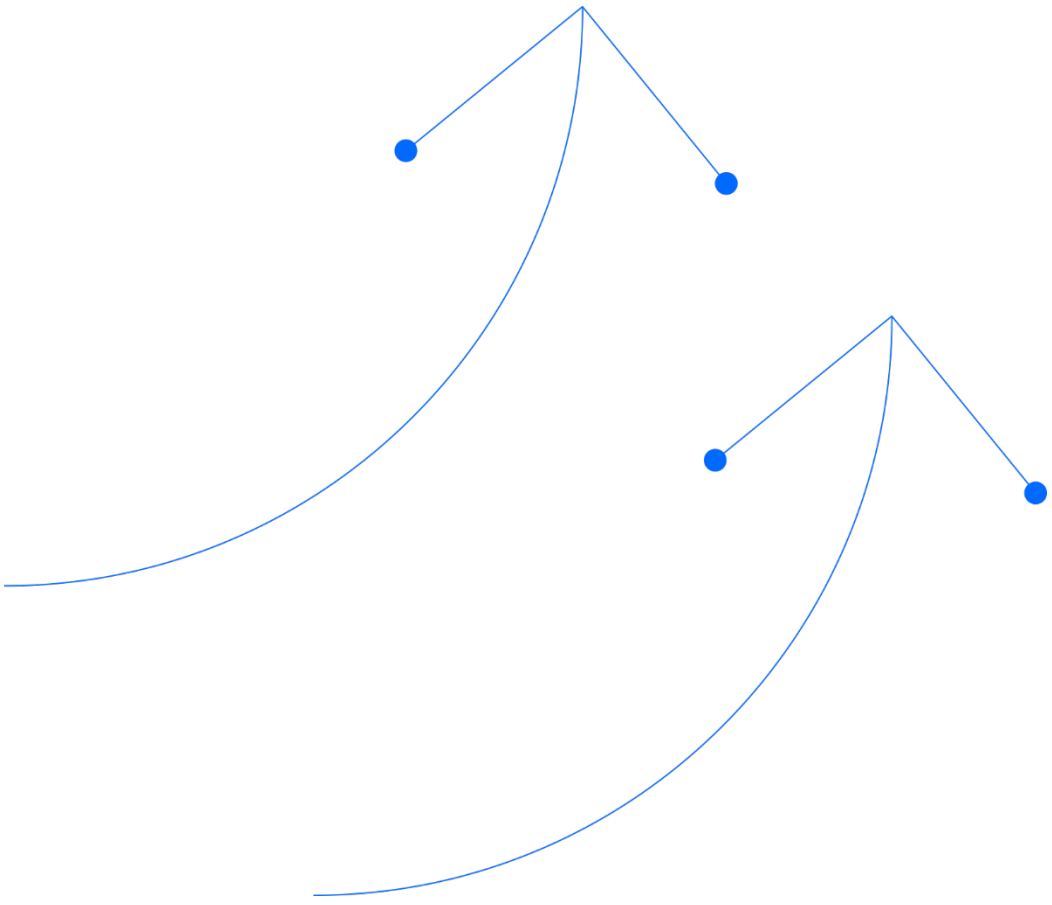
STAGE 1 – PRELIMINARY WORKS CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

November 2023



Project name		Hunter Gas Pipeline					
Document title		Stage 1 – Preliminary Works Construction Environmental Management Plan					
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S3	0	B Anderson D Scott GHD	E Dunlop Santos	On file	T Dunn Santos	On file	05/09/2023
S4	1	B Anderson D Scott GHD	E Dunlop Santos	On file	T Dunn Santos	On file	25/10/2023
S4	2	D Scott GHD	E Dunlop Santos	On file	T Dunn Santos	On file	30/11/2023

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Terms and abbreviations

Abbreviations	Terms
APGA	Australian Pipelines and Gas Association
AHIMS	Aboriginal Heritage Information Management System
CEMP	Construction environmental management plan
CMA	Catchment Management Authority
CNMP	Construction Noise Management Plan
CTMP	Construction Traffic Management Plan
CLM	*Contaminated Land Management Act 1997*
CoA	Conditions of Approval
DECC	Former Department of Environment and Climate Change
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
DIPNR	Former Department of Infrastructure, Planning and Natural Resources
EA	Environmental assessment
EMS	Environmental Management System
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environment Protection Authority NSW
HGP	Hunter Gas Pipeline
HSE	Health, safety, and environment
LGA	Local government area
Ltd	Limited
NSW	New South Wales
PPE	Personal Protective Equipment
POEO Act	*Protection of the Environment and Operations Act 1997*
Pty	Proprietary
QHGP	Queensland Hunter Gas Pipeline
RMS	Roads and Maritime Services
SDS	Safety data sheets
SoC	Statement of Commitment
SSI	State Significant Infrastructure
WMP	Water Management Plan

1 Introduction

1.1 Background

Hunter Gas Pipeline Proprietary Limited (Pty Ltd) (Santos) has approval to construct a gas transmission pipeline between Wallumbilla in Queensland (500 kilometres west of Brisbane) to Newcastle in New South Wales, herein referred to as the Hunter Gas Pipeline (HGP). The HGP will be buried for its entire length and will be identified with line-of-sight markers positioned clearly on the pipeline easement. Limited facilities such as scraper stations, isolation valves, metering stations and cathodic protection units will be the only infrastructure features above ground.

For the NSW portion of the pipeline, the project was gazetted a Part 3A project under the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) on 18 December 2007 and a critical infrastructure project on 13 June 2008. An Environmental Assessment (EA) for the Project was prepared by Manidis Roberts in September 2008 with project approval granted on 11 February 2009 (MP 06_0286). The approval was subsequently transitioned from Part 3A project to State Significant Infrastructure (SSI) project on 20 July 2018 and declared a Critical SSI project pursuant to Clause 5, Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017.* A request to modify the conditions of approval (CoA) was submitted on 18 October 2018 and subsequently approved on 17 October 2019.

The HGP will be constructed in three stages. Stage 1 of the project is early works and will involve the construction of temporary laydown yards at multiple strategic locations along the proposed HGP alignment. These laydown yards will be utilised to securely store construction equipment, pipe, and other materials, as they become available to Santos. Access to and from each laydown yard will also be constructed as required. Site offices will be constructed on the laydown yards or, where existing buildings are present on the property, these may be utilised by the project team to support material logistics coordination, survey, and land access activities to finalise the 30 metre easement. Stage 1 will include the use of the laydown yards until the commencement of Stage 2. The laydown yards will continue to be used during Stage 2 and will be managed during Stage 2 in accordance with the Stage 2 Construction Environmental Management Plan (CEMP).

1.2 Purpose of this report

This CEMP has been prepared to outline the environmental management and mitigation measures to be implemented for Stage 1 activities at 'Preliminary Works at Site 1' located at lot on plan 1/596894, 40 Nicholsons Lagoon Rd, Quipolly, NSW 2343.

As additional preliminary works sites are confirmed along the pipeline route and the necessary site investigations are completed, this CEMP will be updated to include these sites.

The construction works for subsequent project stages will be managed by separate CEMPs.

This CEMP was developed considering the following approval documents, CEMP guidelines and other relevant Project documents:

- CoA MP 06_0286 as modified (Mod 1)
- The EA (as defined by the Conditions of Approval MP 06_0286):
- Queensland Hunter Gas Pipeline Environmental Assessment (Manidis Roberts 2008) and Submissions Report for the Queensland Hunter Gas Pipeline (November 2008) as modified by the:
- Submissions Report for the Queensland Hunter Gas Pipeline (November 2008); and
- Request to modify the approved project, dated 18 October 2018, including the associated *Response to Submissions* dated 27 December 2018 and *Additional Information* provided to the Department dated May 2019.
- Environmental Management Plan Guideline, Guideline for Infrastructure Projects (Department of Planning Industry and Environment (DPIE) 2020)
- Australian Pipelines and Gas Association Ltd (APGA) Code of Environmental Practice – Onshore Pipelines (APGA 2022).

This CEMP applies to all activities associated with the establishment and use of the Preliminary Works Site 1 until the commencement of Stage 2. All site personnel must comply with the requirements of this CEMP.

The CEMP must be approved by the Planning Secretary prior to the commencement of construction. The construction contractor may prepare and implement additional, site-specific environmental management documentation, inclusive of procedures, protocols, and work instructions. Where this is the case, these documents must be compliant with this CEMP.

1.3 CEMP objectives

This CEMP has been developed to meet the following objectives:

- Describe the environmental setting and sensitivities of Preliminary Works at Site 1
- Identify the regulatory framework applicable to Stage 1
- Identify the potential environmental impacts associated with the establishment and use of Preliminary Works at Site 1
- Describe the mitigation measures required to be implemented to manage the potential environmental impacts
- Allocate responsibilities for the implementation and management of the CEMP
- Identify the monitoring, reporting and review requirements for the CEMP.

1.4 Structure of the CEMP

The CEMP sets out the details required by CoA 6.2 and provides environmental management requirements to address the objectives in Section 1.3. The structure of this CEMP is as follows:

- Section 1: Outlines the context, scope, purpose, objectives and consultation requirements for the CEMP
- Section 2: Provides an introduction to the project and the proposed Stage 1 activities
- Section 3: Outlines the statutory provisions relevant to the management of the environment as part of Stage 1
- Section 4: Summarises the key aspects of the Environmental Management Strategy for the Project
- Section 5: Details the environmental risk assessment, the relevant environmental aspects and identified environmental controls for the Stage 1 activities
- Section 6: Describes the processes for monitoring the implementation of the CEMP, continuous improvement and review
- Appendix A: Provides a compliance matrix of commitments from the various assessment and approval documents relevant to Stage 1 activities.

1.5 Relevant sub-plans to the CEMP

The CoA require three (3) CEMP sub-plans to be developed:

- Construction Noise Management Plan (Appendix D)
- Construction Traffic Management Plan (Appendix E)
- Water Management Plan (Appendix F).

In addition, an Unexpected Finds Protocol (Appendix B) and Contingency Plan for pollution events (Appendix C) have been developed to support the CEMP.

1.6 Consultation

The revised Statement of Commitments (SoC) (SoC-CM1) requires the CEMP to be prepared in consultation with DECC, DPI, DWE, DoL[1] and relevant CMAs. A copy of the CEMP and sub-plans were provided to the government agencies and stakeholders on the 20 September for comment and feedback has been incorporated into the revised plans as identified in Table 1.1.

Table 1.1 – Consultation for CEMP and sub-plans

Agency /stakeholder	Feedback	Where addressed
Liverpool Plains Shire Council	Identified approval is needed, a S138 application needs to be applied for through the NSW Planning Portal	Section 3.3 and CTMP (Appendix E) has been updated to include the S138 application.
	Water usage – LPSC does have a stand for supply in the industrial estate, however water restrictions may impact availability/volume should they be introduced	Risk of water restrictions and the potential need for additional water sources has been described in Section 2.2.5.
	The truck suggested, 25m <50t, would appear to be a restricted access vehicle (RAV). Permits will be needed through NHVR for any RAV. This is referred to in other documents as well	The requirement for Heavy Vehicle National Law (NSW) exemption notice has been incorporated in the in Section 3.3 and CTMP (Appendix E).
	No commentary on ensuring no damage to Council's road infrastructure in line with CoA 3.11. Particularly as Nicholsons Lagoon Road is unsealed, with deliveries there is a risk of increased damage to the road compared to normal usage.	Dilapidation surveys will be completed in consultation with Liverpool Plains Shire Council as detailed in the CTMP (Appendix E).
NSW DPI Agriculture	The CEMP is thorough. In terms of agricultural land, the main concerns are the risk of biosecurity breach into and out of the site and impacts on surrounding holdings. We suggest expanding 5.2.1 to include an agricultural biosecurity management plan that extends to pests, weeds, and diseases. The local Lands Services Office can assist with endemic pest species and their management.	A new table for biosecurity mitigation measures table has been incorporated in Section 5.2.1.

[1] Contemporary Government Departments and agencies are: Department of Primary Industries (DPI) Fisheries, DPI Agriculture, Department of Planning and Environment (DPE) Water, Heritage NSW, DPE: Biodiversity, Conservation and Sciences Directorate (BCS), Crown Lands, Local Land Services and Office of Energy and Climate Change.

2 Works description

2.1 Site locality

The site is located at lot on plan 1/596894, 40 Nicholsons Lagoon Rd, Quipolly, NSW 2343, about 65 kilometres southwest of Tamworth and 20 kilometres northwest of the township of Quirindi in the Liverpool Plains Local Government Area (refer Figure 2.1). The land is classified as RU1 and has been cleared for the purpose of primary production, being dominated by highly disturbed, non-native pastures. Land surrounding the site is also used for primary production.

The Preliminary Works Site 1 has been located:

- to avoid crossing or disturbing watercourses, clearing native vegetation, flora and fauna habitat, as well as maximising the distance to sensitive receptors, and
- to be adjacent to the approved HGP corridor as well as major transportation routes, including existing major highways and rail yards.

Santos HUNTER GAS PIPELINE

Figure 2.1

Site locality in relation to local townships

N

0 550 1,100

Metres

Coordinate System:
GDA 1994 MGA Zone 56
Datum: GDA 1994

9/5/2023

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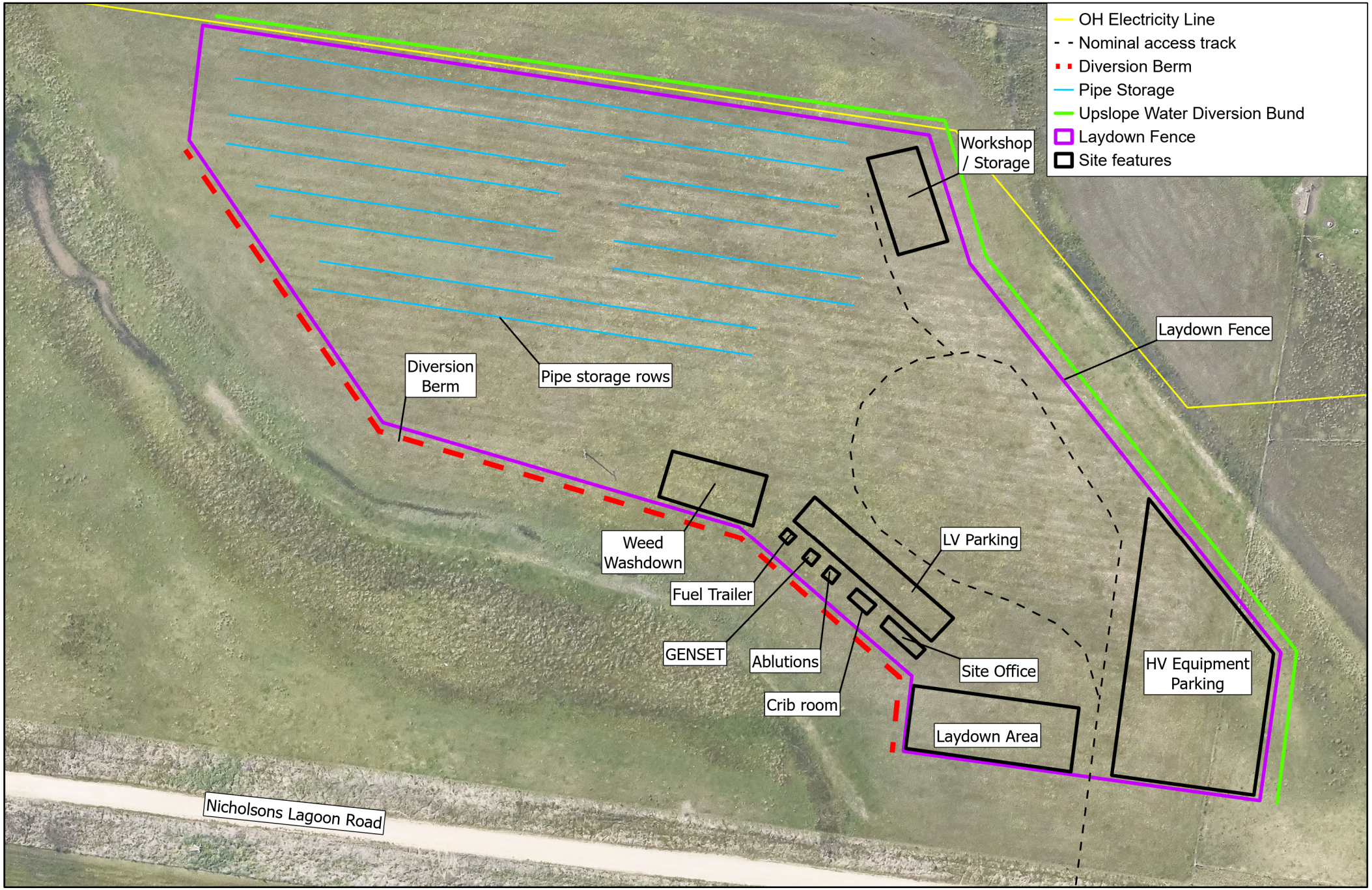
2.2 Preliminary works site establishment

Stage 1 works involve the temporary establishment and use of Preliminary Works Site 1. The preliminary works site will be used primarily for equipment and machinery storage, pipe storage and will house a site office. The total footprint is approximately 3.2 ha comprised of the laydown area and erosion and sediment control measures. A new short access track off Nicholsons Lagoon Road will also be constructed which will provide a single point of entry to the site. An existing house and sheds are present on the property, which may be used as additional site office space or equipment and machinery storage.

A site layout is shown below in Figure 2.2. This layout outlines the proposed arrangement of the site including access, parking, pipe racks, site buildings and erosion and sediment controls, as well as known site features which will be managed during construction and use of the site.

Examples of materials that will be supplied to, and stored within, the preliminary works site include but are not limited to:

- Pipeline and pipeline bends
- Valves, studs, gaskets, pipe stands/supports
- Diesel fuel (up to 10,000L)
- Consumables (e.g., welding rods, grinding discs, cleaning supplies)
- Two-part epoxy for coating of pipeline joints or tape wrap
- Garnet (or equivalent) for grit blasting welded joints
- Battery, power and hand tools.



Santos HUNTER GAS PIPELINE

Figure 2.2

Indicative Preliminary Works Site 1 Layout

N

0 20 40

Metres

Coordinate System:
GDA 1994 MGA Zone 56
Datum: GDA 1994

9/5/2023

Path: N:\AU\Sydney\Projects\21\12539250\GIS\Maps\Deliverables\12592727_CEMP\12592727_CEMP_V2.aprx

2.2.1 Construction activities

The construction of the preliminary works site will consist of the following key activities:

- Clearing and grading the site including the associated access track
- Stockpiling of topsoil and subsoil for reuse across the site
- Bulk earthworks to specified cut/fill levels
- Placement and compaction of gravel across the entire site to provide a hardstand area
- Installation of erosion and sediment controls
- Erection of perimeter fencing to separate construction areas from publicly accessible areas
- Erection of public information signage on the perimeter fence
- Installation of a shaker grid at entrance to site
- Installation of pipe racks, or similar for the storage of piping
- Installation of temporary office and power including diesel generator (if required) and ablution facilities
- Installation of workshop facilities and covered work areas (nominally 20/40ft shipping container pairs with dome shelter or equivalent)
- Installation of a self-contained weed washdown facility and associated water storage tank(s).

The proposed location and layout of the Preliminary Works Site 1 is shown in Figure 2.2. The site layout is indicative only and may be adjusted by the contractor during the construction process. The construction of the site will take up to three (3) months dependent on weather conditions.

2.2.2 Construction workforce

Due to the small scope of works, the construction workforce will be minimal (up to 10) and short-term.

Santos will engage contractors to undertake the construction activities. These contractors will be housed in the local area, and as such, no construction camp sites will be developed for Stage 1 activities.

2.2.3 Construction hours

Construction works will adhere to the approved construction hours:

- Monday to Friday: 7am to 6pm
- Saturday: 8am to 1pm
- Sunday and public holidays: No work.

The construction hours specified do not apply in the event of a direction from police or other relevant authority for safety reasons, or to avoid immediate environmental harm.

2.2.4 Traffic management

Construction of the preliminary works site will involve:

- Initial delivery of construction plant and equipment (e.g., graders, excavators, bulldozers)
- Delivery of materials required for bulk earthworks (e.g., water, rock, gravel)
- Delivery of site facilities
- Removal of construction plant from site
- Daily movements associated with construction workers and deliveries to site.

During construction of Preliminary Works Site 1, up to six (6) light vehicles and 10 heavy vehicles are expected to access the site per day. The largest vehicle that is expected to be utilised is 25m semi-trailer (less than 50 tonnes).

Potential traffic issues, mitigation and management measures covering both the construction and use of Preliminary Works Site 1 are addressed in the Stage 1 CTMP (Appendix E).

2.2.5 Utilities

Gas

No gas will be required during construction.

Electricity

Power will be generated by on site diesel generators.

Telecommunications

Communications systems will be through the use of mobile or satellite telephones for selected personnel.

Water

Water will be required during construction for earthworks and dust control. Water will be sourced from an approved Liverpool Plains Shire Council water supply point managed via the nominated contractor and trucked to site. The amount of water required for construction will be dependent on the soil types (dusty, rocky etc.) and weather conditions but is conservatively estimated to be approximately 3ML. Santos acknowledge that water restrictions may apply during the course of Stage 1 works which could impact on the volumes available to the project. Alternative licenced supplies will be identified should the Council water supply not provide sufficient water for the works.

A stillage of bottled water will be provided onsite for potable use.

Sewage

A self-contained ablutions facility will be installed. Storage tanks will be pumped out by licensed contractors as needed and the effluent disposed of at an existing sewerage system in the region which is licensed to accept that waste.

2.3 Preliminary works site use

2.3.1 Activities

Stage 1 includes the use of the preliminary works site until the commencement of Stage 2[2]. The preliminary works site will be used by the project team to support material logistics coordination, survey, and land access activities to finalise the 30 metre easement. Activities will include:

- Deliveries of pipe sections and other materials, plant and equipment
- Storage of plant and equipment
- Storage of piping and other materials required for pipeline planning, survey or construction
- Use of temporary workshop and offices by the project team
- Use of the weed washdown facility.

The site is expected to be used intermittently, with periods of activity, followed by periods of low or no activity.

2.3.2 Workforce

A maximum daily workforce will be six (6) personnel on site.

2.3.3 Hours

The preliminary works site will be used during the following approved hours:

- Monday to Friday: 7am to 6pm

[2] The continued use of the site during Stage 2 will be managed in accordance with the Stage 2 CEMP

- Saturday: 8am to 1pm
- Sunday and public holidays: No work.

The hours specified do not apply in the event of a direction from police or other relevant authority for safety reasons, or to avoid immediate environmental harm.

2.3.4 Traffic management

During the use of the site, up to six (6) light vehicles would visit the site per day. It is expected no more than three (3) heavy vehicles per day and 10 per month will visit the site for delivery of pipe sections, materials, plant and equipment. The largest vehicle that is expected to be utilised is 25 m semi-trailer (less than 50 tonnes).

2.3.5 Utilities

Gas

No gas will be required during the use of the site.

Electricity

Power will be generated by on site diesel generators.

Water

Water for use within the site office, ablutions facility and weed washdown facility during ongoing use of the site will be sourced from an approved Liverpool Plains Shire Council water supply point or an alternative licenced supply, managed via the nominated contractor and trucked to site and stored in a water tank(s).

A stillage of bottled water will be provided onsite for potable use.

Sewage

Storage tanks associated with the self-contained ablutions facility will be pumped out by licensed contractors as needed and the effluent disposed of at an existing sewerage system in the region which is licensed to accept that waste.

3 Regulatory requirements and criteria

This section outlines the regulatory requirements for establishment of the Preliminary Works Site 1 under Stage 1 of the Project.

3.1 Legislative framework

Legislative requirements and guidelines relevant to the Stage 1 works are outlined in Table 3.1. The requirements related to noise, traffic and soils and water are presented in their respective management plans in Appendix D, Appendix E and Appendix F.

Table 3.1 – Applicable legislative framework for the project

Legislation	Function	Applicability
Environmental Planning and Assessment Act 1979	The *Environmental Planning and Assessment Act 1979* (EP&A Act) provides the statutory basis for planning and environmental assessment in New South Wales. The Minister for Planning, statutory authorities and local councils are responsible for implementing the EP&A Act. The EP&A Act provides the framework for environmental planning and development approvals and includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the decision-making process.	Project approval under the *Environmental Planning and Assessment Act 1979* was granted on 11 February 2009 (MP06_0286). A request to modify the conditions of approval (CoA) was submitted on 18 October 2018 and subsequently approved on 17 October 2019. The conditions of MP06_0286 have been incorporated into this CEMP and will be implemented during construction and use of the preliminary works site. The project is also a designated Critical SSI project.
Heritage Act 1977	To protect natural, cultural, and built heritage in NSW by allowing heritage items or places to be listed on the State Heritage Register, and for interim heritage orders to be made to protect heritage items or places.	There are no known relics located within the site. Procedures for unexpected finds of historic heritage items are provided in Appendix B.
National Parks and Wildlife Act 1974	To administer national parks and reserves in NSW, and to protect and conserve flora and fauna, Aboriginal places, and Aboriginal objects.	There are no known Aboriginal sites or artefacts identified within the proposed disturbance footprint. Procedures for unexpected finds of heritage items are provided in Appendix B.
Protection of the Environment (Operations) Act 1997	The principal legislation regulating pollution and waste management in NSW is the *Protection of the Environment Operations Act 1997* (POEO Act). The EPA and other prescribed regulatory agencies must be notified immediately of pollution incidents causing or threatening material harm to the environment.	The Project must immediately report pollution incidents that cause or threaten material harm to the environment to the EPA via the Environment Hotline. Refer to Section 6 of the EMS for Incident Management procedures.

Legislation	Function	Applicability
Biodiversity Conservation Act 2016 (BC Act)	This Act includes provisions for the Biodiversity Offsets Scheme, which establishes a framework to avoid, minimise and offset impacts on biodiversity from development and clearing. The Biodiversity Values Map identifies land with high biodiversity value that is particularly sensitive to impacts from development and clearing. This map and the Biodiversity Assessment Method are used to determine if certain thresholds are triggered and if the Scheme will apply to development.	No threatened flora or fauna species listed under the BC Act and/or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were observed during the field survey within or in close proximity to Preliminary Works Site 1, and no clearing of native vegetation is proposed for construction and use of Preliminary Works Site 1. Therefore, the Biodiversity Offsets Scheme does not apply. The Biodiversity Assessment Method was used to conduct the field survey of the Preliminary Works Site 1.
Biosecurity Act 2015	The NSW Biosecurity Act 2015 regulates pests, diseases and weeds in NSW. The primary object of the Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers.	The project will implement hygiene, control or eradication measures to minimise the potential for the spread of weeds, pests and pathogens. Refer to Section 5.2.1.
Waste Avoidance and Resource Recovery Act 2001 (WARR Act)	The WARR Act establishes a hierarchy of waste management (avoid, recover, dispose) encouraging efficient use of resources and minimising waste.	Waste materials generated during the Project will be managed in accordance with the principles of the waste management hierarchy referred to in the WARR Act.
Waste Classification Guidelines (NSW EPA 2014)	To help waste generators classify the wastes they produce, the NSW Environment Protection Authority (EPA) has developed Waste Classification Guidelines which are a step-by-step process for classifying waste.	The Project will generate waste which will be classified and disposed of in accordance with the relevant legislation. Refer to Section 5.2.9 for measures to manage waste.
AS1940: 2017 The storage and handling of flammable and combustible liquids	Provides requirements for the planning, design, construction, and safe operation of all installations in which flammable or combustible liquids are stored or handled.	Management measures for the storage and handling of flammable and combustible liquids e.g., petrol and diesel, in Section 5.2.7 have been developed in accordance with the standard.
Australian Code for the Transport of Dangerous Goods by Road & Rail (2020)	The Australian Dangerous Goods Code sets out the requirements for transporting dangerous goods by road and rail. The Code details the requirements for: • classification of substances • packaging and performance testing • use of bulk containers, IBCs, freight containers and unit loads • marking and placarding • vehicle requirements • segregation and stowage • transfer of bulk dangerous goods • documentation	Management measures for the transport of dangerous goods e.g., diesel, in Section 5.2.7 have been developed in accordance with the code.

Legislation	Function	Applicability
	• safety equipment • procedures during transport emergencies.	
Rural Fires Act 1997	The NSW *Rural Fires Act 1997* (Rural Fires Act) facilitates the prevention, mitigation and suppression of bush and other fires in local government areas and parts of the State considered to be rural fire districts. The Project is located partially on Bush Fire Prone Land (BFPL).	Preliminary Works Site 1 is on bushfire prone land (Vegetation Category 2). The Project is required to take precautions to minimise the risk of bushfires starting or spreading on site. Refer to Section 5.2.7.

3.2 Conditions of Approval

This CEMP has been prepared in accordance with the CoA for the project. The relevant CoA to the preparation of this CEMP are outlined in Table 3.2.

A compliance matrix is presented in Appendix A providing a review of all CoA and SoC and EA mitigation measures relevant to preliminary works site 1 and how they have been addressed in this document or other Stage 1 sub-plans.

Table 3.2 – Relevant CoA for the preparation of this CEMP

Condition number	Condition	Where addressed
2.10	The project shall be constructed in accordance with the *APGA Code of Environmental Practice – Onshore Pipelines*.	Section 1.2 and 5.2
6.1	To ensure the studies, strategies and plans for the project are updated on a regular basis and incorporate any required measures to improve the environmental performance of the project, the Proponent may submit revised studies, strategies or plans required for the project under the conditions of approval at any time. With the agreement of the Secretary, the Proponent may also submit any study, strategy or plan required under the conditions of this approval on a staged basis. The Secretary may approve a revised strategy or plan required under the conditions of approval, or the stage submission of these documents, at any time. With the approval of the Secretary, the Proponent may prepare the revised or staged strategy or plan without undertaking consultation with all parties nominated under the applicable condition in this approval	This document
6.2	Prepare a Construction Environmental Management Plan (CEMP) to the satisfaction of the Secretary. This plan must outline the environmental management practices and procedures to be followed during construction of the project. The CEMP shall be consistent with Guideline for the Preparation of Environmental Management Plans (DIPNR 2004), or its latest version, and shall include, but not necessarily be limited to:	This document
6.2 a)	A description of all relevant activities to be undertaken on the site during construction;	Section 2

Condition number	Condition	Where addressed
6.2 b)	Details of the areas designated for the erection of public information signage;	Section 2.2.1
6.2 c)	Details of any construction camp sites and the management of these sites;	Not applicable to Stage 1
6.2 d)	Details of the measures to be employed to minimise soil erosion and trench compaction;	Measures to minimise soil erosion as included in Section 5.1 of Appendix F. Trench compaction is not applicable to Stage 1.
6.2 e)	Details on potential occurrence of expansive soils and saline areas along the proposal route and management and mitigation measures;	Not applicable to Stage 1 as this is referring to soil impacts on the pipeline asset and no pipeline installation is to occur for Stage 1. However, Section 5.1.2 of Appendix F includes amelioration of sodic or saline soils at Preliminary Works Site 1.
6.2 f)	Details of measures to be installed to separate construction areas from publicly accessible areas;	Section 2.2.1
6.2 g)	Details of the protocols to be implemented to minimise impacts to Aboriginal cultural heritage sites;	Section 5.2.5
6.2 h)	Statutory and other obligations that the Proponent is required to fulfil during construction including all relevant approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;	Section 1.6 Section 3 EMS Section 2 and 3
6.2 i)	Details of how the environmental performance of the construction works will be monitored, and what actions will be taken to minimise environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:	
	i) measures to monitor and minimise dust emissions;	Section 5.2.4
	ii) measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters during construction activities;	Section 5.2.8 Section 5.2.11
	iii) measures to monitor and minimise noise emissions during construction works;	Section 5.2.3
	iv) measures to monitor and minimise air emissions during construction to ensure that air emissions;	Section 5.2.4
	v) measures to minimise the impact of construction on local flora and fauna, consistent with the mitigation measures described in section 9.4 and Appendix D of the documents referred to under condition 1.1a) , including minimisation of vegetation clearing; methods to minimise unintended impacts on vegetation to be retained and fauna; details of the rehabilitation of cleared areas; topsoil, seed and vegetative material re-use initiatives to be employed; and measures to be undertaken to control weed spread;	Section 5.2.1

Condition number	Condition	Where addressed
	vi) measures to monitor and minimise the impacts on indigenous heritage values on site including involvement of the relevant Local Land Councils, Committees and Traditional Owner Groups;	Section 5.2.5
6.2 j)	The additional plans listed under condition 6.3 of this approval	(See below)
6.3 a)	Prepare, as part of the CEMP, a Construction Noise Management Plan.	Appendix D
6.3 b)	Prepare, as part of the CEMP, a Construction Traffic Management Plan.	Appendix E
6.3 c)	Prepare, as part of the CEMP, a Water Management Plan.	Appendix F

3.3 Licences and permits required

For the construction and use of the preliminary works site 1 under Stage 1 of the project, the approvals identified in Table 3.3 are required.

Table 3.3 – Licences and permits required for Stage 1

Licence / permit / approval	Approval authority	Requirement
Driveway permit	Liverpool Plains Shire Council	Section 138 approval is required to connect site access road to Nicholsons Lagoon Rd. Section 138 approvals are applied for through the NSW Planning Portal.
Multi-State Class 1 Load Carrying Vehicle Dimension Exemption Notice 2023 (No.2)	National Heavy Vehicle Regulator	An exemption notice is required for the use of 25m semi-trailers on Nicholsons Lagoon Rd as it is not part of the approved road network for this size of vehicle. Exemption notices are applied for through the NHVR portal.

4 Environmental management strategy

Santos maintains the Hunter Gas Pipeline Environmental Management Strategy (HGP EMS) to:

- Provide the strategic framework for the environmental management of the project
- Identify the statutory approvals that apply to the project
- Describe the role, responsibility, authority, and accountability of all key personnel involved in the environmental management of the project
- Describe the procedures that are to be implemented to:
  - Keep the local community and relevant agencies informed about the progress of the project
  - Receive, handle, response to, record and report complaints
  - Resolve any disputes that may arise during the project
  - Respond to any non-compliances, and
  - Respond to any incidents or emergencies.

The preliminary works site establishment will be conducted in accordance with the policies and procedures described in the project HGP EMS. This covers components such as:

- Section 2: Regulator requirements and approvals
- Section 3: Compliance requirements
- Section 4: Implementation of the EMS including roles and responsibilities
- Section 5: Communication
- Section 6: Incident, non-compliance and emergency response
- Section 7: Complaint management and dispute resolution
- Section 8: Reporting, evaluation and review
- Section 9: Training, awareness and competence.

5 Environmental management

5.1 Risk identification

A preliminary environmental risk assessment was undertaken as part of the EA (Manidis Roberts 2008). This risk assessment identified key environmental issues associated with the construction and operation of the HGP. A review of the environmental risk assessment was conducted in accordance with the principles of AS/NZS ISO 31000:2009 for applicability to the construction and use of Preliminary Works Site 1 as part of Stage 1. The inherent risk of each identified issue has been ranked by identifying the consequences of the impact and the likelihood of it occurring without any controls in place. The probable effectiveness of the proposed mitigation measures is then considered to determine the residual risk of each issue.

The risk rating categories determined through the analysis are summarised in Table 5.1. The consequence and likelihood descriptors are provided in Table 5.2 and Table 5.3 respectively. The risk matrix is provided in Table 5.4. The register of risks for Stage 1 of HGP is provided in Table 5.5.

The construction contractor should review, and update as necessary, the identified environmental risks where there are:

- Changes to the project scope or construction methodology
- Findings from incidents, non-compliances or complaints
- Findings from inspections or audits
- Modifications to the project approval.

Table 5.1 – Risk rating categories

Score	Category	Description
1, 2 or 3	High	Detailed assessment and planning necessary to develop appropriate measures to mitigate and manage the potential impacts.
4 or 5	Medium	Potential impacts can be mitigated through the application of relatively standard environmental management measures.
6	Low	Potential impacts either require no specific management measures or are mitigated adequately through other working controls (such as detailed design requirements, normal working practice, quality, and safety controls).

Table 5.2 – Consequence definitions

Consequence Category	Definition
Catastrophic	Would result in a major prosecution under relevant environmental legislation or would cause long-term and irreversible impacts
Major	Would result in a fine or equivalent under relevant environmental legislation or would cause medium-term, potentially irreversible impacts
Moderate	Would result in a medium-term, reversible impacts
Minor	Would result in short-term, reversible impacts
Insignificant	Would not result in any impacts

Table 5.3 – Likelihood definitions

Consequence Category	Definition
Very likely	Almost certain to occur in the course of normal or abnormal operating circumstances
Likely	Event is likely to occur in the course of normal operations
Unlikely	Event could occur in the course of normal or abnormal operating circumstances
Very unlikely	Event may occur in exceptional circumstances

Table 5.4 – Risk matrix

	Very likely	Likely	Unlikely	Very unlikely
Catastrophic	1	1	2	3
Major	1	2	3	4
Moderate	2	3	4	5
Minor	3	4	5	6
Insignificant	4	5	6	6

Table 5.5 – Stage 1 environmental risk assessment

Aspect	Risk description	Consequence	Initial Likelihood	Initial Risk Rating	Residual Likelihood	Residual Risk Rating
Biodiversity	Establishment and spread of weeds and disease to environmentally sensitive areas.	Moderate	Unlikely	4	Very Unlikely	5
	Injury to wildlife from collision with construction plant and equipment.	Minor	Unlikely	5	Very unlikely	6
Heritage	Disturbance to previously unidentified items or places of Aboriginal cultural heritage significance.	Major	Unlikely	3	Very unlikely	4
	Disturbance to previously unidentified items or places of historic heritage significance.	Moderate	Unlikely	4	Very unlikely	5
Human amenity	Noise disturbance to local residents and other land users.	Minor	Very likely	3	Likely	4
	Temporary reduction of amenity associated with dust.	Minor	Very likely	3	Likely	4
	Disruption of traffic and transport services during movement of plant, equipment, and materials on the road network.	Minor	Unlikely	5	Very unlikely	6
Socio-economic	Restricting access for individual landholders to their properties.	Minor	Unlikely	5	Very unlikely	6
Land use	Conflicts with existing and future land uses.	Minor	Unlikely	5	Very unlikely	6
Hazards and risks	Damage to property or human health resulting from an emergency incident.	Major	Unlikely	3	Very unlikely	4
	Bushfire from construction activities.	Major	Unlikely	3	Very unlikely	4

Aspect	Risk description	Consequence	Initial Likelihood	Initial Risk Rating	Residual Likelihood	Residual Risk Rating
Surface water	Pollution of surface and groundwater.	Minor	Unlikely	5	Very unlikely	6
	Changes to existing surface flow regimes.	Minor	Likely	4	Likely	4
Infrastructure	Damage to existing infrastructure such as roads.	Minor	Likely	4	Unlikely	5
Waste	Incorrect classification of waste leads to disposal at facility not licensed to accept.	Minor	Likely	4	Unlikely	5
	Excess volumes of waste generated by the project and sent to landfill.	Minor	Unlikely	5	Very unlikely	6
Contamination	Contamination of land through spills of fuels and chemicals.	Minor	Unlikely	5	Very unlikely	6
Geology and soils	Erosion and sediment releases to land.	Minor	Likely	4	Unlikely	5

5.2 Environmental management measures

This section summarises the potential environmental impacts of the preliminary works site establishment and environmental management measures, as identified through the CoA, SoC and EA to be implemented. Appendix A includes a compliance matrix which aligns with the *DPIE 2020 Environmental Management Plan Guideline.* The 'reference' columns in the following sections refer to commitments in the compliance matrix, please refer to Appendix A for further information.

The APGA Code of Environmental Practice – Onshore Pipelines (the Code) provides guidance on environmental management through all phases of a pipeline lifecycle and associated activities such as laydowns. In accordance with CoA 2.10, Preliminary Works Site 1 has been sited and designed in accordance with the code and has been considered in the mitigation measures presented in the tables below.

The construction contractor will be required, as a minimum to comply with identified risk controls (mitigation measures) outlined below.

5.2.1 Biodiversity management

The site occurs within a rural setting and on land zoned for primary production. A field survey across the property was undertaken in June 2023. Preliminary Works Site 1 was found to be predominantly highly disturbed pastureland dominated by exotic species. There were no areas of native vegetation within Preliminary Works Site 1. The approved disturbance area will be clearly delineated on site through fencing and/or flagging. As such, there would be no direct impacts to protected flora and fauna species habitat or TEC listed under the BC Act and/or EPBC Act.

Preliminary Works Site 1 activities have the potential to impact on biodiversity values, including:

- Introduction and spread of weeds, pests and disease, contributing to the degradation of local habitats
- Injury to wildlife from collision with construction plant and equipment.

Preliminary Works Site 1 activities also have the potential to impact surrounding agricultural holdings via biosecurity breaches resulting in the introduction and spread weeds, pests and disease beyond the boundaries of the preliminary works site.

Controls to mitigate potential impacts on biodiversity are provided in Table 5.6 with controls to manage weeds, pests and disease being provided in Table 5-7.

Table 5.6 – Biodiversity mitigation measures

Reference	Action	Timing	Frequency	Records	Responsibility
MA/A2-4.1.13D	Induct all personnel in biodiversity values and their responsibilities in implementing the CEMP.	Pre-construction	Once	Induction records	Construction Supervisor
SoC-B2	Locate equipment storage areas and stockpile areas within existing cleared or degraded lands.	Construction	Ongoing	Site inspection records	Construction Supervisor
CoA-6.2 i) v) EA-11.10-B EA/AH-6.3B	Delineate the approved disturbance footprint on site with flagging or fencing. Limit clearing of vegetation and topsoil to the designated	Construction	Ongoing	Site inspection records	Construction Supervisor

Reference	Action	Timing	Frequency	Records	Responsibility
	footprint required for Stage 1.				
CoA-6.2 i) v) SoC-B5 SoC-B6 EA/AD-6.2D RS/AD-3.6F RS/AD-3.7J	Store excavated material containing weeds away from waterways and stands of existing native vegetation.	Construction	Ongoing	Site inspection records	Construction Supervisor
CoA-6.2 i) v) RS/AD-3.7J MA/A2-4.1.13l	Avoid direct contact with any wildlife. Injured wildlife should only be handled by persons trained in native fauna rescue. Maintain contact details for local WIRES personnel.	Construction and use	Event based	Incident reports	Construction Supervisor

Table 5.7– Biosecurity mitigation measures

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-6.2 i) v) SoC-B5 EA/AD-6.2D RTS-2018-2-19 RS/AD-3.6F RS/AD-3.7J	Remove and dispose of weed material as general solid waste (non-putrescible).	Construction	Ongoing	Site inspection records	Construction Supervisor
CoA-3.15 c) CoA-6.2 i) v)SoC-B5 SoC-B7 EA-9.5-L EA/AD-6.2D RS/AD-3.6F	Monitor and manage WONS and priority weeds in areas disturbed by construction activities for a minimum of two years post completion.	Post construction	Ongoing for 2 years post completion.	Site inspection records	Team Lead – Land Access
CoA-6.2 i) v) SoC-B5 EA/AD-6.1J EA/AD-6.2D RS/AD-3.6F RS/AD-3.7J	Install, operate, and maintain a weed washdown station onsite. Complete pest hygiene inspection forms for project vehicles, plant and equipment. Maintain pest hygiene inspection forms within	Construction and use	Ongoing	Site inspection records Hygiene inspection forms	Construction Supervisor

Reference	Action	Timing	Frequency	Records	Responsibility
	the relevant vehicle during the works or have available online. Dispose of any waste from the station (water or solids) off-site to a licensed facility.				
CoA-6.2 i) v) SoC-B5 EA/AD-6.2D RS/AD-3.6F	Remain on constructed roads, tracks and working areas at all times to minimise contact with off-site vegetation.	Construction and use	Ongoing	Site inspection records	Construction Supervisor
EA/AH-6.6A	Place and compact gravel within preliminary works site to provide an artificial groundcover eliminating ongoing contact of vehicles and machinery with soils.	Construction	Once	Site inspection records	Construction Supervisor
RS/AD-3.6F	Install and maintain erosion and sediment controls as per Section 5.1 of the WMP (Appendix F).	Construction and use	Ongoing	Site inspection records	Construction Supervisor
N/A	Provide neighbouring landholders a contact name and number to raise any biosecurity concerns.	Pre-construction	Once	Register	Team Lead – Land Access

5.2.2 Historic heritage management

No items of historic heritage or potential heritage were identified within the site. The project's activities would apply an avoidance principle to minimise impact on historical heritage. Protocols have been initiated to minimise and avoid impacts to previously unidentified historical heritage across the site. If previously unidentified heritage objects are found, the Unexpected Finds Protocol (Appendix B) is to be implemented.

5.2.3 Noise and vibration management

The existing noise environment of the site is typical of rural areas with low levels of background noise generally comprised of noises associated with rural based human occupation. Noise levels are likely to be influenced by the following:

- The use of equipment and machinery during agricultural activities
- Traffic noise from the Kamilaroi highway; and
- Natural sources such as birds, insects, wind and other meteorological events.

Key noise generating activities from Stage 1 activities with the potential to affect local residents include:

- Clearing, grading and laying of gravel
- Installation of pipe racks, offices, storage facilities and power generation
- Use of the site.

Appendix D provides the Construction Noise Management Plan (CNMP) for noise management and mitigation during the construction and use of the Preliminary Works Site 1.

5.2.4 Air quality management

Local air quality in the vicinity of the site is good and typical of a rural environment with limited emission sources. The main source of emissions around site are from vehicle movements along the surrounding road network and dust generation due to the movement of vehicles over unpaved roads or within properties as part of agricultural activities. Due to the rural nature of the area, there are only a small number of sensitive receivers around the site.

Key potential emissions generating activities from the preliminary works site establishment include:

- Air emissions associated with the combustion of fuel in vehicles, plant, and equipment
- Dust from earthmoving activities, stockpiling of soil materials, laying of gravel and transport on unsealed roads and tracks.

The following sources of greenhouse gas emissions have been identified for the Stage 1 works:

- Use of heavy and light vehicles, plant, and equipment
- Production of energy used on site e.g., diesel generators
- Manufacture of materials used on the project e.g., steel, gravel, site buildings etc..

Given the short duration of construction works and the limited workforce and associated use of vehicles, emissions are not expected to be significant.

The extent of the impact would vary depending upon prevailing wind conditions at a given location and moisture levels in soil.

Dust is not expected to be an ongoing issue during the use of the Preliminary Works Site 1. The site will be gravel capped, minimising the area of exposed earth and vehicle movements on-site will be greatly reduced.

The controls to mitigate identified construction air quality impacts are provided in Table 5.8.

Table 5.8 – Air quality mitigation measures

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-3.6 SoC-A1 EA/AH-6.2A	Remain on constructed roads and tracks at all times.	Construction and use	Ongoing	Site maps	All project personnel
CoA-3.6 SoC-A1 EA/AH-6.3B MA/A2-4.1.16C	Minimise the extent and duration of disturbance by staging works, only disturbing the areas required.	Construction	As required	Site inspection records	Construction Supervisor
CoA-3.6 SoC-A1 MA/A2-4.1.16B	Place and compact gravel within preliminary works site to provide an artificial groundcover and reduce dust and erosion.	Construction	As required	Site inspection records	Construction Supervisor

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-3.6 SoC-A1 EA-11.10-A EA-11.10-F EA/AH-6.2A EA/AH-6.3A EA/AH-6.3D EA-11.10-A	Cease or modify earthmoving activities and reduce driving speeds during periods of high winds, and dry conditions where excess dust is generated.	Construction and use	Ongoing	Site inspection records	Construction Supervisor
CoA-3.6 SoC-A1 EA-11.10-D EA/AH-6.3D MA/A2-4.1.16E	Apply water as required when loading, unloading, compacting, or handling soil materials. Apply water as required to suppress dust on access roads and active work areas when dust is visible.	Construction and use	Ongoing	Site inspection records	Construction Supervisor
CoA-3.6 CoA-3.7 SoC-A1 SoC-A4 EA/AH-6.1A MA/A2-4.1.16D MA/A2-4.1.16I	Conduct regular inspections of construction activities, including dust generation, odour and plant/vehicle exhaust emissions.	Construction	Ongoing	Site inspection records	Construction Supervisor
SoC-A3 EA-11.10-H EA/AH-6.7 MA/A2-4.1.16G MA/A2-4.1.24A	No burning of material onsite, except under the instruction of fire services.	Construction and use	Ongoing	Site inspection records	All project personnel
CoA-1.8 a) SoC-A4 SoC-GG1 EA-11.10-I EA-17.13-A EA/AH-6.1A MA/A2-4.1.9D MA/A2-4.1.16D MA/A2-4.1.21B	Inspect and service plant and vehicles in line with manufacturers recommendations. Stand down vehicles with smoky exhausts (visible for more than 10 seconds) for maintenance.	Construction and use	Ongoing	Vehicle inspections and servicing records	Construction Supervisor
CoA-3.6 SoC-A1 EA/AH-6.2A MA/A2-4.1.21B	Enforce a speed limit of 20 km/h for all vehicles on site	Construction and use	Ongoing	Site inspection records	All project personnel

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-3.6 SoC-A1 EA/AH-6.2D	Cover all loads of spoil and ensure tailgates are sealed prior to leaving site	Construction and use	Ongoing	Site inspection records	Construction Supervisor
CoA-3.6 SoC-A1 EA-11.10-E EA/AH-6.7	Remove silt and other materials from around erosion control structures following any significant rain event to ensure deposits do not become a dust source Install and maintain a shaker grid at the entrance to site to avoid tracking mud onto local roads	Construction and use	Ongoing	Site inspection records	Construction Supervisor
CoA-1.8 a) EA/AH-6.1B MA/A2-4.1.16D	Turn off plant and vehicles when not in use.	Construction and use	Ongoing	Site inspection records	All project personnel

5.2.5 Aboriginal heritage management

A search of *Aboriginal Heritage Information Management System* (AHIMS) in March 2023 indicated there were no registered Aboriginal heritage items within one kilometre of the site.

On 30 August 2023, Santos and representatives of the local aboriginal community completed cultural heritage assessments within the proposed footprint of Preliminary Works Site 1. No culturally significant finds were identified.

An isolated find was made nearby Preliminary Works Site 1. An exclusion zone has been established around the find, and the location recorded for reporting to the Heritage NSW.

There is very low potential for unidentified Aboriginal heritage objects to be found during Stage 1 activities due to the degraded and highly modified condition of the site as a result of intensive agricultural activities over a long period of time.

The Oral Histories study did not identify any additional cultural heritage objects in the vicinity of the Preliminary Works Site 1.

Cultural heritage specialists, including the local aboriginal community, will continue to work with Santos throughout the Stage 1 activities as required.

Notwithstanding, controls to mitigate potential construction impacts on Aboriginal heritage are provided in Table 5.9.

Table 5.9 – Aboriginal cultural heritage mitigation measures

Reference	Action	Timing	Frequency	Records	Responsibility
SoC-AH2 SoC-AH3 EA-10.4-A EA-10.4-T	Induct all personnel and contractors working onsite in their responsibilities related to identification, management and	Pre-construction	Once Refresher training as required	Induction records	Construction Supervisor

Reference	Action	Timing	Frequency	Records	Responsibility
	reporting of unexpected finds of heritage items during works.				
CoA-3.28 CoA-3.29 SoC-AH2 SoC-AH4 SoC-AH5 EA-10.4-A EA-10.4-L	Should any Aboriginal items or sites including Aboriginal human remains, not previously identified, or historic heritage items be uncovered during construction: • Cease all works in the immediate vicinity of the find and implement Unexpected Finds Protocol (0).	Construction	Event based	Incident report Photos	All project personnel

5.2.6 Traffic and access

Preliminary Works Site 1 is located on Nicholsons Lagoon Road, a rural, unsealed local road that connects to the Kamilaroi Highway. Stage 1 activities may disrupt traffic and transport services during movement of plant, equipment, and materials on the road network.

Appendix E provides the Construction Traffic Management Plan (CTMP) for traffic, transport and access management and mitigation during the preliminary works site construction and use.

5.2.7 Hazards and risks management

The nature of any infrastructure development presents a level of risk associated with the construction activities. Such risks may include the damage to property or human health resulting from an emergency incident, or a bushfire from spark-emitting construction activities.

Potential hazards arising from Preliminary Works Site 1 include:

- Safety issues resulting from equipment failure, inadequate supervision, inadequate procedures, inexperienced or poorly trained staff
- Construction near power lines, resulting in contact or arcing at power lines if safe clearances are not maintained
- Safety issues associated with the storage and use of dangerous goods and hazardous materials onsite e.g., fuels and lubricants.

The controls to mitigate identified hazards and risks are provided in Table 5.10.

Table 5.10 – Hazards and risks mitigation measures

Reference	Action	Timing	Frequency	Records	Responsibility
EA-17.5-B MA/A2-4.1.18D	Induct all project personnel in the risks associated with Stage 1 works and incident response requirements.	Prior to work commencing	Once	Induction register	Construction Supervisor

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-3.11 SoC-AM2-8b EA-14.2-B	Confirm location of services across the Preliminary Works Site 1 using Before You Dig Australia (BYDA). Update site maps with location of known services.	Prior to construction	Once	Service location report Site maps	Construction Supervisor
CoA-3.11 SoC-I1 EA/AJ-5.2.5 EA/AJ-5.4.1-A	Liaise with Essential Energy to either relocate the overhead powerline, de-energise the overhead powerline or develop safe work practices for working in the vicinity of live overhead powerlines. Maintain safe clearances from any overhead powerlines.	Construction	Ongoing	Site inspection records	Construction Supervisor
MA/A2-4.1.24A MA/A2-4.1.24C MA/A2-4.1.24E	Restrict and control all ignition sources. Maintain appropriate firefighting capabilities, both physical equipment and competent operators. Maintain portable fire extinguishers in all vehicles. Minimise combustible material in the vicinity of the site. Maintain a designated area for smoking on site.	Construction and use	Ongoing	Site inspection records	Construction Supervisor
CoA-6.3c) ii) SoC-CL2 EA-17.5-B MA/A2-4.1.24D	Store dangerous goods and hazardous materials in accordance with the requirements of applicable Australian Standards including bunding (110% of the largest container), ventilation, signage, fire protection. Maintain Safety Data Sheets (SDS) for all chemicals stored and used on site and ensure all personnel handling chemicals	Construction and use	Ongoing	SDS Photos Site inspection record Training records	Construction Supervisor

Reference	Action	Timing	Frequency	Records	Responsibility
	have read and understand. Ensure licenced contractors are used to transport, store, handle and dispose of chemicals.				
SoC-CL2 EA-17.5-B	Maintain fully stocked hydrocarbon spill kits on site.	Construction and use	Ongoing	Photos Site inspection record	Construction Supervisor
SoC-CL2 SoC-W5 EA-17.5-B	Contain and clean up spills of chemicals or fuels immediately (refer to Appendix C) Classify and dispose of any contaminated spill materials at a licensed waste facility.	Construction and use	Ongoing	Incident report Waste dockets Waste register	All project personnel
CoA-6.3c) ii) SoC-CL2 EA-17.5-B	Inspect all chemical bunding on site regularly for structural soundness and effectiveness.	Construction and use	Ongoing	Site inspection records	Construction Supervisor
SoC-CL2 EA-15.2-J EA-17.5-B MA/A2-4.1.9C	Establish a designated area for maintenance of mobile equipment and vehicles	Construction	Once	Site layout plan Site inspection records	Construction Supervisor
SoC-CL2 EA-15.2-J MA/A2-4.1.9C	Establish a designated refuelling area on level ground. Use portable bunding to prevent any spills. Supervise refuelling at all times.	Construction	Once	Site layout plan Site inspection records	Construction Supervisor

5.2.8 Surface and groundwater

Potential impacts to surface water and groundwater from Stage 1 activities include pollution as a result of a loss of containment or from sedimentation.

Appendix F provides the Water Management Plan for the management of surface and groundwater issues during the project.

5.2.9 Waste management

All waste, including spoil, must be classified as outlined in the NSW EPA Waste Classification Guidelines. Waste streams forecast to be produced as a result of project activities in Stage 1 are outlined in Table 5.11.

Table 5.11 – Waste streams

Waste stream	Preliminary waste classification
Recyclable containers, plastic, paper, and cardboard	General solid waste, non-putrescible
Concrete and construction waste	General solid waste, non-putrescible
Scrap metal, metal containers, wire, and cable	General solid waste, non-putrescible
Oils and hydrocarbons	Hazardous waste
Timber, crates, pallets	General solid waste, non-putrescible
Food waste	General solid waste, putrescible
Sewage	Liquid waste
Weed washdown wastewater	Liquid waste
Soil	General solid waste, non-putrescible
Vegetative material (including weeds)	General solid waste, non-putrescible

The nature and volume of waste generated during the construction and use of the preliminary works site, if not managed appropriately, may potentially impact on:

- Visual amenity and aesthetic quality of the construction area that is located within a predominantly rural area
- Water quality of local drainage lines and watercourses. This is particularly relevant for gross pollutants (litter) that may become wind borne and enter any watercourses
- Health and safety of workers and visitors to the site.

Controls to manage waste generated by the Project during Stage 1 are provided below in Table 5.12.

Table 5.12 – Resource and waste management mitigation measures

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-3.35 SoC-RM1 EA-17.2-B MA/A2-4.10A MA/A2-4.10.1C	Classify and manage all wastes generated from the works in accordance with the NSW EPA's 2014 Waste Classification Guidelines.	Construction and use	Ongoing	Waste dockets Waste register	Construction Supervisor Environmental Adviser
EA-17.2-A EA-17.2-B MA/A2-4.10.1C MA/A2-4.10.1D	Maintain records of waste materials generated by Stage 1 works.	Construction	Ongoing	Waste dockets Waste register	Construction Supervisor
EA-17.2-D EA-17.2-F MA/A2-4.10A	Maintain securely covered, clearly marked segregated waste bins at strategic points adjacent to site facilities. Store putrescible solid waste in labelled waste	Construction and use	Ongoing	Photos Waste dockets Waste register	Construction Supervisor

Reference	Action	Timing	Frequency	Records	Responsibility
	containers, isolated from surface water drains. Separate recyclable waste from other waste for future disposal at a licensed recycling facility.				
N/A	Maintain working areas free of rubbish and clean up at the end of each working day.	Construction and use	Ongoing	Site inspection record	All project personnel
EA-17.2-B EA-17.2-C EA-17.2-D MA/A2-4.10A MA/A2-4.10B MA/A2-4.10.1C	Engage an authorised waste contractor for the transport of all wastes from the Project.	Construction and use	Ongoing	Waste dockets Waste register	Construction Supervisor
CoA-3.32 MA/A2-4.10A MA/A2-4.10B MA/A2-4.10.1C	Remove all waste materials from the site to a waste management facility lawfully permitted to accept the materials.	Construction and use	Ongoing	Waste dockets Waste register	Construction Supervisor
CoA-3.33	Reuse and/or recycle any wastes where possible to minimise the need for treatment or disposal of those materials outside the site.	Construction and use	Ongoing	Site inspection record	Construction Supervisor
CoA-3.34	Do not receive any waste onto the site	Construction and use	Ongoing	Site inspection record	Construction Supervisor
CoA-3.7 MA/A2-4.10.1C	Do not stockpile waste materials on site.	Construction and use	Ongoing	Site inspection record	Construction Supervisor
EA-17.2-B MA/A2-4.10A MA/A2-4.10.1C	Manage hazardous wastes in accordance with the SDS for the product.	Construction and use	Ongoing	SDS Waste dockets Waste register	Construction Supervisor All project personnel

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-3.35 SoC-RM1 MA/A2-4.10A	Reuse excess spoil onsite in accordance with the Excavated Natural Material order and exemption. Where excess spoil is transported offsite for reuse or disposal, conduct testing and classification as per the Waste Classification Guidelines.	Construction and use	As required	Waste register Site maps	Construction Supervisor Environmental Adviser

5.2.10 Contamination

The site has no known contamination issues however due to intensive land use that has occurred in many areas in NSW, soil and water contamination may exist within the site. This may include contamination with anthropogenic chemicals (e.g., fuels, oils, pesticides, herbicides, asbestos, metal compounds and waste products) that may be organic or inorganic in form, or the accumulation of excessive natural products, such as heavy metals contained in fertilisers, resulting from human management.

Potential impacts that may result from the construction and use of the preliminary works site include:

- Disturbance of contaminated land because of clearing or grading activities during the construction period, affecting the local environment
- Human health impacts resulting from the disturbance of contaminated lands
- Contamination of land or soils due to spills such as chemicals and oils, resulting in pollution and environmental damage.

The controls to mitigate potential impacts from the unexpected find of contamination during Stage 1 are provided in Table 5.13. Response procedures in the event of a spill of hazardous chemicals or dangerous goods are provided in Appendix C.

Table 5.13 – Contamination mitigation measures

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-3.24 SoC-CL1 EA-17.5-A	Where actual or potential contaminated material is encountered during the works, cease all works in the vicinity of the find and notify the Environmental Adviser. Team Leader - Onshore Environment to engage an appropriately qualified environmental consultant to undertake sampling and analysis of the material. Classify and dispose of the contaminated	Construction and use	As required	Incident report Waste dockets Waste register Correspondence	Construction Supervisor / Environmental Adviser Team Leader – Onshore Environment

Reference	Action	Timing	Frequency	Records	Responsibility
	material to an appropriately licensed facility in accordance with NSW EPA Waste Classification Guidelines. Recommence works in the area only after receipt of written advice from the consultant. Team Leader - Onshore Environment to notify Liverpool Plains Shire Council if contaminated soil is encountered during excavation works. Where previously unidentified contamination is encountered that exceeds notification thresholds, Team Leader - Onshore Environment to notify the EPA under the CLM Act.				

5.2.11 Soils and geology management

Soils have been classified based on regional soil classification systems. Soils in the vicinity of the site had soil characteristics associated with the Quirindi Creek Soil Type. This is described as follows (Banks, Robert G. 2001):

- More than 50% of a mixture of open-woodland, woodland and closed-grasslands is cleared for land use. Land use is equally spread for grazing and cultivation purposes.
- Local geology comprises of sands, silts, and gravels of diverse origins. Soil depths exceed 5m.
- Sheet erosion in older cultivation areas is common.
- Streambank erosion and bed scouring is very common.
- Dominant soils include:
  - Brown silty clay topsoil, high erodibility in concentrated flows
  - Brownish grey to yellowish brown clay subsoil, high erodibility in concentrated flows
  - Dark cracking clay subsoil, moderate erodibility in concentrated flows
  - Brown clayey sand subsoil, moderate erodibility in concentrated flows
  - Dark cracking clay topsoils.

No acid sulphate soils occur in or within the vicinity of the site.

Potential impacts to soils include erosion, spills of fuels and chemicals and incorrect management of waste materials. Appendix F provides the Water Management Plan for the management of soils, including erosion and geology issues during the project. Response procedures in the event of a spill of hazardous chemicals or dangerous goods are provided in Appendix C. A procedure for the unexpected find of contaminated material is provided in Section 5.2.10.

6 Monitoring and review

The following section outlines the environmental monitoring requirements during construction and use of the preliminary works site and the review requirements for this CEMP.

6.1 Monitoring and inspections

Environmental monitoring required during the construction and use of the preliminary works site is detailed in Table 6.1 and within the sub-plans. Where adverse results are identified through monitoring, these will be investigated, and measures implemented (where applicable) to bring results back within expected levels.

Table 6.1 – Stage 1 environmental monitoring requirements

Monitoring program	Frequency	Responsibility	Records
Daily pre-start meeting	Daily – construction	Construction Supervisor	Daily pre-start records
Toolbox talks	As required to distribute significant project information or procedural changes – construction	Construction Supervisor	Toolbox talk record
Environmental inspection	Weekly – construction During ESC inspections – use	Construction Supervisor	Site inspection checklist
Erosion and sediment control devices	Prior to and following significant rainfall as per Appendix F WMP Section 5.7	Construction Supervisor	Site inspection checklist

6.2 Continual improvement

Continual improvement is part of any environmental management system. Continual improvement of this CEMP will be completed as part of the records and reporting process described in the HGP EMS.

The continual improvement process will aim to:

- Identify areas of improvement in environmental management and performance
- Determine the cause or causes of non-compliances and incidents
- Develop and implement a plan of corrective action to address any non-compliances and incidents
- Verify the effectiveness of the corrective actions
- Document any changes in procedures resulting from process improvement.

6.3 CEMP review

The CEMP will be reviewed, and if necessary, revised within three (3) months of the following occurring during construction of the project:

- Submission of an incident notification to DPE
- Approval of any modifications to the CoA
- Receipt of a direction from the Planning Secretary.

Other triggers for review of the CEMP include:

- Findings from inspections, audits or complaints
- Major changes to the project scope or construction methodology
- Requests from the Contractor or Santos.

Where the review leads to revisions, Santos will submit the revised documents to the Secretary for approval within four (4) weeks of the review.

Updated CEMP and sub-plans will be provided to the Team Leader - Onshore Environment, Construction Manager, Construction Supervisor and other stakeholders as relevant.

Note that, with the approval of the Planning Secretary, Santos may prepare the revised CEMP without undertaking consultation with all parties nominated under the relevant approval condition.

Appendix A – Compliance matrix

This appendix provides a list of conditions, commitments and management measures from the documents listed in Table A-1 as relevant to the preliminary works site 1. The conditions, commitments and management measures presented in Table A-3 have been summarised and consolidated to form the actions presented in the mitigation tables in Section 5.2.

Table A.1 – Abbreviations used in Compliance matrix

Document reference	Full citation
CoA	Conditions of Approval MP 06_0286 as modified (Mod 1)
EA	Queensland Hunter Gas Pipeline Environmental Assessment, Manidis Roberts 2008
EA/AD	Queensland Hunter Gas Pipeline Biodiversity Assessment ngh environmental 2008
EA/AE	Queensland Hunter Gas Pipeline Aboriginal Heritage Assessment, Archaeological & Heritage Management Solutions Pty Ltd 2008
EA/AF	Queensland Hunter Gas Pipeline Historical Heritage Assessment, Archaeological & Heritage Management Solutions Pty Ltd 2008
EA/AG	Queensland - Hunter Gas Pipeline, Construction Noise and Vibration Assessment, Heggies Pty Ltd 2008
EA/AH	Queensland - Hunter Gas Pipeline, Preliminary Air Quality / Dust Management Plan, Heggies Pty Ltd 2008
EA/AI	Proposed Queensland To Hunter Gas Pipeline, Assessment of Traffic Impacts and Management Implications, Transport and Traffic Planning Associates 2008
EA/AJ	Queensland Hunter Gas Pipeline, Preliminary Risk Assessment (AS 2885 Risk Assessment), Manidis Roberts 2008
EA/AL	Queensland Hunter Gas Pipeline, General Soil Management Assessment
RTS	Queensland Hunter Gas Pipeline Submissions Report November 2008
SoC	Statement of Commitments from Queensland Hunter Gas Pipeline Submissions Report November 2008
MA/A2	Application Letter; Hunter Gas Pipeline – Modification to Extend Lapse Date, Attachment 2 Hunter Gas Pipeline, Construction Readiness Report, RLMS 2018
RS	Hunter Gas Pipeline, Response to Public Consultation Submissions, RLMS 2018

Table A.2 – Key for referencing in Compliance Matrix

Document Reference	-	Chapter Number	-	Sequential numbering / lettering
e.g., CoA	-			3.28
e.g., EA	-	9.5	-	A
e.g., MA/A2	-	4.1.16	-	A

Table A.3 – Compliance Matrix Stage 1

Reference ID	Commitment/Management Measure	Where addressed
CoA-1.1	The Proponent shall carry out the project: a) generally in accordance with the EA; and b) in accordance with the conditions of approval.	Section 1.2
CoA-1.2	In the event of any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of approval shall prevail to the extent of any inconsistency.	Noted
CoA-1.3	The Proponent shall comply with any reasonable requirement(s) of the Director-General arising from the Department's assessment of: a) any reports, plans or correspondence that are submitted in accordance with this approval; and b) the implementation of any actions or measures contained in these reports, plans or correspondence.	Noted
CoA-1.4	This approval will lapse if the Proponent does not physically commence the project by 15 October 2024.	Noted
CoA-1.5	The Proponent shall ensure that all licences, permits and approvals are obtained and maintained as required throughout the life of the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals.	Section 3.3
CoA-1.6	The Proponent shall ensure that: a) all new buildings and structures, any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA; and; b) the pipeline is constructed in accordance with Australian Standard AS 2885.	EMS Section 2.2
CoA-1.8 a)	The Proponent shall ensure that all plant and equipment used on the site, or to monitor the performance of the project, is: a) maintained in a proper and efficient condition; and b) operated in a proper and efficient manner.	Section 5.2.4, Appendix D - CNMP - Section 7.2 Appendix E - CTMP - Section 5.2
CoA-2.10	The project shall be constructed in accordance with the APGA Code of Environmental Practice – Onshore Pipelines.	Section 1.2 and 5.2

Reference ID	Commitment/Management Measure	Where addressed
CoA-3.1	The Proponent shall only undertake construction activities associated with the project, other than blasting, that would generate an audible noise at any residential or sensitive receiver during the following hours: a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive; b) 8:00 am to 1:00 pm on Saturdays; and c) at no time on Sundays or public holidays. Subject to the Secretary's approval of the Construction Environmental Management Plan (under condition 6.2), construction activities may occur outside these hours (for example a 28-day construction, 9 day respite construction schedule approach). This condition does not apply in the event of a direction from police or other relevant authority for safety reasons, or to avoid immediate environmental harm. NOTE: the 28-day on/ 9-day off cycle is generally accepted as appropriate construction hours, however it is important that recognition is given to noise sensitive areas and an alternative schedule be developed for these areas through the Construction Environmental Management Plan.	Section 2.2.3 Appendix D - CNMP - Section 7.1
CoA-3.6	The Proponent shall construct the project in a manner that minimises dust emissions from the site, including wind-blown and traffic-generated dust. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, the Proponent shall identify and implement all practicable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.	Section 5.2.4
CoA-3.7	The Proponent shall not permit any offensive odour, as defined under section 129 of the Protection of the Environment Operations Act 1997, to be emitted beyond the boundary of the site.	Section 5.2.4 Section 5.2.9
CoA-3.9	The Proponent shall ensure that any measures to restore or reinstate roads affected by the project are undertaken in a timely manner, in accordance with the requirements and to the satisfaction of the relevant road authority, including the Crown Lands and at the full expense of the Proponent	Appendix E - CTMP - Section 5.2
CoA-3.11	The Proponent shall undertake all reasonable and feasible measures to minimise the impact of the project on all existing infrastructure in the vicinity of the project route. The Proponent shall consult with the appropriate owner of such infrastructure with regard to measures to mitigate or manage any potential impact. The Proponent shall bear the cost of repairing or relocating any infrastructure directly impacted or damaged as a result of the project.	Section 5.2.7 EMS Section 5
CoA-3.14	Consult with each landholder directly impacted by the project regarding terms and conditions of construction activities on their land, including: a) access to land; b) measures to control spread of weeds, genetically modified organisms and methods to ensure security of livestock on the land during construction c) acquiring of necessary easements, including terms of the easement agreement and compensation to the landowner for the proposed easement on their land	EMS - Section 5.1

Reference ID	Commitment/Management Measure	Where addressed
CoA- 3.15	The proponent shall: c) for a period of two years after construction (or as otherwise required by the Planning Secretary) monitor the areas along the project alignment, after construction is complete, for weed infestation and any infestations shall be actively managed to remove or minimise the spread of infestations	Section 5.2.1
CoA-3.21	Except as may be expressively provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the Protection of the Environment Operations Act 1997 which prohibits the pollution of waters	Section 3.1 and 5.2.10 Appendix F – WMP - Section 5.1
CoA-3.22	Soil and water management controls shall be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities, in accordance with Managing Urban Stormwater: Soils and construction (DECC, 2008), or its latest version.	Appendix F – WMP - Section 5.1
CoA-3.23	The Proponent shall prepare a contingency plan for events that have the potential to pollute or contaminate surface or ground water. The plan is to include threshold levels, remediation actions and communication strategies for the effective management of such an event. This plan is to be included in the Construction Environmental Management Plan required under condition 6.2.	Appendix C – Contingency Plan
CoA-3.24	The Proponent shall notify the relevant local council should contaminated soil be uncovered during excavation works. The Construction Environmental Management Plan required under condition 6.2 shall include management measures for any contamination that may be uncovered during construction of the project.	Section 5.2.10
CoA-3.25	Proponent shall ensure that all water supplies for construction, hydro-testing and operation are sourced from an authorised and reliable supply.	Section 2.2.5
CoA-3.26	Any Acid Sulphate Soils encountered during construction of the project shall be treated and disposed of in accordance with the *Acid Sulphate Soils Manual* (Acid Sulphate Soil Management Advisory Committee, 1998) or its latest version.	Section 5.2.11 Appendix E WMP – Section 4.4
CoA-3.27	The proponent shall prepare an oral histories study for determining significant Aboriginal heritage significant sites along the potential route. CEMP protocols adopted in relation to avoidance, constraints and mitigation measures shall be informed by the oral histories study. Results of the study to be used to assist in determining the final project right of way (refer condition 2.1.1).	Section 5.2.5
CoA-3.28	If during the course of any ground fieldwork assessment, the Proponent uncovers any significant Aboriginal heritage sites, the Proponent shall consult BCD with regard to an appropriate course of action for the management of these sites.	Section 5.2.5
CoA-3.29	If during the course of construction the Proponent becomes aware of any previously unidentified significant Aboriginal object(s), all work likely to affect the object(s) shall cease immediately and BCD informed in accordance with the National Parks and Wildlife Act 1974. Relevant works shall not recommence until written authorisation from BCD advising otherwise is received by the Proponent.	Section 5.2.5

Reference ID	Commitment/Management Measure	Where addressed
CoA-3.32	All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials	Section 5.2.9
CoA-3.33	The Proponent shall maximise the treatment, reuse and/ or recycling on the site of any waste oils, excavated soils, slurries, dusts and sludges associated with the project, to minimise the need for treatment or disposal of those materials outside the site.	Section 5.2.9
CoA-3.34	The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997, if such a licence is required in relation to that waste.	Section 5.2.9
CoA-3.35	The Proponent shall ensure that all liquid and / or non-liquid waste generated and / or stored on the site is assessed and managed in accordance with the relevant NSW Waste Classification Guidelines (EPA, 2014), or their latest versions.	Section 5.2.9
CoA-4.1	The Proponent shall notify the Department in writing of the date of commencement of: a) any stage of construction of the project; b) the commissioning of the pipeline; and c) the operation of the pipeline.	EMS - Section 1.1.2
CoA-4.2	The Proponent shall provide regular compliance reporting on the project as required by the Department and in accordance with the relevant Compliance Reporting (DPE 2018) requirements.	EMS - Section 8.1
CoA-4.3	The Proponent shall provide regular reporting on the environmental performance of the project on its website in accordance with the reporting requirements in any strategies or plans approved under the conditions of approval.	EMS - Section 8.1
CoA-4.4	The Department shall be notified in writing to compliance@planning.nsw.gov.au immediately after the Proponent becomes aware of an incident. The notification must identify the project (including the application number and name of the project) and set out the location and nature of the incident.	EMS - Section 6
CoA-4.5	The Department shall be notified in writing to compliance@planning.nsw.gov.au within 7 days after the Proponent becomes aware of any non-compliance with the conditions of this approval. The notification must identify the project (including the application number and name of the project), set out the condition of approval that the project is non-compliant with, the way in which it does not comply, the reasons for the non-compliance (if known) and what actions have been taken, or will be, undertaken to address the non-compliance.	EMS - Section 6
CoA-5.1	Prior to the commencement of the construction of the project, the Proponent shall prepare an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must: a) provide the strategic framework for the environmental management of the project; b) identify the statutory approvals that apply to the project; c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; and d) describe the procedures that would be implemented to:	EMS a) Section 4.1 b) Section 2 c) Section 4.4 d) Sections 5, 6 and 7

Reference ID	Commitment/Management Measure	Where addressed
	• keep the local community and relevant agencies informed about the progress of the project; • receive, handle, respond to, record and report complaints; • resolve any disputes that may arise during the project; • respond to any non-compliance; and • respond to any incidents or emergencies	
CoA-5.2	From the commencement of the construction of the project, the Proponent shall: a) make copies of the following information publicly available on its website: • the EA; • current statutory approvals for the project; NSW Government Department of Planning, Industry and Environment • approved studies, strategies and plans required for the project under the conditions of approval; • a comprehensive summary of the monitoring results on the project, reported in accordance with the requirements in the conditions of approval or any approved studies, strategies or plans for the project; • a summary of any complaints received, updated monthly; • any other matter required by the Secretary; and b) keep this information up to date.	EMS - Section 5
CoA-6.1	To ensure the studies, strategies and plans for the project are updated on a regular basis and incorporate any required measures to improve the environmental performance of the project, the Proponent may submit revised studies, strategies or plans required for the project under the conditions of approval at any time. With the agreement of the Secretary, the Proponent may also submit any study, strategy or plan required under the conditions of this approval on a staged basis. The Secretary may approve a revised strategy or plan required under the conditions of approval, or the stage submission of these documents, at any time. With the approval of the Secretary, the Proponent may prepare the revised or staged strategy or plan without undertaking consultation with all parties nominated under the applicable condition in this approval. Notes: • While any study, strategy or plan may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable studies, strategies or plans at all times. • If the submission of any study, strategy or plan is to be staged, then the relevant study, strategy or plan must clearly describe the specific stage to which the study, strategy or plan applies, the relationship of this stage to any future stages, and the trigger for updating the study, strategy or plan.	Section 6.3 EMS - Section 1.1.2, Section 8.2
CoA-6.2 a)	Prior to the commencement of the construction of the project, the Proponent shall prepare a Construction Environmental Management Plan (CEMP) for the project to the satisfaction of the Secretary. This plan must outline the environmental management practices and procedures to be followed during construction of the project. The CEMP shall be consistent with Guideline for the Preparation of Environmental Management Plans (DIPNR 2004), or its latest version, and shall include, but not necessarily be limited to: a) a description of all relevant activities to be undertaken on the site during construction;	Section 1.2 Section 2.2.1
CoA-6.2 b)	Details of the areas designated for the erection of public information signage;	Section 2.2.1

Reference ID	Commitment/Management Measure	Where addressed
CoA-6.2 d)	Details of the measures to be employed to minimise soil erosion and trench compaction;	Appendix F - WMP - Section 5.1
CoA-6.2 e)	Details on potential occurrence of expansive soils and saline areas along the proposal route and management and mitigation measures;	Appendix F – WMP – Section 5.1.2
CoA-6.2 f)	Details of measures to be installed to separate construction areas from publicly accessible areas;	Section 2.2.1
CoA-6.2 g)	Details of the protocols to be implemented to minimise impacts to Aboriginal cultural heritage sites;	Section 5.2.5
CoA-6.2 h)	Statutory and other obligations that the Proponent is required to fulfil during construction including all relevant approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;	Section 3 EMS - Section 2,3 and 5
CoA-6.2 i)	Details of how the environmental performance of the construction works will be monitored, and what actions will be taken to minimise environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan: i) measures to monitor and minimise dust emissions; ii) measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters during construction activities; iii) measures to monitor and minimise noise emissions during construction works; iv) measures to monitor and minimise air emissions during construction to ensure that air emissions; v) measures to minimise the impact of construction on local flora and fauna, consistent with the mitigation measures described in section 9.4 and Appendix D of the documents referred to under condition 1.1a) , including minimisation of vegetation clearing; methods to minimise unintended impacts on vegetation to be retained and fauna; details of the rehabilitation of cleared areas; topsoil, seed and vegetative material re-use initiatives to be employed; and measures to be undertaken to control weed spread; vi) measures to monitor and minimise the impacts on indigenous heritage values on site including involvement of the relevant Local Land Councils, Committees and Traditional Owner Groups; and	i) Section 5.2.4 ii) Section 5.2.7, Appendix F – WMP – Section 5.1 and 5.6 iii)Section 5.2.3, Appendix D – NMP – Section 7.1 iv) Section 5.2.4 v) Section 5.2.1 vi) Section 5.2.5
CoA-6.2 j)	The additional plans listed under condition 6.3 of this approval.	Appendix D - CNMP, Appendix E - CTMP, Appendix F - WMP
CoA-6.3a)	The Construction Environmental Management Plan required under condition 6.2 must include: a) a Construction Noise Management Plan to minimise noise impacts during construction. The Plan must include, but not necessarily be limited to: i) revised noise predictions for the final route of the pipeline, taking in consideration the proposed mitigation measures;	Appendix D - CNMP - Section 6.3

Reference ID	Commitment/Management Measure	Where addressed
CoA-6.3a) iii)	details of the measures that would be implemented to minimise the construction noise impacts of the project, having regard to the best practice requirements outlined in the Interim Construction Noise Guideline (DECC, 2009), or its latest version; and	Appendix D - CNMP - Section 7.1
CoA-6.3a) iv)	details, where impacts cannot be mitigated to meet the relevant highly noise affected criterion in the Interim Construction Noise Guideline, of effective consultation and/or negotiation with affected receptors	Appendix D - CNMP - Section 7.2
CoA-6.3b)	a Construction Traffic Management Plan to minimise the construction traffic impacts of the project. The Plan must address the requirements of the relevant Councils, RMS, Crown Lands, and any other relevant road authority and shall include, but not necessarily be limited to:	Appendix E - CTMP
CoA-6.3b) i)	details of how construction of project infrastructure will be managed in proximity to local and regional roads;	Appendix E - CTMP -Section 5
CoA-6.3b) ii)	the measures that would be implemented to minimise the traffic impacts of the project on road users and the capacity and safety of the road network, including: • imposing restrictions on the use of heavy or over-dimensional vehicles; • a driver's code of conduct for workers associated with the project; • notifying the local community about project-related traffic impacts; • ensuring vehicles enter and leave the site in a forward direction and have their loads covered or contained; • minimising dirt being tracked onto the public road network from project-related traffic; and • providing sufficient parking on site for project-related traffic;	Appendix E - CTMP - Section 5.1, 5.2, Appendix A
CoA-6.3b) iii)	include a program to monitor and report on the effectiveness of these measures; and	Appendix E - CTMP - Section 5.2 and 6.1
CoA-6.3b) iv)	evidence to demonstrate that all statutory responsibilities with regard to road traffic impacts have been complied with.	Appendix E - CTMP - Section 3.3
CoA-6.3c)	a Water Management Plan to minimise the water impacts of the project. The Plan shall: i) identify all sources of water that would be used for the construction of the project (including water for hydro-testing), and the amount of water to be extracted from each source; and	Appendix F - WMP - Section 5.3
CoA-6.3c) ii)	Describe the measures that would be implemented to minimise the water impacts of the project, including: • the measures to avoid any off-site water pollution occurring; • the measures to minimise soil erosion and the discharge of sediments from the site; • the measures to ensure all chemical and hydrocarbon products are stored on site in bunded areas in accordance with the relevant Australian Standards; and • details on the proposed disposal sites for hydro-test water and the environmental protection measures to be used at any such disposal sites; and	Section 5.2.7 Appendix F - WMP - Section 5.1 and 5.2
CoA-6.3c) iii)	Include a include a program to monitor and report on the effectiveness of these measures.	Appendix F - WMP - Section 5.6

Reference ID	Commitment/Management Measure	Where addressed
CoA-6.5	Within 3 months, unless the Secretary agrees otherwise, of: a) the submission of an incident notification under condition 4.4 above; b) the approval of any modification to the conditions of approval; or c) a direction from the Secretary under condition the Proponent shall review and, if necessary, revise the studies, strategies or plans required under the conditions of approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval.	Section 6.3
SoC-P1	Pipeline construction and management of environmental aspects of the pipeline construction and operation will be guided by the APIA Code 2005 (or latest edition).	Section 1.2 and 5.2
SoC-CM1	A CEMP will be developed in consultation with DECC, DPI, DWE, DoL and relevant CMAs to manage environmental issues assessed and implement identified mitigation and management measures where required.	Section 1.6
SoC-CM1A	The proponent will direct its contractors to carry out the project in accordance with the conditions of approval, the revised statement of commitments and the CEMP.	EMS - Section 9.1
SoC-CM2	Construction camps, pipeline storage areas and vehicle depots will be located in accordance with the criteria set out in Chapter 5.	Section 2.1
SoC-CM3	Construction works would be undertaken between 7am and 6pm, seven days a week for 28 days and then nine days off, except in the following instances where extended construction hours may occur when: • HDD drill rig is in operation until completion of the HDD bore (continuity of process required). • Boring is in operation until completion of the boring. • Water filling and hydro-testing of the pipeline is underway (continuity of process is required). • Extenuating circumstances out of the control of the project (such as weather, industrial relations) result in delays to the pipeline program, notice would be given to the DoP Director-General with an outline of proposed work hours and schedule. • Works do not pose an audible disturbance to any residences. • Transport of plant, equipment and pipe by oversized trucks outside of hours as required by authorities for safety reasons. • It is required in an emergency to avoid injury or loss of life, property and/or to prevent environmental harm. • Agreement is reached with local residents in order to reduce the duration of construction activities and/or manage other traffic, amenity or disturbance issues.	Section 2.2.3
SoC-CM4	Where construction noise is audible at the major level at sensitive receivers, consultation with impacted residents will be undertaken 48 hours in advance of work and during the local construction period as necessary. The level of major audibility at sensitive receivers is 50dBA at isolated residences and 55dBA at township residences.	Appendix D – CNMP - Section 7.2
SoC-C1	An integrated stakeholder consultation process will continue to be implemented throughout the project. The outcomes of ongoing consultation will continue to influence the project.	EMS - Section 5

Reference ID	Commitment/Management Measure	Where addressed
SoC-C2	A 24-hour toll free contact telephone number will be established. A system to receive, record, track and respond to issues and concerns will be implemented.	EMS - Section 7
SoC-C3	The proponent will establish a framework for a government liaison group (GLG) to liaise with DECC, DPI, DWE and DoP, DoL and relevant CMAs.	EMS - Section 5.1.1
SoC-B2	Equipment storage areas and stockpile areas will be located away from riparian zones within existing cleared or degraded lands.	Section 5.2.1
SoC-B5	Weed management measures will be developed for incorporation into the CEMP, taking into consideration: • A review of relevant desktop information relating to relevant noxious and environmental weed listings. • Results of biodiversity fieldwork. • Liaison with landowners regarding any locally occurring weed management issues or existing management arrangements.	Section 5.2.1
SoC-B6	Any excavated material containing weeds will not be stored near waterways or existing stands of native vegetation.	Section 5.2.1
SoC-B7	Noxious weeds in areas disturbed by construction activities will be managed for a minimum of two years post completion.	Section 5.2.1
SoC-AH2	Site types and sites categorised as low to moderate impact, where identified during pre construction surveys conducted by a qualified archaeologist with assistance from representatives of relevant registered Aboriginal stakeholders, will be managed in accordance with the measures indicated in Tables 10.4 and Table 10.5 of EA.	Section 5.2.5
SoC-AH3	All personnel and contractors working on site will receive training in their responsibilities under the National Parks and Wildlife Act 1974 as part of an Aboriginal heritage induction program. Additional site specific training will be given to workers when working within identified sensitive zones, as per the predictive model.	Section 5.2.5
SoC-AH4	A mechanism will be developed to provide for the management of impacts to artefact scatters above a given density. This mechanism will: • State thresholds when works in the immediate vicinity will stop. • Identify relevant project personnel with authority to stop works in the immediate vicinity when the prescribed threshold is reached. • Include provision for verification of significance of the find by the project archaeologist or similar. • Provide a framework for the resolution and management of the find, seeking input from relevant Aboriginal groups, and the DECC.	Section 5.2.5
SoC-AH5	Should any items or sites of high significance, including Aboriginal human remains, not previously identified be uncovered during construction, all works in the immediate vicinity of the find will cease. A mechanism will be developed to manage this contingency. Works will not recommence in the areas until appropriate clearance is given; specialist advice will be sought as necessary.	Section 5.2.5
SoC-HH1	Use the heritage assessment to inform the final alignment of the ROW.	Section 5.2.2
SoC-HH2/HH5	Maintain consultation with the Heritage Branch of DoP, local councils and other relevant agencies and stakeholders.	EMS - Section 1.4 and 5.1
SoC-HH3	Include relevant known heritage constraints in the CEMP.	Section 5.2.2

Reference ID	Commitment/Management Measure	Where addressed
SoC-HH6	Include relevant potential heritage constraints in the CEMP.	Section 5.2.2
SoC-N1	Construction noise and vibration management strategies will be outlined in the CEMP. Construction and operation measures will include: • Liaising with community to advise on likely timing and duration of noisy activities. • Resolving complaints received from residents and landowners. • Using noise abatement measures where reasonable and feasible.	Appendix D - CNMP - Section 7.1 and 7.2
SoC-T2	Any oversized or over weight loads will be transported in accordance with RTA requirements.	Appendix E - CTMP - Section 5.2
SoC-T3	Specific localised traffic impacts will be assessed following the determination of the location of construction camps, pipeline storage areas, vehicle depots and ROW access points. If there are significant impacts identified then specific transport arrangements associated with pipe transport and storage and construction vehicle movements will be developed to minimise localised impacts on other road users.	Appendix E- CTMP - Section 5.2
SoC-A1	Working practices will be managed to minimise nuisance dust.	Section 5.2.4
SoC-A3	The burning of material on site will be prohibited, except under the instruction of fire services.	Section 5.2.4
SoC-A4	Vehicles will be maintained to ensure emissions are kept to the minimum practicable.	Section 5.2.4
SoC-SE2	The proponent will continue negotiations with landowners regarding location of easement, aboveground infrastructure and compensation and terms and conditions of consent.	EMS Section 5.1
SoC-SE3	Strategies will be put in place to maximise employment opportunities for local and indigenous workers (e.g. working with local employment and training agencies).	EMS - Section 4.5
SoC-L1	The detailed pipeline alignment will continue to be refined to avoid land use conflicts, particularly in relation to existing and proposed urban settlements, extractive industries, environmentally sensitive land uses.	Section 2.1
SoC-L3	The proponent will endeavour to negotiate with each landowner terms and conditions relating to construction activities on their land, which may include: • Access; • Weed management; • Crop control in relation to genetically modified organisms (GMO); and • Livestock security.	EMS Section 5.1
SoC-W3	Soil and water management measures will be implemented during the construction phase through the CEMP. Management measures will be prepared in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) as appropriate to pipeline construction.	Appendix F - WMP - Section 5
SoC-W3A	A contingency plan will be prepared for events that have the potential to pollute or contaminate surface or groundwater sources. The plan will include threshold levels, remediation actions (including monitoring) and communication strategies.	Appendix C – Contingency Plan
SoC-W5	A spill response procedure, addressing fuels, lubricants and other chemicals will be outlined in the CEMP.	Section 5.2.7

Reference ID	Commitment/Management Measure	Where addressed
		Appendix C – Contingency Plan
SoC-W6	The proponent will implement all practicable measures to limit potential impacts on existing surface and groundwater regimes and this will be documented in the CEMP.	Appendix F - WMP – Section 5
SoC-I1	Stakeholder engagement with infrastructure owners and managers will be ongoing to ensure their requirements for crossings and works in the general vicinity of their infrastructure are implemented during construction and operation.	EMS - Section 5.1
SoC-I2	A collaborative management approach involving the relevant infrastructure owners/managers will be ongoing to coordinate management measures in areas where multiple infrastructure services are affected.	Section 5.2.7 EMS - Section 5.1
SoC-RM1	Waste materials will be classified and managed in accordance with the Waste Classification Guidelines (DECC, 2008)	Section 5.2.9
SoC-RM2	Appropriate water sources for construction activities including hydro-testing will be investigated and identified. Relevant irrigation groups, water users/owners and DWE will be consulted. Where licensing of surface or groundwater extraction is required for the identified water sources, the proponent will obtain the relevant licence or exemption from DWE.	Appendix F - WMP - Section 5.3
SoC-CL1	Management measures will be prepared as part of the CEMP to outline procedures to review site conditions including potential contaminants and where necessary, outline measures to ensure appropriate action will be undertaken during construction to avoid any potential impacts to the environment or human health.	Section 5.2.10
SoC-CL2	Site environmental management measures will be developed and outlined in the CEMP with the purpose of minimising the potential for spills to occur and implementing remedial actions.	Section 5.2.7 Appendix C - Contingency Plan
SoC-S1	Manage soils: Soil types will be identified and delineated along the alignment.	Appendix F - WMP - Section 4.4
SoC-S2	Soil management measures will be developed according to soil type and be documented in the CEMP.	Appendix F - WMP - Section 5.1
SoC-S4	Erosion and sediment management controls will be prepared as part of the CEMP to manage and minimise erosion and control sediment impacts associated with the construction of the pipeline.	Appendix F - WMP - Section 5.1
SoC-GG1	Adequate planning and maintenance to ensure efficient use of vehicles.	Section 5.2.4
SoC-AM2-4a	Ongoing landholder and local community consultation.	EMS Section 5
SoC-AM2-4c	Understanding of localised traffic impacts and road crossing impacts.	Appendix E - CTMP – Section 5.1 and 5.2
SoC-AM2-8a	Continuing consultation with third party infrastructure owners.	EMS Section 5.1

Reference ID	Commitment/Management Measure	Where addressed
SoC-AM2-8b	Services searches to identify the exact service crossing requirements.	Section 5.2.7
SoC-AM2-9	Investigate and identify appropriate water sources for construction activities including hydro-testing and obtain relevant licences under Water Sharing Plans and Water Management Act 2002.	Section 2.2.5
RTS-2018-2-18	An Erosion and Soil Management Plan will be prepared prior to construction.	Appendix F- WMP - Section 5.1
RTS-2018-2-25	A Construction Traffic Access Management Plan (CTAMP) will be prepared by a suitably qualified person in accordance with the Austroads Guide to Traffic Management Part 12, Roads and Maritimes Supplements and RTA Guide to Traffic Generating Developments.	Appendix E - CTMP
RTS-2018-2-26	An application for approval for any proposed new access, works and structures on or below a classified road reserve will be sought from the roads authority (Council) and concurrence from Roads and Maritime Services in accordance with Section 138 of the Roads Act 1993. The following information will be submitted to the roads authority for consideration; 1. Detailed plans of any new access, works or structure should be submitted to the local Council prior to any work commencing. The application will then be referred to Roads and Maritime for concurrence. 2. Any proposed new access is to be designed and constructed in accordance with Austroads Guidelines, Australian Standards and Roads and Maritime Supplements. Attached is a copy of Northern Regions “Typical Rural Property Access” standard for low volume side road access in rural locations. 3. Any proposed new access is to be designed and constructed in accordance with Austroads Guidelines, Australian Standards and Roads and Maritime Supplements. Attached is a copy of Northern Regions “Typical Rural Property Access” standard for low volume side road access in rural locations. 4. Construction of an access or road works is to be undertaken in accordance with the RTA Traffic Control at Worksites Manual and a Road Occupancy Licence (ROL) must be obtained from Roads and Maritime prior to the implementation of any traffic control on classified (State) roads.	Section 3.3
RTS-2018-2-27	Where road safety concerns are identified at a specific location along the proposed route, the CTAMP will be supported by a targeted Road Safety Audit undertaken by suitably qualified persons.	Appendix E - CTMP - Section 6.1
RTS-2018-2-31	A reference in the CoA, to legislation, guidelines or standards is a reference to the latest edition of these documents when preparing for construction.	Noted
RTS-2018-3-8	QHGP will negotiate with each individual landholder regarding the pipeline route on each property including the irrigation systems present on each property. QHGP will avoid impacts on these systems.	EMS Section 5.1
RTS-2018-3-11	Local suppliers of services will have the opportunity to be engaged for work during the construction of the pipeline. Offtake points (enabling gas reticulation systems to be constructed) will be provided in the following rural towns Narrabri, Boggabri, Port Stephens, Gunnedah, Murrundi, Scone, Aberdeen and Quirindi.	Section 2.2.2

Reference ID	Commitment/Management Measure	Where addressed
EA-9.5-L	Increased weed invasion due to edge effects Undertake ongoing management and monitoring of weed invasion for a period of no less than two years following completion of the construction phase.	Section 5.2.1
EA-10.4-A	Low to moderate impact sites (in general) • All personnel and contractors working on site would receive training in their responsibilities under the National Parks and Wildlife Act 1974 as part of an Aboriginal heritage induction program prior to the start of construction works. • A mechanism would be developed to provide for the management of impacts on artefact scatters above a given density. This mechanism would: • State thresholds when works would stop in the immediate vicinity. • Identify relevant project personnel with authority to stop works in the immediate vicinity when the prescribed threshold is reached. • Include provision for verification of significance of the find by the project archaeologist or similar. • Provide a framework for the resolution and management of the find, seeking input from relevant Aboriginal groups, and the DECC. • As part of an offset program for cumulative impacts to these sites, and in collaboration with a suitably qualified archaeologist, develop an archaeological research excavation program with the aim of completing a comparison of intra-site patterning, Aboriginal occupation and use of analogous landforms between each bioregion.	Section 5.2.5
EA-10.4-L	Disturbance or destruction of previously unidentified burials • Monitoring of development excavation works in sensitive areas in accordance with the relevant predictive model and constraint mapping. • Should any heritage items be uncovered during works, all works in the vicinity of the item would cease immediately and the Site Foreman contacted. Specialist advice would be sought as necessary and work would not recommence until appropriate clearance received. • Development of specific contingency management measures, which would include legal requirements to notify NSW State Police and/or State Coroner. in consultation with relevant Aboriginal community members, archaeologists and DECC.	Section 5.2.5 Appendix B – Unexpected Finds Protocol
EA-10.4-T	Staff inductions would include information about the known presence of Aboriginal heritage items associated with the Project and the relevant management measures in place.	Section 5.2.2 and 5.2.5
EA-11.7-H	Regularly inspect, test and maintain all stationary and mobile plant and equipment to ensure that noise emission levels do not deteriorate over the construction period.	Appendix D – CNMP - Section 7.1
EA-11.7-I	Provide affected receivers (isolated residences, sensitive, hospitals and schools within 350m of the construction activities and built up areas within 250m of the construction activities) with a contact name and number for ongoing liaison.	Appendix D – CNMP - Section 7.1
EA-11.7-J	A procedure would be established for maintaining contact and responding to all calls within 24 hours.	Appendix D – CNMP - Section 7.1

Reference ID	Commitment/Management Measure	Where addressed
EA-11.7-M	Site inductions would include appropriate behaviour on site to minimise disruptive noise (example no shouting, slamming doors etc), particularly during night works.	Appendix D – CNMP - Section 7.1
EA-11.7-N	Reasonable and feasible measures would be implemented to ensure that potential impacts on affected residences are minimised. This might include noise abatement equipment (such as temporary noise barriers), noise reduction measures (such as the provision of earmuffs) or temporary relocation.	Appendix D – CNMP - Section 7.1
EA-11.10-A	Reduce speed limits during high dust conditions.	Section 5.2.4
EA-11.10-B	Clearing of vegetation and topsoil would be limited to the designated footprint required for pipeline construction.	Section 5.2.1
EA-11.10-D	Water trucks would be employed to reduce dust in dry windy conditions.	Section 5.2.4
EA-11.10-E	Silt and other materials would be removed from around erosion control structures following any significant rain event to ensure deposits do not become a dust source.	Section 5.2.4, Appendix F - WMP - Section 5.6
EA-11.10-F	Working practices would be modified during periods of high winds by limiting the use of some machinery, particularly when in close proximity to dwellings, and reducing travel speeds.	Section 5.2.4
EA-11.10-H	The burning of material on site would be prohibited, except under the instruction of fire services.	Section 5.2.4
EA-11.10-I	Vehicles would be maintained to ensure emissions are kept to the minimum practicable.	Section 5.2.4
EA-11.13-A	Mobilisation and demobilisation of construction plan, equipment and construction camps Further consultation with residents and road authorities (i.e. Councils and the RTA) to outline pipe delivery timeframes and to identify localised impacts on traffic networks.	Appendix E - CTMP - Section 5.2 EMS - Section 5.1
EA-11.13-B	Any oversized or overweight loads would be transported in accordance with RTA requirements	Appendix E - CTMP - Section 5.2
EA-11.13-C	The pipe storage facilities would be located so that they are in close proximity to major transportation routes, including existing major highways and rail yards.	Section 2.1
EA-11.13-D	Transportation of pipe sections Further consultation with residents and road authorities (i.e. Councils and the RTA) to outline pipe delivery timeframes and to identify localised impacts on traffic networks.	Appendix E - CTMP – Section 5.2 EMS - Section 5.1
EA-11.13-E	Where oversized vehicles are used, suitable controls and management will be put in place and heavy vehicle permits would be obtained as required.	Appendix E - CTMP - Section 5.2
EA-11.13-F	Any oversized loads would be transported in accordance with RTA guidelines.	Appendix E - CTMP - Section 5.2

Reference ID	Commitment/Management Measure	Where addressed
EA-11.13-G	Convoys of heavy vehicles would be avoided as far as practicable.	Appendix E - CTMP - Section 5.2
EA-11.13-I	Timing of transport movements to minimise localised impacts, such as avoiding peak times and school zones during the hours 7am–9am and 2pm–4pm.	Appendix E - CTMP - Section 5.2
EA-11.13-N	Where traffic management is required on any roadway, all features of the management would be installed in compliance with the requirements of Australian Standard 1742.3, Part 3 – Traffic Control Devices for Works on Roads.	Appendix E - CTMP - Section 5.2
EA-11.13-Q	The use of multi-passenger vehicles where practicable for transportation of construction crews to/from the ROW to minimise the number of vehicle movements.	Appendix E - CTMP - Section 5.2
EA-12.2-B	The location for storage of plant and equipment, and access hours and conditions would be negotiated with individual landowners to minimise access restrictions and impacts on privacy.	EMS – Section 5.1
EA-12.2-C	The proponent is actively negotiating with landowners along the Study Area in relation to the location of easements, above ground infrastructure and compensation. Negotiations would continue on issues relating to compensation and terms and conditions of consent agreements.	EMS – Section 5.1
EA-12.2-D	Strategies would be put in place to maximise employment opportunities for local and indigenous workers. These strategies may include working with local Aboriginal employment and training agencies and Aboriginal communities to identify opportunities, working with local chambers of commerce and advertising in local papers.	EMS - Section 4.5
EA-14.2-B	• 'One –Call'/'Dial Before You Dig' services. • Marker tape buried in trenched sections along the whole length of the pipeline. • Permanent line-of-sight marker posts installed along the centre line. • External coating of pipeline. • CP systems with regular corrosion monitoring, • Additional protection measures where required near power line easements to reduce the risk of voltage induction effects.	Section 5.2.7
EA-15.2-F	Soil and water management proposals are to be implemented for the construction phase via the CEMP. These proposals would be prepared in accordance with The Blue Book (Managing Urban Stormwater: Soils and Construction) appropriate to pipeline construction such as: • Diversion of 'clean' surface runoff around and away from working areas to prevent erosion • Directing 'dirty' runoff from work areas into sediment control devices (such as geotextile sediment fences, gravel socks or geologs) installed downhill of disturbed areas, particularly near watercourses and around stockpiles. • Appropriately containing water pumped from trenches and disposal through sediment socks or settlement control devices to allow sediment to settle out prior to discharge to the environment. • Trench water to be discharged to stable ground away from the stream bed.	Appendix F – WMP - Section 5.1
EA-15.2-I	Monitoring and reporting procedures would be established within the CEMP for the following areas: • Erosion control and sediment collection devices.	Appendix F – WMP - Section 5.1 and 5.6

Reference ID	Commitment/Management Measure	Where addressed
	• The water quality of upstream and downstream areas from the crossing. • Watercourses post construction.	
EA-15.2-J	A spill response procedure would be developed in the CEMP for the construction phase of the project. This would address fuels, lubricants and other chemicals. The spill response procedure would include aspects such as: • Spill response equipment is to be located at each work site. • Drilling fluid spill (frac-out) prevention and response procedures (including geotechnical investigations). • Maintenance or refuelling of mobile equipment and vehicles should not be conducted within 150m of any surface water body. • Storage sites are not to be located in the vicinity of any waterway.	Section 5.2.7 Appendix C – Contingency Plan
EA-16.2-A	The location of existing third party infrastructure in the ROW would be accurately identified on the alignment sheets and physically marked on the ground prior to trenching activities.	Section 5.2.7
EA-16.2-B	Stakeholder engagement with infrastructure owners/managers would continue to ensure their requirements for crossings and works in the general vicinity of their infrastructure are implemented during construction and operation.	EMS Section 5.1
EA-16.2-C	A collaborative management approach involving the relevant infrastructure owner/managers would be ongoing to coordinate measures in areas where multiple infrastructure and services are potentially affected.	EMS Section 5.1
EA-16.2-E	Traffic management measures would be implemented to ensure no major roads are permanently impassable.	Appendix E – CTMP – Section 5.2
EA-16.2-J	An incident management plan would be developed for the project outlining processes for managing any accidental damage.	Appendix C – Contingency Plan
EA-16.3-B	Vehicle or plant equipment that could exceed 4.5m in height would not be permitted in the easement except when operating under the procedures outlined in the WorkCover Code of Practice (2006) for Work Near Overhead Powerlines, catalogue No. 1394.	Section 5.2.7
EA-17.2-A	Waste types must be tracked when transported interstate but not when transported within NSW	Section 5.2.9
EA-17.2-B	• Handling, storage and transport of hazardous materials and waste would be in accordance with the National Code of Practice and the relevant material safety data sheet (MSDS) for the product. • Any hazardous waste associated with project activities would be separated from non-hazardous waste. If small amounts of hazardous waste are mixed with non hazardous waste the entire quantity of waste would be treated as hazardous. • Reporting protocols to ensure that any hazardous and liquid wastes are tracked from 'cradle to grave'. • Any waste identified as hazardous or liquid waste in accordance with the Waste Guidelines, would be transported by an authorised contractor. A written agreement must be in place prior to the commencement of this type of waste disposal.	Section 5.2.9
EA-17.2-C	Sewage and sullage disposal would be via appropriate septic systems, mobile chemical treatment system or approved contractor	Section 2.2.5, 2.3.5 and 5.2.9

Reference ID	Commitment/Management Measure	Where addressed
EA-17.2-D	All putrescible solid waste generated would be stored in labelled waste containers and isolated from surface water drains. Waste would be removed at regular intervals and disposed of, as required, at an approved waste facility.	Section 5.2.9
EA-17.2-F	Recyclable waste would be kept separate from other waste and stored in a designated area for future disposal at an appropriate recycling facility, if practicable.	Section 5.2.9
EA-17.5-A	Environmental and human health impacts resulting from excavating in contaminated sites: • Ongoing consultation with landowners would be undertaken to identify potentially contaminated sites near or within the Study Area. • Site specific and contaminant specific management measures will be developed for any areas that are not avoidable through realignment of the route. • If potential or actual contamination is found during earthworks, work in that area will stop until a suitably qualified person has inspected the site, the hazard has been assessed and appropriate action has been taken, including delineating areas of concern as required until earthworks can resume safely. • Manage contaminated soil disposal or removal from site in accordance with DECC Waste Classification Guidelines.	Section 5.2.10 Appendix C – Contingency Plan
EA-17.5-B	Site environmental management measures would be implemented to minimise the potential for spills to occur including: • Installation of bunds around chemical, fuel and other potential contaminant storage areas and at other relevant locations. • Implement chemical transport, storage, handling and disposal procedures in accordance with requirements of dangerous goods and environmental legislation and industry standards. • Maintenance of mobile equipment and vehicles would not be conducted within 150m of any surface water body, to reduce the risk of contamination in the event of accidental fuel or oil release. • Implement spill response procedures and have spill response equipment for containment and recovery available on site. • Implement remedial actions if required. • Conduct workforce training.	Section 5.2.7 Appendix C – Contingency Plan EMS – Section 6 and 9
EA-17.13-A	Adequate planning and maintenance to ensure efficient use of vehicles. This would include use of fuel-efficient and low emissions vehicles as practicable.	Section 5.2.4 Appendix E – CTMP – Section 5.2.4
EA/AD-6.1B	Soil and Water management measures will be developed and included in the Construction Environmental Management Plan (CEMP) and/or Environmental Work Method Statements etc. It will include implementation of appropriate erosion and sediment control measures such as minimising the area of exposed surfaces, protection of drainage lines, covering exposed surfaces progressively etc.	Appendix F - WMP Section 5.1
EA/AD-6.1J	Procedures for equipment cleaning to reduce the risk of the spread of pathogens	Section 5.2.1
EA/AD-6.2D	A weed management plan will be prepared as part of the construction Environmental Management Plan (CEMP) for the project	Section 5.2.1

Reference ID	Commitment/Management Measure	Where addressed
EA/AG-4.8.1A	Construction hours of the works will be nominally 7.00 am to 6.00 pm, 7 days per week, or as specified in an approved construction noise management plan prepared in consultation with the DECC, or for horizontal bore drilling and construction substantially distant from residences identified during detailed design.	Section 2.2.3 Appendix D – CNMP - Section 5.1
EA/AG-4.8.1C	Avoiding the coincidence of noisy plant working simultaneously close together and adjacent to sensitive receivers would also result in reduced noise emissions	Appendix D – CNMP - Section 7.1
EA/AG-4.8.1D	Where possible, the offset distance between noisy plant items and nearby noise sensitive receivers should be as great as possible.	Appendix D – CNMP - Section 7.1
EA/AG-4.8.1E	Regular compliance checks on the noise emissions of all plant and machinery used for the project would indicate whether noise emissions from plant items were higher than predicted.	Appendix D – CNMP - Section 7.1
EA/AG-4.8.1F	Ongoing noise monitoring during construction at identified sensitive receivers during critical periods (i.e. times when noise emissions are expected to be at their highest - e.g. chain or wheel trenching) to identify high risk noise events.	Appendix D – CNMP - Section 7.1
EA/AG-4.8.1G	Prepare a construction noise management plan to detail how construction noise and vibration impacts would be minimised and managed.	Appendix D – CNMP
EA/AG-4.8.1H	Engines and exhausts are typically the dominant noise sources on mobile plant such as cranes, graders, excavators, trucks, etc. In order to minimise noise emissions, residential grade mufflers should be fitted on all mobile plant utilised on site	Appendix D – CNMP - Section 7.1
EA/AG-4.8.1I	Regular maintenance of all plant and machinery used for the project will assist in minimising noise emissions.	Appendix D – CNMP - Section 7.1
EA/AG-4.8.1K	Acoustic enclosures of plant items, if required, as identified during compliance monitoring.	Appendix D – CNMP - Section 7.1
EA/AG-4.8.1L	Temporary noise barriers are recommended where feasible, between the noise sources and all nearby potentially affected noise sensitive receivers, wherever possible. Typically, 7 dBA to 15 dBA of attenuation can be achieved with a well-constructed barrier.	Appendix D – CNMP - Section 7.1
EA/AH-6.1A	Vehicle exhaust emissions Trucks and construction plant entering the site should be well maintained in accordance with the manufacturer's specification to comply with all relevant regulations. Fines may be imposed on vehicles which do not comply with smoke emission standards. Vehicles with smoky exhausts (more than 10 seconds) shall be stood down for maintenance.	Section 5.2.4
EA/AH-6.1B	Vehicle exhaust emissions Unnecessary idling for trucks and plant should be avoided with engines turned off during periods of inactivity.	Section 5.2.4
EA/AH-6.1C	Vehicle exhaust emissions Delivery of pipe sections should be planned and coordinated to avoid congestion and excessive truck queuing / idling of trucks.	Appendix E – CTMP – Section 5.2

Reference ID	Commitment/Management Measure	Where addressed
EA/AH-6.1D	Vehicle exhaust emissions Trips and trip distances should be controlled and reduced where possible.	Section 2.2.2 and 5.2.4
EA/AH-6.2A	Vehicle Entrainment All vehicles on site shall be confined to a designated route with a speed limit of 20 km/h strictly enforced.	Section 5.2.4 Appendix E – CTMP - Driver Code of Conduct
EA/AH-6.2B	Vehicle Entrainment Trips and trip distances should be controlled and reduced where possible.	Section 2.2.2 and 5.2.4
EA/AH-6.2C	Vehicle Entrainment Any dirt that has been tracked onto sealed roads shall be cleaned as soon as practicable.	Appendix F - WMP - Section 5.1.3
EA/AH-6.2D	Vehicle Entrainment Spoil trucks will be immediately covered after being loaded and tailgates will be effectively sealed prior to leaving the ROW or other construction sites.	Section 5.2.4
EA/AH-6.3A	Modify working practices by limiting the dozer daily working hours. Modify working practices by limiting the use of the dozer during periods of high winds, particularly when blowing in the direction of populated areas.	Section 5.2.4
EA/AH-6.3B	Limiting the clearing of vegetation and topsoil to the designated footprint required for pipeline construction.	Section 5.2.1 Section 5.2.4 Appendix F - WMP - Section 5.1.2
EA/AH-6.3D	When conditions are excessively dusty and dust can be seen leaving the site and blowing in the direction of populated areas, the application of water spraying can be considered if working practices cannot be modified / ceased.	Section 5.2.4
EA/AH-6.6A	Wind erosion from exposed surfaces should be controlled as part of the best practice environmental management of the site. Wind erosion from exposed ground should be limited by avoiding unnecessary vegetation clearing and ensure progressive rehabilitation occurs as the pipeline construction proceeds, in accordance with the weed management and restoration procedures.	Appendix F - WMP - Section 5.1.2
EA/AH-6.6B	Wind erosion from temporary stockpiles can be limited by minimising the number of stockpiles on site and minimising the number of work faces on stockpiles. As material is removed or added to stockpiles, the area should be compacted to promote particle cohesion.	Appendix F - WMP - Section 5.1.2
EA/AH-6.7	Under no circumstances should any material be burnt on site. Silt and other materials will be removed from around erosion control structures following any significant rain event to ensure deposits do not become a dust source.	Section 5.2.4
EA/AI-5B	Where traffic management is required on any roadway, all features of the management are to be installed in compliance with the requirements of Australian Standard 1742.3, Part 3 – Traffic Control Devices for Works on Roads.	Appendix E - CTMP - Section 5.2

Reference ID	Commitment/Management Measure	Where addressed
EA/AI-5F	All arrangements for the control of traffic shall be in accordance with the RTA's Traffic Control at Worksites Manual. A Road Occupancy License (ROL) will be required for any work that will impact upon traffic. For times of access and ROL applications please contact the Traffic Operations Manager / Traffic Commander in the respective regions.	Appendix E - CTMP - Section 5.2
EA/AJ-5.2.3	Construction Along Roads • Development of a Traffic Management Plan incorporating requirements for traffic management during construction work and after hours • Access barriers, warning signs at construction areas and access points and/ or separation distances between construction areas and roadways • Awareness training prior to commencement of construction activity • Liaison with local councils and roads authorities to review Traffic Management Plan and proposed construction activities • Review requirements for single lane operation where required during periods of construction activity.	Appendix E – CTMP - Section 5.2
EA/AJ-5.2.5	Construction Near Powerlines •Restriction on the type of equipment allowed on the corridor •Training and certification of equipment operators • Construction work is to comply with the Energy Supply Association of Australia guidelines for Safe Approach Distance to Electrical Apparatus and/ or WorkCover Code of Practice for Work near Overhead Powerlines, Catalogue No. 1394, 2006 • Hazard to be included in Construction Safety Management Plan • Liaison with local fire authorities and review and approval of proposed firefighting controls.	Section 5.2.7
EA/AJ-5.4.1-A	The Contractor will be responsible for providing a safe working environment for personnel and complying with the appropriate safety requirements for work near overhead powerlines, e.g. the Energy Supply Association of Australia (ESAA) National Guidelines for Safe Approach Distances for Electrical Apparatus and/ or WorkCover Code of Practice for Work near Overhead Powerlines, Catalogue No. 1394, 2006.	Section 5.2.7
EA/AL-5.3A	Control of soil dispersion by incorporation of hydrated lime in critical areas, for example, culvert aprons or stormwater channels;	Appendix F – WMP - Section 5.1.2
EA/AL-5.3B	Use of erosion and sediment control techniques in construction areas, for example, catch drains, perimeter banks or sediment traps;	Appendix F - WMP -Section 5.1
EA/AL-5.3D	Mitigation of concentrating runoff in critical areas	Appendix F - WMP -Section 5.1
RS/AD-3.6F	A weed management plan or protocol will be developed and included in the CEMP. The plan will consider the findings of the field assessment. The plan or procedure will include hygiene protocols to reduce the risk of spreading weeds. Excavated material that contains weeds and weed seeds or propagules will not be stored near waterways or areas of native vegetation. Noxious weed management will occur for at least two years post construction.	Section 5.2.1
RS/AD-3.7J	A weed management plan or protocol will be developed and included in the CEMP. The plan will consider the findings of the field assessment as detailed in Table 3-2. The plan or procedure will include all hygiene protocols to reduce the risk of spreading weeds. Excavated material that	Section 5.2.1

Reference ID	Commitment/Management Measure	Where addressed
	contains weed and weed seeds or propagules will not be stored near waterways or areas of native vegetation. Noxious weed management will occur for at least two years post construction. An ecologist would be onsite throughout the entire construction period to provide advice and particularly during clearing vegetation, waterway and wetland habitats and for clearing the trench of trapped fauna. The onsite ecologist would supervise and assist with the two stage clearing process which would involve clearing all understory and smaller vegetation, leaving more mature vegetation for a minimum of 24 hours before clearing larger trees. When removing larger vegetation, a spotter would be present at each tree to be removed to look for signs of animal movement in the tree to be cleared. The spotter should be able to communicate directly with plant operators. Prior to clearing larger trees, an excavator or loader would be used to hit the trunk as high up the tree as possible several times. Wait at least 30 seconds. Repeat this process several times. Once the tree is on the ground the ecologist should check for signs of fauna. Direct contact with any wildlife should be avoided wherever possible. Uninjured wildlife must be encourage to leave the site and injured wildlife should be handled by persons trained in native fauna rescue.	
RS/AE-4.8.1A	Construction strategies • Construction hours of the works will be nominally 7.00 am to 6.00 pm, 7 days per week, or as specified in an approved construction noise management plan prepared in consultation with the DECC, or for horizontal bore drilling and construction substantially distant from residences identified during detailed design. • Particularly important will be adherence to standard DECC recommended hours for any blasting activities required. • When working adjacent to schools, scheduling of noisy activities to outside of normal school hours, where possible. • Avoiding the coincidence of noisy plant working simultaneously close together and adjacent to sensitive receivers would also result in reduced noise emissions. • Where possible, the offset distance between noisy plant items and nearby noise sensitive receivers should be as great as possible. • Regular compliance checks on the noise emissions of all plant and machinery used for the project would indicate whether noise emissions from plant items were higher than predicted. • Ongoing noise monitoring during construction at identified sensitive receivers during critical periods (i.e. times when noise emissions are expected to be at their highest - e.g. chain or wheel trenching) to identify high risk noise events. • Prepare a construction noise management plan to detail how construction noise and vibration impacts would be minimised and managed.	Appendix D - CNMP - Section 7.1
RS/AE-4.8.1B	Source Noise Control Strategies • Engines and exhausts are typically the dominant noise sources on mobile plant such as cranes, graders, excavators, trucks, etc. In order to minimise noise emissions, residential grade mufflers should be fitted on all mobile plant utilised on site. • Regular maintenance of all plant and machinery used for the project will assist in minimising noise emissions. • In particular as the chain/wheel trenchers have been identified as a	Appendix D - CNMP - Section 7.1

Reference ID	Commitment/Management Measure	Where addressed
	dominant source during trenching contractual specifications for maximum noise emission should be considered. • Acoustic enclosures of plant items, if required, as identified during compliance monitoring.	
RS/AE-4.8.1C	Noise Barrier Control Strategies •Temporary noise barriers are recommended where feasible, between the noise sources and all nearby potentially affected noise sensitive receivers, wherever possible. Typically, 7 dBA to 15 dBA of attenuation can be achieved with a well-constructed barrier.	Appendix D - CNMP - Section 7.1
RS/AE-4.8.1D	Community Consultation Active community consultation and the maintenance of positive relations with schools, local residents and building owners would assist in alleviating concerns and thereby minimising complaint. Prior advice will be given to the community regarding any works outside standard construction hours.	Appendix D - CNMP - Section 7.1 and 7.2 EMS Section 5.1
MA/A2-4.1.9C	The maintenance and cleaning of any vehicles, plant or equipment will not be carried out in areas from where contaminants can be released into any waters, roadside gutter, storm-water drainage systems or sensitive environments. No refuelling will occur in or adjacent to watercourses.	Section 5.2.7
MA/A2-4.1.9D	All plant and equipment will be maintained and operated properly and efficiently by qualified personnel.	Section 5.2.4 Appendix E - CTMP Section 5.2
MA/A2-4.1.12B	Strategies for reducing soil erosion on graded sites • Installation of erosion and sediment control measures (ESCMs) as necessary, and in line with the ESCMP; • ESCMs will be employed only for as long as necessary; • Special grading and ESCMs will be taken on Work sites adjacent to streams or rivers, and at watercourse crossings.	Appendix F - WMP - Section 5.1
MA/A2-4.1.13D	All personnel working on the pipeline will undergo training and induction on ecological values.	Section 5.2.1
MA/A2-4.1.13E	All construction camps, facility sites or access tracks are to be located outside of significant areas.	Section 2.1
MA/A2-4.1.13I	Any uninjured fauna will be removed and released to a safe area; injured fauna will be handed over to a predetermined wildlife curer.	Section 5.2.1
MA/A2-4.1.16B	In areas where planting, mulching or paving is impractical, apply gravel or landscaping rock to reduce source of dust emission.	Section 5.2.4
MA/A2-4.1.16C	Minimise areas cleared for construction	Section 5.2.4
MA/A2-4.1.16D	Minimise fuel consumption and vehicle emissions at all times.	Section 5.2.4
MA/A2-4.1.16E	Dust control will be managed effectively by use of water sprays or water trucks. Dust suppression will be performed at locations typical as above where the effects of dust impact working conditions, visibility and environmental disturbance. Control of the water trucks will be the responsibility of the area supervisor, where there is a requirement to reduce water usage chemical dust suppressants may be used (e.g. Dustmag).	Section 5.2.4

Reference ID	Commitment/Management Measure	Where addressed
MA/A2-4.1.16F	Educate community on dust emissions and their impacts.	EMS Section 5.1
MA/A2-4.1.16G	A “no burning” policy will be implemented.	Section 5.2.4
MA/A2-4.1.16I	Regular visual monitoring of dust emissions will be conducted and watering frequency altered as required.	Section 5.2.4
MA/A2-4.1.16J	Use energy efficient lighting and other electrical appliances in office and accommodation buildings.	Noted
MA/A2-4.1.18B	All Project employees will be trained and inducted for spill prevention and response procedures.	Section 5.2.7 EMS – Section 9
MA/A2-4.1.18E	Potable water consumed on site, and at camps will comply with the Australian Drinking Water Guideline 2004.	Section 2.2.5 and 2.3.5
MA/A2-4.1.19A	Water Disposal Management All water disposal will be through appropriate ESC devices at sufficient distance away from watercourses and mindful of its potential to damage vegetation.	Appendix F – WMP - Section 5.1.3
MA/A2-4.1.19B	There will be no release of contaminated water with potential to cause environmental harm to surface waters, land or groundwater.	Appendix C – Contingency Plan
MA/A2-4.1.21A	Noise and Vibration Mitigation measures will include consultation with potentially affected parties to discuss the duration and expected levels of impact with respect to construction noise.	Appendix D - CNMP - Section 7.1 and 7.2 EMS Section 5.1
MA/A2-4.1.21B	To minimize the potential impacts, appropriate and well-maintained equipment/plant will be used throughout the life of the Project, speed limits will be reduced along the RoW near sensitive receptors	Section 5.2.4 Appendix D - CNMP - Section 7.1
MA/A2-4.1.21C	Operators of construction equipment will be made aware of the potential noise problems and techniques to minimise noise emission through a continual process of operator education and issuance and use of prescribed PPE	Appendix D - CNMP - Section 7.1
MA/A2-4.1.23A	Noise and blasting monitoring Where complaints about noise are received these will be investigated and remedial action taken where noise levels are found to exceed authorised limits.	Appendix D - CNMP - Section 7.2
MA/A2-4.1.23B	Monitoring will extend to individual items of plant to ensure that they are effectively silenced and operating in accordance with the legislative noise limits.	Appendix D - CNMP - Section 7.1
MA/A2-4.1.23D	The method of measurement and reporting of noise levels must comply with AS1055 Acoustics and the relevant legislation.	Appendix D - CNMP - Section 3.3
MA/A2-4.1.23E	All noise complaints will be investigated and remedial action implemented if noise levels exceed specified limits at sensitive and commercial places.	Appendix D - CNMP - Section 7.2
MA/A2-4.1.24A	Bushfire prevention QHGP will implement a “No burning” policy on the RoW. No open fires will	Section 5.2.4 and 5.2.7

Reference ID	Commitment/Management Measure	Where addressed
	be lit by personnel engaged in construction. Smoking will be in designated areas only.	
MA/A2-4.1.24B	Water trucks will be used in the vicinity of welding operations to suppress dust, as well as fire in the advent of fire.	Section 5.2.7
MA/A2-4.1.24C	Portable fire extinguishers required in all vehicles will be provided at the Worksite.	Section 5.2.7
MA/A2-4.1.24D	QHGP will comply with local fire prevention regulations in respect of all construction activities, including storage of flammable liquids.	Section 5.2.7
MA/A2-4.1.24E	Portable fire extinguishers of suitable type will be provided at camp premises at a minimum 30 m interval. These extinguishers will be provided outside camp cabins at suitable height to use readily at an emergency time. Health and Safety personnel will inspect these extinguishers on monthly basis and maintain service records	Section 5.2.7
MA/A2-4.1.25A	Emergency Response Project Specific ERP has been developed and training will be conducted for all working personnel in order to familiarise with the emergency procedures. Each part of the ERP will provide instructions and guidelines, to be utilized to assist in incident management including: • Response procedures in the event of a fire, chemical release, spill, accident, explosion, equipment failure, bomb threat, natural disaster (including severe storm, bushfire and flood events) or any other likely emergency; • Communication arrangements and contact details; • Roles and responsibilities of responsible personnel; • Emergency controls and alarms; • Evacuation procedures; • Emergency response equipment; • Leak detection and control points; • Training requirements; • Site access and security	EMS – Section 6
MA/A2-4.1.25B	The effectiveness of the emergency response plan will be regularly tested and audited.	EMS – Section 6
MA/A2-4.1.25C	QHGP will report incidents to the relevant authority, and provide the following information • The holder of the authority; • The location of the emergency or incident; • The number of the authority; • The name and telephone number of the designated contact person; • The time of the release; • The time and the holder of the authority become aware of the release; • The suspected cause of the release; • The environmental harm caused, threatened, or suspected to be caused by the release; and • Actions taken to prevent any further release and mitigate any environmental harm caused by the release.	EMS – Section 6
MA/A2-4.7.9	Drainage Drainage standards adopted are shown in Table 5. Temporary drain alignment is to be incorporated into the final drainage design layout.	Appendix F - WMP -- Section 5.1

Reference ID	Commitment/Management Measure	Where addressed
MA/A2-4.7.10	Flow diversion around soil disturbances and stockpiles Where possible, provision for the diversion of up-slope stormwater runoff for catchments area exceeds 1500m2, including temporary stockpile locations, stringing yards, access roads and compounds shall be made. Table 6 Recommended “Maximum” Drain or Bench Spacing on Non-Vegetated Slopes.	Appendix F WMP -- Section 5.1.1 and 5.1.2
MA/A2-4.7.11	Erosion Control The first and most important control on this site is to not disturb the topsoils until required. This is to avoid disturbance of the underlying dispersive subsoils. Once disturbed, the material needs to be promptly placed, and the upper 200mm stabilised with gypsum at the rate advised in the (pending) soils report. The default rate of gypsum application is 15 t/ha.	Appendix F - WMP - Section 5.1.2
MA/A2-4.7.12A	Spacing of Lateral Drains Down Long Continuous Slopes Long unstable slopes must be divided into manageable drainage areas to prevent the formation of rill erosion. Catch drains or flow diversion banks should be placed at regular intervals down the slope to collect and divert surface runoff to a stable outlet. Table 7 Application of Erosion Control Measures to soil slopes (reproduced from table 4.4.13 of IECA 2008) (see tab MA-A2).	Appendix F - WMP - Section 5.1.2
MA/A2-4.7.12B	Concentrated flow from any sediment retention devices should be turned back Into sheet flow on steep ground, or where there is a high erosion risk from output from that structure.	Appendix F - WMP Section 5.1.3
MA/A2-4.7.14A	Revegetation and Stabilisation Revegetation or temporary stabilisation should be completed within 30 days for sites with a very low or low erosion risk. If works are likely to be suspended for an extended period, stabilisation of exposed areas will also be required within the specified timeframes.	Appendix F - WMP Section 5.1.2
MA/A2-4.7.14B	It is understood that the majority of exposed areas on the site will be stabilised by gravelling. In accordance with IECA (2008) gravelling should be undertaken with the following design principles: • Minimum 100% coverage of the soil surface • Nominal aggregate size of 20 to 75mm • Apply at a minimum thickness of 50mm, or at least twice the nominal aggregate size.	Appendix F - WMP Section 5.1
MA/A2-4.7.16A	Corrective action All incidents and non-conformances are to be reported and investigated and corrected in accordance with the ESCP to ensure effective soil and water quality management practices at all times.	Appendix F – WMP - Section 5.6 EMS Section 6
MA/A2-4.7.16B	Best practice site management requires all ESC measures to be inspected by the construction contractor’s nominated representative at least daily when rain is occurring, within 24 hours prior to expected rainfall, and within 18 hours of a rainfall event of sufficient intensity and duration to cause onsite runoff (IECA, 2008).	Appendix F - WMP Section 5.6
MA/A2-4.7.17A	Inspections and monitoring Daily site inspections (during periods of runoff producing rainfall) ▪ All drainage, erosion and sediment control measures ▪ Occurrences of excessive sediment deposition (whether on-site or off-site) ▪ All site discharge points	Appendix F - WMP Section 5.6

Reference ID	Commitment/Management Measure	Where addressed
MA/A2-4.7.17B	Weekly site inspections (even if work is not occurring on-site) ▪ All drainage, erosion and sediment control measures ▪ Occurrences of excessive sediment deposition (whether on-site or off-site) ▪ Occurrences of construction materials, litter or sediment placed, deposited, washed or blown from the site, including deposition by vehicular movements ▪ Litter and waste receptors ▪ Oil, fuel and chemical storage facilities	Appendix F - WMP Section 5.6
MA/A2-4.7.17C	Prior to anticipated runoff producing rainfall ▪ All drainage, erosion and sediment control measures ▪ All temporary flow diversion and drainage works	Appendix F - WMP Section 5.6
MA/A2-4.7.17D	Following runoff producing rainfall ▪ Treatment and de-watering requirements of sediment basins ▪ Sediment deposition within sediment basins and the need for its removal ▪ All drainage, erosion and sediment control measures ▪ Occurrences of excessive sediment deposition (whether on-site or off-site) ▪ Occurrences of construction materials, litter or sediment placed, deposited, washed or blown from the site, including deposition by vehicular movements	Appendix F - WMP Section 5.6
MA/A2-4.7.18A	Audits Site inspections are to be undertaken in accordance with the Site Inspection Checklist provided on page 7.19 – 7.31 of the IECA, Best Practice Erosion and Sediment Control Guidelines (2008).	Appendix F - WMP - Section 5.6
MA/A2-4.7.18B	In accordance with the IECA, Best Practice Erosion and Sediment Control Guidelines (2008), audits are to be conducted at intervals of not more than one (1) calendar month commencing from the day of site disturbance until all disturbed areas have been adequately stabilised against erosion to the acceptance of the relevant regulatory authority. Such audits must be: • Undertaken by a person suitably qualified and experienced in erosion and sediment control (i.e. CPESC); • Conducted on the next business day following a rainfall event in which greater than 10mm of rainfall has been recorded by the Bureau of Meteorology rain gauge nearest to the site. It is recommended audits include: • Copies of all original completed ESC site audit checklists, non-conformance and corrective action reports;	Appendix F - WMP - Section 5.6
MA/A2-4.10A	Waste Management Plan Any scheduled wastes produced by the construction of the pipeline will be handled in accordance with NSW legislation. The waste handling procedures will be cognisant of the nature of waste generation, anticipated quantities, the means of disposal and the environmental controls that will be applied to prevent significant environmental impacts.	Section 5.2.9
MA/A2-4.10B	Special care will be taken to ensure that waste collection and disposal does not create any hazard/nuisance to the local residents or communities.	Section 5.2.9
MA/A2-4.10C	Careful planning will be employed when ordering materials with preference given to materials that will result in no, or low, levels of waste (from both the material and the packaging).	Noted
MA/A2-4.10.1C	Regulated waste will be removed from site, as soon as practicable; in addition, any authorised waste removal or disposal will be reported to the administering authority as soon as it becomes known	Section 5.2.9

Reference ID	Commitment/Management Measure	Where addressed
MA/A2-4.10.1D	A record of regulated waste removed will be kept including the following: • Date of waste transport; • Quantity of waste removed and transported; • Type of waste removed and transported; • Route selected for transport of waste; • Quantity of waste delivered; and • Any incidents (e.g. spillage) that may have occurred on route.	Section 5.2.9
MA/A2-4.11F	The Project Environmental Manager will ensure that all approved Environmental Procedures detailed in this document are being followed by all personnel involved in the pipeline construction Project, including those allotted specific tasks	Section 6.1
MA/A2-4.11G	Project Environmental Manager will promote environmental awareness amongst the workforce by means of regular presentations to supervisory staff and others.	EMS - Section 9
MA/A2-4.11H	They will also organize “Tool Box” meetings to assist Supervisors in maintaining environmental awareness in their individual teams.	EMS - Section 9.2
MA/A2-4.11I	The Project Environmental Manager will act as environmental focal point for the construction work and ensure that the Emergency Response Plan and associated Emergency Procedures are immediately implemented in the event of any environmental incident	EMS - Section 4.4
MA/A2-4.11J	An annual monitoring report will be prepared and will include but not be limited to: • A summary of the previous twelve (12) months monitoring results and to relevant prior results; • An evaluation/ explanation of the data from any monitoring programs; • A summary of any record of quantities of releases required to be kept; • A summary of record of equipment failures or events recorded for any site; and • An outline of actions taken or proposed to minimize the environmental risk from any deficiency identified by the monitoring or recording programs. Monitoring results will be recorded, compiled and kept for minimum of five years and made available for inspection upon request	EMS - Section 4.6
MA/A2-4.11K	The Project Environmental Manager will establish an environmental monitoring and audit program applicable to all phases of the construction works.	EMS - Section 8.1
MA/A2-4.11L	The environmental audit Program will be developed based on AS/NZS ISO 14001 guidelines. It will be based on the criteria for acceptable environmental performance defined in this document including those criteria relating to the following: • Project Environmental Policy; • Environmental objectives; • Key Environmental Performance Indicators (KEPIs); • Minimizing impacts associated with traffic movements; • Water resource conservation; • Protection of archaeological and cultural heritage finds; • Waste management; • Ecological conservation; • Community relations; • Protection of soils;	EMS - Section 8.1

Reference ID	Commitment/Management Measure	Where addressed
	• Weed control • Minimising nuisance from noise and dust.	
MA/A2-4.11M	The audit report will identify the segment of the Project being audited, the conditions that were activated during the period, and a compliance/non-compliance table. A description of the evidence to support the compliance table will be provided. The audit report shall also contain recommendations on any non-compliance or other matter to improve compliance. The third-party auditor will certify the findings of the audit report.	EMS - Section 8.1
MA/A2-4.11N	The Environmental Manager will issue an audit report and raise this with the project management team. This team will identify: • Actions taken to ensure compliance with the imposed conditions; and • Actions taken to routinely prevent a recurrence of any non-compliance issues	EMS - Section 8.1
MA/A2-4.11O	Environmental inspections The Project Environmental Coordinator will conduct (daily) inspections along the active sections of Working Strip to monitor environmental performance of all work activities and a (weekly) inspection at Camps for the same purpose. These inspection reports will be recorded on a specified format; these reports will be audited.	Section 6.1
MA/A2-4.11P	The Project Environmental Manager will carry out regular inspections on working strip and report all non- compliances and follow up actions; these will be recorded in a specified log.	Section 6.1
MA/A2-4.12	Environmental Records The following Environmental Records will be maintained during the course of the Project: • Environmental KPIs; • Environmental permits and licenses; • Environmental awareness training (inductions and others, including HSE meetings, etc.); • Environmental line list; • Environmental site record form; • Job environmental analysis; • Audit reports including CARs (Corrective Action Requests); • Compliance checklist; • Complaints register; • Incident register, including fires and spill reports; • Environmental monitoring records: • Dewatering and groundwater abstraction and monitoring records; • ASS records; • Quantitative records of discharges to the environment that are accurate and can be Monitored and audited; • Details on fauna capture and release and opportunity sightings (daily records, weekly or monthly reports); • Waste register; • Environmental awareness bulletins/alerts; • Consultation records and meeting notes; • Hygiene registers.	Throughout CEMP and subplans

Appendix B – Unexpected Finds Protocol

Heritage

Background

An 'unexpected heritage item' means any unanticipated discovery of an actual or potential heritage item, for which Santos and its contractor does not have approval to disturb or does not have a safeguard in place (apart from this procedure) to manage the disturbance.

Unanticipated discoveries are categorised as either:

- Aboriginal objects
- Historic (non-Aboriginal) heritage items
- Human skeletal remains.

Aboriginal objects

The National Parks and Wildlife Act protects Aboriginal objects which are defined as:

"Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction and includes Aboriginal remains."

Examples of Aboriginal objects include:

- Stone tool artefacts
- Shell middens
- Axe grinding grooves
- Pigment or engraved rock art
- Burial sites
- Scarred trees.

If Santos and its contractor become aware of any unanticipated discovery of Aboriginal object(s), all work likely to affect the object(s) shall cease immediately and the Heritage NSW are to be informed as per the CoA and the *National Parks and Wildlife Act 1974*. Works cannot recommence until written authorisation from Heritage NSW is received by Santos.

Non-Aboriginal heritage items

The Heritage Act protects non-Aboriginal heritage items which are defined as:

"Any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance."

Non-Aboriginal heritage items may include:

- Archaeological 'relics'
- Other historic items (i.e., works, structures, buildings, or movable objects).

Relics are archaeological items of local or state significance which may relate to past domestic, industrial, or agricultural activities in NSW. Relics can include bottles, remnants of clothing, pottery, building materials and general refuse.

If Santos and its contractor become aware of any unanticipated discovery of historic heritage (non-Aboriginal heritage), all work likely to affect the object(s) shall cease immediately and Archaeological advice will be sought by Santos.

Human skeletal remains

Human skeletal remains can be identified as either an Aboriginal object or non-Aboriginal relic depending on ancestry of the individual (Aboriginal or non-Aboriginal) and burial context (archaeological or non-archaeological). Remains are archaeological when the time elapsed since death is suspected of being one hundred years or more.

All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently. Work must cease and the area fenced in the immediate vicinity for an Aboriginal object or for skeletal remains. No-one must enter the fenced area until given approval to do so.

Under the applicable legislation, the following agencies must be notified in the event of human remains being discovered:

- NSW Police
- NSW Coroner's Office
- Heritage NSW (in the event Aboriginal remains are uncovered)
- The consulting heritage specialist who will identify if the remains are human, and whether they are Aboriginal or non-Aboriginal. The heritage specialist would also consult with the Aboriginal community, if necessary.
- If the remains are determined to be Aboriginal, contact the relevant Local Aboriginal Land Council for the area and they may identify/ engage relevant Traditional Owners. This site will be avoided.

If work must stop due to human remains being uncovered, works will not recommence within the area until authorised by the applicable agencies listed above.

Unexpected Finds Protocol

The Unexpected Finds Protocol that must be followed by any personnel in the event of an unexpected heritage item being discovered is outlined below.

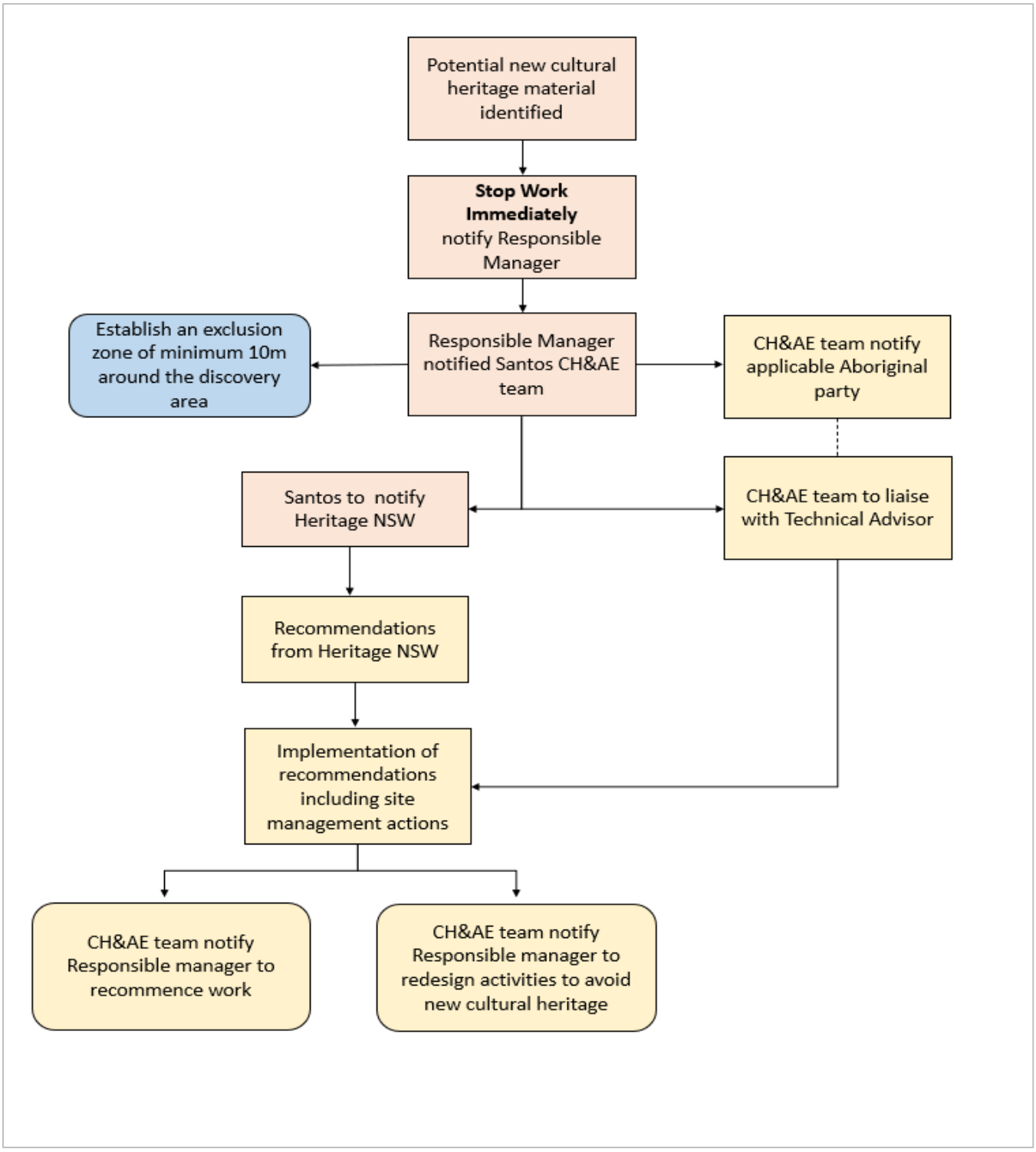


Figure B.1 – Protocol for Unexpected Find of Heritage Item.

Skeletal Remains Protocol

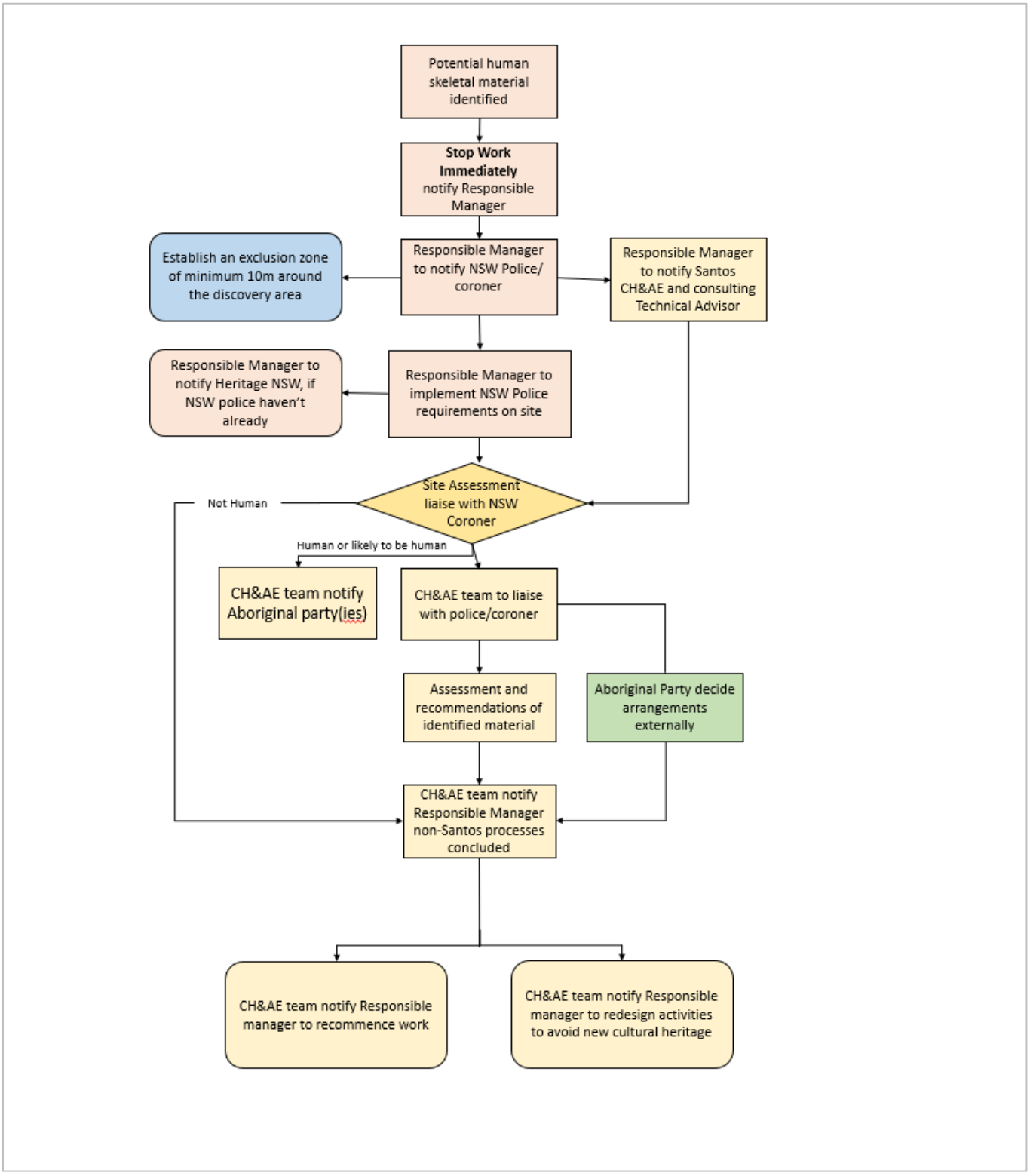


Figure B.2 – Protocol for unexpected find of human skeletal material.

Contact Details

Contact details applicable to this Unexpected Finds Protocol are listed below.

Table B.1 – Contact details – Heritage

Position	Name	Phone Number
Senior Manager Cultural Heritage and Aboriginal Engagement	Haydn Kreicbergs	(07) 3838 5009
Development Manager	Todd Dunn	0438 720 766
Construction Supervisor	TBA	TBA
Werris Creek Police Station		(02) 6768 7444
Consultant Heritage Specialist	Drew Rutch (Santos) OzArk	(07) 3838 3693 (02) 6882 0118
Nungaroo Local Aboriginal Land Council (LALC)		(02) 6746 2356
Heritage NSW		(02) 9873 8500 heritagemailbox@environment.nsw.gov.au

Appendix C – Contingency Plan

Contingency plans for pollution incidents are outlined in the following sections.

Introduction

A "pollution incident", as defined by the *Protection of the Environment Operations Act 1997*, means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill (e.g. hydrocarbons) or other escape or deposit of a substance (including sediment), as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

Key environmental hazards from Stage 1 activities with the potential to pollute or contaminate land, surface and groundwater are restricted to:

- Sedimentation of surface waters during rainfall events due to sediment mobilising from the Preliminary Works Site 1
- Contamination of land, surface and shallow groundwaters from a spill or from incorrect storage and handling practices of hydrocarbons / chemicals stored on-site
- Contamination and sedimentation of surface waters due to flooding / severe weather event.

The Preliminary Works Site 1 is approximately 3.2 ha comprised of a gravelled hardstand area and erosion and sediment control measures. It will be used primarily for equipment, materials (including diesel fuel) and machinery storage, pipe storage and will house a site office. The site is dominated by non-native pastures, adjacent to a heavily disturbed, ephemeral drainage line that can convey waters through pasture during rainfall events. Given the small scale of the site, the limited volumes of hydrocarbons and other hazardous substances to be stored on-site, the nature of the drainage line, and the management measures to be implemented; including the development of erosion and sediment controls in accordance with best practice management - the scale and consequence of a pollution event is expected to be limited, with the primary risk limited to handling of higher risk substances such as hydrocarbons. However, the following measures will be actioned should a pollution event occur, or have the potential to occur. Remedial actions and management measures for flooding are as per those described in Appendix F Section 5.5.

Immediate actions at the scene

In the event of a spill of any size:

- Make the area safe if safe to do so by shutting off ignition sources, or stopping / controlling the leakage by shutting valves, plugging holes or moving mobile equipment, otherwise evacuate the area
- Activate any emergency shutdown devices if able and without putting self at risk
- Raise the alarm using the communication method (Table C.1) appropriate for the scale/type of incident. Alert others in the area if they are in danger if able and without putting self at risk
- Divert traffic and/or people away from the immediate area as necessary.

In event of flooding/severe weather:

- Assess location and seek higher ground if suspect location will flood
- If safe to do so:
  - Move equipment, supplies, waste and hazardous materials to higher ground as reasonably practicable

  - Secure any items that may float and cause damage.
  - Raise the alarm and alert others in the area if able to do so.

In the event of water being released from site:

- Conduct a visual inspection at release point for:
  - a discernible difference in sediment loads upstream and downstream of the release location
  - a visible sheen
- If either of the above are occurring, if safe to do so:
  - for sediment release:
    - rectify improper functioning erosion and sediment control measures on site (e.g. remove build up of sediment, water diversion for a stockpile)
    - implement additional sediment control measures (e.g. coir logs) at or before the point of release or at the sediment source (e.g. a stockpile) and/or install temporary measures to slow or divert water flow
  - for a visible sheen - deploy suitable spill kit controls (e.g. boom).
- Raise the alarm using the communication method (Table C.1) appropriate for the scale / type of incident

Raise the alarm

The available communication methods to raise the alarm are identified in Table C.1.

Prefix any emergency call with “emergency emergency”.

Table C.1 – Communication methods

Method	Description
Radio	Local site radio.
Phone	Direct to Santos Construction Supervisor. 1300 926 177.
Fixed alarm	Fixed fire or ESD. Facility muster alarms.
Other	Long pressing the IVMS duress alarm in vehicles.

Relay Information

Relay the following information when raising the alarm as required by Table C.1:

- Incident description (type of incident examples)
  - Loss of containment: oil, fuel, chemical or other
  - Flood
- Incident location
- Are there any injuries? If yes, details of injuries

  - Who is injured (names of personnel, Santos or Contractor)?
  - How many people are injured?
  - What are the injuries?
  - What first aid is being provided?
  - What emergency services have been called?
  - What further medical assistance is required?
- Incident size and potential
  - Area
  - Height
  - Volume
  - How could this impact personnel, public, environment, assets?
- Status
  - Has the source been stopped or contained?
  - Is it under control?
  - Is it spreading? If yes, what direction? N/S/E/W?
  - Are personnel evacuating to muster location?
- Emergency call made by (provide name and company)?
- Time emergency detected and time of call?

Response actions

The actions outlined in Table C.2 will be taken after a pollution incident to reduce or control any pollution. The following procedures are to be followed where this is no threat to the safety of site personnel responding to the incident.

Table C.2 – Response procedure

	Step	Action
1	Contain	• Review SDS if a hazardous substance. • Put on appropriate Personal Protective Equipment (PPE). • Trace the source of the incident. • If a loss of containment, determine if still continuing. • Contain any leakage using temporary bunds, booms, spill kits etc.
2	Recover protocol	• Recover any free liquid hydrocarbons into purpose-built tankers if possible. • Recover absorbent materials i.e., booms. • Never spread or dilute spills with degreasers, detergents or water
3	Clean up and remediation	Procedures for the clean-up of pollution incidents will largely depend on the type and extent of the pollution incident. Clean-up procedures will consider the following: • Type of pollutant • Extent and area of pollution impact

	Step	Action
		• Medium in which pollution has occurred (land, air, water, or any combination) • Requirements for specialist advice in relation to the removal and remediation of the pollution • Potential additional environmental impacts by the proposed clean-up processes • Costs to remove the polluted material to a waste facility licensed to accept the waste. Sediment and erosion controls would be inspected and remediated to ensure effectiveness as described in Appendix E Section 5.6.
4	Dispose	• Dispose of all product affected by incident appropriately. • Contaminated soil should be removed to an appropriate facility following consultation with the Environmental Advisor.
5	Report	• Report the incident to Construction Supervisor who will then notify the Environmental Advisor. If possible, provide details such as: – Pictures of the spill and affected or impacted area, equipment and/or infrastructure – Record the impacted area (in m^2) and volume released (in m^3). • Environmental Adviser will: – Confirm external and internal notification requirements – Arrange sampling of site as required (e.g., at the discharge location, including up/down stream modelling of any waterways suspected of being impacted) • The Team Leader – Onshore Environment will notify the appropriate agencies and groups. • The Construction Management will initiate IMS entry into EHS Toolbox and initiate an investigation.
6	Replace used equipment	• Any equipment or materials consumed in the incident response or clean-up operation should be replaced as soon as possible.
7	Monitor	• Monitor the incident site to validate clean up and impact on the environment.

Notifications

Depending on the nature of the incident, Santos is required to immediately notify all or some of the regulatory authorities identified in Table C.3 where a pollution incident causing or threatening material harm to the environment has occurred or is likely to occur.

Material harm to the environmental is defined within the POEO Act 1997 as:

- involving actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
- resulting in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations).

Noting that 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.

Table C.3 – External incident notifications

Regulatory authority	Contact details
DPE	compliance@planning.nsw.gov.au
EPA	Environment Line 131 555
Liverpool Plains Shire Council	02 6746 1755
Fire & Rescue NSW	call 000 in an emergency or otherwise, 02 6792 3667
NSW Health	02 6274 8000
SafeWork NSW	131 050

It may also be necessary to communicate with the downstream landholders. This will be completed by phone or by door knocking as required.

Appendix D – Noise Management Plan

Appendix E – Traffic Management Plan

Appendix F – Water Management Plan