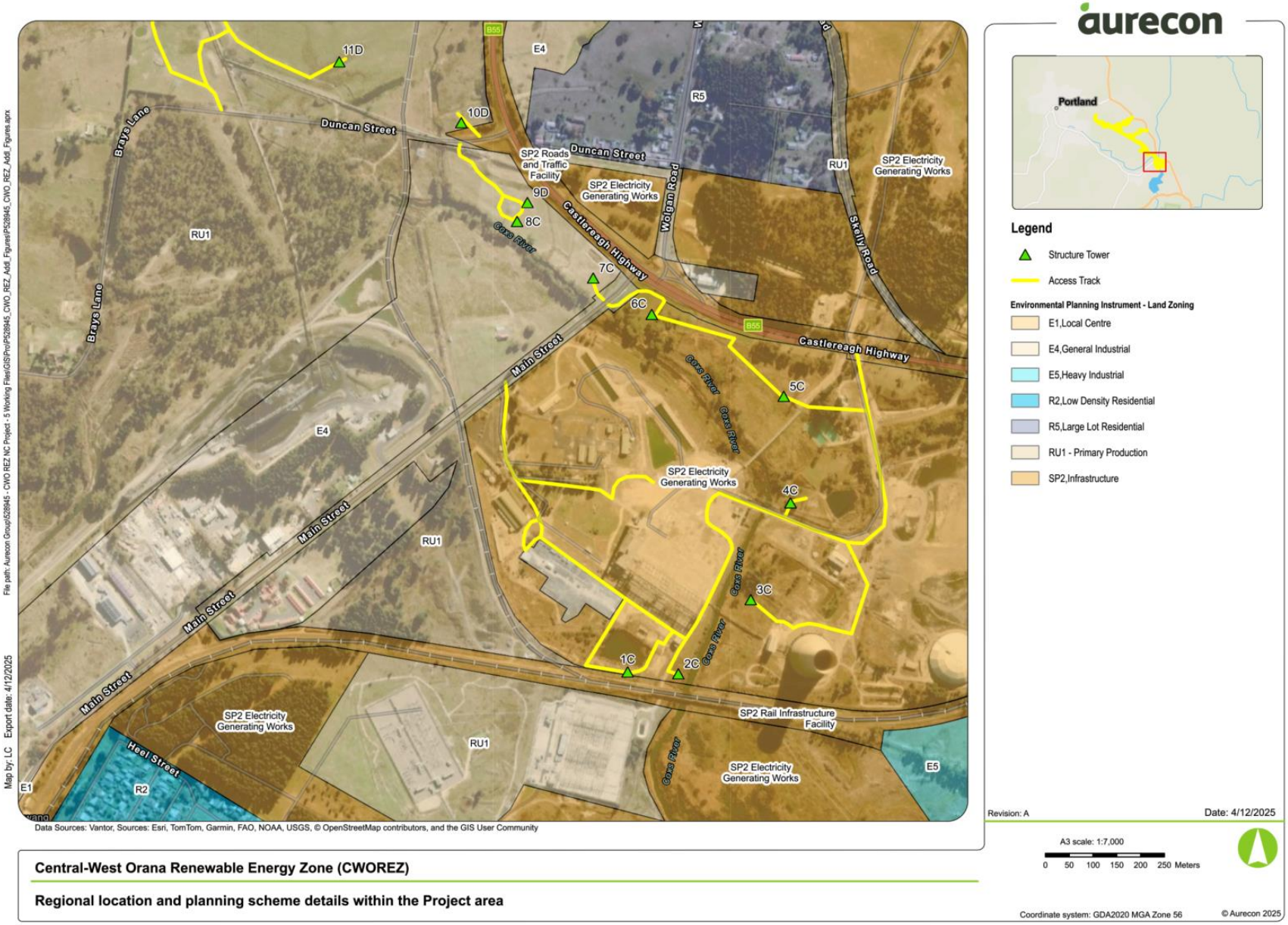
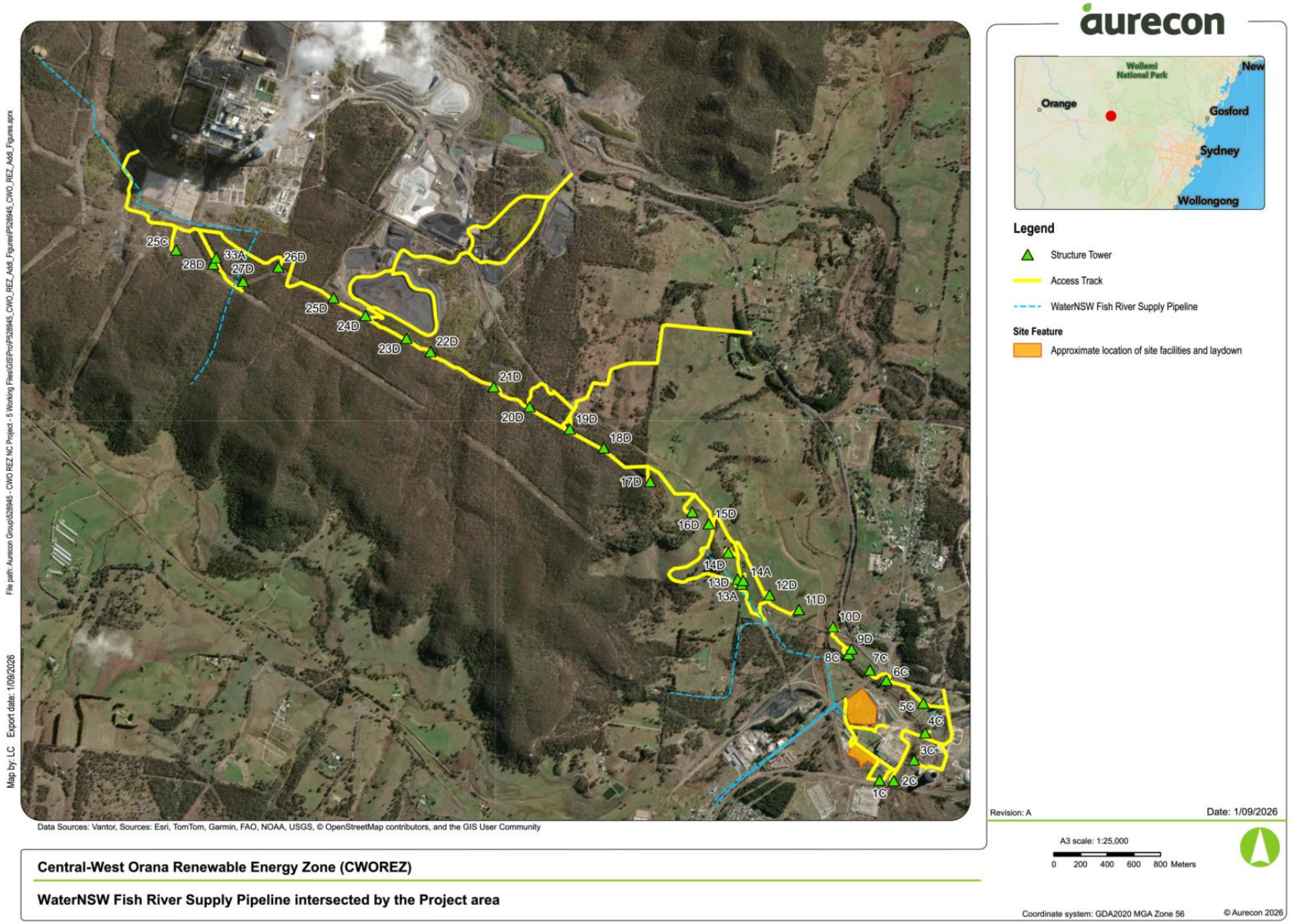


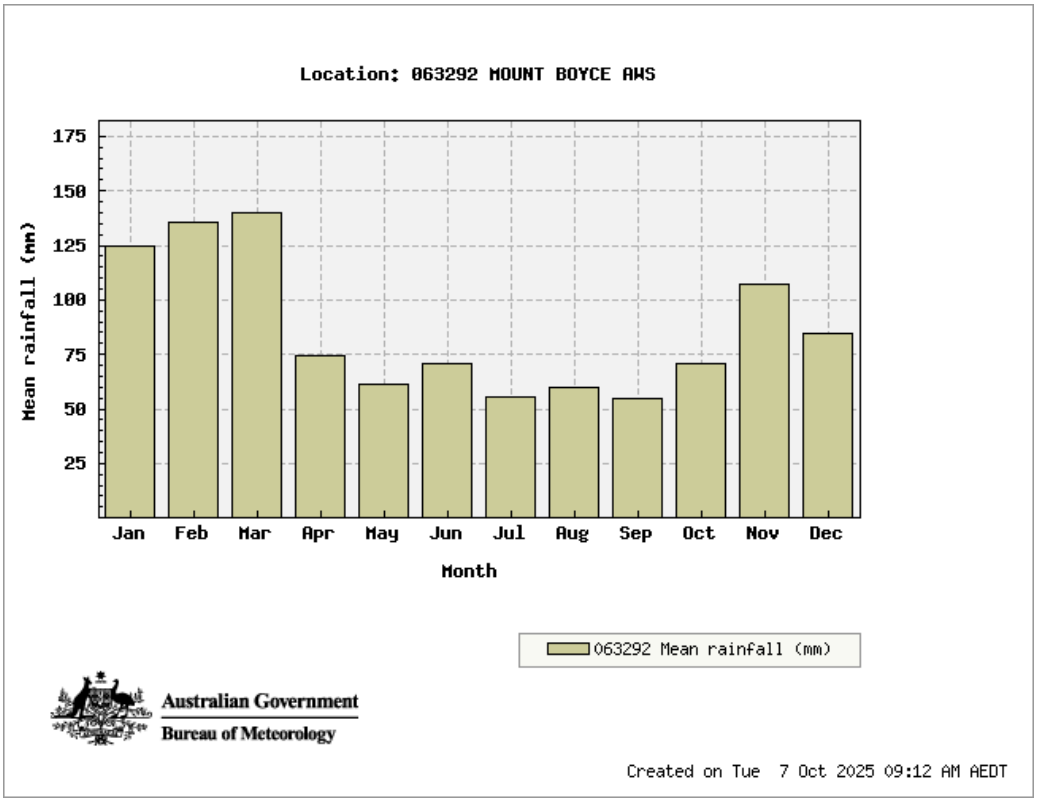
Figure 5: WaterNSW Fish River Supply Pipeline intersected by the Project area



6.2 Climate

Climate data was obtained from the Bureau of Meteorology (BoM) for the closest monitoring station that provides monthly statistics for both temperate and rainfall (Station 063292) approximately 29.8 km from Wallerawang and is assumed to reflect similar conditions. The region experiences the highest rainfall during the wet season, which takes place between January and March, with a maximum mean rainfall of 140 mm in March. The lowest rainfall is observed during the dry season, which takes place between April to October, with a minimum mean rainfall of 55.1 mm in September. The monthly mean rainfall is displayed in Figure 6 below.

Figure 6: Mean monthly rainfall at Mount Boyce AWS weather monitoring station (station #063292)



6.3 Topography, surface water, drainage and flooding

The Project corridor traverses undulating terrain that forms part of the western edge of the Blue Mountains Plateau, within the Southeastern Highlands Bioregion. Ground elevations across the Site generally range between 970 metres Australian Height Datum (AHD) near Mt Piper to approximately 870 metres AHD towards Wallerawang, reflecting an overall gradual southeast fall in topography. Local relief is typically low to moderate, with gentle ridges and shallow depressions influenced by historical disturbance and access track formation associated with existing transmission infrastructure.

The topography of the Site and surrounding area is highly varied and consists of several topographic features, including the following:

- Flat to gently inclined rises on broad valley floors
- Steep sandstone cliffs, often 100 to 200 m above colluvial side slopes
- Broad rolling low hills and rises, with elevations ranging from 550 to 1,050 m.

The Site occupies a transitional landscape between higher ridgelines and broad alluvial flats associated with the Coxs River catchment. Drainage patterns generally follow the regional topography, flowing east and southeast towards Marrangaroo Creek and Neubecks Creek, which are tributaries of the Coxs River and

form part of the Hawkesbury-Nepean basin. Several drainage lines and ephemeral channels occur along the alignment, particularly within lower-lying sections between the substations. These features are typically non-perennial, conveying flow only during or shortly after rainfall events, and are often vegetated with grasses or low sedges. In accordance with the *Guidelines for riparian corridors on waterfront land* (DCCEEW, 2024b), specific buffer distances for works in proximity to watercourses and drainage lines exist based on the associated Strahler stream order classification. A summary of these buffer distances, measured from the top of the highest bank on both sides of the watercourse, is presented in **Table 8.**

Table 8 - Summary of Strahler stream classification buffer zones (DCCEEW, 2024b)

Strahler stream classification	Buffer zone width (each side of the watercourse)	Total riparian corridor width
1st order	10 m	20 m + channel width
2nd order	20 m	40 m + channel width
3rd order	30 m	60 m + channel width
4th order and greater	40 m	80 m + channel width

These buffer distances have been applied to the watercourses intersected the Project footprint and have been displayed in Figures 13-16 alongside the Site topography and drainage features. It should be noted that the mapped extent of the waterfront land buffer zones in Figures 13-16 relates to the Project access track interfaces with the watercourses only, however, a discussion of tower pad interactions with waterfront land and associated buffer zones is located in Section 7.1.1.

The River Condition Index for the majority of the Site is rated 'Poor', improving to 'Moderate' closer to the Wallerawang Substation (SEED, 2025). Cox's River and Piper's Flat Creek are the main major watercourses on the Site and are designated as 'High Ecological Value Aquatic Ecosystems' with low-to-medium ecological ratings (SEED, 2025). Waterways within the alignment that were found to provide key fish habitat, as per the GHD Aquatic Fauna assessment (GHD, 2025b), include: Cox's River which is classified as class 1 major fish habitat and provides type 2 moderately sensitive key fish habitat. As well as two unnamed tributaries of Wangcol Creek, classified as class 3 minimal fish habitat, providing type 3 minimally sensitive key fish habitat.

The Project extends across the Coxs River floodplain, as part of the EIS, historical data was reviewed to characterise the existing flood condition across the Project. The key historical trends for the area include:

- A maximum water levels of 1 to 2 m above the top of the bank during large flood events at the nearest WaterNSW flow gauge (Coxs River at Wallerawang Power Station – 212054)
- Maximum flowrates of 200 to 300 m^3/s for the 1 in 50 to 1 in 100 AEP storm events as per the Bureau of Meteorology (BOM) flood frequency analysis
- Flood levels appear to generally be within the confines of the bank of Coxs river.

Overall, the historical flood data indicates limited lateral connectivity to the floodplain across the Project with inundation likely limited to locations with reduced channel capacity due to changes in channel geometry or channel constraints.

Localised depressions and topographic low points at other waterways such as Wangcol Creek and Pipers Flat Creek, may also experience flooding (GHD, 2025a).

Figure 7: Topography, surface water, and drainage - Project area overview

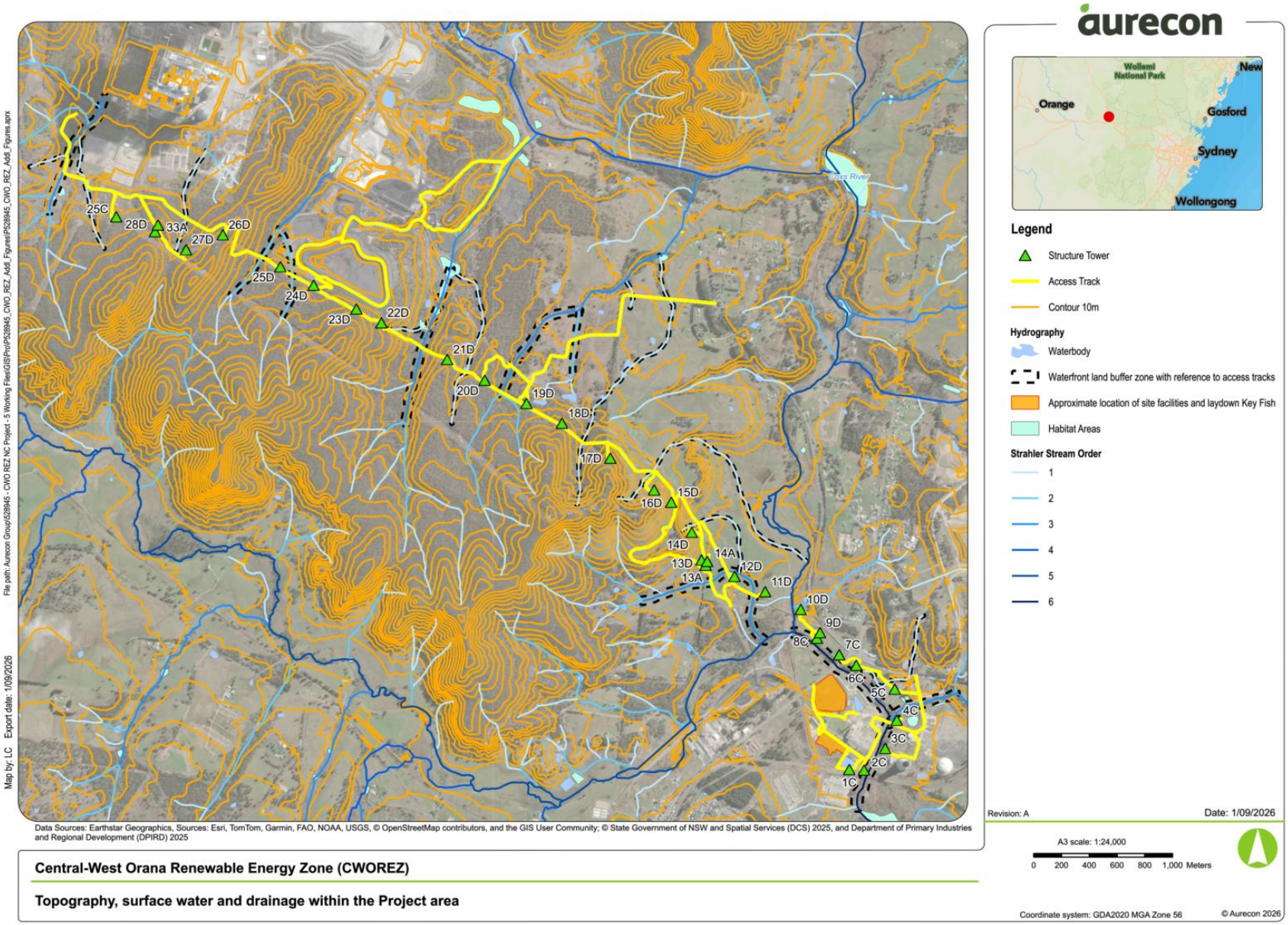


Figure 7a: Topography, surface water, and drainage within the Project area – Regional detail map 1

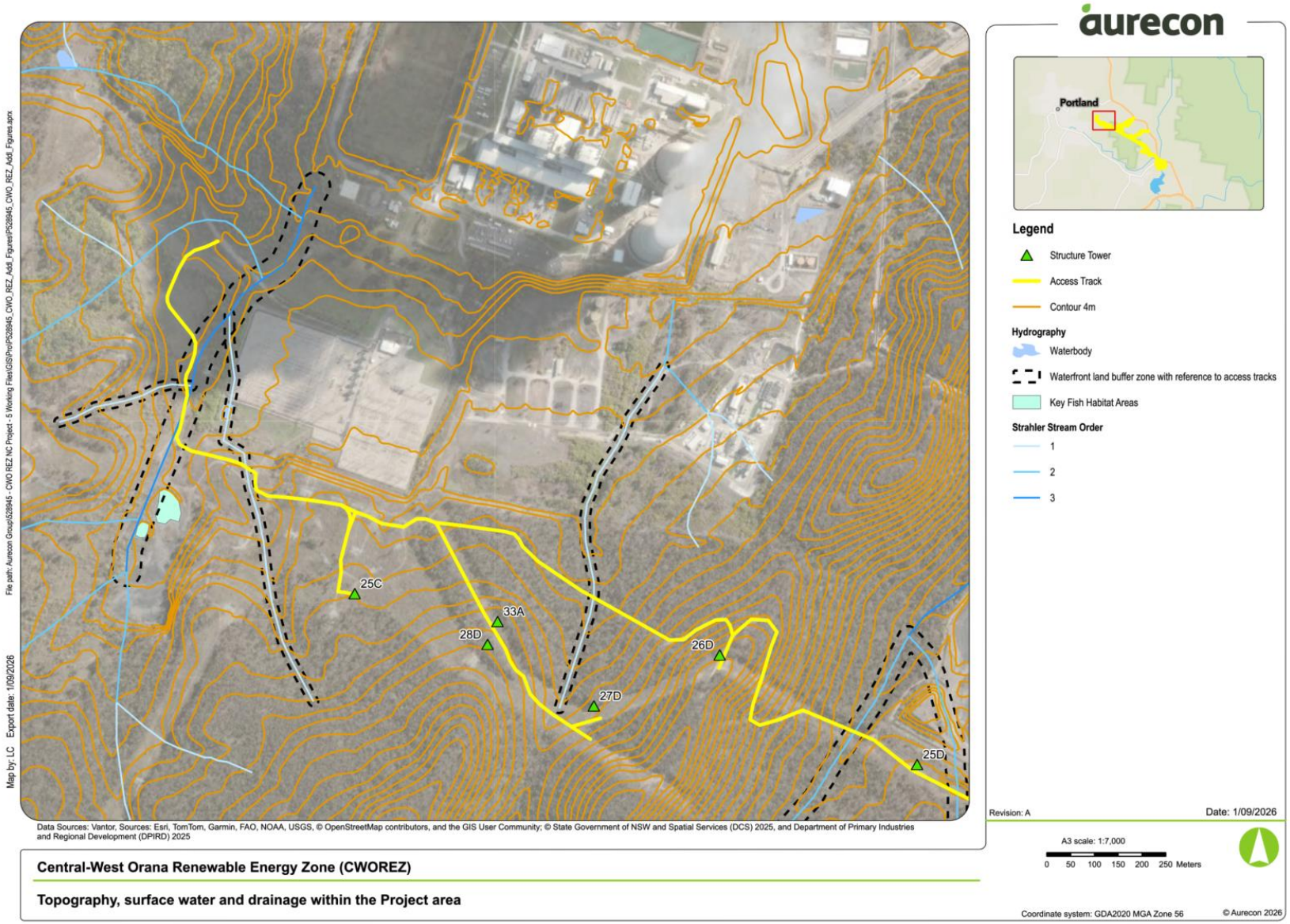


Figure 7b: Topography, surface water, and drainage within the Project area – Regional detail map 2

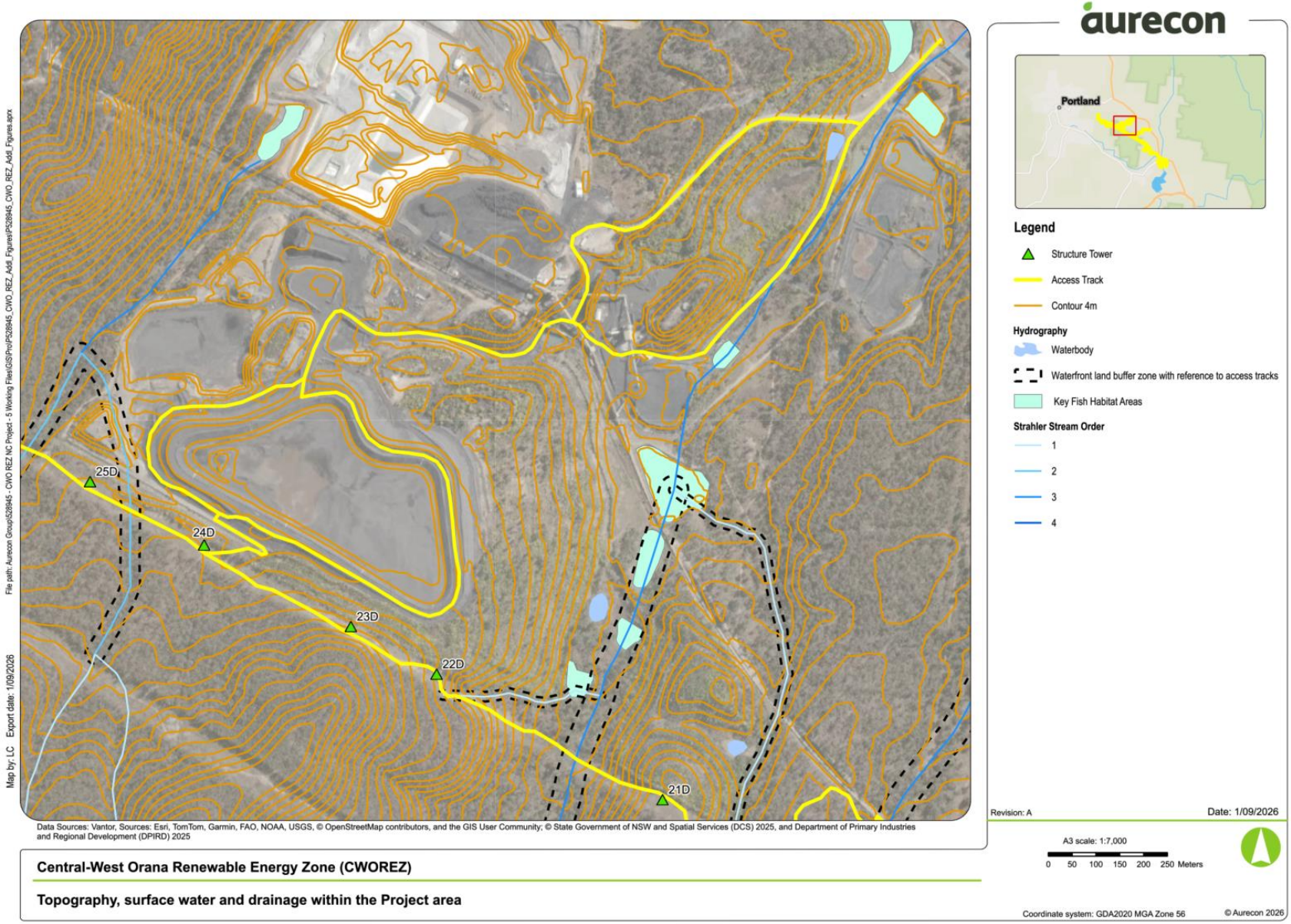


Figure 7c: Topography, surface water, and drainage within the Project area – Regional detail map 3

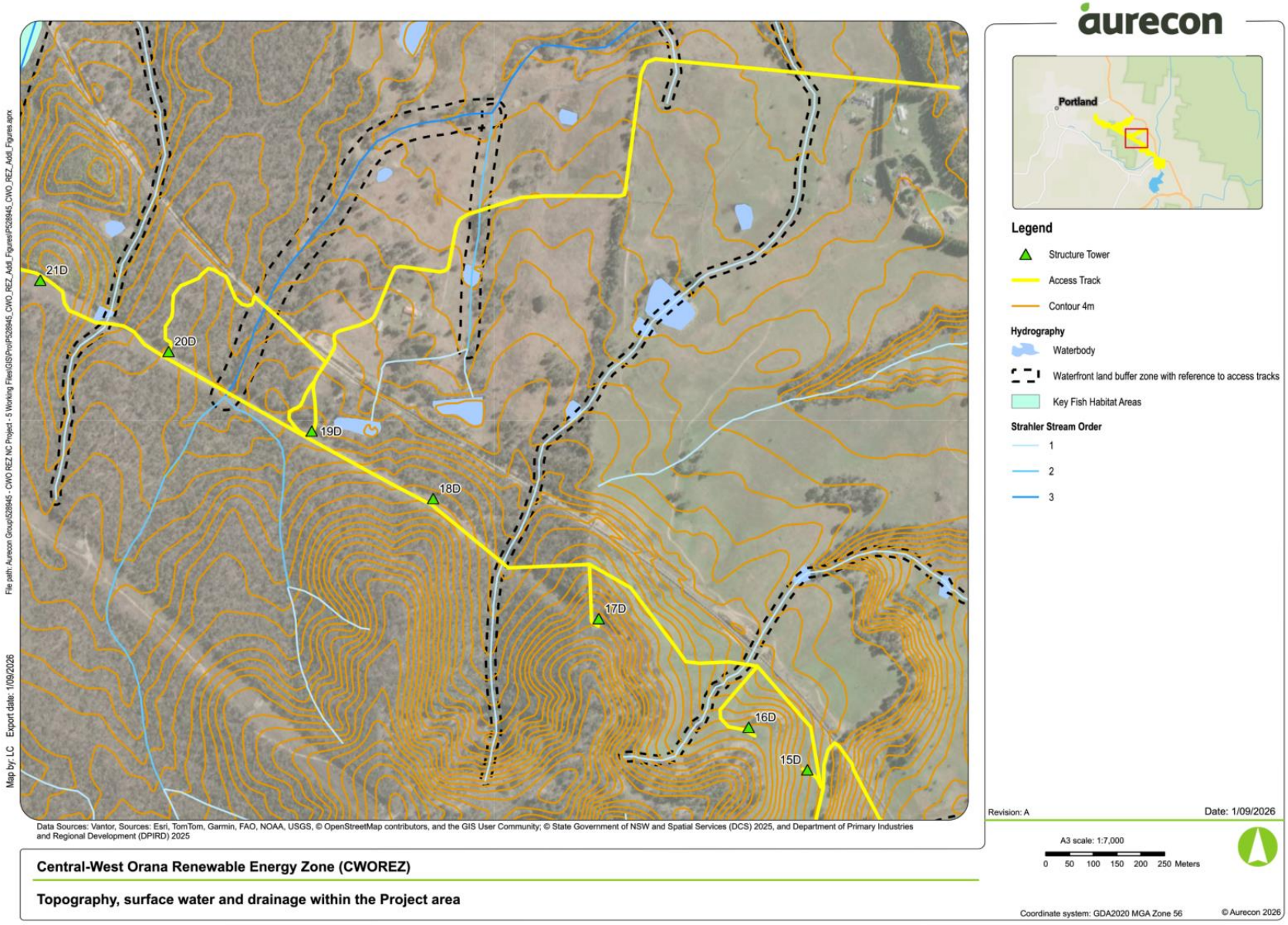


Figure 7d: Topography, surface water, and drainage within the Project area – Regional detail map 4

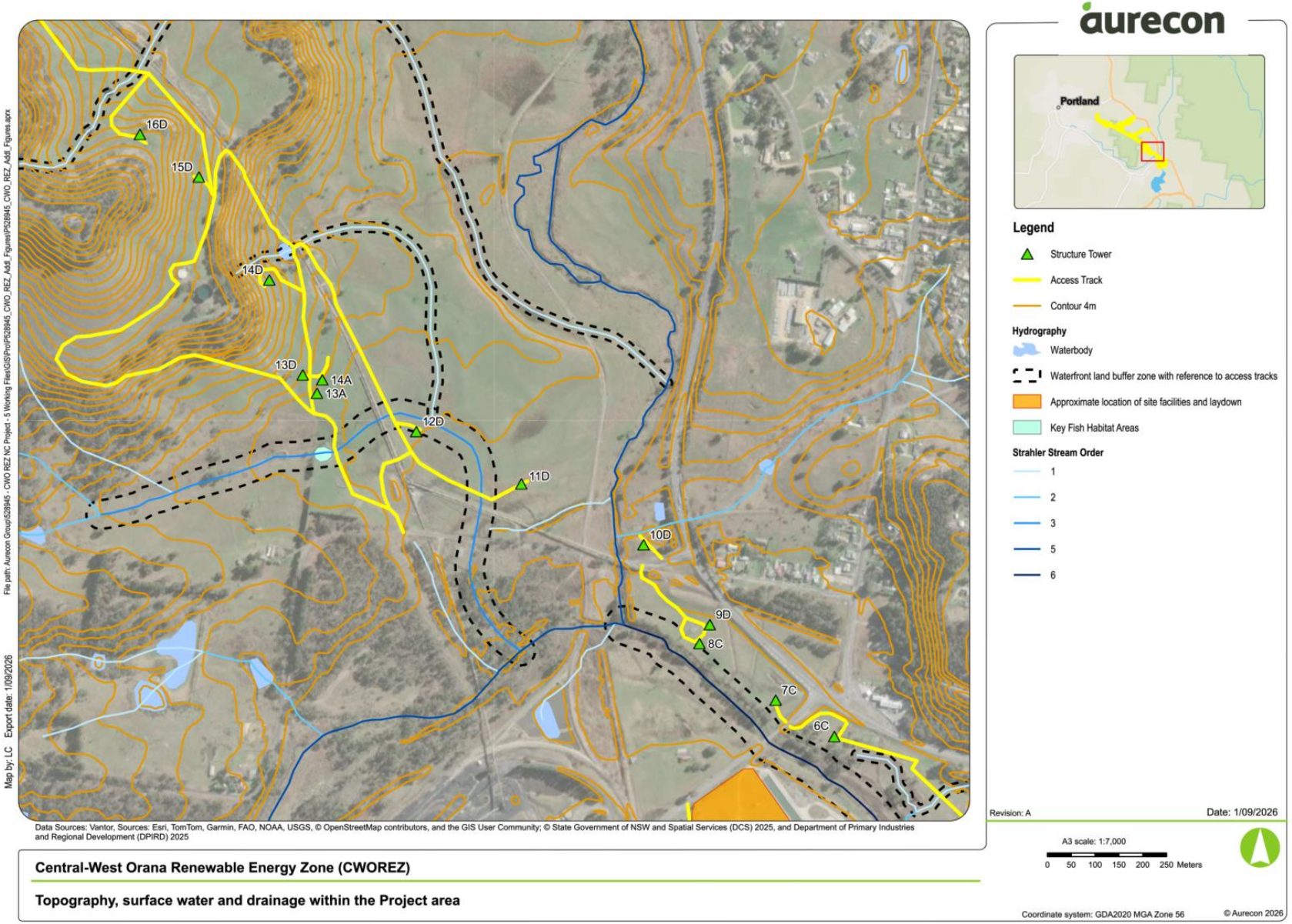
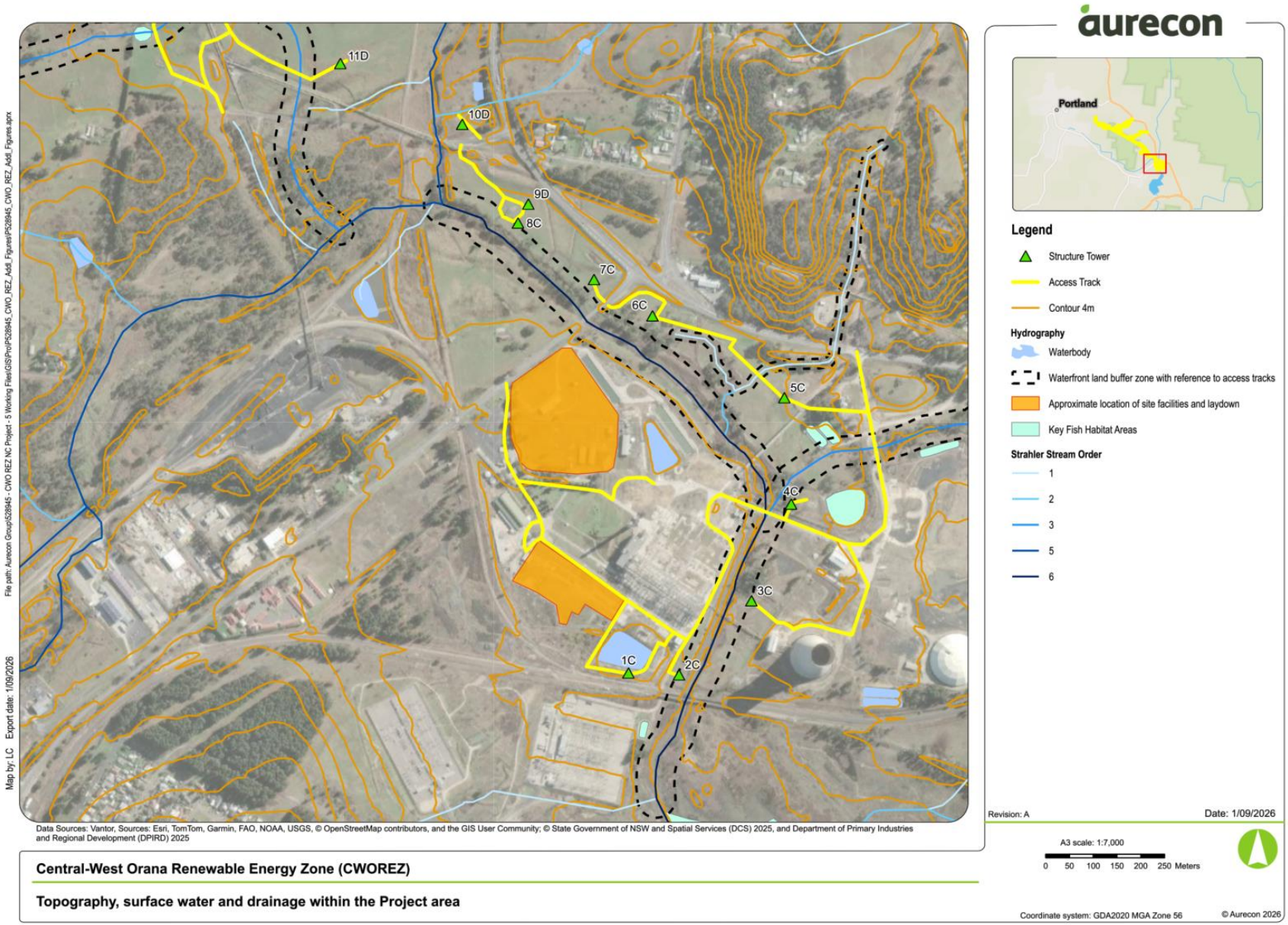


Figure 7e: Topography, surface water, and drainage within the Project area – Regional detail map 5



6.4 Soils, geology, and contamination

The Project area is located on the western edge of the Sydney Basin, a geological province comprising sedimentary rocks of Permian and Triassic age. The majority of the project footprint is underlain by Permian-aged Illawarra Coal Measures, which consist of multiple coal seams interbedded with sandstone, claystone, mudstone, siltstone, and tuff. These formations are underlain by the Berry Siltstone, which also occurs as local outcrops in the eastern part of the alignment near Wallerawang.

At the surface, Quaternary alluvial deposits occur in low-lying areas and drainage corridors associated with Coxs River, Pipers Flat Creek, and Lake Wallace, indicating zones of fluvial deposition and potentially variable soil profiles.

Reference to NSW Seamless Geology dataset indicates the presence of various near-surface geologies across the site, as is summarised and presented in **Table 9** and **Figure 8**.

Table 9 - Surface geology units intersected by the Project area from (Douglas Partners, 2025a)

Structure number	Mapping code	Parent unit	Geological unit	Description
1C to 10D	Q_a	Quaternary	Alluvium	Gravel, sand, silt and clay predominantly transported and deposited by alluvial processes.
1C to 8C, 9D to 13D, 94E-13A and 94E-14A	Pshb	Shoalhaven Group	Berry Siltstone	Siltstone, grades up sequence to very fine-grained sandstone, highly fossiliferous, sporadic dropped pebbles.
14D	Pibm	Illawarra Coal Measures	Cullen Bullen Subgroup, Marrangaroo Formation	Pebbly quartz-lithic sandstone, sporadic pebble and cobble conglomerate, mudstone and sporadic coal.
14D to 16D, 18D to 25D, 25C, 27D to 28D, 94E-33A	Pil_u		Cullen Bullen Subgroup, Charbon Subgroup & Wallerawang Subgroup	Mudstone, siltstone, claystone, sandstone, conglomerate, coal, torbanite, siliceous claystone.
17D and 26D	Tnr	Narabeen Group		Cross-bedded, quartz to quartzlithic sandstone, red-brown claystone and shale.

Soil landscape assessments for the area are available with including descriptions of topography in accordance with the *Australian Soil and Land Survey Field Handbook* (National Committee on Soil and Terrain (NSCT), 2009), and soil types, classified using the *Australian Soil Classification* (ASC) (Isbell & NSCT, 2021) and *Great Soil Groups* (GSG) (Stace et al. 1968).

The soil landscape units intersected by and surrounding the Project are outlined in **Table 10**. The area also contains extensive disturbed terrain. It should be noted, however, that these units do not contain soil profile logs or laboratory data. Mapped soil landscape units within the Project area are presented in Figure 9.

Table 10 - Soil landscape units intersected by the Project area

Mapping unit	Landform description	Geology	ASC	GSG	Hazards/Limitations
Cullen Bullen (cb)	Rolling low hills and rises (slope class 10 to 25%).	Permian Berry Siltstone and Permian Illawarra Coal Measures (shale, sandstone, conglomerate and limestone)	Yellow Kurosols		Localised foundation hazard, localised sheet and gully erosion, widespread low fertility
			Kandosols	Yellow Podzolic Soils and Yellow Earths	
			Rudosols		

Hassans Walls (hw)	cliffs derived from Narrabeen Group sandstones (slope class >40%)	Narrabeen Group Sandstones and Permian Illawarra Coal Measures (sandstone-lithic)	Orthic and Bleached-Orthic Tenosols	Lithosols, Siliceous Sands and Earth Sands	Widespread foundation and mass movement hazard, widespread sheet erosion, localised gully erosion and localised low fertility
			Brown and Red Kurosols	Yellow and Red Podzolic Soils and Soloths	
			Chernic-Leptic Tenosols	Lithosols	
			Brown Dermosols	Brown Earths	
Lithgow (li)	Flat to undulating rises and broad valley floors (slope class 10%)	Permian Berry Siltstone and Permian Illawarra Coal Measures (shale, sandstone, siltstone/mudstone and claystone)	Kurosols	Yellow Podzolic Soils	Localised low fertility, localised sheet and gully erosion
			Sodosols	Solodised Solonetz	
Pipers Flat (pf)	Level to very gently undulating drainage depressions and floodplains (slope class 0 to 5%)	Permian Berry Siltstone (alluvium, unconsolidated, sand and gravel) and	Tenosols	Grey-Brown Alluvial soils	Widespread foundation hazard, widespread gully and streambank erosion,
			Kurosols	Yellow Podzolic Soils and Soloths	
Wollangambe (wo)	Rounded crests and moderately to steeply inclined sideslopes (slope class less than 35%)	Narabeen Group (quartz sandstone and quartz-lithic sandstone interbedded with thin red, grey and green claystone, shale and occasional conglomerate and ironstone lenses)	Calcarosols	Lithosols	Highly susceptible to sheet erosion and severe rill and gully erosion. High foundation hazard.

As part of the geotechnical investigation undertaken by Douglas Partners (2025a), 32 boreholes were drilled corresponding to tower locations, and the encountered soils were classified as per AS 1726-2017 Part 6.1.3. An overview of the results is shown in **Table 11**.

Table 11 - Overview of encountered geologies from (Douglas Partners, 2025a)

Unit	Type	Subunit	Description
1	Uncontrolled Fill	1.1	Comprising varying quantities of clay, silt, sand and gravel
	Topsoil	1.2	Mix of clays, silts and sands with abundant organics
2	Alluvial	2.1	Stiff clays or medium dense sands / gravel
		2.2	Very stiff or stronger clays or dense sands / gravel
3	Colluvial / Residual	3.1	Stiff clays or medium dense sands / gravel
		3.2	Very stiff or stronger clays or dense sands / gravel
4	Extremely weathered material	4	Hard clay or very dense sand weathered from parent rock with some remnant rock structure
5	Bedrock	5.1	Very Low strength sedimentary rock
		5.2	Low strength sedimentary rock
		5.3	Medium strength sedimentary rock
		5.4	High strength sedimentary rock

Figure 8: Surface geology units intersected by the Project area - Overview

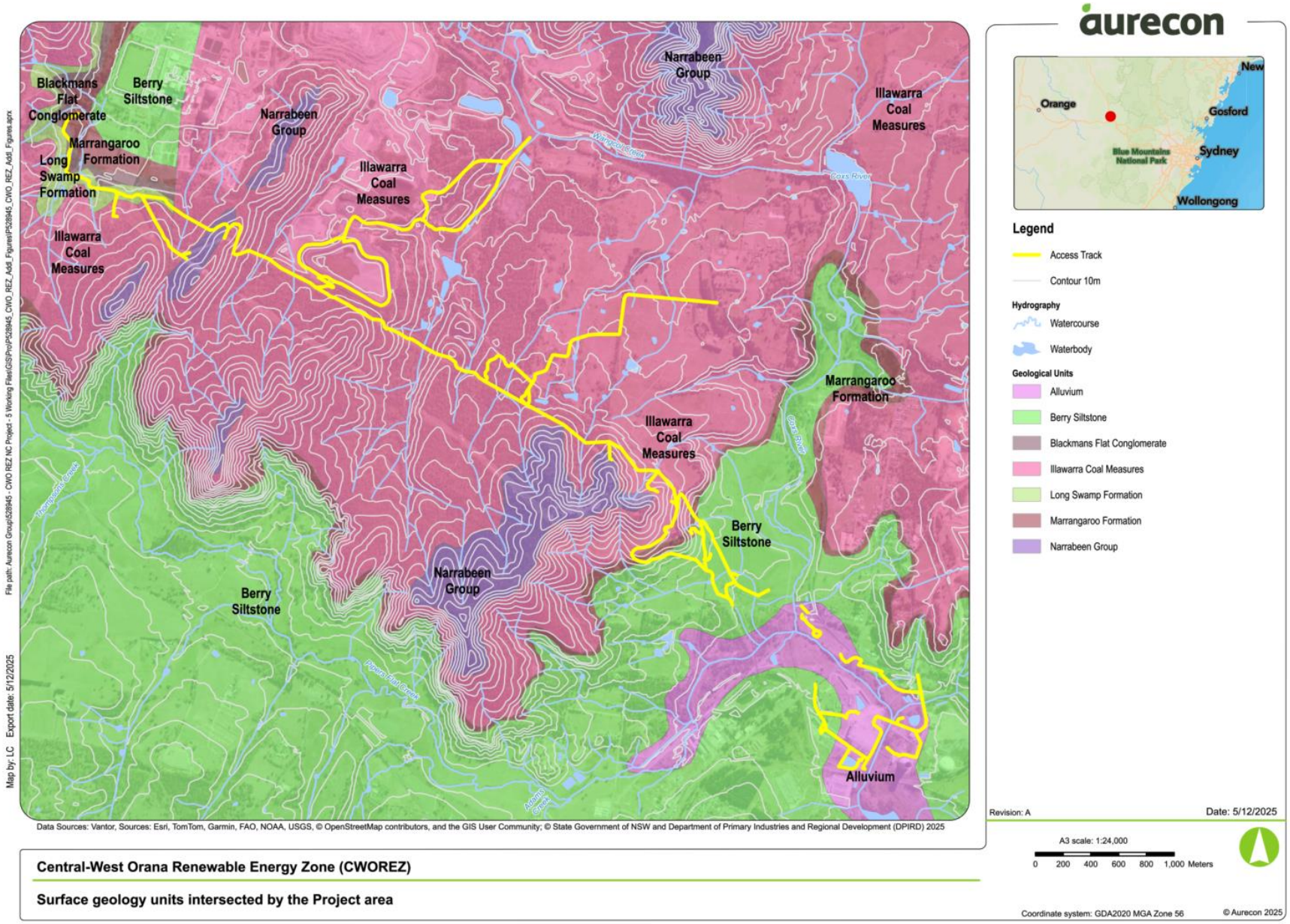


Figure 8a: Surface geology units intersected by the Project area – Regional detail map 1

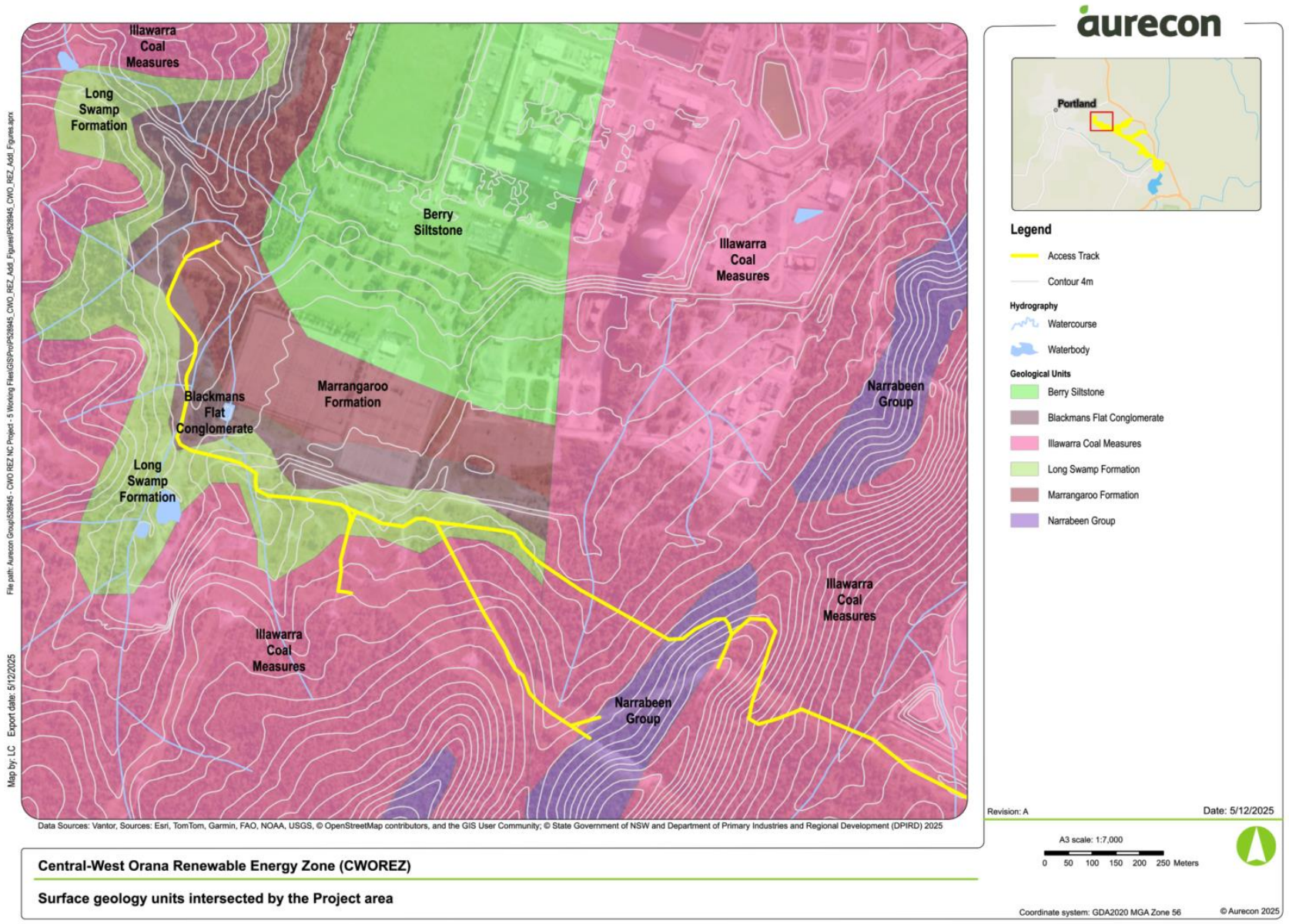


Figure 8b: Surface geology units intersected by the Project area – Regional detail map 2

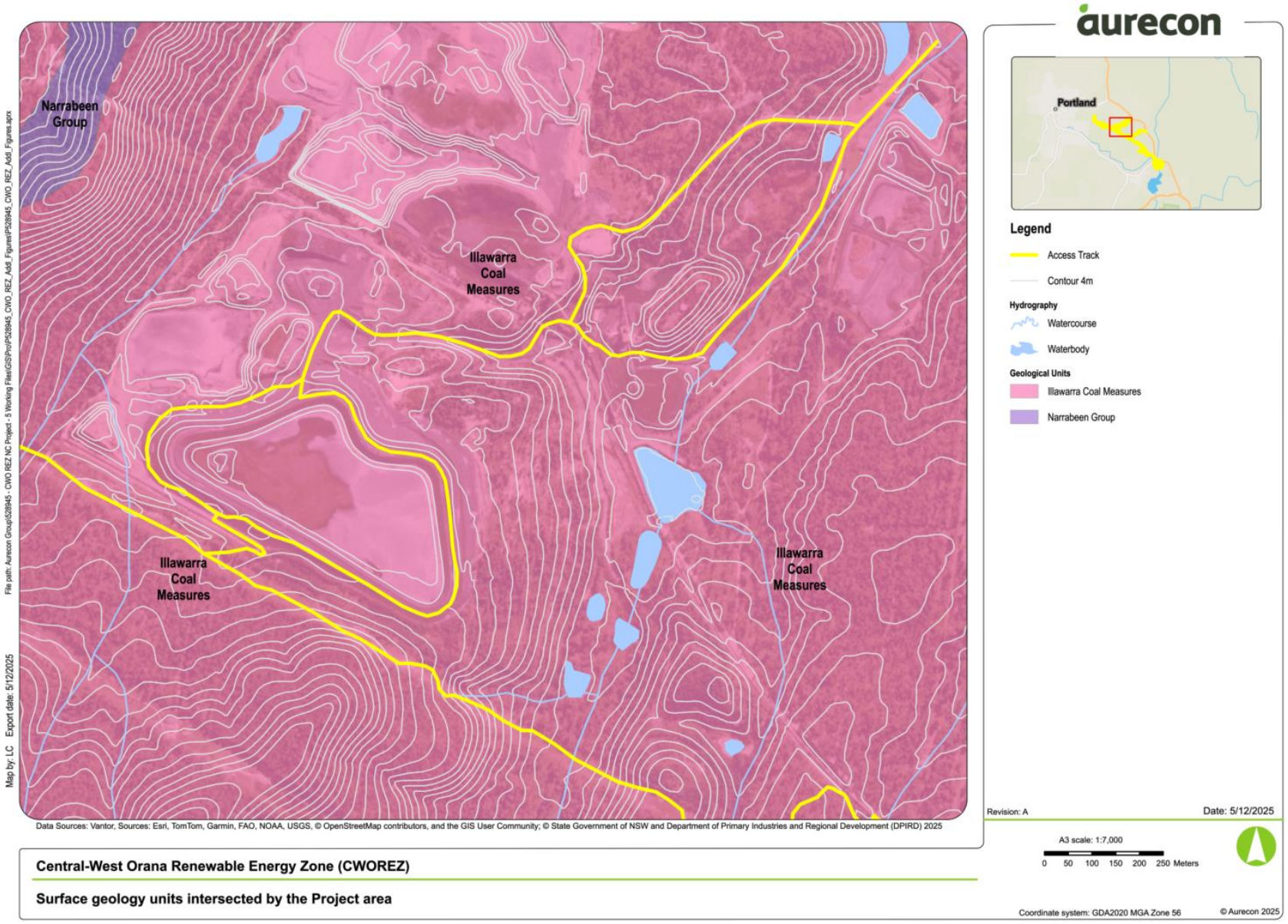


Figure 8c: Surface geology units intersected by the Project area – Regional detail map 3

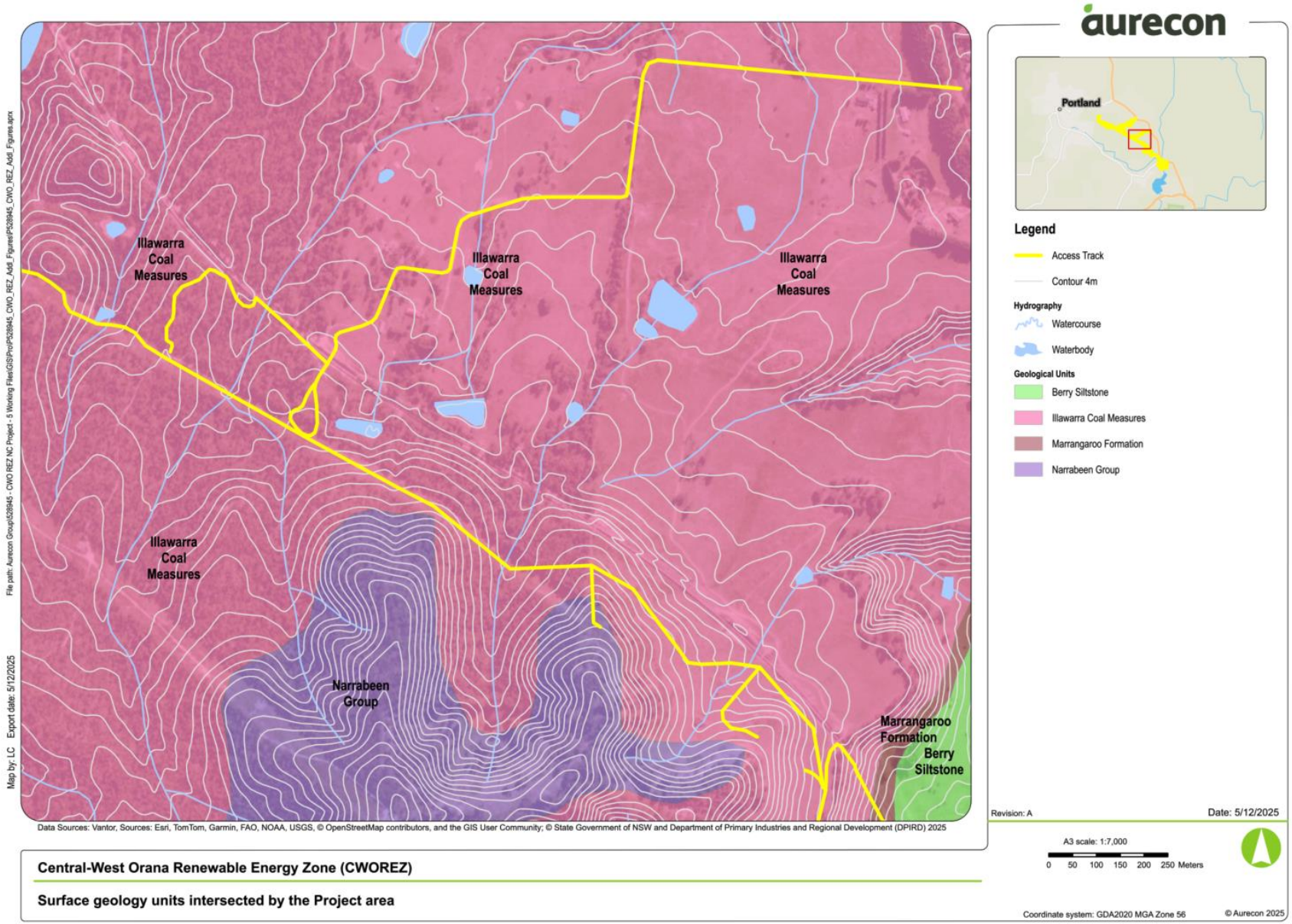


Figure 8d: Surface geology units intersected by the Project area – Regional detail map 4

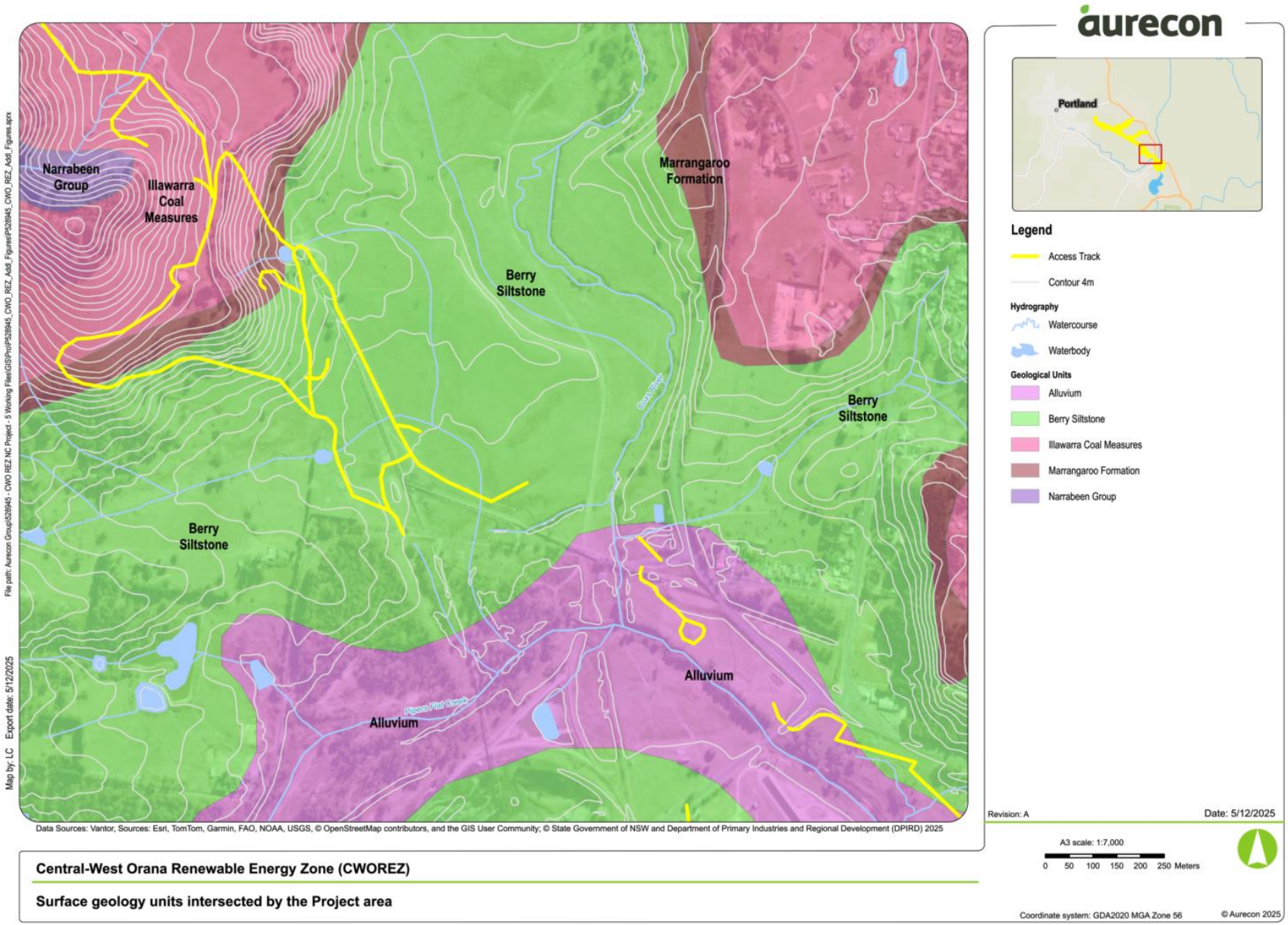


Figure 8e: Surface geology units intersected by the Project area – Regional detail map 5

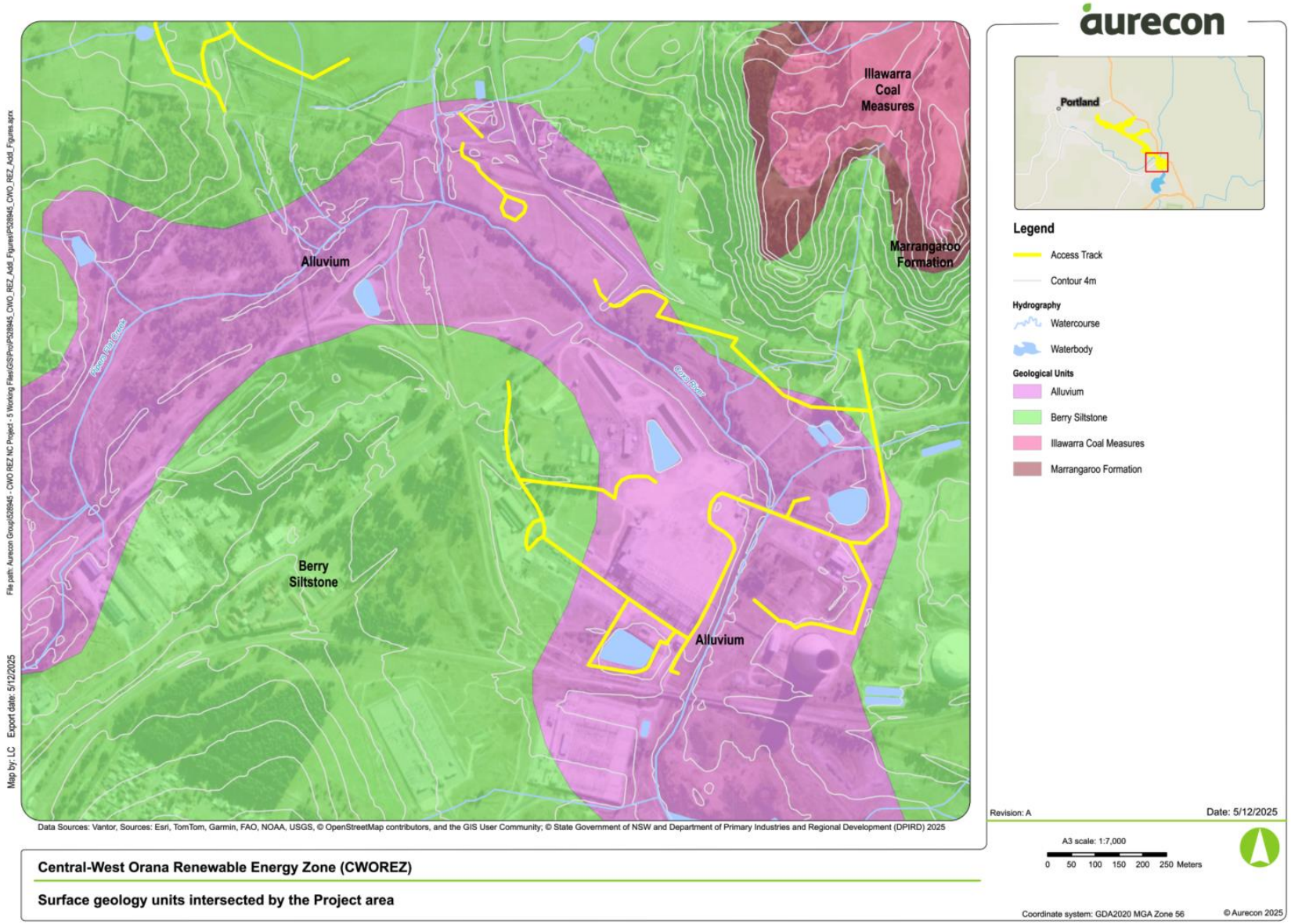


Figure 9: Soil landscape units intersected by the Project area - Overview

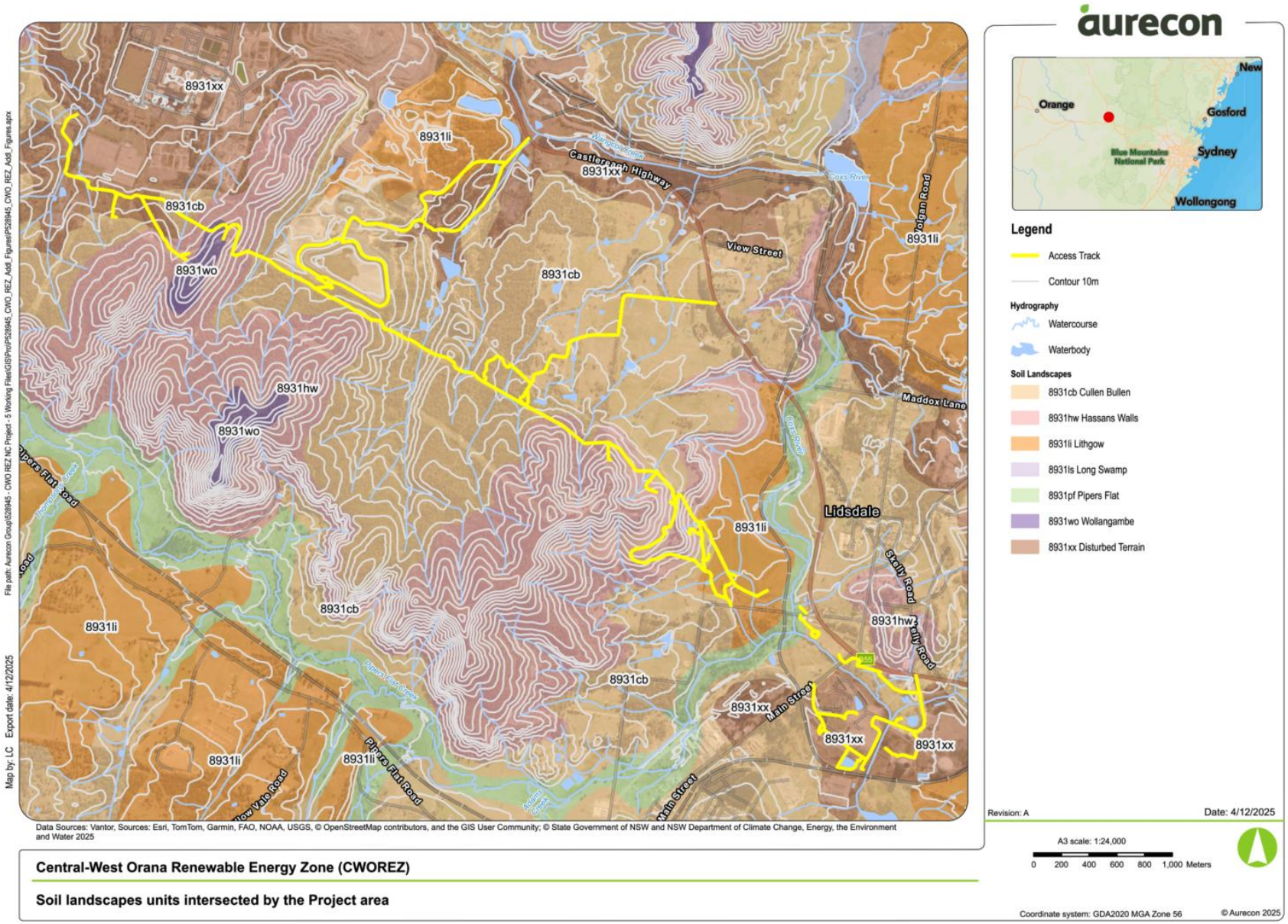


Figure 9a: Soil landscape units intersected by the Project area – Regional detail map 1

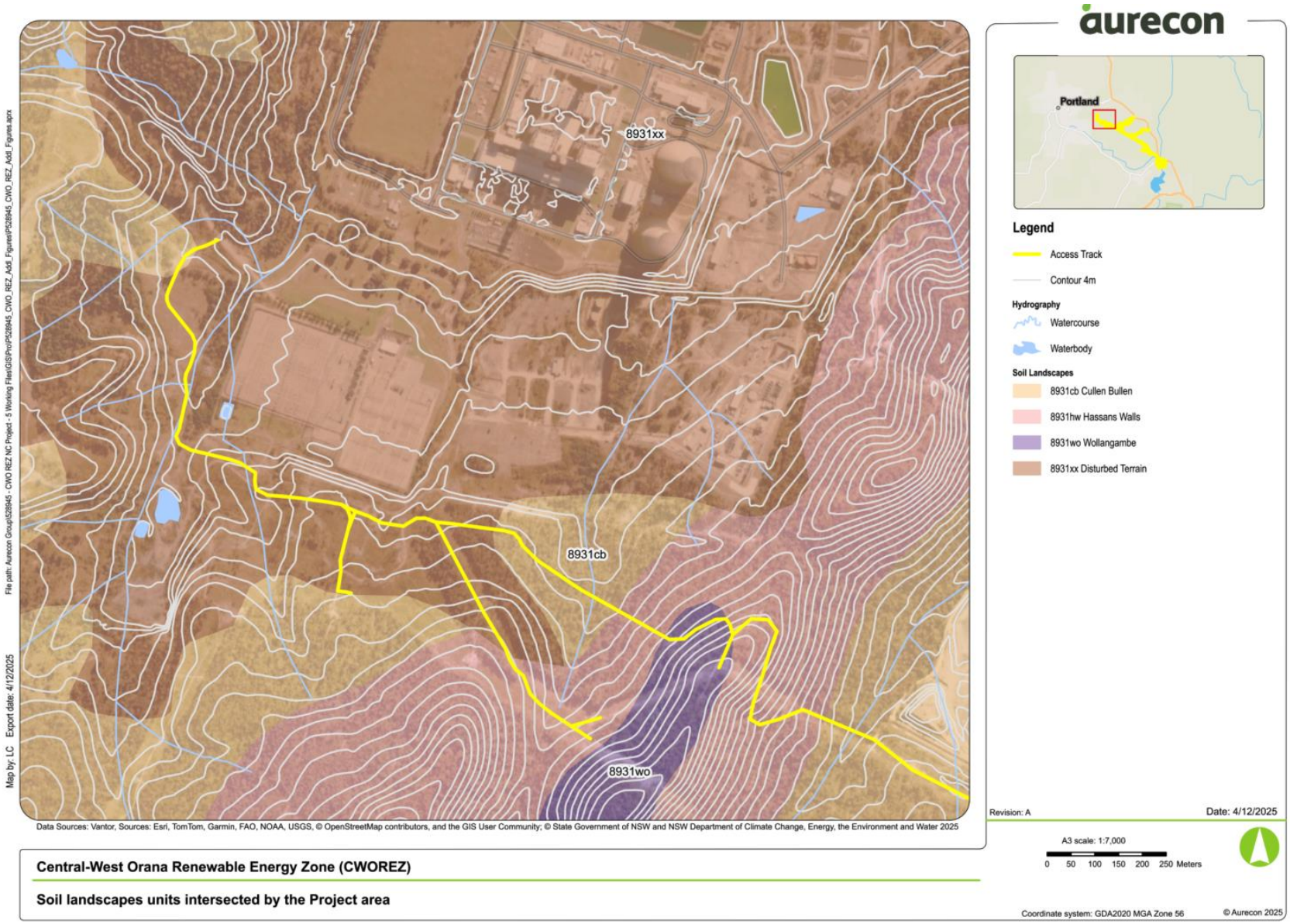


Figure 9b: Soil landscape units intersected by the Project area – Regional detail map 2

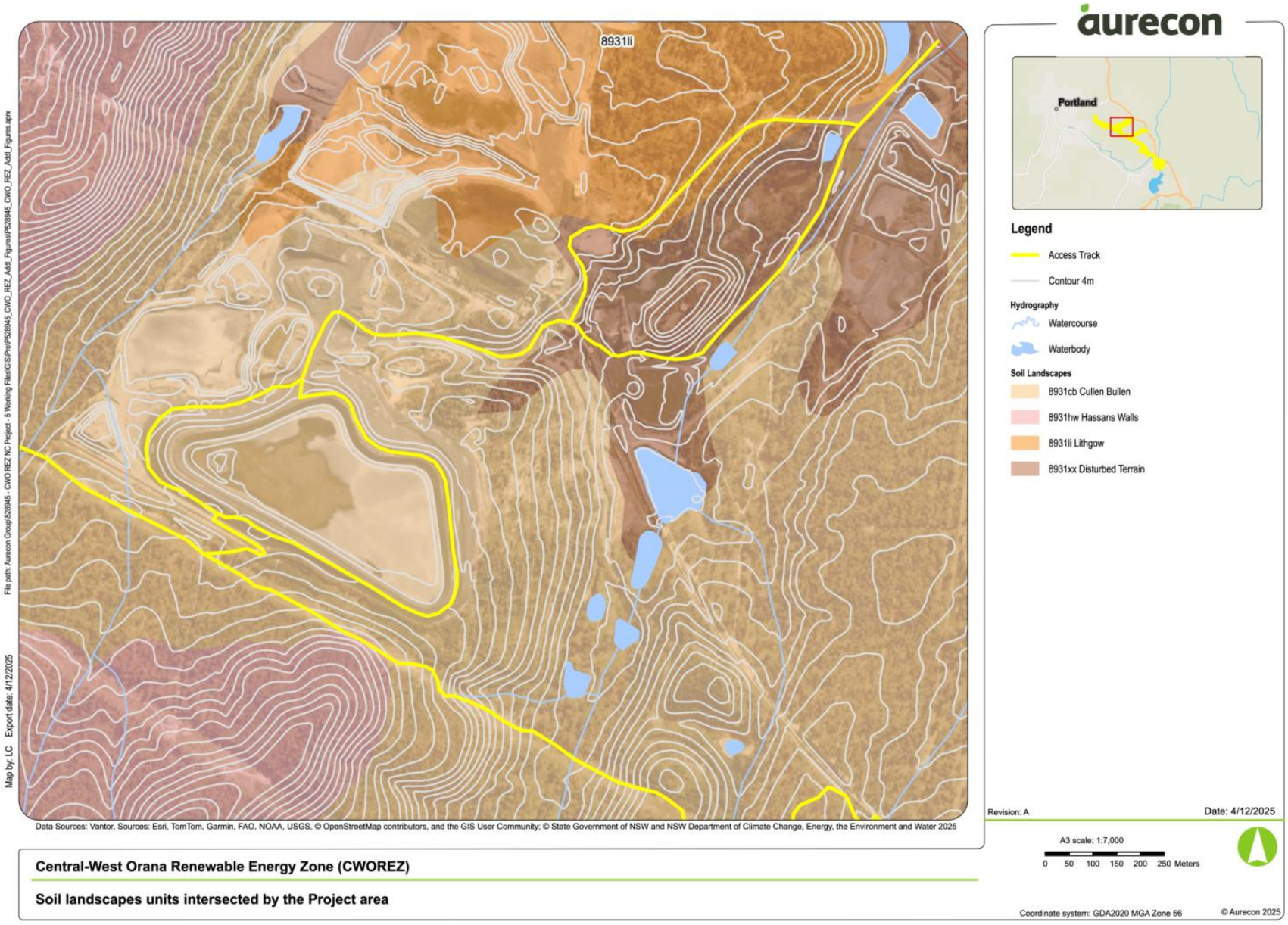


Figure 9c: Soil landscape units intersected by the Project area – Regional detail map 3

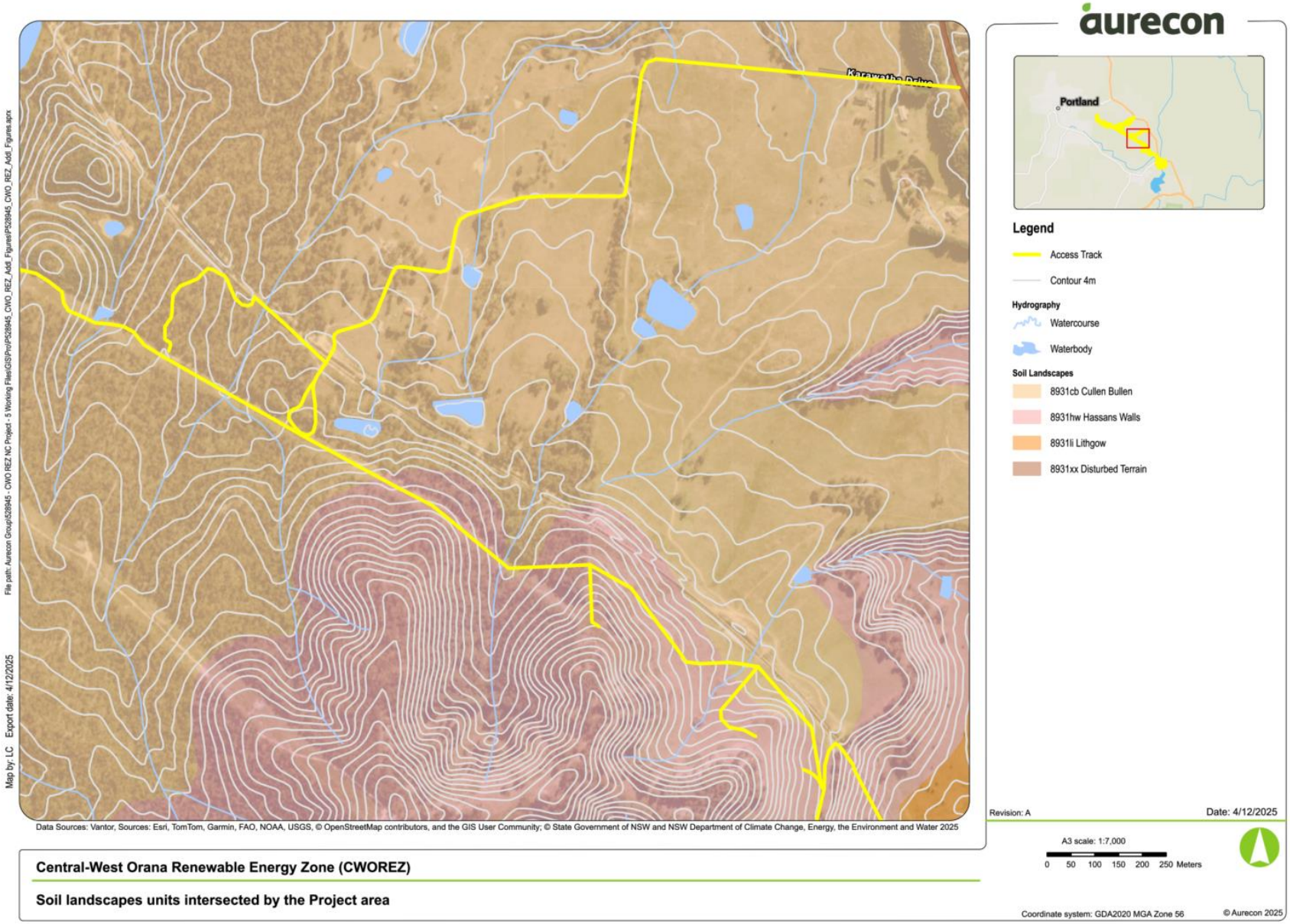


Figure 9d: Soil landscape units intersected by the Project area – Regional detail map 4

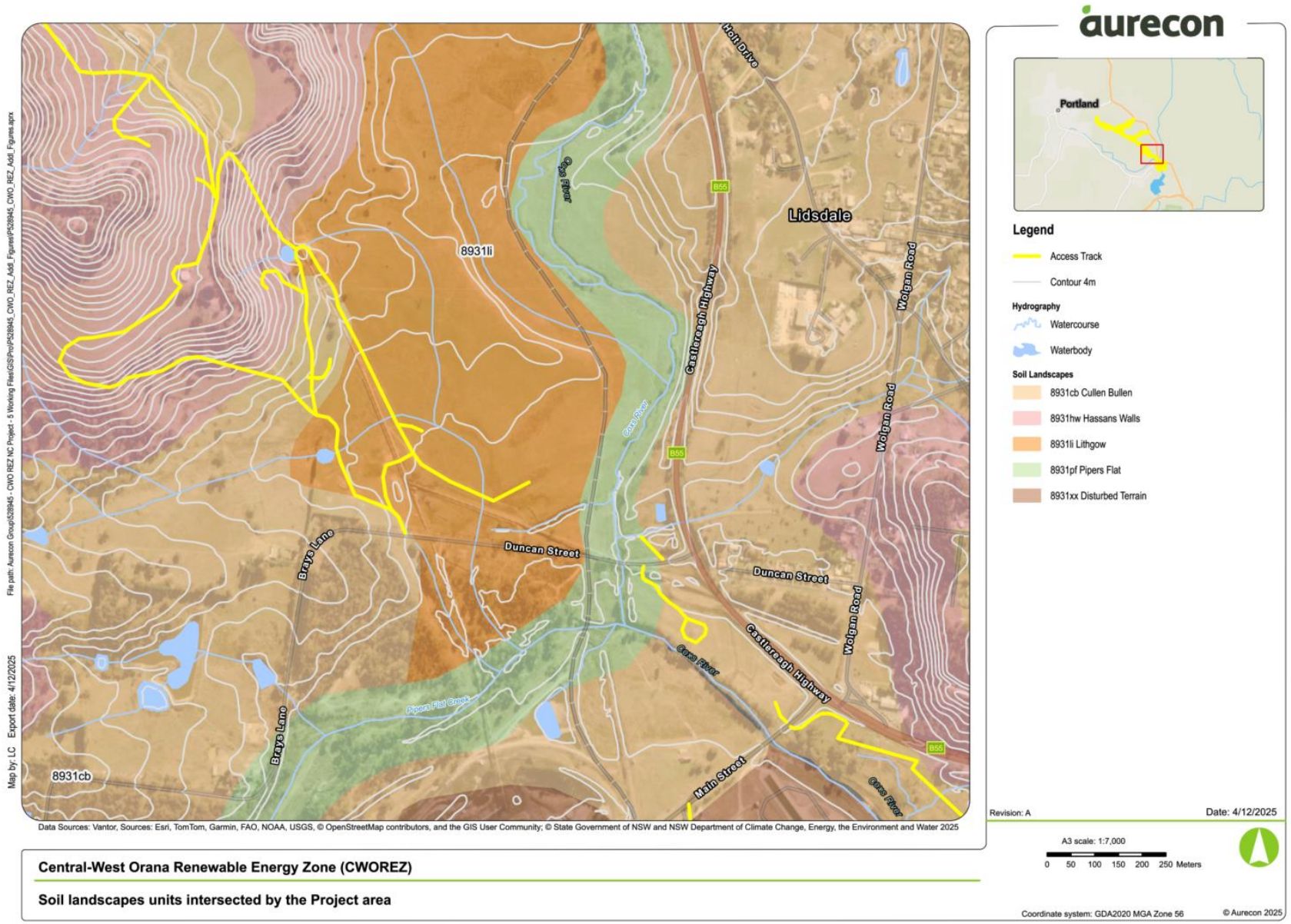
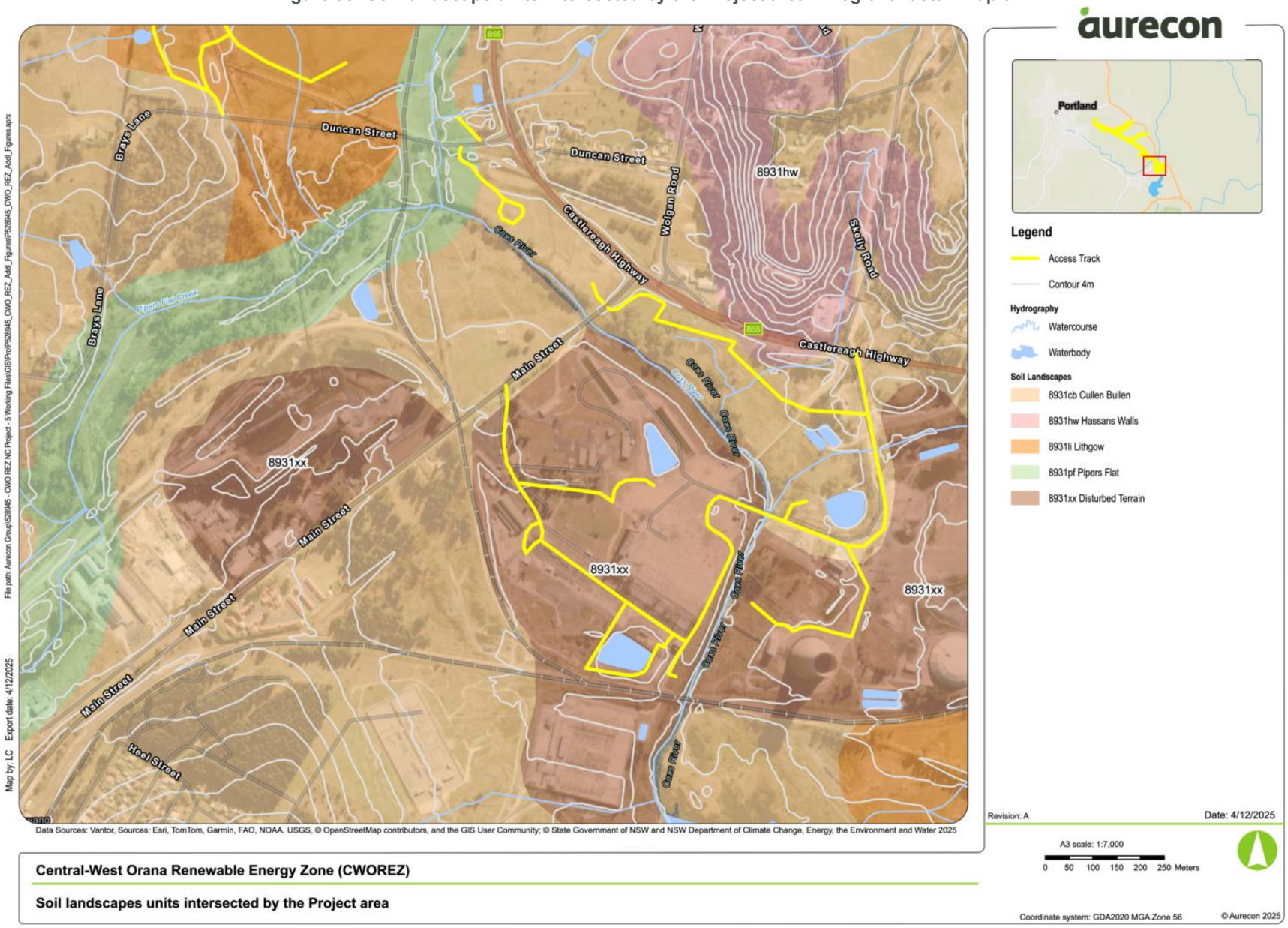


Figure 9e: Soil landscape units intersected by the Project area – Regional detail map 5



6.4.1 Acid sulfate soils

Acid sulfate soil (ASS) is commonly defined as naturally occurring sediments and soils containing iron sulfides. The exposure of these soils to oxygen, following drainage or excavation works, oxidises the iron sulfides and generates sulfuric acid. The sulfuric acid can be readily released into the environment, with potential adverse effects on the natural and built environments, including corrosion of infrastructure, fish kills, water pollution and acid rain. The majority of ASSs are formed when available sulfate (which occurs widely in seawater, marine sediment, or saturated decaying organic material) reacts with dissolved iron and iron minerals forming iron sulfide minerals, the most common being pyrite. This generally limits their occurrence to deeper marine sediments and low-lying sections of coastal floodplains, rivers, and creeks where surface elevations are less than about reduced level (RL) 5 m AHD.

The potential for ASS at the Site was investigated by Douglas Partners (2025b). This investigation entailed the following:

- Drilling of 12 boreholes to depths ranging between 2.45 m bgl and 4.2 m bgl at tower locations that required an ASS assessment
- Collection of soil samples at approximately 0.5 m intervals
- Excavation of 16 shallow (≤ 0.4 m depth) test pits using hand tools, with sampling carried out at 0.05 m, 0.1 m, 0.2 m., and 0.3 m depth
- Submission of soil samples to a National Association of Testing Authorities (NATA) accredited laboratory for screen (testing) of pH_F and pH_{FOX}
- Testing of 88 samples for chromium reducible sulfur and comparison to the action criteria, as defined in **Table 12**.

Table 12 - Overview of action criteria used in analysis by (Douglas Partners, 2025b)

Assessment criteria an associated test	Units	Threshold (<1000 tonnes)	Threshold (>1000 tonnes)
Screening test assessment criteria pH_F and pH_{Fox}	pH_F	<4	
	pH_{Fox}	>3	
	ΔpH_F	>1	
Action criteria: S_{cr} net acidity / sulphur trail (%) <1000 tonnes Sands to loamy sands	$\%S_{Oxidisable}$	≥0.03	≥0.03
Action criteria: S_{cr} net acidity / sulphur trail (%) <1000 tonnes Clayey sand to light clays	$\%S_{Oxidisable}$	≥0.06	≥0.03
Action criteria: S_{cr} net acidity / sulphur trail (%) <1000 tonnes Light, medium to heavy clays	$\%S_{Oxidisable}$	≥0.10	≥0.03

For tower pads, ASS results from field testing presented as part of the site-specific ASSMP are summarised as follows:

- Towers 1C, 3C and 10D did not exceed action criteria and exhibit conditions where reduced inorganic sulfur (RIS) is absent or acid potential is sufficiently low; therefore, no ASS treatment is required at these locations.
- Towers 2C, 4C, 5C, 6C, 7C, 8C, 9D, 11D and 12D exceeded the nominated ASS action criteria and therefore will require treatment and management per the ASSMP
- Overall, the results confirm the presence of RIS and ASS across multiple tower pad locations, within both fill materials and natural alluvial soils.

For access tracks, where shallow excavation test pitting was undertaken within the upper 0.3 m, majority of testing indicated net acidity concentrations below the action criteria and hence management is generally not required. The following exceptions to this are listed as follows:

- Pit 111 (Track 9/10): clayey sand at 0.2 m bgl marginally exceeded the action criteria requiring management under an ASSMP if disturbed

- Pit 104 (Track 4): marginal result (on the threshold limit of the action criteria), however, given the surrounding results from Pit 105 and 106 remaining under the action criteria it is considered this material would not require treatment/management.

In summary, access Track 9/10 and nine tower pads including associated infrastructure require ASS treatment, and these locations shall be managed in accordance with site-specific ASSMP (Douglas Partners, 2025b). General ASS management controls for unexpected ASS finds are provided in Appendix C; all other controls are considered in the site specific ASSMP.

6.4.2 Dispersive soils

Dispersive soils are chemically unstable soils that typically comprise a sand-dominated topsoil layer and a clay-dominated subsoil layer. The subsoil clay aggregates break down into fine particles when exposed to water due to the high proportion of sodium ions (Na^+) in the soil. This mechanism reduces the structural integrity of the subsoil and can lead to soil erosion where soil particles are displaced from the soil profile in surface runoff, especially during high intensity rainfall events.

The Emerson aggregate test (EAT) can be used as a general guide to the dispersive characteristics of a soil where an Emerson 'Class 1' is highly dispersive and soils with an Emerson 'Class 6' or higher are almost certainly non-dispersive. As part of the geotechnical investigation completed by Douglas Partners (2025a), EAT testing was scheduled for 16 samples across 15 locations and these results are summarised in **Table 13** and presented in Figure 10.

Table 13 - Overview of EAT results (Douglas Partners, 2025ab)

Sample ID	Depth (m bgl)	Emerson class	Rating (Dispersibility)
4C	0.3	8	Negligible
4C	0.7	3	Slight
5C	0.4	3	Slight
6C	0.5	6	Negligible
7C	1	6	Negligible
8C	0.5	4	Moderate
10D	0.8	4	Moderate
11D	0.8	6	Negligible
12D	0.5	4	Moderate
13A	0.4	2	Very High
17D	0.7	5	Slight
18D	0.8	4	Moderate
20D	0.8	5	Slight
26D	0.5	5	Slight
28D	0.6	8	Negligible
33A	0.7	3	Slight

The EAT test results indicated soils ranged from non-dispersive (Emerson classes 4-8) to highly dispersive (Emerson class 2). As seen in Figure 10, these results were also presented with the annual bare soil erosion spatial mapping (DCCEEW, 2024). This mapping layer indicated soils situated on steep sloped topography (toward the western portion of the Project area) exhibited higher risk of bare soil erosion than soils situated at lower slope gradients (toward the eastern portion of the Project area).

Additionally, the soil landscape 'Lithgow' is associated with Sodosols, which are the soil classification denoted to texture contrast soils with sodic and dispersive characteristics. This is consistent with the presence of highly dispersive Emerson class results. It should be noted that instances of erosion, including sheet and gully erosion, were associated with all soil landscapes within the Project area.

Figure 10: Emerson aggregate testing and bare soil erosion within the Project area - Overview

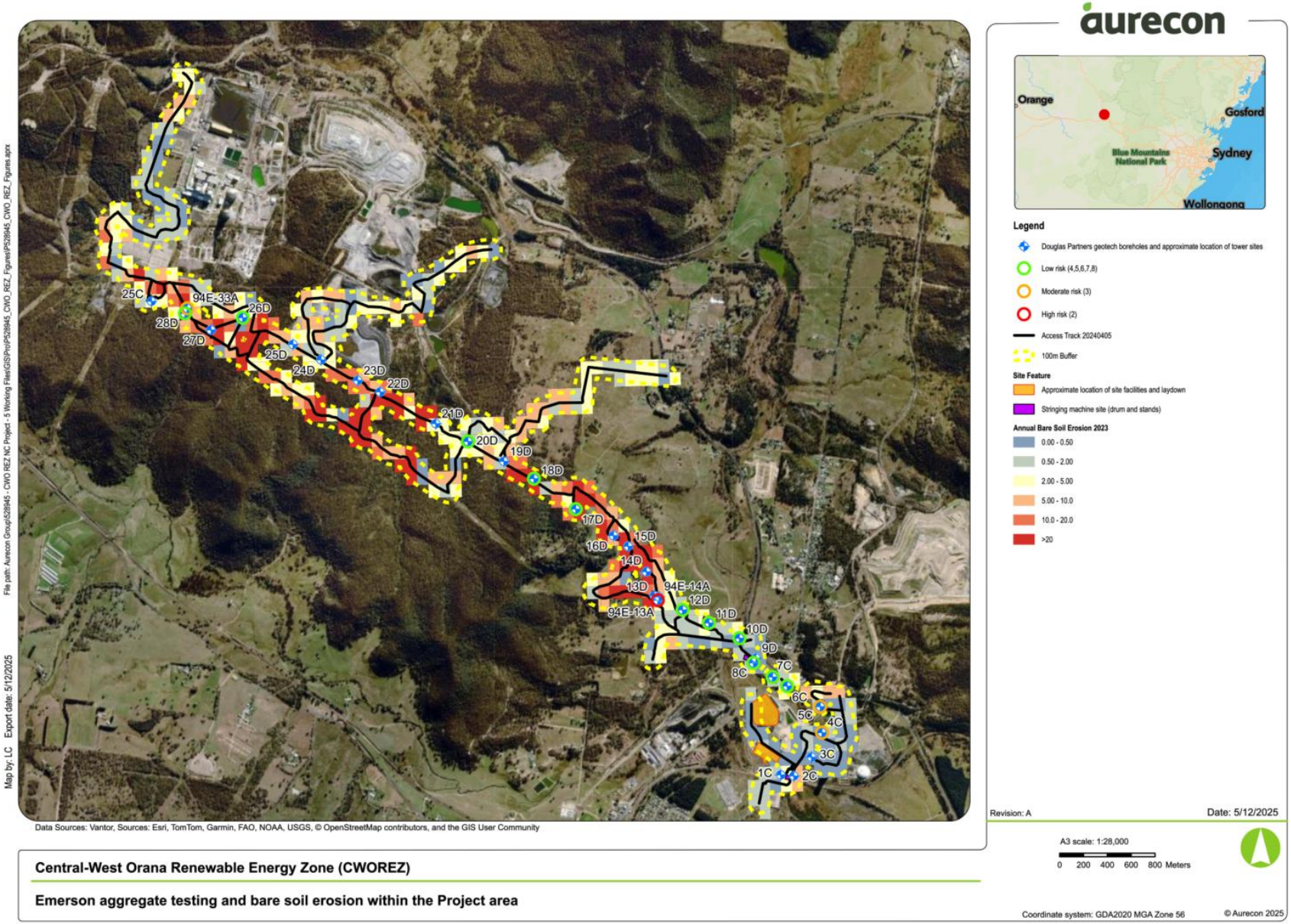


Figure 10a: Emerson aggregate testing and bare soil erosion within the Project area – Regional detail map 1

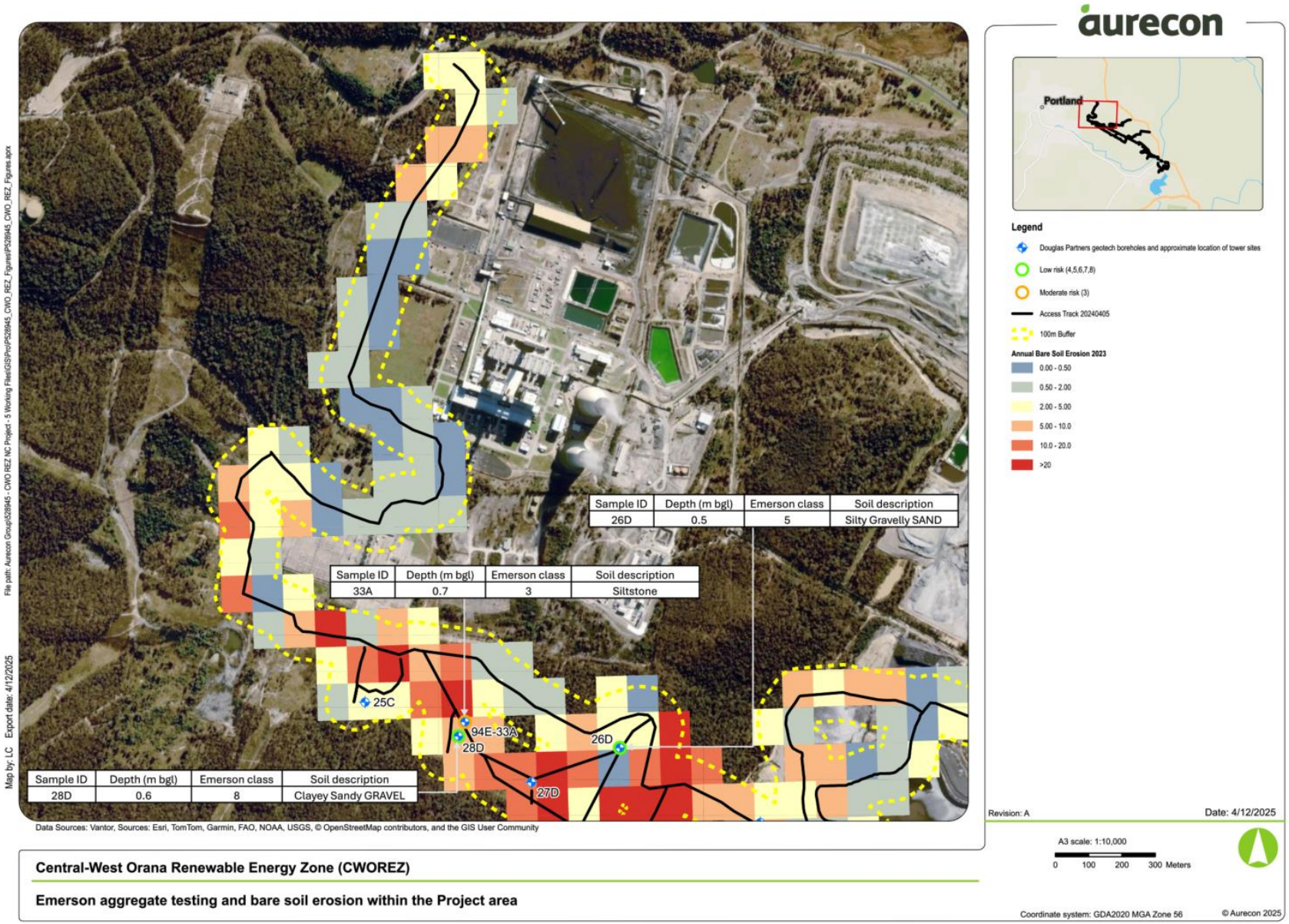


Figure 10b: Emerson aggregate testing and bare soil erosion within the Project area – Regional detail map 2

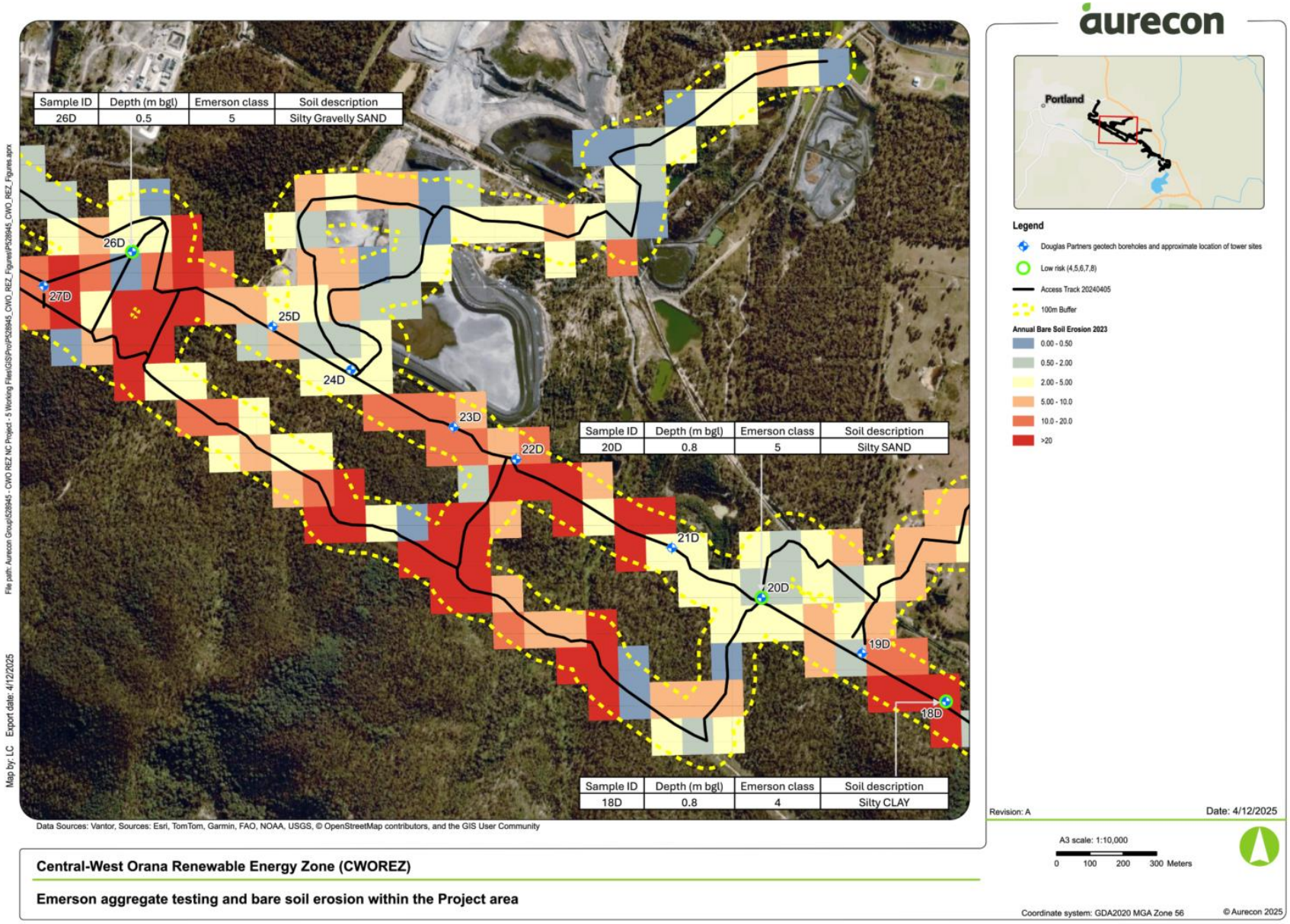


Figure 10c: Emerson aggregate testing and bare soil erosion within the Project area – Regional detail map 3

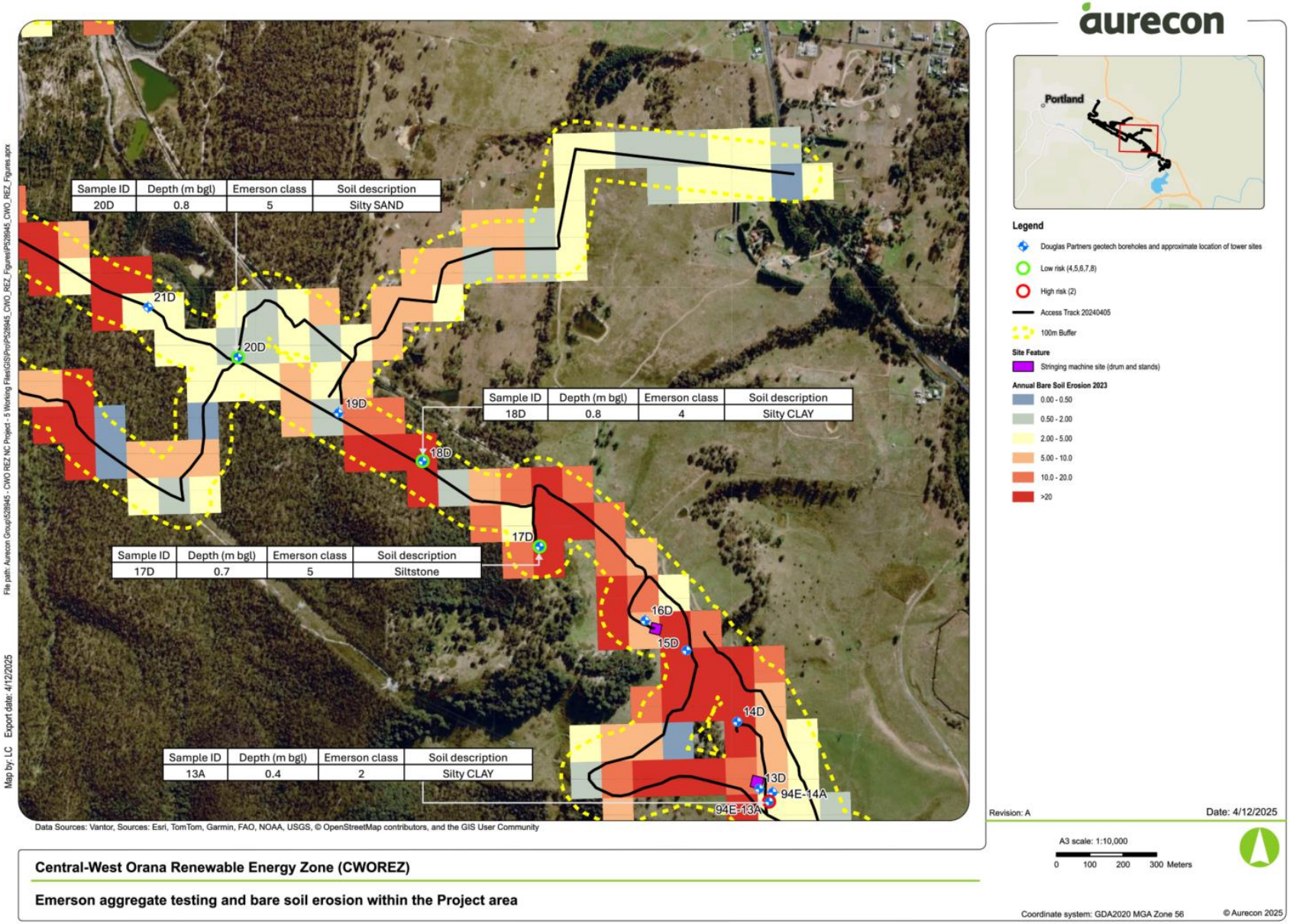
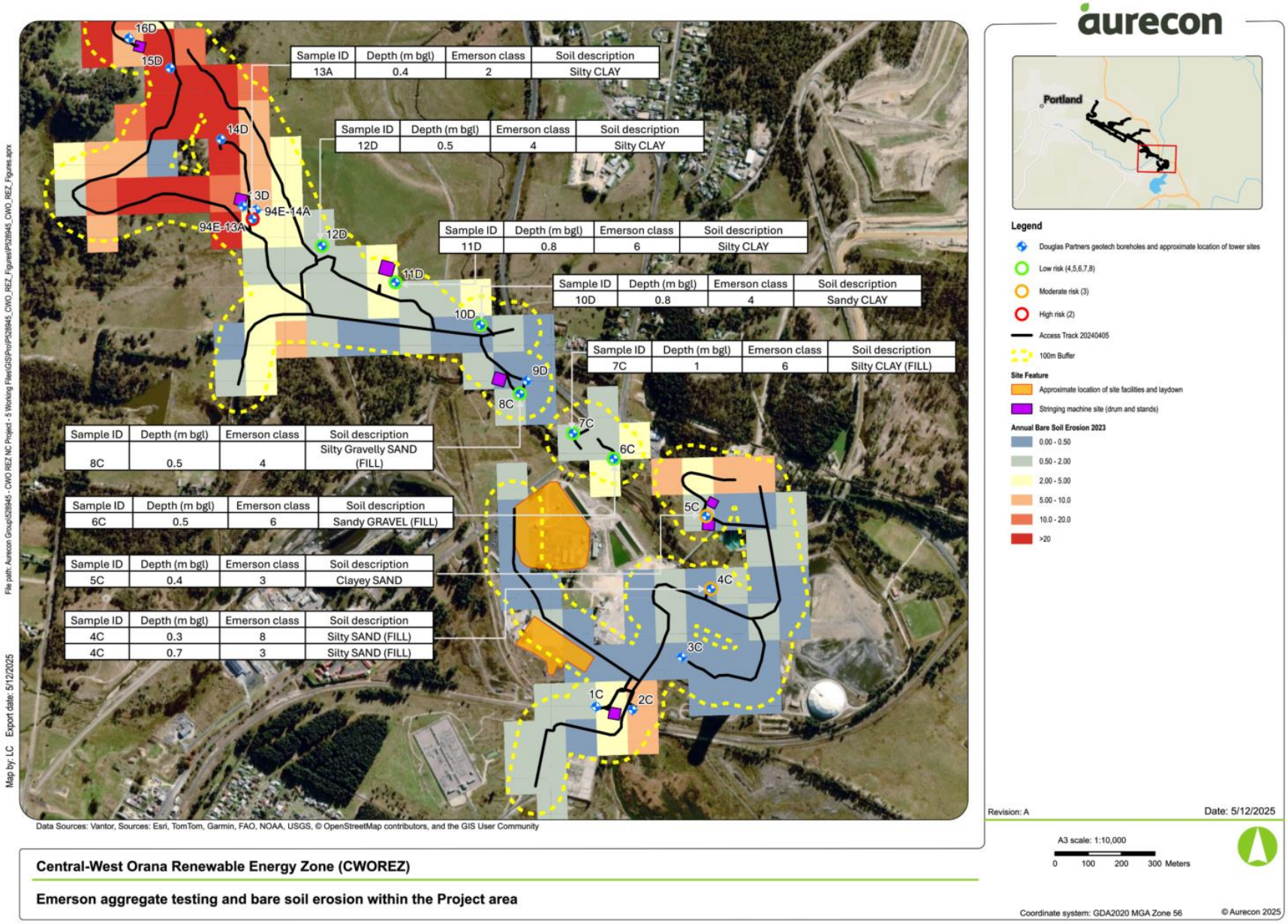


Figure 10d: Emerson aggregate testing and bare soil erosion within the Project area – Regional detail map 4



6.4.3 Naturally occurring asbestos

There is no recorded naturally occurring asbestos in the Project footprint based on the EIS and publicly available mapping (SEED, 2025).

6.4.4 Mine subsidence

The alignment traverses an area with a long history of coal mining activity, particularly near the former Lamberts Gully open cut mine and the Centennial Springvale Coal Services facility. A geotechnical investigation by Douglas Partners (2025c) identified that towers 22D, 23D, 24D, and 25D are located near historical underground workings and may be susceptible to mine subsidence. The investigation confirmed that tower 22D is situated outside the underground workings, whereas towers 23D to 25D are highly likely to experience subsidence impacts and will require additional foundation design considerations to mitigate potential ground movement risks.

6.4.5 Contamination investigation at Former Wallerawang Power Station

In April 2026, a Baseline Contamination Report was prepared for Transgrid by ADE Consulting Group Pty Ltd (ADE). As part of the investigation, contamination sampling was conducted at nine proposed transmission towers (tower 1C to 8C and 9D) relating to the Project (ADE, 2026).

Approximately four sampling locations per transmission tower were conducted using a hand auger to a target depth of 0.5 m bgl. Soil samples were collected in glass jars (for non- per-and polyfluoroalkyl substances (PFAS) analysis) and PFAS-free plastic jars (for PFAS analysis) and placed in a chilled esky for storage. Dedicated disposable materials (e.g. nitrile gloves) were used and changed between each sample to prevent cross contamination of soil material.

A total of 61 samples were submitted for laboratory analysis across the nine tower locations. Results indicated no analytes exceeded the adopted ecological and human health screening criteria. Minor detections of metals were reported at all tower locations above the laboratory limit of reporting (LOR), however, as these were below the adopted screening criteria and the power station is a highly industrialised site these were deemed representative of background conditions. The was no observed asbestos containing material at any of the sample locations. Concentrations of polycyclic aromatic hydrocarbons (PAHs), total recoverable hydrocarbons (TRH), and PFAS were not detected in the majority of tower locations with an exception to towers 4C and 5C. Analytical results for all towers aside from 4C and 5C indicated “low” initial contamination risk, with no further measures outside of this SWMP document required.

A summary of detected concentrations for these towers is provided in **Table 14** below.

Table 14 - Detected concentrations of PAH, TRH, PFAS for towers 4C and 5C

Analyte group	Analyte	No. samples collected	No. samples with detections	Minimum detected concentration	Maximum detected concentration
Tower 4C					
PAH	PAHs (sum of total):	4	1	-	4.38 mg/kg
TRH	C10-C16 Fraction (F2)	4	1	-	87 mg/kg
	C16-C34 Fraction (F3)	4	2	177 mg/kg	599 mg/kg
PFAS	PFHxS	4	1	-	0.00085 mg/kg
	PFOS	4	1	-	0.00111 mg/kg
	PFOA	4	3	0.00058 mg/kg	0.00313 mg/kg
	Sum of PFAS	4	4	0.00534 mg/kg	0.08858 mg/kg

Analyte group	Analyte	No. samples collected	No. samples with detections	Minimum detected concentration	Maximum detected concentration
Tower 5C					
PAH	PAHs (sum of total):	4	3	1.26 mg/kg	1.59 mg/kg
PFAS	Sum of PFAS (PFPeA)	4	1	-	0.00052 mg/kg

In June 2026, Aurecon conducted a soil leachate investigation at towers 4C and 5C. As part of this investigation, seven soil samples across both sites (four samples at 4C and three samples at 5C) using a hand auger to a target depth of 0.5 m bgl were analysed for total concentrations and Australian Standard Leaching Procedure (ASLP) leachable concentrations (neutral leach) of Contaminants of Potential Concern (COPCs).

The investigated COPCs included: TRH, benzene, toluene, ethylbenzene, xylene, naphthalene (BTEXN), PAH, metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) and PFAS. Samples representing surface and subsurface conditions were collected using a hand auger to a depth of 0.5 m bgl (Aurecon, 2026c). The leachate results were found to be below the adopted human health and ecological screening levels for all COPCs except for copper, lead and zinc at tower pad 4C, and copper and zinc at tower pad 5C (Aurecon, 2026b). There was one marginal PFOA exceedance of the adopted ecological guideline at tower 4C; however, this was considered to not represent a risk to surrounding ecological receptors (Aurecon, 2026b).

Overall, the results indicate a potential pathway for metals to migrate from soil to the underlying groundwater table via infiltration and support the “moderate” contamination risk rating for towers 4C and 5C. As such, these towers require further management measures as detailed per Section 6.4.6 below.

6.4.6 Areas of environmental concern

Areas of environmental concern (AECs) were identified in the EIS with consideration of the history at the site, current and former land uses, site inspections, and expected ground conditions. This process identified 14 AECs with 11 of these intersecting the Project footprint. A summary of all AECs identified in the EIS are included in **Table 15**.

Although several AECs were mapped across the site and intersect the works, the level of associated potential contamination varies within each AEC. It was found to be unlikely for contamination to be widespread across the site, rather risks of soil and groundwater contamination were localised to specific AECs.

Based on the findings from the Preliminary Site Investigation conducted by GHD, including review of desktop information, previous intrusive investigation and site inspection these AECs were assigned an initial contamination risk (assessment of risk before controls are implemented) from “low” to “high” based on the potential for complete source, pathway, receptor links.

Low initial risk was attributed to AEC’s that were found to likely contain no complete source-pathway-receptor links and/or were outside of the scope of works and were not expected to be interacted with or impacted by construction. Moderate initial risk was attributed to remaining AECs with likely source-pathway-receptor links located within the scope of Project works.

It should be noted that AEC 10 (Former Wallerawang substation) was originally assigned a “high” initial risk rating, however, this risk was reduced based on the outcomes of the previous intrusive investigations within this AEC. As per the summary of the Baseline Contamination Investigation report (ADE, 2026) in Section 6.4.5, the majority of tower locations were deemed “low” risk requiring no further management measures outside of this SWMP. The outcomes of this investigation indicated only two towers (4C and 5C) listed as “moderate” risk as requiring further management measures as outlined in Appendix E.

For AECs and tower locations with “low” initial risk, no further management (outside of the measures outlined in this SWMP) were deemed required. However, for AECs and tower locations with “moderate” initial risk

further specific contamination management as per mitigation measure SC1 of the EIS is required as detailed in Appendix E.

AECs that were identified by the GHD Preliminary Site Investigation (2025c), as being included in the scope of works and containing “moderate” initial contamination risk requiring further contamination management (see Appendix E) are outlined as follows:

- AEC02 (surficial rubbish along current easement)
- AEC03 (coal conveyor)
- AEC04 (presence of fill material along easement)
- AEC05 (Agricultural Land)
- AEC09 (Lamberts South Ash Repository)
- AEC 10 (Former Wallerawang substation)
- AEC13 (Farm dams at various locations close to the proposed transmission line)

To summarise:

- Certain imported material within the AECs in the Project footprint pose a contamination risk from both soil and groundwater based on the EIS study. An overview of the AECs at the sites is provided in Table 16 and presented in Figure 11.
- Where the initial risks of onsite contamination at AEC’s are determined to be low, the default position will be to adopt the general controls and mitigations recommended in this SWMP which excludes the requirements of Appendix E.
- Where the initial risks of onsite contamination are determined to be moderate for select AECs, additional management requirements to be considered are provided in Appendix E.

Table 15 - Areas of environmental concern within the Project area

AEC and name	Rationale for concern	Location in relation to project footprint
AEC 01[1] Mount Piper 330 kV substation, Mount Piper Power Station and associated infrastructure	Use as a substation and power station, with associated infrastructure e.g., water treatment plant, fuel storage, oily water containment system, transformers and insultation oils, storage and use of chemicals, fuels and oils. COPCs are hydrocarbons, pesticides, heavy metals, asbestos, PFAS, and nutrients and pathogens.	Within and outside
AEC 02 Anthropogenic material/surficial rubbish (25C, 28D, 27D, 26D, 25D, 24D, 22D, 21D, 19D, 18D and 17D)	Rubbish/anthropogenic materials observed along current easement in Gardens of Stone SCA and possibly located along other areas of the proposed transmission line. COPCs are hydrocarbons, pesticides, heavy metals, and asbestos.	Within
AEC 03 Coal conveyor from Wallerawang to Mt Piper	Potential presence of fill material and coal residues associated with its construction (batters) and operation i.e. leaks of oils associated with maintenance activities. This AEC includes the area below the coal conveyer (as depicted in Figure 11 as well as potentially beside the coal conveyor, to be determined based on a visual assessment of the ground for any evidence of coal, oil, or similar materials. COPCs are hydrocarbons, pesticides, heavy metals, and asbestos	Within and outside

AEC and name	Rationale for concern	Location in relation to project footprint
AEC 04 Presence of fill material in project footprint (unknown extent, quality and contents) (25C, 28D, 27D, 26D, 25D, 24D, 22D, 21D, 19D, 18D, 17D, 15D, 16D, 14D, 13D, 12D, 11D, 10D, 9D, 8C, 7C, 6C, 5C, 4C, 3C, 1C and 2C)	Potential for fill material of unknown quality and contents along and within proximity to the proposed transmission line. COPCs are hydrocarbons, pesticides, heavy metals, and asbestos.	Within and outside
AEC 05 Agricultural land use, current and historical (15D, 16D, 14D, 13D, 12D, 11D and 10D)	Use of pesticides, herbicides and fertilisers, land clearing activities (earthworks). COPCs are pesticides, heavy metals, asbestos, and nutrients and pathogens.	Within and outside
AEC 06 Water storage tank, chemical storage	Storage of chemical products at water storage tank (i.e. sodium hypochlorite). COPCs are water treatment chemicals and heavy metals.	Within
AEC 07 Main Western Railway Line to the south of Wallerawang Power Station	Use as a railway line and associated activities such as fuel and oil leaks, pesticide and herbicide application, importation of fill material. COPCs are hydrocarbons, pesticides, heavy metals, and asbestos.	Within and outside
AEC 08 Former Ivanhoe Colliery and mining activities, Pipers Flat Road, Blackmans Flat	Activities associated with the Colliery and mining including former landfills (construction related), former chitter dam, backfilling of open cut mines, storage and use of chemicals, fuels and oils. COPCs are hydrocarbons, pesticides, heavy metals, asbestos, PFAS, nutrients and pathogens, natural gases, and landfill gases	Within and outside
AEC 09 Rejects Emplacement Area / Lamberts South Ash Repository (LSAR), Mount Piper	Use of this location to store ash from power station operation including brine, acidic seepages, windblown dust, heavy metals. COPCs are hydrocarbons, heavy metals, nutrients, and brine.	Outside
AEC 10 Former Wallerawang Power Station, Wallerawang (6C, 5C, 4C, 3C, 1C and 2C)	Water treatment plant, fuel storage, oily water containment system, transformers and insulation oils, drainage ponds/basins, infill of section of Coxs River (1980s). COPCs are hydrocarbons, pesticides, heavy metals, asbestos, and PFAS.	Within and outside
AEC 11[2] Wallerawang 330 kV substation	Use of the site as a substation and associated infrastructure including oily water containment system, transformers and insultation oils, and containment system. COPCs are hydrocarbons, pesticides, heavy metals, asbestos, and PFAS.	Within and outside
AEC 12 Kerosene Vale Ash Repository, 110 Skelly Road, Lidsdale	Contamination of surface water, seepage water and groundwater with metals, metalloids, acidic seepage/drainage, salinity, sulfate, ammonia, fluoride and asbestos associated with the ash deposits and other wastes. COPCs are hydrocarbons, pesticides, and heavy metals.	Outside
AEC 13 Farm dams and former farm dams (infilled, unknown location), located close to the proposed transmission line easement.	Contamination associated with the sediments and water quality in active dams, and infill material used for former dams. COPCs are pesticides, heavy metals, and nutrients and pathogens.	Within and outside
AEC 14 Service station at Castlereagh Highway, 50 m to the north	Storage and use of petroleum products (underground and above ground tanks). COPCs are hydrocarbons and heavy metals.	Outside

Table note:

1 Inside the Mt Piper Substation (AEC 01) does not fall under the works covered by this CEMP and is excluded from this document

2 Inside the Wallerawang 330 kV Substation (AEC 11) does not fall under the works covered by this CEMP and is excluded from this document

Of these AECs, those with complete source pathway receptor links require specific management measures (as presented in detail in Section 8.4 and Appendix E). It is noted that these risks and associated management measures are based on the desktop EIS study. It is considered that the potential for contamination of native in-situ soils within each of the AEC's is low.

Contamination concern is primarily associated with uncontrolled filling activities and imported fill (excluding ENM). Uncontrolled fill material likely consists of building debris, oil or other foreign materials that have been dumped in an uncontrolled manner. Controlled fill (including ENM) is likely to contain road base or quarried products that have been placed in accordance with Transgrid's management procedures, this material is not deemed a contamination concern as part of this Project.

Where uncontrolled fill imported material (excluding ENM) is observed, it is recommended to undertake detailed site investigations at these AECs. The results of these targeted investigations will then be used to update the risks and mitigation measures presented in this SWMP and overall CEMP.

Where the risks of onsite contamination at AEC's are determined to be low the default position will be to adopt the general controls and mitigations recommended in this SWMP.

Figure 11: Areas of environmental concern within the Project area - Overview

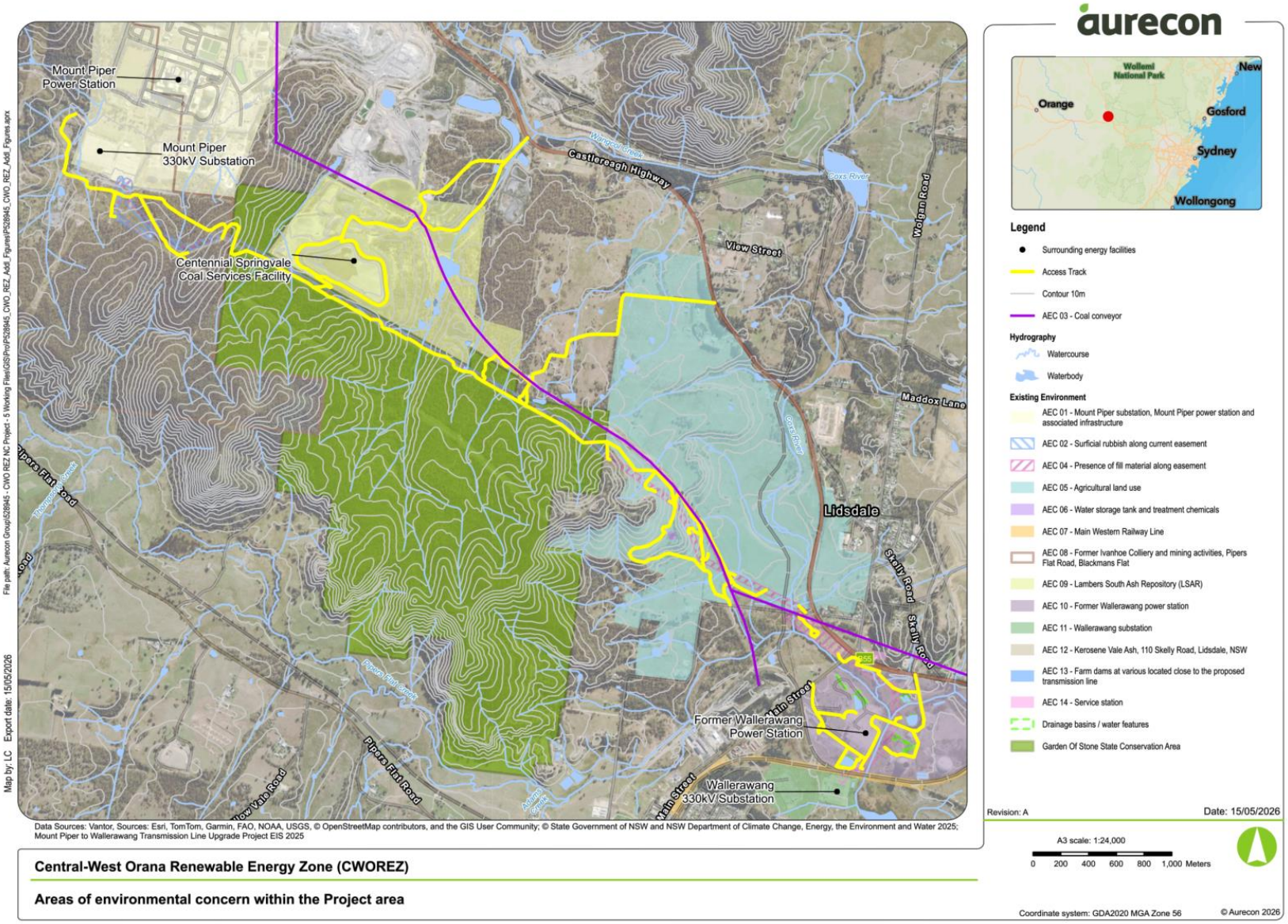


Figure 11a: Areas of environmental concern within the Project area – Regional detail map

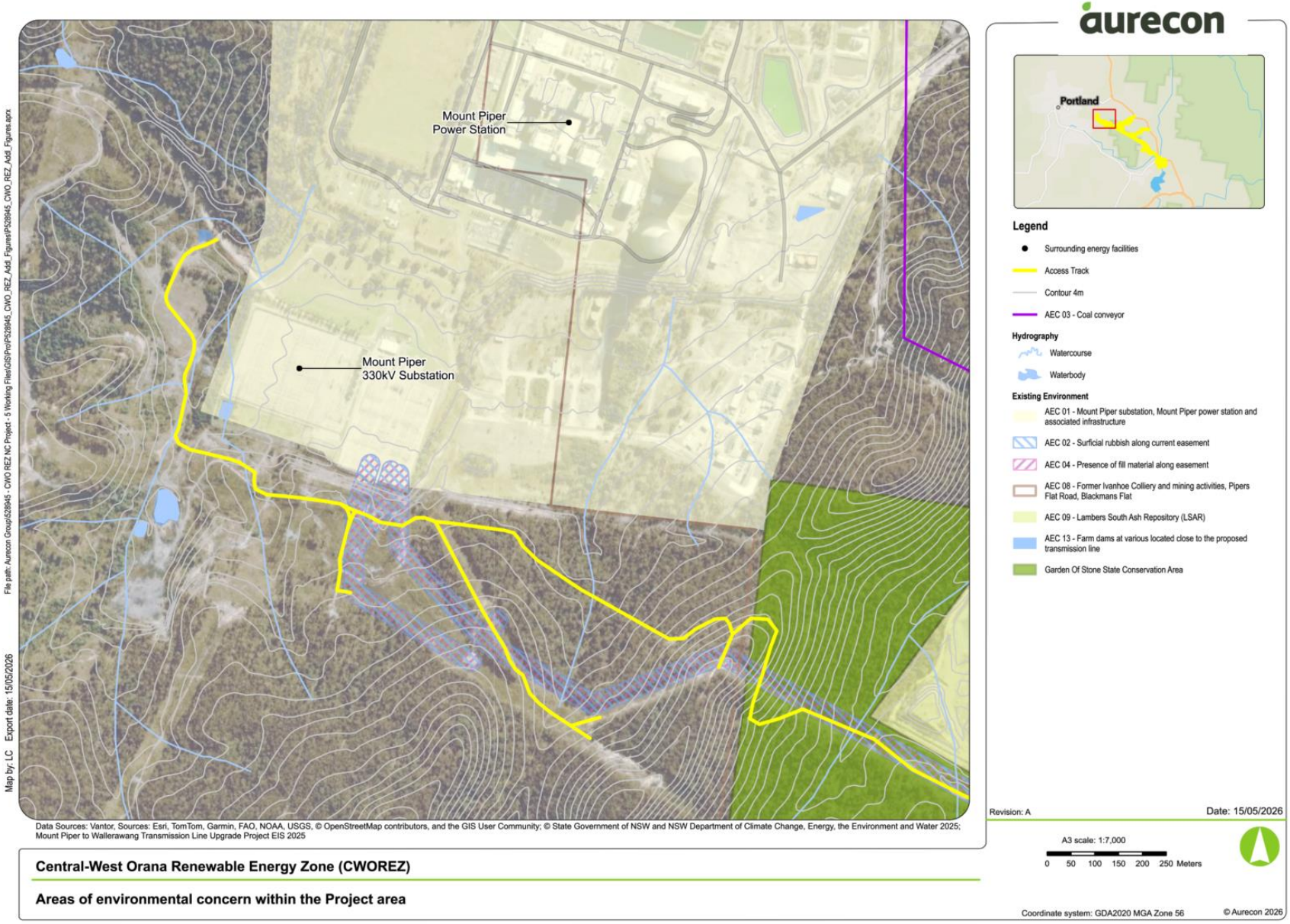


Figure 11b: Areas of environmental concern within the Project area – Regional detail map 2

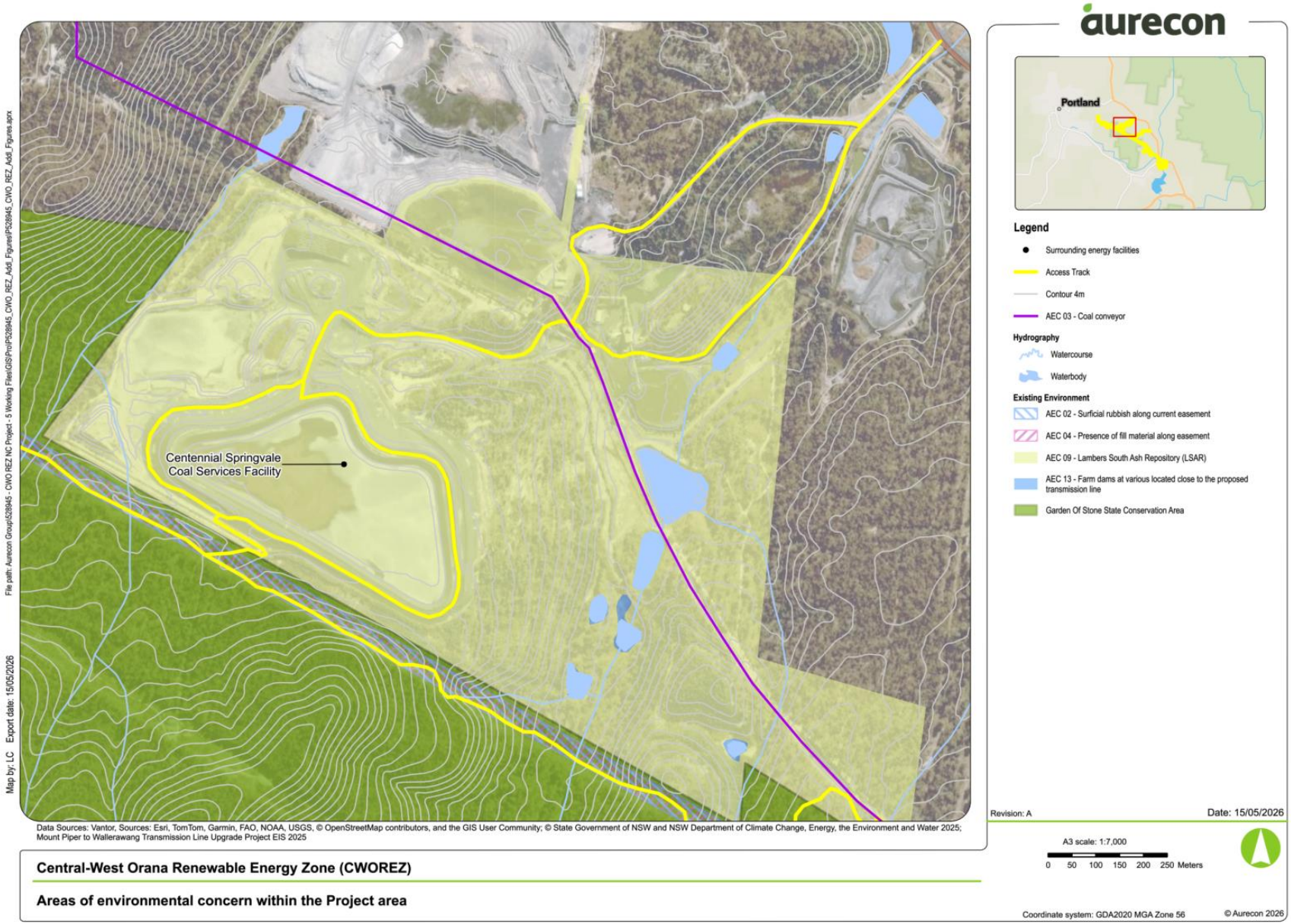


Figure 11c: Areas of environmental concern within the Project area – Regional detail map 3

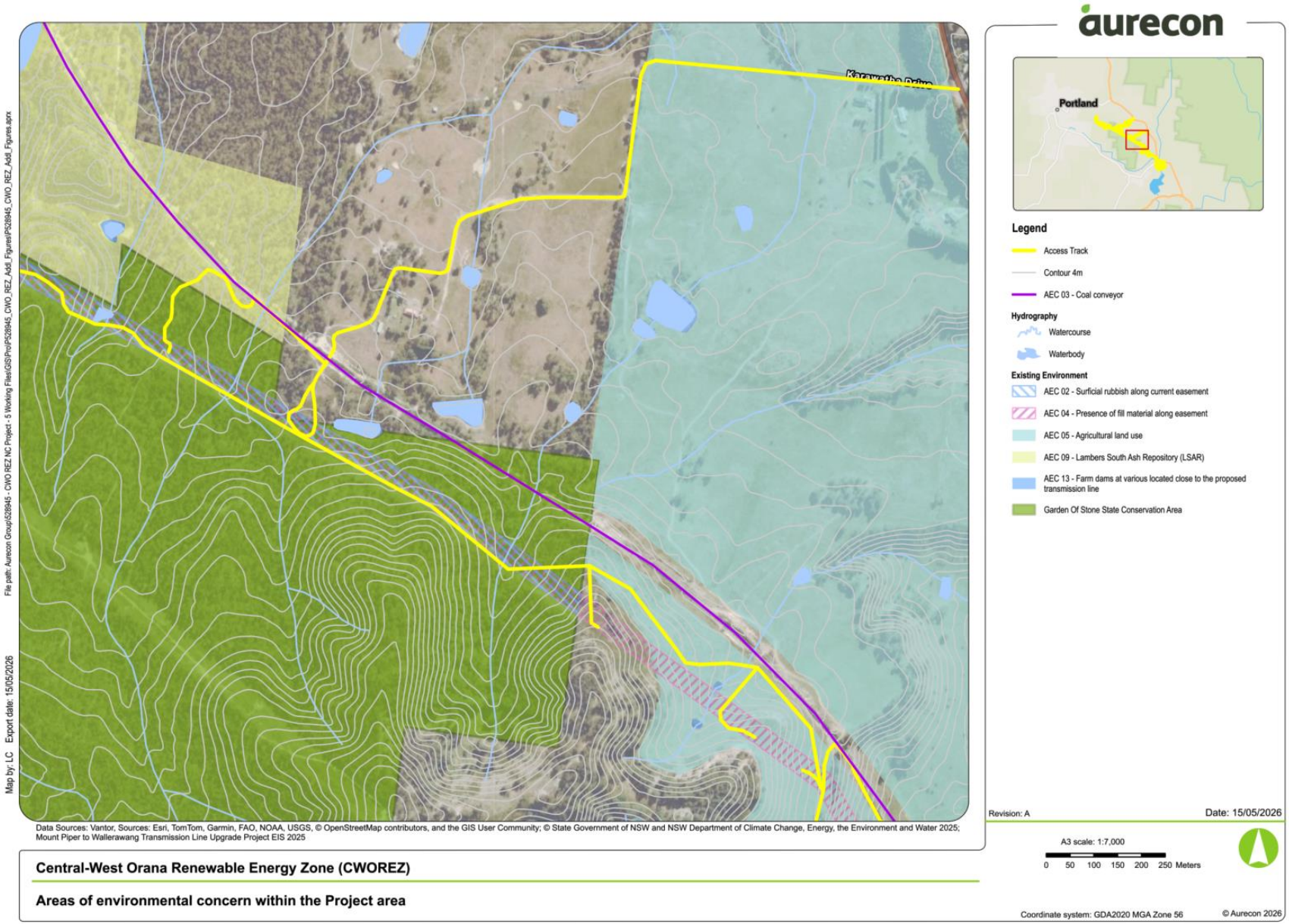


Figure 11d: Areas of environmental concern within the Project area – Regional detail map 4

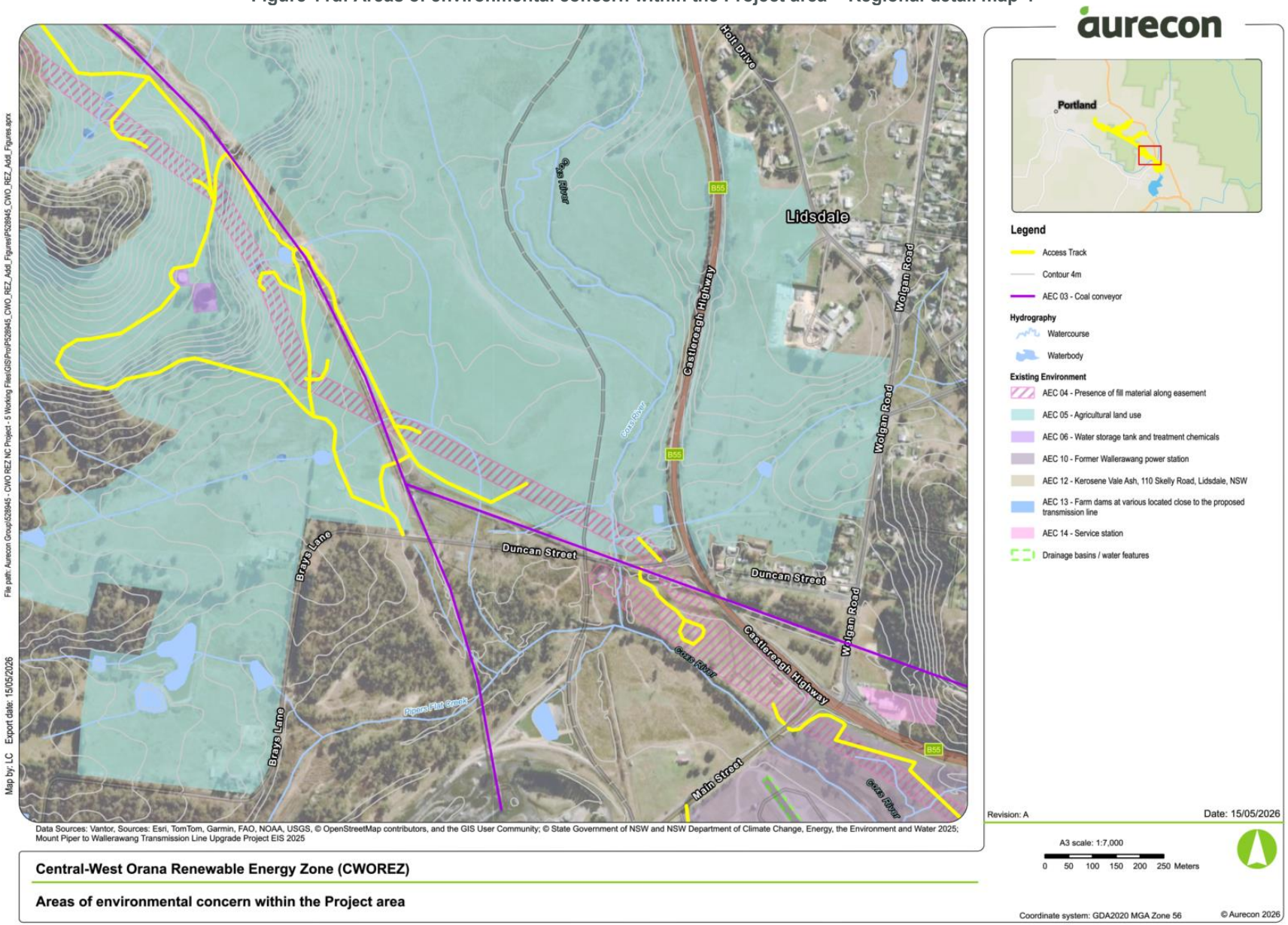
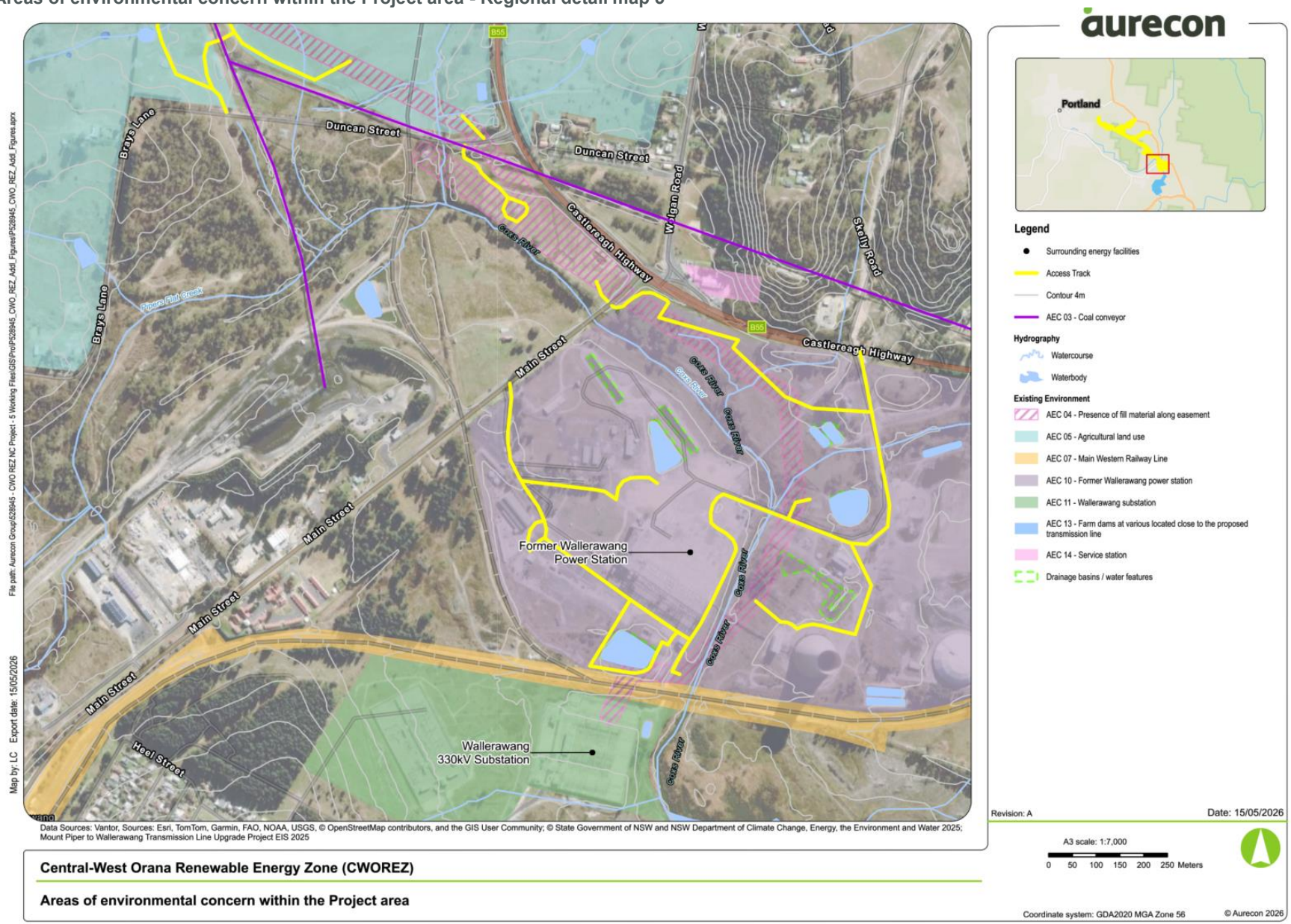


Figure 11e: Areas of environmental concern within the Project area - Regional detail map 5



6.5 Vegetation

The Project area is mapped as containing several plant community types (PCTs). An overview of the PCTs found on and surrounding the Project area is shown in **Table 16.**

The works are within and surrounding the Ben Bullen State Forest and some of the transmission line works may intersect with 'Gardens of the State, State Conservation Area' (SEED, 2025).

The area is classed as bushfire prone land with both 'Category 1' and 'Category 3' vegetation (Spatial Viewer, 2025).

Table 16 - PCTs mapped for the area of the Project

PCT ID	PCT name	Vegetation formation	Vegetation class
0	Cleared/not classified	-	-
3369	Central Tableland Ranges Peppermint-Gum Grassy Forest	Grassy Woodlands	Southern Tableland Grassy Woodlands
3385	Southern Tableland Creekflat Swamp Woodland	Grassy Woodlands	Subalpine Woodlands
3695	Western Blue Mountains Peppermint Sheltered Forest	Dry Sclerophyll Forests (Shrubby sub-formation)	Sydney Montane Dry Sclerophyll Forests
3747	Southern Tableland Western Hills Scribbly Gum Forest	Dry Sclerophyll Forests (Shrubby sub-formation)	Southern Tableland Dry Sclerophyll Forests
3749	Western Blue Mountains Scribbly Gum Forest	Dry Sclerophyll Forests (Shrubby sub-formation)	Southern Tableland Dry Sclerophyll Forests

Figure 12: Plant community types within the Project area - Overview

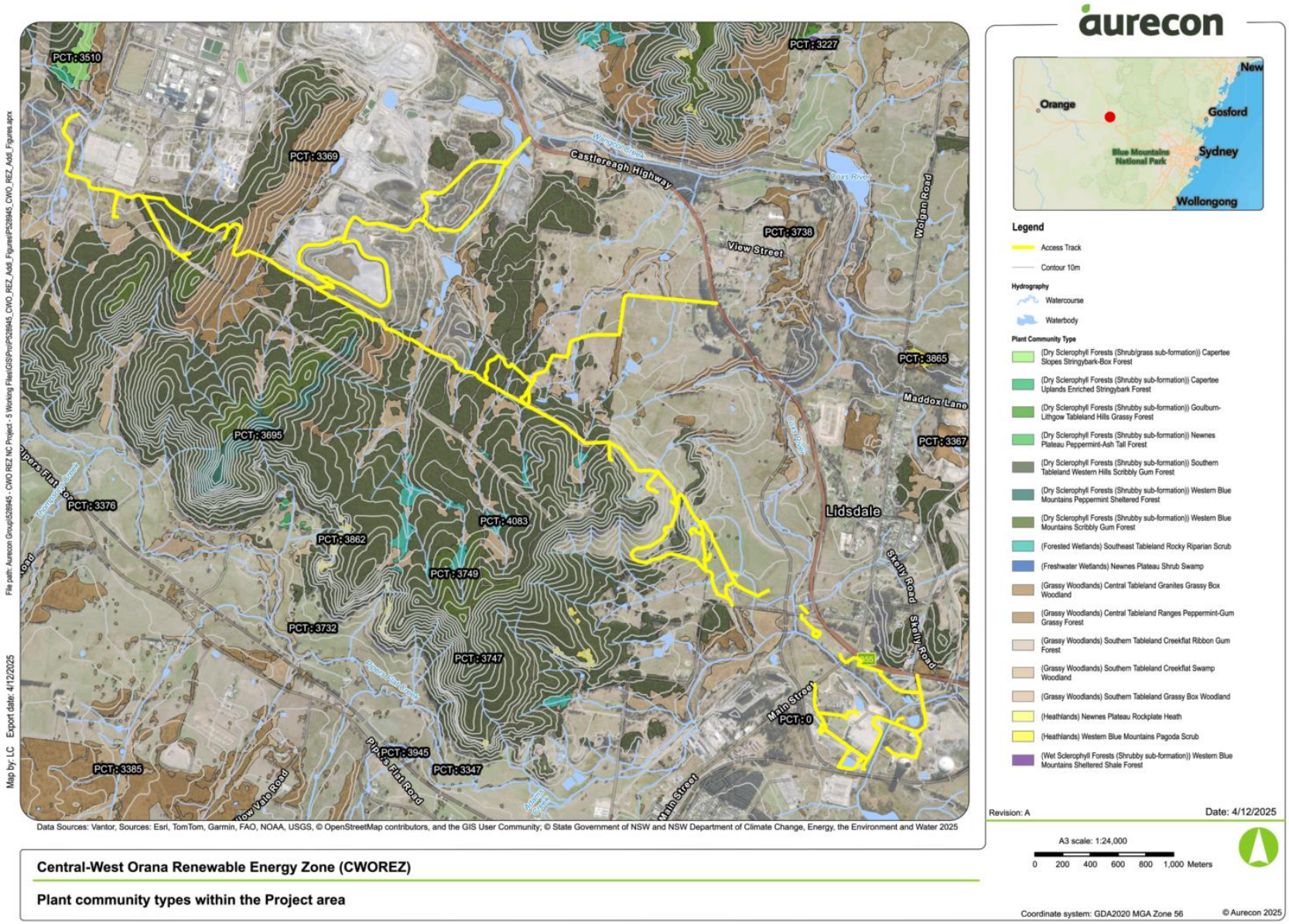


Figure 12a: Plant community types within the Project area – Regional detail map 1

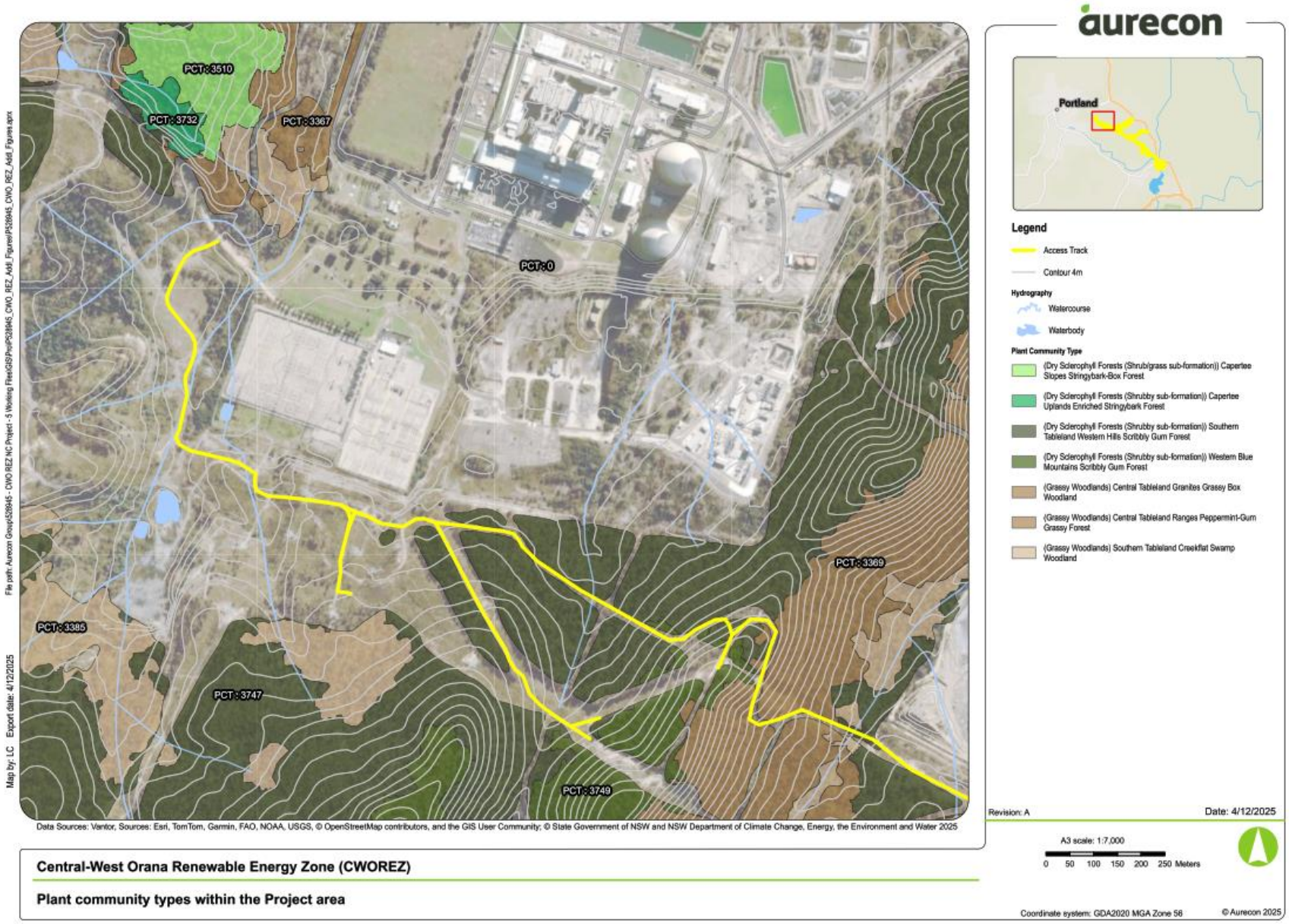


Figure 12b: Plant community types within the Project area – Regional detail map 2

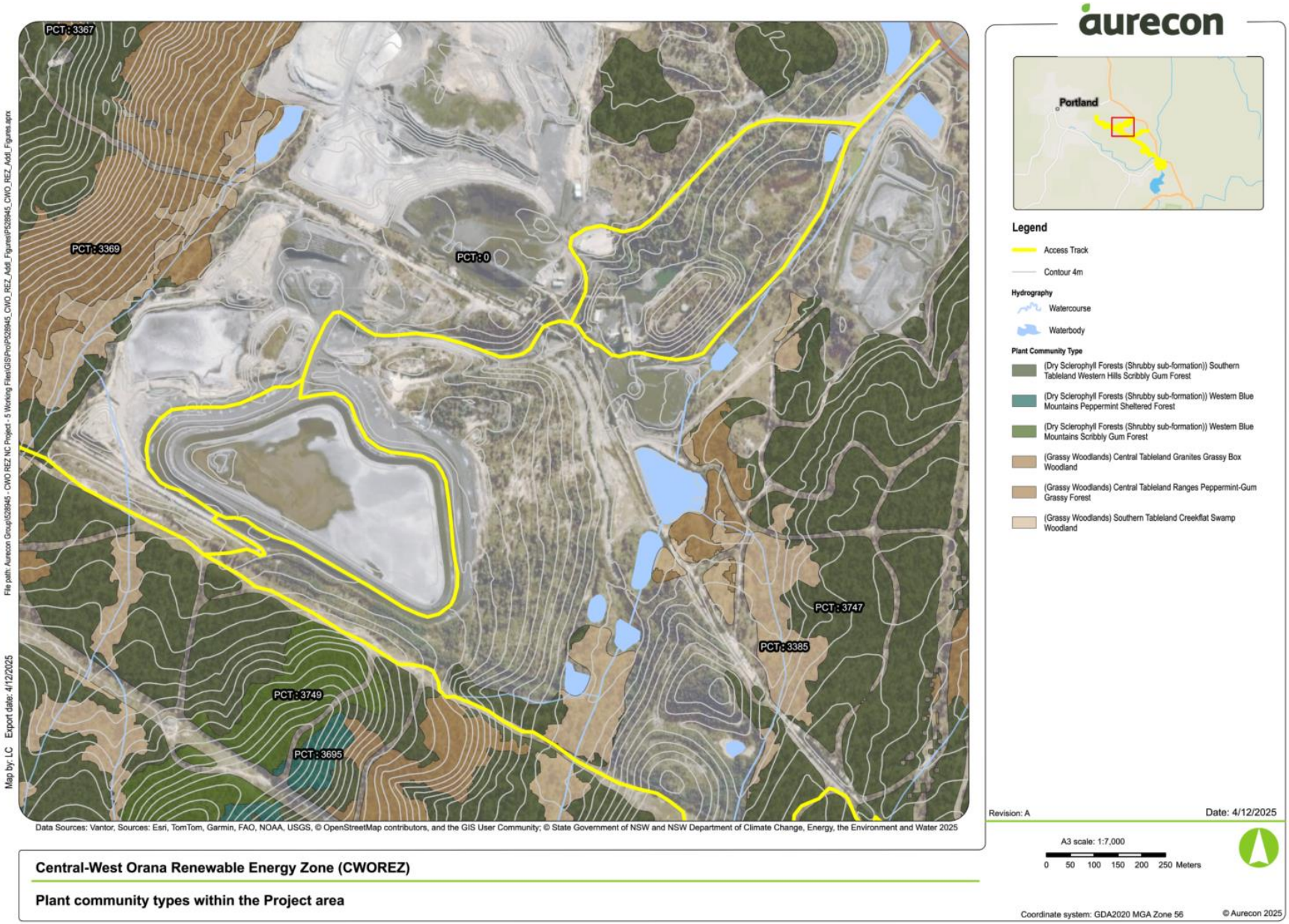


Figure 12c: Plant community types within the Project area – Regional detail map 3

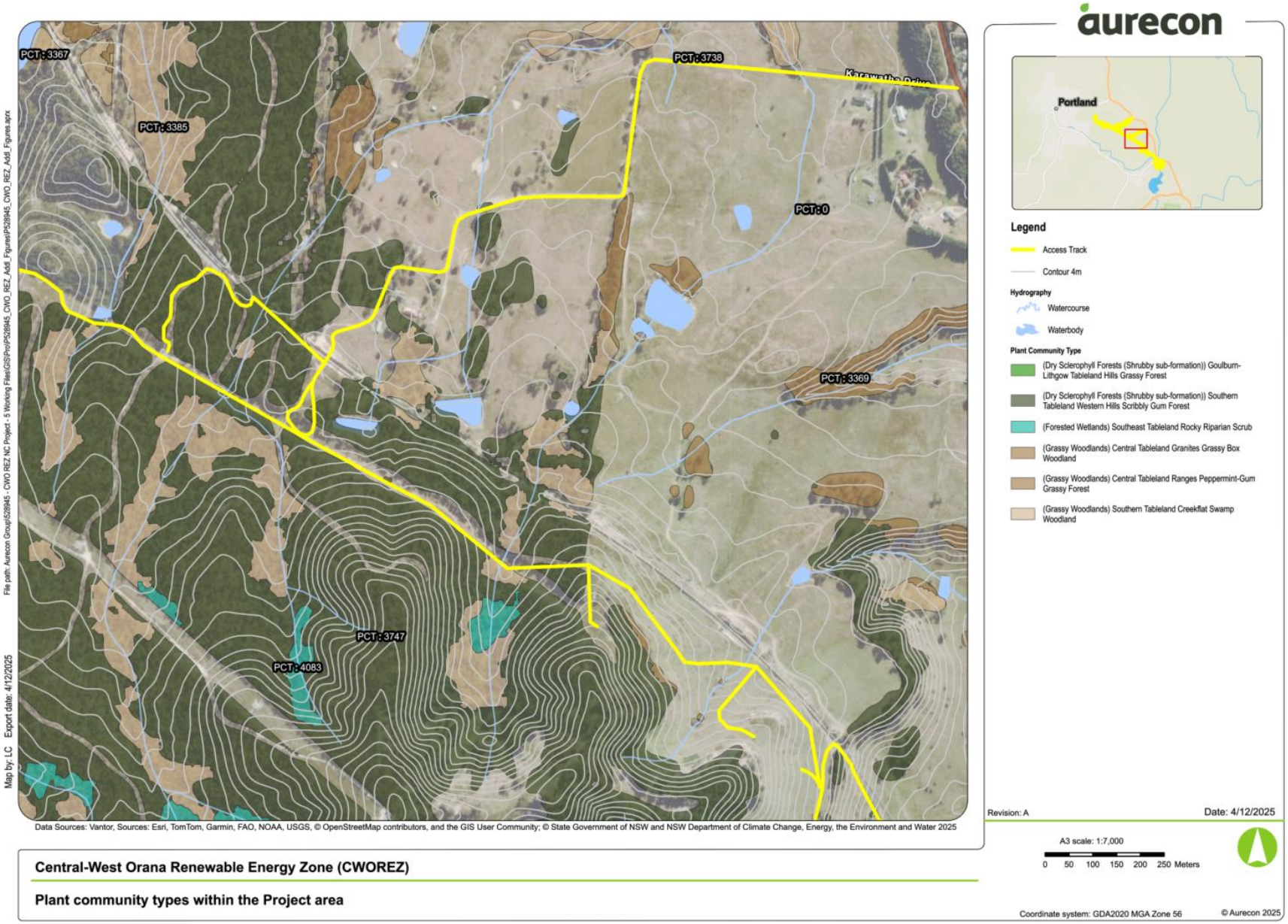


Figure 12d: Plant community types within the Project area - Regional detail map 4

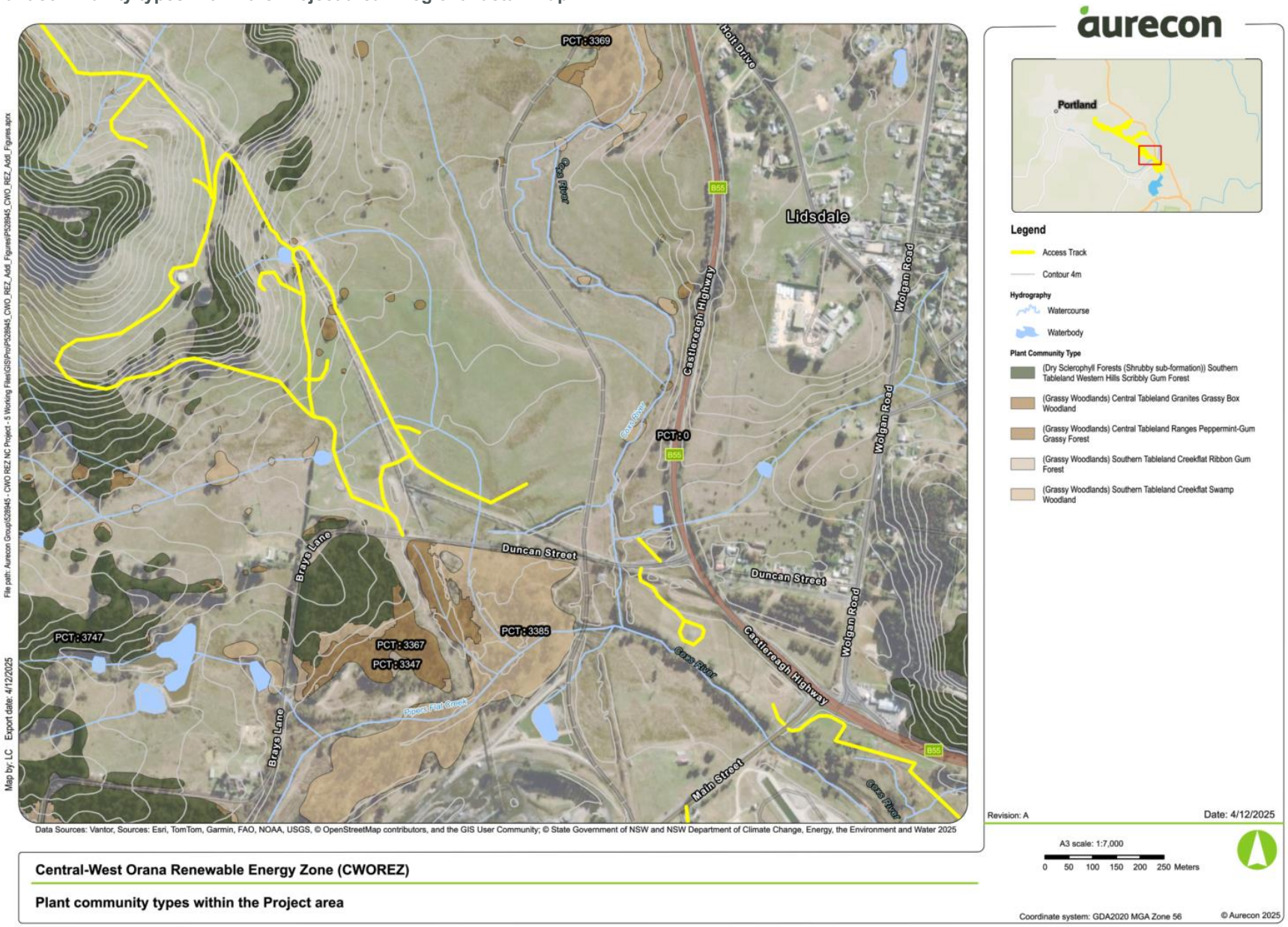
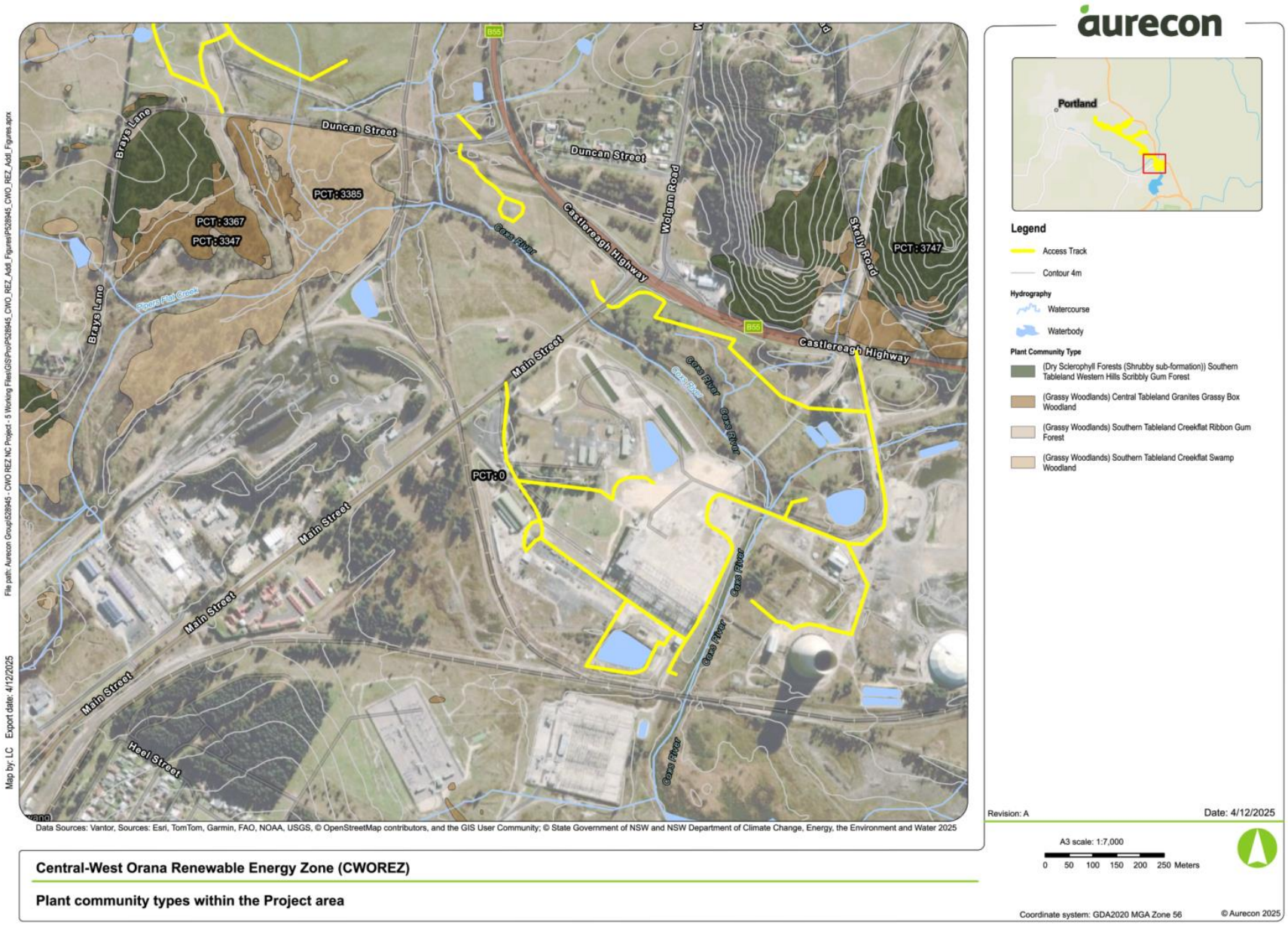


Figure 12e: Plant community types within the Project area - Regional detail map 5



7 Environmental aspects and impacts

This section of the SWMP identifies the key environmental aspects associated with soil and water management during the construction phase of the Project. It also identifies the impacts these aspects may generate for soils, surface water and groundwater, sediment transport, erosion, hydrogeology, and downstream receiving environments.

7.1 Water quality

7.1.1 Surface water

The Project involves multiple construction activities that may impact surface water quality, including:

- Works on waterfront land (defined as within 40 m of a riverbank) and within riparian buffer zones
- Earthworks, excavations, and soil disturbance
- Handling of chemicals, fuels, and other high-risk materials in proximity to waterways.

Waterfront land is all land within 40 m of the highest bank of a lake, river or estuary and includes the bank and bed of any lake, river or estuary. Typical impacts to riparian zones include:

- Direct impacts, caused by works within riparian zones, such as removal of riparian vegetation and instream or channel bank disturbance
- Indirect impacts, as a result of changes to soil, water quality or hydrology which affect the survival rates for riparian vegetation.

An overview of the activities within riparian zones and waterfront land which may lead to direct impacts to riparian vegetation is shown in **Table 17**.

Table 17 - Overview of riparian zones impacted by the works (GHD, 2025b)

Structure ID	Waterway	Strahler Stream order	Required offset distance/buffer zone (m)	Vegetation present in VRZ	Approx. distance of transmission structure from the top of the bank (m)	Approx. distance of construction bench from top bank (m)
2C	Coxs River	6th	40	Pasture / grass	20	0
4C	Coxs River	6th	40	Large trees / shrubs	35	0
5C	Coxs River	6th	40	Large trees / shrubs	65	20
6C	Coxs River	6th	40	Large trees / shrubs	55	30
7C	Coxs River	6th	40	Large trees / shrubs	40	10
8C	Coxs River	6th	40	Large trees / shrubs	20	0

Structure ID	Waterway	Strahler Stream order	Required offset distance/buffer zone (m)	Vegetation present in VRZ	Approx. distance of transmission structure from the top of the bank (m)	Approx. distance of construction bench from top bank (m)
9D	Coxs River	6th	40	Sparse Lage trees / grassland	65	0
10D	Coxs River	5th	40	Grassland / pasture	40	0
10D	Coxs River	2nd	20	Grassland / pasture	25	0
12D	Pipers Flat	3rd	30	Grassland / pasture	5	0
14D	Pipers Flat	1st	10	Sparse small trees / pasture	30	0
22D	Wangcol Creek	1st	10	Thick trees / forest	40	5
Construction compound 1	Wangcol creek	3rd	30	Trees / scrub	N/A	10

As per the *Guidelines for instream works on waterfront land* (DCCEEW, 2025a), the design process has considered alternative options with the aim to minimise the construction footprint and disturbance within watercourses and on waterfront land. During the design process several amendments were made to minimise the impacts of the works, with the amendment approved on 22nd December 2025. These refinements included:

- Removal of a waterway crossing near tower 11D which was originally proposed as part of the Project and may have required a water access license (WAL) due to water extraction activities.
- Relocation of the culvert between towers 5C and 6C to avoid the low lying and wettest area. The culvert will still have some potential to obstruct stream flow and change flooding; however, the new location experiences less frequent ponding reducing the disturbance to the waterway.

The approved amendment design also includes a new temporary culvert on a third order ephemeral stream, this may result in minor, localised flow changes; however, due to the temporary nature and preference of culvert design over ford or causeways as per *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (NSW Fisheries 2003), no significant impacts are expected. Further methods to minimise impacts of the two culverts are detailed in the ESCP and include designing ESC measures to withstand the 10% AEP storm event wherever possible.

Condition B17 requires all activities on waterfront land to be constructed in accordance with three documents, unless Water Group and DPIRD Fisheries agree otherwise:

- Guidelines for Controlled Activities on Waterfront Land (DPE, 2022)
- Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries, 2003)
- Policy and Guidelines for Fish Habitat Conservation and Management (NSW Fisheries, 2013)

The Controlled Activity guidelines have since been reissued by DCCEEW (2025) as a set of guideline documents. The Project has adopted the current DCCEEW (2025) versions, consistent with REMM W6.

These documents have been applied in a step-by-step way, in this order:

1) Avoid waterfront land, riparian vegetation and instream works where possible.

2) Minimise the extent and duration of disturbance where avoidance is not possible.
3) Mitigate residual impacts through construction controls, staging and rehabilitation.
4) Offset as a last resort, where residual riparian impacts remain (Section 8.8.2).

Table 18 - How the CoA B17 guidance has been considered in detailed design and construction

Guidance document	Key requirement	How it has been applied in design	How it will be applied in construction
Guidelines for riparian corridors on waterfront land (DCCEEW, 2025b)	Keep riparian corridors and VRZ widths, based on Strahler stream order	VRZ buffers were mapped for all watercourses near the works (Table 8, Figures 13–16). Infrastructure was placed outside VRZs where possible. Most waterfront works were placed on previously cleared land.	VRZs and retained vegetation are shown on ECMs and fenced off as exclusion zones (SW24). Disturbed riparian areas are rehabilitated with local native species (Section 8.8).
Guidelines for instream works on waterfront land (DCCEEW, 2025a)	Consider alternatives and minimise instream disturbance and the construction footprint	Design was amended (approved 22 December 2025): the waterway crossing near tower 11D was removed, and the culvert between towers 5C and 6C was moved away from the wettest low-lying area.	Instream works are scheduled for dry, stable conditions. ESC controls are installed before disturbance. Bed, bank and rock habitat must not be damaged (Section 8.1).
Guidelines for watercourse crossings on waterfront land (DCCEEW, 2025)	Crossings keep natural flow, stable beds and banks, and connectivity	Culverts were chosen over fords and causeways. Crossing ESC measures are designed for the 10% AEP event where possible (ESCP).	Crossings are kept hydraulically connected. Temporary crossings are removed and the area reinstated after use (SW16).
Guidelines for vegetation management plans on waterfront land (DCCEEW, 2025)	A vegetation management plan is needed where riparian corridors are rehabilitated	Riparian rehabilitation needs were identified at towers 3C, 4C and 10D.	Riparian rehabilitation follows the RMP and includes the elements listed in Section 8.8.1.
Why do Fish Need to Cross the Road? (NSW Fisheries, 2003)	Waterway crossings must not stop fish moving. The type of crossing is matched to the waterway's fish habitat class.	Crossing types were chosen with the fish habitat class of each waterway in mind (Section 6.3). Culverts were preferred over fords and causeways.	Fish passage is kept open during works (Section 8.1). No surface water dewatering of the Coxs River oxbow is proposed (REMM B20).
Policy and Guidelines for Fish Habitat Conservation and Management (NSW Fisheries, 2013)	Key fish habitat is identified and impacts on it avoided or minimised	Key fish habitat was identified (GHD, 2025b): Coxs River is Class 1 major / Type 2, and the two unnamed Wangcol Creek tributaries are Class 3 minimal / Type 3. These were treated as design constraints.	Works in or next to key fish habitat are sequenced to limit disturbance to beds, banks and aquatic habitat (SW16, REMM B18).

Investigation into work methods has identified that there is no need for dewatering the surface water at the culvert crossing on the Coxs River oxbow during the Project. As such, consultation with NSW Department of Primary Industries and Regional Development (DPIRD) on the management of aquatic biota for dewatering was not triggered.

The location of most transmission infrastructure works were able to avoid waterfront land and riparian buffers. The scope of works within the nominated buffer zone (based on the Strahler stream order of the adjacent watercourse) of permanent water bodies include:

- Works at towers 2C and 3C (refer Figure 13)
- Works at tower 4C (refer Figure 14)
- Works at tower 7C (refer Figure 15)
- Works at towers 8C and 10D (refer Figure 16)

As shown in the figures Figure 13 to 16, most works on waterfront land were able to be positioned on previously cleared land so as to avoid the riparian vegetation as per *Guidelines for riparian corridors on waterfront land* (DCCEEW, 2025b). For towers 2C, 7C and 8C all works will be in land that is already cleared so riparian vegetation is avoided with VRZ exclusion fencing and ESC controls to be installed before ground disturbance starts.. However, works at towers 3C, 4C and 10D were unable to avoid riparian vegetation, as such these streams will be managed in accordance with the *Guidelines for riparian corridors on waterfront land* (DCCEEW, 2025b) including consideration of the following mitigation measures to minimise impact of clearing on the surrounding environment:

- ESC controls installed before clearing
- clearing limited to the minimum footprint, with root balls and trunk bases left in place (REMM B04)
- bank stability and channel form protected
- retained vegetation and root zones protected
- weeds removed
- disturbed areas progressively revegetated with local native species under the RMP.

There are also some towers and associated infrastructure (5C, 6C, 8C, 9D, 12D, 14D and 23D) which are within waterfront land, i.e. 40 m of non-permanent, ephemeral streams. Works for these towers will be staged in line with the ESCP. This keeps the disturbed area small at any one time and lets disturbed areas be stabilised before the next stage starts. Where possible, work will be scheduled for when there is no flow.

All riparian buffer zones expected to be impacted have limited existing riparian vegetation due to previous construction activities. However, in accordance with the best practice documentation, efforts should be taken to re-instate native vegetation during revegetation works to improve the quality of disturbed riparian zones within the Project footprint (IECA, 2025; DCCEEW, 2025; DPI, 2003). Due to the progressive nature of the construction activities, works are only anticipated to intercept small amounts of surface water and there are currently no significant hydrological impacts anticipated.

The key surface water quality impacts requiring management are sedimentation from disturbance activities and fuel and chemical handling. Management and mitigation measures for these risks have been detailed in Section 8.1.

Figure 13: Scope of works within waterfront land (towers 2C and 3C)

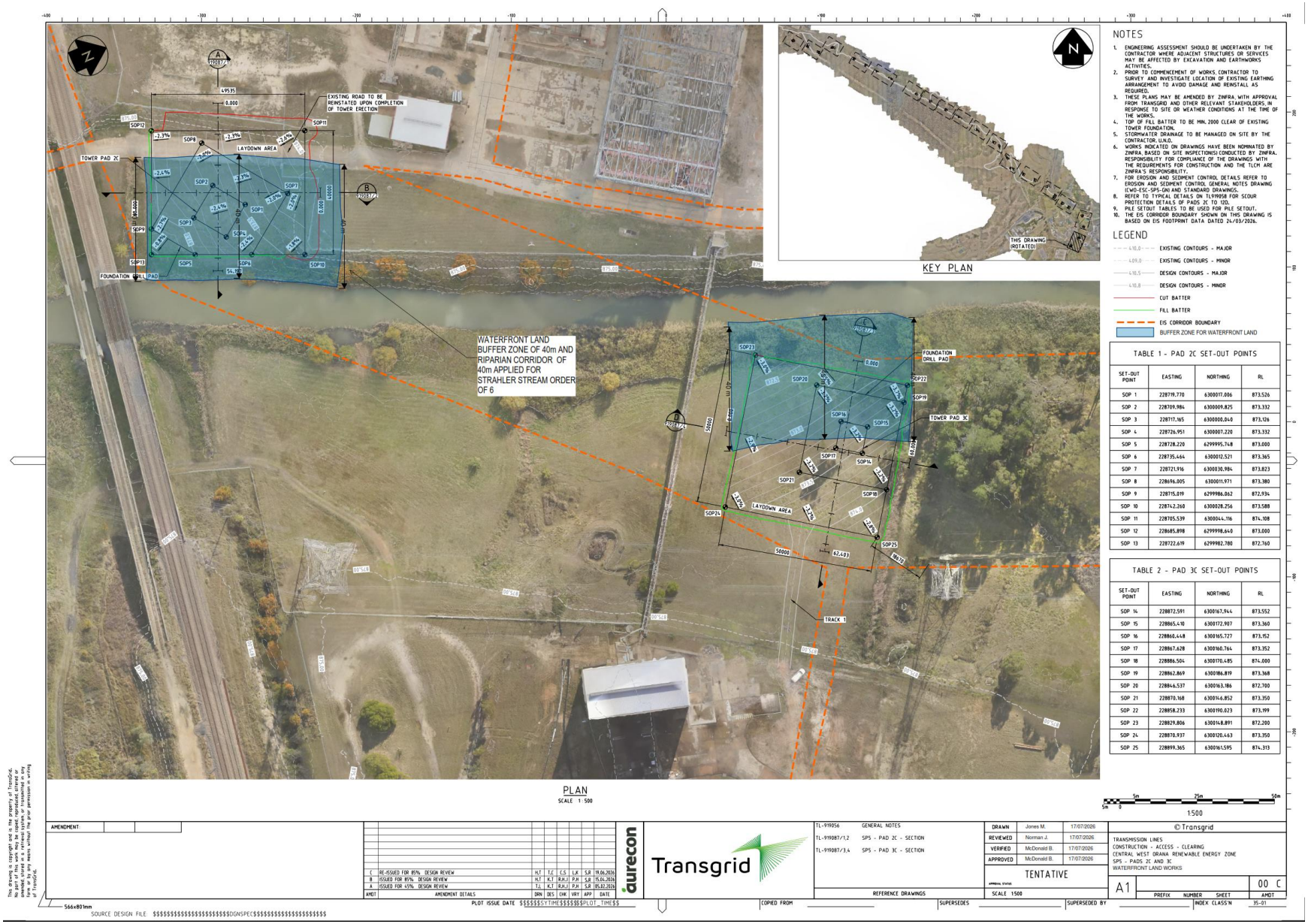


Figure 14: Scope of works within waterfront land (tower 4C)

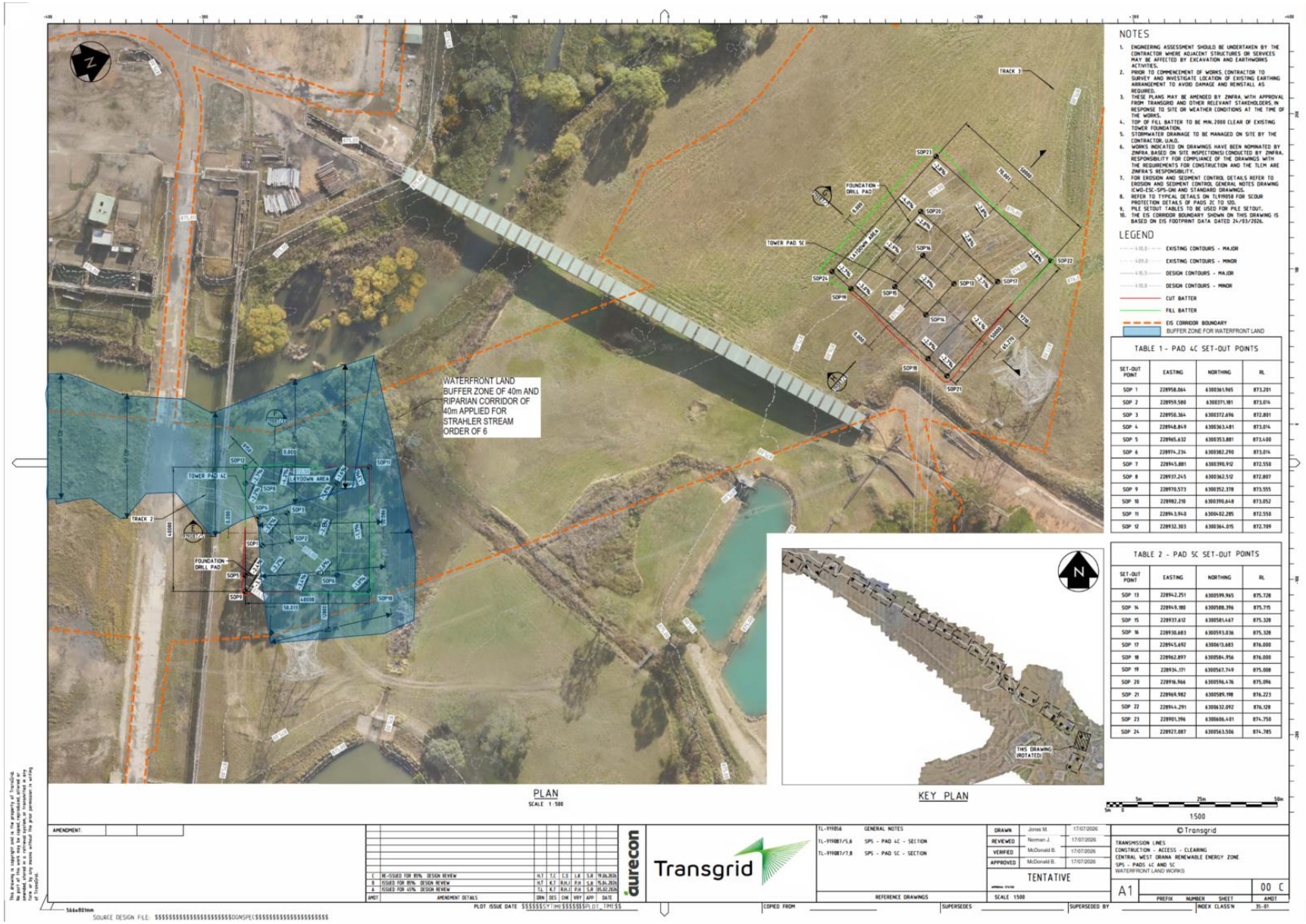


Figure 15: Scope of works within waterfront land (tower 7C)

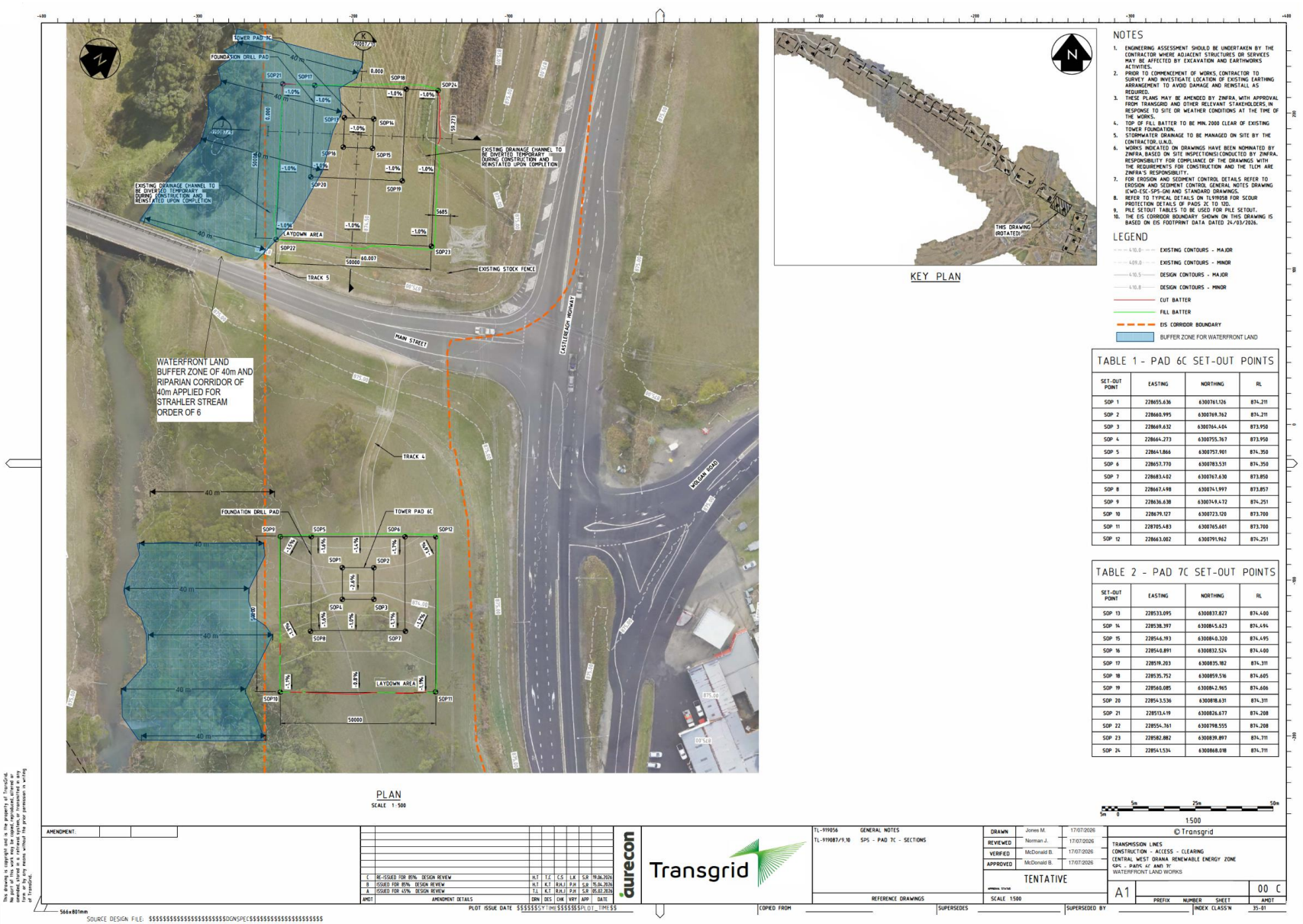
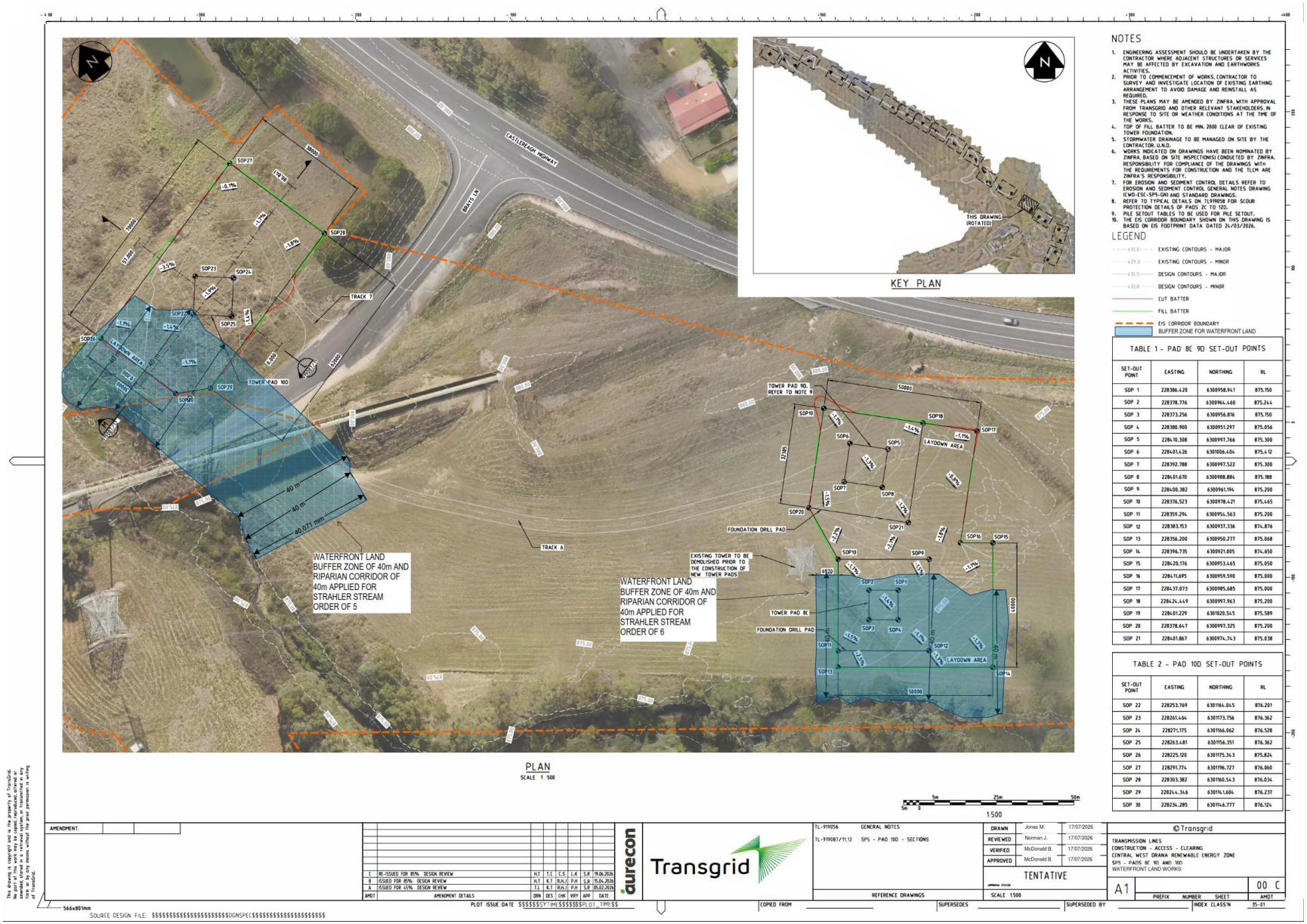


Figure 16: Scope of works within waterfront land (towers 8C and 10D)



7.1.2 Dewatering Groundwater

There is potential for groundwater flows to be altered due to interception of groundwater during piling activities, however this is deemed unlikely for the scope of the Project, as groundwater extraction is expected to be short-term and less than 3 ML per year. The volume of groundwater extracted and discharged from excavations will be estimated using a combination of pump capacity records and excavation volume measurements. The quantity of water pumped will be calculated based on the known capacity of the dewatering pump and the duration of pump operation. In addition, the volume of water contained within excavations will be estimated using excavation dimensions and observed water levels. These methods will be used to determine and record the total volume of groundwater extracted and discharged during construction activities. As part of this exemption the project is required to record all extractions and maintain a record a per Appendix D.

The most likely impact to groundwater is from accidental spills and leaks of hazardous materials. As such, the transport, storage, and handling of common pollutants have been considered in Section 8.4.

7.1.3 Flooding

The Hydrology and Hydraulic Assessment report produced for the Project (Aurecon, 2026c) indicated that the project will result in some additional transmission structures and access tracks located within flood prone land. To assess the impact of the project, a flood model was created for a 1 in 100-year (1%) AEP event using Runoff Routing Software (RORB) calibrated to historical streamflow and rainfall records. Design storm inputs from ARR 2019 were applied to generate flows, which were then used in a 2D TUFLOW hydraulic model. This model was then used to undertake a critical storm duration analysis to determine the storm producing the most adverse hydraulic response, typically reflected in the highest peak flood levels or flows. This analysis was then used to inform the design of the towers to ensure the resilience of the project and minimise any effects to the environment.

As part of the modelling output for the 1 in 100-year (1%) AEP event two figures were produced, one for the flood event depth (Figure 17) and one for the flood event velocity (Figure 18). An extract of these figures from the Hydrology and Hydraulic Assessment report (Aurecon, 2026c) is provided below.

Figure 17: Flood depth for a 1 in 100-year (1%) AEP event (Aurecon, 2026c)

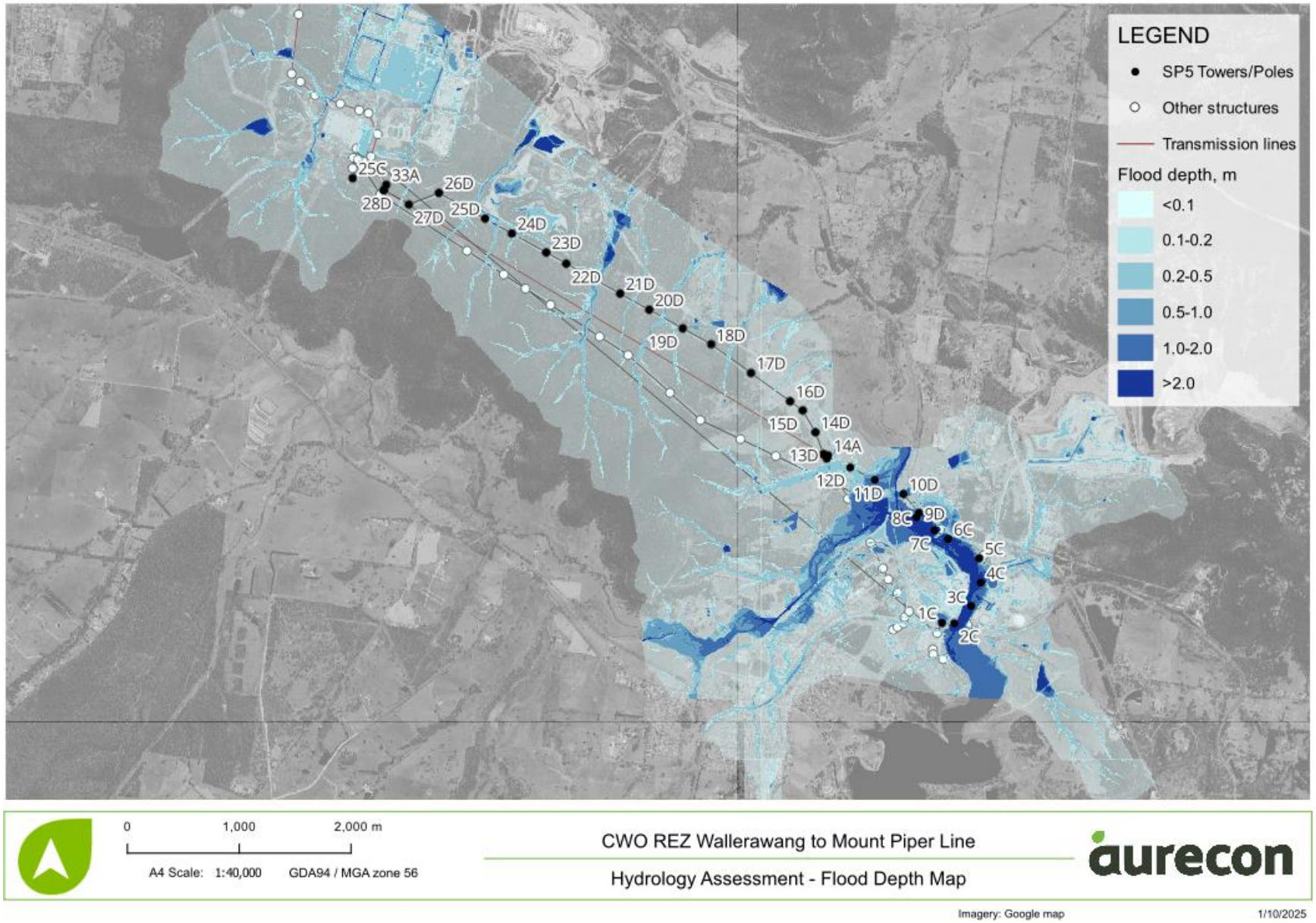
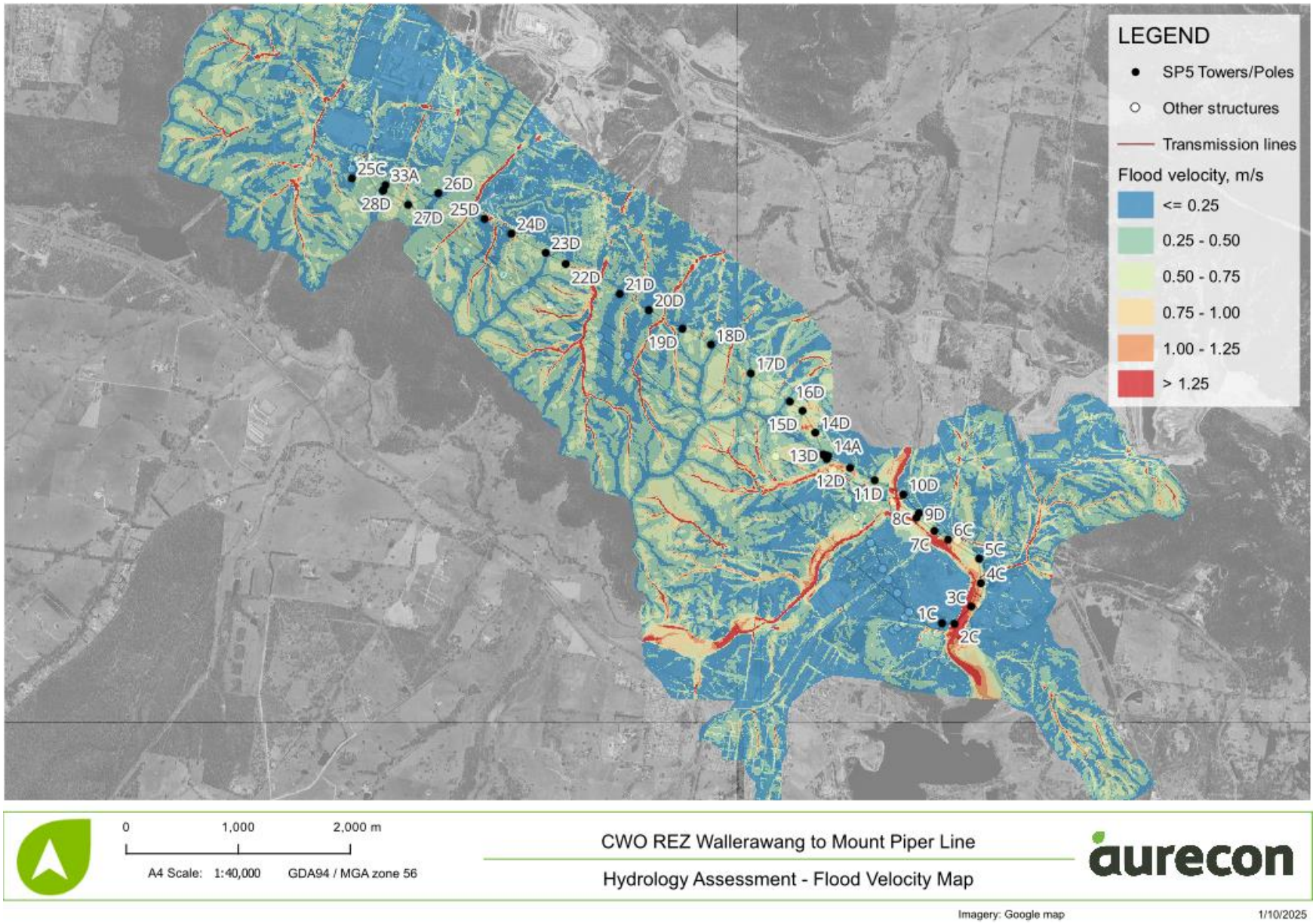


Figure 18: Flood velocity for a 1 in 100 (1%) AEP event (Aurecon, 2026c)



The results indicated that the proposed transmission line structures situated in the higher elevation area of Mount Piper are not susceptible to flooding under the 1% AEP scenario. Additionally, none of the structures are located within significant drainage paths, and terrain analysis confirm the site lies outside major flow corridors. Overland sheet flow depths and flow velocities were also found to be low, indicating minimal hydraulic forces acting on the structures. Overall, minor impacts are expected at these tower locations.

Transmission line structures 1C-8C and 9D-12D located near Coxs River were identified as a potential flood risk. Modelled flood depths ranged from 0.12 m to 2.82 m, with the majority of structures experiencing modelled flood depths >1 m. For the majority of these structures, the associated velocities were low (<1 m/s). Only two structures exceeded the 1 m/s threshold, 1.27 m/s at structure 3C and 1.06 m/s at structure 12D. These velocity conditions, when combined with flood depths >1 m have the potential to cause localised scouring around footings and supports, particularly where soils are erodible and/or where flow constriction occurs.

However, these structures are considered unlikely to result in material alterations to flood inundation depths, velocity, storage and the nature of the hazard as per CoA B18.

In accordance with EMM W3, structures within flood liable areas will be designed and constructed to withstand a 1% AEP event. To mitigate flooding risk several tower pad locations have considered scour protection and raising of the tower pad where applicable, to avoid the 1% AEP event. Additional erosion and sediment controls have been considered as part of the ESCP (Aurecon, 2026a) in areas with potential flood risk to manage flow velocities, provide structural protection to the transmission tower infrastructure, and provide erosion control for disturbed areas of soil. These measures are to be detailed as part of the ESCP (Aurecon, 2026a). These plans and measures will ensure that changes in flood storage capacity, flows or characteristics in the Project area or off-site, are not material, in accordance with CoA B18.

7.1.4 Water supply, take and licensing

As per design, the Project's expected water use includes:

- Potable use for toiles, drinking and washing
- Non-potable use for construction and dust control.

The expected potable water demand is 200 kL across the project spread relatively evenly throughout the works. As per the EIS, potable water is to be supplied from the Lithgow City Council either via the Fish River Water Supply Scheme connection or via water trucks. The EIS accounted for a potable water demand of 1.1 ML/year during construction period and found this demand would have negligible impacts to Lithgow City Council. The current potable water demand has been significantly refined during detailed design to 200 kL and as such no impacts to the supply scheme are anticipated.

The non-potable water demand is expected to fluctuate throughout the project and is highly variable depending on rainfall. Non-potable water will be sourced, in order of preference, from:

- Re-use of water extracted from foundations (refer Appendix D for testing requirements)
- Raw water currently available at Greenspot Wallerawang Pty Ltd (eastern portion of the former Wallerawang Power Station)
- Potable water (for potable water use the 1.1 ML total in the EIS should be considered).

During the first 7 months of construction, a daily demand of 60 to 180 kL is anticipated for foundation works and pads construction. Following this, the non-potable water demand is expected to reduce to between 0 to 60 kL per day, mainly for dust suppression activities. Assuming the maximum non-potable water demand, 30 day months over a 20-month construction period, as per the EIS, the total non-potable water demand for the project is approximately 61.2 ML. The EIS had considered a non-potable water demand of 80 ML for construction, and the current maximum forecasted non-potable water use is within the EIS demand. As such additional water licensing is unlikely to be required.

The project currently has sufficient water supply for the required works as per CoA B13 and all water supply works have been assessed as part of the EIS and the SSI approval. If, during construction, additional works are found to be required, works will pause and licensing will be sort in accordance with the WM Act.

A summary of the groundwater depths during the monitoring events conducted by Douglas Partners (2025a) is shown in **Table 19**. Generally, piles would penetrate to 8-10 m bgl, as such, towers 2C to 8C, 11D and 12D may all experience groundwater infiltration, with the works at towers 11D and 12D being the most susceptible. Groundwater extraction, is expected to be short-term during piling and excavation with the water either:

- Re-used for dust suppression along access tracks
- Mixed with soil as part of cut and fill earthworks
- Discharged following testing to ensure it meets the required discharge criteria before discharge into grass or vegetated areas,
- Removed from site as a last resort.

The current anticipated groundwater inflow during excavations, as per the EIS, is less than 3 ML per year and as such, the project is exempt from requiring a WAL. As part of this exemption, the water taken must be recorded on the approved form, *Annual record of water take – report form*, which must be provided to the minister's representative within 28 days of the end of the water year (DPE, 2022d). Refer Appendix D for further details.

As per REMM W5 and condition B19c, if groundwater inflows are greater than expected and may become likely to exceed the 3 ML per year exemption, the Trigger Action Response Plan (TARP) will be activated as per Appendix D procedures to obtain a licence may commence. If the 3 ML per annum exemption is exceeded, Zinfra through Transgrid will notify the department as this would be considered a non-compliance with CoA B13.

Table 19 - Summary of groundwater monitoring events from Douglas Partners (2025a)

Bore/Tower	Depth to groundwater (m bgl)				
	30/04/2025	15/05/2025	4/06/2025	1/08/2025	8/11/2025
2C	1.21	-	-	1.25	1.11
3C	0.8	-	-	0.58	0.54
5C	2.61	-	-	2.37	2.04
6C	1.35	-	-	1.21	1.18
7C	1.46	-	-	1.16	0.83
8C	1.55	-	-	1.33	1.31
11D	-	0.76	0.7	0.24	0.14
12D	-	2.15	1.52	1.01	0.67

7.2 Erosion and sedimentation

The proposed construction activities associated with the tower pad and access track construction and upgrade works will involve surface excavation and earthmoving. This temporary exposure of soils to rainfall, water runoff, and wind could increase soil erosion potential, particularly for soils more susceptible to erosion.

There is the potential for exposed soils and other materials, such as sand, spoil, and other aggregates, to be transported into surrounding waterways via stormwater runoff.

7.2.1 Erosion (wind)

The majority of the Project area is mapped in eSPADE as having slight limitations for highly impacted land for wind erosion hazard, corresponding to the 'Cullen Bullens' and 'Lithgow' soil landscapes. Other landscapes found across the area and associated wind erosion hazard, include the following:

- No limitations for highly impacted land, corresponding to the 'Pipers Flat' landscape

- Moderate limitations for highly impacted land, corresponding to the ‘Wollangambe’ landscape
- Moderate to high limitations for highly impacted land, corresponding to the Hassan Walls’ landscape

Construction activities, such as earthworks, cause substantial soil disturbance, which is likely to strip topsoil and subsequently reduce groundcover and vegetation that binds the soil during dry periods. This will potentially increase the area’s susceptibility to wind erosion.

7.2.2 Erosion (water)

Water erosion is described as the removal of soil by surface water runoff following rainfall/flooding, usually transported via sheet, rill, tunnel, gully, and streambank erosion, leading to downstream sedimentation. eSPADE data for the Site maps the area as having the following water erosion hazards:

- Moderate to high limitation to high-impact land uses, corresponding to the ‘Cullen Bullen’ landscape
- High limitation to high-impact land uses, corresponding to the ‘Lithgow’ landscape
- Very high limitation to high-impact land uses, corresponding to the ‘Wollangambe’ soil landscape
- Very severe limitation to virtually all land uses, corresponding to the ‘Hassan Walls’ landscape.

The specific water erosion mechanisms the landscapes are most include:

- Sheet erosion, caused by even flow of thin, wide layers of water flowing down slopes removing topsoil (‘Cullen Bullen’, ‘Hassan Walls’, ‘Lithgow’)
- Gully erosion, caused by strong concentrated flow on slopes removing soil particles and deepening rills (‘Cullen Bullen’, ‘Hassan Walls’, ‘Lithgow’, ‘Pipers Flat’)
- Streambank erosion, caused by the flow of water in the stream eroding away the bank (‘Pipers Flat’)
- Rill erosion, caused by concentrated surface runoff on slopes (‘Wollangambe’)

As per Section 6.4.2, the soil landscape unit ‘Lithgow’ is associated with Sodosols, also known as texture contrast soils with both dispersive and sodic (exchangeable sodium percentage (ESP) greater than 6%) characteristics. While there is no ESP data to confirm the presence of sodic soils, the soil landscape mapping is supported by the EAT results which have indicated the presence of dispersive soils across the Project area ranging from slight to very high dispersion across 11 towers.

Dispersive soils are especially susceptible to erosion during rainfall events and/or overland surface flows across the landscape, where a strong concentrated flow of water causes clay particles to detach from the soil profile and be washed away, causing cracks and voids within the soil profile. Over multiple rainfall/overland flow events the continued suspension and removal of clay particles cause further deepening of these cracks and voids to form more severe erosional features such as rills and gullies and weaken the overall the structural integrity of the soil material. Dispersive soils can also have an additional environmental impact on surrounding water quality due to the increased sediment load from dispersive particles entering waterways through overland flows.

It is noted that all of the soil landscapes mapped within the Project area are associated with erosion risk, especially soil landscape units associated with steep slope gradients >15% including (‘Cullen Bullen’, ‘Hassan Walls’, and ‘Wollangambe’. In accordance with IECA (2025), soils situated on slope gradients greater than 10% (but less than 15%) are classified as a ‘high’ erosion risk while soils situated on slope gradients >15% are classified as an extreme erosion risk, as these soils are more susceptible to erosion and soil displacement during rainfall events and/or instances of overland flow.

Disturbance of dispersive soils and/or soils on steep gradients, especially during vegetation clearing, topsoil stripping, and bulk excavation activities, may induce erosion and present a higher risk than in areas of lower gradient non-dispersive soils. Instances of erosion, depending on the type and severity of erosion present, have the potential to degrade soil structure, where soil aggregates are displaced from wind or raindrop impact.

Additionally, as surface water drainage flows from west to east toward Cox River and associated tributaries, sediment laden runoff from storm events has the potential to flow into these nearby waterways and impact water quality. Any instances of dispersive soils need to be appropriately managed as part of a site-specific

erosion and sediment control plan (ESCP). Calcium sulfate (Gypsum) amelioration is a recommended management measure treating dispersive soils within the Project area, to improve their structural stability and aid in reducing overall erosion risk during and post-construction. In accordance with IECA (2025), typical calcium sulfate (in the form of gypsum) amelioration rates range from 10 to 25 t/ha, however additional field investigation may be recommended to determine a site-specific amelioration rate.

Construction activities, such as cut and fill works, have the potential to expose soils; hardstands and laydown areas also have the potential to concentrate flows. This increases the area's susceptibility to water erosion and is a major concern for dispersive soils. Adequate controls are required to mitigate this impact, as detailed in Section 8.1.

7.2.3 Scalding (salinity) erosion

The accumulation of salts in the soil surface and groundwater in non-irrigated areas is known as dryland salinity. Dryland salinity is commonly caused by the mobilisation of salts in the soil profile by surface water or groundwater through groundwater recharge (or deep drainage), groundwater movement, or groundwater discharge. Dryland salinity is also potentially caused by the exposure of naturally saline soils, including hypersaline clays. Similarly, sodic soils, are also associated with dryland salinity.

Saline soils could potentially become exposed during earthworks, particularly for access tracks, easements, and infrastructure. Associated impacts can include:

- Localised soil structure degradation
- Salt scalding at the surface
- Vegetation distress
- Increased salt mobilisation through runoff or groundwater recharge.

Construction activities may also generate localised secondary salinisation near creeks, floodplains, and drainage lines. This can occur as a result changes in landscape salt movement over time from activities such as the removal of vegetation, hydrology changes, changes in land use, increased hardstand, and disturbance of groundwater.

The results of several soil salinity surveys conducted for the area are publicly available on eSPADE. All of the salting investigations for the area have shown no salting evident, thus construction related impacts are considered unlikely.

7.3 Waste management

Waste materials, including potentially contaminated soil, would be produced during construction. Waste would be sampled and classified prior to reuse, onsite or offsite, in accordance with the NSW Waste Classification Guidelines. In accordance with SC1 of REMM, disturbance of Areas of Environmental Concern (AECs) identified in the Contamination Assessment as having a potentially complete source-pathway-receptor linkage will be managed in accordance with this SWMP.

Soil testing will be undertaken where imported, excavated, or potentially contaminated soils are encountered, in accordance with the NSW EPA Waste Classification Guidelines, ASC NEPM (2013) and, where applicable, the PFAS National Environmental Management Plan (NEMP) Version 3.1 (2025). Soil testing results will be used to classify material and identify opportunities for onsite reuse, or where required, offsite transport and disposal of contaminated material at a suitably licensed waste facility.

7.4 Contamination

The Project could potentially cause contamination or interface with contaminated lands. Related impacts include, but are not limited to:

- Excavation of potentially contaminated soils and unexpected contamination finds, exposing contaminants
- Unexpected contamination finds associated with imported soil (where applicable)
- Spills of oil and chemicals causing land contamination
- Cross contamination of stockpiles.

These risks will be managed using the adaptive management approach in Section 8.4.4.

7.4.1 Acid Sulfate Soils

If Acid Sulfate Soils (ASS) becomes exposed to air during construction activities like excavations and earthworks, it may become oxidised and produce sulfuric acid, which can cause corrosion of infrastructure, fish kills, reductions in water quality and acid rain. This process may also release heavy metals and other toxicants into soils and waterways (DCCEEW, 2025).

The majority of the soils in the Project footprint are unlikely to contain ASS due to the Project area's elevation and surface geology. However, the areas lower in elevation were investigated for ASS by Douglas Partners (2025b). Based on the data, Douglas partners (2025b) concluded that select tower locations do contain ASS. Further to this, Zinfra commissioned Douglas Partners to develop the Acid Sulfate Soil and Reduced Inorganic Sulfur Soil Management Plan which aligns with the Acid Sulfate Soil Manual (ASSMAC, 1998) and Transgrid's Health, Safety and Environment Guideline. This plan is provided in Appendix F**.**

7.4.2 Groundwater contamination

Groundwater within the Project area occurs primarily within fractured rock and shallow alluvial deposits associated with the Illawarra Coal Measures and local drainage corridors. Groundwater levels are typically low, and the potential for significant interaction with construction activities is limited.

Potential impacts to groundwater from the proposed works include:

- Localised interception of shallow groundwater during excavation or drilling, leading to temporary drawdown or minor flow alteration
- Degradation of groundwater quality from spills, leaks, or infiltration of sediment-laden or contaminated water
- Mobilisation of saline or sodic soils, resulting in increased salinity or sodium concentrations in recharge water
- Minor changes to groundwater flow paths in areas influenced by historic underground coal workings.

7.5 Summary of impacts

A summary of the aspects and impacts for the development with consideration of the overall risk rating given to activities in Appendix C of the EIS is shown in **Table 20.**

Table 20 - Aspects and impacts

Aspect	Potential environmental impact	Relevant receptors / resource	Likelihood / magnitude*
Clearing, vegetation removal and ground disturbance (including access tracks, tower footings, stringing sites)	▪ Loss of vegetation cover, increased soil shear stress, destabilisation of cut/fill slopes ▪ Increased erosion and sediment mobilisation into watercourses or drainage lines ▪ Mobilisation of salts ▪ Mobilisation of shallow soil contaminants or ASS (if present) ▪ Loss / alteration of topsoil horizon and soil structure	Soils (topsoil, sub-soils), drainage lines, ephemeral waterways, groundwater (shallow)	The soil landscapes mapped throughout the site are considered to have no to moderate limitations to wind erosion and moderate to very high, water erosion risks. Through implementation of appropriate erosion and sediment controls the residual risk of erosion is considered to be low. Scalding erosion caused by the mobilisation of salts during construction activities is considered unlikely. This is because all publicly available salinity surveys in the area have shown no salinity in the area. Mobilisation of contaminants and ASS are a risk in discrete locations as detailed in Sections 6.4.1. As such these risks are managed through an ASSMP and specific controls for certain AECs. Other contaminants will be managed through the Unexpected Contamination Finds Protocol (UCFP) in Appendix C.
Earthworks including cut and fill, excavation for towers, in-stream works, compaction, stockpiling of excavated material	▪ Altered drainage patterns, increased run-off rates, concentration of flows, reduction of flood storage ▪ Increased sediment delivery to downstream receiving waters ▪ Soil compaction leading to reduced infiltration and increased surface run-off ▪ Potential for slope failure or mass movement on embankments	Down-slope watercourses and receiving environment	The downstream waterways are all considered to be of limited ecological value and permanent changes to drainage are considered unlikely as all diversions are temporary and in-stream works will be undertaken with consideration of the Blue Book. However, adverse impact from sediment-laden runoff is still a risk as soil landscapes across the site are mapped as having moderate to very high, water erosion risks The soil landscapes throughout the site are mapped as having a moderate to high structural decline hazard limitation for high-impact land uses. Thus, construction activities may lead to soil structure degradation and compaction, adversely affecting soil properties. Furthermore, some compaction will be required during construction such as for access tracks. Thus, measures to reduce the likelihood of unintended compaction and rehabilitate purposefully compacted areas have been considered. The majority of the site is mapped as having a low mass movement hazard. However, there are some areas with very severe limitations to all land uses and may require consideration of additional controls (refer the ESCP).
Disturbance of acid sulfate soils	▪ ASS is exposed and oxidised leading to sulfuric acid generation ▪ Acidification of soils and surface waters ▪ Release of heavy metals and toxicants	Low-lying areas, some tower locations	As detailed in Section 6.4.1, the Project area has discreet pockets of ASS associated with towers 2C, 7C, 8C, 9D and 12D. At these locations this risk will be managed via a site-specific ASSMP. Overall, the area has low likelihood of ASS, and this risk was not included in Appendix C of the EIS.

Aspect	Potential environmental impact	Relevant receptors / resource	Likelihood / magnitude*
Disturbance of dispersive soils	▪ Degradation of soil structure ▪ Soil erosion, in the form of rill/tunnel erosion ▪ Increased erosion and sediment mobilisation into watercourses or drainage lines ▪ Loss / alteration of topsoil horizon and soil structure	Soils (topsoil, sub-soils), drainage lines, ephemeral waterways, groundwater (shallow)	As detailed in Section 6.4.2, the Project area has soils ranging from low to high dispersion potential. Moderate dispersion potential (Emerson class 3) was associated with towers 4C, 5C and 33A while high dispersion potential (Emerson class 2) was associated with tower 13A. As only limited EAT testing was conducted within the Project area, there is potential for other tower locations to also exhibit dispersive characteristics. In the absence of ESP data to determine site-specific amelioration rates for treating dispersive soils within the Project area the primary recommendations include minimising soil disturbance where possible, completing earthworks in stages, ideally during the dry season to minimise erosion risk from rainfall events, and establishing appropriate soil stabilisation measures as soon as practicable. Through the implementation and ongoing management of dispersive soils on-site, the residual risk is considered to be low.
Drilling / piling	▪ Localised soil disturbance and compaction ▪ Generation of drill cuttings, slurry, or drilling fluids ▪ Potential mobilisation of sediments or contaminants ▪ Interception of shallow groundwater ▪ Waste management of cuttings and fluids	Drill pads, tower locations, surface and groundwater, surrounding soils	Soil landscapes across the Site are mapped as having a moderate to high limitation to soil structural decline for high impact land uses and as such they are assumed to be susceptible to compaction. However, through the implementation of adequate controls the overall risk of soil chemical and physical degradation is considered low. The Site has moderate to very high, water erosion susceptibility thus sediment transport to downstream waterways is a risk of the Project. However, through the implementation of adequate controls during soil disturbing works the residual risk is considered to be low. Any groundwater extraction would be short-term, during piling and excavation for foundations and is considered to be unlikely to cause impacts to surrounding groundwater users thus it has been given a low-risk rating. The project is designed to minimise earthworks and surplus spoil through the balancing of cut and fill activities. Mitigation measures are also considered in Section 8.3 and the risk is considered to be low.
Contamination	▪ Excavation of contaminated soils may expose contaminants ▪ Disturbance of AECs ▪ Spills of oils, fuels, chemicals ▪ Cross-contamination of stockpiles ▪ Potential groundwater contamination during earthworks/piling	Soil, groundwater, construction footprint	As detailed in Section 6.4.6, certain AECs in the Project footprint pose a contamination risk from both soil and groundwater. These AECs require specific management measures considered in Appendix E. Through the implementation of additional measures to avoid exposure the residual risk from contamination is considered to be low. The likelihood of spills and leaks was considered to be low following appropriate mitigation measures as detailed in Section 8.7.7. Measures for storage, handling and transport of high-risk hazardous materials have also been detailed in Section 8.4, further reducing this risk. Management of stockpiles and groundwater will be in accordance with the Blue Book and is considered to pose a low residual environmental risk.

Aspect	Potential environmental impact	Relevant receptors / resource	Likelihood / magnitude*
Sediment mobilisation and transport (via sheet flow, channelised flow, overland flow)	▪ Elevated sediment loads in watercourses ▪ Turbidity and suspended solids impacting aquatic habitats ▪ Sediment accumulation reducing channel capacity or degrading water quality ▪ Increased risk of downstream erosion	Surface water receiving environment (streams, drainage paths), floodplains	The soil landscapes throughout the site are mapped as having a mix of medium to very severe limitations to water erosion and tend to be susceptible to sheet, gully, streambank and rill erosion. Through the implementation of appropriate management controls as detailed in Section 8.2, this risk is considered to be adequately controlled with a low residual risk rating.
Stormwater / run-off from disturbed areas (including from refuelling areas, mobile plant staging, construction compound)	▪ Contaminant mobilisation (oil/grease, fuel, chemicals) ▪ Increased nutrient loads, heavy metals from disturbed soils ▪ Pollutants entering surface water or groundwater ▪ Flooding risk due to changed flow paths	Surface water, groundwater, nearby wetlands or riparian zones	Runoff from areas likely to be contaminated such as wheel washdowns and chemical bunds and certain areas within the AECs are considered in Appendix D and Appendix E. Also, measures for storage, handling and transport of high-risk hazardous materials have also been detailed in Section 8.4, and no bulk use or stockpiling of dangerous goods is expected to be required further reducing contamination risks. The residual risk of contamination following adequate control is considered to be low. The flooding risk from any flow diversions from temporary erosion and sediment controls will be considered in the ESCP (Aurecon, 2026a).
Drainage changes and modification of waterways (temporary diversions, permanent structures)	▪ Alteration of flow regime, velocity and sediment transport capacity ▪ Potential for scour downstream or deposition upstream ▪ Possible impact on aquatic ecology, riparian vegetation ▪ Changed groundwater-surface water interaction	Streams, ephemeral drains, floodplains, aquatic habitats	The Project scope of works includes construction activities within waterfront lands as detailed in Section 7.1.1. However, the surrounding hydrological environments are already significantly disturbed with little remaining riparian vegetation and where riparian vegetation exists it has been avoided as much as possible. Thus, the works are anticipated to have minimal overall change in water quality at these locations, and all instream works will be designed in accordance with the Blue Book to avoid impact to riparian land and streams as far as possible and detailed with Sections 7.1.1 and 8.1 and the ESCP. In areas of highly disturbed riparian vegetation, existing vegetative buffers should be retained and where possible reinstated with desirable natural vegetation cover to improve the quality of the environmentally critical areas (IECA, 2025; DCCEEW, 2025; DPI, 2003). Any changes to groundwater flows or quality are considered to be unlikely as any extraction would be temporary, less than 3 ML per annum and measured in accordance with the Blue Book.

Aspect	Potential environmental impact	Relevant receptors / resource	Likelihood / magnitude*
Groundwater interception / dewatering (if required for tower foundations or trenching)	▪ Lowering of groundwater levels locally leading to drying of dependent ecosystems ▪ Mobilisation of contaminants or changes in geochemistry ▪ Discharge of dewatering water with elevated sediments or contaminants	Groundwater aquifers, adjacent wetlands/riparian vegetation, downstream surface water	As per the EIS, any groundwater extraction is considered to be of a temporary nature during excavation of foundations. Also, all surrounding groundwater users are significantly distanced from excavations and piles thus, any localised, temporary groundwater drawdown is considered unlikely to cause major impacts and the risk is low. Any intercepted contaminants will be controlled via the UCFP detailed in Appendix C and the specific controls for AECs in Appendix E. The dewatering process for intercepted groundwater is detailed in Appendix D.
Legacy impacts: poorly stabilised areas, invasive weeds, altered hydrology	▪ Long-term erosion gullies, sediment sources ▪ Spread of invasive species reducing soil stability and altering hydrology ▪ Reduction in land productivity or changed ecological function	Adjacent land, drainage lines, revegetated areas	The majority of the soil landscapes found across the site are susceptible to gully erosion and as such appropriate erosion and sediment controls and rehabilitation is required to avoid any long-term impacts. Through the implementation of controls outlined in Section 8.2, the residual risk is considered low. Where portions of the Project area have been highly modified and industrialised from previous land uses (e.g. former and existing power stations), significant degradation of ecological function is considered unlikely. For works located nearby sensitive receptors, including waterfront land and riparian zones, additional controls outlined in Sections 8.1 and 8.2 are to be implemented to reduce the residual risk on ecological function to low.
Cumulative impacts	▪ Loss of environmental and social value due to increased pressure	Adjacent ecological and anthropogenic sensitive receivers	The EIS details mitigation measures to manage any cumulative impacts from the surrounding developments in the region. These include consideration of: ▪ Biodiversity ▪ Land use and agriculture ▪ Landscape character and visual amenity ▪ Traffic and transport ▪ Noise and vibration ▪ Air quality ▪ Social ▪ Waste. No specific soil or water cumulative impacts were considered. However, waste has been considered in Section 7.3.

8 Environmental Control Measures

To avoid, mitigate, and/or minimise potential impacts on soil and water, a suite of control measures has been developed based on Project commitments and Transgrid's environmental management guidelines, to achieve assigned performance criteria. From these, a series of monitoring procedures have been developed to ensure current management measures are implemented, functioning as intended, and that performance criteria are being met. This also serves an as opportunity to identify potential improvements and adjust management actions as required as part of an adaptive management response. Where monitoring or inspections identify environmental controls are ineffective, or where and incident or non-conformance is reported, procedures for implementing corrective actions and emergency responses are provided.

8.1 Surface and groundwater protection

A range of measures will be implemented to manage potential water quality impacts during construction. These are focused on preventing sediment mobilisation, maintaining stable drainage pathways, and ensuring discharge water remains within acceptable quality limits to protect waterways and sensitive environments.

An overview of indicative management measures to protect surface and groundwater is shown in **Table 21**.

Table 21 - Overview of surface water and groundwater management measures

Management	
Performance criteria	■ No accidental or uncontrolled release of contaminated or sediment-laden water to surrounding waterways or storm water system. ■ Minimise sediment run-off or soil loss from exposed areas.
Actions	**General** Zinfra will implement all reasonable and feasible measures to prevent pollution of surface water and groundwater. Construction activities will be managed to ensure the development does not cause water pollution, as defined under Section 120 of the Protection of the Environment Operations Act 1997 (NSW), including preventing the release of sediment, fuels, chemicals, concrete washout, wastes, contaminated water or other pollutants to waters. ■ All works are to be undertaken in accordance with the following documents: – Erosion and sediment control plan (ESCP) (Aurecon, 2026a) – Dewatering management procedure (DMP) (Appendix D) – Areas of environmental concern procedures (Appendix E) – Acid sulfate soil management procedure ■ Erosion and sediment control measures will be implemented in accordance with Section 8.2. ■ Works will limit, as far as practicable, the disturbance of vegetation, waterways and drainage lines. ■ All watercourse crossings and instream works are to be designed in accordance with the below. – Guidelines for instream works on waterfront land (DCCEEW, 2025) – Guidelines for Controlled Activities on Waterfront Land (DCCEEW 2025) – Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003) – Policy and Guidelines for Fish Habitat and Conservation and Management (NSW Fisheries, 2013) – the Policy and guidelines for fish habitat conservation and management (DPI, 2013). ■ The works will be planned and programmed to: – Limit the area that is disturbed at any one time in line with the construction program. – Where practicable, avoid high risk construction work during forecast high rainfall events. ■ Water must not be allowed to enter surface water drains without the use of appropriate drainage and sediment controls. ■ Ponding of stormwater on exposed soil surfaces should be minimised, wherever practicable. The site should be shaped to promote shedding of stormwater runoff.

Management	
	Dust ■ Locate dust generating activities, such as stockpiling and ASS treatment, away from sensitive receptors ■ Dust suppression measures such as water sprays, water extension agents, soil stabilising polymers or other media on: – Unpaved work areas and tracks subject to traffic or wind – Spoil and aggregate stockpiles – During loading and unloading of dust generating materials ■ Provide adequate water supply on site for dust suppression ■ Wind monitoring and forecasting using Bureau of Meteorology AWS forecasts, to identify conditions where winds are over 10 m/s and the additional controls required to reduce dust if observed to be leaving the site boundary. These may include stopping high dust generating works, additional water cart usage or ceasing works altogether. The Site Supervisor, in consultation with the Environmental BP, will assess the risk based on activities and weather conditions and implement additional measures as required. ■ Implement measures to minimise the tracking of dust generating material onto paved roads. These may include stabilisation at access and egress points, installation of rumble grids, regular sweeping of paved roads or temporary suspension of vehicle movements through muddy areas. ■ Minimising the extent of ground disturbance at any one time as far as practicable, such as planning and scheduling vegetation clearing and grubbing activities to minimise areas of open and exposed soil ■ Disturbed land will be stabilised as soon as practicable after completion of construction works and will also include: – construction benches, where not in riparian zones, to be left in a stable, weed free condition – brake and winch sites to be restored to previous condition – access tracks not required for operation to be returned to previous condition unless otherwise agreed with the relevant landowner – disturbed areas in riparian zones to be rehabilitated to ensure bank stability and minimise ecological impacts in accordance with a Rehabilitation Management Plan. ■ Stockpile management to minimising the amount of material stockpiled, protecting stockpiles from wind erosion, and positioning stockpiles as far as practicable from nearby receptors ■ Covering of transport loads of spoil, earthwork materials, waste and other loose materials when leaving the site to prevent escape of materials during transport. **Dewatering/discharge** ■ Dewatering activities associated with the foundation must be supervised ■ During dewatering activities pumps must be set up to ensure sediment from storage areas/excavations is not discharged, as outlined in Appendix D. ■ Dewatering within AECs of concern will be conducted in consideration of guidelines outlined in Appendix E. ■ All dewatering monitoring of extraction volumes must be done in accordance with Appendix D. **Concrete Washout** ■ Concrete washout areas will be established prior to commencement of concrete works. ■ Washout facilities will be clearly identified on Environmental Control Maps (ECMs) and communicated during pre-starts and toolbox talks. ■ Washout facilities will be located on stable, level ground away from drainage lines, watercourses, wetlands and environmentally sensitive areas. ■ Concrete washout areas will be located a minimum of 20 m from watercourses, drainage lines and stormwater infrastructure, unless an alternative distance is approved through a project-specific risk assessment.

Management	
	■ Washout facilities will incorporate an impermeable liner, proprietary washout unit or equivalent containment system. ■ Concrete trucks, pumps, tools, chutes and associated equipment will only be washed within approved washout facilities. ■ Discharge of concrete wash water, slurry or cement residue directly onto the ground is prohibited. ■ Washout facilities will be inspected regularly and prior to forecast rainfall events. ■ Accumulated concrete residues and hardened waste will be removed before washout facilities reach capacity. ■ Concrete washout areas will be protected from stormwater run-on and runoff where practicable. **Waterfront land and instream works** ■ All works within waterfront land are to be conducted in accordance with the Guidelines for instream works on waterfront land with further detail located in the ESCP (Aurecon, 2026a). ■ Schedule instream works and works in flood-risk areas during dry, stable weather where possible ■ Ensure design and construction of instream works (e.g., culvert replacements) comply with Guidelines for instream works on waterfront land (DCCEEW, 2025a) with further detail located in the ESCP (Aurecon, 2026a). ■ Maintain and manage Riparian Corridors and Vegetated Riparian Zones (VRZ) according to the 2025 Guidelines for riparian corridors on waterfront land (DCCEEW, 2025b) ■ Align watercourse crossings with the Guidelines for watercourse crossings on waterfront land (DCCEEW, 2025c) ■ Retain naturally functioning streams and if necessary, engineer drainage lines to reflect natural functions ■ Maintain adequate fish passage (if required) in accordance with Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries, 2003) guidance to ensure no barriers to fish movement occur during works ■ Develop dewatering procedure including a Trigger Action Response Plan (TARP) for activities where groundwater may be intercepted or inflows are higher than expected (Appendix D) ■ During construction activities, stockpile or store materials away from the VRZs for the waterway where practical ■ Ensure no damage occurs to watercourse rocks and the organisms that live on them by equipment, machinery or any other activity ■ Store suitable spill control materials in easily accessible locations during construction works **ASS-related water management** ASS management will follow the site-specific ASSMPs developed by Douglas Partners. **Flood management** To minimise the impact to flooding, construction areas are to be designed with consideration of overland flow paths and avoid flood prone land. Where practical, stockpiles are also to be located at least 5 m away from drainage inlets, open drains, watercourses, and paved areas. Further measures include: ■ Construction of access tracks at grade where possible to minimise cut and fill activities and changes to existing topographic conditions ■ Rehabilitation of all disturbed areas post-works as soon as possible ■ Removal of any temporary brake and winch sites and construction benches ■ Construction planning to consider the timing of works ■ Environmental Control Maps (ECMs) will identify flood-prone areas, overland flow paths and drainage lines where relevant to construction activities. ■ Hazardous substances, fuels and chemicals will be stored within appropriately bunded facilities located outside flood-prone areas wherever practicable. ■ Stockpiles located within areas potentially affected by flooding will be stabilised and protected using suitable erosion and sediment controls to minimise mobilisation during flood events. ■ Temporary works, access tracks, stockpiles and construction activities will not obstruct natural drainage lines, watercourses or overland flow paths. ■ Where flooding is forecast or observed, works within affected areas will be suspended where necessary and plant, equipment and materials relocated to higher ground.

Management	
Monitoring	■ Surface water monitoring to be undertaken in accordance with the following documents: – ASSMP (Appendix F) – ESCP (Appendix B) – DMP (Appendix D) ■ As per the above documents, and in accordance with IECA (2025) monitoring of physical field parameters (e.g. pH, redox potential, dissolved oxygen, electronic conductivity, total suspended solids (TSS) and turbidity) along with visual inspections should be conducted both up and down hydraulic gradient of the works to assess water quality prior to and at monthly intervals during works. Monitoring will be undertaken on both upstream and downstream of active work area. ■ Dust generation shall be monitored continuously during all earthworks and where winds are over 10 m/s additional controls will be required if dust is observed leaving the site boundary as per AQ1. ■ Weather forecasts and Bureau of Meteorology (BoM) warnings will be monitored daily. ■ Site inspections will be undertaken prior to forecast rainfall events and following significant rainfall to identify conditions that may increase flood risk or impede natural drainage. ■ Site inspections will verify that temporary structures, sediment controls and construction materials are not restricting flood flows or reducing flood storage capacity. ■ Monitoring water use to ensure the quantities remain within 3ML/ year. ■ Additional observations including presence of odours or hydrocarbon sheen should be recorded during inspection ■ Furthermore, water quality monitoring for the above physical parameters should be undertaken prior to ASS management works and in accordance with the ASSMP. ■ Weekly visual inspections of the Site and downstream stormwater drains are to be conducted during construction for evidence of ASS disturbance and acidification, such as: – Unexplained scalding, degradation, or death of vegetation – Unexplained death or disease in aquatic organisms – Formation of the mineral jarosite and other acidic salts in exposed or excavated soils – Areas of blue-green water or extremely clear water indicating acidic waters and high concentrations of aluminium (which acts as a flocculant) – A transition to, or establishment of, a community dominated by acid tolerant species – Rust coloured deposits on plants or on the banks of drains, water bodies, and watercourses, indicating iron precipitates – Corrosion of concrete and/or steel structures in contact with soil or water – Black to coloured waters indicating de-oxygenation – Sulfurous (rotten egg gas) smells – General water quality inspections are to be undertaken on a weekly basis and as soon as practicable after rainfall.

8.1.1 Construction compound water management

In accordance with CoA B16, a water management system will be designed, built and maintained at every construction compound to prevent pollution. Spills of hazardous materials and hydrocarbons at compounds will be minimised and cleaned up as soon as possible.

Compounds have a higher pollution risk than the linear work areas. They concentrate in one place:

- fuel and chemical storage
- refuelling and plant servicing
- vehicle washdown
- amenities wastewater
- stockpiles and hardstand runoff.

They are also close to sensitive receiving environments. Construction compound 1 sits within the 30 m riparian buffer of a third-order reach of Wangcol Creek, with its bench about 10 m from the top of the bank (Table 17). The whole Project lies within the Sydney drinking water catchment (Section 3.2). Some compounds may also be on land within the AECs (Section 6.4.6).

The compound water management system is made up of the controls in **Table 22**. Each compound will have:

- a compound-specific ESCP/PESCP
- an Environmental Control Map (ECM) showing the location of each control.

Table 22 - Construction compound water management system

Element	Requirement	Reference
B16(a) – Design		
Siting	Compounds are located outside watercourses, overland flow paths and flood-prone land wherever practicable. Riparian buffers are kept as exclusion zones and marked on the ECM. At construction compound 1, all storage, refuelling, washdown and stockpiling must be outside the Wangcol Creek riparian buffer.	Sections 7.1.1, 8.1; REMM B04
Clean and dirty water separation	Upslope clean water is diverted around the compound without changing natural drainage patterns or flood behaviour. Runoff from inside the compound is collected and directed to sediment controls before it leaves the site.	Section 8.2; CoA B14, B18
Drainage and sediment controls	Temporary drainage controls are designed to carry at least the 10-year ARI event without erosion. Sediment controls are sized in line with the Blue Book and IECA (2025).	Section 8.2
Discharge criteria	Water leaves the compound only if it meets the criteria in Appendix D: pH 6.5–8.5, turbidity ≤ 60 NTU, no visible oil or grease, no debris. Water that cannot meet the criteria is reused on site if suitable, or taken away by a licensed contractor.	Appendix D (Table 2-1); CoA B15
Contamination	Where compounds are on potentially contaminated land, disturbance is minimised and engineering fill, ENM or VENM is used as a construction base. If earthworks are needed, the contamination status of surface soils is assessed first.	REMM SC2; SW35, SW36
B16(a) – Construct		
Hazardous substance storage	Fuels, oils and chemicals are stored in bunded areas. Each bund holds at least 130% of the largest container and is placed away from drains and watercourses, outside flood-prone areas. Incompatible substances are stored separately.	Section 8.4.2; Transgrid (2021)
Refuelling and servicing area	A defined area on hardstand or within containment. It is set back as far as practicable from drains and watercourses and has a spill kit on hand.	SW30
Vehicle washdown	Washdown happens only in a designated area with controlled drainage. Only wash water goes to the washbay drain: no oil, hydraulic fluid, degreaser or radiator coolant. Wash water is collected and managed, never discharged to drains or waterways.	Transgrid (2021) s7.2; TTMP
Concrete washout	Lined or proprietary washout facilities are located at least 20 m from watercourses and drains.	Section 8.1; SW27, SW28
Amenities wastewater	Effluent goes to enclosed tanks fitted with a high-level alarm or automatic cut-off. A licensed contractor pumps them out.	Section 8.3; REMM WM1
Waste and stockpiles	Waste is held in covered or bunded receptacles. Stockpiles are at least 5 m from drains, with sediment controls downslope.	Sections 8.2, 8.3
B16(a) – Maintain		
Inspection	Compound controls, bunds and spill kits are inspected weekly, before forecast rainfall and after runoff-producing rainfall.	Section 8.6.1
Bund and sediment maintenance	Bunds are kept impervious, free of debris, with the drain valve closed. Bunds are emptied after rain, but only after the collected water has been checked for contamination. Sediment is removed before control capacity drops below the design level.	Transgrid (2021); Section 8.6.3
Corrective action	Defects are recorded in the Corrective Action Register and fixed as soon as practicable.	Section 8.6.3; SW51

Element	Requirement	Reference
B16(b) – Minimise spills		
Prevention	Plant is kept in line with the manufacturer's requirements and inspected regularly. All containers are labelled. Oil transfers are monitored the whole time they are under way. Handling takes place where a spill can be recovered easily.	Section 8.4.2; Transgrid (2021)
Spill kits	Spill kits suited to the substances on site are kept at storage, refuelling and washdown areas, and are restocked after use.	SW31
Training	Compound personnel are inducted and trained in spill response before handling fuels, oils or chemicals.	Section 8.9.3; SW33
B16(b) – Clean up spills		
Response	Any spill is stopped, contained, absorbed and cleaned up straight away, following the Spill Response Procedure.	Section 8.7.7 (Table 33)
Reporting	A spill of oil or chemical of any volume is an environmental pollution incident. It is reported in OMNIA and assessed against the definition of material harm.	Sections 8.7.1, 8.7.2
Disposal and remediation	Used absorbents and contaminated soil are classified and disposed of lawfully. Affected areas are remediated under a RAP where needed.	Sections 8.3, 8.7.7; REMM SC3

8.2 Erosion and sediment control measures

The Project involves cut and fill activities that disturb soil and remove vegetation. This increases the risk of erosion, surface runoff and the possibility of sedimentation of surrounding waterways. The following consists of general principles as per the Blue Book (Landcom, 2004) and IECA (2025). An overview of erosion and sediment control measures is shown in **Table 23**.

Table 23 - Overview of erosion and sediment control measures

Management	
Performance Criteria	▪ No discharges of sediment-laden water from the Site ▪ No sediment run-off or soil loss from areas of exposed soil ▪ No visual evidence of mud/debris on haulage route(s) consisting of public sealed roads associated with the Project ▪ No complaints from the local community related to sediment and erosion controls.
Actions	**Erosion and sediment control plan** ▪ In accordance with REMM W1, ESCP will be prepared by CPESC in accordance with the principles and requirements, in the following publications: ➢ Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004), Volume 2A (DECC, 2008) and Volume 2C (DECC, 2008a) ➢ Best Practice Erosion and Sediment Control (IECA, 2008) ➢ Guidelines for controlled activities on waterfront land (DCCEEW 2025) ▪ Detailed design and placement of erosion and sediment controls will be undertaken through site-specific ESCPs and Progressive Erosion Sediment Control Plans (PESCPs). Controls will be designed and implemented in accordance with the relevant Blue Book Standard Drawings (SDs), having regard to site conditions, drainage characteristics, slope gradients and construction activities. ▪ PESCP's the construction phase of the project. Typical ESCP of access tracks and tower pads are provided in Appendix B. ▪ HOLD POINT: Prior to the commencement of any ground-disturbing construction activities all primary erosion and sediment controls must be installed as specified in the site-specific Erosion and Sediment Control Plans (ESCPs).

Management	
	■ HOLD POINT Release: The Environmental BP will inspect the installed erosion and sediment controls against the ESCP's and provide approval prior to commencing earthworks. **General erosion and sediment management measures as per the Blue Book (Landcom, 2004)** ■ Vehicle traffic to be restricted to designated existing access routes or constructed access tracks and not to be carried out in undisturbed areas. Stabilise disturbed areas, including access tracks where required, as soon as possible where vehicle traffic is expected. ■ Soil and vegetation disturbance for the construction of causeways and culverts shall be minimised and disturbed areas are to be reseeded and protected from erosion. ■ Prior to any rest and recouperation periods between onsite staff members all erosion and sediment controls are to be checked to ensure they can perform without supervision during the break. ■ If rain occurs during the rest and recouperation period, erosion and sediment controls should be inspected and repaired/reinstated (where required) upon returning to site before commencing further works. ■ All rock and gravel used, including that used for erosion and sediment control, is to be pre-approved by Zinfra. ■ As per the ESCP (Aurecon, 2026a), construction of the final landform for earth batters is to occur, as per the Blue Book, with as low a gradient as possible and a maximum slope of: – 2(H):1(V) for slope lengths less than 13 m – 2.5(H):1(V) for slope lengths between 13 and 17 m – 3(H):1(V) for slope lengths between 17 and 20 m – 4(H):1(V) for slope lengths greater than 20 m – Where required, construction of earth batters with steeper gradients may be approved with appropriate soil containment measures. ■ Temporary construction batters (less than 6 months) may be steeper than the above and will be subject to the general ESC measures outlined in the ESCP. ■ Concentrated flow paths are to be protected from erosive forces as per the ESCP (Aurecon, 2026a). ■ Use of vegetative temporary cover in areas of sheet flow wherever practicable. ■ Any used sediment fences will: – Be installed as near as possible to the source of any coarser sediment fractions – Have a storage depth (including settling and settled zones) of at least 0.6 m – Have internal dimensions with a very low gradient to provide maximum surface area for passage of stormwater ■ Trapped sediment will be stockpiled and managed appropriately. ■ Stockpiles will be placed further than 5 m from all areas of high velocity flow such as waterways, paved areas and hardstands with indicative locations to be included as part of the ESCP (Aurecon, 2026a) ■ Water will be prevented from directly entering the permanent drainage system unless it is relatively sediment free, with a trigger value of 90th percentile TSS concentration not exceeding 50 mg/L in accordance with IECA (2025) ■ Temporary sediment controls will be retained until the relevant catchment is safe, stable and non-polluting ■ For erosion and sediment controls within the National Park area, biodegradable coir logs will be given preference over sediment fences to avoid sediment fence degradation after earthworks. **Drainage control**

Management	
	■ Temporary drainage controls must be designed to convey runoff up to at least the 10-year ARI rainfall event in a non-erosive manner ■ Site runoff must be diverted away from exposed surfaces, batters or stockpiles ■ External runoff must be diverted around active or exposed work areas as far as practical, including in waterfront land construction zones to prevent surface flows mixing with site sediment ■ Incorporate measures to ensure that stormwater runoff reflects patterns, volume and quality that existed prior to works ■ Where required, sediment laden water generated on site must be diverted utilising drainage controls to a sediment trap or settlement treatment prior to release from site or into receiving waters ■ Outlet drains must be protected by sediment traps placed upstream of outlet points. **Erosion control** ■ Disturbed areas must be reinstated as soon as practicable with ground cover/surfacing suitable for the site conditions (e.g. size of area to be stabilised; topography; soil type; and duration of work). A target of 70% ground cover (combined plant and/or mulch) of the total disturbance area encountered during earthworks to be implemented where possible to provide satisfactory erosion control. However, due to the poor quality of the soil, 70% plant coverage may not be achievable in which case soil amelioration may be required to improve soil quality and structure to re-instate permanent vegetative cover. Temporary erosion control methods (e.g. erosion control blankets/mesh/mulch) can be utilised to provide erosion protection to the soil surface as an interim measure ■ Weed growth cannot be counted towards vegetation establishment unless approved by the Transgrid environment team ■ Disturbed areas to be stabilised where exposed surfaces are likely to remain for over 7 days, through the use of short-term erosion controls such as soil binder, bonded fibre matrix, erosion control blankets/ or mats. In highly trafficable areas such as access tracks, these may be stabilised with gravel where soil binder is not effective. Grading, excavation and construction must not proceed during periods of heavy rainfall ■ Limit disturbance when excavating and preserve as much native vegetation as possible to reduce erosion and the extent of revegetation required post works ■ Re-grass or revegetate disturbed areas after completion of civil works. Use applicable seed type for area and season, as approved by Transgrid environment team ■ Conduct all vegetation in accordance with Landcom (2004) and for waterfront construction zones ensure revegetation works are also carried out in accordance with the Guidelines for riparian corridors on waterfront land (DCCEEW, 2025b) as outlined in the ESCP. **Sediment control** ■ Sediment controls must be designed, installed and maintained to maximise ponding area and sediment capture. Refer to the Blue Book and ESCP (2026a) for design requirements. ■ Prior to the commencement of ground disturbing work, any stormwater pits, drains or any open channels in proximity must be protected through appropriate controls, such as kerb inlet protectors, (geofabric) filter material to capture coarse sediments, and/or gully pit baskets (e.g. Enviropod, Ecosol Litter Basket or similar) ■ Sediment loads must be captured/treated as close to their source as possible using effective sediment traps ■ Sediment run-off controls and drainage around all work areas must be established prior to commencement of any works ■ All sediment control measures must be maintained and intact for the duration of the works (including reinstatement period) and inspected regularly including prior to (and after) rain events to ensure they are functioning properly ■ Immediate repair of sediment control measure damages. **Flood-prone areas and instream works**

Management	
	Erosion and sediment controls in flood-prone areas and instream environments need to be more resilient than standard controls to withstand high flow velocities, inundation, saturated soils and debris impacts from severe weather events. Where possible, flows should be diverted around known flood-prone areas and waterways to minimise the volume of concentrated flows passing through. Options for robust controls include: ■ Compost berms, ■ Rock check dams, ■ Sediment basins with armoured spillways, ■ Diversion bunds, ■ Rock filter berms, ■ Sediment traps designed for overtopping. Outlet and scour protection, as well as energy dissipation controls, should be implemented at drainage concentration points to minimise accelerated erosion and gullying in these areas. Examples of these include: ■ Level spreaders, ■ Outlet protection, ■ Energy dissipators, ■ Riprap aprons, ■ Lined channels, ■ Check structures in temporary drains. However, it should be noted that for the above controls these should not obstruct or alter the natural flow paths of instream ecosystems as this could have negative impacts on the organisms inhabiting these waterways. In addition to the standard erosion and sediment control recommendations, the following considerations should be applied during instream works and in flood-prone areas (Landcom, 2004): ■ Minimising disturbance of vegetation near waterways, in riparian zones or flood-prone areas where possible. Where vegetation clearing on waterfront land is unavoidable, it may be appropriate to offset these areas as per the approach in *Controlled activities – Guidelines for waterfront land* (DCCEEW, 2025) ■ Scheduling construction activities during dry periods, and commencing prompt stabilisation of exposed soil surfaces ahead of forecasted weather events ■ Where works are to be undertaken within the 2-year flood level, measures should be incorporated to ensure the C factor is always below 0.05 during possible erosion events. ■ Further, measures to reduce the C factors to this level should remain stable under concentrated flow conditions where appropriate. ■ Above all, instream works and works within flood-prone areas should not result in or be likely to cause sediment pollution either directly or indirectly. ■ Where practical, ensure that constructed grassed batters have gradients no steeper than 6(H):1(V) if below the 2-year ARI flood level ■ Further details on erosion and sediment control measures and design specifications of controls for instream works and flood prone areas are located in the ESCP (Aurecon, 2026a). **Stockpile management** ■ Surplus material from earthworks is currently proposed to be utilised for cut-and-fill activities and creating diversion berms as part of the ESCP (Aurecon, 2026a). If surplus material is required to be stockpiled, this is to be undertaken in accordance with any applicable ASSMP, ESCP, and contamination requirements. ■ AECs that require stockpiles to be lined/covered to avoid leaching of contaminants are detailed in Appendix E.

Management	
	■ Minimise the number and size of stockpiles – maximum 2:1 m height to width ratio for batters. ■ Topsoil stockpiles are required where significant ground disturbance is expected including winch sites, drum sites, construction benches, assembly areas and tower foundations. All located leaf litter and branches shall be included in the stockpile. ■ All topsoil disturbed by clearing shall be stockpiled and respread and reseeded within 20 working days of the completion of works (or as otherwise directed by Transgrid). ■ Topsoil stockpiles shall not exceed 1.5 m high (IECA, 2025), shall not be compacted and are to be stabilised via vegetation or other approved means which preserves the quality of the topsoil (physically, chemically, and biologically) ■ The number and size of stockpiles must be minimised as far as practicable ■ Where practical, stockpiles must be placed at least 5 m away from drainage inlets, open drains, watercourses, and paved areas ■ Locate all material stockpiles away from receiving waters, overland flow paths and outside established riparian zones ■ Cover erodible stockpiles other than topsoil with geotextiles, soil binder, stabilisation matting, or other suitable material, when necessary, to prevent erosion by wind and water ■ Stormwater must be diverted around stockpiles ■ Sediment control devices must be placed downslope of any stockpile ■ Stockpiles must be managed to reduce the risk of bird or other wildlife hazard attraction **Dust (Wind Erosion management)** ■ Ground-disturbing and dust-generating activities will, where practicable, be located away from sensitive receivers. ■ Dust generation will be minimised through the application of water, water extension agents, soil stabilising polymers or other suitable suppression methods to unsealed work areas, access tracks, spoil and aggregate stockpiles, and during the loading and unloading of dust-generating materials. ■ Adequate water supplies will be maintained on site for dust suppression purposes, weather conditions and Bureau of Meteorology forecasts will be monitored to identify periods when wind speeds exceed 10 m/s, and additional controls will be implemented where dust is observed approaching or leaving the site boundary. ■ Disturbed land will be stabilised as soon as practicable following the completion of construction activities to minimise dust generation and erosion. ■ All transport loads containing spoil, earthwork materials, waste or other loose materials will be appropriately covered during transport to prevent material loss. ■ Construction benches outside riparian zones will be left in a stable and weed-free condition, brake and winch sites will be restored to their pre-construction condition, access tracks not required for operation will be reinstated to their previous condition unless otherwise agreed with the landowner, and disturbed areas within riparian zones will be rehabilitated to maintain bank stability and minimise ecological impacts. **Access tracks management** ■ The access tracks are to be designed in compliance with Department of Land & Water Conservation guideline entitled "Guidelines for the Planning, Construction and Maintenance of Tracks" and Managing Urban Stormwater – Soils and Construction Volume 2C Unsealed Roads (DECC, 2008). As such, they require additional maintenance consideration including the following: – Weekly inspections during construction and additional inspections following heavy traffic use or rainfall, including inspection of cross bank inlets and outlets and any necessary repairs – Inspection of all access tracks at least annually as part of routine maintenance following the completion of construction works, with additional inspections as required following prolonged heavy traffic use or exceptionally heavy rainfall events – Removal of any windrows along the outside edge of the track to encourage outfall drainage

Management	
	– Removal of any debris near drainage lines – Minimise timber and scrub removal to that which must be removed for safe operation of the tracks. ■ For un-improved access tracks constructed on cultivated lands additional conservation measures must be implemented. These include: – Topsoil conservation measures – Avoiding mixing of topsoil and subsoil – Limiting of subsoil compaction, including cultivating of topsoil to alleviate access related compaction – Mitigation of risks associated with invasive plant species and pathogens ■ For un-improved access tracks constructed on grasslands lands additional conservation measures must be implemented. These include: – Topsoil conservation measures – Avoiding mixing of topsoil and subsoil – Conservation measures for Rhizomes and the seed bank in the topsoil – Mitigation of risks associated with invasive plant species and pathogens – As far as practicable, limiting the use of access enhancement matting to less than two weeks during the growing season ■ For access tracks on forested or bushlands no additional requirements need to be considered ■ For temporary access tracks only grass slashing is proposed, and no further controls are required to minimise soil disturbance ■ For permanent access tracks associated with construction these will be managed through the use of erosion and sediment controls (see ESCP; Aurecon, 2026a) to divert offsite flows, stabilise flow velocity along access tracks through the use of flow dissipation controls, and application of surface protection (e.g. gravelling) where required to reduce rilling. ■ Where steep slope gradients are unexpected along access tracks cross-fall drainage is to be implemented as per the detailed design, as well as implementing benching or stepped construction where required. **Site access** ■ Site access and egress points are to be limited to the minimum quantity practicable ■ Access and egress from the Site must not track soil onto roads or cause erosion and sediment issues ■ Any dirt tracked onto adjacent roads is to be swept and cleaned up, not swept down drains or washed off.
Monitoring	■ Undertake monitoring in accordance with the Project ESCP ■ Inspections of the ESC measures are to be undertaken: – Weekly during project works – Prior to and after any weather events that generate runoff or excessive winds – Prior to extended Site shutdowns, e.g. Easter, Christmas, public holidays etc. ■ Copies of all inspection records are to be kept on Site and are to be included in any required reports submitted to Zinfra.

8.3 Spoil and waste management

Under the POEO Act, it is an offence to allow waste materials, such as paint, effluent, concrete slurry, cleared vegetation, acid, general rubbish, and chemicals, to leak, spill, or escape from the site or to place it where it could cause environmental harm. As such, it is important to effectively control waste during all

stages of the development. **Table 24** details Project spoil and waste management considerations in accordance with principles outlined in the Blue Book.

Table 24 - Overview of spoil and waste management measure

Management	
Performance Criteria	■ Site neat and tidy ■ Adoption of the waste management hierarchy ■ Any opportunities to reuse or recycle construction materials have been identified and implemented ■ No corrective actions identified during inspections regarding overfilled or inappropriately covered skip bins and/or waste receptacles ■ No complaints related to waste management or disposal from surrounding land users and/or tenants ■ All waste removed from Site is tracked, documented and accounted for with disposal receipts.
Actions	**Worker awareness** ■ The site induction will be conducted as per the CEMP and will include adequate information on appropriate waste disposal practices, requirements to keep the site tidy, and the location of bins. **Work practices** ■ All operations and activities must have adequate waste disposal facilities ■ Operators are responsible for ensuring that their work areas are clean, tidy, and free from foreign object debris ■ Good housekeeping practices are to be employed to ensure no loose waste remains on Site ■ Encourage suppliers to provide materials with minimal packaging ■ Rock, topsoil, and vegetation are to be reused where possible on Site ■ Materials for use elsewhere are to be stockpiled ■ Onsite sorting and/or collection systems are to be in place ■ Site workers to undergo training and site inductions as per the CEMP and Waste Management Plan. ■ Site workers to ensure appropriate personal protective equipment (PPE) is applied to minimise risk of dermal contact and inhalation of excavated material **Spoil management** ■ Spoil is to be stockpiled separately for rehabilitation purposes where appropriate or to be used for landscaping of laydown areas or around access tracks following the completion of construction works. ■ Stockpile register will be maintained. ■ Strip and stockpile topsoil and subsoil separately. ■ Retain topsoil for rehabilitation and surface reinstatement works. ■ Reuse subsoil as track sub-base material or backfill within the project footprint where suitable. ■ Classify all spoil requiring off-site disposal in accordance with the EPA Waste Classification Guidelines. ■ Implement dust suppression on stockpile and topsoil as required. ■ Install suitable erosion controls around the stockpile and topsoil storage areas. **Waste management** ■ Implement the WMP developed for the Project in accordance with REMM WM1. ■ Apply the waste hierarchy by prioritising avoidance, reduction, reuse, recycling and recovery before disposal. ■ Clearly identify, physically separate and stockpile topsoil, mulch and other waste in designated areas to prevent mixing and cross-contamination. Use appropriate delineation measures (e.g. separation distances, bunds, barriers, signage or stockpile markers) where required. ■ Reuse excavated spoil onsite wherever practicable. ■ The importation, storage, treatment, processing, reprocessing and disposal of waste associated with the Project will be undertaken in accordance with the Protection of the Environment Operations Act 1997, the Protection of the Environment Operations (Waste) Regulation 2014, and any relevant Resource Recovery Orders and Exemptions or other applicable regulatory requirements. ■ Classify waste prior to off-site transport and undertake sampling where required to determine the appropriate waste classification or reuse pathway.

Management	
	■ Dispose of surplus spoil that cannot be reused at an appropriately licensed facility using authorised contractors. ■ Cover waste loads and secure tailgates prior to leaving site. ■ Transport waste off-site only using appropriately licensed waste contractors ■ Ensure waste with leachable contaminants is stored on sealed, impervious surfaces. ■ Verify waste contractor and receiving facility licences before transport and disposal. ■ Achieve 100% diversion of uncontaminated spoil from landfill where possible. ■ Staff facilities are to be placed so that any effluent, including wash-down water is contained within the Project footprint and does not migrate off-site. Toilet facilities are typically placed above an enclosed effluent storage tank. Sorted waste is to be removed from Site only in an approved manner by means of suitable transport to licensed landfill sites. ■ The effluent storage tanks will be equipped with either a high-level alarm or an automatic cut-off valve. These controls are intended to alert the project team and indicate that a pump-out is required as a matter of urgency to prevent tank overfilling. Designated waste collection areas with appropriate bunds or containers are to be provided and maintained to operate within their capacity ■ Waste material, including spoil, earthworks materials, or other loose material is to be suitably covered when being transported off-site to prevent escape of materials during transport. ■ Employees and subcontractors are to be trained as per the CEMP in appropriate spill management procedure ■ Waste classification, transport, reuse, recycling and disposal activities will be managed to prevent environmental harm and maintain compliance.
Monitoring	■ Continuous visual checks during scheduled inspections ■ Daily inspections to ensure all skip bins and/or waste receptacles on site are sufficiently covered and housekeeping is appropriate. ■ Where a complaint is received, the complaint is to be investigated, and mitigation techniques be employed to resolve the situation.

An overview of the licensing and tracking requirements for common wastes for Transgrid projects as per Transgrid's Environment Handbook (2021) is shown in **Table 25**.

Certain wastes, such as dangerous goods, soil from transmission trenches, scheduled chemical waste, and radioactive waste, may have specific requirements.

Table 25 - Waste classification guidelines (Transgrid, 2021)

Waste class	Examples	Legal requirements		
		Licence to store	Licence to transport	Waste tracking
General solid waste	■ Asphalt ■ Building and demolition waste ■ Bricks concrete and timber ■ Oil filter and absorbent material (free of PCBs and free liquids) ■ Vegetation waste ■ Wood poles (including treated poles) ■ Soil/spoil	Yes, if storing more than 2,500 tonnes of waste generated off-site	No	No
Restricted solid waste	■ Transgrid has no pre-classified restricted solid waste	Yes, if storing more than 5 tonnes of waste generated off-site	Yes	Yes

Waste class	Examples	Legal requirements		
		Licence to store	Licence to transport	Waste tracking
Hazardous waste	▪ Aerosols (empty spray cans, LPG bottles) ▪ Dangerous goods (compressed gas, flammable, corrosive, toxic) ▪ Lead-acid or nickel-cadmium batteries ▪ Dry lead paint waste ▪ Street lamps	Yes, if storing more than 5 tonnes of waste generated off-site	Yes, in loads of more than 200 kg	Yes
Liquid waste	▪ Chemicals, solvents, acids, alkalis, poisons, cleaning agents ▪ Grease and lubricants ▪ Liquid grease trap wastes ▪ Oil (for polychlorinated biphenyls (PCB) <2 ppm) ▪ Liquid paint ▪ Liquid pesticides ▪ Septic tank waste	Yes, if storing more than 5 tonnes of waste generated off-site (60 tonnes for recyclable oil)	Yes, in loads of more than 200 kg	Yes
Special waste	▪ Asbestos ▪ Sharps ▪ Tyres	Yes, if storing more than 5 tonnes of waste generated off-site (50 tonnes for tyres)	Yes, in loads of more than 200 kg (2 tonnes for tyres)	Yes, except for asbestos and tyres within NSW

8.4 Contamination and hazardous materials management

8.4.1 General soil and contamination management

The Transgrid Environmental Handbook (2021) provides detailed management for common hazardous materials encountered during Transgrid projects, including:

- Oil, fuels and chemicals
- PCBs
- Pesticides.

An overview of general soil and contamination management principles is shown in **Table 26**.

Table 26 - Soil and contamination management measures

Management	
Performance Criteria	▪ Development of the Site does not result in unacceptable risks of exposure to contamination, or mobilisation of contamination from the project site ▪ All soil movements within the Site and to/from the Site are monitored and tracked ▪ Off-site disposal and/or re-use of soil complies with relevant State and Federal legislation ▪ Imported soil is approved by Transgrid, complies with relevant contamination guidelines including PFAS NEMP 3.1 (2025), ANZG (2025) and ASC NEPM (2013) and is suitable for use ▪ All reasonable and practicable measures are to be applied to prevent the contamination of land and water ▪ Where able, soil material is to be reused on site.
Actions	**Minor works** ▪ If excavation and earthworks is required, the contamination status of the surface soils will be assessed and management, if necessary, will be undertaken in accordance with procedures detailed in this SWMP ▪ Minor works within AECs noted as potentially containing complete source, pathway receptor links and present initial moderate risk will follow the additional procedures and controls outlined in Appendix E, to reduce the residual risk of activities to low risk.

Management	
	■ If during works, any indicators of potential contamination are encountered, such as (but not limited to) offensive or noxious odours, oil, staining, mottling or discolouration, implement the unexpected finds procedure (Appendix C). ■ In the event that an environmental incident occurs during works, this incident must be reported to the relevant personnel and recorded in the OMNIA the compliance management portal. **Contamination and ASS** ■ In accordance with REMM SC2, if excavation and earthworks is required, the contamination status of the surface soils will be assessed and management, if necessary, will be undertaken in accordance with procedures detailed in this SWMP. ■ In accordance with REMM SC7, prior to ground disturbance in areas of potential acid sulfate soil or rock occurrence, testing will be carried out to determine the presence of actual and/or potential acid sulfate soils or rocks. If acid sulfate soils or rocks are encountered, they will be managed in accordance with the Acid Sulfate Soil Manual (ASSMAC, 1998) and Transgrid's Health, Safety and Environment Guideline. ■ Where earthworks and excavation are required, the contamination status of surface soils are to be assessed and managed, if required, in accordance with the procedures stated in the ASSMP and unexpected finds procedure (Appendix C) ■ Where imported fill, excluding Excavated Natural Materials (ENM), is encountered during Project works the mitigation measures outlined in Section 8.3 are to be implemented. ■ All works at tower locations 2C, 4C, 5C, 6C, 7C, 8C, 9D, 11D and 12D are to be undertaken in accordance with the site-specific ASSMP. **Unexpected contamination** ■ In accordance with REMM SC3, contamination test results and new contamination information will be managed through the adaptive management approach in Section 8.4.4, which applies the CEMP adaptive management framework to soil and groundwater contamination. ■ An unexpected contamination finds protocol is required to be outlined in Appendix C for dealing with unexpected contamination (e.g. stained, oil, odorous soils, discolouration and/or potential asbestos-containing materials) found on site during works. ■ Where unexpected contamination is identified, the following guidelines should be followed: – Works must cease immediately in the vicinity of those works – A member of Zinfra Environmental BP (Business Partner) must be notified and follow the protocol – A suitably qualified person (SQP) must be employed to provide further advice including whether or not reporting or remediation actions are required under the CLM Act is required – Works must not re-commence, until approved by the SQP and Zinfra Environmental BP member – Any additional contamination assessment(s) must be completed by an SQP in accordance with the requirements of ASC NEPM (2013) and NSW EPA to determine suitability of material for on-site reuse or off-site disposal – In the event suspected asbestos or other hazardous building materials containing material is discovered, works should cease immediately and access to the area restricted. Zinfra and/or Transgrid Environment Team should be notified and the Suitably Qualified Environmental Consultant and/or Licenced Asbestos Assessor to be engaged. Works should not recommence until approval from the Zinfra and/or Transgrid PM is received to do so. **Material import** ■ In accordance with EMM SC2, at construction compound sites, importation and placement of engineering fill, Excavated Natural Materials (ENM) or Virgin Excavated Natural Materials (VENM) is to be considered as a construction base to minimise and avoid disturbance of potentially contaminated soils in these areas. ■ Imported ENM will comply with the conditions of the Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014, including: – Material must meet the chemical and other material requirements under 'the excavated natural material order 2014' – Material can only be applied as engineering fill or for use in earthworks – A written record of quantity of ENM received as well as the name and address of the supplier must be kept for 6 years – All records must be made available to Transgrid and ER on request

Management	
	– All ENM received must be applied to land within a reasonable timeframe (no definition of reasonable provided in the exemption) ■ All other material imports to be conducted in accordance with the *Guide to the NSW Resource Recovery orders and exemptions policy framework* ■ No material (e.g. soil, structural fill, asphalt, concrete, green waste, etc.) to be exported from the Site without prior approval ■ Contaminant levels in soil are to comply with the health-based and investigation levels and/or health-based screening levels applicable to commercial/industrial land use described in ASC NEPM (2013: Schedule B1) and PFAS NEMP 3.1 (2025). Contaminant levels in leachate extracts are to comply with the ANZG Toxicant default guideline values (DVGs) for fresh and marine water (ANZG, 2025) and PFAS NEMP 3.1 (2025). **Interim stockpiling** ■ All stockpiling is to be done in accordance with the ASSMP (where applicable) and ESCP (Aurecon, 2026a). ■ Interim stockpiling of soil and other materials should be minimised throughout works, wherever possible, and actions should be taken to prevent both increases in stockpile volumes and the duration of stockpiling. ■ In accordance with the Transgrid Environmental Handbook (2021), excavated spoil may be temporarily stored in a lined/sealed skip or bulk storage bag on-site or at a licenced storage facility if required. ■ Where stockpiling is required: – The Contractor's CEMP and ESCP to include plans with material stockpile areas, routine checks and diversion drains designed to ensure protection from erosion and mobilisation of sediment resulting from runoff and ensuring no 'dirty' stormwater enters the existing site drains – All stockpiles are to be tagged and labelled with a unique stockpile identifier where practical – Stockpiles should have effective stormwater controls implemented where practical, such as installation of temporary up-gradient diversion drains to prevent run-on or bunding down-gradient of stockpiles to collect any leachate where contaminated material is present. – Stockpiles must be placed in locations that will not lead to environmental harm – Long-term stockpiles will be avoided where possible. However, where unavoidable, stockpiles must be adequately revegetated or covered with a suitable material to prevent dust (i.e. temporary covered, hydro mulched, application of a binder). The Contractor's EMP and ESCP are to include plans regarding long-term stockpiles and their management – In accordance with IECA (2025) and Landcom (2004), any stockpiles generated must have a maximum batter slope of 2H:1V (unless otherwise supported by geotechnical advice) and be located within a designated area away from drainage lines and be surrounded by appropriate sediment controls. **Off-site soil disposal** ■ All waste management is to follow controls outlined in Section 8.3. ■ Contaminated soil must only be disposed to an appropriately licenced landfill facility alongside an approved Waste Tracking Register developed in accordance with the NSW EPA Waste Classification Guidelines (2022). **Material tracking** ■ A Waste Tracking Register will be maintained and used to track all wastes requiring offsite disposal. The transportation of waste will be tracked as per Part 4 of the *POEO Waste Regulation* (2014).
Monitoring	■ Monitoring is to be undertaken in accordance with the ASSMP and the Areas of Environmental Concern Procedure (Appendix E). ■ Visual inspections for contamination to be undertaken to look for: – Unexplained scalding, degeneration or vegetation dieback – Unexplained death or disease in aquatic ecosystems – Discoloured or odorous soils – Presence of construction or demolition waste below ground. ■ Visual inspections for ASS to be undertaken to in accordance with Section 8.1. ■ Soil sampling and laboratory analysis to be carried out in response to suspected contamination or ASS or a complaint or incident.
Reporting	■ If soil sampling and laboratory analysis are carried out in response to suspected contamination or ASS or a complaint or incident, validation reports shall be maintained on record and be made available to Transgrid and ER if requested.

Management	
	■ Records of all site inspections, and corrective actions must be maintained ■ Material tracking register to be maintained documenting internal (on site) and external (off site) material movements. ■ A written record of quantity of ENM received as well as the name and address of the supplier must be kept for 6 years ■ All records relating to ENM received on site will be made available to Transgrid and ER on request ■ Where suspected contamination is encountered, works will cease in the affected area and the contamination will be assessed by a suitably qualified specialist. The NSW EPA will be notified through Transgrid in accordance with Section 60 of the Contaminated Land Management Act 1997 where contamination is determined to pose, or be likely to pose, a significant risk to human health or the environment, including through actual or potential off-site migration.

8.4.2 Oil, fuels and chemicals

In accordance with REMM SC5, chemicals, fuels, oils and other hazardous substances will be stored, handled, transported and used in accordance with relevant legislation, Australian Standards and other applicable guidelines, including Transgrid procedures.

The Transgrid Environmental Handbook (2021) (the Handbook) sets out how oil, fuels and chemicals must be controlled on Transgrid projects. It sets the minimum environmental controls for all construction and maintenance work on Transgrid's network and has been adopted for the Project. The Handbook forms part of Transgrid's Environmental Management System and is designed to help workers and contractors comply with their legal obligations.

Table 27 summarises the legislation and standards relevant to hazardous substances on the Project, and how the Handbook procedure meets each one. Where project-specific requirements, approval conditions or Safety Data Sheets (SDS) set a more stringent requirement, the more stringent requirement applies. An overview of the different control measures for different Project stages, relevant to the Project scope of works is shown in **Table 28**.

Table 27 - Legislation and standards addressed by the Transgrid Environmental Handbook (2021)

Legislation/Standard	Requirements	How the Handbook meets the Requirements
Protection of the Environment Operations Act 1997 (NSW)	■ Prevent water and land pollution, including water pollution under section 120 (CoA B15). Notify pollution incidents that cause or threaten material environmental harm.	■ Fuel, oil and chemical storage must be bunded. Handling takes place on hardstand, in bunds or under cover, away from drains, waterways and property boundaries. All containers are labelled and spills are cleaned up promptly. A spill of oil or chemical of any volume is treated as an environmental pollution incident and reported. Incidents reportable under the POEO Act are escalated as High Consequence Incidents (Section 8.7).
Protection of the Environment Operations (Waste) Regulation 2014 (NSW)	■ Classify waste, use licensed transport and track liquid and hazardous waste.	■ Liquid wastes (chemicals, solvents, oils, grease and lubricants) need licensed transport for loads over 200 kg and must be tracked. Used spill absorbents can only go to general solid waste if they are PCB-free and contain no free liquids (Section 8.3, Table 23).

Legislation/Standard	Requirements	How the Handbook meets the Requirements
Contaminated Land Management Act 1997 (NSW)	▪ Duty to report contamination (section 60).	▪ Finding contamination, including from a spill, is treated as an environmental incident: work stops, the area is restricted and the HSE Group is notified so the regulator can be told where required. Remediation is carried out under a RAP (Section 8.7.7).
Work Health and Safety Act 2011 and *Work Health and Safety Regulation 2025* (NSW)	▪ Label hazardous chemicals, make SDS available, provide PPE and store incompatible substances separately.	▪ The Handbook requires all containers to be labelled, incompatible chemicals to be stored separately, and PPE, spill kits and fire extinguishers to be available. Requirements specific to WHS are also managed through the Project safety management system and SWMS.
AS 1940 – *The Storage and Handling of Flammable and Combustible Liquids*	▪ Contain and store flammable and combustible liquids.	▪ Storage of chemicals, fuels and oils must be bunded. Each bund must hold at least 133% of the largest container and be kept impervious and free of debris, with the drain valve closed and the bund emptied after rain. The Handbook refers directly to AS 1940 for bunded storage of PCB material.
Australian Code for the Transport of Dangerous Goods by Road and Rail (NTC, 2018)	▪ Transport dangerous goods safely, with correct labelling, placarding and vehicle equipment.	▪ Vehicles carrying oil must be roadworthy and carry a spill kit, a radio or mobile phone, protective clothing, a dry-chemical fire extinguisher and two foam (AFFF) extinguishers. Containers must be secured. For scheduled PCB material, the Handbook requires dangerous goods labelling, a licensed driver and vehicle for receptacles over 500 kg (L), and placarding.
Pesticides Act 1999 (NSW)	▪ Store, handle, use and dispose of pesticides correctly.	▪ Addressed in Section 8.4.3 (Table 26).
AS/NZS ISO 14001 – *Environmental Management Systems*	▪ Systematic environmental management.	▪ The Handbook is part of Transgrid's certified EMS. Zinfra's EMS is certified to AS/NZS ISO 14001:2015 (Section 5.1).
Protection of the Environment Operations Act 1997 (NSW)	▪ Prevent water and land pollution, including water pollution under section 120 (CoA B15). Notify pollution incidents that cause or threaten material environmental harm.	▪ Fuel, oil and chemical storage must be bunded. Handling takes place on hardstand, in bunds or under cover, away from drains, waterways and property boundaries. All containers are labelled and spills are cleaned up promptly. A spill of oil or chemical of any volume is treated as an environmental pollution incident and reported. Incidents reportable under the POEO Act are escalated as High Consequence Incidents (Section 8.7).

Table 28 - Overview of management controls for oil, fuels and chemicals adapted from Transgrid (2021)

Staging	Requirements
General Requirement	▪ All oil, fuel and chemical containers to be clearly labelled ▪ All spills and leaks to be cleaned as soon as possible

Staging	Requirements
Vehicles and machinery	▪ All vehicles used onsite must be roadworthy and at a minimum maintained in accordance with the manufacturer's requirements. The following should be accessible in the event of an incident involving oils, fuels and chemicals: – Appropriately sized spill kit – Telecommunications device – Appropriate PPE – Dry-chemical fire extinguisher ▪ Regular inspection of all plant and equipment used in the transport of oil, fuel and chemicals ▪ All drums and equipment to be secured during transport off work site
Handling/Operation	▪ All vehicles and machinery equipment to be positioned as far as practical from waterbodies, drains and property boundaries ▪ Constant monitoring of vehicles, machinery and equipment in use ▪ Regular inspection of all plant and equipment used in the handling of oil, fuel and chemicals ▪ Where possible, handle oil, fuel and chemicals where they can be easily recovered in the event of a spill such as on hard stand, within a bunded area, or under cover
Storage	▪ Chemicals, fuels and all other oil storage must be bunded ▪ Bunds should be able to contain at least 130% of the volume of the largest container ▪ Bunds must be in good condition (e.g. impervious, free of debris, drain valve closed, emptied after rain ▪ All incompatible chemicals must be stored separately

8.4.3 Pesticides

If required, the storage, handling and disposal of pesticides (including termiticides, herbicides, biocides, insecticides and fungicides) is controlled under the Pesticides Act 1999. Pesticides can be useful in the management of unwanted pests; however, their misuse can have serious health and environmental effects. Controls for the use of pesticides at different design stages for the Project from Transgrid Environmental Handbook (2021) are detailed in **Table 29**.

Table 29 - Overview of pesticide management controls (Transgrid, 2021)

Stage	Controls
Notification	▪ Display approved notification signage when pesticides are used in public places in accordance with Trans grid's Pesticide Use Notification Plan ▪ Notify owners and occupiers of private property at least 72 hours prior to use on their property ▪ Have the SDS available during use for employees or members of the public
Planning and use	▪ Only use Transgrid approved pesticides (refer to the Schedule of Approved Pesticides) ▪ Any application of pesticides is undertaken by suitably qualified and trained staff ▪ Use the correct equipment and pesticide for the job ▪ Use well maintained equipment that is in good working order ▪ Mix only what you need ▪ Handle, store, mix, use and dispose of pesticides in accordance with the label or permit ▪ Ensure spray does not drift outside the target area ▪ Avoid spraying during periods of rain or wind ▪ Provide an adequate buffer area between the application and dwellings, waterways, animals or environmentally sensitive areas
Storage	▪ Store pesticides in a container with an Agricultural and Veterinary Chemicals (AGVET) Code approved label ▪ Store in areas that are bunded, secure, cool and well ventilated

Stage	Controls
Transport	■ Transport only enough pesticide as is reasonably required for the job ■ Carry an appropriate spill kit in all vehicles used to transport pesticides

8.4.4 Adaptive management of soil and groundwater contamination

In accordance with REMM SC3, an adaptive management approach will be applied to reduce human health and environmental risks from soil and groundwater contamination. The framework for adaptive management is set out in Section 4.6.2 of the CEMP. This section explains how that framework applies to soil and groundwater contamination under this SWMP.

For this Plan, adaptive management means:

- regularly checking, using monitoring, testing and inspection results, whether the contamination controls in Section 8.4.1, Appendix C, Appendix D and Appendix E are working;
- where they are not, or where new contamination information becomes available, changing those controls or putting additional controls in place.

The process has four steps:

1) Monitor: Collect soil, stockpile, leachate and groundwater data through the monitoring in Section 8.6.1 (Table 29), the dewatering permit testing in Appendix D, the AEC-specific requirements in Appendix E, and visual inspections.
2) Evaluate: The Environmental BP, with a suitably qualified contamination specialist where required, compares results against the adopted criteria. These are the ASC NEPM (NEPC, 2013) health and ecological investigation and screening levels, ANZG (2025), PFAS NEMP 3.1 (2025) and the NSW EPA Waste Classification Guidelines. The evaluation determines whether:
    - contamination risks to human health (construction personnel, landowners and the public) or the environment (soil, groundwater, the Coxs River and the Sydney drinking water catchment) are greater than assessed;
    - current controls are adequate.
3) Adjust: Where a trigger in **Table 30** is reached, apply the adaptive response. Responses may include further assessment, more sampling or analytes, stronger PPE and exposure controls, a change to the stockpiling, reuse, discharge or disposal pathway, or reassessing the AEC risk rating in Appendix E.
4) Review and communicate: Record changes in the Corrective Action Register (Section 8.6.3) and communicate them through toolbox talks and pre-starts. Where a change affects this Plan, update the Plan in accordance with Section 9.

New contamination information will feed into this process. This includes further contamination reports on AEC 10 (Former Wallerawang Power Station), results from detailed site investigations where uncontrolled fill is found (Section 6.4.6), and unexpected finds. This is particularly important at towers 4C and 5C. At those towers, the baseline investigation (ADE, 2026) and leachate testing (Aurecon, 2026b) found a potential pathway for metals to migrate from soil to groundwater (Section 6.4.5).

Table 30 - Overview of pesticide management controls (Transgrid, 2021)

Trigger	Evaluation	Adaptive response	Responsibility	Record
Soil or stockpile results exceed the adopted ASC NEPM (2013) or PFAS NEMP 3.1 (2025) criteria	Contamination specialist assesses the extent, source and exposure pathways under ASC NEPM (2013)	Further assessment; segregate and cover affected material; stronger PPE and dust controls; reclassify material under the Waste Classification Guidelines before reuse or disposal; RAP where required (Section 8.7.7)	Environmental BP / contamination specialist	Laboratory reports; waste classification; Corrective Action Register
Groundwater or dewatering results exceed Appendix D or Appendix E criteria	Compare against ANZG (2025), PFAS NEMP 3.1 (2025) and ASC NEPM (2013) criteria	Stop discharge or reuse; contain, treat or dispose of the water off-site at a facility lawfully able to receive it; expand the analytes for later dewatering events at that location	Environmental BP / Supervisor	Dewatering Permit; laboratory results; disposal dockets
New contamination information becomes available (e.g. further AEC 10 reports, detailed site investigations, unexpected finds)	Review the AEC risk rating and controls in Section 6.4.6 and Appendix E	Update the AEC risk rating and Appendix E controls; extend controls to more towers or areas where needed; update Section 6.4	Environmental BP / contamination specialist	Updated Appendix E; SWMP revision record
Inspections or monitoring show contamination controls are ineffective (e.g. leachate or run-off from stockpiles, damaged covers or bunds)	Identify the cause and the potential exposure to human or environmental receptors	Repair or upgrade the controls; move stockpiles; add bunding, lining or covers; increase inspection frequency	Supervisor / Environmental BP	Inspection reports; Corrective Action Register
Contamination found at levels that may trigger a duty to report under s60 of the CLM Act	Contamination specialist assesses against the EPA Duty to Report guidelines	Notify the EPA through Transgrid; manage under Appendix C and a RAP	Environmental BP	Notification records; specialist report

8.5 Management and Mitigation Measures

Management and mitigation measures relevant to the Project are outlined in **Table 31** below. These will be implemented to minimise impacts on soil and water and ensure all commitments and requirements of the Project approval are met. These specific management and mitigation measures have been developed to address the requirements of applicable legislation, the CoA and commitments of the REMMs.

Table 31 - Soil and Water management and mitigation measures

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
SW1	The Project will maintain sufficient potable and non-potable water supplies for construction activities and will review forecast demand against available supply.	Throughout Construction	Construction Manager	CoA B13	Site water usage records; water delivery dockets
SW2	Site-specific ESCPs and progressive ESCPs will be prepared or reviewed in consultation with a CPESC, Registered Soil Practitioner or similarly qualified professional and implemented before the relevant ground-disturbing work commences.	Prior to ground disturbance and throughout construction	Environmental BP	CoA B14; REMM W1	Approved ESCPs, Progressive ESCPs, site environmental inspection record
SW3	Erosion, sediment and drainage controls will be designed, installed and maintained in accordance with the approved ESCPs, the Blue Book, applicable IECA guidance.	Prior to ground disturbance and throughout construction	Supervisor	CoA B14; REMM W1	Approved ESCPs; erosion and sediment control inspection records; environmental inspection reports.
SW4	Land disturbance will be limited to approved work areas and the minimum area reasonably required to undertake the work. Existing vegetation, stable groundcover, waterways and drainage lines will be retained where practicable.	Detailed design and throughout construction	Supervisor	CoA B12 and B14; REMM AQ1, LU8 and SC1	Construction drawings and disturbance footprint plans; survey records.
SW5	Vehicle and plant movement will be restricted to designated access routes, approved access tracks and defined work areas to minimise unnecessary soil disturbance and compaction.	Throughout Construction	Construction Manager,	Industry best practice	Traffic management plans; site access plans; site inspection records.
SW6	External clean-water runoff will be diverted around exposed work areas, stockpiles and other disturbed surfaces where practicable, without materially altering natural drainage patterns, flood flows or flood-storage capacity.	Prior to and throughout ground-disturbing work	Supervisor	CoA B14 and B18; REMM W2 and W3	ESCPs; drainage diversion design drawings; site inspection reports; photographs of diversion drains and clean-water controls
SW7	Sediment-laden runoff generated within construction areas will be captured and treated to meet the discharge criteria prior to reuse or discharge.	Throughout construction and following rainfall	Supervisor	CoA B14 and B15; REMM W1	Water quality monitoring results; discharge records; dewatering records; laboratory analytical reports (where applicable); inspection records following rainfall events;
SW8	Water management system will be designed, constructed and maintained at all construction compounds to prevent pollution;	Throughout construction	Project Manager	CoA B16	Compound drainage and water management design drawings; inspection and maintenance records; photographs

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
					of installed controls; pollution incident records (if applicable)
SW9	Erosion and sediment controls will be inspected weekly, before and after rainfall events that generate runoff, and before extended site shutdowns. Identified defects will be repaired as soon as practicable.	Throughout construction; before and after rainfall; before extended shutdowns (>3 days)	Environmental BP	REMM W1	Erosion and sediment control inspection records; pre- and post-rainfall inspection records
SW10	Sediment control measures will remain in place and operational until the contributing catchment and disturbed surfaces are safe, stable and non-polluting.	Throughout construction	Supervisor	CoA B14; Industry best practice	Environmental inspection reports, photographic records
SW11	Disturbed areas that are no longer required for construction will be stabilised as soon as practicable.	During construction and following completion of work in an area	Supervisor	Industry best practice	Photographic records before and after stabilisation; environmental inspection reports
SW12	Disturbed areas will be progressively rehabilitated at the earliest practicable opportunity using measures suitable for the soil type, slope, land use and receiving environment.	During construction and post-construction	Supervisor	CoA B53; REMM B12, B17, SC1 and AQ1	Environmental inspection reports, photographic records, rehabilitation completion sign-off documentation.
SW13	All upgrades and rehabilitation works to trails within the Gardens of Stone Conservation Area will be undertaken in consultation with and to the satisfaction of NSW National Parks and Wildlife Service (NPWS).	During construction and post-construction	Supervisor	CoA B36	Consultation records with NPWS; meeting minutes; email correspondence
SW14	Following completion of construction activities, trails within the Gardens of Stone Conservation Area will be rehabilitated and upgraded, where required, in accordance with the Guidelines for the Planning, Construction and Maintenance of Trails, Blue Book Volume 2C – Erosion and Sediment Control on Unsealed Roads, and relevant requirements of Managing Urban Stormwater: Soils and Construction (Landcom 2004).	During construction and following completion of work within Gardens of Stone Conservation Area	Supervisor	CoA B36	Rehabilitation design drawings; NPWS consultation records and correspondence; rehabilitation completion sign-off

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
SW15	Following the completion of construction activities, opportunities to enhance riparian zones for aquatic habitat values, including revegetation and other ecological improvement measures, will be considered in consultation with relevant stakeholders, including DPIRD-Fisheries, WaterNSW and other appropriate agencies. Where enhancement initiatives are determined to be feasible and reasonable, they will be incorporated into post-construction restoration and rehabilitation works.	During construction and following completion of work in an area	Environmental BP	REMM B17	Stakeholder consultation records; meeting minutes; photographic monitoring records
SW16	Construction activities within or adjacent to the Coxs River and the unnamed tributaries of Wangcol Creek that provide fish habitat will be undertaken to minimise any additional restriction to fish passage from existing conditions and in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI 2013) and the Controlled Activities – Guidelines for Watercourse Crossings on Waterfront Land (DCCEEW 2025b). These will include • Watercourse crossings will be selected and managed to maintain hydraulic connectivity and, where practicable, allow the ongoing movement of fish and other aquatic fauna through the watercourse. • Works within or adjacent to fish habitat will be sequenced and undertaken in a manner that minimises disturbance to watercourse beds, banks and aquatic habitat and reduces the potential for construction activities to impede fish movement.	During construction	Environmental BP	REMM B18	Watercourse crossing design drawings; environmental inspection records
SW17	Topsoil and subsoil will be stripped and stockpiled separately where practicable. Retained topsoil will be protected from contamination, erosion and compaction and reused for reinstatement and rehabilitation.	During clearing, stripping, earthworks and rehabilitation	Supervisor	REMM LU10	Environmental inspection records; photographic records
SW18	Weed-free woody material generated during vegetation clearing will be considered for beneficial reuse as part of rehabilitation works, where practicable.	During clearing, stripping, earthworks and rehabilitation	Supervisor	REMM LU9	Weed hygiene inspection records; photographs of reused woody material; environmental inspection records.

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
SW19	Stockpiles will be located away from waterways, drainage lines, overland-flow paths, riparian zones and other sensitive receiving environments.	When establishing and maintaining stockpiles	Supervisor	CoA B14 and B15; REMM AQ1 and SC1	Environmental control maps; environmental inspection reports
SW20	Access and egress points will be stabilised and managed to prevent soil, mud and debris being tracked onto public roads.	Throughout construction	Supervisor	Industry best practice	Photographic records; community complaint records (if applicable)
SW21	Dust-generating activities will be located away from sensitive receptors where practicable, and exposed surfaces, access tracks and stockpiles will be managed using suitable suppression or stabilisation measures.	Throughout construction, particularly during dry or windy conditions	Supervisor	CoA B12; REMM AQ1	Water cart usage records; photographic records; weather monitoring records; environmental inspection reports; complaint register (if applicable)
SW22	Weather forecasts and wind conditions will be monitored during earthworks. Where wind speeds exceed 10 m/s and dust is observed leaving the site boundary, additional controls will be implemented and the dust-generating activity modified or stopped until the risk is acceptable.	During earthworks and other dust-generating activities	Environmental BP	Industry best practice	Daily pre-start records; environmental inspection records
SW23	Works within waterfront land will be designed and undertaken in accordance with the applicable Guidelines for Controlled Activities on Waterfront Land and relevant fish-passage and fish-habitat guidance, unless otherwise agreed by the relevant regulator.	Detailed design, pre-construction and construction	Supervisor	CoA B17; REMM W6 and B18	Design drawings; environmental approvals and permits; regulator consultation records; environmental control plans; construction inspection reports; photographic records.
SW24	Riparian buffers and vegetation to be retained will be identified on relevant plans or environmental control maps and physically delineated as exclusion areas where practicable.	Detailed design and prior to construction near riparian areas	Environmental BP	REMM B04	Environmental control maps; environmental inspection reports
SW25	Materials, spoil, fuels, chemicals, plant and equipment will be stored outside riparian zones, watercourses, drainage lines and flood-prone areas where practicable.	Throughout construction	Supervisor	Industry best practice	Environmental inspection reports; photographic records.
SW26	Following flood or severe-weather events, affected work areas, access tracks, drainage structures and erosion and sediment	Following flood or severe-weather events	Environmental BP	Industry best practice	Photographic records of damage and repairs; corrective action register.

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
	controls will be inspected when safe to do so. Damage or instability will be rectified before affected work recommences.				
SW27	Concrete washout structures will be established with sufficient capacity to prevent over filling before concrete work commences and located on stable, level ground.	Prior to concrete work and throughout concrete activities	Supervisor	Industry best practice	Photographic records of washout facilities; environmental inspection reports
SW28	Concrete trucks, pumps, tools, chutes and associated equipment will only be washed within approved, clearly identified and contained washout facilities. Concrete wash water, slurry and cement residue will not be discharged directly to land, drains or waterways.	During concrete works	Supervisor	Industry best practice	Environmental inspection reports; photographic records
SW29	Chemicals, fuels, oils and hazardous substances will be stored, handled and used in accordance with relevant legislation, Australian Standards, applicable guidelines.	Procurement, transport, storage, handling and use	Supervisor	SW29	Safety Data Sheets (SDS); chemical and fuel registers; environmental inspection reports.
SW30	Refuelling, servicing and handling of hazardous substances will be conducted as far as practicable from watercourses, drains and property boundaries and in locations where spills can be readily contained and recovered.	During refuelling and chemical handling	Supervisor	Industry best practice	Environmental inspection reports; photographic records
SW31	Spill kits suitable for the substances and activities being undertaken will be readily accessible to construction personnel, maintenance personnel and contractors. Spill kits will be inspected and replenished as required.	Prior to relevant activities and throughout construction	Environmental BP	Industry best practice	Spill kit inventory registers; replenishment records; site inspection reports; photographic records
SW32	Spills and leaks will be stopped, contained, cleaned up and reported as soon as practicable in accordance with the Project Spill Response Procedure and incident-management requirements.	Immediately following a spill or leak	Supervisor	Industry best practice	Incident reports; spill response records; photographic records
SW33	Site personnel undertaking activities involving fuels, oils or chemicals will be trained in the Spill Response Procedure and the protocols to be implemented in the event of a spill or leak.	Prior to commencing relevant work	Environmental BP	CoA A16; REMM SC5	Training records; induction records; toolbox attendance records; competency records;

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
SW34	Personnel working within applicable AECs or with potentially contaminated materials will receive contamination-awareness training and use PPE appropriate to the identified exposure risks.	Prior to work within applicable AECs and throughout the activity	Environmental BP	REMM SC1	Contamination awareness training records; induction records; toolbox attendance sheets
SW35	The Project will minimise ground disturbance at construction compound sites where practicable. Where necessary, imported engineering fill, Excavated Natural Material (ENM) and/or Virgin Excavated Natural Material (VENM) will be used as a construction base to avoid or minimise disturbance of potentially contaminated soils and reduce the risk of contaminant mobilisation.	Prior to work within applicable AECs and throughout the activity	Supervisor	REMM SC2	Construction compound layout plans; contamination assessment records; imported fill verification records; environmental inspection reports; design documentation demonstrating minimisation of disturbance within AECs.
SW36	Where excavation or earthworks are required within construction compounds, the contamination status of surface soils will be assessed prior to disturbance. Any contaminated or potentially contaminated soils identified during construction will be managed in accordance with Appendix C.	Prior to work within applicable AECs and throughout the activity	Supervisor	REMM SC2	Contamination assessment reports; site investigation records; environmental inspection reports
SW37	Imported material will be verified as legally sourced, suitable for its intended use and compliant with applicable resource recovery orders, exemptions and project acceptance requirements before placement.	Prior to import and placement	Environmental BP	CoA B48; REMM SC2	VENM/ENM certificates; resource recovery order and exemption records; material validation documentation; delivery dockets
SW38	Unexpected contamination will be assessed by a suitably qualified contamination specialist, and affected work will not recommence until required controls, treatment, remediation or disposal measures have been implemented and recommencement has been authorised.	Following an unexpected contamination find	Environmental BP	CoA B19(b)(iii) to B19(b)(v); REMM SC6	Stop-work records; contamination specialist assessment reports; laboratory analytical results
SW39	Soil requiring reuse or off-site disposal will be sampled and classified where required in accordance with the applicable NSW EPA Waste Classification Guidelines and relevant contamination-assessment requirements.	Before reuse or off-site disposal	Environmental BP	REMM SC1 and SC3	Waste classification reports; laboratory analytical results; sampling records; waste assessment documentation

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
SW40	Contaminated soil or other waste requiring off-site disposal will only be transported by an appropriately authorised contractor to a facility lawfully able to receive the material. Waste classifications, transport records and disposal dockets will be retained.	Before and during off-site disposal	Environmental BP	CoA B49 and B50; REMM SC1	Waste transport certificates; waste tracking documentation; disposal facility receipts; disposal dockets; waste classification reports; contractor licences; waste registers.
SW41	A Dewatering Permit will be completed, reviewed and approved before dewatering commences. The permit will identify the dewatering location, estimated volume, water-quality results, proposed reuse or discharge method and relevant controls.	Before each dewatering activity	Supervisor, Environmental BP	REMM W5	Approved Dewatering Permit; water quality monitoring results; dewatering assessment records; discharge approvals (where required); dewatering inspection records
SW42	Personnel involved in dewatering will receive induction or activity-specific training covering the Dewatering Management Plan, Dewatering Permit requirements, applicable controls and relevant environmental obligations.	Prior to undertaking dewatering	Environmental BP	CoA A16; REMM W5	Dewatering training records; induction records; toolbox attendance records; competency records; signed attendance sheets; training material
SW43	Water proposed for reuse or discharge will be visually inspected and tested against the approved DMP water-quality criteria before reuse or discharge.	Before each reuse or discharge event	Supervisor	CoA B15; REMM W5 and SC1	Water quality monitoring results; field test records; laboratory analytical reports (where required); approved Dewatering Permit; discharge/reuse approval records; dewatering logs; environmental inspection records.
SW44	Contaminated groundwater will not be released to the surrounding environment and will be managed through treatment or disposal at a facility lawfully able to receive it.	Whenever groundwater contamination is identified or suspected	Supervisor	REMM SC1	Groundwater contamination assessment records; laboratory analytical reports; waste classification reports; disposal dockets; licensed facility receipts
SW45	Reuse of dewatered water for dust suppression, soil conditioning, drilling support, wheel washing or revegetation will be undertaken only where the water is suitable for the intended use and application will not cause runoff, erosion, ponding or migration to sensitive areas.	During approved reuse activities	Supervisor	Industry best practice	Environmental inspection reports; dewatering logs; photographic records; water quality monitoring records

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
SW45	Water reused or discharged to land will be applied to stable areas at a rate that allows infiltration without causing runoff, scouring, channelling or waterlogging.	During water reuse or land discharge	Supervisor	Industry best practice	Environmental inspection reports; dewatering logs; photographic records; water quality monitoring records
SW46	Dewatering will be continuously supervised. Pumping will cease immediately if erosion, scouring, bypass, overtopping, uncontrolled runoff, instability or an adverse change in water quality is observed.	Throughout each dewatering event	Supervisor	Industry best practice	Dewatering inspection records; dewatering logs; environmental monitoring records; photographic records; supervisor sign-off.
SW47	Groundwater extraction records required under the applicable 3 ML annual exemption will be completed within 24 hours of extraction, retained for the required period and submitted in accordance with the applicable exemption conditions.	Within 24 hours of each extraction and at the prescribed annual reporting time	Environmental BP	CoA B13 and B19(c)	Groundwater extraction register; groundwater extraction logs; annual reporting submissions; regulatory correspondence and submission records.
SW48	Cumulative groundwater extraction volumes will be reviewed during construction. The groundwater TARP will be activated where extraction volumes or inflow conditions approach the applicable trigger levels or are greater than expected.	Throughout construction and during groundwater interception	Environmental BP	CoA B19(c); REMM W5	Groundwater extraction register; groundwater monitoring records; groundwater inflow records, environmental inspection reports
SW49	If groundwater take is likely to exceed the applicable 3 ML annual exemption, the Project will escalate the matter in accordance with the TARP, assess licensing requirements and obtain any required WAL before unlicensed take exceeds the exemption.	When TARP trigger levels indicate the exemption may be exceeded	Environmental BP	CoA B13 and B19(c); REMM W5	Groundwater extraction calculations; WAL application records; regulatory correspondence; approvals and licences obtained;
SW50	Monitoring and inspection results will be documented, retained and reviewed to verify control effectiveness and identify corrective or preventive actions.	Throughout construction	Environmental BP	Industry best practice	Environmental inspection reports; monitoring records; audit reports;
SW51	Where inspections, monitoring, audits, incidents or complaints identify ineffective controls, the relevant control will be repaired, replaced, supplemented or otherwise improved, and the action will be tracked to completion.	Following identification of ineffective controls	Supervisor	Industry best practice	Corrective action register; inspection reports; audit findings; incident reports; complaint records;
SW52	Site personnel will receive induction, toolbox or pre-start information relevant to their work, including erosion and	Prior to commencing	Environmental BP	CoA A16; REMM W1, SC1, SC5,	Site induction records; toolbox attendance sheets; pre-start records;

ID	Measure/ Requirement	When to implement	Responsibility	Reference	Evidence
	sediment control, dewatering, contamination, ASS, spill response, sensitive areas and incident-reporting requirements.	relevant work and throughout construction as required		SC7 and Industry best practice.	competency records; training registers; signed acknowledgement records.
SW53	Relevant soil and water management requirements, exclusion areas, controls will be communicated through approved plans, environmental control maps, pre-starts, toolbox talks and work-method documentation.	Prior to and during the relevant activity	Supervisor, Environmental BP	Industry best practice	Environmental control maps; pre-start records; toolbox records; work method statements
SW54	Ground disturbance within Areas of Environmental Concern (AECs) identified as having a potentially complete source-pathway-receptor linkage will be minimised to the extent practicable.	Prior to and during the relevant activity	Supervisor, Environmental BP	REMM SC1	Environmental control maps; AEC delineation records; construction footprint plans; environmental inspection reports; photographic records;
SW55	Construction activities will be staged, and progressive rehabilitation will be implemented, to minimise the area of land disturbed at any one time and reduce the potential for the mobilisation or exposure of contamination.	During progressive rehabilitation	Supervisor	REMM SC1	Environmental inspection reports; photographic records; rehabilitation completion sign-off records.
SW56	Where any exceedances are identified by monitoring activities contained in Section 8.6.1, they will be investigated and suitable corrective actions will be implemented in line with Section 8.6.3.	Throughout construction	Environmental BP	Industry best practice	Monitoring records; exceedance reports; investigation reports; corrective action register.
SW57	Soil, stockpile and groundwater results and new contamination information will be assessed against the adopted criteria. Where a trigger in Section 8.4.4 is reached, controls will be adjusted or supplemented to reduce human health and environmental risk.	Throughout construction	Environmental BP	REMM SC3	Laboratory reports; Corrective Action Register; updated Appendix E

8.6 Compliance Monitoring and Reporting

8.6.1 Environmental Monitoring

In accordance with Condition B19 (d) of CoA, an overview of the monitoring activities for the Project has been developed and is provided in **Table 32** below. Where any exceedances are identified by these monitoring activities, they will be investigated and suitable corrective actions will be implemented in accordance with Section 8.6.3.

Table 32 - Site inspection and monitoring requirements

Monitoring Type	Frequency / Trigger	Responsibility	Record / Reporting Requirement	Source / Reference
Weather forecasting and severe weather monitoring	Weekly review. Daily during predicted adverse weather. Prior to forecast severe weather events.	Environmental BP	pre-start records	Industry Best Practice
Dust monitoring	Continuous during earthworks. Additional monitoring when wind speeds exceed 10 m/s.	Supervisor	Visual; SWMS/ Job Hazard Analysis, Site Supervisor's Diary	REMM AQ1
Erosion and sediment control inspections	Weekly during works; before and after rainfall events; before site shutdowns >3 days	Environmental BP/ Supervisor	Weekly environmental inspection checklist	Industry Best Practice
Drainage controls, sediment basins and outlet inspections	Weekly and after rainfall events	Environmental BP/ Supervisor	Weekly environmental inspection checklist/ Post Rainfall Inspection Checklist	Industry Best Practice
CPESC inspections	As required by construction activities	CPESC	CPESC inspection report	Industry Best Practice
Pre-rainfall inspection of excavations, sumps and temporary storages	Prior to forecast rainfall	Environmental BP/ Supervisor	Pre rainfall Inspection Checklist	DMP – Appendix D Table 31
Post-rainfall inspections	Next working day following rainfall event	Environmental BP/ Supervisor	Post Rainfall Inspection Checklist	DMP – Appendix D Table 31
Dewatering water quality testing	Prior to any reuse or discharge	Environmental BP	Water quality test results, Dewatering Permit	REMM W5; DMP – Appendix D Tables 21 and 23
Post-discharge inspection	Following completion of each dewatering event	Environmental BP/ Supervisor	Photographs, Dewatering Permit, corrective action records	DMP – Appendix D Table 23 Step 8
Groundwater extraction reporting (<3 ML exemption)	Record within 24 hours of extraction; annual reporting	Environmental BP	Annual groundwater take records and DCCEEW reporting form	Water Management Act exemption requirements; DMP Section 4.1
AEC-specific groundwater and dewatering monitoring	Prior to discharge/reuse where dewatering occurs in applicable AECs	Environmental BP	Laboratory analysis reports and Dewatering Permit	REMM SC1
Sensitive receptor dewatering monitoring	Before and throughout dewatering near waterways, dams and riparian areas	Environmental BP	Dewatering records and inspection records	DMP – Appendix D Section 3.1 and Table 35

Monitoring Type	Frequency / Trigger	Responsibility	Record / Reporting Requirement	Source / Reference
ASS monitoring	Prior to ASS disturbance and weekly during ASS-related works	Environmental BP	ASSMP monitoring records and laboratory reports	REMM SC7
Soil testing (unexpected contamination / reuse / disposal)	Triggered by contamination indicators, complaints or incidents	Environmental BP	Laboratory reports and waste classification reports	REMM SC1, SC3, SC6
Stockpile inspections	Weekly and after rainfall events	Environmental BP/ Supervisor	Inspection checklist and stockpile register	REMM AQ1, SC1
Fuel, oil and chemical storage inspections	Regular inspections during construction	Environmental BP/ Supervisor	Inspection records and spill response records	CoA B16(b); REMM SC5
Spill kit inspections	Weekly and during environmental inspections	Environmental BP/ Supervisor	Inspection checklist	REMM SC5
Water use monitoring	Monthly review of potable and non-potable water consumption	Environmental BP	Water use log and supplier records	CoA B13;
Cox River water quality monitoring (upstream and downstream of works)	Monthly whilst works are occurring within 50 metres of Cox River	Environmental BP	Water Quality Monitoring records	REMM W1

8.6.2 Environmental Audit

As per Condition C14 of the Infrastructure Approval, an Independent Audit will be carried out for the Project

The audit will be conducted in accordance with the current Independent Audit Post Approval Requirements.

The recommendations of the Independent Environmental Audit will be implemented to the satisfaction of the Planning Secretary, as relevant to this Plan.

8.6.3 Corrective and preventative actions

Corrective and preventative action process will be initiated following the identification of a non-conformance and/or non-compliance. In accordance with the Environmental Management Plan Guideline, **Non-conformance** is defined to be a failure to comply with an environmental requirement, standard, or procedure. **Non-compliance** is defined as an occurrence and/or set of circumstances that breach the Conditions of Approval and/or any other legal requirement.

In the event that environmental incidents, non-conformances, complaints, monitoring results, inspections or audits identify actual or potential environmental impacts, the following corrective actions will be undertaken as appropriate to rectify the issue, prevent recurrence and maintain compliance with project requirements.

- Implement any recommended actions arising from site inspections, audits, investigations, monitoring activities or compliance reviews.
- Record corrective actions on inspection checklists, inspection reports or non-conformance records and allocate them to the appropriate personnel for implementation.
- Notify the Transgrid Environment Team of environmental incidents, non-conformances, complaints or unexpected environmental impacts as soon as practicable.
- Investigate the cause of environmental incidents, non-conformances, complaints or environmental harm and implement reasonable and practicable corrective and preventive measures.
- Undertake additional investigations, inspections, monitoring or assessments where required to determine the cause, extent and significance of an incident or environmental issue.

- Review the effectiveness of environmental controls, mitigation measures and management procedures and implement improvements where deficiencies are identified.
- Complete maintenance, repair, replacement or reinstatement of damaged or ineffective environmental controls as soon as practicable.
- Update relevant management plans, procedures, risk assessments, ESCPs or environmental documentation where monitoring, incidents, audits or inspections identify a need for change.
- Communicate revised requirements and corrective actions to personnel through toolbox talks, pre-start meetings, inductions or other appropriate communication mechanisms.
- Implement the Unexpected Finds Procedure and any site-specific contamination or acid sulfate soil management requirements where contamination or ASS is encountered.
- Complete and close out all non-conformance, incident and corrective action records in accordance with project requirements.
- Notify relevant stakeholders of environmental incidents or complaints in accordance with the Community Communication Strategy and applicable notification requirements.

As a result of the inspections corrective actions may be required including the following:

- Necessary repairs to any drains identified as non-operational or damaged
- Removal of any spilled sand or other materials from areas closer than 5 metres from areas of likely concentrated or high velocity flows (waterways, paved areas, driveways)
- Removal of trapped sediment whenever less than design capacity remains within the structure
- Upgrading or repair of rehabilitated lands as appropriate if the erosion hazard has not been effectively reduced
- Construction of additional erosion and/or sediment controls as necessary to ensure the desired protection is given to downslope lands and waterways, i.e. make ongoing changes to the Construction ESCP where it proves inadequate or is subjected to changes in conditions or construction methodology
- General maintenance of erosion and sediment controls to ensure they operate in a fully functioning condition until all earthwork activities are completed, and the site is stabilised
- Removal of temporary soil conservation structures once the site has been verified as fully rehabilitated/stabilised.

Any remedial works that are undertaken should be logged in the weekly inspection checklist/logbook.

Both non-conformance and non-compliance items identified during inspections and audits will be captured in the Corrective Action Register.

The Environmental BP in consultation with Zinfra Project Manager and Construction Manager will develop the corrective and preventative actions and assign a responsible person to close the actions within the agreed timeframes.

A copy of the Corrective Action Register will be provided to Transgrid as part of the monthly reporting. Any non-compliance identified will be reported to the Department in line with the Condition of Approval requirements.

8.6.4 Reporting

Reporting which will be undertaken in accordance with the SWMP is summarised in **Table 33** below:

Table 33 - Reporting requirements

Item	Scope	Frequency	Responsibility	Recipient
Unexpected Finds	Reporting of unexpected contamination finds will be undertaken in accordance with Transgrid procedure.	As required	Environmental BP	Transgrid Environmental Representative (if required) Relevant agencies (if required)
Groundwater intercepted during aquifer interference activities	An exemption within the Water Management (General) Regulation 2018 allows for 3ML per project per year to be intercepted during aquifer interference activities without the need for a WAL. Monthly log report will be provided on the quantity of interception.	Monthly	Environmental BP	Transgrid
Contamination	The Duty to Report Contamination will be considered per the CLM Act 1997. The project will work with the certified environmental practitioner consulted with the notification triggers including unsuitable lands, prescribed contaminant levels or off-site (including foreseeable) migration of contaminants from site by any means.	As required / When triggered by the CLM Act 1997	Environmental BP	Transgrid Environmental Representative (if required) Relevant agencies (if required)

8.7 Environmental Incident and Emergency Planning, Preparedness and Response

8.7.1 Incident Management

In accordance with CoA, an incident is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance. Material Harm is harm that

- involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or
- results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $50,000, (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).

This definition excludes “harm” that is authorised under either this approval or any other statutory approval.

All incidents will be reported immediately to the Transgrid Project Manager and must be entered by Zinfra into OMNIA within 24 hours, Zinfra’s Risk and Compliance Management System, which serves as the project’s

incident management database to ensure that actions are tracked and completed within the required timeframes.

OMNIA supports the management of:

- Enterprise- and Business Unit-level risks, including associated controls, causes, and actions
- Compliance obligations and related documentation

8.7.2 Incident Notification

In accordance with Condition C16 of CoA, the Zinfra Environmental Business Partner (through Transgrid) will notify DPHI and NPWS within 24 hours of becoming aware of an incident. The notification to the Department 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.

Note: NPWS can be notified to NPWS Kanangara Area via **npws.kanangra@environment.nsw.gov.au** and Blue Mountains Branch Duty Officer or as otherwise advised by NPWS.

8.7.3 Incident Report

In accordance with CoA C17, the Zinfra Environmental Business Partner (through Transgrid) will provide the Department and NPWS with a subsequent incident report via the NSW planning portal (Major Projects) within 7 days (or as otherwise agreed by the Planning Secretary) of the incident notification (in accordance with condition C16). The incident report shall

a. identify how the incident was detected;

b. identify when the Proponent became aware of the incident;

c. identify any actual or potential non-compliance with conditions of consent;

d. identify further action(s) that will be taken in relation to the incident; and

e. provide a summary of the incident;

f. provide outcomes of an incident investigation, including identification of the cause of the incident;

g. detail corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence, including the period for implementing any corrective and/or preventative actions; and

h. detail any communication with other stakeholders regarding the incident.

Zinfra's Environmental Business Partner (through Transgrid) shall also submit any further reports as directed by the Planning Secretary.

8.7.4 Incident Investigation

An investigation will be initiated by the Zinfra Project Manager promptly following any reported incident. The scope and depth of the investigation will depend on the severity and potential impact of the incident. Key elements may include:

- Determining the cause, extent, and responsibility of the incident.
- Additional monitoring (where appropriate)
- Identifying and implementing corrective actions to prevent recurrence.
- Assigning responsibility for carrying out corrective measures.
- Reviewing and updating controls and procedures as needed.

- Notifying relevant stakeholders, including regulatory authorities, if significant soil and water impacts have occurred.

Investigations will follow the ICAM (Incident Causation Analysis Method), in alignment with Transgrid's investigation requirements. The level of investigation, team composition, and reporting obligations will be determined based on the actual and potential severity of the incident.

8.7.5 Non – Compliances

An environmental non-compliance occurs when a condition of approval, licence condition, or any other statutory requirement relevant to a Project activity or location is breached.

Non-compliances may include incident-related significant non-compliances, which may result from construction activities.

For any non-compliances that are not classified as incidents and are identified through inspections, audits, or observations, in accordance with CoA C15, Transgrid's Environmental Business Partner will notify the Department via the Major Projects website within seven (7) days of becoming aware of the non-compliance. Zinfra will provide all necessary information to assist Transgrid in preparing this notification.

The written notification will include the following details:

- The development, including the development application number and Project name.
- The specific Condition of Approval that has not been met.
- The reasons for the non-compliance, if known; and
- Actions that have been undertaken, or are planned, to address the non-compliance, including expected timing for completion.

8.7.6 Emergency Preparedness and Response

In accordance with REMM W2, An Emergency Management Plan has been developed for the Project which includes a Flood Risk Management Plan (FRMP), in consultation with the SES. The FRMP includes a Trigger Action Response Plan and details how and when actions will be taken and can be found in Appendix F of the Project's Traffic and Transport Management Plan. The plan also outlines the following:

- Workers and visitors will be inducted onto the Plan.
- Works will not commence or continue in construction areas that are at risk of flooding.
- People, machinery and materials will be removed from construction areas prior to any flood event that is predicted to impact the construction area.

The construction program will schedule and carry out works in flood-risk areas in periods of dry, stable weather as far as practicable. To further manage risk, resources will be made available to reduce the duration of works within flood-risk areas.

Project Emergency Contacts Details for the Key Project personnel are provided in **Table 34** below:

Table 34 - Project Emergency Contact Details

Role/Agency	Personnel	Contact Details
EPA	-	131 555
DPHI Compliance	-	1300 305 695
Fire & Rescue NSW	-	000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
Lithgow City Council	-	(02) 6354 9999 or 1300 661 303



All incidents will be managed in accordance with Section 8.7.1 of this plan. All non-compliance notification will be managed in accordance with Section 8.7.5 of this plan. The below details specific considerations for spills.

8.7.7 Spill Response Procedure

A spill of chemical or oil of any volume is classified as an environmental pollution incident as is required to be reported as per the Transgrid Environmental Handbook (2021). In the event of a spill, the Transgrid Spill Response procedure (separate document) should be followed.

As per REMM SC3, remediation of the construction work area following accidental spills or encountering contaminated materials, will be undertaken based on a site-specific Remedial Action Plan (RAP). The RAP will define remedial goals and objectives, performance criteria for remedial effort and remediation methodology. A validation report will be prepared after remedial effort and be in accordance with the NSW EPA Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020b). The RAP will be developed by the Environmental BP in consultation with a qualified contaminations specialist.

An overview of the Transgrid approved spill kit materials and directions for use is shown in **Table 35** with an overview of the Zinfra spill response procedure provided in **Table 36**.

Table 35 - Overview of spill response equipment and directions for use from Transgrid (2021)

Product	Uses	Notes
Socks and booms	■ Surround leaking drums ■ In flow paths such as drains ■ As a floating boom	■ A 3 m sock holds around 6 L of oil ■ Does eventually deteriorate and sink in water ■ Can be disposed as general solid waste if no PCB or free liquids
Polymer agent	■ For spills on water	■ Applied as a powder and solidifies hydrocarbons for easy removal ■ Has been tested as non-harmful to aquatic plants and animals ■ Can be disposed as general solid waste if no PCB or free liquids
Absorbent pads	■ Under leaks and drips ■ As a floating pad ■ In trafficable areas ■ In drip trays ■ As a wipe	■ Holds approximately 1 L of oil ■ Does eventually deteriorate and sink in water ■ Can be disposed as general solid waste if no PCB or free liquids
Powder absorbent	■ Use for spills on hardstands such as concrete ■ **Do not use on water**	■ Apply powder, work in with a broom then remove ■ Can be disposed as general solid waste if no PCB or free liquids

Product	Uses	Notes
Loose absorbent	▪ **Do not use on water**	▪ Holds approximately half the volume of the absorbent (e.g. a 50 L bag holds 25 L of oil) ▪ Can be disposed as general solid waste if no PCB or free liquids
Absorbent pillows	▪ In drains, pits or gutters	▪ Holds approximately half the volume of the absorbent (e.g. a 20 L pillow, holds 10 L of oil) ▪ Does eventually deteriorate and sink in water ▪ Can be disposed as general solid waste if no PCB or free liquids

Table 36 - Spill Response Procedure

Step	Action	Responsible Person
1	**Identify** the type of material, from: ▪ Signage ▪ Package labelling ▪ If there is a sheen on water ▪ Safet Data Sheets (SDS)	All workers responding to spill
2	**Assess** the risk on personnel and the environment	All workers responding to spill
3	**Stop** the source and spread of the spill, For example: ▪ Shut valves ▪ Seal cracks ▪ Place item into containment bund ▪ Make dam walls to contain the spill	Nominated work crew member
4	**Absorb** the material using spill kits, and**:** ▪ Form dam walls ▪ Block further downstream (if safe to do so) ▪ Cordon off the area	Nominated work crew member
5.	**Store Waste:** Once cleaned up, store all the used materials and spoil in a safe location away from any waterbodies. Decontaminate the area and equipment used.	Nominated work crew member
6.	**Report** the spill to Zinfra Environmental BP and incident management system (OMNIA): ▪ Chemical involved ▪ Leak source ▪ Volume ▪ Area of spill and downstream impacts.	Supervisor
7.	**Incident Notification:** Notify Transgrid of the spill	Environmental BP
8.	**Assess for "Material Harm" –** Assess if the spill meets the definition of "Material Harm" as defined in Section 8.7.1. If it meets the definition, then implement Section 8.7.2.	Environmental BP, Transgrid Environmental BP.
9.	**Waste Classification:** Classify the spoil.	Environmental BP

Step	Action	Responsible Person
10	**Waste Transport & Disposal:**	Environmental BP

8.7.8 Severe weather

Early identification of site severe weather provides personnel with the maximum time to implement control measures and prepare. An overview of the procedure for severe weather at the site is shown in the **Table 37** below:

Table 37 - Severe weather procedure

General	■ Site supervisory personnel should ■ Monitor the Bureau of Meteorology (BOM) website (www.bom.gov.au) for severe weather alerts (including wind for dust prevention) ■ Review daily weather patterns on the BOM and other weather-related websites for approaching storm activity (including intensity, direction, and speed) ■ Where winds are over 10 m/s or dust is observed to be leaving the site boundary, direct all personnel to slow down and implement further dust controls as per the CEMP and Section 8.2. ■ Where severe weather event is predicted (typically associated with longer duration storms), using a rainfall trigger threshold of >100mm 5-day forecast, the actions outlined below are to be undertaken prior to and after the severe weather event has occurred. ■ Where significant rainfall is predicted (>25mm/hr, typically associated with shorter duration higher intensity events), actions are to be undertaken prior to the rainfall event (where possible) and after the event to assess condition of erosion and sediment controls onsite.
Prior to severe weather event	The following specific treatments should be undertaken in the days leading up to these events: ■ Dewatering of drainage and sediment controls to allow sufficient storage capacity ■ Additional erosion protection measures installed to increase protection in high-risk areas, including the use of geofabric at the points with high risk, as required ■ Relocate any materials, plant and equipment to high ground or safe area ■ Carrying out temporary repairs where possible to protect permanent works from further damage ■ Ensure maintenance (i.e. desilting) has been carried out on all erosion and sediment controls.
Post severe weather event	Following significant weather, a site wide inspection will be undertaken, and the following response strategy will be undertaken: ■ Dewater work areas in accordance with the Dewatering Management Plan ■ Undertake maintenance on all erosion, sediment and drainage controls ■ Schedule additional corrective actions by order of priority ■ Track closed out and outstanding items.
Specific access track considerations	Following significant weather, all access tracks are to be assessed for stability and safety before re-commencing works. Where access tracks are deemed safe for use, vehicle traffic may resume however should repairs be required these are to be undertaken before re-commencing works and/or allowing vehicle traffic on access tracks.

8.8 Progressive Rehabilitation

8.8.1 Progressive rehabilitation and vegetation management

During construction, progressive rehabilitation of disturbed areas is proposed to reduce the overall disturbance footprint by reducing the extent and duration of soil exposure at any one time. This in turn minimises risk for potential erosion and sediment impacts by allowing a quick response to erosion issues as they arise and allows for controls to be repaired, adapted or replaced as required.

Soil stabilisation approaches involving temporary stabilisation through control measures, as well as long term stabilisation through revegetation works is documented in the ESCP (Aurecon, 2026a). The rehabilitation and vegetation management for the site will be conducted in accordance with the Rehabilitation Management Plan.

In accordance with the *Guidelines for vegetation management plans on waterfront land* (DCCEEW, 2025c), when rehabilitating a riparian corridor, as per the RVZ limits, a vegetation management plan is required and must consider the following:

- An appropriate width for the riparian corridor and the corridor's functionality
- Maps or diagrams to identify the riparian corridor and existing vegetation including that to be maintained, cleared and areas of proposed revegetation
- The location of bed and banks or foreshore of waterfront land
- Photographs of the site to pinpoint monitoring sites
- Vegetation species composition, planting layout and density
- Costs
- Seed or plant sources
- Avoidance of exotic vegetation.

As per Section 7.1.1, the works that will impact riparian vegetation include:

- Works at towers 2C and 3C (refer Figure 13)
- Works at tower 4C (refer Figure 14)
- Works at tower 7C (refer Figure 15)
- Works at towers 8C and 10D (refer Figure 16).

Within the disturbed RPZ areas, progressive rehabilitation will be undertaken at the earliest practicable opportunity to achieve minimum 70% ground cover. The rehabilitation will incorporate Transgrid's vegetation management requirements to ensure revegetation activities do not compromise electrical safety clearances, asset integrity, operational and maintenance access, or bushfire risk management objectives. Revegetation design and species selection will consider applicable vegetation height restrictions, required setback distances from electrical infrastructure, and ongoing access requirements.

8.8.2 Long-term monitoring and maintenance and environmental offsetting

Offsets may be required where vegetation clearing is unavoidable and where residual impacts to riparian vegetation remain after and mitigation measures have been applied (DCCEEW, 2025b). It should be noted that implementing offsets should be considered as a last resort approach after exercising all other options stated above. Where required and approved, offset measures should:

- Achieve no net loss, or preferably a net gain, in riparian ecological function
- Maintain or improve corridor connectivity
- Prioritise like-for-like rehabilitation or revegetation adjacent to the impacted watercourse

- Compensate for losses in vegetation structure, habitat value and ecosystem function
- Be located within the same catchment where feasible
- Be secured through appropriate management and ongoing maintenance commitments.

In accordance with *Guidelines for riparian corridors on waterfront land* (DCCEEW, 2025b), non-riparian corridor works and activities may be authorised within the outer riparian corridor where adequate offsetting is provided through use of the "averaging rule".

The "averaging rule" allows limited encroachment into the outer 50% of the VRZ (width determined by the Strahler stream order) provided that an equivalent area of riparian land is incorporated into the riparian corridor elsewhere within the site, maintaining the overall width, area and ecological function of the corridor. The inner 50% of the VRZ is to remain protected and vegetated with native riparian species. It should be noted that the averaging rule should only be applied and utilised for cleared waterfront land. Development proposals on waterfront land that contains existing native vegetation should seek to preserve riparian vegetation in accordance with the minimum riparian corridor requirements.

The long-term monitoring, maintenance and environmental offsetting will be the responsibility of Transgrid.

8.9 Induction and Training

To support effective implementation of this plan, each level of management is responsible for ensuring that all personnel under their supervision understand the requirements of this Plan. The Environmental BP will coordinate environmental training in alignment with broader Project training and development activities.

All employees, contractors (and their subcontractors) must be made aware of, and are to be instructed to comply with, the conditions of the Planning Approval relevant to the activities they carry out. The following training mechanisms will be applied to all relevant Project personnel as applicable to the role, including subcontractors.

8.9.1 Site Induction

All personnel and subcontractors must complete the Zinfra Project HSE Induction, including the environmental component, prior to commencing works on the site. This is done to ensure all personnel involved in the Project are aware of the requirements of the CEMP including this SWMP, and to ensure the implementation of environmental management measures. Short-term visitors (e.g., regulators or inspectors) will complete a visitor induction and must be escorted by inducted personnel.

All induction records will be maintained on file on site, or electronically. The Environmental BP may update the induction content to reflect Project changes, legislative updates, or revisions to this plan. The Project Manager is responsible for ensuring all required personnel, visitors, and contractors complete the appropriate induction before commencing activities on site. An induction register is kept on site to demonstrate compliance.

8.9.2 Toolbox meetings

Toolbox sessions will be prepared by the Environmental BP and delivered by Project Engineers, Construction Managers, the Project Manager, the Safety or other subject matter experts. These short, practical briefings are non-accredited and conducted on-site, focusing on soil and water management topics or specific work activities.

8.9.3 Soil and Water Management related training

Various Soil and Water management related awareness training will be provided during the construction phase of the project by the Environmental BP/ Supervisors through Induction, toolbox meetings and during pre-start meetings. These are summarised in the table below:

Table 38 - Training topics

Training Requirement	Frequency/ Trigger	Reference
Project Environmental Induction which includes requirements of SWMP	Prior to commencing work on the project	CoA A16
Erosion and Sediment Control Awareness Training	Prior to undertaking relevant works and as required throughout construction.	REMM W1
Dewatering Procedure Training	Prior to undertaking dewatering activities.	DMP Section 1.5
Spill Response Training	Prior to commencement of works involving fuels, oils or chemicals	REMM SC5
Relevant HSE requirements PPE to minimise the risk of dermal contact and inhalation.	Prior to works in AECs and contaminated land areas.	REMM SC1
Acid Sulfate Soil (ASS) Awareness Training	Prior to works at ASS locations.	REMM SC7

9 Plan Revision

Ongoing monitoring and review of the performance and implementation of this Plan will be undertaken in accordance with Condition C3 of the Infrastructure Approval.

If updates to an environmental management document are required:

a. to include new information or changes to the development as a result of:
    i. a modification of Project approval; or
    ii. a change in the phase of development as notified under condition C10;
b. to update risk controls or mitigation measures in response to a change in risk level identified by the annual review of the environmental risk assessment required by condition C1(f);
c. to address the findings of an Independent Environmental Audit under condition C14;
d. to implement the findings of an incident report required by condition C16;
e. to comply with a directive by the Planning Secretary;

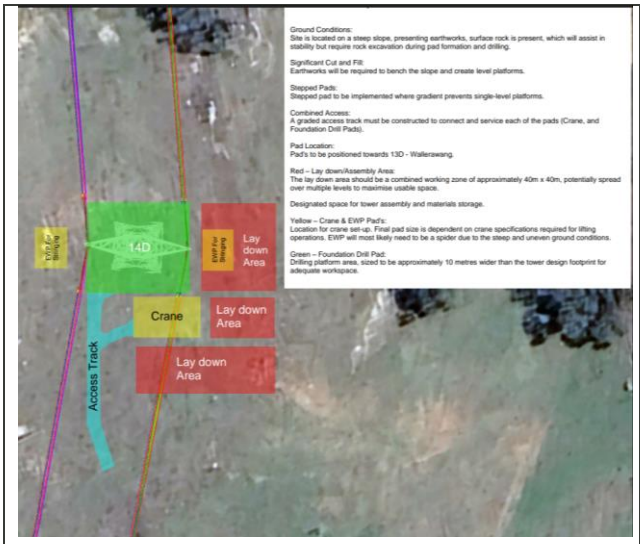
the relevant environmental management document(s) must be revised and submitted to the Planning Secretary for approval within three months unless otherwise agreed by the Planning Secretary.

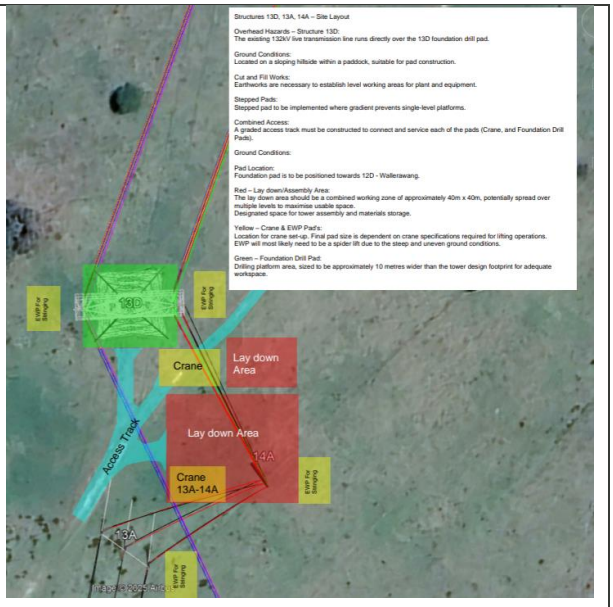
It is noted that the review of this Plan as detailed in the Infrastructure Approval will be undertaken by Zinfra during the construction phase and by Transgrid during the operation of the Project. The review must ensure that the Plan remains consistent with the approved operations. If a revision to this Plan is determined to be required, the review of the Plan will be undertaken by a suitably qualified person whose appointment has been approved by the Planning Secretary in accordance with the Infrastructure Approval.

Any revision of this Plan must be approved by the Planning Secretary, unless the revision is purely administrative in nature, in which case, with the agreement of the Planning Secretary and/or the Environmental Representative (per condition A12), a revised strategy, plan or program may be prepared without undertaking consultation with all the parties referred to under the relevant condition of this consent.

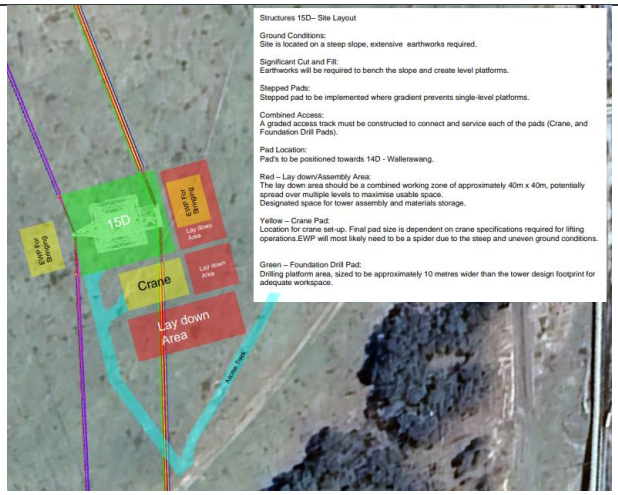
Appendix A – Indicative Specific Tower Designs

The indicative layouts of specific tower pads are provided as follows. It should be noted that the below layouts relate to specific tower pads that are expected to deviate from the general tower pad layout (provided in Figure 2 of SWMP) due to site constraints, and as such not all towers are included in the diagrams below. These diagrams are preliminary and are subject to change if the detailed design is amended, and do not include batter extents or the project boundary.



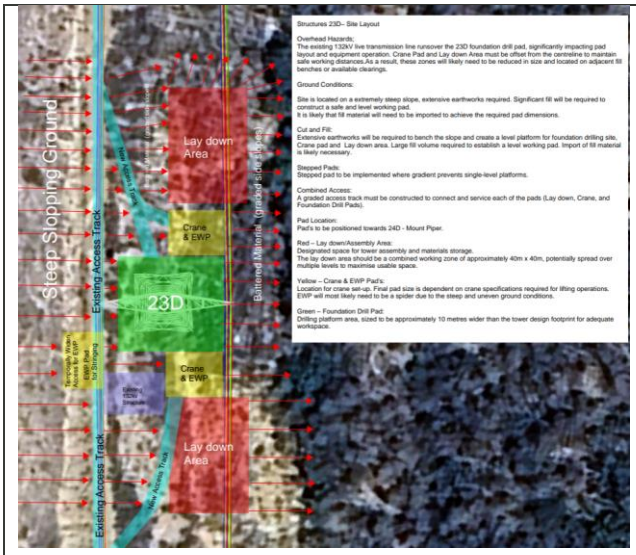


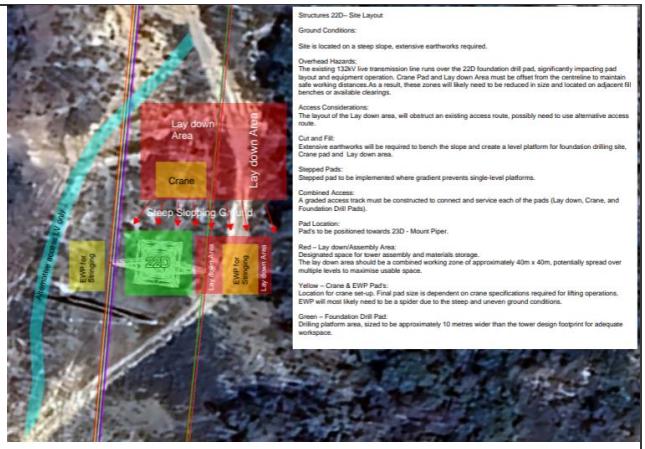






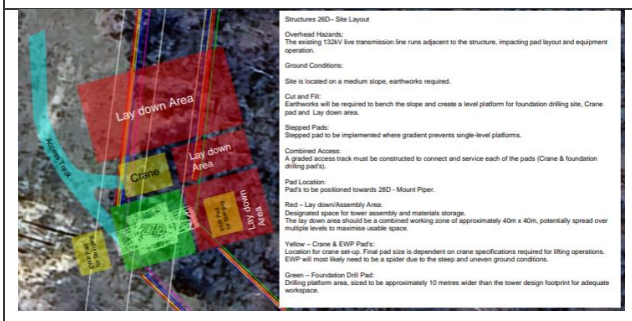



Steep Sloping Ground
Existing Access Track
Lay down Area
Crane & EWP
23D
Crane & EWP
Lay down Area
Existing Access Track
Structures 23D– Site Layout
Overhead Hazards:
The existing 132kV live transmission line runscover the 23D foundation drill pad, significantly impacting pad layout and equipment operation. Crane Pad and Lay down Area must be offset from the centreline to maintain safe working distances.As a result, these zones will likely need to be reduced in size and located on adjacent fill benches or available clearings.
Ground Conditions:
Site is located on a extremely steep slope, extensive earthworks required. Significant fill will be required to construct a safe and level working pad.
It is likely that fill material will need to be imported to achieve the required pad dimensions.
Cut and Fill:
Extensive earthworks will be required to bench the slope and create a level platform for foundation drilling site, Crane pad and Lay down area. Large fill volume required to establish a level working pad. Import of fill material is likely necessary.
Stepped Pads:
Stepped pad to be implemented where gradient prevents single-level platforms.
Combined Access:
A graded access track must be constructed to connect and service each of the pads (Lay down, Crane, and Foundation Drill Pads).
Pad Location:
Pad's to be positioned towards 24D - Mount Piper.
Red – Lay down/Assembly Area:
Designated space for tower assembly and materials storage.
The lay down area should be a combined working zone of approximately 40m x 40m, potentially spread over multiple levels to maximise usable space.
Yellow – Crane & EWP Pad's:
Location for crane set-up. Final pad size is dependent on crane specifications required for lifting operations. EWP will most likely need to be a spider due to the steep and uneven ground conditions.
Green – Foundation Drill Pad:
Drilling platform area, sized to be approximately 10 metres wider than the tower design footprint for adequate workspace.


Lay down Area
Crane
Lay down Area
22D
EWP for Stringing
EWP for Stringing
Structures 22D– Site Layout
Ground Conditions:
Site is located on a steep slope, extensive earthworks required.
Overhead Hazards:
The existing 132kV live transmission line runs over the 22D foundation drill pad, significantly impacting pad layout and equipment operation. Crane Pad and Lay down Area must be offset from the centreline to maintain safe working distances.As a result, these zones will likely need to be reduced in size and located on adjacent fill benches or available clearings.
Access Considerations:
The layout of the Lay down area, will obstruct an existing access route, possibly need to use alternative access route.
Cut and Fill:
Extensive earthworks will be required to bench the slope and create a level platform for foundation drilling site, Crane pad and Lay down area.
Stepped Pads:
Stepped pad to be implemented where gradient prevents single-level platforms.
Combined Access:
A graded access track must be constructed to connect and service each of the pads (Lay down, Crane, and Foundation Drill Pads).
Pad Location:
Pad's to be positioned towards 23D - Mount Piper.
Red – Lay down/Assembly Area:
Designated space for tower assembly and materials storage.
The lay down area should be a combined working zone of approximately 40m x 40m, potentially spread over multiple levels to maximise usable space.
Yellow – Crane & EWP Pad's:
Location for crane set-up. Final pad size is dependent on crane specifications required for lifting operations. EWP will most likely need to be a spider due to the steep and uneven ground conditions.
Green – Foundation Drill Pad:
Drilling platform area, sized to be approximately 10 metres wider than the tower design footprint for adequate workspace.


Lay down Area
Crane
Existing Access Track
Existing Access Track


Lay down Area
Crane
33A
50m X 50m
Lay down Area
Structure 28D – 33A Site Layout
Ground Conditions:
Located on a Flat to gently undulating ground, small cut and fill.
Combined Access:
A graded access track must be constructed to connect and service each of the pads (Crane & foundation drilling pad's).
Pad Location:
Foundation pad is to be positioned towards 27D - Wallerawang.
Red – Lay down/Assembly Area:
Designated space for tower assembly and materials storage.
Yellow – Crane & EWP Pad's:
Location for crane set-up. Final pad size is dependent on crane specifications required for lifting operations.
EWP will most likely need to be a spider due to the steep and uneven ground conditions.
Green – Foundation Drill Pad:
Green – Foundation Drill Pad:
Drilling platform area, sized to be approximately 10 metres wider than the tower design footprint for adequate workspace.


Lay down Area
Crane
Lay down Area
Structures 26D– Site Layout
Overhead Hazards:
The existing 132kV live transmission line runs adjacent to the structure, impacting pad layout and equipment operation.
Ground Conditions:
Site is located on a medium slope, earthworks required.
Cut and Fill:
Earthworks will be required to bench the slope and create a level platform for foundation drilling site, Crane pad and Lay down area.
Stepped Pads:
Stepped pad to be implemented where gradient prevents single-level platforms.
Combined Access:
A graded access track must be constructed to connect and service each of the pads (Crane & foundation drilling pad's).
Pad Location:
Pad's to be positioned towards 28D - Mount Piper.
Red – Lay down/Assembly Area:
Designated space for tower assembly and materials storage.
The lay down area should be a combined working zone of approximately 40m x 40m, potentially spread over multiple levels to maximise usable space.
Yellow – Crane & EWP Pad's:
Location for crane set-up. Final pad size is dependent on crane specifications required for lifting operations.
EWP will most likely need to be a spider due to the steep and uneven ground conditions.
Green – Foundation Drill Pad:
Drilling platform area, sized to be approximately 10 metres wider than the tower design footprint for adequate workspace.

Appendix B – Typical Erosion Sediment Control Plan

GENERAL NOTES

1. THIS EROSION AND SEDIMENT CONTROL PLAN HAS BEEN DEVELOPED AS PART OF THE 85% DETAILED DESIGN AND PRIOR TO THE ENGAGEMENT OF A CONSTRACTOR AND ADOPTION OF A CONSTRUCTION METHODOLOGY.
2. THE PRIMARY PURPOSE OF THE ESCP IS TO BE AN OVERARCHING PLAN THAT WILL GUIDE THE SUBSEQUENT PREPARATION AND PLACEMENT OF CONTROLS DURING CONSTRUCTION.
3. CONTRACTOR SHALL DEVELOP A PROJECT SPECIFIC CONSTRUCTION ESC PLANS TO IN ACCORDANCE WITH THE CONDITIONS OF CONTRACT TO REFLECT WORK METHODS AND STAGING. CONTRACTOR ESC PLAN SHALL CONFORM TO THE REQUIREMENTS OF THE CIVIL SPECIFICATION AND NOTES ON THE DRAWINGS.

   THE EROSION AND SEDIMENT CONTROL MEASURES IMPLEMENTED ON SITE SHOULD BE INSTALLED AND UTILISED IN ACCORDANCE WITH THE INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA) AUSTRALASIA 'BEST PRACTICE EROSION AND SEDIMENT CONTROL (SEPTEMBER 2025) GUIDELINES, WITH DETAILS SHOWN ON THE STANDARD DRAWINGS NOTED.
4. THE CONTROL MEASURES NOTED IN THIS PLAN REPRESENT THE MINIMUM ANTICIPATED STANDARDS OF EROSION AND SEDIMENT CONTROL FOR THE CONSTRUCTION PHASE. ADDITIONAL CONTROL MEASURES OR MODIFICATIONS TO WORK PRACTICES AND CONSTRUCTION METHODOLOGY MAY BE REQUIRED TO SUIT THE SITE CONDITIONS OR CONSTRUCTION SEQUENCING AS IDENTIFIED THROUGH ON-SITE MONITORING.
5. THE LOCATION OF THE EROSION AND SEDIMENT CONTROL DEVICES SHOWN ARE INDICATIVE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SPECIFICALLY LOCATE THE CONTROL DEVICES AND MINIMISE SEDIMENT TRANSPORT DOWNSTREAM DURING ALL STAGES OF CONSTRUCTION, INCLUDING THE MAINTENANCE PERIOD.
6. THE SITE ENTRY AND EXIT POINTS ARE TO BE LIMITED TO THE MINIMUM PRACTICAL NUMBER AND ARE TO BE APPROPRIATELY DESIGNED AND STABILISED. PROPOSED LOCATIONS ARE INDICATIVE ONLY AND WILL BE CONFIRMED DURING CONSTRUCTION. EROSION AND SEDIMENT CONTROL PROGRAM AND DEVICES TO COMPLY WITH EPA REQUIREMENTS AND PROJECT CEMP.
7. WHEREVER POSSIBLE, UPSLOPE STORMWATER RUNOFF IS TO BE DIVERTED AROUND SOIL DISTURBANCES AND UNSTABLE SLOPES IN A MANNER THAT MINIMISES EROSION. WHERE IDENTIFIED, SITE RUN-OFF MUST BE DIRECTED TOWARDS A TEMPORARY SEDIMENT CONTROL DEVICE DURING CONSTRUCTION.
8. DESIGN DRAINAGE STRUCTURES ARE TO BE USED WHEREVER POSSIBLE.
10. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE AND MAINTAINED IN EFFECTIVE OPERATIONAL CONDITION UNTIL THE SITE IS ADEQUATELY STABILISED. THIS INCLUDES MONITORING, REPAIRS AND CLEANING OUT AT REGULAR INTERVALS, AFTER STORM EVENTS AND DISTURBANCE BY CONSTRUCTION. SEDIMENT CAPTURE DEVICES MUST HAVE SUFFICIENT CAPACITY TO MAINTAIN EFFECTIVE OPERATION.
11. WHERE PRACTICAL ALL AREAS OF THE SITE NOT SUBJECT TO DISTURBANCE MUST HAVE PROVISION FOR ALL RUN-OFF TO BE DIVERTED AWAY FROM THE SITE, IN A MANNER, WHICH DOES NOT CAUSE SCOURING, OR EROSION.
12. DURING CONSTRUCTION, TEMPORARY DIVERSION DRAINS, SEDIMENT FENCES AND/OR SEDIMENT TRAPS ARE TO BE CONSTRUCTED AT REGULAR INTERVALS DOWN SLOPE PRIOR TO ANY BREAKS IN CONSTRUCTION (SUCH AS WEEKENDS) OR IF RAIN IS IMMINENT.
13. INSTALL ANY INSTANCES OF SEDIMENT FENCING TO SHEET FLOW OR SEDIMENT TRAPS TO CONTROL CONCENTRATED FLOW.
14. SEDIMENT IS TO BE PREVENTED FROM ENTERING STORMWATER GULLY PITS, DRAINS, OR CULVERTS AS PER BEST PRACTICE EROSION AND SEDIMENT CONTROL DOCUMENT.
15. WHERE CONTROLS ARE REMOVED TO FACILITATE OTHER WORKS, THEY ARE TO BE REINSTATED AS SOON AS REASONABLY PRACTICABLE AND PRIOR TO ANY FORECASTED RAIN EVENT.
16. DIRT AND/OR MATERIALS SPILT OR TRACKED ONTO EXTERNAL ROADS IS TO BE SWEPT AND CLEANED – NOT WASHED INTO STORMWATER INLETS/DRAINS.
17. DURING CONSTRUCTION, STOCKPILES AND AREAS OF BARE SOIL OR EARTH THAT ARE LIKELY TO BECOME ERODED MUST BE ADEQUATELY PROTECTED BY UPSLOPE SURFACE WATER DIVERSION, DOWNSLOPE SEDIMENT CONTROLS AND TEMPORARY SURFACE COVERINGS.
18. STOCKPILES SHOULD NOT BE LOCATED WITHIN AN OVERLAND FLOW PATH/DRAIN.
19. IF DIRECTED BY THE SUPERINTENDENT, TOPSOIL STOCKPILES ARE TO BE SOWN WITH A COVER CROP AS SOON AS PRACTICAL AFTER STOCKPILING.
20. WHERE POSSIBLE, PLACE EXCAVATION SPOIL ON THE UPSLOPE SIDE OF THE TRENCH. EXCAVATION SPOIL MAY BE USED TO CONSTRUCT UPSTREAM DIVERSION BERMS TO DIRECT CLEAN RUNOFF AROUND THE DISTURBANCE AREA.
21. WHERE BREAKS IN THE UPSLOPE DIVERSION BERM ARE REQUIRED (EVERY ~50-80M), COIR LOGS (OR SIMILAR) WILL BE INSTALLED.
22. EXCAVATIONS AND EARTHWORKS ARE TO BE DONE PROGRESSIVELY AND IN MANAGEABLE SECTIONS. WHEREVER POSSIBLE, EXCAVATIONS ARE TO BE BACKFILLED AND STABILISED WITHIN SAME DAY. WHERE BACKFILLING ACITIVITIES OCCUR, BACKFILL SHOULD BE PROPERLY COMPACTED AND LEAVE FINAL LEVEL SLIGHTLY ABOVE (ABOUT 75MM) THE ADJACENT GROUND LEVELS TO ALLOW FOR SUBSEQUENT SETTLEMENT.
23. CUT AND FILL BATTERS ARE TO BE STABILISED WITH TOPSOIL AND SEEDED AS SOON AS PRACTICAL.
24. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHOULD BE PROMPTLY AND PROGRESSIVELY STABILISED WHERE APPROPRIATE.
25. NO DISTURBANCE TO VEGETATION IS TO TAKE PLACE BEYOND THE BOUNDARIES OF THE PROJECT FOOTPRINT.

INSTALLATION NOTES/SEQUENCING

1. ASSESS TIMING OF WORKS AND CONDUCT WORKS DURING PERIOD OF THE LEAST RAINFALL, WHERE POSSIBLE.
2. REFER TO TYPICAL DETAILS AND TECHNICAL NOTES FOR NOMINATED DRAINAGE, EROSION AND SEDIMENT CONTROLS.
3. CLEARLY DELINEATE NON-DISTURBANCE AREAS.
4. INSTALL STABILISED SITE ACCESS POINTS IF NEEDED.
5. CLEAR AND GRUB VEGETATION FOR PROCESSING INTO MULCH AND UTILISE AS REQUIRED.
6. STRIP AND RELOCATE TOPSOIL TO CONSTRUCT 'CLEAN WATER' FLOW DIVERSION BERM ON THE UPSLOPE SIDE AS DETAILED IN THE APPROVED ESC DRAWINGS AND PROVIDE ADEQUATE CONTROLS.
7. DIRECT 'DIRTY WATER' FLOW INTO TYPE 3 CONTROL STRUCTURES TO RETAIN CAPTURED WATER WITHIN THE DISTURBANCE FOOTPRINT.
8. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES WITHIN THE DISTURBED AREAS AS SOON AS PRACTICABLE, OR IF RAIN IS FORECAST IN 24 HOURS.
9. CONTROL TRAFFIC ALONG CONSTRUCTION ACCESS ROADS TO PREVENT DAMAGE TO SOIL SURFACE THAT MAY CAUSE EROSION.
10. COMMENCE STAGED CONSTRUCTION AND EARTHWORK ACTIVITIES, PROGRESSIVELY INSTALLING CONTROLS WITHIN EACH STAGE.
11. WHERE SIGNIFICANT QUANTITIES OF SUBSOIL ARE CUT FROM THE WORK AREA, THE MATERIAL IS TO BE STOCKPILED IN A DEDICATED AREA WITH APPROPRIATE EROSION AND SEDIMENT CONTROLS.
12. REHABILITATION IS RECOMMENDED TO COMMENCE AS SOON AS PRACTICABLE, WITH DRAINAGE PATHS (E.G. WATERWAY CROSSINGS) TO BE REHABILITATED AS A PRIORITY.
13. DURING CUTTING EARTHWORKS STRIP AND STOCKPILE TOPSOIL SEPARATELY TO SUBSOIL

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AMENDMENT

AMDT	AMENDMENT DETAILS	DRN	DES	CHK	VRY	APP	DATE
A	PRELIMINARY ISSUE	T.J.	K.T	LM	R.H.J	S.R	

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REFERENCE DRAWINGS

DRAWN	M. Jones/J. Norman	03/07/2026
REVIEWED	B. McDonald	03/07/2026
VERIFIED	B. McDonald	22/07/2026
APPROVED	B. McDonald	24/07/2026

APPROVAL STATUS: DRAFT ISSUED FOR REVIEW

SCALE NOT TO SCALE

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TRANSMISSION LINES
DRAWING SHEET LAYOUT
PLATFORM EARTHWORKS
Typical ESC Layout
General Notes

A1

PREFIX	NUMBER	SHEET	AMDT
CWO	ESC-G01		00

566x801mm

PLOT ISSUE DATE $$$$$$SYTIME$$$$$$$PLOT_TIME$$

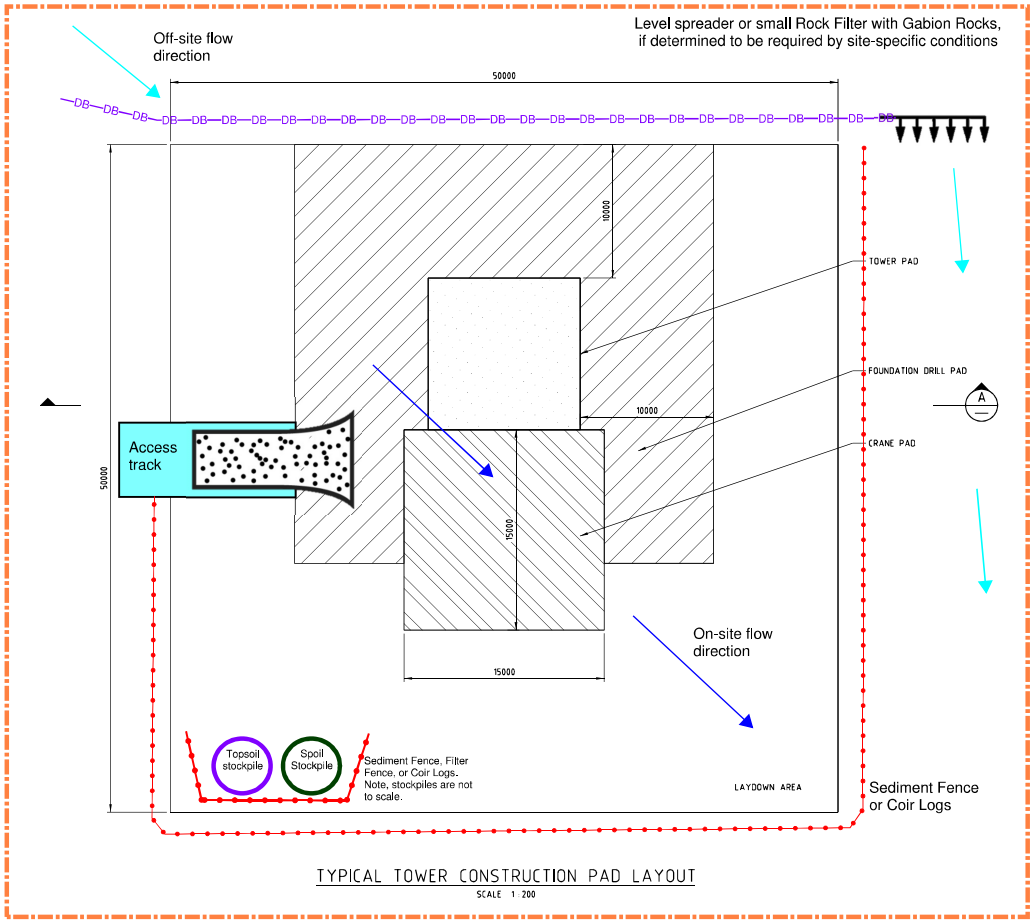
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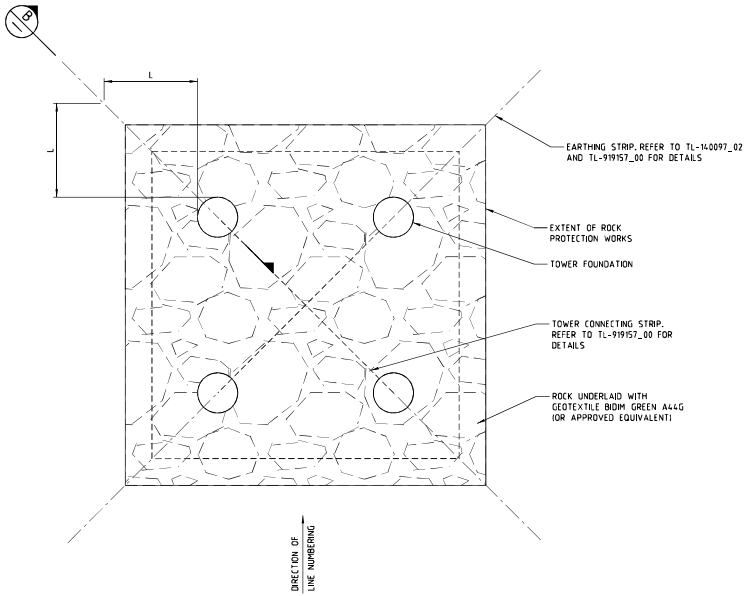


TYPICAL TOWER CONSTRUCTION PAD LAYOUT

SCALE 1 200

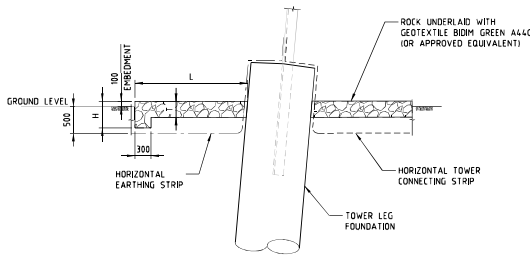
NOTES

1. FOR GENERAL NOTES SEE TL-919056.
2. THIS DRAWING SHOWS TOWER CONSTRUCTION TYPICAL PAD LAYOUT. REFER TO INDIVIDUAL TOWER PAD LAYOUTS FOR SITE SPECIFIC PAD DETAILS.



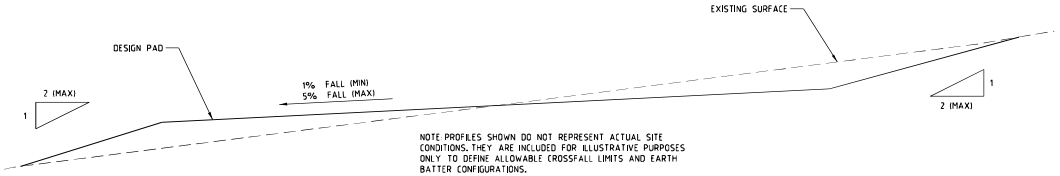
SCOUR PROTECTION DETAILS

SCALE 1 100



SECTION B

N.T.S



SECTION A

1:200

TOWER LOCATION	D_{90}	RIP-RAP THICKNESS (T)	PROTECTION LENGTH (L)	KEY DEPTH (H)
1C, 2C, 4C TO 12D	150mm	225mm	2000mm	400mm
3C	200mm	300mm	2100mm	500mm

1m 5m 10m
1m 0
1:100

2m 10m 20m
2m 0
1:200

AMDT	AMENDMENT DETAILS	DRN	DES	CHK	VRY	APP	DATE
B	ISSUED FOR 85% DESIGN REVIEW	T.J.	T.C	R.H.J	P.H	S.R	19.06.2026
A	ISSUED FOR 45% DESIGN REVIEW	T.J.	K.T	R.H.J	P.H	S.R	05.02.2026

AMENDMENT

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REFERENCE DRAWINGS

DRAWN	M.Jones/J.Norman	03/07/2026
REVIEWED	B.McDonald	03/07/2026
VERIFIED	B.McDonald	22/07/2026
APPROVED	B.McDonald	24/07/2026

APPROVAL STATUS: DRAFT ISSUED FOR REVIEW

SCALE AS SHOWN

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TRANSMISSION LINES
STEEL STRUCTURE - GENERAL - BENCHING
CENTRAL WEST ORANA RENEWABLE ENERGY ZONE
BPS ESC Layout
General Arrangement

A1

PREFIX	NUMBER	SHEET	AMDT
CWO-ESC-G02		00	B

INDEX CLASS'N 30-02

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566x801mm

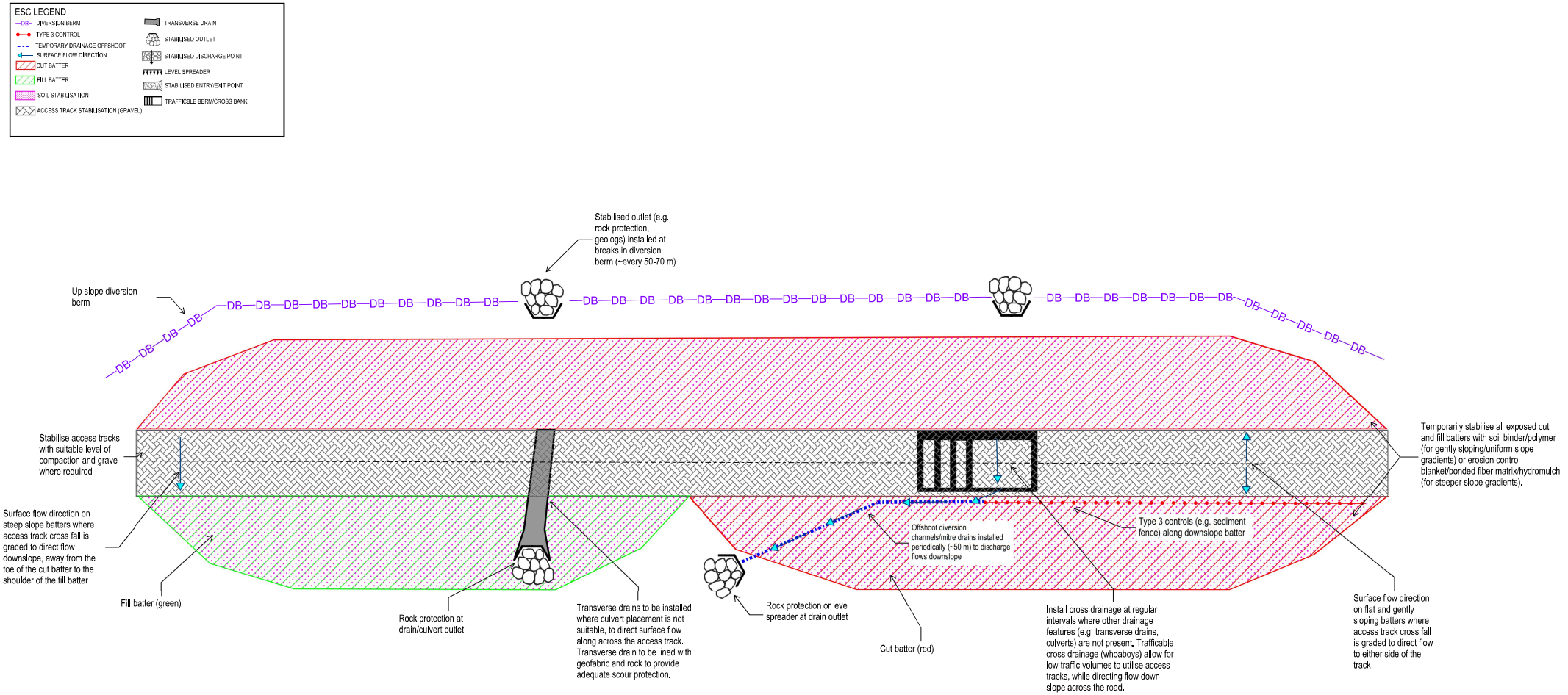
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TYPICAL ACCESS TRACK - BIRDS EYE VIEW

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AMENDMENT:

AMDT	AMENDMENT DETAILS	DRN	DES	CHK	VRY	APP	DATE
A	PRELIMINARY ISSUE	T.J.	K.T	LM	R.H.J	S.R	

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TL-919056 GENERAL NOTES
TL-919057 TYPICAL DETAILS
REFERENCE DRAWINGS

DRAWN	M. Jones/J. Norman	03/07/2026
REVIEWED	B. McDonald	03/07/2026
VERIFIED	B. McDonald	22/07/2026
APPROVED	B. McDonald	24/07/2026

DRAFT ISSUED FOR REVIEW
APPROVAL STATUS
SCALE NOT TO SCALE

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TRANSMISSION LINES
CONSTRUCTION - ACCESS - CLEARING
ACCESS ROAD
Typical ESC Layout
Access Tracks

A1 | CWO-ESC-G03 | 00
PREFIX NUMBER SHEET AMDT

INDEX CLASS'N 35-01

566x801mm

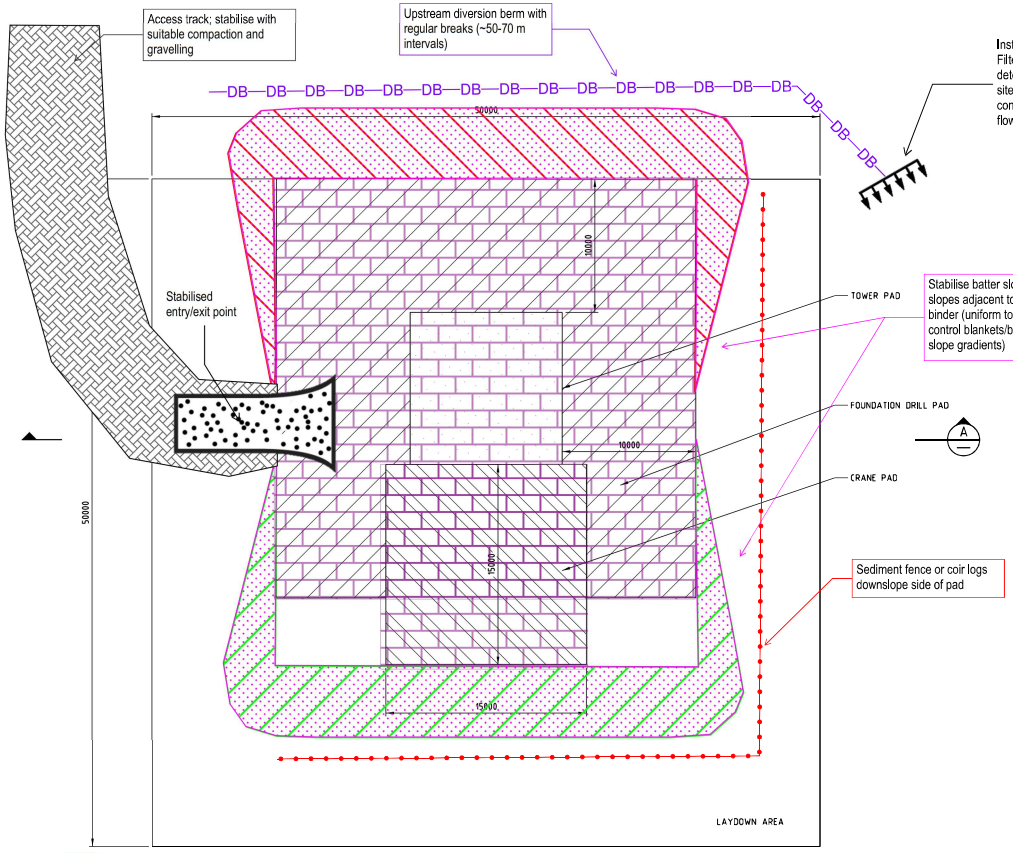
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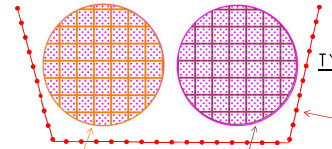
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TYPICAL TOWER CONSTRUCTION PAD LAYOUT

SCALE 1:200

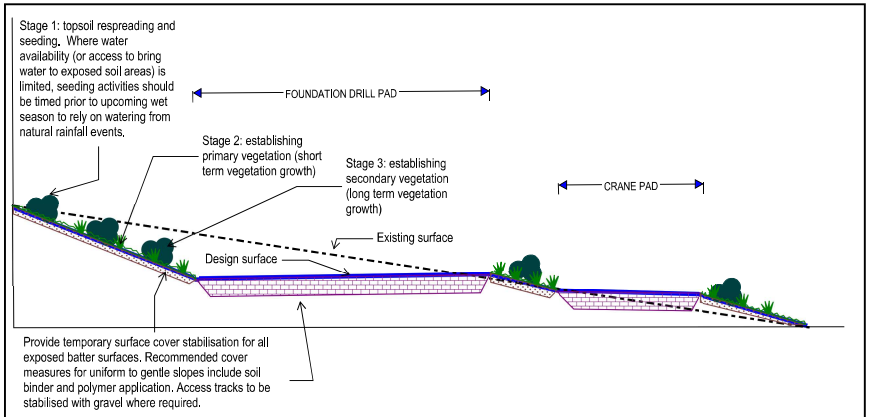
TYPICAL PAD - BIRDS EYE VIEW

ESC LEGEND

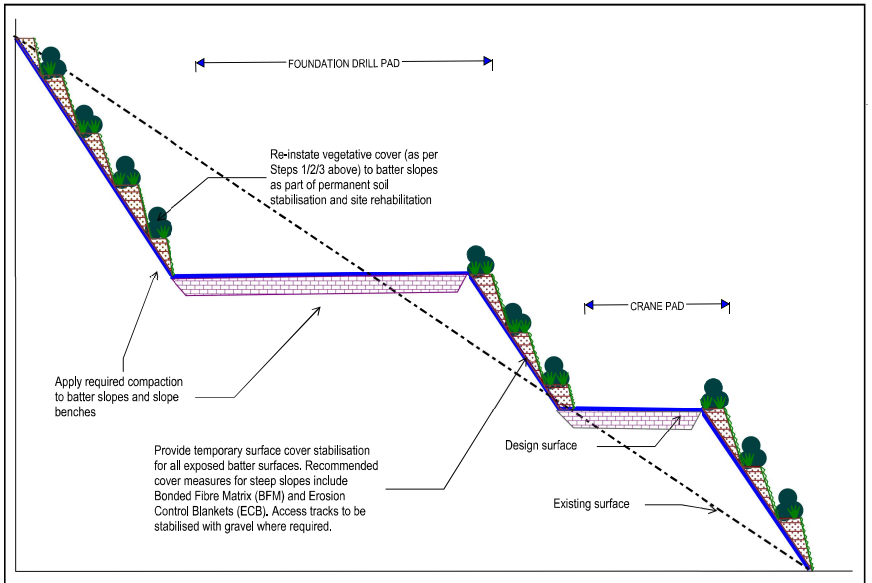
- DIVERSION BERM
- MULCH BERM/SEDIMENT FENCE
- TOPSOIL STOCKPILE
- SUBSOIL STOCKPILE
- CUT BATTER
- FILL BATTER
- SOIL STABILISATION
- PAD STABILISATION
- ACCESS TRACK STABILISATION (GRAVEL)
- TERRACED SLOPE BENCHES
- EXISTING SURFACE
- DESIGN SURFACE
- LEVEL SPREADER
- STABILISED ENTRY/EXIT POINT
- TOPSOIL RESPREADING
- PRIMARY REVEGETATION
- SECONDARY REVEGETATION

NOTES

1. FOR GENERAL NOTES SEE CWO-ESC-G01
2. THIS DRAWING SHOWS TOWER CONSTRUCTION TYPICAL PAD LAYOUT. REFER TO INDIVIDUAL TOWER PAD LAYOUTS FOR SITE SPECIFIC PAD DETAILS.



TYPICAL PAD - CROSS SECTION (UNIFORM TO GENTLE SLOPE)



TYPICAL PAD - CROSS SECTION (STEEP SLOPE)

2m 0 10m 20m

1:200

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AMENDMENT			
A	ISSUED FOR 45% DESIGN REVIEW	T.J.	05.02.2026
AMDT	AMENDMENT DETAILS	DRN	DATE

DES | K.T | CHK | R.H.J | VRY | P.H | APP | S.R

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REFERENCE DRAWINGS

DRAWN	M. Jones/J. Norman	03/07/2026
REVIEWED	B. McDonald	03/07/2026
VERIFIED	B. McDonald	22/07/2026
APPROVED	B. McDonald	24/07/2026

APPROVAL STATUS: DRAFT ISSUED FOR REVIEW

SCALE 1:200

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TRANSMISSION LINES
STEEL STRUCTURE - GENERAL - BENCHING
CENTRAL WEST ORANA RENEWABLE ENERGY ZONE
Typical ESC Layout
Typical Revegetation & Stabilisation Plan

A1	PREFIX	NUMBER	SHEET	AMDT
	CWO-ESC-G04		00	

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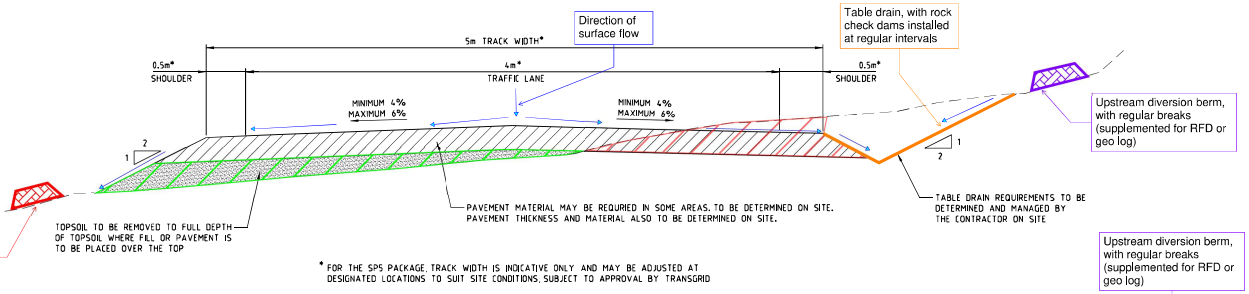
566x801mm

TABLE 1 - TABLE DRAIN SCOUR PROTECTION TREATMENT

DRAIN GRADE %	TREATMENT
> 8%	FULLY ROCK LINED
6% - 8%	GRASS LINED AND ROCK CHECKS AT 5m SPACING
4% - 6%	GRASS LINED AND ROCK CHECKS AT 10m SPACING
2% - 4%	GRASS LINED AND ROCK CHECKS AT 20m SPACING
<2%	GRASS LINED

ALL DUMPED ROCK TO BE PLACED ON GEOFABRIC ROCK UNDERLAY (A34G)

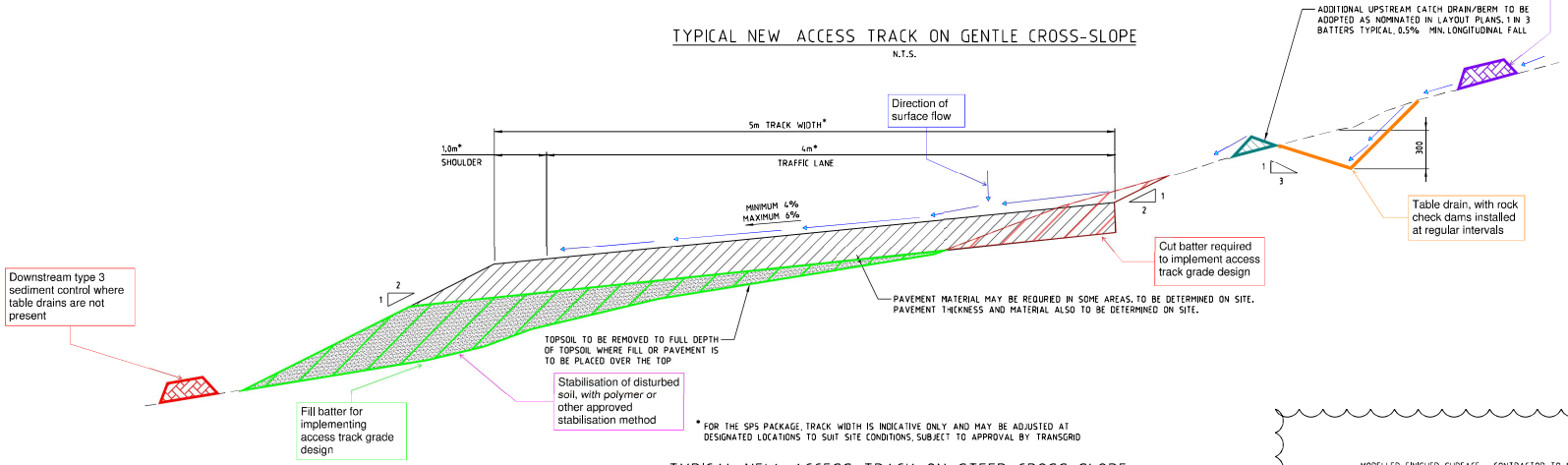
UPDATE IN PROGRESS



* FOR THE SPS PACKAGE, TRACK WIDTH IS INDICATIVE ONLY AND MAY BE ADJUSTED AT DESIGNATED LOCATIONS TO SUIT SITE CONDITIONS, SUBJECT TO APPROVAL BY TRANSGRID

TYPICAL NEW ACCESS TRACK ON GENTLE CROSS-SLOPE

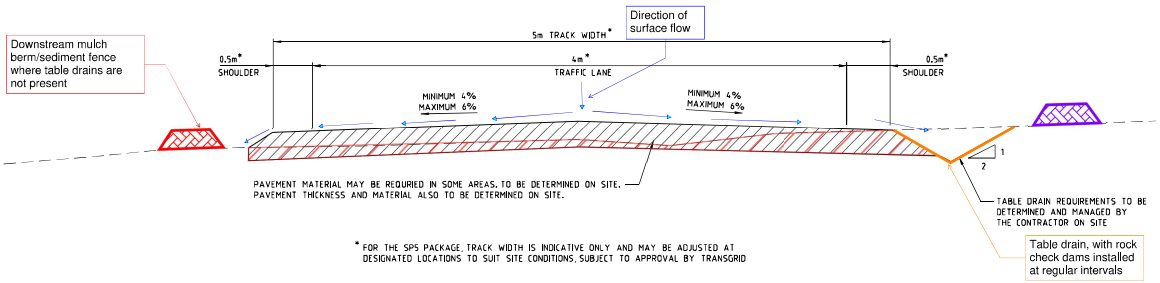
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TYPICAL NEW ACCESS TRACK ON STEEP CROSS-SLOPE

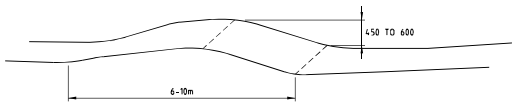
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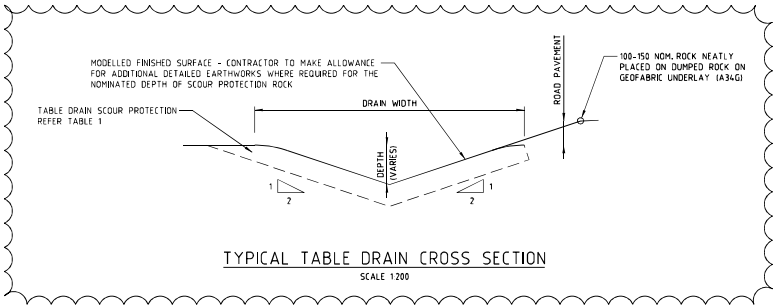
TYPICAL NEW ACCESS TRACK ON UNIFORM CROSS-SLOPE

N.T.S.



CROSS SECTIONAL VIEW OF WHOA BOY

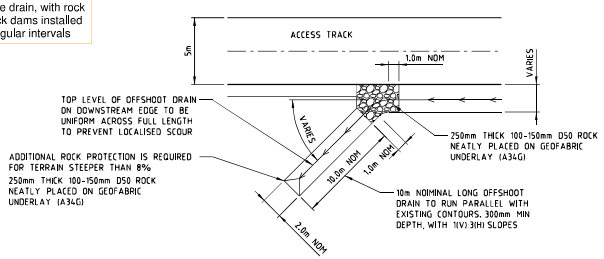
N.T.S



TYPICAL TABLE DRAIN CROSS SECTION

SCALE 1200

UPDATE IN PROGRESS



TYPICAL OFFSHOOT DRAIN DETAIL

SCALE 1200

200mm 1.0m 2.0m
200mm 0
1:200

NOTES

ROAD CROSS SECTIONS

1. ALL ROAD PAVEMENT WIDTHS SHALL BE 5000 UNLESS NOMINATED OTHERWISE ON THE LAYOUT PLANS.
2. ROAD CROSSFALLS TO BE MINIMUM 4% TO MAXIMUM 6%.

ROAD PAVEMENT

1. ROAD PAVEMENT DESIGN, TYPE AND MATERIAL SPECIFICATION TO BE PROVIDED BY ZINFRA.
2. FOR FIRM TO STIFF SUBGRADES, 100 THICK PAVEMENT TO BE PROVIDED AS PER TRANSGRID MATERIAL SPECIFICATIONS.

TABLE DRAINS

1. FOR TABLE DRAIN SCOUR PROTECTION REFER TO TABLE 1.
2. WHERE TABLE DRAINS ARE REQUIRED TO RUN INDEPENDENTLY OF ROAD PROFILE, MINIMUM 0.5% LONGITUDINAL GRADE SHALL BE ADOPTED.
3. ADDITIONAL SCOUR PROTECTION MAY BE REQUIRED. (AS DIRECTED BY SITE ENGINEER IN UNSTABLE SUBGRADE ON SITE).
4. TABLE DRAIN OFFSHOOTS/TURNOUTS TO BE INSTALLED AT 100M NOMINAL SPACING AND AS DIRECTED BY SITE ENGINEER.

PARAMETERS FOR BATTER CONSTRUCTION AND TREATMENT

1. NO RETAINING STRUCTURES, MECHANICAL STABILISATION. (I.E. SOIL ANCHORING) OR CONCRETE SURFACING TO BATTERS (IE. SHOTCRETE) U.N.O ON DESIGN PLANS.
2. NO MULCHING TO BATTERS OR USE OF WEED MATS.
3. ENVIRONMENTAL CONSIDERATIONS DURING THE CONSTRUCTION OF BATTERS
   a. MINIMSE BATTER SLOPES
   b. TOPSOIL AS SOON AS PRACTICABLE. TOPSOIL TO BE CLEANED OF DEBRIS / ROCKS AND OVERSIZED BRANCHES PRIOR TO PLACEMENT
   c. CUT IN HORIZONTAL RIDGES TO AID BATTER STABILISTION
   d. AVOID CONCENTRATED WATER PATHS WHERE POSSIBLE, I.E. DISSIPATE WATER FLOWS OVER LARGE AREA.

CLEANING AND REHABILITATION OF SITE

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE SITE TO AN EQUIVALENT STATE TO WHICH IT WAS ORIGINALLY FOUND, SUBJECT TO IMPOSITION OF NEW ASSETS SUCH AS ROADS, HARDSTANDS, ETC, INCLUDING BUT NOT LIMITED TO THE REINSTATEMENT TO ORIGINAL CONDITION OF GRASSED AREAS, GATES, FENCES AND AFFECTED PROPERTY.

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AMENDMENT:

AMDT	AMENDMENT DETAILS	DRN	DES	CHK	VRY	APP	DATE
B	ISSUED FOR 85% DESIGN REVIEW	H.T	K.T	R.H.J	P.H	S.R	19.06.2026
A	ISSUED FOR 45% DESIGN REVIEW	T.J	K.T	R.H.J	P.H	S.R	05.02.2026

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REFERENCE DRAWINGS

DRAWN	M. Jones/J. Norman	03/07/2026
REVIEWED	B. McDonald	03/07/2026
VERIFIED	B. McDonald	22/07/2026
APPROVED	B. McDonald	24/07/2026

DRAFT ISSUED FOR REVIEW

APPROVAL STATUS

SCALE AS SHOWN

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TRANSMISSION LINES
CONSTRUCTION - CROSS SECTION
CENTRAL WEST ORANA RENEWABLE ENERGY ZONE
SPS ESC Layout
Crossfall Modification Earthworks

A1

PREFIX	NUMBER	SHEET	AMDT
CWO-ESC-SP5-G01		00	B

INDEX CLASS'N 35-02

566x801mm

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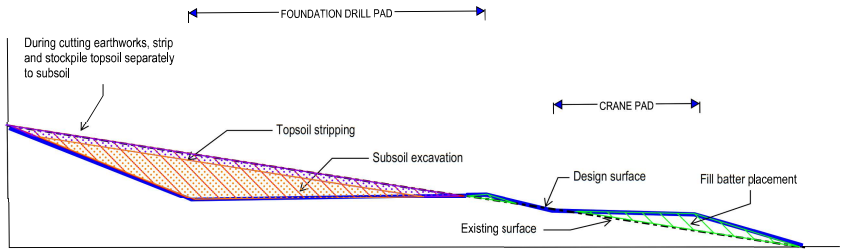
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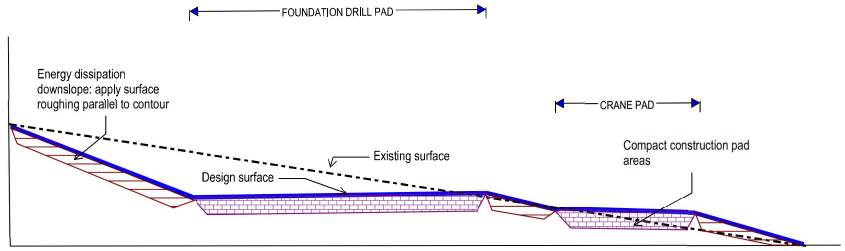
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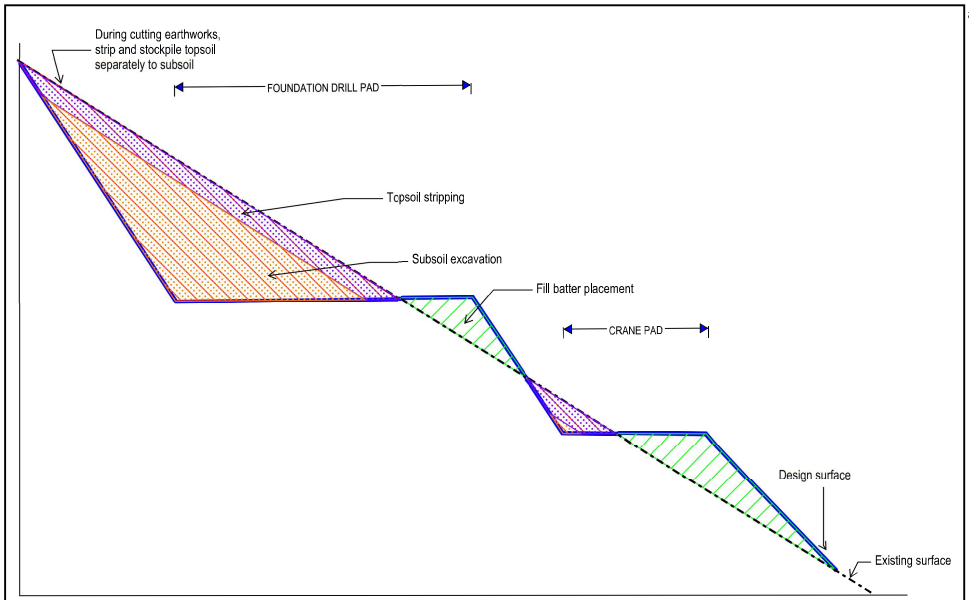
- DESIGN SURFACE
- EXISTING SURFACE
- CUT BATTER
- FILL BATTER
- TOPSOIL STRIPPING
- SUBSOIL EXCAVATION
- CONSTRUCTION PAD
- SURAFCE ROUGHENING
- TRANSVERSE DRAIN
- ROCK PROTECTION OUTLET
- ROCK CHECK DAM
- LEVEL SPREADER
- STABILISED ENTRY/EXIT POINT
- TRAFFICBLE BERM/CROSS BANK



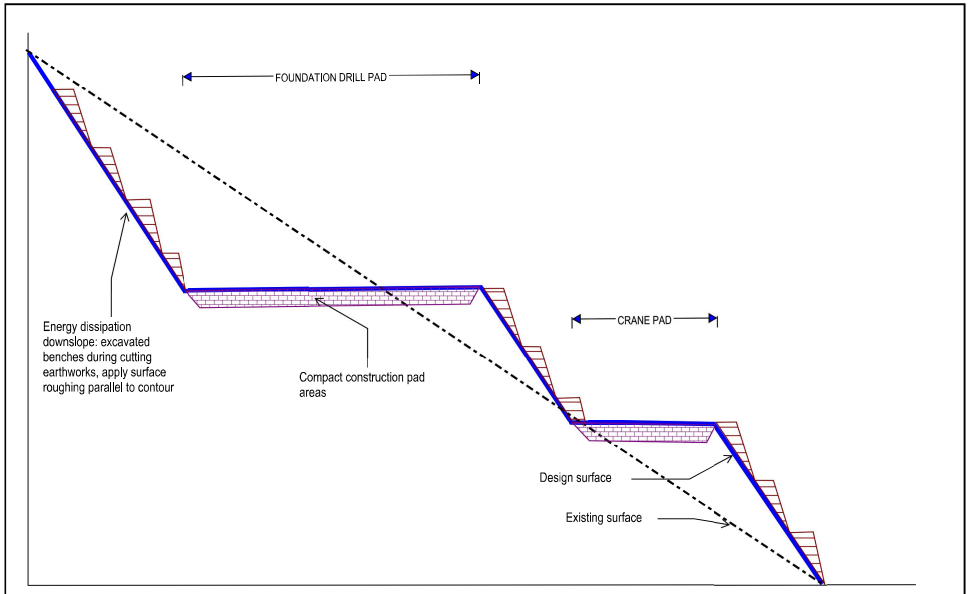
TYPICAL PAD - CROSS SECTION (UNIFORM TO GENTLE SLOPE)



TYPICAL PAD - CROSS SECTION (UNIFORM TO GENTLE SLOPE)



TYPICAL PAD - CROSS SECTION (STEEP SLOPE)



TYPICAL PAD - CROSS SECTION (STEEP SLOPE)

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AMENDMENT:

AMDT	AMENDMENT DETAILS	DRN	DES	CHK	VRY	APP	DATE
A	PRELIMINARY ISSUE	T.J.	K.T.	LM	R.H.J	S.R	

aurecon

Transgrid

REFERENCE DRAWINGS

DRAWN	M. Jones/J. Norman	03/07/2026
REVIEWED	B. McDonald	03/07/2026
VERIFIED	B. McDonald	22/07/2026
APPROVED	B. McDonald	24/07/2026

APPROVAL STATUS: DRAFT ISSUED FOR REVIEW

SCALE

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TRANSMISSION LINES
DRAWING SHEET LAYOUT
PLATFORM EARTHWORKS
SP5 ESC Layout
Longitudinal Grade Modification Earthworks

A1

PREFIX	NUMBER	SHEET	AMDT
CWO-ESC-SP5-G02			00

INDEX CLASS'N 27-17

566x801mm

PLOT ISSUE DATE $$$$$$SYTIME$$$$$$$PLOT_TIME$$

SOURCE DESIGN FILE $$$$$$$$$$$$$$$$$$$$$$DGNSPEC$$$$$$$$$$$$$$$$$$$$

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Appendix C – Unexpected Contamination Finds Protocol

1. Introduction

1.1 Purpose

The scope of this Unexpected Contamination Finds Protocol (UCFP) is to describe how the Project proposes to identify, contain, and dispose of unexpected finds of contamination during construction works.

1.2 Objectives

The key objective of this UCFP is to provide instruction on the management of potential unexpected finds to protect the environment from contamination. To achieve this objective, the Project will undertake the following:

- Ensure all personnel who are engaged in activities that may potentially expose, impact on, or handle contamination are aware of and have access to this procedure.
- Ensure this procedure is appropriately communicated to all personnel.

2. Unexpected Finds

2.1 Identification

Indicators of potential contamination may include, but are not limited to the following:

- Distinctively different soils in both texture, colour, smell and moisture content, to other soils previously found on-site
- Underground/buried infrastructure such as tanks and structures
- Soil or water that is stained, shows seepages, appears oil soaked or to contain a petroleum sheen
- Soil that includes other products such as batteries etc
- Soils that emit offensive odours, including sulphur-based leachate impacts, sewerage, or acid sulfate soils
- Potential asbestos-containing materials
- Unexploded ordinance.

In the event of an Unexpected Find, alert Site Supervisor, Environmental BP and any other relevant parties. Works in the vicinity must cease immediately and the steps in this UCFP shall be followed.

2.2 Personal Protective Equipment

Prior to any contamination investigation or management, appropriate personal protective equipment (PPE) must be worn. This may include but not limited to:

- Eye goggles
- Face mask
- Rubber boots
- Rubber gloves
- Long sleeves and pants.

Advice should be sought from the Safety team or relevant representative.

3. Unexpected Contamination Finds Procedure

All unexpected finds of potential contamination will follow the process shown in Figure 1.

3.1 Assessment

The Environmental BP will notify Transgrid and evaluate the situation and, if considered necessary, commission a suitably qualified contamination specialist to undertake a contamination investigation in the area of the find. A report of the investigation will be prepared to determine the nature, extent and degree of any contamination, assess the requirement to notify the NSW Environmental Protection Authority (EPA), and advise on the need for remediation or other action in consultation with Transgrid.

The level of reporting must be appropriate for the identified contamination in accordance with relevant EPA guidelines, including Guidelines for Consultants Reporting on Contaminated Sites (NSW Office of Environment and Heritage (OEH), 2020).

3.2 Management and mitigation

The Environmental BP (in consultation with a contamination specialist) will determine the appropriate management measures to be implemented and/or the requirement for an EPA-accredited contamination site auditor. Potential measures may include treatment or offsite disposal.

All material disposed offsite must be received by a licensed waste facility and be classified in accordance with the Waste Classification Guidelines (EPA 2014) for offsite disposal or an assessment of contaminants of concern against an adopted soil assessment criteria.

For material containing asbestos the following must be considered:

- manage as per Asbestos Management Plan, for the Site
- If any non-friable asbestos >10 m^2, or friable asbestos will be disturbed – this must be done so under NSW SafeWork licenced conditions, including the engagement of an appropriately licenced removalist (Class A/B) working under an Asbestos Removal Control Plan and SafeWork NSW notification/removal permit (as required)
- Any reporting and management requirements under the Work Health and Safety Act 2011.

Material will be classified in accordance with the Waste Classification Guidelines (EPA 2014) for offsite disposal or an assessment of contaminants of concern against the adopted soil assessment criteria. If necessary, the Environmental BP will liaise with the relevant Authorities to determine appropriate management options.

In the unlikely event unexpected acid sulfate soils are found, the Unexpected Contaminated Finds Protocol would be followed, which is in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998). The manual includes procedures for the investigation, handling, treatment and management of such soils.

3.3 Remediation

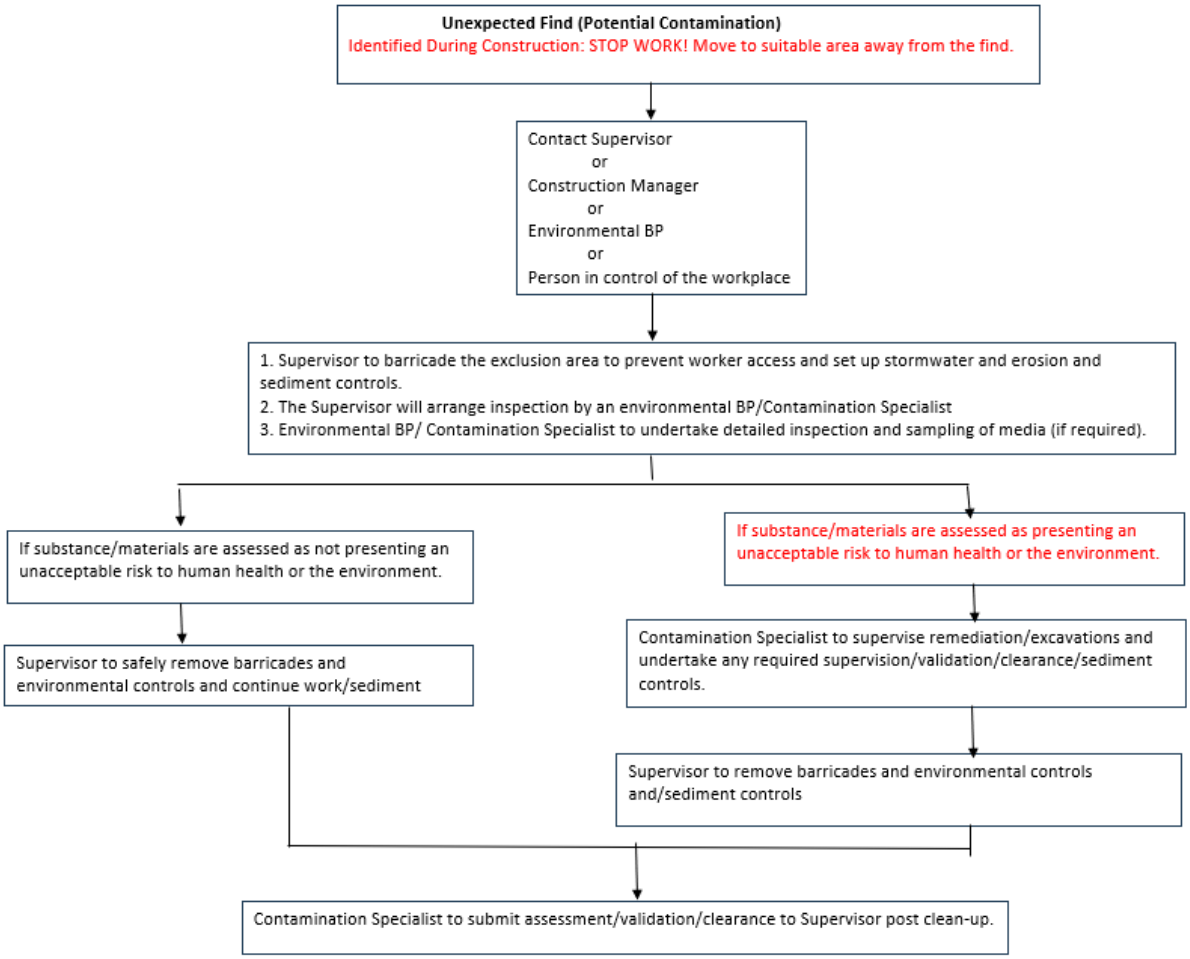
If required, contaminated soils will be treated and validated in accordance with an approved Remedial Action Plan (RAP) to be developed in consultation with the qualified contaminations specialist with consideration for the remediation hierarchy. The RAP must be prepared in accordance with EPA guidelines on contaminated land management, and include the following:

- Testing requirements for any contaminated material prior to its disposal off site
- A Validation Plan, which includes the area immediately below and adjacent to the known contamination and implications of the validation results on the waste classification
- Remediation of the contaminated material, or its removal and disposal.

Remedial actions including removal and disposal will be incorporated into specific safe work method statements (SWMS) and environmental work method statements (EWMS) and communicated to the Project team and subcontractors through toolbox meetings.

Recommencement of works will occur once remedial works have been implemented to the satisfaction of the Environmental BP or the Site Auditor (if applicable).

Figure 1 – Unexpected finds of potential contamination procedure flow chart



4. Roles and responsibilities

An overview of the roles and responsibilities relating to this UCFP is shown in **Table 1** below:

Table 1 - Overview of roles and responsibilities

Position	Responsibilities
Site Supervisor	■ Ensure this UCFP is implemented during construction ■ Enforce stop work procedures ■ Notify the Environment BP ■ Assist the Environment BP as required ■ Ensure asbestos removalists (if required) are appropriately licensed ■ Recommencement of works following relevant approvals

Environmental BP	■ Ensure this UCFP is implemented throughout construction ■ Record details of unexpected find and notify and/or consult with Transgrid and environmental regulators (including EPA) as required ■ Engage a suitably qualified contaminated land consultant ■ Assist the suitably qualified contaminated land consultant in the investigation and assessment of unexpected find ■ Work with Site Supervisor to develop a plan for managing and/or remediating the unexpected find ■ In coordination with the Site Supervisor, implement the plan for the management and/or remediation of the unexpected find ■ Following successful management of the unexpected finds, issue the Site Supervisor with approval to recommence work
Contamination specialist	■ Identify the potential hazard to human health and/or the environment in accordance with applicable legislative requirements ■ Undertake sampling of unexpected finds for laboratory analysis ■ Undertake waste classification of any waste to be removed from site in accordance with the NSW EPA Waste Classification requirements ■ Report on findings of any contamination investigation ■ Assist in development of management and mitigation measures where required • Issue asbestos clearance certification (if required) ■ Prepare RAP (if required).

5. Reporting and notification

If suspected contamination is uncovered, the following will occur as applicable:

- Any required Project reporting and notifications, detailed in Section 8.7 of SWMP.
- Recording of confirmed contamination in an Unexpected Contamination Finds Register maintained by the Project
- Material tracking for all material disposed offsite as per the POEO Act 1997
- Notification and reporting to EPA will be undertaken in accordance NSW EPA Guidelines on the Duty to Report Contamination (2009) and the CLM Act
- Where it is deemed probable that the contamination has been, or could have been caused, or changed by Project works, the EPA will be notified in accordance with Section 60 of the CLM Act.

6. Polychlorinated biphenyls (PCBs)

PCBs are classified as hazardous material and are regulated under the POEO Act. Transgrid is undergoing processes to remove PCBs from their network and equipment under their PCB management plan and licence. As the scope of works for the Project interfaces with existing Transgrid infrastructure and substations there is potential for PCBs to be in proximity to the works. If PCBs are found to be during the works, the specific controls for the management of PCBs from Transgrid Environmental Handbook (2021) are detailed in **Table 2.**

Table 2 - Overview of PCB management controls (Transgrid, 2021)

Stage	Controls
Testing	■ The Substations Officer is responsible for arranging oil samples to determine the PCB level ■ Consider the item to be scheduled PCB where the PCB level is unknown or if the equipment was manufactured before 1997 or if the date is uncertain

Stage	Controls
General Transport and handling	■ Wear required personal protection equipment (PPE) and use good hygiene practices ■ Clearly label PCB material, waste and storage areas and have spill kits and PPE readily available ■ Store PCB material in waste storage areas bunded in accordance with AS 1940 The storage and handling of flammable and combustible liquids and located in secure areas ■ Clearly label and secure ■ When carrying receptacles greater than 500 kg(L), use a dangerous goods licensed driver and vehicle ■ Placard receptacles greater than 500 kg (L) and aggregate loads greater than or equal to 1000 kg (L) with emergency information panels
Transport of more than 1 tonne of PCB oil or waste electrical scrap	■ Use PCB licensed transporters to take PCB material directly to a licenced waste disposal facility or ■ Transport and store in accordance with Transgrid's Environmental Protection Licenses (EPLs), or ■ Direct transport by Transgrid employees from Transgrid premises to a disposal facility or Transgrid's licenced storage facility
Disposal	■ Dispose of all PCB waste to an EPA licensed facility ■ Comply with waste licensing and tracking requirements ■ To arrange disposal Transgrid employees can contact the Senior Environmental BP or Support Engineer

Appendix D – Dewatering Management Procedure

Mount Piper to Wallerawang Transmission

Dewatering Management Procedure

Zinfra

Reference: 528945

Revision: 0

2026-10-08



aurecon

Bringing ideas to life

Document control record

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Document control		aurecon				
Report title		Dewatering Management Procedure				
Document code			**Project number**		528945	
Client		Zinfra				
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
A	2025-11-07	DRAFT – For Review	J. Norman	M. Donaldson		S. Rackley
B	2026-04-16	Addressing Zinfra comments	M. Jones	B. McDonald		S. Rackley
C	2026-05-08	Addressing Transgrid comments	J. Norman	B. McDonald		S. Rackley
D	2026-05-15	Addressing Zinfra comments	J. Norman	B. McDonald		S. Rackley
E	2026-05-25	Addressing Zinfra comments	J. Norman	B. McDonald		S. Rackley
F	2026-06-01	Addressing Zinfra comments	J. Norman	B. McDonald		S. Rackley
G	2026-07-14	Addressing consultation	J. Norman	B. McDonald		S. Rackley
H	2026-07-21	Addressing Zinfra comments	J. Norman	B. McDonald		S. Rackley
I	2026-09-07	Addressing ER comments	M. Jones	B. McDonald		S. Rackley
J	2026-09-29	Addressing ER comments	M. Jones	B. McDonald		S. Rackley
0	2026-10-08	Final for ER review and endorsement	M. Jones	B. McDonald		S. Rackley
Current revision		**0**				

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1 Introduction

This Dewatering Management Procedure (DMP) forms part of the Soil and Water Management Plan (SWMP) framework for the Mount Piper to Wallerawang Transmission Project ('the Project'). It outlines the approach for managing all water requiring removal from construction areas during the works and establishes the requirements for protecting water quality during dewatering, reuse, discharge, and general site water management.

Dewatering may be required at tower foundation excavations, construction pads, trenching, temporary sumps and any low-lying areas where stormwater or groundwater accumulates and must be removed to enable safe construction. This plan also sets out the water quality standards, assessment criteria, monitoring requirements, and control measures necessary to ensure that any water handled, treated, reused, or discharged meets the applicable environmental and regulatory requirements.

1.1 Purpose

The purpose of this DMP is to ensure that all dewatering and site water-quality management activities are planned, assessed, and executed in a manner that prevents environmental harm, avoids uncontrolled discharge, and complies with all relevant legislative, approval, and project-specific requirements.

This Plan describes how water quality will be assessed, how dewatering will be undertaken, and the controls that must be implemented to prevent erosion, sedimentation, pollution, and adverse impacts to downstream environments. It also defines the criteria that must be met before water can be reused on site or discharged to the environment.

This DMP ensures that any contaminated water requiring removal or management from excavations or work areas is:

- Collected (if required), assessed, and managed to prevent erosion, sediment transport, contamination, or degradation of receiving environments
- Reused or discharged only when water quality meets Section 120 of the POEO Act as per Condition of Approval (CoA) B15Transgrid, and project approval requirements
- Documented and controlled through a clear permit, monitoring, and sign-off process.

1.2 Scope

This DMP applies to all areas and construction activities within the Project where groundwater, stormwater, or accumulated water may require active management. The Plan covers both the removal of water from work areas and the assessment, treatment, reuse, and discharge of water to ensure it meets applicable water quality criteria. The DMP covers:

- Transmission structure sites, including tower and pole foundations (pad, piled and micro-pile foundations)
- Access tracks, including cut/fill sections, drainage depressions and locations where groundwater or seepage may accumulate
- Temporary trenching, conduit installation and underground services, including any excavation where groundwater ingress is encountered
- Watercourse interface works, minor tributaries, ephemeral drainage lines and riparian transition zones
- Construction laydown areas, work pads, and crane pads, where stormwater accumulation may require controlled removal or water-quality management
- Any sump, depression, excavation or low-lying area that collects water requiring removal or quality assessment to maintain safe access or construction progress
- Temporary containment areas, including lined or unlined storage areas used for stormwater or groundwater holding, settlement, or treatment during construction

- Areas with potential contamination risk, where additional water quality testing and controls may be required prior to reuse or discharge

1.3 Regulatory and guideline requirements

Dewatering and water quality management activities must comply with:

1.3.1 Legislation

- *Protection of the Environment Operations Act 1997 (NSW) (POEO Act)*
- *Water Management Act 2000 (NSW)*
- EPBC Act referral conditions (if applicable)

1.3.2 Standards & Guidelines

- IECA (2025) Best Practice Erosion and Sediment Control
- Landcom "Blue Book" (2004) – Volume 1, Ch. 6
- Transgrid Environmental Handbook & HSE Procedures (including Dewatering Guidance Note – Minor Civil Works)
- Zinfra Environmental Management Framework & SWMP requirements
- Transport for NSW water quality guidelines (pH/TSS/oil & grease).
- ANZG (2025) Water Quality Guidelines – for assessing discharge water quality

1.3.3 Approval Conditions & Revised Mitigation Measures

The Final Conditions for SSI-70279722 were issued on the 16th of May 2026. An overview of the Conditions of Approval and the Revised Mitigation Measures (RMM) relevant to the dewatering procedure is shown in Table 1-1.

Table 1-1 Overview of Approval and EIS Requirements

Reference	Impact category	Condition	Where addressed in this report
Conditions of Approval			
B13	-	The Proponent 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 Proponent is required to obtain the necessary water licences before commencing any works which intercept or extract groundwater or surface water (unless an exemption applies).*	Construction water supply is detailed in Section 8.1.4 of the SWMP. The Project is exempt from requiring a water access license (WAL), unless the inflow of groundwater exceeds 3 ML. If the inflow exceeds this 3 ML per annum, the TARP will be followed as per: - Section 3.2 - Section 4.2. The management of licensing requirements will be done by Zinfra.

Reference	Impact category	Condition	Where addressed in this report
B15	-	Unless otherwise authorised by an EPL, the Proponent must ensure the development does not cause any water pollution, as defined under Section 120 of the POEO Act.	This Plan is designed with reference to the POEO Act and is designed to avoid water pollution as defined under Schedule 120: ■ Section 1.3.1 ■ Section 2.1
B16(a)	-	The Proponent must: (a) design, construct and maintain an appropriate water management system at all construction compounds to prevent pollution;	This document forms part of the construction water management system to prevent pollution at construction compounds (including wastewater) by managing water quality leaves site. ESCP will be implemented during construction phase.
B19(c)	-	Prior to the commencement of construction, the Proponent must prepare a Soil and Water Management Plan for the development to the satisfaction of the Planning Secretary. This plan must: (c) detail how the Proponent would manage groundwater inflows and extraction during construction including groundwater trigger action response measures if groundwater inflows are greater than 3 ML / year;	These requirements in relation to the DMP are addressed in: ■ Section 3.2 ■ Section 4.2.
Revised Environmental Mitigation Measures			
B20	Surface water dewatering at culvert crossings	Consult with DPIRD on the management of aquatic biota for any proposed dewatering of the Coxs River oxbow for construction of the culvert crossing, and any proposed discharge of surface water to/ from waterways.	These requirements are captured in Section 2.
W5	Groundwater impacts and dewatering	A groundwater dewatering procedure will be prepared and implemented as part of the SWMP. The procedure will define measures for the appropriate management of extracted groundwater, including: ■ reviewing groundwater volumes, such as inflows and extraction ■ identifying licencing requirements ■ water quality testing of intercepted groundwater to inform treatment (if required), disposal and/or discharge requirements ■ a groundwater trigger action response plan that will be implemented in the event that groundwater inflows are greater than expected.	These requirements are addressed in: ■ Appendix A includes the dewatering permit and Appendix B includes the dewatering record for the scope of works. ■ Licensing requirements are identified in Section 1.3 ■ Water quality testing requirements are detailed in Section 2.1 ■ A groundwater trigger action response plan (TARP) is provided in Section 2.2

1.4 Dewatering permit

A Dewatering Permit must be completed, reviewed, and approved before any dewatering occurs. The permit provides a formal check to ensure water quality, discharge location, erosion controls, and environmental risks have been assessed and are compliant with Project, Transgrid, and regulatory requirements.

The Permit applies to all dewatering activities, including discharge from:

- Tower foundation excavations
- Trenches and conduits
- Sumps, pits, and boreholes.

No dewatering shall commence until the Dewatering Permit (refer Appendix A) is approved and signed by the Zinfra Site Supervisor and Environmental BP.

It is unlikely that water will need to be bypassed by pump. However, if it is required, then a permit is required.

Following the Project amendments, no dewatering is proposed in the waterbodies. However, should any water extraction activities are to be carried out a WAL is required under the WM Act.

1.5 Roles and responsibilities

All personnel taking part in construction activities shall be informed through site inductions, prestart meetings, or toolbox talks of the significance of the surrounding environment and potential dewatering impacts. All staff involved in dewatering activities will undergo site induction and/or specific training relating to this dewatering procedure. This will include (but not be limited to):

- Relevant legislation
- The existence of this procedure
- Dewatering Permits.

An overview of roles and responsibilities relating to this DMP is shown in Table 1-2.

Table 1-2 Overview of roles and responsibilities

Role	Key Responsibilities
Construction Manager	Overall responsibility for site compliance; ensures dewatering activities comply with permit conditions; coordinates subcontractors; ensures environmental controls are implemented and maintained.
Supervisor	Day-to-day management of dewatering works; ensures procedures are followed; conducts site inspections; maintains records and logs; responds to incidents and approves dewatering permit
Environmental Consultant / Specialist	Prepares dewatering management procedure; assesses groundwater quality; recommends treatment methods; monitors discharge quality; advises on compliance with Protection of the Environment Operations Act 1997.
Dewatering Subcontractor	Installs and operates pumps, tanks, and treatment systems; maintains equipment; ensures discharge meets quality limits; reports issues to site manager.
Water Treatment Operator	Operates filtration/sediment control systems; monitors turbidity, pH, hydrocarbons; ensures treated water meets discharge criteria.
Environmental BP	Conducts monitoring (turbidity, pH, flow) where required, keeps compliance records, reports exceedances, liaises with regulators. Approves dewatering permit.

2 Dewatering procedure

Water may be temporarily detained within the Project area in excavations, trenches, boreholes, and temporary sumps following rainfall or groundwater ingress. Dewatering may be undertaken for two purposes:

1. Reuse on site where water can be safely and appropriately used for construction activities, such as dust suppression or
2. Discharge to the environment where water cannot be reused and must be released in a controlled manner to reinstate storage capacity and maintain safe working conditions.

The Project is exempt from requiring a Water Access License (WAL) under the Water Management Act, unless the inflow of groundwater exceeds 3 ML per annum. The volume of groundwater extracted and discharged from excavations will be estimated using a combination of pump capacity records and excavation volume measurements. The quantity of water pumped will be calculated based on the known capacity of the dewatering pump and the duration of pump operation. In addition, the volume of water contained within excavations will be estimated using excavation dimensions and observed water levels. These methods will be used to determine and record the total volume of groundwater extracted and discharged during construction activities.

No surface water dewatering at the culvert crossing on the Coxs River oxbow is required for the project. However, if construction methodology changes, prior to any dewatering of the Coxs River oxbow associated with culvert construction, and prior to any discharge of surface water to or from waterways, the Project Engagement Lead will consult with DPIRD regarding the management of aquatic biota and will implement any agreed management measures and requirements arising from that consultation.

In accordance with SC1 of REMM, contaminated groundwater will not be released to the surrounding environment and will be disposed of at a licenced facility. All dewatering activities must follow the detailed guidance in the following sections, however, additional constraints to dewatering activities apply to select AECs that have been identified as moderate initial contamination risk (risk before tailored management), and where the presence of uncontrolled fill is encountered during the Project works. These additional requirements, to be implemented alongside the base requirements in this DMP, are provided in Appendix E of the SWMP. For AECs where the initial contamination risk is determined to be low, dewatering activities at these locations can proceed as per this DMP and exclude the additional requirements outlined in Appendix E of the SWMP.

The Project does not propose to store extracted groundwater within sediment basins or temporary water storage structures. Groundwater accumulated within excavations will be managed through controlled dewatering and discharge in accordance with the approved water quality criteria and discharge requirements. Notwithstanding this approach, the principles of the "management period" concept outlined in Managing Urban Stormwater: Soils and Construction (Blue Book) have been considered in the planning of dewatering activities. Dewatering rates and operational timeframes will be managed, where practicable, to minimise the volume of water retained within excavations and to restore excavation capacity within approximately five (5) days, thereby maintaining preparedness for subsequent rainfall events and reducing the risk of overtopping, erosion and sediment-laden runoff.

The Project must not cause any water pollution as defined under Section 120 of the POEO Act. Specific water quality discharge criteria have not been mandated within the approval. Accordingly, as industry best practice, water quality criteria (As shown in Table 1-1) for reuse and discharge has been adopted for this project which are based on IECA (2025), Blue Book (Landcom, 2004), and ANZG (2025) guideline values.

Table 2-1 Water Quality Discharge criteria

Parameter	Interim Criteria	Basis / Source	Application
pH	6.5 – 8.5	IECA; ANZG 2025	Required prior to any reuse or controlled discharge.
Turbidity	Nephelometric Turbidity Units (NTU) reading not exceeding 60 NTU	IECA	Applies to water reused for dust suppression, compaction, irrigation or discharged to vegetated buffers.

Hydrocarbon sheen	No visible sheen	IECA; NSW EPA "no harm" discharge principle	Visual inspection required before reuse or discharge.
Colour / Odour	No abnormal colour, odour or evidence of contamination	Industry standard; EIS EMMs	Used to screen for contamination risk before reuse.
Floating debris / litter	None present	Blue Book	Must be removed prior to reuse or discharge.
Electrical Conductivity (EC)	Comparable to local baseline; no indication of saline contamination	ANZG 2025	Required where water is reused for irrigation or discharged to land. Groundwater intercepted will not be comparable to surface water.
Potential contaminants (PFAS, metals, hydrocarbons)[2]	PFOS: 0.046 ng/L (freshwater) PFOA: 220 ng/L (freshwater) Other contaminants (metals/hydrocarbons): Not detected above the ANZG (2025) Marine Water Toxicant DGVs LOSP 95% or ASC NEPM (2013) groundwater investigation levels (GILs)	EIS Hydrology & Water Quality Technical Paper; ANZG 2025	Required where water comes from areas of potential contamination, uncontrolled fill (excluding ENM), or where unexpected contamination finds are encountered on-site. Where analyte concentrations are reported below the ANZG (2025) and PFAS NEMP 3.1 (2025) Guidelines, water can disposed offsite or reused onsite (e.g. for dust suppression). Where analyte concentrations are report above the ANZG (2205) and PFAS NEMP 3.1 (2025) Guidelines, water must be retained and disposed of at a suitably licensed facility with the appropriate permits.

Table notes:

1 Turbidity testing is not required for situations where the collected water is intended to be used for dust suppression reuse on site where dust suppression will not result in runoff into a receiving waterbody. Collected water cannot be discharged directly into receiving waters without turbidity testing.

2 Laboratory testing for contaminants only required for specific AECs (see Appendix D of SWMP), where uncontrolled fill (excluding ENM) is encountered during Project works, or where unexpected contamination finds are present (Appendix B of SWMP) otherwise not required and field water quality parameters are acceptable.

2.1 Reuse

The Project will require water for a range of construction and environmental management activities, including dust suppression, soil compaction, wheel washdown facilities (where installed), and watering of revegetation areas. Subject to a Dewatering Permit, water may be sourced from temporary storages, sumps, or open excavations, provided it is suitable for the intended use and does not present an environmental risk.

2.1.1 Dust suppression and other construction activities

Water used for dust suppression, soil conditioning, drilling support, vehicle movement control, or wheel washdown must meet minimum environmental quality standards to avoid introducing contaminants to the work area or surrounding environment. Water intended for these activities must comply with the following:

- Water quality criteria have been met, including pH and visual hydrocarbon screening
- Soil surface condition and infiltration potential are considered when determining the application rates to avoid excessive runoff or erosion
- The reuse area is located at least 40 metres from sensitive receiving environments, such as waterways, riparian zones, wetlands and farm dams
- Water is not applied near food crops or food-crop pastures, nor in a manner that risks overspray onto agricultural production areas

- Weather forecasts are reviewed, particularly rainfall predictions, to prevent runoff, ponding or uncontrolled flow.

Only water meeting these criteria may be applied to construction surfaces, access tracks, laydown areas or work pads. Application methods such as water carts or sprays must be managed to avoid overspray into drainage lines, sensitive environmental areas, or private property.

2.1.2 Watering and revegetation

Where reuse is proposed via controlled application to vegetated areas, the discharge must:

- Water quality criteria have been met, including pH, and visual hydrocarbon screening
- Occur at a rate that allows for infiltration without generating surface runoff
- Avoid steep slopes, dispersive soils, or erodible substrates unless additional controls (e.g., flow diffusers, spreaders, armouring) are installed
- Maintain a buffer of at least 40 metres from waterways, dams, wetlands, riparian zones, or areas where ponding could lead to off-site migration
- Be supervised to ensure that no scouring, channelling or waterlogging occurs.

If runoff or erosion is observed, the activity must cease, and corrective actions implemented. Where vegetation watering is not suitable, water must be managed through alternative reuse options or controlled discharge.

2.2 Discharge

Where water cannot be reused on-site, controlled discharge may be undertaken to reinstate the functional water holding capacity of excavations, or construction areas. Discharge may occur as a point-source release (e.g., hose outlet) or via appropriate method application (refer Table 2-2), provided it remains within the approved discharge footprint and complies with the requirements outlined in Table 2-1.

Discharge activities typically involve pumping or gravity release of water detained within basins, trenches, excavations, or sumps. Prior to any discharge:

- Water must meet the water quality discharge criteria as specified in Table 2-1.
- The proposed discharge location and method must comply with Table 2-3, ensuring the hierarchy of preferred methods is followed
- All necessary Erosion & Sediment Controls must be installed
- A Dewatering Permit must be completed and approved prior to commencement.

The selection of a discharge location must consider:

- The level of stabilisation at the discharge point and its ability to manage flows without causing erosion
- Appropriate flow dispersion and infiltration opportunities
- Proximity to sensitive receiving environments, including waterways, dams, contaminated areas, heritage features, threatened flora and fauna, and dispersive soils.

If erosion or scouring is observed during dewatering:

- Pumping must cease immediately
- The affected area must be repaired
- Additional erosion controls or flow dissipation measures must be installed
- Discharge must not recommence until an alternative approved discharge point is identified if required
- All observations and corrective actions must be documented on the Dewatering Permit.

Table 2-2 Discharge method summary

Infiltration / Soak-Away (Preferred Method)	Filtration (Sediment Bags, Geofabric Socks, Dewatering Units)	Off-Site Disposal (Licensed Waste Contractor)
Pump water onto stable, vegetated ground so it can soak into the soil rather than run off.	Pump water through a filter to remove sediment before discharge to a stable area.	Water is removed by vacuum truck and/or water cart and taken to a licensed disposal facility.
Use when: ■ Soil is stable and not dispersive ■ Area is ≥40 m from waterways/drainage lines ■ Water meets discharge/reuse criteria.	Use when: ■ Water is turbid or contains sediment ■ Infiltration is suitable once sediment is removed	Use when: ■ Contamination suspected (sheen, odour, colour) ■ Water fails quality criteria and cannot be treated onsite ■ Near contamination hotspots or ASS.
Key controls: ■ Spread flow using a diffuser/splash pad ■ Stop immediately if erosion occurs.	Key controls: ■ Place filter bags on flat, stabilised ground ■ Discharge to vegetated buffer ■ Monitor bags, do not allow clogging or bursting.	Key controls: ■ Use only licensed transporters/facilities ■ Keep disposal dockets for records.

Table 2-3 Dewatering procedure

Step	Description / Requirements
1. Identify Need for Dewatering	Triggers include: ■ Excavation >0.5 m with groundwater ingress ■ Accumulated stormwater preventing works ■ Foundation pads filling with water ■ Water required to be removed before concrete placement
2. Establish a Controlled Sump	■ Install a stable excavation sump away from batters ■ Protect pump intake with sediment socks or weighted geotextile ■ Avoid undercutting dispersive clays (Emerson Classes 2–5 confirmed in lab testing).
3. Assess Water Quality[1]	Test before discharge in accordance with Table 2.1. For areas within the Areas of Environmental Concern (AECs) identified in the Contamination Assessment with a potentially complete source–pathway–receptor (SPR) linkage, additional testing for potential contaminants (PFAS, metals, hydrocarbons) and ensure all concentrations are below the ANZG (2025) criteria prior to commencing dewatering activities.
4. Select Dewatering Method	Preferred hierarchy: 1. Infiltration / soak-away discharge (where safe and stable) 2. Filtration via sediment bags, geofabric socks, or dewatering units 3. Off-site disposal via licensed waste contractor (if contamination suspected).

Step	Description / Requirements
5. Implement Erosion & Sediment Controls	At minimum: ■ Level spreader or rock energy dissipater at discharge point ■ Flow spread across vegetated buffer (≥20 m where possible) ■ No discharge into dispersive-soil drainage lines without armouring ■ Install check structures or flow diffusers as required. ■ Additional controls may be required where dewatering activities have the potential to impact and/or interact with surrounding sensitive receptors (see Section 3.1)
6. Obtain Dewatering Permit Approval	Permit must include: ■ Location (i.e. GPS, tower number / track chainage) ■ Estimated volume ■ Water quality test results ■ Proposed discharge location & method ■ Confirmation ESC controls are in place. Required approvals: ■ Site Supervisor ■ Environmental Lead ■ Project Manager (where required, i.e. AECs as per the SWMP).
7. Controlled Discharge	■ Pump at <10 L/s unless approved otherwise ■ Maintain continuous supervision ■ Stop immediately if erosion, bypass, overtopping, or turbidity spike occurs.
8. Post-Discharge Monitoring	■ Inspect discharge area ■ Photograph before, during, after ■ Document and implement corrective actions.

Table notes:

1 Water quality criteria from IECA, Blue Book.

3 Monitoring

Monitoring is required to ensure that dewatering activities are conducted safely and do not result in uncontrolled discharge, erosion, or environmental harm. Monitoring must occur before rainfall, during rainfall (where safe), after rainfall, and throughout any dewatering event.

Table 3-1 Monitoring summary

Monitoring Stage	Requirements	Key Checks / Outcomes
Pre-rainfall monitoring	Inspect excavations, sumps, trenches and temporary water storage areas prior to forecast rainfall (on working days).	▪ Adequate freeboard available ▪ No safety or flooding risks ▪ Pumping required to restore capacity identified early
During rainfall (where safe)	Inspect accessible areas during rainfall events, provided conditions are safe.	▪ No overtopping or uncontrolled flow ▪ No bypassing of diversion controls ▪ No erosion or scouring around edges ▪ Excavation batters remain stable
Post-rainfall monitoring	Inspect excavations and sumps on the next working day once safe access is available.	▪ Accumulated water requiring dewatering ▪ Evidence of overtopping or uncontrolled release ▪ Erosion around drains, inlets or edges ▪ Excavation stability impacts
During dewatering	Conduct pre-dewatering water quality testing and supervise dewatering with hourly visual inspections.	▪ For all dewatered groundwater, quantity of water to be measured during dewatering activities and recorded as per the form in Appendix B. If the seems likely to exceed the 3 ML per annum exemption for groundwater the TARP (see Section 3.2) is to be implemented ▪ Discharge remains within approved project/easement boundaries ▪ No runoff to sensitive environments ▪ No erosion, scouring or instability ▪ Controls functioning effectively (flow spreaders, filtration, buffers)

3.1 Sensitive areas

Within the CWO REZ footprint, dewatering controls must be heightened for:

- Pipers Flat Creek major interface
- Ephemeral drainage lines as part of the Coxs River which forms part of the Hawkesbury-Nepean catchment
- Dams and stock watering features
- Steep access track batters with dispersive material (Emerson 2–5)
- Areas within 50 m of riparian vegetation
- Any GDE (groundwater dependent ecosystem) interface.

3.2 Trigger action response plan (TARP)

The Groundwater Trigger Action Response Plan (TARP) provides a structured framework for identifying, assessing and responding to groundwater-related risks during construction of the Project. It establishes clear trigger levels for groundwater inflow volumes (3 ML per annum as per condition B19c of the CoA), water quality, and excavation stability, and outlines the actions required at each level to ensure environmental protection, construction safety and regulatory compliance. The TARP supports proactive management and ensures that any exceedances are addressed promptly through defined escalation pathways.

The TARP applies a tiered response approach, beginning with normal operating conditions (Level 0) and escalating through Levels 1 to 3, where increased groundwater inflow, reduced water quality, or excavation instability present higher levels of environmental risk. The required actions for each trigger level are summarised in Table 3-2, which provides an overview of response expectations for all trigger categories. Detailed trigger levels, descriptions, actions and notification requirements are shown in Table 3-3.Other risks for dewatering activities are summarised in Table 3-4.

Table 3-2 Required actions summary table

Trigger Level	Response Required	Typical Actions
Level 0	Normal	Continue work, monitor, record.
Level 1	Low impact	Dewatering Permit, ESC installed, water quality confirmation and commence recording water dewatering as per Appendix B.
Level 2	Moderate impact	Stop work if unsafe, higher-level testing, engineering input, potential redesign of dewatering approach, potential consideration of a WAL for activities
Level 3	Critical	Cease work, hydrogeologist review, regulator notification as per SWMP Section 5.3.3, corrective action plan.

Table 3-3 GW present in excavations

Parameter	Trigger Level	Description	Required Actions	Notification
Groundwater inflow – Normal	**Level 0**	Minor seepage or dampness consistent with geotech logs. No pumping required.	▪ Continue work with standard controls ▪ Record observations in daily log.	▪ None
Groundwater inflow – Elevated	**Level 1**	Persistent inflow requiring sump or light pumping to maintain safe excavation. Extraction volumes are less than 2ML extraction exemption per year	▪ Implement Dewatering Procedure Steps 1–8 ▪ Install sump protection & ESC ▪ Complete Dewatering Permit ▪ Monitor discharge.	▪ Site Supervisor ▪ Environmental BP

Parameter	Trigger Level	Description	Required Actions	Notification
Significant groundwater inflow	**Level 2**	Rapid inflow, difficulties maintaining excavation stability, unexpected volumes. Extraction volumes are more than 2 ML and less than 3ML in a single water year and the exemption may be breached.	▪ Stop work if unsafe ▪ Environmental BP to assess; – water quality – beginning process to obtain a WAL ▪ Upgrade controls / stabilise excavation ▪ Review construction sequencing ▪ Investigate source.	▪ Environmental BP(Immediate) ▪ Construction Manager ▪ Project Manager
Critical groundwater impact	**Level 3**	Sudden inrush; foundation instability; uncontrolled inflow; pumping and/or works could not be ceased due to reasons relating to safety, environment or the preservation of property. 3 ML exemption per year has been exceeded without an approved WAL in place	▪ Non-compliance with CoA B13 has occurred and must be notified as per non-compliance notification procedure. ▪ Environmental BP to obtain a WAL ▪ Cease all works ▪ Secure area ▪ SQP review ▪ Prepare Corrective Action Plan ▪ Consider shoring, casing, tankering, redesign.	▪ Project Manager ▪ Transgrid ▪ WaterNSW ▪ Regulator (refer non-compliance notification requirements in Section 9.7.5 of SWMP)

Table 3-4 Impact to sensitive receptors

Parameter	Trigger Level	Description	Required Actions	Notification
Proximity to waterways / dams	<40 m	Discharge near sensitive waterbody.	▪ Relocate discharge point ▪ Increase buffer & filtration.	These occurrences may constitute non-compliances or formal incidents, as such works shall stop and Environmental BP shall be contacted.
	<20 m or visible flow path	High risk of impact.	▪ Stop dewatering ▪ Redirect discharge ▪ Implement additional ESC.	
Impact to riparian vegetation / EEC / habitat	**Any observed impact**	Flow causing scour or root exposure.	▪ Stop pumping ▪ Reinstate area ▪ Modify discharge.	
Impact to farm dams / private land	**Any observed turbidity increase**	Uncontrolled or unsuitable discharge.	▪ Stop works ▪ Repair damage ▪ Notify landholder if required.	

4 Record keeping

4.1 Dewatering activity records

Under the legislative requirements for the 3 ML per annum exemption, the water taken must be recorded within 24 hours of the extraction on the approved form from NSW DCCEEW, provided in Appendix B of this DMP (Department of Planning and the Environment (DPE), 2022). This record must be kept for five years with the form provided to the minister's representative within 28 days of the end of the water year (28 July) (DPE, 2022). The following must be recorded for each dewatering event:

- Total amount of groundwater taken per year per authorised project under the exemption
- The date or dates on which the groundwater was taken
- A description of the method used to measure the volume of groundwater taken
- The groundwater source from which the water was taken
- The authority under which the water is being taken, for example water supply work approval, licence under the Water Act 1912, development consent, complying development or an approval exemption under legislation
- The details of the person taking water
- A description of the activity taking water
- The location of the activity taking water (DPE, 2022).

Other information that must be recorded for each dewatering event, but is not required to be submitted to the department, includes:

- Completed Dewatering Permit (location, volumes, method, water quality results, approvals)
- Daily monitoring details including pump rate, duration, discharge point and supervision
- Pre- and post-discharge photos of the sump, discharge point and receiving area
- Site observations (turbidity, sheen, odour, colour, erosion or scouring)
- Weather conditions before, during and after dewatering
- Water Quality Records
  - pH, turbidity/TSS and hydrocarbon checks for each event
  - Laboratory results (PFAS, metals, ASS) where required
  - Records of any failed water quality tests and corrective actions taken.

4.2 TARP and Incident Records

The incident and non-compliance reporting must be undertaken as per the specification in Section 5.3.3 of the SWMP. Records must be kept for the following:

- Any TARP activation, including trigger level, actions taken, investigations and notifications
- Incident reports for uncontrolled releases, exceedances, erosion/scour, or contamination indicators.

5 References

- Department of Planning and Environment. (2022d). Fact sheet – Water access licence exemption 3 ML or less of groundwater
- International Erosion Control Association Australia (2025). Best Practice Erosion and Sediment Control IECA, Picton NSW
- Landcom (2004), *Managing Urban Stormwater – Soils and Construction, Volume 1, 4th Edition* – "the Blue Book Volume 1"
- ANZG (2025). Guidelines for Fresh and Marine Water Quality

Appendix A
Dewatering Permit

Mount Piper to Wallerawang Transmission Line Upgrade

Dewatering Permit Form

This Dewatering Permit must be completed and approved prior to any dewatering activity.

NOTE: If the intended dewatering relates to the dewatering of the Coxs River oxbow for construction of the culvert crossing and any proposed discharge of surface water to/ from waterways, the NSW Department of Primary Industries and Regional Development (DPIRD) must be consulted to assist with aquatic biota management as per Environmental Mitigation Measure B19 of the EIS.

General Details

Field	Entry
Permit ID	
Date	
Location (Tower No. / Chainage / GPS)	
Type of Water Source	
Reason for Dewatering	

Estimated Water Volume & Dewatering Details

Field	Entry
Estimated volume (L or m³)	
Pump type & expected flow rate (L/s)	
Estimated duration of pumping	
Proposed dewatering method	☐ Infiltration / soak-away ☐ Filtration (sediment bag/geofabric) ☐ Off-site disposal
Appropriate flow recording equipment installed and operating?	☐ Yes ☐ No
Total amount of groundwater extracted (ML)	

Water Quality Testing

Parameter	Result
Test date / time	
Tester name	
pH result	
Turbidity/TSS result	
Hydrocarbon sheen present?	☐ Yes ☐ No
Odour/ colour concerns?	☐ Yes ☐ No
Additional contamination testing (PFAS/metals/ASS)	☐ Yes ☐ No

EXAMPLE

Parameter	Result
Preferred method of disposal as per Table 2-2 of the DMP	
Is treatment onsite required/possible?	☐ Yes ☐ No Why?
If yes, is there adequate storage volume and treatment capacity for the water?*	☐ Yes ☐ No ☐ N/A
Has the water previously been treated onsite?	☐ Yes ☐ No
If yes, how long approximately had the water been stored onsite?	

Note: If the response to any of the above is "No", please contact Environmental BP to ascertain available options for the water.

Discharge Location Assessment

Assessment Item	Details
Discharge location description	
Located in an AEC as per Appendix D of the SWMP	☐ Yes ☐ No *If yes, have all additional controls as per SWMP Appendix D been implemented*
Distance to nearest waterway (≥40 m)	☐ Yes ☐ No
Vegetated buffer available (≥20 m)	☐ Yes ☐ No
Discharge point stable/ armoured	☐ Yes ☐ No
Sensitive receptors present?	☐ Yes ☐ No
Photos attached	☐ Yes ☐ No

Erosion & Sediment Controls Verification

Control Measure	Implemented
Level spreader installed	☐
Rock energy dissipater installed	☐
Sediment filtration device installed	☐
Flow diffusers / check structures installed	☐
Additional controls	☐ Details:

Monitoring Requirements

Requirement	Confirmation
Continuous supervision during discharge	☐ Yes
Stop pumping if erosion/bypass/turbidity occurs	☐ Yes
Photos taken before, during, after	☐ Yes

EXAMPLE

Risk Assessment & Mitigation

Risk Identified	Mitigation Actions

Approval Signatures

Role	Name	Signature	Date
Zinfra Site Supervisor			
Environmental BP			
Project Manager *(AECs Only)*			

EXAMPLE

Appendix B
Dewatering Record

Annual record of water take – report form

Use this form to record water taken during construction dewatering and aquifer interference activities under a water access licence exemption.

When to use this form

Use this form to record and report water taken when claiming any of the following water access licence exemptions:

- aquifer interference activities[i] taking up to 3 ML per water year per groundwater source – Water Management (General) Regulation 2025 Sch 4, s 19
- dewatering related to the construction[ii] of infrastructure[iii] within prescribed coastal water sharing plan areas, from 6 June 2025 – Water Management (General) Regulation 2025 Sch 4, s 6
- dewatering related to the construction of essential infrastructure[iv] by or on behalf of public authorities – Water Management (General) Regulation 2025 Sch 4, s 4 Water Management
- dewatering related to private water industry infrastructure construction within a scheme approved under the *Water Industry Competition Act 2006* – Water Management (General) Regulation 2025 Sch 4, s 7

To claim any of the exemptions, you must meet the record-keeping and reporting requirements set out in the Water Management (General) Regulation 2025 and in this form. You must also have all other required approvals and authorisations in place and be compliant with them. This record is in addition to any record-making and reporting requirements of any other approvals or authorisations you may hold for your project.

You will need to complete and submit a separate form for each authorised project and each water source you take water from every year until your project ends.

Information needed to complete this form

To complete this form, you will need:

- details of your activity and project, and the locations where water is taken
- related approvals (for example, work or development approvals, exploration licences)

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- details of the meter used to record groundwater take **or** the method used to estimate surface water take
- records of water volumes taken throughout the water year
- records of periods of take (days/year).

Returning completed forms

Completed forms can be submitted as soon as an activity ends, but you must submit your form within 28 days of the end of each water year (by 28 July).

Please email or post your completed form/s to:

- water.enquiries@dcceew.nsw.gov.au, or
- NSW Department of Climate Change, Energy, the Environment and Water
  Locked Bag 5022
  Parramatta NSW 2124

Where to get help

Please refer to the Notes section for help completing this form. For more information, contact the department on:

- 1300 081 047 (business hours)
- water.enquiries@dcceew.nsw.gov.au

Section A — Exemption claimed

Exemption type

☐ Aquifer interference activity taking up to 3 ML per water year, per groundwater source

☐ Construction within prescribed coastal water sharing plan areas, from 6 June 2025

☐ Essential infrastructure by or on behalf of public authorities

☐ Private water industry infrastructure within a scheme approved under the *Water Industry Competition Act 2006*

Total annual volume of water taken under the exemption

Record the water year that applies to this annual record, and the total volume of water that was taken for the authorised project under the applying exemption in that water year.

Water year	**Total recorded volume[v] taken within the water year (ML or L)**
1 July — 30 June 20	ML **or** L

Section B — Proponent details

The proponent[vi] is the person claiming the exemption and submitting the record.

Title		Surname			
Given name/s					
Company name			ABN[vii]		
Address					
Town		State		Postcode	
Phone		Mobile phone			
Email					
Reference number[viii] (if known)					

Office use only		Date received

Section C — Activity details

Activity description

Description of authorised project[ix]			
Description of activity[x]			
Water take method[xi]			
Activity start date		Activity end date[xii]	

Activity location

Address[xiii]				
Town		NSW	Postcode	
Lot/ Deposited Plan/ Section				
GPS coordinates[xiv]				
Water source[xv]				

Landowner contact details

Required if different from proponent

Title		Surname			
Given name/s					
Company name			ABN [xvi]		
Address					

Town		State		Postcode	
Phone		Mobile phone			
Email					

Section D — Existing project authorisations

You must provide details of existing approvals, including Water supply work approvals, permits, or authorisations, where held.

If your project does not require any approvals or authorisations, please mark the box below.

☐ No approvals or authorisations required

Authorisation type[xvii]	Issuer	Approval or authorisation number	Annual extraction limit[xviii]

Section E — Declaration

I declare all information contained in this form is accurate, true and complete.			
Signature		Date	
Name			
Address		Phone	
Email			
It is an offence under sections 91J in connection with a metering record and 340A of the Water Management Act 2000 for a person to furnish any information knowing that it is false or misleading in a material respect.			

Privacy statement

The information you provide on this form is subject to the *Privacy and Personal Information Protection Act 1998*. It is being collected and used for purposes relating to the water access licence exemptions described in this form. Your personal information will not be disclosed to anybody else unless authorised by law. You have the right to request access to, and correct details of any personal information held. Further information regarding privacy can be obtained from the department's website: www.nsw.gov.au/departments-and-agencies/dcceew/information-access-governance-and-feedback#toc-privacy-statement

Section F — Record of metered volumes

Complete this section to record **metered** extraction volumes under your nominated exemption for Coastal construction of infrastructure or Aquifer interference activities. Metering records are required where an extraction limit applies.

This record must be completed within 24 hours of the end of each period of take.

If the water take was **estimated**, which is permitted under the other exemptions listed in this form, do not complete this section, **go to Section G**.

Meter information

Meter brand and type	Meter serial number

Groundwater take data

No.	Week ending	Start date and time	Start meter reading	End date and time	End meter reading	Volume taken	Units (L, ML)	Date and time record made
1								
2								
3								
4								
5								
6								
7								
8								

Section G — Record of estimated volume

Complete this section to record estimated extraction volumes under the following exemptions:

- aquifer interference activities taking up to 3 ML per water year (if an extraction limit does not apply),
- coastal construction of infrastructure (if an extraction limit does not apply),
- construction of essential infrastructure by or on behalf of public authorities, or
- construction of private water infrastructure within a scheme approved under the *Water Industry Competition Act 2006*.

Complete this record **for each period of take within 24 hours of the end of take**[xix].

Method used to **estimate** the volume of water taken[xx]:

No.	Period of take – START	Period of take – END	Estimated volume	Units (L, ML)	Date record made
1					
2					
3					
4					
5					
6					
7					

Record of estimated volume — continued

This page provides additional space to record estimated extraction volumes if needed. Print additional pages as required.

No.	Period of take – START	Period of take – END	Estimated volume	Units (L, ML)	Date record made

Notes

[i] **Aquifer interference activities** are:

- exploration for minerals, including coal, or petroleum
- quarrying, excavation, dredging or exploration for stone, aggregate, sand or gravel
- excavation required for the construction of a building, road or infrastructure
- creation of an artificial lake that intersects with groundwater
- remediation of groundwater contamination
- investigation of groundwater resources or geotechnical investigation
- testing of water quality from monitoring bores
- conducting pumping tests to investigate bore capacity or the capacity or connectivity of groundwater systems
- operation of ground source heating or cooling systems.

[ii] **Construction** in relation to coastal infrastructure, does not include maintenance.

[iii] **Infrastructure** in relation to coastal construction, includes, whether for public or private use:

- buildings, including residences
- roads
- fences
- other permanent structures

[iv] **Essential infrastructure** constructed by public authorities includes infrastructure for the following purposes:

- electricity generation, transmission and distribution
- telecommunications
- rail
- roads
- gas
- sewerage systems, water supply systems, stormwater management systems or flood water management
- airports, ports, shipping and harbours.

[v] Record the **total volume of water taken** in the water year for the water source in either megalitres (ML) or litres (L).

[vi] The **proponent** may be any person who has the care, control or management of the land.

[vii] Record your Australian Business Number

[viii] As these exemptions commenced in December 2019, no **reference number** is available for the 2019/20 water year. In following years, please provide the reference number issued to you by WaterNSW or the department after submitting an annual record for a previous water year for the exemption being claimed.

[ix] An **authorised project** in relation to aquifer interference or coastal construction of infrastructure means an activity:

a) that is the subject of a consent, approval or other lawful authority conferred by or under an Act, or

b) to which Division 5.1 of the *Environmental Planning and Assessment Act 1979* applies, or

c) that is exempt development under that Act.

[x] An **activity** describes how water is taken, and the number of works involved.

Example activities include (but are not limited to):

- installing spear points to dewater a building construction site
- drilling reverse circulation mineral exploration drill holes
- pump-and-treat contaminated groundwater using extraction bores
- evaporation of water from an artificial lake
- extracting water from a temporary trench
- removing groundwater seepage from a cutting
- water quality sampling from monitoring bores using a bailer
- conducting a pumping test
- dewatering from coal seam gas pilot production bores
- pumping water out of a cofferdam

[xi] Examples of **water extraction methods** include pump, airlift, bailer, removed with ground materials, free draining, evaporation from lake. Where several extraction points are involved, detail the **number and type**.

[xii] Provide **best estimate of activity end date** if uncertain.

[xiii] For **multiple locations**, please attach a separate list of activity locations and landowner contact details containing information for all fields in Section C of the form.

[xiv] GPS coordinates, please use **Datum GDA94**.

[xv] If you are unsure which **water source** you are taking water from, please contact the department for assistance.

[xvi] Record your Australian Business Number

[xvii] **Example authorisations** include (but are not limited to):

- water supply work approvals issued under the *Water Management Act 2000*
- water licences issued under the *Water Act 1912*
- exploration licences issued under the *Mining Act 1992*
- development approvals issued under the *Environmental Planning and Assessment Act 1979*
- environment protection licences issued under the *Protection of the Environment Operations Act 1997*.

[xviii] Supply the **annual bore extraction limit** if listed on your water supply work approval or other authorisation. Note, it is a requirement of most water access licence exemptions for excavation dewatering for coastal construction of infrastructure that any water supply work approval be subject to an annual extraction limit.

[xix] A **record of the total volume of water taken during each period of take must be made within 24 hours of the end of take**. This record must be retained for 5 years. You must make a new record for each period of take during your activity. For the purposes of the exemption, you do not need to make a record for the periods during your activity where no water is taken. The **period of take** is either the date water was taken, or the start and end dates for a period of continuous take.

[xx] Example **methods used to estimate** the volume of water taken include (but are not limited to):

- v-notch weir or velocity times area
- borehole volumes

- sump volumes
- bailer volumes
- bucket volumes
- evaporation calculations
- seepage calculations
- other (please specify).

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Appendix E – AEC Specific Contamination and Dewatering Management Requirements

Disturbance to imported material (excluding ENM) within the Areas of Environmental Concern (AECs) identified in the Contamination Assessment will be managed in accordance with this SWMP and the Dewatering Management Procedure (Appendix D). For each area within the AEC with a potentially complete source–pathway–receptor (SPR) linkage, controls have been tailored to the contaminants of potential concern (COPCs), the Project activities likely to occur, and the proximity of the AEC to the construction footprint. Detailed site investigations are recommended for these AECs, where imported material (excluding ENM) is observed. The results of these targeted investigations would then be used to update the risks and mitigation measures presented in the table below.

It should be noted that if soil testing is performed (where soil testing is one of the nominated mitigation measures for moderate risk AECs) and the soil is found not to contain contamination risk that further nominated controls as part of the below table can be excluded, and instead these areas can be managed as part of the procedures outlined in the primary SWMP document with no further mitigation required.

The following table summarises the AEC-specific risks, likelihood of a complete source-pathway receptor link and the management measures required for dewatering, soil handling, PPE, testing and disposal.

Table E -1 AEC management summary

AEC (Tower pads within this AEC)	Site-Specific Risks & COPCs	Likely SPRs	Initial risk (before management measures)	SWMP / DMP Management Requirements	Residual risk (after management measures)
AEC 01 – Mount Piper 330 kV Substation, Mount Piper Power Station[1]	Hydrocarbons, pesticides, heavy metals, asbestos, PFAS, nutrients/pathogens from oily water systems, transformers, fuel storage, water treatment	■ Possible SPR link via ingestion or dermal contact with soil and/or groundwater by construction personnel ■ Possible SPR link inhalation of contaminated dust or fibres by construction personnel ■ All other linkages found to be unlikely	■ Moderate	General: ■ PPE for dermal and inhalation protection ■ Manage in accordance with Transgrid's operational procedures Soils: ■ Soil testing per EPA Waste Classification + NEPM ■ Where encountered, excavated fill to be subjected to EPA waste classification testing before reuse or disposal. Surface water and groundwater: ■ Treat all groundwater as potentially contaminated, no discharge onsite ■ Mandatory water quality screening (pH, TSS/turbidity, EC, sheen) ■ Additional testing for potential contaminants (PFAS, metals, hydrocarbons) and ensure all concentrations are below the PFAS NEMP 3.1 (2025), ASC NEMP (2013) and ANZG (2025) criteria prior to commencing dewatering activities	■ Low
AEC 02 – Anthropogenic surface rubbish in Gardens of Stone SCA **(25C, 28D, 27D, 26D, 25D, 24D, 22D, 21D, 19D, 18D and 17D)**	Surficial fill, dumped waste, possible asbestos, metals, hydrocarbons.	■ Possible SPR link via ingestion or dermal contact with soil and/or groundwater by construction personnel ■ Possible SPR link via inhalation of contaminated dust or fibres by construction personnel ■ All other linkages found to be unlikely	■ Moderate	The following measures are only required where uncontrolled fill, excluding ENM (as per Section 6.4.6 of SWMP) and/or dumped waste material is encountered within the Project works area Otherwise, default management measures as per the SWMP are deemed sufficient. General: ■ Avoid disturbance where possible ■ Visual inspection for waste; unexpected finds protocol ■ PPE for dermal and inhalation protection ■ Manage in accordance with Transgrid's operational procedures Soils: ■ Segregate and classify all suspect soils ■ Where encountered, excavated fill to be subjected to EPA waste classification testing before reuse or disposal.	■ Low

AEC (Tower pads within this AEC)	Site-Specific Risks & COPCs	Likely SPRs	Initial risk (before management measures)	SWMP / DMP Management Requirements	Residual risk (after management measures)
				Surface water and groundwater: ■ Foundation dewatering acceptable only after water quality clears screening (pH, EC, TSS/turbidity)	
AEC 03 – Coal Conveyor (Wallerawang–Mt Piper)	Fill with coal residues; oils from maintenance; metals, hydrocarbons, asbestos.	■ Possible SPR link via ingestion or dermal contact with soil and/or groundwater by construction personnel ■ Possible SPR link via inhalation of contaminated dust or fibres by construction personnel ■ All other linkages found to be unlikely	■ Moderate	The following measures are only required where uncontrolled fill, excluding ENM (as per Section 6.4.6 of SWMP) and/or material with coal or oil residues is encountered within the Project works area Otherwise, default management measures as per the SWMP are deemed sufficient. General: ■ PPE for dermal and inhalation protection ■ Manage in accordance with Transgrid's operational procedures. Soils: ■ Excavations likely to intersect coal-contaminated fill ■ Soil stockpiles must be lined/covered ■ EPA waste classification before reuse or disposal Surface water and groundwater: ■ Water encountered may contain hydrocarbons, no discharge unless verified clear ■ Additional testing for potential contaminants (hydrocarbons) and ensure all concentrations are below the ASC NEMP (2013) and ANZG (2025) criteria prior to commencing dewatering activities	■ Low
AEC 04 – Uncontrolled Fill Along Project Footprint (25C, 28D, 27D, 26D, 25D, 24D, 22D, 21D, 19D, 18D, 17D, 15D, 16D, 14D, 13D, 12D, 11D, 10D, 9D, 8C, 7C, 6C, 5C, 4C, 3C, 1C, 2C)	Unknown origin fill with hydrocarbons, pesticides, metals, asbestos.	■ Possible SPR link via ingestion or dermal contact with soil and/or groundwater by construction personnel ■ Possible SPR link via inhalation of contaminated dust or fibres by construction personnel ■ All other linkages found to be unlikely	■ Moderate	The following measures are only required where uncontrolled fill, excluding ENM (as per Section 6.4.6 of SWMP) is encountered within the Project works area. Otherwise, default management measures as per the SWMP are deemed sufficient. General: ■ Induct personnel on hazardous fill risks. ■ PPE for dermal and inhalation protection ■ Manage in accordance with Transgrid's operational procedures	■ Low

AEC (Tower pads within this AEC)	Site-Specific Risks & COPCs	Likely SPRs	Initial risk (before management measures)	SWMP / DMP Management Requirements	Residual risk (after management measures)
				Soils: ■ Where encountered, uncontrolled fill (excluding ENM) to be assumed contaminated until screened and any excavated fill to be subjected to EPA waste classification testing before reuse or disposal. ■ Mandatory soil classification for reuse Surface water and groundwater: ■ Additional testing for potential contaminants (metals, hydrocarbons) and ensure all concentrations are below the ASC NEMP (2013) and ANZG (2025) criteria prior to commencing dewatering activities ■ Conduct dewatering only via infiltration/filtration if water is clean (concentrations below nominated criteria within Appendix D); otherwise tank off-site to suitable disposal area.	
AEC 05 – Agricultural Land (current/historical) (15D, 16D, 14D, 13D, 12D, 11D and 10D)	Pesticides, herbicides, metals, nutrients/pathogens, asbestos from farm structures.	■ No complete SPR links found to be likely	■ Moderate	General: ■ PPE due to potential pathogens ■ Minimise disturbance of legacy contaminated soils ■ Manage in accordance with Transgrid's operational procedures Soils: ■ Follow unexpected finds SOP ■ Where encountered, excavated fill to be subjected to EPA waste classification testing before reuse or disposal.	■ Low
AEC 06 – Water Storage Tank and Chemical Storage	Sodium hypochlorite, water treatment residues, metals.	■ No complete SPR links found to be likely	■ Low	■ N/A as works are unlikely to interact with this AEC	■ N/A
AEC 07 – Main Western Railway Line Corridor	Hydrocarbons, herbicides/pesticides, metals, asbestos, fill importation.	■ No complete SPR links found to be likely	■ Low	■ N/A as works are unlikely to interact with this AEC	■ N/A
AEC 08 – Former Ivanhoe Colliery & Mining Features	Landfills, chitter dam residues, fuels/oils, PFAS, metals, asbestos, gases.	■ No complete SPR links found to be likely	■ Low	■ N/A as works are unlikely to interact with this AEC	■ N/A

AEC (Tower pads within this AEC)	Site-Specific Risks & COPCs	Likely SPRs	Initial risk (before management measures)	SWMP / DMP Management Requirements	Residual risk (after management measures)
AEC 09 – Rejects Emplacement Area / Lamberts South Ash Repository (outside footprint)	Ash residues, brine, acidic seepage, metals.	▪ Possible SPR link via ingestion or dermal contact with soil and/or groundwater by construction personnel ▪ All other linkages found to be unlikely	▪ Moderate	General: ▪ PPE for dermal and inhalation protection ▪ Manage in accordance with Transgrid's operational procedures Soils: ▪ Minimise bulk earthworks as much as practicable ▪ Only minor risk if construction is nearby Surface water and groundwater: ▪ Prevent runoff from entering easement ▪ No discharge towards LSAR drainage lines ▪ Treat any unusual dewatering water as suspect.	▪ Low
AEC 10 – Former Wallerawang Power Station (6C, 5C, 4C, 3C, 1C and 2C)	Hydrocarbons, metals, pesticides, asbestos, PFAS; oily water systems; drainage ponds.	▪ Possible SPR link via ingestion or dermal contact with soil and/or groundwater by construction personnel ▪ Possible SPR link via inhalation of contaminated dust or fibres by construction personnel ▪ Possible SPR link via inhalation of gases/vapours by construction personnel ▪ All other linkages found to be unlikely	▪ Low (1C-3C, 6C) ▪ Moderate (4C and 5C only)[2]	The following measures are for "moderate" initial risk towers (4C and 5C) only. General: ▪ PPE for dermal and inhalation protection ▪ Manage in accordance with Transgrid's operational procedures Soils: ▪ Minimise bulk earthworks as much as practicable ▪ Soil stockpiles must be covered and contained. ▪ Where encountered, excavated fill to be subjected to EPA waste classification testing before reuse or disposal Surface water and groundwater: ▪ Dewatering in these zones requires prior notification to Environmental Lead ▪ Assessment of groundwater conditions (depth, hydraulic conductivity and flow direction) and quality to confirm actual groundwater conditions. ▪ Mandatory water quality screening (pH, TSS/turbidity, EC, sheen) PFAS and leachate risk, no uncontrolled discharge. Additional testing for potential contaminants (PFAS, metals, hydrocarbons) and ensure all concentrations are below the	▪ Low

AEC (Tower pads within this AEC)	Site-Specific Risks & COPCs	Likely SPRs	Initial risk (before management measures)	SWMP / DMP Management Requirements	Residual risk (after management measures)
				PFAS NEMP 3.1 (2025), ASC NEMP (2013) and ANZG (2025) criteria prior to commencing dewatering activities.	
AEC 11 – Wallerawang 330 kV Substation[3]	Oils, metals, asbestos, PFAS, transformers.	▪ Possible SPR link via ingestion or dermal contact with soil and/or groundwater by construction personnel ▪ All other linkages found to be unlikely	▪ Moderate	General: ▪ PPE + contamination awareness induction required ▪ Manage in accordance with Transgrid's operational procedures Soils: ▪ Treat soils as potentially contaminated ▪ Where encountered, excavated fill to be subjected to EPA waste classification testing before reuse or disposal Surface water and ground water: ▪ No infiltration discharge where oily residues observed ▪ Off-site disposal for suspect groundwater. ▪ Mandatory water quality screening (pH, TSS/turbidity, EC, sheen) ▪ Additional testing for potential contaminants (PFAS, metals) and ensure all concentrations are below the PFAS NEMP 3.1 (2025), ANZG (2025), and ASC NEPM (2013) criteria prior to commencing dewatering activities.	▪ Low
AEC 12 – Kerosene Vale Ash Repository (outside footprint)	Acidic seepage, metals, sulfate, ammonia, fluoride, asbestos.	▪ No complete SPR links found to be likely	▪ Low	▪ N/A as per GHD contamination assessment	▪ Low
AEC 13 – Farm Dams (existing and infilled)	Contaminated sediments, pesticides, metals, nutrients/pathogens.	▪ Possible SPR link via ingestion or dermal contact with soil and/or groundwater by construction personnel ▪ All other linkages found to be unlikely	▪ Moderate	General: ▪ Buffers must be maintained around dam margins. ▪ PPE for dermal and inhalation protection ▪ Manage in accordance with the CEMP and Transgrid's operational procedures No discharge to dams or flow paths leading to dams Soils: ▪ Excavated infill to be subjected to EPA waste classification testing before reuse or disposal Surface water and groundwater:	▪ Low

AEC (Tower pads within this AEC)	Site-Specific Risks & COPCs	Likely SPRs	Initial risk (before management measures)	SWMP / DMP Management Requirements	Residual risk (after management measures)
				▪ Water reused must not overspray onto pasture	
AEC 14 – Castlereagh Highway Service Station (50 m north)	Petroleum hydrocarbons, metals from USTs and fuel handling.	▪ No complete SPR links found to be likely	▪ Low	▪ N/A as works are unlikely to interact with this AEC	▪ N/A

Table note:

1 Inside the Mt Piper Substation (AEC 01) does not fall under the works covered by this CEMP and is excluded from this document

2 Former Wallerawang Power Station (AEC 10) was noted as “high” initial risk before mitigation measures were applied, however, previous investigations and testing reviewed by GHD (2025b) allowed for this initial risk to be lowered to moderate.

3 Inside the Wallerawang 330 kV Substation (AEC 11) does not fall under the works covered by this CEMP and is excluded from this document

Appendix F – Acid Sulfate Soil and Reduced Inorganic Sulfur Soil Management Plan

Douglas PARTNERS

GROUNDED EXPERTISE

Acid Sulfate Soil and Reduced Inorganic Sulfur Soil Management Plan

CWO REZ 330 kV Transmission Lines

Mt Piper to Wallerawang (SP5 and SP5a), NSW

Prepared for Zinfra Pty Ltd

Project 229568.00

11 May 2026

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Document History

Details

Project No.	229568.00
Document Title	Acid Sulfate Soil and Reduced Inorganic Sulfur Soil Management Plan
Site Address	Mt Piper to Wallerawang (SP5 and SP5a), NSW
Report Prepared For	Zinfra Pty Ltd
Filename	229568.00.R.009.Rev2

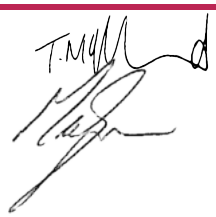
Status and Review

Status	Prepared by	Reviewed by	Date issued
Revision 0	Troy McClelland	Michael Gawn	26 February 2026
Revision 1	Troy McClelland	Brent Kerry	2 March 2026
Revision 2	Troy McClelland	Michael Gawn	11 May 2026

Distribution of Copies

Status	Issued to
Revision 2	Zinfra Pty Ltd

The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

Signature		Date
Author		11 May 2026
Reviewer		11 May 2026

FS604853

Douglas Partners acknowledges Australia's First Peoples as the Traditional Owners of the Land and Sea on which we operate. We pay our respects to Elders past and present and to all Aboriginal and Torres Strait Islander peoples across the many communities in which we live, visit and work. We recognise and respect their ongoing cultural and spiritual connection to Country.

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Appendix A: About this Report

Acid Sulfate Soil and Reduced Inorganic Sulfur Soil Management Plan
CWO REZ 330 kV Transmission Lines
Mt Piper to Wallerawang (SP5 and SP5a), NSW

1. Introduction

Douglas Partners Pty Ltd (Douglas) has been engaged by Zinfra Pty Ltd to prepare this acid sulfate soil and reduced inorganic sulfur soil management plan (ASSMP) in association with the proposed 330kV transmission lines from Mt Piper to Wallerawang, NSW. The transmission line is required as part of linking the Central West Orana Renewable Energy Zone (CWO REZ) to the main transmission network. The ASSMP was prepared in accordance with Douglas' email proposal dated 23 October 2025.

Douglas has previously undertaken a geotechnical investigation and acid sulfate assessment for the 330kV transmission lines from Mt Piper to Wallerawang, the results of which are detailed in the following reports:

- *Report on Geotechnical Investigation, CWO REZ 330kV Transmission Line, Mt Piper to Wallerawang (SP5 and SP5a), NSW* (Dougals 2025a); and
- *Report on Acid Sulfate Soil Assessment, CWO REZ 330 kV Transmission Line, Mt Piper to Wallerawang (SP5 and SP5a), NSW* (Douglas 2025b).

Based on the results of the above investigations, acid sulfate soils have been confirmed to be present between towers 1C and 12D, the locality of which is shown in Figure 1 below.

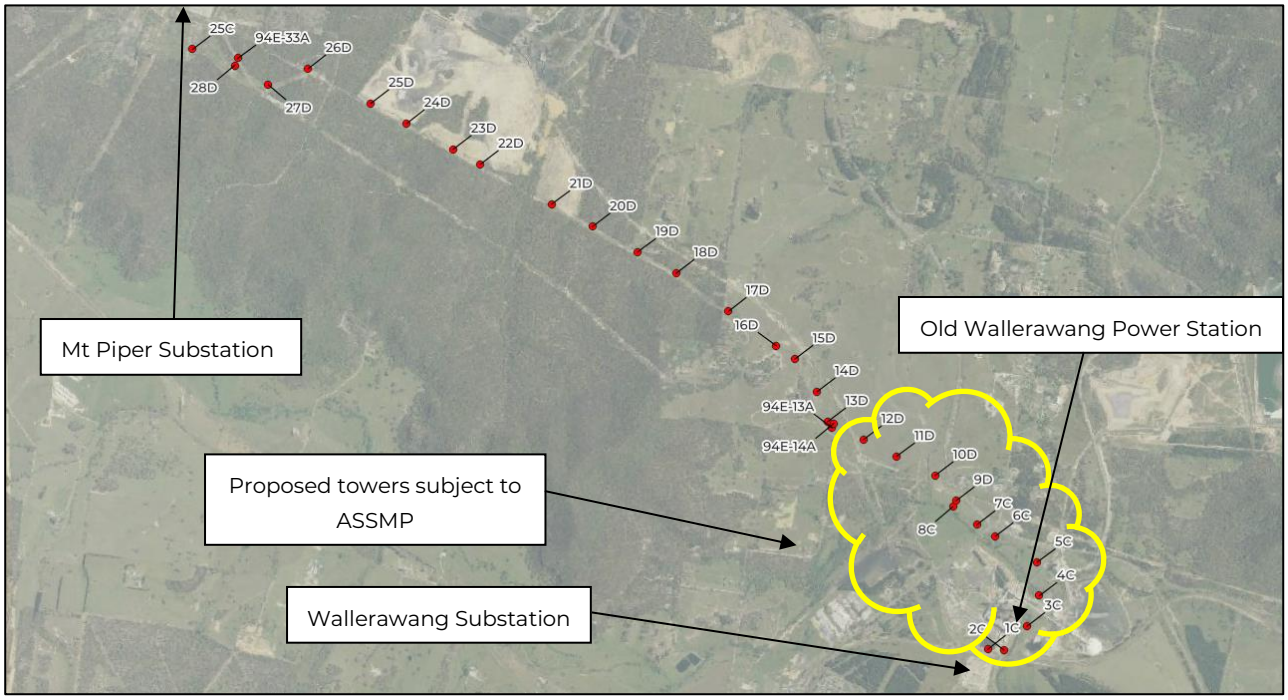


Figure 1 – Aerial view of the site, showing tower locations

The objective of this ASSMP is to provide management methods and procedures to minimise environmental impacts resulting from the disturbance of acid sulfate soils (ASS)/reduced inorganic sulfur (RIS) during the construction of the proposed development. This ASSMP provides a summary of previous ASS test results, neutralisation and treatment methods, verification testing and monitoring requirements, emergency response procedures and groundwater / leachate management procedures and contingency measures.

This ASSMP is devised on the basis of the guidelines and reference documents endorsed by NSW EPA and with reference to other national guidelines where considered appropriate and includes the following key guidelines:

- Acid Sulfate Soil Management Advisory Committee (ASSMAC), *Acid Sulfate Soil Manual 1998* (Stone, Ahern, & Blunden, 1998).
- QLD Department of Resources, QLD Department of Environment and Science, A*cid Sulfate Soil Technical Manual: Soil Management Guidelines, Version 5.1* (Dear, et al., 2024).
- Department of Agriculture and Water Resources (DAWR), *National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual* (Sullivan, et al, 2018a).
- DAWR, *National Acid Sulfate Soils guidance: National acid sulfate soils sampling and identification methods manual* (Sullivan, et al, 2018b).

This report must be read in conjunction with all appendices, including the notes provided in Appendix A.

2. Site information and environmental setting

Site address	The proposed transmission line extends approximately 7.5 km, from the Mt Piper 500/330kV substation to the Wallerawang 330/132kV substation. The alignment typically follows parallel to an existing transmission easement, as well as through the Old Wallerawang Power Station which is located at the eastern end of the alignment. This ASSMP is limited to the section of the alignment where acid sulfate soils have been assessed / encountered as reported in Douglas (2025b), ie between Towers 1C to 12D (refer Figure 1).
Topography	Surface levels along the alignment typically range from about RL 870 (m AHD) (near Wallerawang Substation) and RL 970 (near Mt Piper Substation) to approximately RL 1020 near Tower 26D.
Geology	Reference to NSW Seamless Geology dataset indicates the presence of various near-surface geologies across the alignment. At the eastern end of the alignment, where this assessment is focused, the site is mapped as comprising Quaternary aged alluvial deposits (Q_a) comprising gravel, sand, silt and clay. These alluvial soils are mapped to be surrounded by the Berry Siltstone formation (Pshb) of the Shoalhaven Group which comprises siltstone and sandstone with sporadic pebbles.

Soil landscape	Reference to the NSW Soil and land information (Tool), eSpade, indicates that the alignment within the ASS assessment area traverses through areas mapped as comprising disturbed terrain, within the Old Wallerawang Power Station, as well as the Cullen Bullen, Hassans Walls, Pipers Flat and Lithgow landscapes to the north and west.
Surface water	The nearest surface water bodies include the Coxs River and Pipers Flat Creek which are located in close proximity to the alignment and discharge into Lake Wallace to the south.
Groundwater	As encountered previously (Douglas, 2025a), groundwater is present a relatively shallow depths (within about 0.5 m to 3 m depth) over this section of the alignment.
Acid sulfate soil risk	Reference to the NSW Acid Sulfate Soil Risk map indicates the site is not within a mapped area. Whilst ASS are typically encountered in coastal areas of elevation RL 5 (AHD) or lower with estuarine deposits, ASS or soils with RIS have been identified in a wide range of environmental settings where a combination of organic matter, iron minerals, waterlogged conditions or a high watertable, and sulfidic minerals exists.

3. Proposed Development

Based on recent information provided by the client, it is understood that at each tower location (except for Tower 1C), a 50 m by 50 m square platform is to be created for construction of the towers. Bulk excavation for theses towers is understood to be limited to 1 m depth (at Tower 2C), 0.73 m depth (at Tower 5C) and less than 0.2 m depth at the remaining locations.

In addition, at all tower locations, four 0.9 m diameter bored piles are to be constructed. At Tower 1C, a 6.5 m square, 1.5 m deep mass foundation is also proposed over the piles.

4. Presence of acid sulfate soils

Based on the results of the ASS assessment (Douglas, 2025b), it is considered that soils with Reduced Inorganic Sulfur (RIS) are present at the site and should be treated as acid sulfate soils. Table 1 below provides a summary of the presence of materials requiring treatment / management, based on the results of Douglas (2025b).

It is noted that based on recent information provided by the client, as outlined in Section 3, the disturbance of material containing RIS at each tower location is typically less than 1000 tonne and each tower will be treated separately, as construction progresses. An exception to this is at Tower 5C, where in the order of 1700 tonne is expected to be disturbed.

Table 1: Summary of RIS / ASS Conditions

Tower ID	Summary of RIS / ASS Conditions	Estimated Volume of Material to be treated (m^3)[1]
1C	RIS / ASS not present, no management required.	NA
2C	RIS / ASS not present within the fill material. RIS present within the alluvial silty sandy clay from 1.2 m to 1.9 m depth. Net acidity **above** action criteria for the alluvial material and hence the alluvial silty sandy clay from 1.2 m to 1.9 m depth material is **to be treated as ASS and managed appropriately** if disturbed.	2
3C	RIS present within the alluvial sand and clayey gravelly sand to 2.0 m depth. Net acidity less than action criteria and hence no management required.	NA
4C	RIS present within the fill material and alluvial silty clay to 2.6 m depth. Net acidity less than action criteria and hence no management required.	NA
5C	RIS present within the fill material and alluvial sand and clays soils to 3.5 m depth. Net acidity less than action criteria for the fill material and alluvial sand and hence no management required for this material. The underlying sandy clay and clayey sand from 2.0 m depth, however, has net acidity **above** action criteria. The sandy clay and clayey sand from 2.0 m to 3.5 m depth is **to be treated as ASS and managed appropriately**.	4
6C	RIS present within the fill material and alluvial clay and gravel to 2.5 m depth. Net acidity less than action criteria and hence no management required.	NA
7C	RIS present within the fill material and alluvial clay and gravel to 2.0 m depth. Net acidity **above** action criteria for the fill material and marginally below the action criteria for the alluvial material. It is recommended that both the fill material and alluvial soils to 2 m depth **be treated as ASS and managed appropriately** if disturbed. The underlying materials do not require management.	31
8C	RIS present within the silty gravelly sand fill material to 0.5 m depth but not the alluvial clayey gravel from 2.0 m to 2.3 m depth. Net acidity **above** action criteria for the silty gravelly sand fill material. The silty gravelly sand fill material to 0.5 m depth is **to be treated as ASS and managed appropriately** if disturbed. The underlying materials do not require management.	16

Tower ID	Summary of RIS / ASS Conditions	Estimated Volume of Material to be treated (m^3)[1]
9D	RIS present within the silty gravelly sand fill material to 0.8 m depth but not the underlying clayey gravelly sand fill or alluvial clayey gravel. Net acidity **above** action criteria for the silty gravelly sand fill material. The silty gravelly sand fill material to 0.8 m depth is **to be treated as ASS and managed appropriately** if disturbed. The underlying materials do not require management.	17
10D	RIS present within the alluvial sand and clays to 2.9 m depth. Net acidity less than action criteria and hence no management required.	NA
11D	RIS present within the clay and gravel to 2.4 m depth. Net acidity less than action criteria and hence no management required.	NA
12D	RIS present within the sand, clay and gravel to 2.1 m depth. Net acidity **above** action criteria for the alluvial silty sand material, but below action criteria for the alluvial clays. It is recommended that silty sand to 0.3 m depth **be treated as ASS and managed appropriately** if disturbed. The underlying materials do not require management.	117

Table notes:
[1] Volumes estimated based on information provided by Zinfra regarding proposed excavations and the assessed presence of RIS / ASS requiring treatment.

5. Potential for oxidising acid sulfate soil and risk categorisation

5.1 Acid sulfate soil oxidation potential

Based on the proposed development (refer to Section 3) excavations and potential exposure of ASS include:

- Bulk excavations for site levelling. Excavation to depths ranging from 0.2 m to 1.0 m are anticipated; and
- Drilling of four, 0.9 m diameter piles per tower.

Based on the above, the volume of ASS / material containing RIS likely to be at each tower location (treated separately) is typically less than 1000 tonne. An exception to this is at Tower 5C, where in the order of 1700 tonne is expected to be disturbed.

Groundwater is also likely to be encountered in the bored pile excavations, in which short term dewatering is likely to be required in order to clean the pile holes prior to pouring concrete.

ASS may also be exposed during dewatering, where required (i.e. if excavation beneath the groundwater table and subsequent dewatering of ASS is required).

5.2 Assigned risk categorisation

Dear, et al. (2024) relates environmental risk from ASS to the treatment level and volume of disturbance of ASS. Based on the tonnage of ASS to be disturbed and the average net acidity, the proposed disturbance of the site soils is categorised as one of the following:

- Low level of treatment: Category L;
- Medium level of treatment: Category M;
- High level of treatment: Category H;
- Very High level of treatment: Category VH; and
- Extra High level of treatment: Category XH.

Based on the proposed development and subsequent tonnage of ASS to be disturbed (refer Section 5.1) and the maximum net acidity identified at each tower location, the proposed disturbance of the site soils is considered to be Low or Medium level of treatment.

6. Acid sulfate soil management

Based on Dear et al (2024), management of ASS disturbance considered low to medium treatment categories requires:

- Treatment of soils with an amount of neutralising agent that will counter the net acidity;
- Thorough mixing of the neutralising agent with the soil;
- Management of site run-on, runoff and infiltration of water and leachate;
- Documentation of the RIS management strategies adopted, including photographic records, for regulatory review (if required).

The following sections provide the methods and strategies to address these requirements and to minimise the potential for adverse impact on the receiving environment associated with the disturbance of ASS / RIS during the proposed development works.

It is the responsibility of the contractor to manage RIS with reference to this ASSMP and in accordance with the relevant standards and statutory requirements. Verification sampling and testing (where required) should be undertaken by an experienced and qualified environmental consultant.

6.1 Excavation and treatment

6.1.1 General

RIS requiring treatment (Refer Table 1 and Table 2) should be segregated from other non-ASS/non-RIS soil/fill (or RIS/ASS that does not require treatment) during excavations and treated within a sealed metal container (refer to Section 6.1.2), on a prepared treatment pad (refer to Section 6.1.3) or in situ (refer Section 6.1.4). The location of the treatment area should be selected in order to minimise the potential for impact on nearby sensitive receptors, including nearby water bodies.

Agricultural lime (aglime) is the preferred neutralisation material for the management of RIS, as this material is usually the cheapest and most readily available product for acid neutralisation. Furthermore, aglime is slightly alkaline (pH of about 8.3 (Dear, et al., 2024)), non-corrosive, of low solubility and does not present handling problems or generate high pH leachate and it only liberates alkalinity in the presence of acid.

The process for treatment of excavated ASS/RIS comprises:

- Treatment of ASS/RIS should be undertaken as soon as practical, however, in general:
  - For coarse soils (ie sands), treatment should occur within approximately 12 to 18 hours following excavation;
  - For fine-grained soils (ie clays), treatment should occur within approximately 40 to 60 hours following excavation.
  - Note that faster oxidation rates are possible for both coarse and fine soils, particularly in warm weather.
- Treat within a sealed metal container (refer to Section 6.1.2), on a prepared treatment pad (refer to Section 6.1.3) or in situ (refer Section 6.1.4); and
- Undertaking verification testing (as outlined in Section 6.3) to confirm that the ASS/RIS has been adequately neutralised. If verification testing indicates that additional neutralisation is required, add additional aglime (at an appropriate liming rate).

A layer of aglime should be applied to the base of excavations in ASS/RIS (5 kg/m^2 is recommended) to neutralise downward seepage from exposed ASS, or to minimise acidification of groundwater following ASS/RIS treatment.

It is understood that areas of proposed excavation (ie tower pads and access tracks) are to be capped with minimum 50 mm non-ASS/non-RIS fill. It is recommended that the treatment works be carried out during dry weather conditions, in order to minimise the risk of run-on / leachate being generated, prior to capping each site.

6.1.2 Treatment within a sealed container

Given the relatively small volume of excavated ASS/RIS requiring treatment at some tower locations, the use of a sealed container for treatment may be more practical than the preparation of a treatment pad. This option would also likely be considered appropriate for managing small amounts of ASS/RIS excavated for access tracks.

For treatment of ASS/RIS within a sealed container, such as a metal skip bin, the methodology would be as follows:

- Spread the ASS/RIS into the bin in layers of up to 0.3 m thick;
- Apply aglime to the ASS/RIS in the skip bin at the aglime application rate specified in the report discussion and mix using an excavator or auger bucket;
- Continue the liming cycle for each 0.3 m layer until excavation is finished or the container is full; and
- Place a plastic covering over the skip bin to cover from wind and rain.

6.1.3 Treatment pads

Where required, treatment pads should be located as far as practical from any ecological receptors (eg drainage lines which enter the stormwater system and nearby water bodies). The pad should be of an appropriate area to accommodate the volume of soil to be treated / stored and should be prepared on relatively level or gently sloping ground to minimise the risk of potential instability issues, with a fall to the local drainage sump.

Construction of the treatment pad involves:

- Lining the footprint of the pad with either:
  - Natural low permeability clay;
  - A compacted clay layer;
  - Geosynthetic liner (eg HDPE);
  - Impervious barrier (eg concrete or bitumen hardstand).
- Placement of a guard layer of fine aglime at approximately 5 kg/m^2 per 300 mm layer of ASS/RIS proposed. The guard layer should be re-applied each time treated soils are removed, prior to placement of the next batch of un-treated ASS; and
- Construction of a perimeter clay bund (or equivalent) to collect any leachate runoff and to prevent surface water from entering the treatment pad. The inner bund slopes should be lined to prevent leachate seeping into the ground surface and sized to prevent overflow of untreated leachate onto the site.

A standard treatment pad is shown in Figure 2, below.

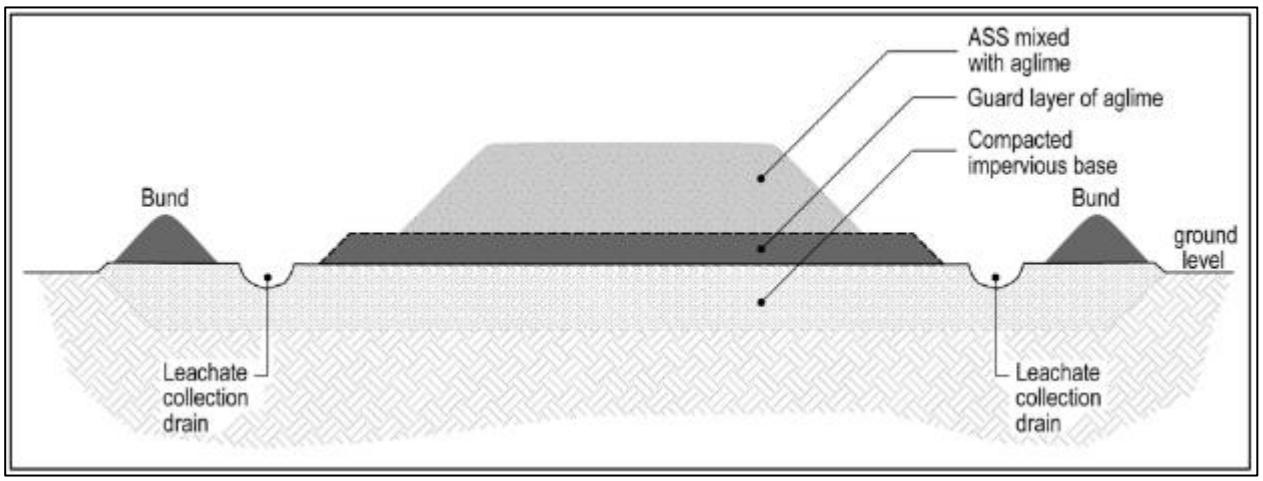


Figure 2: Schematic cross-section of a treatment pad, including compacted impervious base (clay layer), guard layer, leachate collection drains and bunding (Dear, et al., 2024)

For treatment of ASS/RIS on a treatment pad, the methodology would be as follows:

- Construct the treatment pad;
- Spread the ASS/RIS over the guard layer in layers of up to 0.3 m thick, leaving a 1 m buffer between the toe of the spread soil and the containment bund or drain. When spreading the first soil layer, care should be taken not to churn up the guard layer;

- Apply aglime to the ASS/RIS at the aglime application rate specified in the report discussion and harrow / mix thoroughly. Use of tillage equipment (eg rotary hoe or auger bucket) may be appropriate for cohesive soils, where adequate mixing is difficult to achieve. If ASS/RIS materials are too wet, adequate mixing of aglime cannot be achieved and soils may require a period of drying prior to mixing;
- Continue the spreading / liming / harrowing / verification cycle for each 0.3 m layer until excavation is finished.

Reapplication of the guard layer will be necessary under treatment pads if the treated soil is being removed as the guard layer could be removed with the treated soil.

6.1.4 Treatment in situ

Treatment in situ may also be considered where the ASS/RIS material is to be re-used within the same location (ie minor cut to fill). In this instance, the following is recommended:

- Construct diversion bund (as described above) upslope of treatment area and excavate leachate collection drains downslope of the treatment area. Note that material excavated to construct the leachate drains should also be treated for ASS/RIS, where required, and a guard layer of fine aglime (as described above) should be placed following excavation of the collection drains;
- Any leachate / runoff collected should be treated as outlined in Section 6.3;
- Strip unsuitable materials (ie materials not to be re-used as engineered fill, such as topsoil) and, where required, undertake treatment in accordance with Section 6.1.2 or 6.1.3;
- For cut / fill earthworks less than 300 mm, apply aglime to the exposed ASS/RIS at the aglime application rate specified in this report and harrow / mix thoroughly to depth of 300 mm prior to excavation;
- For areas to receive treated ASS/RIS, unless the above is undertaken (i.e. placement and harrowing in of aglime), place a suitable guard layer at a rate of 5 kg/m^2 per 300 mm layer of ASS/RIS proposed to be placed;
- For areas where more than 300 mm of cut / fill is proposed, repeat the above in layers no thicker than 300 mm, taking into account the time required to carry out verification testing on each layer, as outlined in Table 4;
- Undertake verification testing as required (for each 300 mm lift); and
- Cap the area as soon as possible with non-acid sulfate soil. Should the area be left temporarily uncapped, then the area should be covered with plastic.

6.1.5 Liming rates

Based on the assessment results, fill / natural soils identified to contain RIS and that are to be disturbed during excavation are to be treated using aglime prior to reuse off-site or on-site or disposal. Table 2 provides indicative liming rates for neutralisation of the ASS/RIS likely to be disturbed at each tower location.

Table 2: Indicative liming rate for soil

Tower ID	Material description	Net Acidity [a] (%S)	Aglime application rate [b] (kg/tonne)
1C	No RIS/ASS identified. Management not required.	NA	NA
2C	Fill material: No RIS/ASS identified. Management not required.	NA	NA
	Natural Soils: Alluvial silty sandy clay from 1.2 m to 1.9 m depth.	**0.17**	**8**
3C	RIS present, below action criteria. Management not required.	NA	NA
4C	RIS present, below action criteria. Management not required.	NA	NA
5C	Fill material: RIS present, below action criteria. Management not required.	NA	NA
	Natural Soils: Alluvial sand and clays from 2.0 m to 3.5 m	**0.042**	**2**
6C	RIS present, below action criteria. Management not required.	NA	NA
7C	**Fill Material: Silty Sand and Silty Clay to 1.1 m depth** **Natural Soils: Silty Clay and Silty Gravelly Clay from 1.1 m to 2.0 m depth**	**0.098**	**5**
8C	**Fill Material: Silty Gravelly Sand to 0.5 m depth**	**0.034**	**2**
	Natural Soils: No RIS/ASS identified. Management not required.	NA	NA
9D	**Fill Material: Silty Gravelly Sand to 0.8 m depth**	**0.032**	**2**
	Natural Soils: No RIS/ASS identified. Management not required.	NA	NA
10D	RIS present, below action criteria. Management not required.	NA	NA
11D	RIS present, below action criteria. Management not required.	NA	NA
12D	**Natural Soils: Silty Sand to 0.3 m depth**	**0.051**	**3**
	Natural Soils: Silty Clay below 0.3 m depth. RIS present, below action criteria. Management not required.	NA	NA

Notes:
[a] Maximum net acidity for soil unit/type.
[b] Lime application rate calculated using maximum net acidity for soil unit / type, effective neutralising value (ENV) of 95% for aglime and a factor of safety (FOS) of 1.5.

Depending upon the source of the aglime and ultimately the representative effective neutralising value (ENV) of the aglime selected, the minimum lime dosing rate may be increased or decreased. Prior to the commencement of works, the minimum lime dosing rate should be finalised following review of the ENV of the selected aglime.

6.1.6 Trenching works

For trenching works (ie service installation) which cannot be re-routed or modified to ensure the invert depth of the trench is above ASS/RIS and where trenchless tunnelling technologies cannot be used to minimise disturbance, the general treatment method is applicable (refer to Section 6.1.1). Alternatively, the following modified process for trenches is recommended with reference to Dear, et al. (2024), for excavated trench spoil:

- Non-ASS/Non-RIS surface soils should be removed and segregated from ASS/RIS. Soil horizons should be replaced back in the trench in the same order they were removed (after ASS/RIS has been neutralised), and subject to geotechnical requirements;
- The trench excavation should be staged, such that ASS/RIS soils are excavated, treated and backfilled within 24 hrs (typically within an 8-hour working day);
- Where the ASS/RIS risk assessment shows the risk is not high, which is anticipated based on the results of investigation to date, the trench is not located in a sensitive environment and no dewatering is required the following management strategy could be adopted in lieu of a treatment pad:
    - A guard layer of fine aglime should be applied to the ground surface alongside the trench at approximately 5 kg/m^2;
    - Excavated soil from the trench should be placed on the guard layer;
    - Aglime should be applied to the surface of the excavated soil at double the specified application rate provided in the report discussion (ie FOS=3);
    - A layer of aglime should be applied to the base of the excavation. A lime application rate of 5 kg/m^2 is recommended;
    - The excavated treated soil should be backfilled into the trench; and
    - Segregated non-ASS/non-RIS overlying ASS/RIS should be re-instated on top of the treated ASS/RIS, minimising any aglime at the ground surface.

6.2 Groundwater extraction

Short term groundwater extraction (less than one day) may be required for the proposed development during construction of the piles. Short term groundwater extraction which is less than one day duration is not defined as "groundwater dewatering" by Dear et al (2024).

The groundwater extraction process should be managed as follows:

- Dewatering sumps and / or spears must be kept to a minimum, staged where feasible (i.e. for trenches) and should not drawdown outside the excavation area if possible. Suction depths should not exceed 1 m below the invert depth of the excavation;
- Cased piles should be considered to minimise groundwater extraction volumes and oxidised ASS/RIS volumes;

- Groundwater extraction should be timed to coincide with the dry season (if practical) and all pumped groundwater should be stored on the site for irrigation (and potential recharge) or dust suppression purposes (depending on water quality);
- Baseline pH testing of groundwater and nearby surface waters should be conducted prior to works commencing to establish baseline conditions for verification testing purposes. Note that groundwater pH testing has been carried out as part of Dougals (2025a); and
- Extracted groundwater should be monitored and treated (where required) prior to re-use. A number of proprietary systems are available for use. Alternatively, a series of holding tanks may be appropriate for relatively small volumes;

If the pH of extracted groundwater falls below pH 6.5 or one unit below background levels, pH treatment may be required.

It is noted that aglime is generally not suitable for the treatment of leachate / dewatering effluent due to its low solubility in water. A commercial pH adjustment product or hydrated lime (slaked lime) can be used, which should be added as a slurry and mixed via use of an agitator. The slurry should be added incrementally to avoid overshooting the required pH.

Hydrated lime is a highly alkaline neutralising agent and should not be allowed to come into contact with the skin or be inhaled during use (refer to manufacturers product safety data sheet for additional handling and storage requirements).

As a guide, the approximate quantities of hydrated lime required to neutralise acidic water (ie to raise the existing pH to approximately pH 7 / neutral) are provided in Table 3.

Table 3: Approximate hydrated lime application rates for water neutralisation (kg of $Ca(OH)_2$))

Water pH	Volume		
	10 m^3	50 m^3	100 m^3
1	37	185	370
2	3.7	18.5	37
3	0.37	1.85	3.7
4	0.037	0.185	0.37
5	0.0037	0.0185	0.037
6	0.00037	0.00185	0.0037

Notes to table:
Refer to Table A4-1 (Dear, et al., 2024) for alternative neutralising agents and application rates

6.3 Verification testing

Douglas notes that verification testing is not a requirement for low or medium treatment category disturbances of ASS/RIS (Dear, et al., 2024). However, given the sensitivity of the site (ie proximity of the Coxs River and Pipers Flat Creek which discharge into Lake Wallace to the south), it is considered that verification testing should be undertaken after the addition of lime, to confirm adequate treatment.

Verification testing frequency is shown in Table 4.

Table 4: Verification testing frequency for treated acid sulfate soils

Test	Frequency
Field screening: pH_F and pH_{FOX}	One sample / soil type OR One sample per 25 m^3 of treated soil (whichever is greater frequency).
ABA (chromium suite)	One sample per 300 mm deep soil treatment layer (minimum three samples)

The target levels for neutralised soil are shown in Table 5.

Table 5: Target levels of neutralised soil and water

Test		Component	Target level
Soil	Field screening	pH_F	$6.5 \leq pH_F \leq 8.5$
		pH_{FOX}	$6.5 \leq pH_{FOX} \leq 8.5$
	ABA (chromium suite)	Net acidity	≤ 0
		pH_{KCL}	$6.5 \leq pHKCL \leq 10$
Monitoring of water (leachate, surface water and groundwater)[1]		pH	pH 6.5 < pH < 8.5, or one pH unit from background levels
		Turbidity	To comply with either values determined in consultation with the Authority or less than local background levels (baseline monitoring required).
		Dissolved oxygen (DO)	To comply with either values determined in consultation with the Authority or generally greater than local background levels established by baseline monitoring.
		Electrical conductivity (EC)	To comply with either values determined in consultation with the Authority or less than local background levels established by baseline monitoring.

Notes to table:
[1]Assumes groundwater extraction in piles would be short term (no more than one day) to enable pile construction and that extracted water would not be disposed within or in close proximity to (>50m) sensitive receptors (ie Coxs River).

It should be noted that typically laboratory tests will require at least five days turnaround, possibly longer, and hence sufficient time should be allowed in the treatment program for such

verification testing. The Environmental Consultant should collect verification samples and conduct field testing (ASS screening). Net acidity (ABA) testing for verification must be tested at a National Association of Testing Authorities (NATA) accredited laboratory in accordance with Sullivan et al (2018a).

6.4 Disposal and re-use of treated ASS/RIS

Following treatment, the treated ASS/RIS could be re-used on-site or transported off-site for disposal to a licenced landfill subject to the results of a waste classification assessment undertaken in accordance with waste classification guidelines (NSW EPA, 2014a; NSW EPA, 2014b), not completed as part of this assessment.

For on-site re-use, the treated ASS/RIS should be reinstated below the final finished surface (ie lime treated soil covered by minimum 50 mm non-ASS/non-RIS fill) and away from sensitive receptors (ie surface water bodies), subject to contamination and geotechnical requirements.

6.5 General monitoring requirements

It is recommended that prior to commencement of works, a construction environmental management plan (CEMP) should be developed by the lead Contractor. The CEMP should also include a program for general site monitoring pertinent to the ASS/RIS. A typical monitoring program is provided below and should be implemented by the responsible parties.

Table 6: General monitoring requirements

Task	Frequency	Standard	Reporting/ record keeping	Responsibility
Inception Meeting	Pre-start	ASSMP	Minutes	Contractor / Site Supervisor, Environmental Consultant
Site inspection	Daily	Visual / olfactory signs of ASS/RIS	File note	Site Supervisor
Site inspection	Monthly	Visual / olfactory signs of ASS/RIS	File Note	Environmental Consultant
Monitoring of disturbed excavations that are in ASS/RIS	Daily	Visual until backfilled	File note	Site Supervisor
Monitoring of ASS/RIS treatment area/s	Daily	Visual Daily pH testing until results show ASS/RIS or leachate has been neutralised	File note and results of pH testing to be recorded in field sheets	Site Supervisor

Task	Frequency	Standard	Reporting/ record keeping	Responsibility
Groundwater extraction in ASS/RIS	Prior to planned discharge	Treated and tested to demonstrate compliance with ASSMP guidance or regulatory requirements prior to discharge	Field sheets and permit to discharge	Site Supervisor, Environmental Consultant
Surface Waters	Daily (field parameters) Weekly (metals), plus prior to and following discharge	pH, EC, DO, total and dissolved metals (including Al and Fe) tested to demonstrate compliance with ASSMP guidance or regulatory requirements prior to discharge	Field sheets and permit to discharge	Site Supervisor / Environmental Consultant

6.6 Reporting and record keeping

With reference to Dear, et al. (2024), it is good practice for the Contractor to maintain a record of treatment of ASS/RIS. Such records should include the following details:

- Date;
- Location / area / treatment pad;
- Time of excavation;
- Neutralisation process undertaken;
- Lime rate used including;
  - Receipts showing quantities of aglime purchased;
  - Evidence of composition, purity, particle size and ENV of the aglime used;
  - Record of aglime use (e.g. per treatment pad, use in guard layers etc);
  - Photographic evidence of incorporation of neutralising agent (aglime).
- Results of monitoring;
- Disposal and/or reuse location; and
- Tonnages and disposal/transfer dockets (if applicable).

A record should also be maintained confirming contingency measures and additional treatment if undertaken. A final report should be issued upon completion of the works presenting the monitoring regime and results and confirming that appropriate management of ASS/RIS has occurred during the works.

7. Conclusions and recommendations

This ASSMP provides the general ASS/RIS management procedures to be enacted to minimise the impact of ASS/RIS disturbance on the environment during the proposed works.

Given the variable profile of materials containing RIS, it is recommended that additional inspections during earthworks and site preparation is conducted to assist in visually differentiating alluvial soils requiring ASS/RIS management from the non-ASS/non-RIS materials.

Should materials different to that described above, or as identified in the borehole logs in Douglas (2025b) are encountered, then an unexpected finds protocol should be followed. In this regard, this would require stopping work, and seek further advice from Douglas to confirm the presence or absence of ASS / RIS.

The work should be conducted with reference to current regulatory and statutory requirements.

If ASS/RIS are encountered, then the ASS/RIS management procedures provided herein will be enacted to minimise the impact of ASS/RIS disturbance on the environment.

8. References

Dear, et al. (2024). *Queensland acid sulfate soil technical manual : soil management guidelines version 5.1.* Dear, S E; Williams, K M; McElnea, A E; Ahern, C R; Dobos, S K; Moore, N G; O'Brien, L E; Department of Environment, Science and Innovation.

Dear, S. E., Williams, K. M., McElnea, A. E., Ahern, C. R., Dobos, S. K., Moore, N. G., & O'Brien, L. E. (2024). *Queensland acid sulfate soil technical manual : soil management guidelines version 5.1.* Department of Environment, Science and Innovation.

Douglas. (2025a). *Report on Geotechnical Investigation, CWO REZ 330kV Transmission Line, Mt Piper to Wallerawang (SP5 and SP5a).* 229568.00.R.003.Rev3: Douglas Partners Pty Ltd.

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NSW EPA. (2014a). *Waste Classification Guidelines, Part 1: Classifying Waste.* NSW Environment Protection Authority.

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Stone, Y., Ahern, C. R., & Blunden, B. (1998). *Acid Sulfate Soils Manual.* Wollongbar, NSW, Australia: Acid Sulfate Soil Management Advisory Committee.

Sullivan, et al. (2018a). *National Acid Sulfate Soils Guidance: National Acid Sulfate Soils Identification and Laboratory Methods Manual.* Canberra ACT CC BY 4.0: Sullivan, L; Ward, N; Toppler, N; Lancaster, G, Department of Agriculture and Water Resources.

Sullivan, et al. (2018b). *National Acid Sulfate Soils Guidance: National Acid Sulfate Soils Sampling and Identification Methods Manual.* Canberra ACT CC BY 4.0: Sullivan, L; Ward, N; Toppler, N; Lancaster, G, Department of Agriculture and Water Resources.

Sullivan, L., Ward, N., Toppler, N., & Lancaster, G. (2018a). *National Acid Sulfate Soils Guidance: National Acid Sulfate Soils Identification and Laboratory Methods Manual.* Canberra ACT CC BY 4.0: Department of Agriculture and Water Resources.

9. Limitations

Douglas Partners Pty Ltd (Douglas) has prepared this ASSMP for this project at Mt Piper to Wallerawang (SP5 and SP5a), NSW in line with Douglas' email proposal dated 23 October 2025 and acceptance received from Victor Sayaxang of Zinfra Pty Ltd dated 6 February 2026. The work was carried out under the Long Form Consultancy Agreement for Central West Orana Renewable Energy Zone as fully executed on 2 April 2025. This report is provided for the exclusive use of Zinfra Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of Douglas, does so entirely at its own risk and without recourse to Douglas for any loss or damage. In preparing this report Douglas has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after Douglas' field testing has been completed.

Douglas' advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by Douglas in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the environmental / groundwater components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed ‘safety in design’ assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. Douglas cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by Douglas. This is because this report has been written as advice and opinion rather than instructions for construction.

Appendix A

About this Report

About this Report

October 2024

Introduction

These notes have been provided to amplify Douglas' report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

Douglas' reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Engagement Terms for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, Douglas will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, Douglas cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, Douglas will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, Douglas requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. Douglas would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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Appendix G – Consultation Updates

An overview of the comments received, and changes made is shown in Table G-1.

Table G-1 Consultation Updates

Agency	Advice	Section updated in Plan
DCCEEW (Rev I)	*Condition of approval* The SWMP references the draft conditions of approval in many places. As the project is approved, the final conditions of approval must be referenced and addressed. The SWMP should then be updated if any variation between the draft and final versions are identified	Table 2 of the SWMP and the entire document was updated. All references to the draft conditions of approval have been updated and the conditions have been cross-checked and amended as required to align with the final approval conditions.
DCCEEW (Rev I)	*7.1.4 Water supply, take and licensing* The proponent must update the SWMP to identify maximum water take volumes required to meet site water demands and confirm the water sources that take will occur from. The SWMP states that water supply will be managed by a construction work methods statement that does not form part of the CEMP. This is unsatisfactory as the volume and confirmed sources of water to meet project water demands (e.g. dust suppression, potable water etc.) must be identified in the SWMP as required under condition B19 of consent, which states the SWMP must detail how condition B13 sufficient water is held for the project.	The potable and non-potable maximum water demand is detailed in Section 7.1.4 as well as a description of the water sources including reuse of dewatering from foundations, Fish River Supply Scheme and other approved sources. Thus, sufficient water supply is available for the works, as per CoA B13.
DCCEEW (Rev I)	*7.1.4 Water supply, take and licensing* Review the plan for accuracy regarding licence and approvals requirements under the Water Management Act 2000 and ensure that the mandatory monitoring and reporting requirements are conducted for the referenced 3ML/year exemption. The SWMP states the project is exempt from the *Water Management Act 2000* in Table 1 and Table 2 of the Dewatering Management Plan. This is incorrect as there are some parts to the *Water Management Act 2000* that remain relevant to this project. The project may be eligible for an exemption from a Water Access Licence under section 19 Schedule 4 of the Water Management (General) Regulation 2025 for the take of less than or equal to 3ML/year subject to mandatory monitoring and reporting requirements. If these requirements are not met, a WAL is required to be held.	Section 7.1.4 was updated to better explain that the works are not exempt from the Water Management Act, only that the development does not require a WAL as less than 3 ML/year of groundwater is expected to be intercepted. Section 7.1.4 was updated to detail the expected groundwater intrusions, uses and requirements as per the WM Act and EMM W5. Appendix D was updated to align with the WM Act and has included the dewatering record and reporting form from the DCCEEW's website.

Agency	Advice	Section updated in Plan
DCCEEW	*7.1.4 Water supply, take and licensing* *The proponent must confirm if the required water supply works were identified and impacts under the SSI approval or provide a reference number for the water supply work* *The SWMP must be updated to clarify the water supply work requirements for the project. Where a water supply work (e.g. bore or pump) was identified and impacts assessed as a part of the SSI, it would meet section 5.23 of the EP&A Act 1979 and not require a water supply work under the Water Management Act 2000. If these water supply works were not identified and impacts assessed, a reference number must be provided of the approvals under the Water Management Act 2000 unless another exemption can be identified.*	A comparison of all water supply works, and the EIS is detailed in Section 7.1.4. As shown in Section 7.1.4, all water supply works have been considered within the EIS and the Water Technical Assessment, refer Chapter 1. These impacts have been assessed under the SSI approval and are exempt from the WM Act under section 5.23 of the EP&A Act 1979. As such, no further licenses for water supply works are required.
DCCEEW (Rev I)	*7.1.1 Activities on waterfront land* Provide a diagram (s) which demonstrates the extent of encroachment of the project footprint/disturbance area into waterfront land and demonstrate how the proposal meets the Guidelines for Controlled Activities on Waterfront Land. Insufficient information has been provided to demonstrate the Guidelines for Controlled Activities have been considered or what the impacted area associated with the project will be. Clarification, with diagram(s) is required regarding: ■ The SWMP states that 9D will include works within waterfront land, but it is mapped as over 50m from the nearest watercourse. ■ The 8 towers with construction impacts are not identified and the extent of impact is not outlined. ■ The 4 towers (2C, 4C, 8C and 12D) located within waterfront land do not outline the impacts or the extent of the works footprint. ■ The temporary construction facility is not identified so it is unclear of the extent of impacts. ■ Water course crossings will be required but the SWMP only outlines that there will be 4 culverts. The proponent must identify where these culverts will be and how all other watercourses will be crossed.	Section 7.1.1 includes: ■ Diagrams for all works within 40 of waterfront land, outlining the scope of works expected within waterfront land and potential impacts; ■ All watercourse crossings and the type of crossing; ■ Consideration of the Guidelines for Controlled Activities on Waterfront Land, these guidelines have also been implemented into the ESCP.
Lithgow City Council (Rev I)	Clearer references to the Sydney drinking water catchment and the guidelines used to establish the water quality criteria is desired. Clearer description for the use of water from the extracted foundations was also desired. A diagram showing that the whole project footprint is in the catchment was requested.	Section 3.2 details the Sydney drinking water catchment guidelines. The IECA Blue Book has been used to derive the water quality criteria in Appendix D as per CoA B14. The footprint diagram is shown in Section 3.2.
CPHR	Reviewed the plan with no comment	N/A
WaterNSW	Table name refers to "Draft Conditions of Approval as of 17th of March 2026". This should be updated to refer to final conditions dated 16 May 2026	Whole of document wherever ‘draft’ conditions have been referenced

Agency	Advice	Section updated in Plan
WaterNSW	All references to the 'draft approval' within the document should be updated to reflect the Approval dated 16 May 2026	Whole and whole of document wherever ‘draft’ conditions have been referenced
WaterNSW	Table 1, Row AQ1 Dust generation shall not impact on water quality in adjoining Coxs River. Measures shall be specified in this regard in the final plan.	Section 8.5 and further dust management measures have been incorporated into the document
WaterNSW	Table 1, Row AQ1 Stockpiling shall also prevent impacts on water quality in adjoining Coxs River, specifically from any contaminated material and associated leachate during stockpiling period. Measures to prevent impacts on water quality shall be included in the final plan.	All stockpile related REMMs have been incorporated into Section 8.5 and stockpiling leachate has been considered in Section 6.4.5, 8.4.1 and Appendix E. Further leachate testing has been conducted by Aurecon and has been included into the report in Section 6.4.5.
WaterNSW	Table 1 and Table 2 Row B17 Notes that WaterNSW shall be consulted for removal of riparian vegetation around Coxs River (for flooding perspective). This should be DCCEEW	This is a direct quote from the EIS and CoA so the text in the tables have not been changed. However, DCCEEW has been added as a key stakeholder.
WaterNSW	The plan states "closest named watercourse for the access tracks works surrounding the Mt Piper substation is Pipers Flat Creek. Pipers Flat Creek is classified as ‘Key Fish Habitat’ and is not expected to be impacted by the Project (SEED, 2025). Piper’s Flat Creek flows into the Goulburn River which is a majority tributary of the Hunter River catchment." This appears an error and shall be corrected.	Section 6.36.3 has been amended with references to Goulburn River removed and all information cross checked with the EIS water study.
WaterNSW	Former Wallerawang Power Station near Main Street may have been used for filling/disposing of asbestos during decommissioning stage of Wallerawang power station. This shall be checked/confirmed via records and/or targeted site investigations. The final plan and Construction Environmental Management Plan shall address how to address and manage if any asbestos has been disposed of at the site.	There was no observed asbestos containing material at the former Wallerawang Power Station during the ADE investigation. This has been made explicit in the text in Section 6.4.5. Asbestos unexpected finds mitigation measures are outlined in Appendix C.
WaterNSW	WaterNSW has not been included as stakeholder for the protection of Fish River water supply infrastructure and access.	WaterNSW has been added as a key stakeholder.
WaterNSW	Appendix D of SWMP states "Watercourse interface works, including Barrigan Creek, minor tributaries, ephemeral drainage lines and riparian transition zones." Is Barrigan Creek correct or it is a typo error. If this is a typo error, this shall be corrected.	Appendix D, removed reference to Barigan creek
WaterNSW	The plan states "closest named watercourse for the access tracks works surrounding the Mt Piper substation is Pipers Flat Creek. Pipers Flat Creek is classified as ‘Key Fish Habitat’ and is not expected to be impacted by the Project (SEED, 2025). Piper’s Flat Creek flows into the Goulburn River which is a majority tributary of the Hunter River catchment." This appears an error and shall be corrected.	Section 6.3 amended, reference to Goulburn River has been removed and all information has been cross checked with the EIS water study.
WaterNSW	Consider relocating construction of towers and trenches where practically feasible to avoid acid sulphate soils.	It is not possible to relocate structures at this stage of the project.

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