Sassafras Wesley Vale Irrigation Scheme Augmentation (SWISA) Project

Shaw Contracting (Aust) Pty Ltd

Environmental Management Plan Appendix B: Erosion and Sediment Control Plan

JBS&G 70498| 172,021

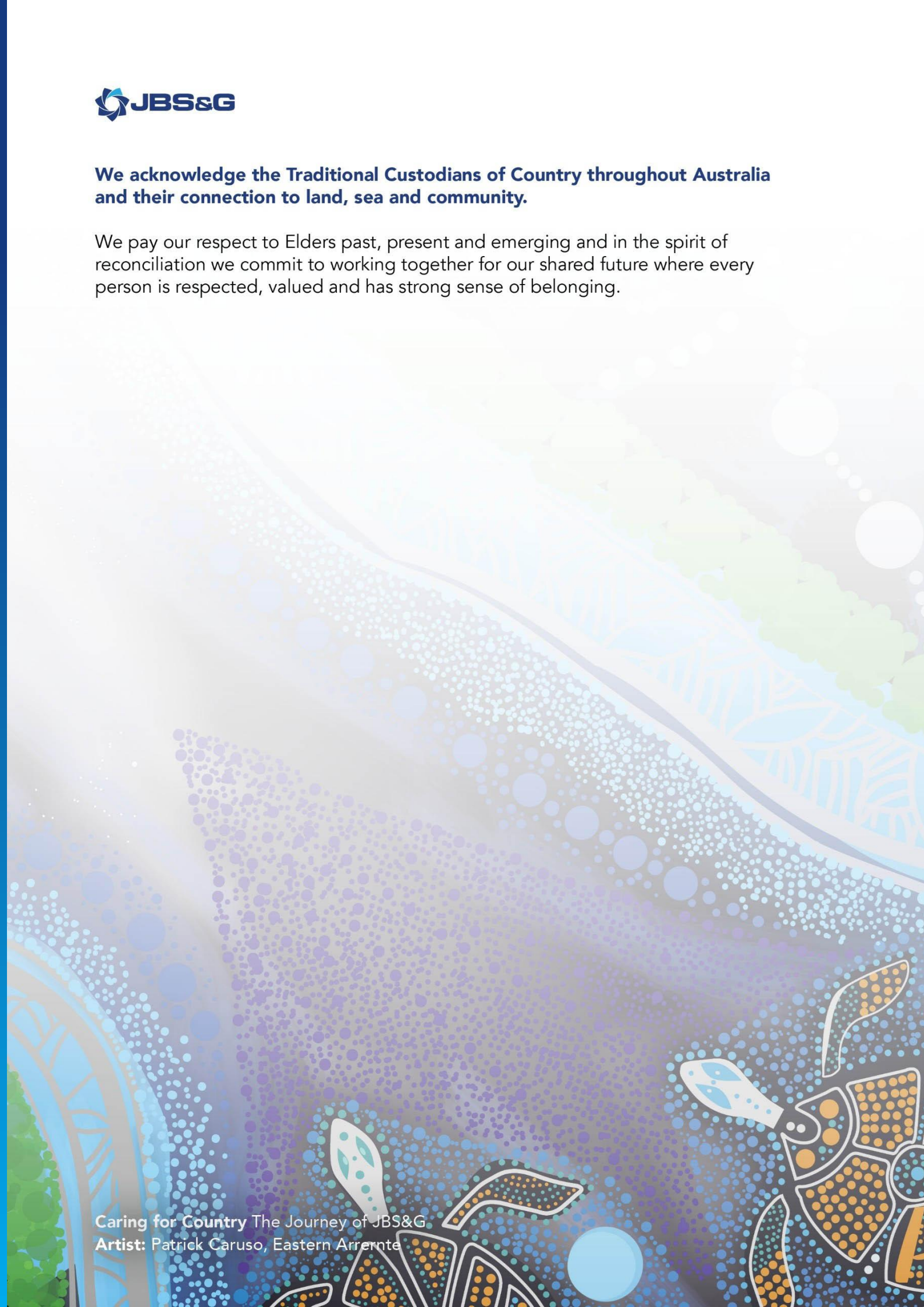
9 January 2026

CHANGE HISTORY
Approved by: Shaw Project Manager

Issue	Clause	Change Description	Date
A	All	First Issue	17/11/2025
B	All	Changes following TI review comments issued 18/12/25	23/12/2025
C	All	Changes following TI review comments issued 7/01/26	09/01/2026
D			

We acknowledge the Traditional Custodians of Country throughout Australia and their connection to land, sea and community.

We pay our respect to Elders past, present and emerging and in the spirit of reconciliation we commit to working together for our shared future where every person is respected, valued and has strong sense of belonging.



Caring for Country The Journey of JBS&G
Artist: Patrick Caruso, Eastern Arrernte

Appendix B Erosion and Sediment Control Plan

Introduction

Shaw, as the appointed contractor for the Project, commits to full compliance with the approved Project CEMP (specifically EPR 4 – Sediment and Erosion requirements). Construction activities including trenching, earthworks, stockpiling, and access grading across the 30 m corridor have the potential to generate soil erosion and sediment impacts to the construction land and surrounding landscape, including Mersey catchment tributaries, agricultural drainage lines, and MNES habitats (GGF and BCF). For more detail regarding the catchment and MNES locations, see the Project CEMP and subsequent EPRs.

This Erosion and Sediment Control Plan (ESCP) describes the mitigation and management to minimise erosion generation and sediment migration per TEER (2023) standards, protecting water quality and ecological values. Primary works include refurbishment GBPS, construction of SHBT, SBPS, and 100 km of pipeline within modified agricultural land, plantation forestry, and native vegetation patches (317.12 ha modified and 3.74 ha native impact). Decommissioning of end-of-life SWIS assets occurs under separate assessment and is excluded from this ESCP scope. Shaw will implement layered EPR 4 controls across all disturbance phases to protect the Project footprint and adjacent landscape values.

Approvals

The SWIS Project was approved under EPBC Ref 202309666 (15 August 2025). Condition 6 mandates implementation of the Project CEMP, EPRs, and CEPs/CETs to protect MNES from construction impacts. Shaw acknowledges all regulatory approvals and integrates ESCP measures to DCCEEW standards, ensuring ongoing compliance across Commonwealth (EPBC Act) and State legislation (TSPA/NCA).

This ESCP directly address EPBC condition 6 and EPR 4 (Sediment and erosion) through layered controls (diversion, erosion prevention, sediment capture, monitoring) achieving the performance requirements of “no measurable degradation to listed species habitats from sedimentation" (GGF, Australian grayling, BCF). EPR 4 provides the integrated framework protecting Mersey aquatic ecosystems and MNES habitats from turbid runoff, verified through DCCEEW auditing.

Shaw will comply with all required permits through EPR 4 measures explicitly addressing sediment risks across jurisdictions.

EPBC sediment/erosion obligations are as follows:

- Protect MNES (GGF, Australian grayling, BCF) from indirect impacts via turbid runoff
- EPR 4 mandated through CEMP approval conditions
- Performance requirement: No measurable degradation to listed species habitats from sedimentation
- DCCEEW auditing over sediment controls

Applicable legislation and guidelines relating to sediment and erosion control

Legislation/Guideline	Specific Sediment/Erosion Obligations	Shaw Compliance Mechanism
EPBC Act 1999 (Condition 6 of approval notice)	CEMP/EPRs/CEPs/CETs protect MNES (GGF, BCF) from turbid runoff	EPR 4 implementation per approval notice/CEMP
TSPA 1995/NCA 2002	Prevents death/injury to protected species via sedimentation	EPR 4 layered controls (diversion/capture/stabilisation)
EMPCA 1994/Waste Regs 2020	Prohibits sediment pollution; ESCP mandatory >0.25ha disturbance	TEER (2023) standards + monthly auditing
TEER Fundamentals (2023)	Tasmania best practice Type 1-3 controls	Site-specific design per catchment/slope
Mersey DGV (EPA 2021)	Turbidity <25 NTU protects aquatic ecosystems	Upstream/downstream monitoring + work cessation
ANZECC (2000)	TSS <50 mg/L, pH 6.5-8.5 freshwater triggers	Sediment basins + flocculant dosing
Water Management Act 1999	No adverse water quality changes from works	HDD methods + turbidity monitoring
National Parks Act 2002	Minimise soil disturbance in Warrawee CA	Level 2 RAA + 600m micro-trenching paste.txt

Erosion and Sediment Control Management Plan EPRs

EPR #	General Description
4.1	ESCP preparation per TEER (2023) standards including site plans, soil description, disturbance layout, watercourses, drainage controls, erosion/sediment controls, responsibilities, installation sequence, maintenance program. Staged implementation approved by TI
4.2	Water Quality Management Plan with upstream/downstream turbidity monitoring (Mersey DGV <25 NTU, ANZECC TSS <50 mg/L). Daily readings (pre/during/post-works), immediate cessation on exceedance, sediment curtains/traps during dewatering
4.3	All personnel training on erosion/sediment control function, installation, maintenance. Must understand ESCP responsibilities
4.4	All erosion/sediment controls (incl. diversion drains) installed prior to ground disturbance unless mechanically impractical
4.5	Diversion drains per ESCP to divert clean runoff. Geotextile/rock lined with level spreaders or rock check dams for velocity control
4.6	Undiverted runoff captured/treated via sediment controls identified in ESCP
4.7	Sediment-laden water preferentially reused on-site (e.g., dust suppression)
4.8	Scour protection installed where pipeline vulnerable to erosion (per ESCP)
4.9	Stockpiles per ESCP: <2m high, flat-topped, away from drains, upslope berm, downslope sediment fence (1-2m) with returns
4.10	Stockpiles assessed pre high-intensity rain/wind; covered if high sediment loss risk
4.11	Trenching in 500m max segments, progressive backfill/compaction, topsoil mounding pre-revegetation
4.12	Stabilised site access points constructed per ESCP as main corridor entry points
4.13	Minimise exposed soil via staging, progressive rehab per EPR 13. Erosion controls per ESCP
4.14	No earthworks during high-intensity rainfall/runoff events (ground conditions + BOM forecasts)
4.15	Nil sodic soil risk per LISTmap. If encountered: avoid disturbance or limit topsoil/subsoil exposure
4.16	Backfilled trench erosion prevention: trench blocks, compaction
4.17	Weekly inspections + pre/during/after high rainfall maintenance of all controls
4.18	Disturbed areas re-profiled (2H:1V batters), excess fill reused/disposed per EPA AMM, rehab per EPR 13

Objectives

Shaw's primary objective through this ESCP is to address EPBC Condition 6 and EPR 4 requirements, while delivering enhanced, site-specific sediment and erosion controls. This plan provides regulators and TI with:

- Clear compliance roadmap linking all EPR 4 measures to EPBC/TSPA/NCA protected species protections (GGF, Australian Grayling, BCF).
- Detailed implementation protocols and maintenance triggers and verification mechanisms through turbidity monitoring, reporting, and monthly audits.

Shaw will adhere to the Project CEMP provisions, site-specific controls, and any additional approval conditions. All ESCP updates require TI pre-approval to maintain consistency with the overarching CEMP.

Project Description

The SWISA Project comprises of linear infrastructure across diverse terrains. The existing environment along the SWISA pipeline corridor consists predominantly of modified agricultural and plantation land, and native vegetation patches (3.74 ha impact), with potential for dispersive soils requiring pre-clearance EM38 testing to assess soil conductivity and erosion vulnerability. High-risk erosion activities include trenching (1-3.5 m depth, 500 m sections), stockpiling, access track grading, and HDD watercourse crossings. Shaw will stage works in 500 m sections to limit exposure, with all disturbance confined to the permanent 30 m corridor footprint. Sensitive receptors that may be impacted by earth works include:

- Mersey tributaries
- GGF habitat
- BCF habitat

Erosion Risks

Erosion Risks were classified for the various pipeline segments of the SWISA project based on terrain characteristics to determine appropriate Erosion and Sediment Control (ESC) measures per EPR 4 of the Project CEMP. Higher-risk segments (steeper slopes, larger catchments) require more robust controls to prevent sediment runoff into waterways or MNES habitats.

Slope percentage serves as the primary indicator of erosion vulnerability, with steeper gradients accelerating water flow and soil detachment. Catchment area further refines this assessment by quantifying runoff volume, where larger areas, such as the 12.5 ha in Warrawee or 45 ha along the trunk, necessitate more controls to capture and manage sediment before it reaches sensitive waterways or MNES habitats.

These factors inform a tiered system of Control Types from the TEER (2023), the "Erosion and Sediment Control – the fundamentals for development in Tasmania" guidelines, as mandated by EPR 4, providing a structured approach to site protection. Type 1 focuses on perimeter containment through sediment fences, hay bales, and rock check dams to intercept sheet flow across all segments, forming the foundational barrier against off-site migration. Type 2 addresses interception and diversion with features like drains, berms, and silt socks, applied to medium-risk zones to redirect concentrated flows away from vulnerable areas. Type 3 emphasises stabilisation via geotextiles, mulch, revegetation, stockpile covers, and track management, mandatory for all disturbed land to prevent initial soil exposure and long-term erosion. This framework originates from TEER (2023), with EPR 4 listing specific measures like diversion drains, sediment fences, and stockpile covers.

The SWISA project's infrastructure requires erosion and sediment control measures under EPR 4 due to varying scales of soil disturbance across its components, with stationary sites like the GBPS refurbishment in sensitive Warrawee Conservation Area limited to access stabilisation, SHBT and SBPS confined to compact modified land footprints with gravel tracks, and the 100 km pipeline corridor generating extensive linear impacts through deep trenching (1-3.5 m) and HDD watercourse crossings within a 30 m construction zone.

SWISA Erosion Risk Profile and Primary Components Requiring Erosion and Sediment Controls

Segment/Component	Length/Site Area	Slope (%)	Catchment (ha)	Control Type (TEER 2023)	Risk Level	Primary Features	Soil Disturbance	Required ESC Measures (EPR 4)
GBPS-SHBT (Warrawee)	4.4 km / 1,200 m²	3-8	12.5	Type 1+2+3	HIGH	GBPS refurb: pumps, SCADA, HVAC (no expansion)	Access stabilisation and 30m corridor	- Type 1: Sediment fences and rock check dams - Type 2: Diversion drains and geotextile - Type 3: Stabilised access tracks and daily inspections
SHBT-North Trunk	30 km / 1,478 m²	1-5	45	Type 2+3	MEDIUM	SHBT: 2.1 ML tank + shed, 4m gravel track 5 pumps SBPS (137 L/s)	Modified land + trenching (1-3.5m avg 1.5m)	- Type 2: Diversion drains and silt socks - Type 3: Stockpile covers and weekly checks
Branches/Spurs	65.6 km / 625 m²	<2	<2.5	Type 3	LOW	Pipeline: 1m HDPE, HDD at 12 crossings	30m corridor, minimal at stations	- Type 3: Basic sediment barriers and post-rain inspections

General site management

Shaw implements robust site governance ensuring EPR 4 controls function continuously. EPR 4 – Sediment and Erosion (Full Implementation): Responsibility: Shaw (primary), TI Project Representative (oversight). Frequency: All soil disturbance/storage phases. Objective: Minimise erosion/sediment generation and off-site migration per TEER (2023).

Roles and Responsibilities

The following table outlines the roles and responsibilities for implementing EPR 4 – Sediment and Erosion across the SWISA Project construction phases. It defines specific duties derived directly from EPR 4 requirements, such as daily inspections of controls (EPR 4.14), personnel training on installation/maintenance (EPR 4.3), non-compliance management with immediate work stoppages (EPR 4.1-2), pre-disturbance verification (EPR 4.4), weather constraints prohibiting works during high rainfall (EPR 4.12), and incident reporting protocols—along with clear reporting lines to ensure TI oversight. RAMP (Review and Amendment Management Plan) notifications are required by DCCEEW for significant CEMP changes creating new/increased MNES impacts.

Summary of roles and responsibilities for erosion and sediment control in the Project

Role	Specific EPR 4 Duties	Reporting Line
Shaw Environmental Coordinator	Weekly inspections/logs Training delivery Non-compliance management	TI Project Manager
TI Project Representative	Approvals Weekly audits Regulatory liaison/reporting	DCCEEW/TI
Site Supervisors	Pre-works control verification Weather holds Daily inspections/logs	Shaw

Reporting Protocols

General

The following table outlines the roles and responsibilities for implementing EPR 4 – Sediment and Erosion across the SWISA Project construction phases. It defines specific duties derived directly from EPR 4 requirements, such as daily inspections of controls (EPR 4.14), personnel training on installation/maintenance (EPR 4.3), non-compliance management with immediate work stoppages (EPR 4.1-2), pre-disturbance verification (EPR 4.4), weather constraints prohibiting works during high rainfall (EPR 4.12), and incident reporting protocols—along with clear reporting lines to ensure TI oversight. RAMP notifications are required by DCCEEW for significant CEMP changes creating new/increased. For additional reporting information, see Section 6.3.

Summary of reporting protocols for erosion and sediment control

Frequency	Requirement	Source
Regular inspections	Inspect all sediment/erosion controls (basins, fences, drains)	EPR 4.14
Post-Rain (>10 mm)	Additional checks after rainfall events	EPR 4.14
Non-compliance	Immediate work stoppage and remedial action if water quality exceedances	EPR 4.1-2

Site Specific Plans

Site-specific plans must be developed and approved by TI Project Representative prior to commencing work at each location per EPR 4.1 requirements. Each site plan must contain the following mandatory elements in the following table:

EPR 4.1 Site Plan Checklist

Requirement	Description
Plan Identification	Plan name, document version, date, author, stage #
Site Layout	North point, scale, property boundaries, contours
Soil Description	General soil type (per pre-clearance EM38 testing)
Disturbance Layout	Soil disturbance locations/volumes, stockpile sites
Watercourses	All watercourses, HDD crossings, drainage lines
Stormwater Infrastructure	Existing drains, culverts, sediment traps
Temporary Drainage	Diversion drains (dimensions, lining, velocity controls), level spreaders
Erosion Controls	Vegetation retention areas, exclusion zones
Sediment Controls	Sediment fences, basins, stabilised access points
Wash-out Areas	Concrete wash-out, machinery cleaning controls
Responsibilities	Contact details for control installation/maintenance
Installation Sequence	Step-by-step control implementation order
Maintenance Program	Inspection frequency, repair triggers (EPR 4.17)

Environmental Training

Pre-mobilisation Induction: All personnel will receive training on ESCP overview, EPR 4 measures, and turbidity protocols with 100% sign-off required per EPR 4.3: "Training of construction personnel on the function, installation, and maintenance of erosion and sediment controls. All construction personnel must read and understand their responsibilities under the respective sections of ESCP."

Weekly Toolbox Talks: Ongoing sessions will cover weather forecasting (EPR 4.12), maintenance triggers (EPR 4.14), and species identification (GGF calls, CNBC chimneys) to reinforce EPR 4.3 training requirements throughout construction.).

Emergency Contacts and Procedure

Personnel will immediately cease works, isolate affected areas, and deploy containment upon detecting sediment release. Shaw environmental coordinator will notify the TI Project Manager and EPA Pollution Hotline 1800 643 827, followed by remediation (corrective actions until compliant) with TI approval required to resume.

Potential Environmental Impacts & Risks

Shaw's ESCP minimises sedimentation through proactive EPR 4 controls across earthworks exposing 317 ha of modified land plus 3.74 ha of native vegetation. Potential risks include topsoil loss and Mersey tributary pollution affecting MNES, with impact pathways progressing from rain splash erosion to rill formation, turbid runoff entering drains, and exceedances of TSS >50 mg/L or turbidity thresholds. The following table summarises the potential impacts and risks to MNES species.

Potential impacts of erosion and sediment to MNES species

Species	Specific Impact	Likelihood	Consequence	Residual Risk	EPR Controls
GGF	1.71 ha temp dispersal habitat and aquatic sedimentation	Likely/Unlikely	Minor	Low	EPR 1C, 3, 4
Australian grayling	Surface water quality degradation	Unlikely	Moderate	Low	EPR 1D, 3, 4
CNBC	9 chimneys destroyed 1.92 ha habitat Edge compaction	Likely	Minor-Moderate	Low-Medium	EPR 1B, 3, 4, 8

Monitoring and Adaptive Management

Monitoring Site plan implementation forms the cornerstone of ESCP compliance per EPR 4.1, with all site-specific plans developed, TI-approved, and fully implemented prior to any ground disturbance through staged implementation per the construction schedule. Pre-works verification by Site Supervisors confirms all TEER Type 1-3 controls (sediment fences, diversion drains, stockpile protection, stabilised access) are installed per plan sequence before earthworks commence.

High-risk conditions including heavy rainfall events trigger enhanced measures per EPR 4.10/4.14/4.17:

- Stockpiles must be pre-assessed and covered prior to forecasted high-intensity rain/wind
- Ground disturbing works immediately cease during high-intensity rainfall or runoff events (EPR 4.14);
- Additional inspections conducted before, during, and after rainfall events (if safe).
- EPR 4.2 Water Quality Management mandates upstream/downstream turbidity monitoring with daily readings (pre-works, during works, post-works) and immediate work stoppage/remediation if parameters exceed triggers. This will be defined in the WQMP; however, this plan will be prepared by a suitably qualified aquatic fauna expert (managed by TI).

Compliance monitoring includes weekly environmental inspections (EPR 4.17) documenting control condition/maintenance, daily inspection logs, and post-rain event verification. Incident reporting follows EPR 4.1-2 protocol: turbidity exceedances or control failures trigger immediate works cessation, root cause analysis, corrective actions, and TI approval required prior to resumption. TI weekly audits and DCCEEW CEMP audits verify performance against CEPs/CETs, with RAMP notifications submitted for significant changes.