Jemena
Port Kembla Pipeline Project
WASTE MANAGEMENT SUBPLAN

Document No.: GAS-599-PA-EV-008 | Revision 5

Rev	Description	By	Checked	QA	Nacap Approved	Date
5	Issued for Use	BRO	RPO	BPH	JHE	21-NOV-22
4	Issued for Use	BRO	HHE	BPH	JHE	18-OCT-22
3	Issued for Use	BRO	HHE	BPH	JHE	28-SEP-22
2	Issued for Use	BRO	HHE	BPH	JHE	19-AUG-22
1	Issued for Use	BRO	BPH	ZFR	BKE	1-AUG-22
0	Issued for Use	BRO	BPH	ZFR	JHE	20-MAY-22
A	Issued for Review	BRO	BPH	NFU	JHE	19-APR-22

REVISION HISTORY

This table describes changes made for numerical revisions after Rev 0

Date	Rev	By	Description
02/08/2022	1	BRO	Implementation of Jemena and AIE comments for Approvals consultation
19/08/2022	2	BRO	Implementation minor comments following Jemena review – CODE 2
28/09/2022	3	BRO	Updated following AIE and Site Auditor Review
14/10/2022	4	BRO	Updated following AIE Review
17/11/2022	5	BRO	Update following DPE Review

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LIST OF EMERGENCY AND KEY CONTACTS

Organisation/Position	Contact Details
Environment Line (EPA Pollution Hotline)	131 555 The Environment Line handles general inquiries about environmental issues and takes reports of pollution for which the EPA has regulatory responsibilities. Environment Line is a one-stop pollution and environmental incident reporting service provided by Environment and Heritage Group (EEG) and EPA.
Fire and 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)
Wollongong City Council	General Enquiries (02) 4227 7111
NSW Ports	General Enquiries 1300 922 524
Port Authority NSW	24-hour community enquiries and complaints line (02) 9296 4962 enquiries@portauthoritynsw.com.au
Port Kembla Coal Terminal	Administration (02) 4228 0288
BlueScope	Laura Davis Laura.davis@bluescopesteel.com +61 467728547
Transport for NSW	General Enquiries (02) 8202 2200
GrainCorp	Dylan Clarkson +61 409 739 697 dclarkson@graincorp.com.au
AIE	Andrew Petch +61 401 175 917 Andrew.petch@ausindenergy.com

Organisation/Position	Contact Details
Jemena	Community Feedback - 1300 081 989 Justin Anderson 0435 092 889 justin.anderson@zinfra.com.au
Nacap	Jason Heard Nacap Project Manager j.heard@nacap.com.au +61 488 087 393

ACRONYMS

Term	Meaning
AIE	Australian Industrial Energy
ASS	Acid Sulfate Soils
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CROW	Construction Right-of-Way
DLP	Defects Liability Period
DPE	Department of Planning and Environment
EA	Environmental Assessment
EGP	Eastern Gas Pipeline
EIS	Environmental Impact Statement
ENM	Excavated Natural Material
EOL	End of Line
EPA	Environment Protection Agency
ESG	Environment, Social and Governance
ESC	Erosion and Sediment Control

Term	Meaning
FSRU	Floating Storage and Regasification Unit
ISO	International Standards Organisation
KGMS	Kembla Grange Meter Station
LECH	Land, Environment and Cultural Heritage
LNG	Liquid Natural Gas
MIJ	Monolithic Insulating Joint
NATA	National Association of Testing Authorities
NSW	New South Wales
PASS	Potential Acid Sulfate Soils
PKGT	Port Kembla Gas Terminal
PKL	Port Kembla Lateral
PKPP	Port Kembla Pipeline Project
POEO Act	Protection of Environment Operations Act 1997
Principal	Jemena
SOW	Scope of Work
SSI	State Significant Infrastructure
SWMP	Soil and Water Management Plan
SWMS	Safe Work Method Statements
TfNSW	Transport for NSW
VENM	Virgin Excavated Natural Material
WMP	Waste Management Plan (This Plan)

GLOSSARY

Term	Meaning
Company/Principal	Jemena
Contractor	Nacap
ESG	ESG provides a framework to consider an organisation's impact and dependencies on the environment and society, as well as the quality of its corporate governance.
Environmental Assessment	Includes the following EIS and Modification Reports: > Port Kembla Gas Terminal EIS and Modifications 1, 2 and 3, and > Eastern Gas Pipeline EIS and Modifications 1 and 2.
Feasible and reasonable	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account mitigation benefits and cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.
Hazard	A source or a situation with a potential for harm in terms of human injury or ill-health, damage to property, damage to the environment, or a combination.
HAZID	Hazard Identification risk assessment
Incident	A set of circumstances that: > causes or threatens to cause material harm to the environment; and/or > breaches or exceeds the limits or performance measures/criteria in this approval
Project	Port Kembla Pipeline
Regulatory Requirements	Government acts and regulations that are environment specific which prescribe legal obligations encompassing the employer and contractor.
Risk	Effect of uncertainty on objectives. Often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated likelihood of occurrence [ISO Guide 73:2009, definition 1.1]
Sensitive Receptor	Locations where people are likely to work or reside and be affected by the works. May include residential dwellings, places of work, places of worship and areas of public open space used for recreation and access

Term	Meaning
Stakeholder	Party with vested interest in the works
Third Party	Any party external to the works that has been identified as a stakeholder

INTRODUCTION

1.1. Background

Australian Industrial Energy (AIE) have approval to build a new Liquid Natural Gas (LNG) import terminal at the Port Kembla inner harbour with the aim to sell gas to the east coast market. The gas is planned to be processed on a Floating Storage and Regasification Unit (FSRU) and imported into the existing gas networks through a new pipeline that will connect the AIE Port Kembla Gas Terminal (PKGT) with the Jemena owned gas transmission network via the Eastern Gas Pipeline (EGP).

In February 2021, Jemena and AIE entered into a Project Development Agreement to enable Jemena to build, own and operate a segment of the pipeline that is approved as part of AIE's SSI 9471 Infrastructure Approval for the PKGT, and build and operate the remainder of the pipeline approved under the same Infrastructure Approval, SSI 9471.

The Port Kembla Pipeline Project (PKPP) involves the construction of an approximately 12.1 kilometres long, 18" (DN450) buried steel gas transmission pipeline and a new End of Line (EOL) facility in the vicinity of the Jemena's existing Kembla Grange Metering Station (KGMS). The proposed PKPP Project is comprised of three sections (refer to Figure 1):

- Segment 1.1 – 4.3 km pipeline from PKGT to Springhill Road to be built by Jemena; owned by AIE with some services provided in operation by Jemena.
- Segment 1.2 – 2.2 km pipeline from Spring Hill Road to Five Islands Road, and
- Segment 2 – 5.6 km pipeline from Five Islands Road to KGMS which includes the Kembla Grange Tie-in Facility to be built, owned and operated by Jemena.

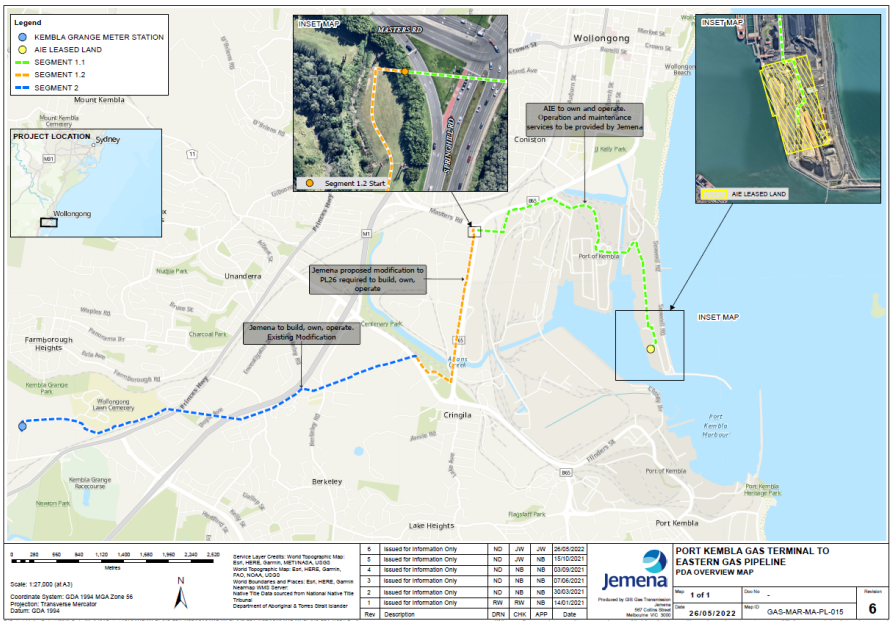


Figure 1 - Project Layout

The project is approved by the Department of Planning and Environment (DPE) under a number of Infrastructure Approvals:

- SSI-9471 Port Kembla Gas Terminal Infrastructure Approval under Section 5.19 of the Environmental Planning and Assessment Act 1979 which incorporates Segment 1.1 and 1.2.
- SSI-9973 Eastern Gas Pipeline Modification 1 - Port Kembla Lateral Pipeline Infrastructure Approval under section 5.25 of the Environmental Planning and Assessment Act 1979 pertains to Segment 2.
- SSI-9973 Eastern Gas Pipeline Modification 2 - Transfer of Pipeline Segment to transfer Segment 1.2 from AIE SSI-9471 PKGT Infrastructure Approval.
- Proposed Modification to the AIE SSI-9471 Port Kembla Gas Terminal to remove segment 1.2 from the Infrastructure Approval in Q2 2022.
- Staging Plan approved by DPE for SSI-9471
    - Stage 1: Early Enabling Works commenced in May 2021
    - Stage 2a: Marine Berth Construction – Land Based commenced January 2022
    - Stage 2b: Marine Berth Construction and Dredging – Land and Marine based commenced March 2022, and
    - Stage 3: Pipeline installation including ties ins, proposed to commence in June 2022.
- Staging Plan SSI-9973 [Subject to Approval]
    - Stage 1: Pipeline installation, and
    - Stage 2: Construction of the tie in facilities including Kembla Grange Metering Station (KGMS).

1.2. Purpose and Scope

This Waste Management Plan (WMP) has been prepared to ensure construction activities are carried out in accordance with the Conditions of Approval (CoA), relevant regulatory requirements, standards, procedures and current best practice to ensure that all reasonable and practical measures are implemented to minimise the potential for Waste related impacts.

This WMP adopts an integrated approach, considering and identifying management measures overarching the sequencing of construction related activities. All works are to be implemented in accordance with the management measures and strategies contained within this plan.

This WMP has been prepared to satisfy the requirements of both SSI 9471 and SSI 9973, the Project EIS and subsequent modification reports to include the staging of works as described above in Section 1.1 and as presented in the table below. This WMP applies to the Construction phase of the works only and in accordance with the CoA will be implemented during construction.

Table 1 - WMP scope relevant to SS1-9471 and SSI-9973

Infrastructure Approval	Post Consent Stage	Description of Works	Segment of Works As detailed in Sect 1.4 and Figure 1
SSI-9471	Stage 3	Pipeline construction from PKGT to KGMS	Segment 1.1
SSI-9973	Stage 1		Segment1.2
			Segment 2

1.3. Project Description

A detailed project description is provided in Section 1.4 of the Construction Environment Management Plan (CEMP) (GAS-599-EV-001)

1.4. References

The following are principal documents referenced in this document:

Table 2 - Reference Documents

Document No.	Title of Document
GAS-554-AC-PM-001	SSI 9471 - Port Kembla Gas Terminal - Infrastructure Approval
GAS-556-AC-PM-001	SSI 9973 Modification 1 - Port Kembla Lateral Looping Pipeline – Infrastructure Approval
GAS-556-SP-PL-007	Construction Specification
GAS-551-SW-PL-001	Pipeline Construction Scope of Work
GAS-599-HSE-004	Environmental Management Plan
GAS-599-PA-RA-001	Joint Post-Approval Strategy - AIE's Port Kembla Gas Terminal to Jemena's Eastern Gas Pipeline
GAS-599-RP-RA-007	Eastern Gas Pipeline - Port Kembla Lateral Looping Modification Report
GAS-599-RP-RA-008	Eastern Gas Pipeline Modification 2 - Modification Report
	Port Kembla Gas Terminal Environmental Impact Statement

1.5. Principal Contractor Details

Table 3 - Principal Contract Details

Nacap Details	
Business name:	Nacap Pty Ltd
Address:	Ground Floor, 599 Doncaster Road, Doncaster Victoria 3108
ABN:	33 006 306 994
Main phone number:	03 8848 1888
Contact person:	Jason Heard Nacap Project Manager
Contact mobile:	+61 488 087 393
Contact email:	j.heard@nacap.com.au

1.6. Environmental Management System Overview

The environmental management system overview is described in Section 4.1 of the Construction Environmental Management Plan (CEMP) (GAD-599-PA-EV-001). This WMP used together with the CEMP, and subordinate project documents, procedures, resources, and practices will inform and guide Nacap personnel and subcontractors to ensure that all reasonable and practical measures are taken to manage the environmental risks for the Project.

1.7. CEMP Structure and relationship with sub plans

The CEMP comprises three sections:

PART A: Provides background information and the overarching systems approach to environmental management and mitigation controls for the project

PART B: Comprising Appendices in support of PART A, and

PART C: Comprising the required series of environmental management sub-plans outlined in the CoA including:

(a) Noise Management Plan (GAS-599-PA-EV-004),

(b) Air Quality Management Plan (GAS-599-PA-EV-005),

(c) Biodiversity Management Plan (GAS-599-PA-EV-006),

(d) Soil and Water Management Plan (GAS-599-PA-EV-007),

(e) Traffic Management Plan (GAS-599-PA-CN-002), and

(f) Waste Management Plan (GAS-599-PA-EV-008) (this plan).

The sub plans are structured to incorporate mitigation and control measures in meeting the project's environmental risk assessment and includes, construction Activity Specific Environmental Management Measures and Aspect Specific Environmental Management Measures, each of which identifies the following:

- Environmental aspects,
- Environmental performance objectives and standards,
- Measurement criteria,
- Management measures and responsibilities,
- Compliance monitoring; and
- Records.

1.8. Objectives and Targets

The objectives and targets for the PKPP Project to be undertaken in relation to the Waste are listed in Table 4 Objectives and Targets.

Table 4 - Objectives and Targets

Objective	Target
Minimise waste and litter impacts generated as a result of construction activities.	Zero complaints from the community as a result of waste generation.
Ensure all personnel, subcontractors and visitors are inducted, consulted and receive regular updates and information on project waste aspects and impacts for the duration of works.	100% completion of Inductions, Daily Pre-Start Inputs by Environment Team, and Monthly toolbox inputs by Environment Team.
Ensure that personnel and subcontractors are aware of waste hazards and risks associated with construction activities and relevant scope of work under the contract.	100% attendance recorded at SWMS workshops, and 100% Project Induction.

Objective	Target
To conduct construction activities in compliance with all relevant approvals and environmental legislation.	100% compliance No regulatory infringements, including Provisional improvement notices and prosecutions.
Promote a positive reporting culture. To minimise the occurrence and severity of environmental incidents during construction activities.	All environmental incidents to be reported within 2 hours and investigated appropriately.
Ensure all corrective actions are closed out by the nominated due dates	No corrective actions outstanding past due date >7 days

1.9. Consultation

Consultation on this WMP is required to be undertaken with the following stakeholders:

- Transport for NSW (TfNSW)
- Wollongong City Council, and
- NSW Ports

Comments and feedback received during consultation will be incorporated into the Plan where relevant before being submitted to the DPE for approval.

Details of the Consultation associated with this Plan will be presented in Appendix A.

1.10. Certification and Approval

This WMP is required to be submitted for approval by the Secretary of the DPE prior to commencement of construction or as otherwise agreed by the Secretary.

1.11. Distribution

A controlled hard copy of this WMP and supporting documentation will be maintained and reside at the Project construction site office. Registered copies of this WMP and supporting documentation will be distributed to the Project team, the DPE, all relevant personnel and interested third parties as required. It will also be available to view on the Project website, link below:

[https://jemena.com.au/pipelines/eastern-gas-pipeline]

2. ENVIRONMENTAL PLANNING AND GOVERNANCE

2.1. Legislation

The following legislation and guidelines provide the primary context for construction waste management in NSW:

- Protection of the Environment Operations Act 1997 (POEO Act)
- Protection of the Environment Operations (Waste) Regulation 2014 (NSW)
- Waste Avoidance and Resource Recovery Act 2001 (NSW), and

- Environmentally Hazardous Chemicals Act (1985).

2.2. Guidelines

The main guidelines, specifications and policy documents relevant to this Plan include:

- Waste Classification Guidelines (EPA 2014)
- NSW Waste Avoidance and Resource Recovery Strategy 2014-2021, and
- Construction and demolition waste (EPA 2020).

2.3. Conditions of Approval (CoA) requirements for WMP

This Plan has been prepared to comply with the Joint Post Approval Strategy for SSI-9471 (GAS-554-AC-PM-001) and SSI-9973 (GAS-556-AC-PM-001) and associated consent documents and supporting information and the consolidated conditions of approval as listed in Table 5 Conditions of Approval requirements WMP.

Table 5 - Conditions of Approval requirements WMP

CoA	Condition	Refer to Section within This Plan
SSI 9471 - Port Kembla Gas Terminal – Stage 3 Works		
Schedule 3 Condition 13	At the completion of any dredging, excavation and disposal works, the Proponent must engage a site auditor accredited by the EPA to issue a Section A Site Audit Statement confirming the suitability of the site for its intended use.	Section 4.3
Schedule 3 Condition 36	The Proponent must: (a) minimise the waste generated by the development; (b) classify all waste generated on site in accordance with the Waste Classification Guidelines (NSW EPA 2014), or its latest version; (c) store and handle all waste generated on site in accordance with its classification; and (d) ensure all waste is disposed of off-site at appropriately licenced facilities	Section 3 Section 4.3
SSI 9973 Modification 2 - Port Kembla Lateral Looping Pipeline		
B12	The Proponent must: (a) minimise the waste generated by the construction of the Port Kembla Lateral Looping Pipeline; (b) classify all waste generated in accordance with the EPA's Waste Classification Guidelines 2014 (or its latest version); (c) store and handle all waste in accordance with its classification;	Section 3 Section 4.3
C1	Prior to commencing construction, the Applicant must prepare a Construction Environmental Management Plan (CEMP) for the Port Kembla Lateral Looping Pipeline to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with Council, Sydney Trains and TfNSW; (b) identify the statutory approvals that apply to the construction and commissioning of the Port Kembla Lateral Looping Pipeline;	This Plan

CoA	Condition	Refer to Section within This Plan
	(c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Port Kembla Lateral Looping Pipeline; (d) describe the procedures that would be implemented to: keep the local community and relevant agencies informed about the construction and commissioning of the Port Kembla Lateral Looping Pipeline; receive, handle, respond to, and record complaints; resolve any disputes that may arise; respond to any non-compliance; and respond to emergencies; and (e) include: the following sub-plans: noise, including an out-of-hours work protocol; air quality; biodiversity; soil and water management; water management; traffic management; and waste a clear plan depicting monitoring to be carried out in relation to the Port Kembla Lateral Looping Pipeline	
C2	The CEMP sub-plans must state how: the mitigation measures identified in the Modification Report will be implemented; and the relevant terms of this Schedule will be complied with.	Section 3 Section 4.3
C5	The Proponent must implement the approved CEMP.	This Plan

2.4. Environmental Management Measures

Environmental Management Measures (EMM) derived from the Project Environmental Assessment which are relevant to this WMP Plan are listed in Table 6.

Table 6 - Environmental Management Measures (EMM) relevant to WMP

EMM	Management Measure category	Commitment	Refer to Section within This Plan
SSI 9471 - Port Kembla Gas Terminal – Stage 3 Works			
W1	Construction waste	Develop and implement a waste management plan for construction that integrates all statutory requirements for waste in NSW and includes: > systems to sort and track the actual types and quantities of waste generated	Section 4.3

EMM	Management Measure category	Commitment	Refer to Section within This Plan
		> measures for separating waste based on classification of management options including colour coded bins > options for offsite reuse, reprocessing, recycling and energy recovery of waste	
SSI 9973 Modification 2 - Port Kembla Lateral Looping Pipeline			
No Waste related EMMs in relation to SSI 9973.			

3. WASTE MANAGEMENT

3.1. Waste Management Hierarchy

The waste management hierarchy will be utilised as the guiding principle for waste management on the Project. The hierarchy, (Figure 2) provides the following guidance towards achieving positive waste and resource management outcomes.

- Waste generated during the Project will be managed in accordance with the following priorities (in order of preference):
- Waste generation is to be avoided, and where avoidance is not reasonable and feasible, the generation of waste is to be reduced.
- Where avoidance or reducing waste is not practicable, waste is to be re-used, recycled or recovered
- Treatment of waste will be considered where waste cannot feasibly be re-used, recycled, or recovered – where necessary, treat products to make them less harmful to the environment, and
- Disposal will apply only to the transfer of waste that is hazardous or cannot be safely recycled or treated and long term storage or transfer to a licenced waste management facility lawfully permitted to accept the materials.

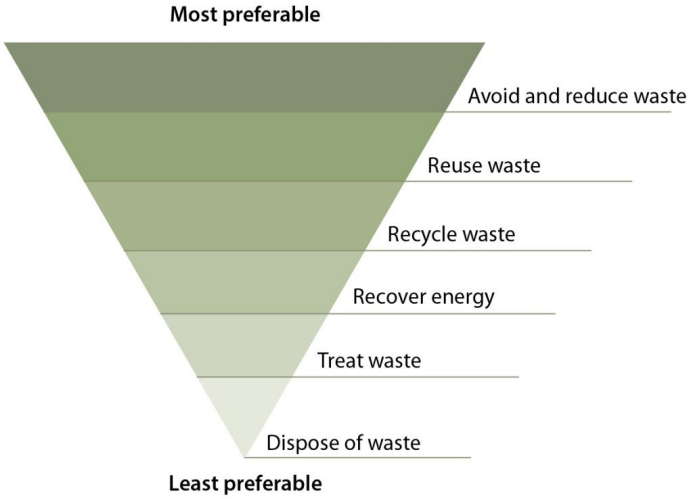


Figure 2 - Waste management hierarchy (NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014)

3.1.1. Waste Avoidance and Reduction

During procurement and subsequent pipeline construction, the following measures will be implemented to avoid and reduce the generation Project waste:

- Ensure relationships and awareness is established with suppliers to enable alignment with Nacap and Project ESG and waste management objectives
- Ensure procurement is undertaken to highlight project waste management objectives around avoidance and minimisation of packaging associated with material supply and delivery
- Ensuring that the necessary planning is undertaken to enable effective management of the delivery and storage of materials
- Ensuring take offs associated with procurement and supply of materials are accurate and correct quantities of materials are ordered to minimise risk of surplus materials at project completion
- Ensure that stored materials and consumables are properly secured and protected from works activities, conflicts with work by others and the weather
- Ensure that agreements are established with suppliers for return of packaging/pallets/drums wherever practicable
- Ensure effective coordination of site activities to minimise waste associated with use of materials, and
- Utilise appropriately trained and competent plant and machinery operators to avoid damage to materials and reduce wastage of consumables during plant and machinery operation and maintenance.

3.1.2. Waste Re-use and Recycling

A range of waste streams will be generated along the construction right of way (CROW) and various static locations in support of construction of the proposed pipeline. Waste separation and segregation will be promoted on site to facilitate re-use and recycling as a priority waste management objective as follows:

- Waste segregation on site (construction activities) – waste materials, including spoil and construction waste, will be separated on site into dedicated bins / areas for either re-use on site or collection by a waste contractor and transport to offsite facilities
- Waste segregation on site (office) – waste within site offices shall be segregated on site with colour coded bins being provided for comingled recyclable and general waste. Paper bins will be provided within site offices to encourage the recycling of scrap paper; and
- Designated areas and/or storage containers will be allocated for each waste stream and are to be clearly labelled and covered to prevent access by fauna and release to the environment.
- Wherever practicable and fit for purpose spoil will be beneficially reused as part of the Project. Spoil will be excavated and temporarily stored immediately adjacent to the excavation. Where movement of spoil is required for temporary stockpiling, the excavation site coordinates will be recorded and the stockpile will be appropriately delineated and signposted. On site movement of materials will be recorded in the Materials Tracking Register (Appenidix C).
- Spoil may include multiple classifications as described in Section 3.2 such as:
    - Virgin Excavated Natural Material (VENM)
    - Excavated Natural Material (ENM), and

- Spoil classified in accordance with waste classifications, exemptions and other orders, including but not limited to:
  - General solid waste
  - Restricted waste
  - Hazardous waste, and
  - Special waste.

Excess spoil that cannot be re-used or recycled will be disposed of at a suitably licenced landfill or waste management facilities. Where feasible and reasonable and in accordance with the waste classification, exemptions and other orders, spoil re-use will be prioritised in accordance with the following hierarchy:

- Minimisation of spoil generation through design and construction management
- Re-use of spoil within the Project, primarily for backfill of excavations and
- Where reuse isn't possible or surplus to project needs, spoil disposal would be the last resort.

Water captured in excavations and trenches following rain events will be dewatered and reused in accordance with the dewatering and water reuse protocol (Appendix F) of the SWMP.

Water that is surplus to construction needs or water that is encountered during works which cannot be reused on site or released in accordance with the POEO Act (i.e., it does not meet release criteria or cannot be treated in situ), will be collected, transported by a licenced transporter to a licenced facility for disposal.

Spoil and water will be managed in accordance with the Soil and Water Management Plan (SWMP) GAS-599-PA-EV-007.

3.1.3. Waste Handling and Storage

Where waste is required to be handled and stored onsite prior to either onsite re-use or offsite recycling/disposal, it will be stored temporarily in accordance with the POEO Act and removed from site as soon as practicable to an appropriately licenced facility for disposal. The following handling, storage, transport and disposal measures will apply:

- Topsoil, spoil, green waste will be stockpiled on site in allocated areas within the CROW with appropriate mitigation measures for dust control and surface water management as per AQMP and SWMP
- Liquid wastes other than dewatering as described above and in the SWMP is to be stored in appropriate containers in bunded areas until transported off site. Bunded areas will have the capacity to hold 110 per cent of the liquid waste volume for bulk storage or 120 per cent of the volume of the largest container for smaller packaged storage.
- The excavation, handling, management, temporary storage and disposal of asbestos containing material will be undertaken in accordance with procedures detailed in the Unexpected Contaminated Lands Finds Procedure (GAS-599-PR-CN-001).
- Asbestos waste will be disposed of off-site by authorised contractors at a licenced facility and the NSW EPA Waste Locate system will be used to track asbestos waste
- Identified Acid Sulfate Soils (ASS) and Potential Acid Sulfate Soils (PASS) material will be managed in accordance with the SWMP and associated ASSMP (Appendix G to SWMP)

- The excavation, handling and temporary storage of waste material identified as contaminated will be undertaken in accordance with the procedures detailed in the SWMP
- Contaminated material will be stockpiled and stored on hardstand or lined areas and segregated from uncontaminated material to prevent cross-contamination. Contaminated material will be disposed off-site at a licenced facility
- Hazardous waste will be managed by appropriately qualified and licensed contractors, in accordance with the requirements of the Environmentally Hazardous Chemicals Act 1985 and the EPA waste disposal guidelines, and
- Recyclable and non-recyclable wastes will be stored in appropriately covered receptacles (e.g. bins or skips) on site and contractors will be commissioned to regularly remove/empty the bins to approved disposal or recycling facilities.

Onsite treatment of waste will be limited to ASS prior to re-use or offsite disposal. No other wastes are proposed to be received, treated or disposed of onsite.

3.2. Waste Classification

Waste classification will be undertaken in accordance with the Waste Classification Guidelines (EPA 2014). The guidelines identify and describe the characterisation of the six classes of waste as defined in clause 49 of Schedule 1 of the POEO Act:

- Special
- Liquid
- Hazardous
- Restricted Solid
- General Solid (putrescible), and
- General Solid (non-putrescible).

3.3. Waste Streams

A Waste Management Strategy detailing how each of the waste streams will be managed is provided below:

Table 7 - Waste Management Strategy

Waste Stream	Waste Classification	Waste Management Hierarchy	On-Site Strategy	Off-Site Strategy
Green Waste	General solid waste	Re-use	Will be stockpiled on the CROW for re-use as part of ESC or reinstatement works	Materials surplus to project needs will be stockpiled for disposal at a licenced facility
Waste Pavement	General solid waste	Disposal	On-site skips provided or trucked straight from site.	Disposal at licenced facility
Soils	General solid waste	Re-use	Will be stockpiled on the CROW and re-used as part of backfill and reinstatement works	Materials surplus to project needs will be stockpiled temporarily pending sampling and waste classification for disposal at a licenced facility

Waste Stream	Waste Classification	Waste Management Hierarchy	On-Site Strategy	Off-Site Strategy
Excavated natural materials	**General Solid Waste (non-putrescible)**	Re-use	Will be stockpiled on the CROW and re-used as part of backfill and reinstatement works	Materials surplus to project needs will be stockpiled for reuse as per resource recovery exemption or disposal at a licenced facility
General Waste	**General Solid Waste (non-putrescible)**	Disposal	On-site skips provided.	Disposal at licenced facility
	General Solid (Putrescible)	Disposal	On-site skips provided	Disposal at licenced facility
Paper/cardboard and or office based wastes	**General Solid Waste (non-putrescible)**	Recycle/disposal	On-site skips provided	Recycle if end use identified otherwise disposal at licenced facility
Oily rags/gloves **Oil Filters**	**General Solid Waste (non-putrescible)**	Disposal	On site wheelie bins. On site draining trays.	Full containers will be removed from site for disposal at end of project or as required by a subcontractor.
Steel	**General Solid Waste (non-putrescible)**	Recycle	Steel to be segregated and placed in designated waste skip. Pipe off cuts (pups) to be re-used during construction	Taken off site for recycling at end of project or as required.
Timber	**General Solid Waste (non-putrescible)**	Re-use	Will be progressively collected at end of use for transport off project	Re-use
Sawdust bags	**General Solid Waste (non-putrescible)**	Re-cycle/Disposal	Will be progressively collected at end of use to be recycled or disposed	Recycle if end use identified otherwise disposal at licenced facility
Untreated Liquid Waste (Sewage)	**Liquid Waste**	Disposal	Stored within temporary tanks and collected as required	Waste to be transported by road to by licensed transporter to nearest licensed disposal facility.
Contaminated Soil (if a spill occurs)	**General Solid Waste (non-putrescible)** **or** **Hazardous Waste**	Disposal	Spill sites will be assessed for treatment options depending upon size of spill. Where it is decided that the contaminated soil should be removed it will be bagged and stored in a suitable storage container. Contaminated waste shall have suitable secondary containment measures.	Full containers will be removed from site at end of project or as required for disposal by a subcontractor.

Waste Stream	Waste Classification	Waste Management Hierarchy	On-Site Strategy	Off-Site Strategy
Contaminated Soil **(unexpected finds)**	**General Solid Waste (non-putrescible)** **or** **Hazardous Waste**	Disposal	Will be temporarily stockpiled and contained on CROW pending sampling and analysis to inform waste classification. Material is not to be mixed with any other waste stream and shall have suitable secondary containment measures.	Disposal at licenced facility
Unidentified Waste	**General Solid Waste (non-putrescible)** **or** **Hazardous Waste**	To be determined	Contain separately. Material is not to be mixed with any other waste stream. Hazardous waste shall have suitable secondary containment measures implemented.	Full containers will be removed from site for disposal at end of project or as required by a subcontractor.
Contaminated Absorbent Material	**General Solid Waste (non-putrescible)** **or** **Hazardous Waste**	Disposal	Contaminated absorbent material is to be bagged and stored in a suitable storage container. Material is not to be mixed with any other waste stream (e.g. contaminated soil). Contaminated waste shall have suitable secondary containment measures.	Full containers will be removed from site for disposal at end of project or as required by a subcontractor.
Waste oil, greases and fuels (liquid waste)	**Hazardous Waste**	Disposal	Liquids that cannot be reused are to be stored in a designated liquid waste drum, which shall be bunded.	Full containers will be removed from site for disposal at end of project or as required by a licenced subcontractor.

3.4. Waste Tracking and Record Keeping

Consistent with the Protection of the Environment Operations (Waste) Regulation 2014 the following wastes potentially encountered/generated are required to be tracked within NSW:

- Hazardous Wastes
- Liquid Waste
- More than 100 kilograms of asbestos waste or more than 10 square meters of asbestos sheeting in any single load
- More than 200kg of waste tyres, or 20 tyres (whichever is heavier)
- Waste oil/water, hydrocarbon/water mixtures emulsions, and
- Wastes listed in Table 1 of the NSW EPA Waste that must be tracked Guideline.

https://www.epa.nsw.gov.au/your-environment/waste/tracking-transporting-hazardous-waste/waste-must-tracked

Details of waste type, volumes and destinations will be recorded in the Project Disposals Register, Appendix B (GAS-599-RG-CN-007) for all waste movements off site and, where required, on site.

The Project Disposals Register will include:

- Date that the waste was generated/transported
- Details of the Waste Transporter
- Details regarding the type and classification of the waste
- Quantity of waste in the consignment
- Proposed waste treatment
- Consignment Details, and
- Details regarding the receiving facility.

4. CONSTRUCTION CONTROLS

4.1. Roles and Responsibilities

An Organisation Chart will be developed prior to the commencement of construction. Refer to Appendix A of Project Management Plan (GAS-599-PA-PM-015) for Organisation Chart for ECI Phase. Position descriptions describe the responsibilities specific to positions on the Project.

Table 8 provides a summary of Nacap environmental management responsibilities for relevant roles.

Table 8 - Nacap Environmental Management Responsibilities

Role	Responsibilities
Project Director (Management Representative)	The Project Director provides environmental leadership and ensures that adequate, competent and experienced resources are provided and supported in the implementation of this WMP.
Project Manager	> Provide support and guide in the implementation of this WMP and associated controls > Provide management and leadership in the implementation of this WMP > Ensure adequate resources are provided for implementing and maintaining environmental controls and mitigation measures in relation to waste > Take action including the stopping of work in response to natural events and activities which may impact on the environment or compromise the performance objectives, standards and commitments contained in this WMP > Take action in the event of an environmental emergency and allocate the required resources to minimise environmental impact and harm.
Lands, Environment and Cultural Heritage (LECH) Manager	> Provide support and guide the implementation of this WMP and associated controls > Provide environmental input and support to construction and associated methodologies > Support and guide site environmental incident investigation and reporting > Review internal and external project audits and coordinate the implementation of audit recommendations., and > Develop and update this WMP and subordinate procedures and protocols

Role	Responsibilities
Environment Advisor	> Provide and coordinate monitoring, inspections and audits of works > Provide and coordinate site-based training preparation and delivery > Routine record keeping and reporting in support of commitments in this WMP > Reporting of hazards and incidents and implementing any rectification measures > Provide site based environmental incident investigation and reporting and corrective action management.
Project Supervisors	> Provide leadership for the implementation of commitments contained in this WMP > Reporting of hazards and incidents and implementing any rectification measures.
Subcontractors	> Subcontractors engaged to perform works on behalf of Nacap will operate in accordance with all applicable legislation, Nacap procedures and this WMP. > Subcontractors are required to report all incidents to their Nacap Supervisor immediately.
All Project Personnel and Visitors	> All Project personnel and visitors will uphold a general environmental duty to take all reasonable and practical measures to ensure that the activities on the whole site do not pollute the environment in a way which causes or may cause environmental harm.

4.2. Training and Awareness

All personnel and subcontractors working on site will undergo site induction as detailed in the CEMP Section 6.1.

In addition, waste management awareness will be facilitated through toolbox discussions, pre-starts and face to face sessions throughout construction. Topics may include but not be limited to:

- Waste classification and characterisation,
- Waste segregation,
- Waste containment, transport and disposal,
- Controlled waste collection and disposal,
- Use and waste management arising from ablutions, and
- Management and reporting of spills and other incidents.

Targeted training undertaken as part of SWMS workshops, toolbox talks, and site and / or activity specific training will also be provided to personnel with a key role in waste generation and management. For further details with regards to environmental training and awareness, refer to Section 6 of the CEMP.

4.3. Construction Waste Management Measures

In accordance with CoA C1-3, measures to manage the impacts of Waste Management are outlined in Table 9.

Table 9 - Construction Waste Management Measures

No	Management Measure	Implementation	Responsibility
W01	Project inductions for all project personnel and sub-contractors will include material to cover project expectations as to waste generation and management	Pre-Construction	Principal Contractor/ Subcontractors
W02	All construction personnel and subcontractors will participate in Safe Work Method Statement (SWMS) development that will include specific management measures relating to waste emissions for specific construction activities.	Pre-Construction	Principal Contractor/ Subcontractors
W03	In the event there are changes to people/plant/process or environment after the development of SWMS, ensure that any changes are communicated to work personnel including environmental hazards and controls which shall be recorded in a revised SWMS or SWMS review card and signed off by all involved in the activity.	Per Event	Principal Contractor/ Subcontractors
W04	Waste generated during construction will be managed in accordance with the following priorities: > waste generation must be minimised. Where avoidance is not reasonably practicable, waste generation must be reduced. > where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered. > where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of at a waste management facility or premise lawfully permitted to accept the materials	Construction	Principal Contractor/ Subcontractors
W05	Design, procurement, and construction are considered by Nacap in order to contribute to waste avoidance and minimisation. Measures will include: > take off assessment to accurately estimate and order only materials required for construction; > minimisation of construction footprints; and > storage of excess materials at Nacap yards / premises for use on subsequent projects.	Construction	Principal Contractor
W06	Construction and waste classification, transportation, and management methods in accordance with the EPA's Waste Classification Guidelines (2014).	Construction	Principal Contractor/ Subcontractors
W07	Purchase materials in bulk where possible to minimise packaging.	Construction	Principal Contractor/ Subcontractors
W08	Store empty fuel, lubricant, and chemical containers for collection by a drum recycler for cleaning and reuse.	Construction	Principal Contractor/ Subcontractors
W09	Store waste oil, grease and lubricants in drums for collection by a waste oil recycler for treatment and reuse.	Construction	Principal Contractor/ Subcontractors
W10	Where possible and cost effective, purchase and/or use recycled materials, or products with recycled content in place of new materials, especially where they are environmentally preferable to the non-recycled alternative.	Construction	Principal Contractor/ Subcontractors
W11	Reuse wood packaging, pallet, plywood, formwork and off-cuts, and cardboards wrapping on-site wherever possible.	Construction	Principal Contractor/ Subcontractors
W12	Waste will be segregated between recyclable and non-recyclable waste, as well as between categories of recyclable wastes (paper/ cardboard/ plastic/ glass/ timber/ metals/ fluorescent lighting/ printer cartridges/ICT equipment) and volumes reported. Wherever possible, packaging will be avoided or minimised.	Construction	Principal Contractor/ Subcontractors
W13	The discovery and excavation of previously unexpected contaminated land or asbestos will be managed and disposed of in accordance with an Unexpected Contaminated Lands Finds Protocol and SWMP. Any contaminated waste will be handled, separated, contained, managed and disposed of as soon as practicable to prevent migration and further contamination.	Construction	Principal Contractor/ Subcontractors
W14	Classify waste that cannot be reused or recycled for disposal at approved disposal facilities in accordance with EPA's *Waste Classification Guidelines (2014)*.	Construction	Principal Contractor/ Subcontractors
W15	Maintain all waste sampling and classification results, and waste transfer dockets / receipts for the life of the project. Provide any required records and registers in relation to this WMP in support of Section A Site Audit Statement provisions.	Construction	Principal Contractor/ Subcontractors
W16	Provide receptacles including rubbish skips in appropriate locations on site and ensure a contractor is commissioned to regularly remove/empty the bins.	Construction	Principal Contractor/ Subcontractors
W17	Where possible and fit for purpose, spoil will be beneficially reused as part of the Project before alternative spoil disposal options are pursued.	Construction	Principal Contractor/ Subcontractors
W18	Place chemical wastes in sealed drums in designated, bunded areas. Prior to transportation of such material for disposal, check whether the waste requires waste tracking in accordance with the Waste Regulations.	Construction	Principal Contractor/ Subcontractors

No	Management Measure	Implementation	Responsibility
W19	Dewatering and water reuse will be undertaken in accordance with the dewatering and water reuse protocol (Appendix F) of the SWMP. Water that is surplus to construction needs or water that is encountered during works which cannot be reused on site or released in accordance with the POEO Act (i.e., it does not meet release criteria or cannot be treated in situ), will be transported by a licenced transporter to a licenced facility for disposal.	Construction	Principal Contractor/ Subcontractors
W20	Dispose of liquid wastes by tankering off-site to a suitably licensed facility.	Construction	Principal Contractor/ Subcontractors
W21	No burning of disturbed vegetation or green waste	Construction	Principal Contractor/ Subcontractors
W22	Ensure waste truck loads are covered and tailgates secure prior to leaving site.	Construction	Principal Contractor/ Subcontractors
W23	Ensure all trucks transporting waste off-site are appropriately licensed to carry the materials to appropriately licensed waste facilities. Record waste type and destination on a waste manifest/docket system and in the Disposals Register	Construction	Principal Contractor/ Subcontractors
W24	Incidents associated with waste will be managed in accordance with Section 7 of the CEMP.	Per Event	Principal Contractor/ Subcontractors
W25	Undertake monitoring of works in accordance with Section 5	Construction	Principal Contractor

5. MONITORING AND INSPECTIONS

The LECH Manager (or delegate) shall coordinate environmental inspections and monitoring of works during the conduct of construction activities to check and record compliances with works procedures and this WMP.

To minimise the impacts of waste management to the environment and local community the following monitoring measures will be utilised:

All construction activities will be performed in accordance with relevant Procedure and SWMS.

The Nacap Environmental advisor will monitor all works and be available to provide advice and direction on the adequacy and requirement for waste management control measures throughout construction.

Inspections of pipeline alignment will include daily site inspections by Site Supervisors, and weekly site inspection by environmental personnel during construction as a minimum. The frequency of these inspections may be increased to reflect the risk associated with potential impacts during adverse weather conditions or during specific construction activities to assess the effectiveness of waste management measures namely:

- Adequacy of disposal containers, non-containment and storage capacity.
- Capacity against servicing frequency.
- Review and compliance against waste management strategy, and
- Waste management performance and opportunities for improvement.

Non-compliance and incident reporting will be reported to and regulated by management to ensure prompt rectification and change management

Site inspections will be recorded (along with actions and issues observed) and actioned appropriately within agreed timeframes. Waste related inspections/monitoring will be recorded as part of Environmental Inspection Checklist. Additional requirements and responsibilities in relation to inspections are documented in Section 8 of the CEMP.

6. RECORD KEEPING AND REPORTING

6.1. Record Keeping

The Project shall maintain a documentation and record system in support of this WMP and monthly Project HSE reporting requirements to enable review and auditing of environmental management systems and procedures. Additionally, records will be retained in support of Agency and Regulatory reporting in accordance with CoA, particularly in meeting any EPA assurance confirming the suitability of the site for its intended use.

The following records are expected to be generated in relation to Waste management and monitoring:

- Visual monitoring and environmental inspection records
- Waste sampling, testing and classification records
- Waste tracking records
- Disposals Register (Appendix B)
- Materials Tracking Register (Appendix C)
- Stakeholder discussion records
- Induction, training and awareness records
- Site and construction activity specific records and registers
- Reporting of Environmental Incident, non-conformances and corrective actions
- Audit reports, and
- Complaints.

6.2. Reporting

Daily, Weekly, Monthly and Annual Reporting will include information on relevant environmental data including waste and commentary as generated in support of incident and complaint management, regulatory and contractual requirements.

7. REVIEW AND IMPROVEMENT

Section 8.6 and 8.7 of the CEMP describes the process for the review and continual improvement of project documents including this WMP.

Continual improvement of this WMP will be achieved by ongoing evaluation of environmental management performance against environmental policies, objectives and targets, for the purpose of identifying opportunities for improvement.

The continual improvement process is designed to:

- Identification of opportunities for improvement of environmental management and performance
- Identification through incident investigation the cause or causes of non-conformance,
- Development of corrective and preventative measures to address non-conformance and process deficiency
- Assessment of the effectiveness of corrective actions
- Documentation and communication of change and process improvements, and

- Any updates to the WMP as described above.

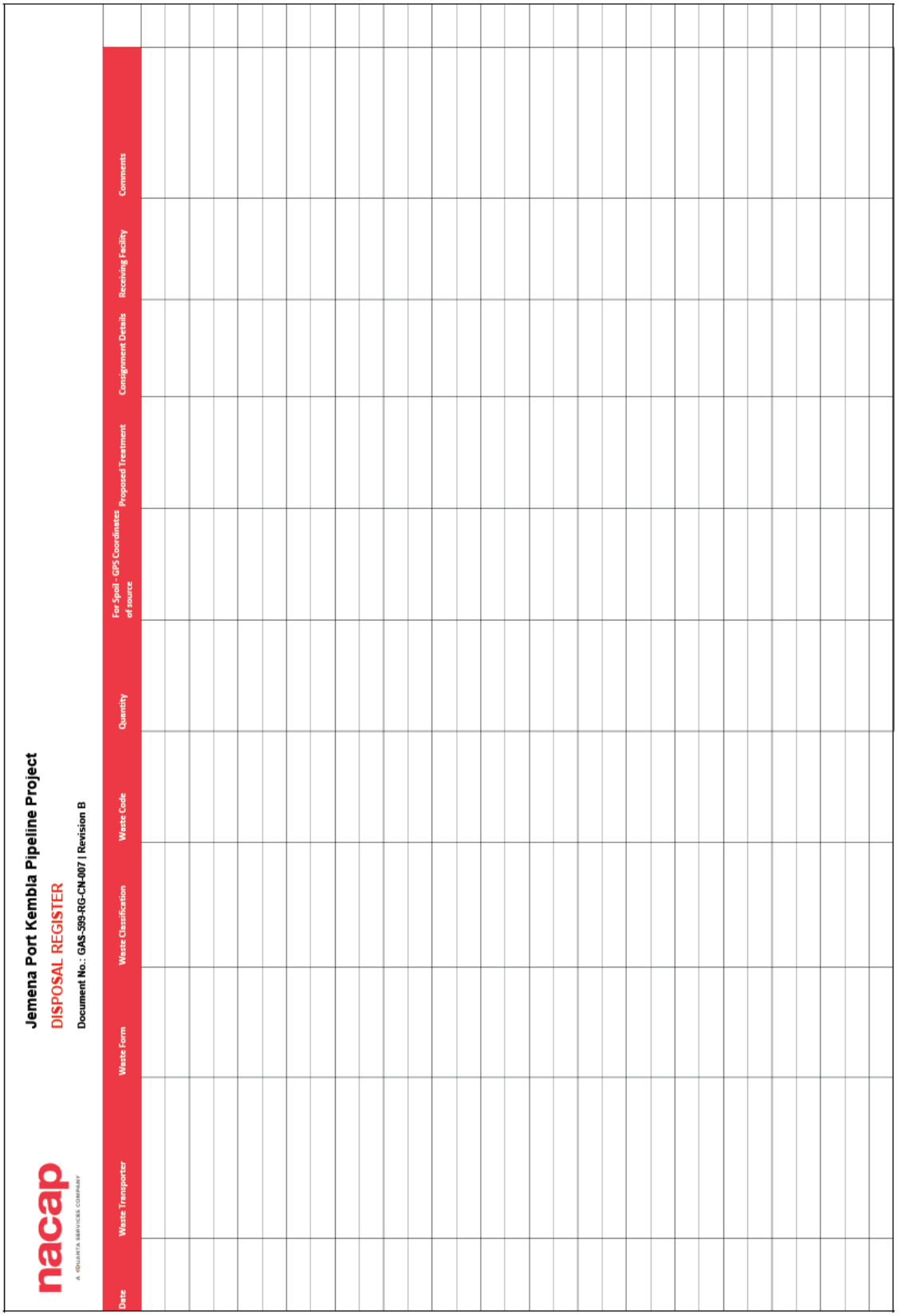
A copy of any updated plan and changes will be distributed to all relevant stakeholders and regulatory authorities. Any changes to work practices arising from document review will be communicated via pre-start alerts, toolboxes, SWMS review and or site specific awareness sessions.

APPENDIX A CONSULTATION RECORD

The following table provides a detailed record of the consultation activities associated with this Plan.

Stakeholder	Date Sent	Send Method	Due Date	Date Received	Comments
Wollongong City Council (WCC)	30/08/2022	Email	13/09/2022	10/11/2022	Completing review, however, note that the deadline has passed.
Sydney Trains	30/08/2022	Email	13/09/2022	15/09/2022	No Comments
Transport for NSW	30/08/2022	Email	13/09/2022	21/09/2022	No Comments

APPENDIX B DISPOSALS REGISTER



APPENDIX C MATERIALS TRACKING REGISTER

nacap
A QUANTA SERVICES COMPANY

Jemena Port Kembla Pipeline Project

MATERIALS TRACKING REGISTER

Revision A

Date	Material Excavation Location	Material Type/Class	Stockpile Identifier	Estimated Volume	Proposed Use	Re-Use Destination	Date of Movement	Re-Use Authorised	Comments