Environmental Referral

Sturt Plateau Pipeline

APA SPP Pty Ltd

Level 12, 80 Ann Street
Brisbane QLD 4000

Prepared by:

SLR Consulting Australia

SLR Project No.: 680.030294.00001

6 December 2024

Revision: 3.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	21 October 2024	Natalie Calder	Craig Smith	Craig Smith
2.0	21 November 2024	Natalie Calder	Craig Smith	Craig Smith
3.0	6 December 2024	Natalie Calder	Craig Smith	Craig Smith

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care, and diligence, and taking account of the timescale and resources allocated to it by agreement with APA SPP Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

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Executive Summary

This Referral report was prepared to inform the Northern Territory Environment Protection Authority (NT EPA) of the proposal by APA SPP Pty Ltd (APA) to develop and operate the Sturt Plateau Pipeline (the Project).

This document provides supporting information to the Referral Form for the Project, submitted under Section 48 of the Northern Territory (NT) Environment Protection Act 2019 (EP Act) to the NT EPA.

The Project is proposed to transport gas from Tamboran B2 Pty Ltd's (Tamboran) Sturt Plateau Compression Facility (SPCF) development sites to the Amadeus Gas Pipeline (AGP) via a lateral pipeline 300 mm in diameter. The AGP is a transmission pipeline that transports natural gas to Darwin, Alice Springs and regional centres, principally to fuel power generation.

The Project is located approximately 50 km south of Daly Waters, and 80 km north of Elliott, in the Roper Gulf Region of the NT.

The preferred pipeline alignment is approximately 37 km in length and traverses pastoral land and the Stuart Highway Road reserve.

The Project comprises the following primary components:

- The Shenandoah Facility (receipt station), where the proposed pipeline connects to Tamboran's SPCF
- The Sturt Plateau Facility (delivery station) where the proposed pipeline connects to the AGP
- A buried transmission pipeline and associated construction footprint for the construction right of way (CROW)
- A buried cathodic protection anode bed
- Temporary construction camp and associated facilities
- Additional work areas for construction including areas for truck turnarounds and vegetation storage, horizontal bore entry and exit locations, and line pipe storage areas.

The NT EPA has developed a framework for the assessment of environmental impact. The framework uses 14 environmental factors divided into five themes to provide a systematic approach to organising environmental information and to establish environmental objectives against which proposals will be assessed. The pre-referral screening determined that the Project has potential to impact two of the 14 environmental factors. The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) aims to protect Matters of National Environmental Significance (MNES). The Project is unlikely to significantly impact upon MNES, namely:

- Listed threatened species
- The Water Trigger.

However, a precautionary referral has been submitted to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) for assessment under the EPBC Act.

Table 1 provides a summary of the relevant factors, potential impacts, benefits, and residual impacts.

This referral has considered the potential environmental impacts of the proposed Project in line with the Referring a proposal to the NT EPA guidance for proponents. Technical studies were undertaken to assess the impacts on the key environmental factors and a risk-based approach has been applied to developing and evaluating effective mitigation and management measures. An iterative approach was then taken to ensure that the mitigation and management measures were appropriate to achieve an acceptable level of residual risk.

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) aims to protect Matters of National Environmental Significance (MNES). The Project is unlikely to significantly impact upon MNES, namely:

- Listed threatened species
- The Water Trigger.

However, a precautionary referral has been submitted to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) for assessment under the EPBC Act.

Table 1: Summary of Factors relevant to the Project, potential impacts, and residual impacts

Factor	Environmental value	Potential impacts and benefits	Mitigation Measures Reducing Potential Impacts	Residual Impact
LAND				
Terrestrial ecosystems	Riparian vegetation	• Clearing of approximately 22 ha of sensitive or significant vegetation (riparian vegetation). • Introduction of pest flora species (weeds).	The protection of terrestrial ecosystems to ensure environmental values are supported and maintained will be managed through the Construction Environmental Management Plan (CEMP), including: • Erosion and Sediment Control Plan • Fire Management Plan • Hazardous Substances Management Plan • Land Clearing Management Plan • Waste Management Plan • Rehabilitation Management Plan • Weed and Pest Management Plan. The following permits will regulate the activity: • Pastoral land clearing permit under the Pastoral Land Act 1992 • Permit to interfere with a waterway under the Water Act 1992.	Low

Factor	Environmental value	Potential impacts and benefits	Mitigation Measures Reducing Potential Impacts	Residual Impact
PEOPLE				
Community and Economy	Native Title Holder rights and interests	• Community division over project benefits and impacts could have a noticeable and significant effect on community cohesion and social dynamics. • Economic impacts (positive) • Traffic impacts during construction • Stakeholder concerns.	An Indigenous Land Use Agreement (ILUA), negotiated between Native Title Holders, the NLC and APA, will be in place prior to any works. Construction works will be limited (approximately 6 months), much of the construction infrastructure temporary (I.e., workers camp) and most of the disturbance footprint rehabilitated. Other impacts will be managed through the CEMP, including: • Traffic Management Plan • Community and Social Performance Management Plan • Emergency Management Plan • Transparent Social Investment Program • Stakeholder Engagement Plan	Low

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Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
AAPA	Aboriginal Areas Protection Authority
AGP	Amadeus Gas Pipeline
APA	APA Group Limited
APGA	Australian Pipelines and Gas Association Ltd
AS	Australian Standard
CEMP	Construction Environmental Management Plan
CP	Cathodic protection
CROW	Construction Right of Way
CSPMP	Community and Social Performance Management Plan
CUF	Common User Facility
DAF	Department of Agriculture and Fisheries
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DLI	Department of Logistics and Infrastructure
DLPE	Department of Lands, Planning and Environment
DME	Department of Mines and Energy
EP Act	Environment Protection Act 2019
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ha	Hectare
IAP2	International Association for Public Participation
ICCP	Impressed current cathodic protection
ILUA	Indigenous Land Use Agreement
Km	Kilometre
LGA	Local Government Area
m	meters
mm	Millimetres
ML	Mega litre
MNES	Matters of National Environmental Significance
NLC	Northern Land Council
NT	Northern Territory
NT EPA	Northern Territory Environmental Protection Authority
PBC	Prescribed Body Corporate
pig	Pipeline inspection gauge
PPL	Perpetual Pastoral Lease
SREBA	Strategic Regional Environmental and Baseline Assessment
SIA	Social Impact Assessment
SPCF	Sturt Plateau Compression Facility
Tamboran	Tamboran B2 Pty Ltd

Acronym/ Abbreviation	Definition
Tamboran project	Tamboran's gas exploration and appraisal project
TJ	Terajoules
WEL	Water extraction licence
WM Act	Weed Management Act 1992
WoNS	Weeds of National Significance

Glossary

Term	Definition
Disturbance Footprint	The physical extent of the impact of the Project on the natural environment of the site.
Project Area	The development envelope for the Project comprising a 500 m wide corridor for the proposed pipeline, land for surface facilities at the start and end of the pipeline and the temporary construction camp.
Survey Area	The area outside of, surrounding and including the Disturbance Footprint that has been assessed in detail to ensure environmental constraints have been identified and are understood. The area is notionally a 150 m wide corridor which is centred around the pipeline alignment and includes larger areas surrounding each facility.
The Project	The Sturt Plateau Pipeline Project.
Operation footprint	The area of land required to operate and maintain the Project.

Publication Statement

This Referral has been prepared by SLR Consulting Pty Ltd (SLR) on behalf of APA SPP Pty Ltd (APA). Key contributors, their qualifications, and years of experience in their respective technical disciplines are provided below.

Contributor	Qualification	Experience
Natalie Calder	Bachelor Science	10+
Craig Smith	Bachelor of Applied Science	25+
Matthew McIntosh	Bachelor of Science, Zoology and Ecology	8+
Glyn Cowie	Bachelor of Environmental Management Member of Australian Acoustical Society	18+
Kirsten Lawrence	Bachelor of Engineering (Chemical and Materials) CAQP - CASANZ	31+
Anthony Kay	Bachelor of Engineering (Civil) (Hons) MIE Aust	22+
Chad Pretty	Bachelor of Environment and Society Graduate Certificate of Spatial Science	1+
Roland Short	Bachelor of Urban and Regional Planning	10+

A list of key subconsultants, their qualifications, and years of experience in their respective technical disciplines are provided below.

Subconsultant	Technical discipline	Qualification	Experience
Craig Fenton	Economics	Bachelor of Economics	20+ years
Julian Orth WRM Consultants	Hydrology	Bachelor of Engineering (Civil) (Hons) Master of Engineering (Engineering Science)	17+ years
Ben Keys Remote Heritage Services	Archaeology	Batchelor of Archaeology (Honours)	15+ years
Richard Wolfe Earth Sea Heritage Surveys	Archaeology	Master of Arts (Archaeology and Heritage Management)	20+ years
Isaac Floyd Night Time Ecology	Bioacoustics and ecology	Bachelor of Biomedical Science	3+ years

1.0 Introduction

This Referral report was prepared to inform the Northern Territory Environment Protection Authority (NT EPA) of the proposal by APA SPP Pty Ltd (APA) to construct and operate the Sturt Plateau Pipeline (the Project), approximately 540 km south of Darwin, in the Northern Territory (NT). The regional context of the Project is shown in Figure 1.

The Project will receive gas from Tamboran B2 Pty Ltd's (Tamboran) approved gas exploration and appraisal project in the Beetaloo Basin and transport it to the Amadeus Gas Pipeline (AGP) that connects to Darwin, Alice Springs, and regional centres.

This document provides supporting information to the Referral Form for the Project, submitted under Section 48 of the Environment Protection Act 2019 (EP Act) to the NT EPA. This supporting information document includes a completed NT EPA Pre-Referral Screening Tool (Appendix A) and has been prepared in accordance with NT EPA Environmental Impact Assessment Guidance for Proponents – Referring a Proposal to the NT EPA (NT EPA, 2022).

The Proposal is being referred to the NT EPA to determine whether formal assessment is required pursuant to the NT EP Act. This Referral also gives consideration as to whether the Proposal should be referred for assessment under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

1.1 Project Overview

APA is a subsidiary of APA Group Limited (APA Group). APA Group owns and operates various gas pipelines in the NT and throughout Australia through its subsidiaries.

APA proposes to construct and operate the Project. The Project will receive gas from Tamboran's approved Beetaloo Basin Shenandoah South Exploration and Appraisal Program and transport it to the AGP. The Project is located approximately 50 km south of Daly Waters, and 80 km north of Elliott, in the Roper Gulf Region of the NT.

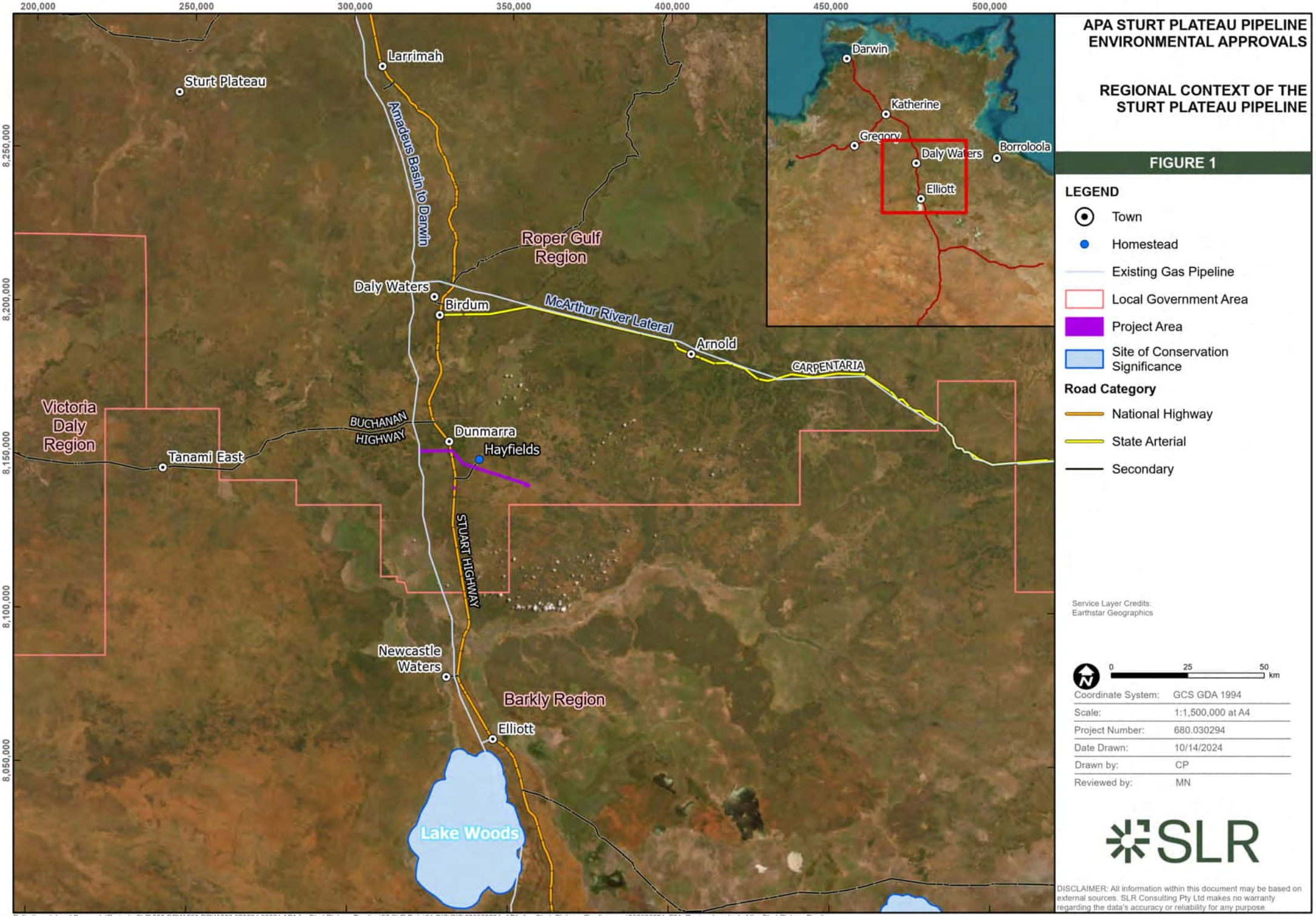
The AGP, APA Group's existing bidirectional gas pipeline, extends from the south of the NT to Darwin (in the north), transporting natural gas to Darwin, Alice Springs, and regional centres, primarily for power generation.

The Disturbance Footprint for the project is defined as the Project's combined construction footprint and is approximately 146 hectares (ha) comprising:

- the construction right of way (CROW) for the Sturt Plateau Pipeline.
- construction footprints for the Shenandoah Facility and Sturt Plateau Facility.
- the temporary construction camp, and
- additional work areas (including truck turnarounds, vegetation storage, horizontal bore entry and exit locations, and line pipe storage areas) required to facilitate construction.

The Disturbance Footprint is located within the larger Project Area comprising a 500 m wide corridor for the proposed pipeline, land for surface facilities at the start and end of the pipeline and the temporary construction camp.

The estimated capital investment value for the Project is $57 million.



APA STURT PLATEAU PIPELINE ENVIRONMENTAL APPROVALS

REGIONAL CONTEXT OF THE STURT PLATEAU PIPELINE

FIGURE 1

LEGEND

- Town
- Homestead
- Existing Gas Pipeline
- Local Government Area
- Project Area
- Site of Conservation Significance

Road Category

- National Highway
- State Arterial
- Secondary

Service Layer Credits: Earthstar Geographics

0 25 50 km

Coordinate System:	GCS GDA 1994
Scale:	1:1,500,000 at A4
Project Number:	680.030294
Date Drawn:	10/14/2024
Drawn by:	CP
Reviewed by:	MN

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1.2 Studies Undertaken to Inform this Referral

The following studies have been undertaken to inform this Referral:

- Air Quality and Greenhouse Gas Assessment completed by SLR (2024) (Appendix B)
- Cultural Heritage Desktop Assessment completed by Remote Heritage Consultants (2024) (Appendix C)
- Cultural Heritage Field Assessment completed by Remote Heritage Consultants (2024) (Appendix D)Ecological Assessment completed by SLR (2024) (Appendix E)
- Economic Impact Assessment completed by PricewaterhouseCoopers (2024) (Appendix F)
- Construction Noise and Vibration Assessment completed by SLR (2024) (Appendix G)
- Social Impact Assessment completed by SLR (2024) (Appendix H)
- Surface Water Assessment completed by WRM Pty Ltd (2024) (Appendix I)
- Traffic Impact Assessment completed by SLR (2024) (Appendix J).

Information from the Strategic Regional Environmental and Baseline Assessment (SREBA) for the Beetaloo Sub-basin has also been used, where relevant.

2.0 Project Description

2.1 Location and Regional Context

2.1.1 Location

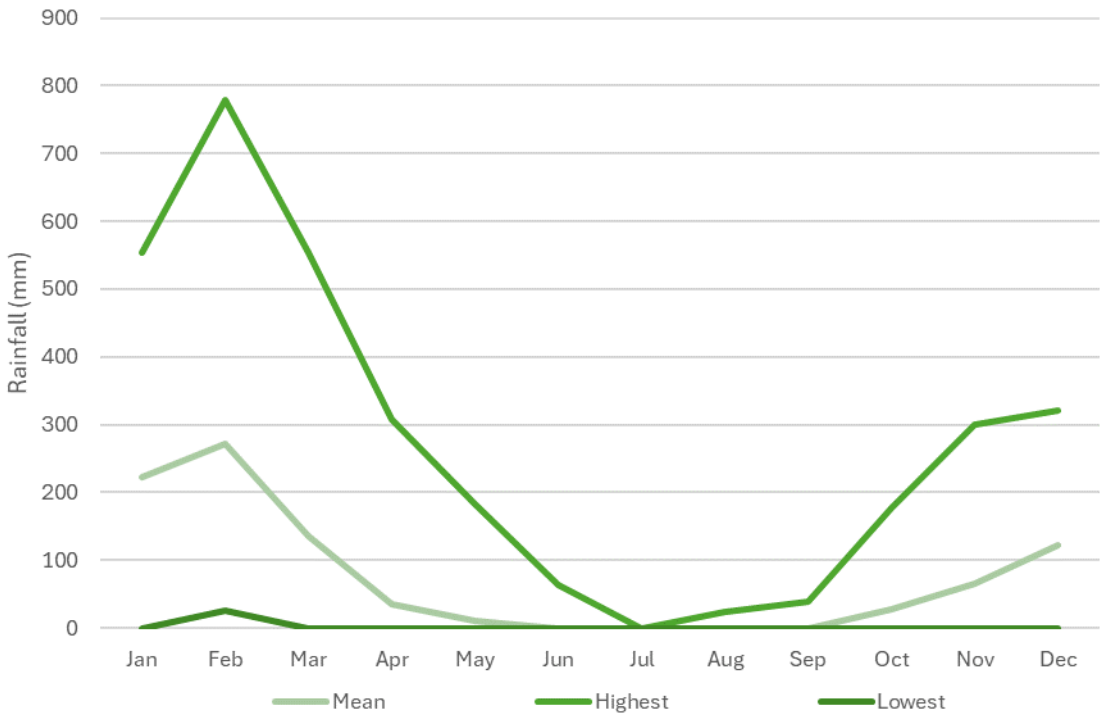
The Project is situated in the Birdum region of the Northern Territory within the Roper Gulf Local Government Area (LGA) and bordering the Barkly LGA. The regional context of the Project is shown in Figure 1.

2.1.2 Climate

Climate is described as per Daly Waters Airstrip, BOM Station 14626 (Bureau of Meteorology (BOM), 2024) and Dunmarra Roadhouse NT, BOM Station 14611 (BOM, 2024) depending on information availability. Climate described in this location is as follows:

- As per data recorded from Daly Waters from 1940 to 2024, Daly Waters's mean highest temperature is greater in December (45.6º C) and the lowest in June (36.2º C). Its mean minimum temperature is greater in November (38.1º C) and lowest in June (29º C).
- Figure 2 shows rainfall recorded at Dunmarra Roadhouse from 1963 to 2014, with the mean highest rainfall in February (779.6 mm) and the lowest in July (0 mm). The mean rainfall annually for all years is 922.4 mm.

Figure 2: Dunmarra Roadhouse Annual Rainfall (1963 – 2014) (BOM 2024)



2.1.3 Landscapes

The Project is located within:

- Land system: Beetaloo (BE)
- Geozone: Sturt Plateau
- Class: Lateritic plains and rises. Plains and rises associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils.

There is no occurrence of acid sulfate soils in the region.

2.1.4 Land Units

Based on the information provided by DENR 2019, Shenandoah Area, the Survey Area is composed of:

- Elevated plains and pediments
- Sloping pediments
- Lower clay plains

Table 2 shows the land units and landforms at the Survey Area.

Table 2: Land Units and Land Forms at Project Area

Land Unit	Landform	Soil	Vegetation
Low Rises			
7a	Gently undulating dissected gravelly low rises and pediment slopes	Very shallow (<0.25 m) to moderately deep (<1 m), massive, brown earthy sands or red earths over ferricrete (Leptic Tenosols and Red/Brown Petroferric Kandosols)	Corymbia dichromophloia low open woodland
7b	Scoured gravelly gently undulating low rises and pediment slopes	Generally shallow (<0.5), massive, brown or red earths over indurated ferricrete (Red/Brown Petroferric Kandosols)	Acacia shirleyi low woodland
Plains			
8a3	Level sandy wash-slope plains and pediments	Massive, bleached, brown earthy sands or brown earths over ferricrete. Soil depth predominately moderately deep (0.5-1m), though quite variable. (Petroferric Tenosols/Kandosols)	Corymbia dichromophloia low open woodland
8a4	Broad, imperfectly drained, mostly endorheic plains	Deep (<1.5 m), massive, bleached, brown earthy sands or grey/yellow earths over ferricrete (Petroferric Kandosols)	Melaleuca nervosa low open woodland
8b2	Level colluvial plain margins and valley flats within narrow relict drainage features	Moderately deep (0.5-1.0 m), massive, red earths over ferricrete (Red Kandosols)	Erythrophleum chlorostachys, Corymbia dichromophloia, Corymbia terminalis low woodland
Inland Wetlands			
13a	Seasonally inundated level clay plains with gilgai microrelief	Very deep (>1.5 m), cracking, self-mulching, grey medium to heavy clay (Grey Vertosols)	Eucalyptus microtheca low open woodland

2.1.5 Land Tenure

The start of the transmission pipeline (KP 0) will connect to the Shenandoah Facility on NT Portion 7026 and the end of the transmission pipeline (KP 37) will connect to the Sturt Plateau Facility which connects to the AGP on NT Portion 1077. The pipeline will cross the Stuart Highway Road corridor and NT Portion 7513 (refer to Figure 3). Details of land tenure for each respective lot are listed in Table 3.

A map series showing the proposed location of the transmission pipeline corridor, the Shenandoah Facility, Sturt Plateau Facility and cathodic protection anode bed is provided in Figure 4 to Figure 7.

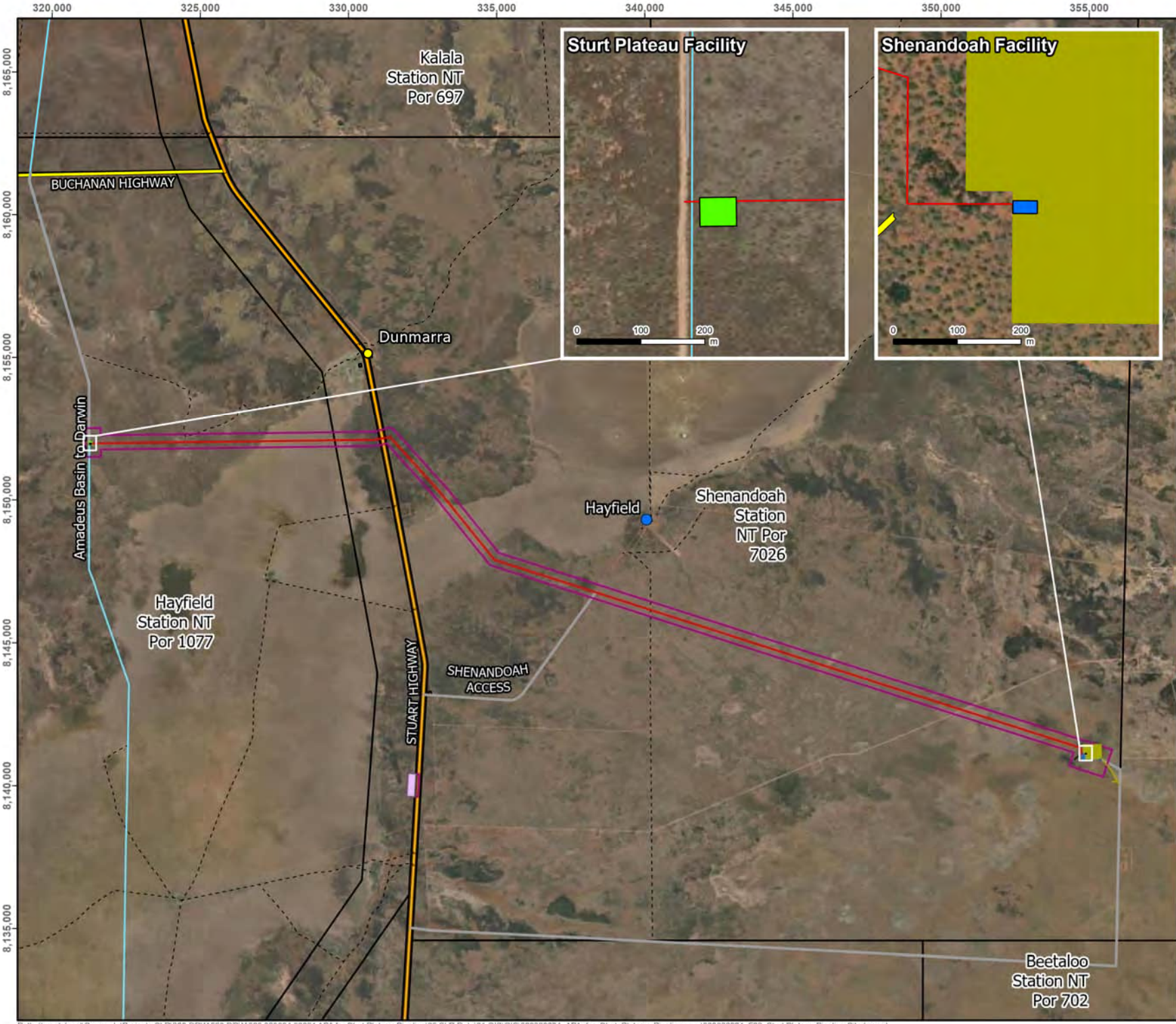
Options to secure land tenure and access include:

- easement (for the pipeline)
- sub-lease – for fenced surface facilities at either end of the alignment
- deed of agreement for the Stuart Highway Road reserve.

Table 3: Land Tenure Details for the Project

Portion Number	7026	Stuart Highway	7513*	1077*
Project element	Shenandoah Facility and pipeline	Pipeline	Pipeline and construction camp	Pipeline and Sturt Plateau Facility
Tenure Type	PPL	NTG road corridor	PPL	PPL
Station Name	Shenandoah	-	Hayfield	Hayfield
Title	CUFT 752	-	CUFT 823	CUFT 823
Street Number	14981 Stuart Highway, Birdum	-		1143 Buchanan Highway, Birdum
Survey ID	S2009/182A		CP005573	S811108
Lot Area (ha)	147,273	-	8040	176,702
Owner	A.P.N Pty Ltd	Department of Logistics and Infrastructure (DLI)	A.P.N Pty Ltd	A.P.N Pty Ltd
Construction Disturbance Footprint (ha)	88.76	2.16	25.54	29.24
Operation Footprint (ha)	81.84	0.6	4.55	25.31
Total Area to be Rehabilitated Following Construction (ha)	6.92	1.56	20.99	3.93

* Note: NT Portion 7513 and NT Portion 1077 are proposed to be merged into NT Portion 8011.



APA STURT PLATEAU PIPELINE ENVIRONMENTAL APPROVALS

STURT PLATEAU PIPELINE SITE LAYOUT

FIGURE 3

LEGEND

Project Elements

- Proposed Pipeline Alignment
- Cathodic protection anode bed
- Temporary Construction Camp and Laydown Area
- Sturt Plateau Facility
- Shenandoah Facility
- Tamboran's Sturt Plateau Compression Facility

Existing Infrastructure

- Roadhouse
- Homestead
- Access Track
- Existing Gas Pipeline

Road Category

- National Highway
- State Arterial
- Local
- Cadastre
- Project Area

Service Layer Credits: Earthstar Geographics, Maxar

0 2.5 5 km

Coordinate System:	GCS GDA 1994
Scale:	1:180,000 at A4
Project Number:	680.030294
Date Drawn:	10/15/2024
Drawn by:	CP
Reviewed by:	MN

SLR

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2.2 Key Project Elements

The key elements of the Project are identified in Table 4

Table 4: Project Key Elements

Project element	Summary
Overview	
The Project	The Project will involve the: • Use of the existing sealed road network for transport of machinery and materials to the Project Area. • Clearing of approximately 134 ha of native vegetation and site preparation. • Ancillary surface facilities including additional work areas, supply of gravel, water, site access and the temporary construction camp. • Construction of surface facilities, including the Shenandoah Facility (receipt station) and Sturt Plateau Facility (delivery station). • Installation of a medium diameter (DN300), gas transmission pipeline (up to 9.6 MPaG) of approximately 37 km in length. • Operation of the pipeline. • Decommissioning of the pipeline.
Project Area	The development envelope of the Project, within which the Project will be sited, is approximately 2002 ha.
Location	The Project is in the locality of Birdum, approximately 50 km south of Daly Waters, and 80 km north of Elliott, in the Northern Territory.
Land tenure	The Project is located across: • NT Portion 1077 – Shenandoah Perpetual Pastoral Lease (PPL). • NT Portion 7026 – Hayfield PPL. • NT Portion 7513 – Hayfield PPL. • The Stuart Highway Road Reserve.
Capital Investment Value	Approximately $57 million
Project life	40 years
Construction	
Disturbance Footprint	The construction footprint covers an area of approximately 146 ha, including approximately 12 ha of previously disturbed land.
Total area that will be rehabilitated	Approximately 33 ha of the Disturbance Footprint will be rehabilitated progressively during construction.
Construction water use and supply	Construction of the Project will require an estimated 70 Mega Litres (ML) of water in total. Approximately 30 ML of non-potable water will be utilised for dust control and hydrostatic testing which will be sourced from Tamboran or associated companies under an existing water extraction licence (WEL). New bores are required to be constructed to source 40 ML for the Project under a new WEL.
Off-site supporting infrastructure	• Existing road network • Waste disposal facility • Pipe laydown area
Construction hours	6 am to 6 pm, seven days a week. Construction will occur in shifts of 21 days on and 7 days off. Limited 24 hours works will be required during hydrostatic testing activities.
Construction workforce	Between 70 to 125 personnel will be required for the majority of the 6-month construction period. The construction workforce will peak at approximately 133 personnel for one or two days, halfway through construction.

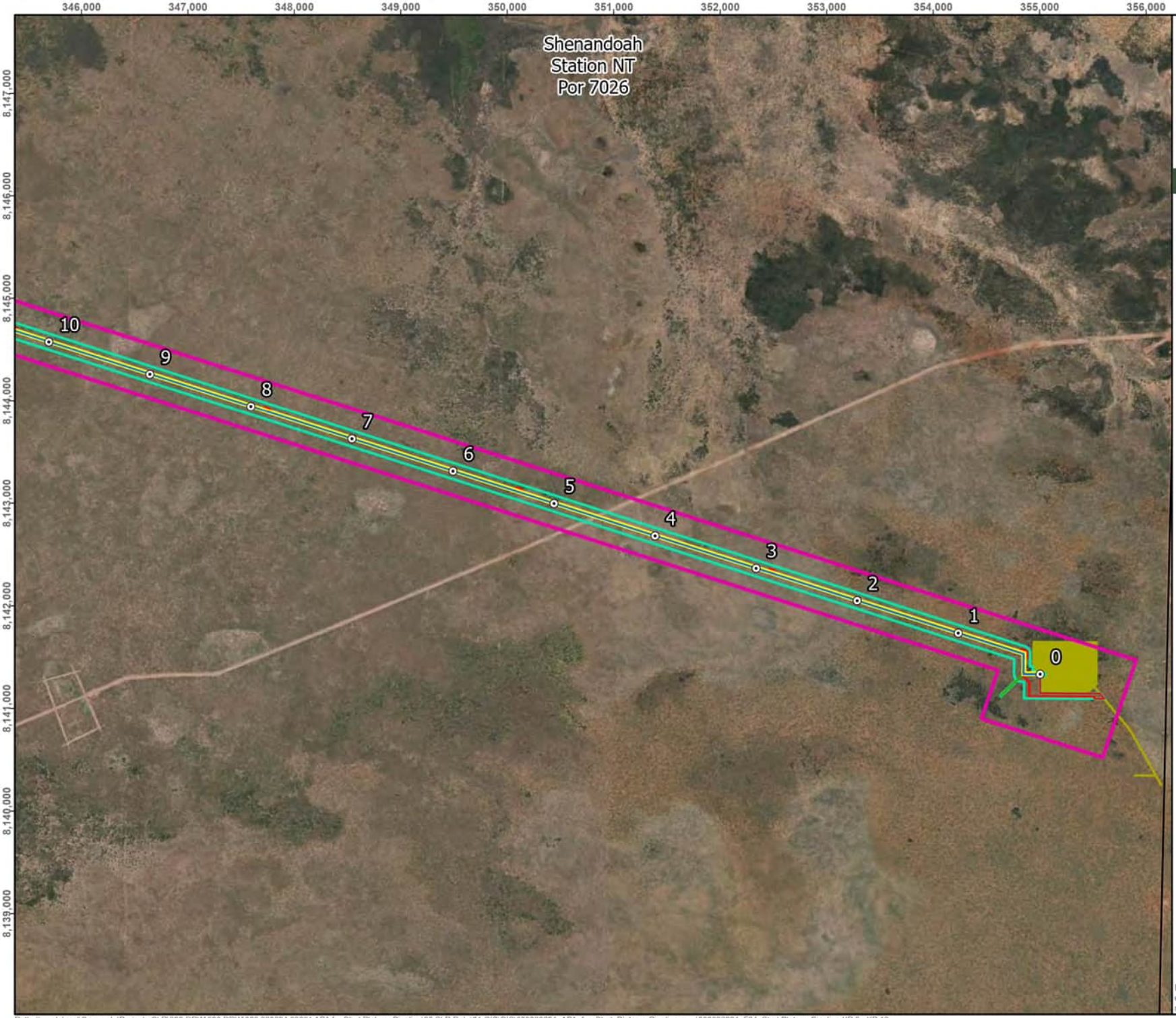
Project element	Summary
Operation	
Operation footprint	Approximately 112 ha will be utilised for the transmission pipeline easement, Shenandoah Facility, and Sturt Plateau Facility during operations.
Operational workforce	Approximately 2 personnel
Operational hours	Up to 24 hours, seven days a week as required by the Project's operations and maintenance.
Decommissioning	
Decommissioning	The pipeline's decommissioning may include suspension or abandonment. Removal of the pipeline as part of abandonment would result in significant disturbance and environmental impacts and is therefore not preferred.

2.2.1 Schedule

The indicative project schedule is provided in Table 5. Environmental approvals are anticipated to be obtained by the end of June 2025. Mobilisation for construction is proposed to commence in July 2025 pending receipt of necessary approvals and agreements. Construction is anticipated to take six months upon which commissioning will be completed. The indicative schedule is subject to review through advance or delay during the approvals and access, design, procurement, construction and commissioning stages.

Table 5: Indicative Project Schedule

Stage	2024			2025			
Approvals and Access							
Front End Engineering Design							
Detailed Engineering Completion							
Long-Lead Item procurement							
Site Mobilisation (late July - Late August)							
Construction (late July - November 25)							
Commissioning (November / December 25)							



STURT PLATEAU PIPELINE ENVIRONMENTAL APPROVALS

STURT PLATEAU PIPELINE KP 0 - KP 10

FIGURE 4

LEGEND

- Kilometre Points
- Proposed Pipeline Alignment
- Additional Work Area
- Cathodic Protection Anode Bed
- Pipeline Construction ROW
- Cadastre
- Project Area
- Survey Area
- Tamboran's Sturt Plateau Compression Facility

Service Layer Credits: Esri, TomTom, FAO, NOAA, USGS, Esri, USGS, Maxar

0 1 2 km

Coordinate System:	GCS GDA 1994
Scale:	1:50,000 at A4
Project Number:	680.030294
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Reviewed by:	NC

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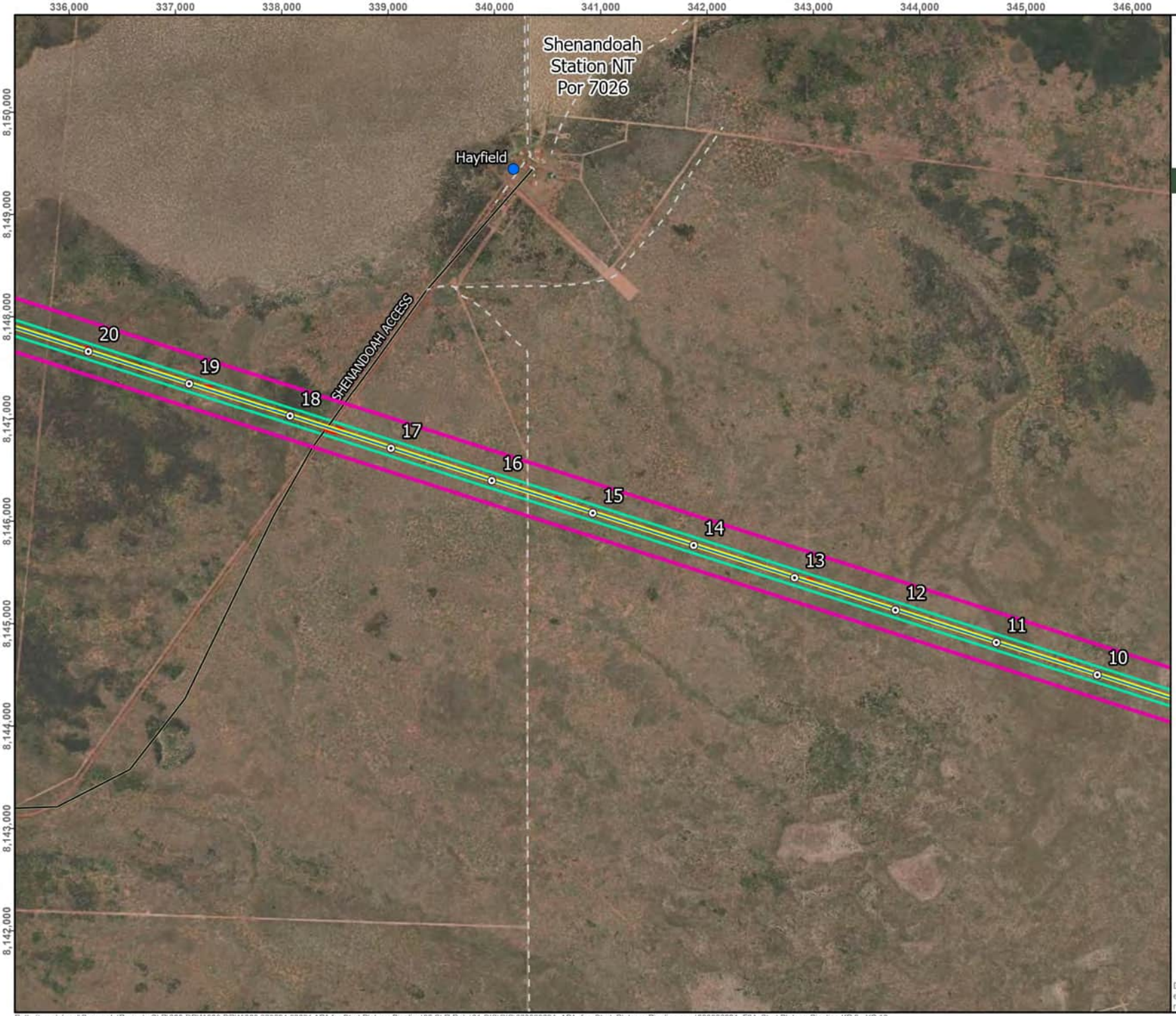

STURT PLATEAU PIPELINE ENVIRONMENTAL APPROVALS

STURT PLATEAU PIPELINE KP 10 - KP 20

FIGURE 5

LEGEND

- Homestead
- Kilometre Points
- Proposed Pipeline Alignment
- Additional Work Area
- Pipeline Construction ROW
- Cadastre
- Project Area
- Survey Area

Road Category

- Secondary
- Local

Service Layer Credits: Esri, TomTom, FAO, NOAA, USGS, Earthstar Geographics, Esri, USGS

0 1 2 km

Coordinate System:	GCS GDA 1994
Scale:	1:50,000 at A4
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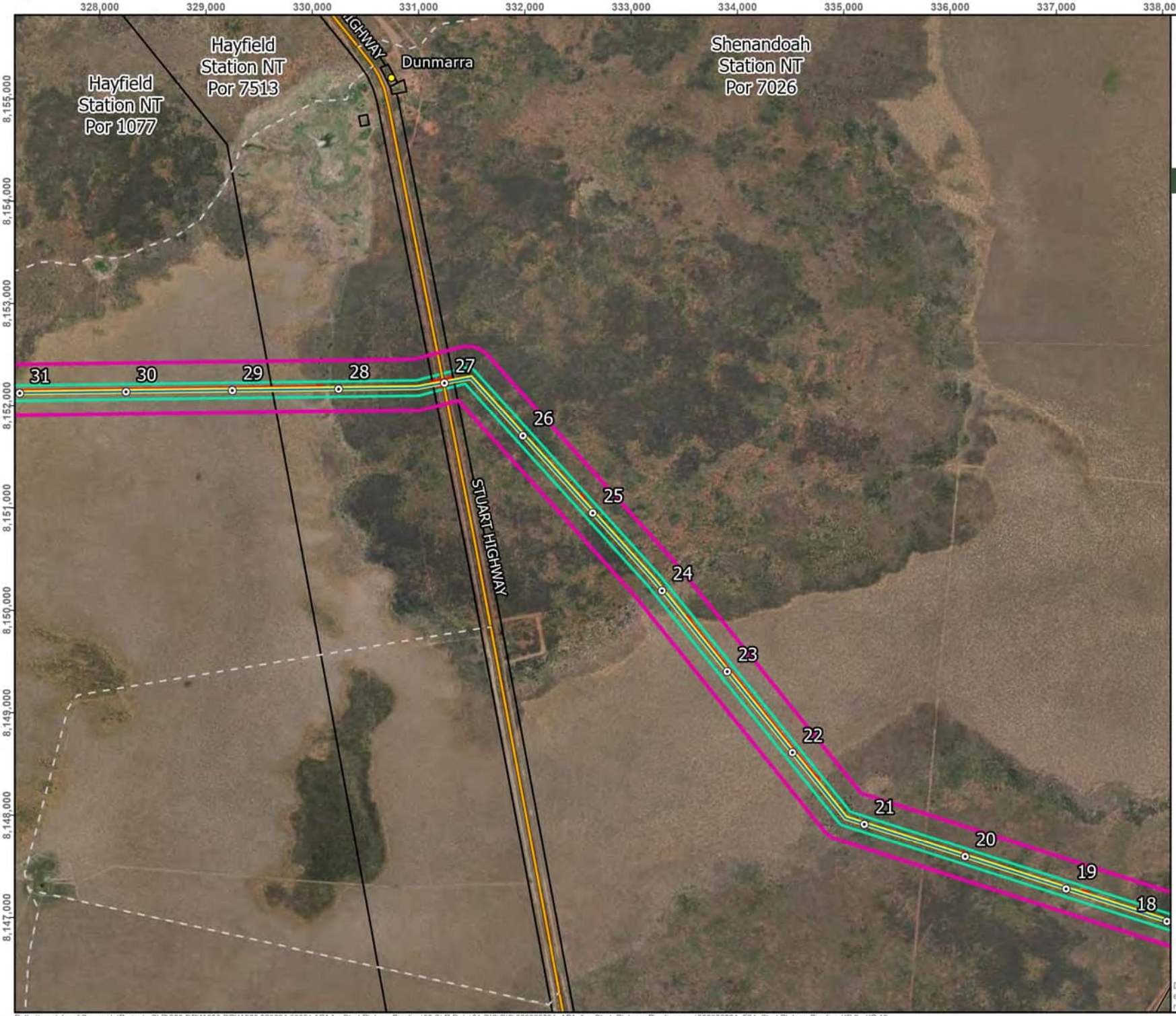

STURT PLATEAU PIPELINE ENVIRONMENTAL APPROVALS

STURT PLATEAU PIPELINE KP 20 - KP 30

FIGURE 6

LEGEND

- Roadhouse
- Kilometre Points
- Proposed Pipeline Alignment
- Additional Work Area
- Pipeline Construction ROW
- Cadastre
- Project Area
- Survey Area

Road Category

- National Highway
- Secondary
- Local

Service Layer Credits: Esri, TomTom, FAO, NOAA, USGS, Earthstar Geographics, Esri, USGS

0 1 2 km

Coordinate System:	GCS GDA 1994
Scale:	1:50,000 at A4
Project Number:	680.030294
Date Drawn:	10/17/2024
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SLR

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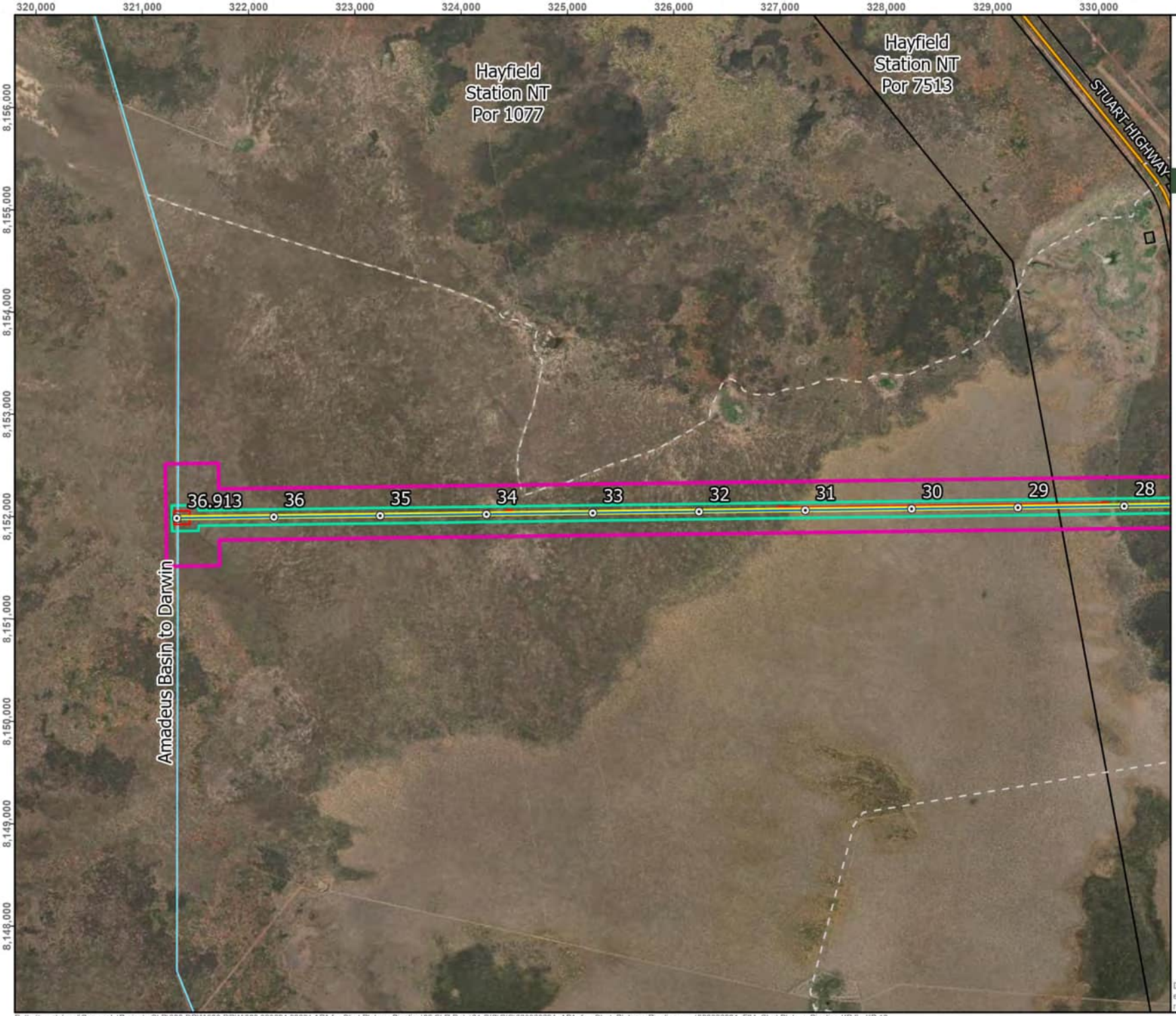

STURT PLATEAU PIPELINE ENVIRONMENTAL APPROVALS

STURT PLATEAU PIPELINE KP 30 - KP 37

FIGURE 7

LEGEND

- Kilometre Points
- Proposed Pipeline Alignment
- Additional Work Area
- Pipeline Construction ROW
- Cadastre
- Project Area
- Survey Area

Road Category

- National Highway
- Local

Service Layer Credits: Esri, TomTom, FAO, NOAA, USGS, Esri, USGS, Maxar

0 1 2 km

Coordinate System:	GCS GDA 1994
Scale:	1:50,000 at A4
Project Number:	680.030294
Date Drawn:	10/17/2024
Drawn by:	CP
Reviewed by:	NC

SLR

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2.3 Key Project Features and Activities

2.3.1 Construction

2.3.1.1 Pipeline

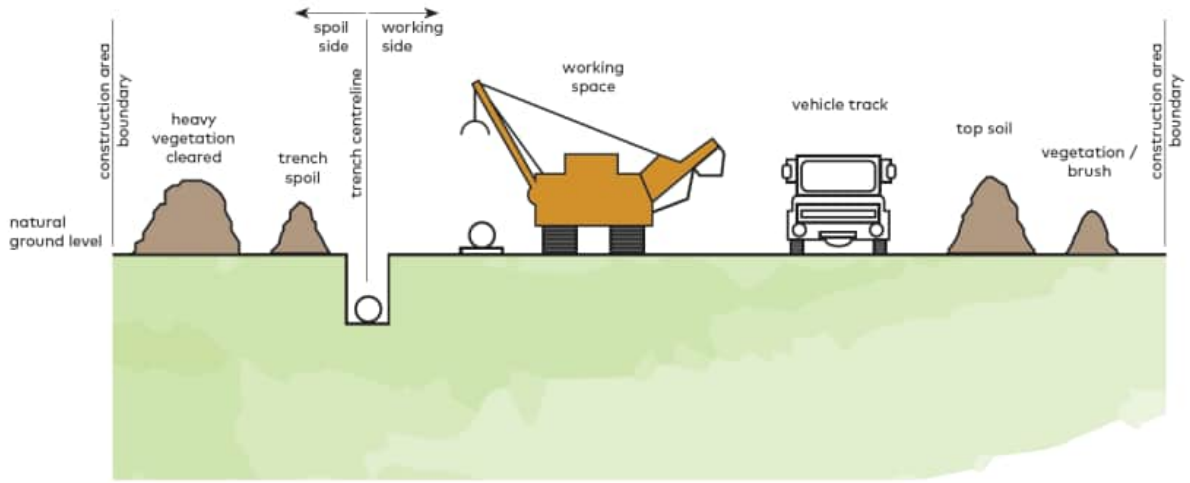
Sequence of Pipeline Construction

An indicative cross section of the pipeline CROW is shown in Figure 8. Two potential CROW footprints have been identified, but only one will be selected based on the construction direction.

Construction activities will occur either from KP 0 to KP 37 or KP 37 to KP 0. Consequently, the working side of the CROW will be located to the north of the pipeline alignment if pipelaying commences at KP 0 or to the south of the pipeline alignment if pipelaying commences at KP 37.

The direction of pipelaying will be dependent upon weather and site conditions (e.g. presence of surface water, soil moisture) at the commencement of construction. The figures in this Referral are based on construction commencing at KP 0. Spatial data for both CROW options has been included in the Referral and assessed in the technical studies undertaken to inform this Referral.

Figure 8: Indicative Cross Section of CROW



Stages of Pipeline Construction

The key activities of trenched pipeline construction are described in Figure 9.

Figure 9: Stages of Trenched Pipeline Construction

Clear and Grade

- Trees, shrubs and groundcover in the CROW are cleared by bull dozers and excavators and stockpiled in the CROW. Breaks are made in the vegetation stockpiles at fence lines, tracks and drainage lines.
- Grading of the CROW is undertaken by a grader with stockpiling of tospoil on one side of the CROW.

Pipe Stringing and Bending

- The pipe lengths are transported to the CROW from layodwn areas by extendable semi-trailers and distributed along the prepared CROW by excavators with vacuum lifters, side-booms or cranes with lifting hooks for welding.
- Hydraulic bending machine is used on the pipe lengths to match changes in elevation or direction of the pipe alignment.

Pipe Welding

- Pipe lengths are welded manually into "strings" in preparation for placement in the pipeline trench.
- Pipeline integrity testing is undertaken.
- Treatment of the wedling joints is completed.

Trench Excavation

- Trenching machines remove sub-soil to the target depth. If rock is encountered, a rocksaw / hammer will be utilised. Blasting will be considered where the previous methods are unsucuessful.
- Excavated sub-soil will be stockpiled on the non-working side of the CROW.
- Breaks in the open trench are left for stock, wildlife and vehicles.

Pipe Lowering In

- Padding from excavated material is sieved onsite, or offsite materials may be placed in the trench to prevent abrasion damage.
- The welded pipe strings are lifted off skids and lowered into the trench using side-boom tractors.
- After lowering in, the strings are welded together in the trench.

Trench Backfilling

- Padding over the pipe is installed.
- Trench blocks are installed to prevent moverment of water along the trench as needed, including watercourses.
- Subsoils are placed in the trench and compacted to reduce settlement.
- Top soils are placed over the trench.

Rehabitlitation of Disturbance

- Structures and infrastructure not required for operations are removed.
- Grading of landform and drainage is undertaken.
- Spreading of cleared vegetation is undertaken.
- Installation of fencing or tracks as required.

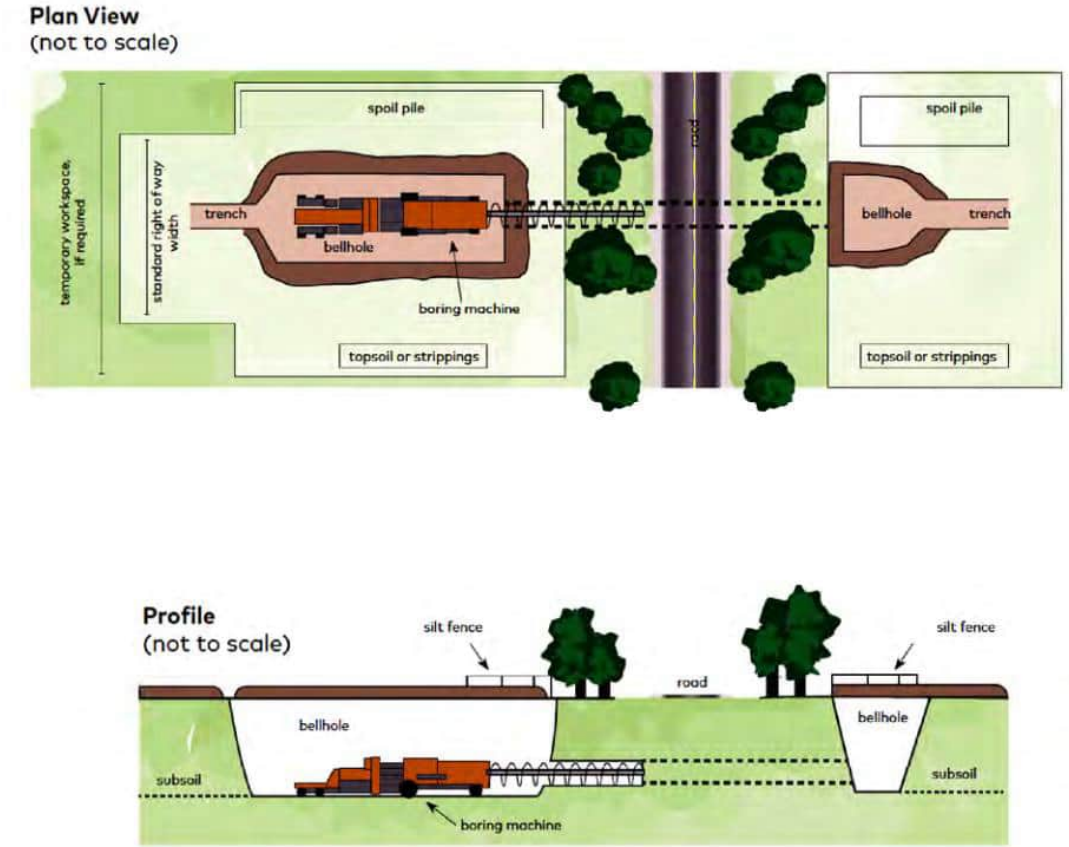
Horizontal Boring

Horizontal boring will be required to construct the pipeline under the Stuart Highway (approximate KP 27.1 km). The key activities for pipeline construction using horizontal boring are:

- The excavation of a bellhole either side of the feature to be bored, for installation of the pipeline beneath the surface feature which cannot be open cut, such as sealed roads.
- The additional disturbance footprint required for the horizontally bored crossing would generally be an area 70m wide, including the nominal 30m for the easement, that will extend both sides of the Stuart Highway

Since traffic will need to continue to flow on the Stuart Highway this technique will be employed to ensure the pipeline crossing beneath the highway and adjacent table drains can be achieved at this location. This is the only location where a horizontal bored crossing will be needed for the Project. Figure 10 provides a typical set-up for a horizontal bored crossing.

Figure 10: Typical Horizontal Boring Schematic



Rehabilitation of Disturbance

The objective of the rehabilitation of disturbance is to ensure the pre-construction environment is reinstated as far as practicable. Rehabilitation will be restricted along the pipeline easement to ensure the operation and integrity of the pipeline is not compromised from trees and shrubs. Rehabilitation steps would include:

- Removal of all temporary structures and buried infrastructure e.g. septic system/plumbing.
- Removal of all waste.
- Re-establishing topsoil cover.
- Returning surface levels to natural contours.
- Ameliorating construction impacts to soil texture, structure, and chemical composition, where required.
- Reinstating natural drainage patterns.
- Reinstating roadways and road reserves in accordance with regulatory requirements.
- Reinstating fencing and access tracks in accordance with the requirements of landowners.
- Spreading of cleared vegetation back over disturbed areas.
- Completing revegetation through seeding as appropriate.

Installing permanent erosion control measures (such as contour banks) in erosion prone areas.

Indicative Pipeline Specifications

The SPP will be designed, constructed, operated, and decommissioned in accordance with the Australian Standards (AS) 2885 series Pipelines – Gas and Liquid Petroleum. The pipeline specifications are provided in Table 6.

Table 6: Indicative Pipeline Specifications

Component	Description
Approximate length	37 km
Material	High strength steel with fusion bonded epoxy external coating except at each end to allow welding. Post welding, the uncoated weld margins will be grit blasted and coated with hand or spray applied epoxy.
Material testing	Factory integrity testing of the epoxy external coasting. On site integrity testing of the epoxy external coating prior to placement in the pipe trench. On site Direct Current Voltage Gradient following completion of construction.
Nominal diameter	Up to 300 mm (12 inches)
Nominal capacity	Max 50 TJ/day
Pipe wall thickness	12.7 mm
Pipe length	18 m (some 12 m)
Pipe monitoring	An impressed current cathodic protection system (ICCP system) will be employed to protect the pipeline from corrosion remotely monitored via SCADA. Dependent upon final design of the ICCP system, an anode ground bed will be required near the Shenandoah Facility. The anode bed will be offset from the

Component	Description
	pipeline by a minimum of 100 m. The ICCP system will be run with AC power supply from the Tamboran project. Cathodic protection (CP) test points will also be installed along the pipeline alignment. Buried ground bed anodes employed as part of the CP system are typically made of magnesium or zinc.
Depth of cover	Minimum: 750 mm Sealed road crossings (Stuart Highway): minimum 3,000 mm at road crown Unsealed road crossings, drainage lines, and floodplains: minimum 1,200 mm
Easement / CROW	Nominally 30 m wide
Pipeline markers	Pipeline markers will be installed over the pipeline at a distance to ensure continual line of sight over its length. In addition, markers will be installed at bends in the pipeline, at property boundary fences and either side of crossings including roads and watercourses. The pipeline marker text will identify the presence of the pipeline and provide the name and contact details of the operator.
Design principles	In accordance with current version of AS 2885 series Pipelines – Gas and Liquid Petroleum
Design life	40 years

2.3.1.2 Surface Facilities

The surface facilities required for the Project are listed in Table 7.

Table 7: Surface Facilities

Surface Facility	Description
Shenandoah Facility	• Pig launcher assembly. • Actuated shutdown valve. • Station Remote Terminal Unit and Associated communications. • Separate pipeline vent fenced compound.
Sturt Plateau Facility	• Pig launcher assembly. • Pipeline Isolation. • Hot-tap connection to AGP.
Temporary Construction Camp	Capacity for up to 150 persons, including: • Accommodation. • Offices and first aid facilities. • Kitchen and dining. • Laundry and ablution blocks. • Recreational areas. • Water supply and use. • Power supply. • Diesel/fuel storage and use. • Vehicle and plant wash-down facilities (biosecurity). • General laydown area. • Wastewater treatment and management. • Waste management facilities.

2.3.1.3 Additional Work Areas

Additional work areas that will be utilised for construction are listed in Table 8 and shown in Figure 4 to Figure 7.

Table 8: Additional Work Areas

Work Area	Description
Construction laydown	• Adjacent to Shenandoah Facility. • Adjacent to Sturt Plateau Facility.
Cleared vegetation stockpiles	• Primarily within the pipeline CROW. • Where insufficient space in the pipeline CROW, it will be stored within laydown areas, truck turnarounds, and additional work areas.
Truck turnarounds.	• Turning bays along the CROW approximately 20 m width and 50 m length are proposed for every 2.5 km. • Final locations will be subject to final design for pre-clearing surveys or site conditions at the time of constructions.
Trenched/bored crossings	• Adjacent to the Stuart Highway where horizontal boring is proposed • Where the pipeline crosses ephemeral waterways

2.3.1.4 Water Supply

Water will be required for dust suppression, trench compaction, hydrostatic testing and for potable uses at the temporary construction camp.

Water will be sourced from new bores, and existing Tamboran bores located adjacent to the Shenandoah Facility. A minimum of two new bores are proposed within the footprint of the temporary construction camp. Bore locations will be determined via groundwater investigation following receipt of an Aboriginal Areas Protection Authority (AAPA) Authority Certificate.

Hardstand and associated piping infrastructure will be required at water bores. Water storages are likely to be turkey's nest dams located at the construction camp, at KP 0 and adjacent to KP 37. The turkey's nest dams may be retained following construction if requested by the landholder. The estimated area required for each turkey's nest storage is 50 m by 50 m. A turkey's nest will be constructed adjacent to the Shenandoah Facility to store water provided by Tamboran and at the temporary construction camp to store water for use in the camp and for dust suppression.

2.3.1.5 Gravel Material

Gravel material will be sourced from borrow pits within the Project Area. An approximately 50 m by 50 m borrow pit is proposed within the footprint of the Sturt Plateau Facility additional work area. Additional gravel material may also be sourced from within the temporary construction camp area. The locations and size of the borrow pits will be finalised following geotechnical assessment.

2.3.1.6 Workforce

Construction of the pipeline and surface facilities is expected to be undertaken by APA staff and contractors.

APA staff will coordinate and oversee the construction activities. Approximately 133 personnel will be on site at any one time during peak construction, reducing to between 70 and 125 following the peak construction period.

2.3.1.7 Access

Port of Darwin Common User Facility

The Common User Facility (CUF) in the Marine Industry Park, located at East Arm Wharf will be used as a pipe yard following delivery of the pipes to the Port of Darwin and prior to delivery to the Project Area (Figure 11). The CUF has 9 ha of existing hardstand for temporary storage of the pipes. A 1.4 ha area will be required for the pipe yard. Pipe will be delivered from the pipe yard direct to the CROW for pipe stringing and subsequent welding.

APA STURT PLATEAU PIPELINE ENVIRONMENTAL APPROVALS

MARINE INDUSTRY PARK COMMON USER FACILITY LOCATION

FIGURE 11

LEGEND

- NT Towns
- Project Location
- Rural - National Highway
- Urban - Primary Arterial
- Urban - Sub Arterial
- Urban - Local
- Urban - Collector

Service Layer Credits: Earthstar Geographics, Maxar

0 50 100 km

Coordinate System:	GCS GDA 1994
Scale:	1:3,500,000 at A4
Project Number:	680.030294
Date Drawn:	9/27/2024
Drawn by:	CP

SLR

Path: \\au.slr.local\Corporate\Projects-SLR\680-DRW\680-DRW\680.030294.00001 APA for Sturt Plateau Pipeline\06 SLR Data\01 GIS\GIS\680030294_APA_for_Sturt_Plateau_Pipeline.aprx\680030294_F11_Marine Industry Park Common User Facility Location

Access Routes

Equipment and personnel will require daily access to the CROW and worksites throughout construction via existing access tracks through the pastoralist properties, the existing service track adjacent to the AGP, and the CROW itself will act as a thoroughfare.

Existing roads and tracks that will be used to access the Project Area during the construction phase of works are:

- Shenandoah Access.
- AGP easement operations service track (light vehicles only).
- An unnamed access track to the pastoral property.

Existing access routes are shown in Figure 3.

Access Maintenance

Maintenance of the above access tracks will be undertaken to a suitable standard for vehicles. APA will seek agreement from landholders to grant suitable access rights to tracks for construction access and ongoing operational access where required.

APA will maintain the Shenandoah Access and AGP easement operations service track. Tamboran will maintain the unnamed pastoral property access.

2.3.1.8 Waste Management

A range of wastes would be generated during construction activities for the Project, mainly during pipeline construction, which include:

- General wastes from transportation and storage of pipe (packaging, pallets, ropes, bevel protectors)
- Wastes from clearing the construction area (vegetation)Small quantities of hazardous wastes such as empty containers, pipeline coating waste, oily rags and the like
- Waste from temporary construction camp
- Laying, welding, and grinding waste (for example, scrap metal, spent welding rods)
- Water from dewatering
- Machinery waste.

Cleared vegetation, topsoil, and subsoil will be generated during the construction of the transmission pipeline and surface facilities. Subsoil materials generated during pipeline construction will be returned to the trench while topsoil is respread and used to assist rehabilitation of the construction footprint and are not considered to be wastes.

Excavated sub-soils will be stockpiled to be re-used in backfilling. The volume of material reused will vary location to location based on the soil profile and quality. In the event that the excavated material cannot be reused, the spoil would be disposed of according to the requirements of the Construction Environmental Management Plan (CEMP).

Project construction wastes will be reused or recycled where practicable or collected and transported by licensed waste contractors for disposal at appropriately licensed facilities. Any contaminated or hazard materials identified on site would be disposed in accordance with NT EPA waste classification and transport requirements.

Dewatering of trenches and bellholes due to rainfall or groundwater ingress will be collected and treated, if required, prior to discharge to land or reused where appropriate such as for dust suppression.

Dewatering of excavated trenches or bellholes will be managed to minimise sedimentation, including the use of sediment control devices to remove suspended solids and dissipate flow. Sediment control devices will be listed in the CEMP.

2.3.2 Pipeline Testing and Commissioning

Hydrostatic Testing

Hydrostatic testing of the pipeline will be undertaken prior to commissioning to ensure that the pipeline passes strength and leak tests.

Hydrostatic testing includes:

- Welding temporary manifolds to the start and end of the pipeline
- Filling the pipeline with water
- Pressurising the pipeline to a minimum of 1.25 times the maximum allowable operating pressure
- Leak testing for a minimum of 24 hours to determine that the pipeline is leak free.

Wastewater from hydrostatic testing will be discharged into a lined turkeys nest near the Shenandoah Facility. The hydrostatic testing water will be tested to determine its suitability for release to ground. The testing will follow the Australian Pipelines and Gas Association (APGA) Code of Environmental Practice (APGA, 2022). The hydrotesting water will continue to be tested and, if required, treated to ensure it is suitable for release to ground. Treatment may be required in the event that chemical treatment of the source water is required prior to hydrostatic testing, to prevent oxygen corrosion.

Drying and Caliper Pigging

When the dewatering process is complete the pipeline will be dried using compressed dry air. Following pipeline testing and drying, the pipeline will be gauged using an approved geometry pipeline inspection gauge (pig) capable of measuring the internal diameter of the pipe and inspecting the pipeline for ovality and dents. Any defects will be located, removed as a cylinder, and replaced with a length of pretested pipe.

Commissioning

The pipeline will be commissioned following the completion of hydrostatic testing and caliper pigging. Commissioning will proceed sequentially from the point where commissioning gas is available.

Commissioning will be in accordance with a procedure prepared during the detailed design and construction phase of the Project and will include the following activities:

- Instrument calibration
- Gas filling
- Testing and commissioning of stations and valves.

2.3.3 Operation and Maintenance

2.3.3.1 Workforce

Operation of the pipeline and surface facilities is expected to be undertaken by APA Group staff and APA Group contractors.

APA Group staff will monitor the day-to-day operation of the Project from an existing Integrated Operations Centre located in Brisbane, Queensland. Up to two field staff likely to be based in Tennant Creek or Katherine will conduct operations, maintenance activities and continue engagement with landholders.

APA Group's contractors will undertake the easement maintenance, specialist pigging operations, and cathodic protection surveys.

2.3.3.2 Inspection and Maintenance

A routine inspection and maintenance program will be implemented during operation of the pipeline. Frequency of inspections may vary depending upon the particular issue being inspected or in response to specific conditions such as major rainfall events. Aerial patrols will typically be undertaken monthly with ground patrols conducted annually.

Inspection and routine maintenance activities will include:

- Easement maintenance, such as vegetation control, weed management, erosion and subsidence monitoring
- Specialist pigging of the transmission pipeline
- Survey of the impressed current cathodic protection system.

Pigging of the transmission pipeline will be undertaken approximately every 10 years. Minor amounts of gas will be vented during pigging activities to depressurise the pig launcher/receiver.

2.3.3.3 Surface Facilities

The potential for automation of the Shenandoah Facility and Sturt Plateau Facility will be confirmed during detailed design. Inspections will be undertaken on the facilities for erosion, weeds, security, and success of revegetation.

2.3.4 Decommissioning

2.3.4.1 Decommissioning and Rehabilitation Plan

A decommissioning plan for the Project and associated infrastructure will be prepared in advance of the pipeline and ancillary facilities decommissioning. The decommissioning plan will be prepared in consultation with the relevant regulatory authorities and landholders. The decommissioning plan will be prepared to meet the requirements of applicable legislative and best practice guidelines and the APGA Code of Environmental Practice (2022) or latest published version available at the time of decommissioning.

2.3.4.2 Pipeline Decommissioning

The method of the pipeline's decommissioning will be determined during the preparation of the decommissioning plan. The pipeline's decommissioning may include:

- Suspension – The transmission pipeline would be depressurised, and all remaining natural gas would be purged from the pipeline, capped and filled with an inert gas such as nitrogen, or water with corrosion inhibitors. The cathodic protection system would be maintained to prevent the pipeline corroding. Surface facilities would be removed or left in place if further service is envisaged.
- Abandonment – The pipeline would be disconnected from all sources of hydrocarbons and surface facilities. All remaining natural gas would be purged from the pipeline. Sections of the pipeline may then be filled with water, filled with cementitious mud, or removed. All surface facilities would be removed.

Both identified decommissioning options would result in small scale disturbance and environmental impacts. It is anticipated that relinquishment of the applicable Pipeline Licence (and associated easement) would not be possible until such time as any decommissioning issues are resolved.

Removal of the pipeline as part of abandonment would result in significant disturbance and environmental impacts and is therefore not the preferred option.

2.4 Site Selection and Alternatives

The Project involves the construction of infrastructure to facilitate the transport of gas from Tamboran Resources' approved Beetaloo Basin Shenandoah South Exploration and Appraisal Program, specifically from the Sturt Plateau Compression Facility, to the AGP. The specific purpose of this infrastructure dictates its location and design requirements. Since the infrastructure must provide a direct connection between these two fixed points (between Tamboran Resources' Sturt Plateau Compression Facility and the AGP), there is no feasible alternative site for the Project and options for alternative alignments are constrained.

2.4.1 Alternative Alignments

Three alternative alignments were considered for the pipeline. These alignments are shown in Figure 12 and referred to as Alignments X, Y, and Z.

The proposed pipeline alignment was selected as the preferred option based on:

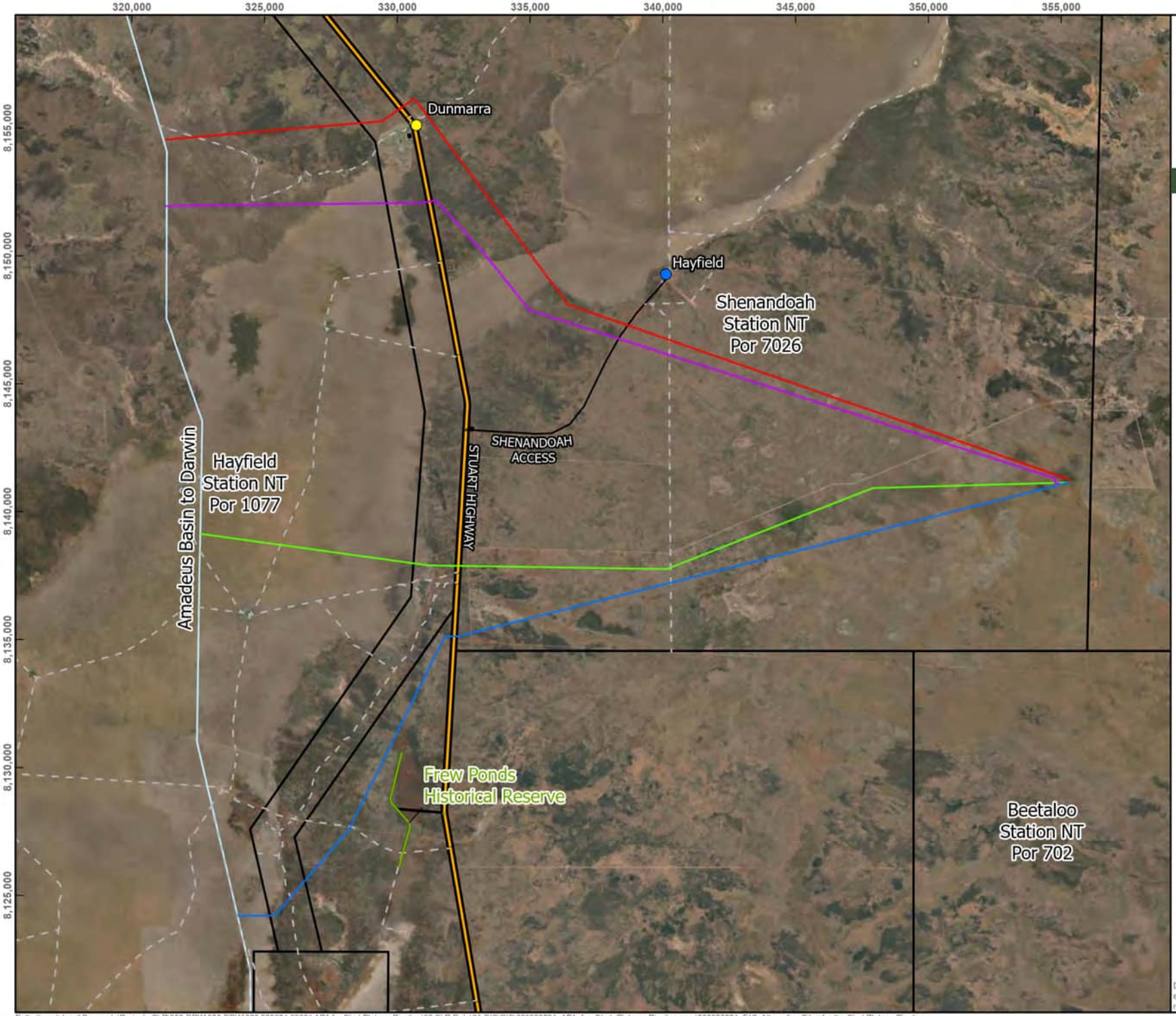
- an Abstract of Records from the Aboriginal Areas Protection Authority dated 23 August 2023
- publicly available data on existing environmental conditions
- existing infrastructure
- sensitive receptors, stakeholder consultation, and field inspections
- operational constraints such as access to the pipeline during wet weather conditions.

An environmental assessment of a 150 m wide corridor provided a relative assessment of the pipeline alignment to minimise potential environmental impacts and inform the pipeline design.

2.4.2 Do Nothing

Under the ‘do nothing’ alternative, there would be a loss of energy benefits from Tamboran’s Beetaloo Basin Shenandoah South Exploration and Appraisal Program, as the Project would reduce upstream greenhouse gas (GHG) emissions that would otherwise occur if the gas were vented/flared. While flaring the gas at the wellhead would not significantly change GHG emissions compared to using it for heat or electricity generation, the energy benefits would be realized in the latter scenario, rather than being lost to the environment. It is prudent to note that quantification of the GHG reduction associated with the capture and transport of the appraisal gas via the Sturt Plateau Pipeline for end use, compared to venting/flaring of the gas at the wellhead, will depend on the amount of gas generated during the appraisal phase. An Air Quality and Greenhouse Gas Assessment was conducted for the Project and is provided in Appendix B.

If the Project does not go ahead, there would also be missed economic opportunities for local communities. These include employment and supply chain opportunities that would arise during the construction phase of the project.



APA STURT PLATEAU PIPELINE ENVIRONMENTAL APPROVALS

ALTERNATIVE SITES FOR THE STURT PLATEAU PIPELINE

FIGURE 12

LEGEND

- Homestead
- Roadhouse
- Proposed Pipeline Alignment
- Alignment X
- Alignment Y
- Alignment Z
- Existing Gas Pipeline
- Cadastre
- Historical Reserve

Road Category

- National Highway
- Secondary
- Local

Service Layer Credits: Earthstar Geographics

0 2.5 5 km

Coordinate System:	GCS GDA 1994
Scale:	1:200,000 at A4
Project Number:	680.030294
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SLR

Path: \\au.slr.local\Corporate\Projects-SLR\680-DRW\680-DRW\680.030294.00001 APA for Sturt Plateau Pipeline\06 SLR Data\01 GIS\GIS\680030294_APA_for_Sturt_Plateau_Pipeline.aprx\680030294_F12_Alternative Sites for the Sturt Plateau Pipeline

2.5 Change Management Procedure

The alignment of the pipeline and location of surface facilities, and additional work areas may be subject to change following the assessment of this Referral based on additional investigation, preclearance surveys, unexpected finds, or due to requirements of statutory approvals or agreements. These changes will not result in disturbance outside the nominated Project Area

The nominated Project Area represents the proposed extent of the development envelope within which the Project will be located. Whilst the location of the pipeline, surface facilities, and additional work areas may change, the Disturbance Footprint will ultimately be within the boundary of the Project Area shown in Figure 3 and will not exceed the overall current Disturbance Footprint of approximately 146 Hectares.

Modification and optimisation of the Project design may include:

- Minor refinements to avoid or reduce impacts on environmental values identified after referral submission, such as sacred sites identified within an Authority Certificate, unexpected archaeological finds during construction activities or ecological features identified during pre-clearance inspections undertaken by qualified fauna spotter/catchers
- Minor refinements to address Native Title Holder feedback based on ongoing consultation
- Minor changes to the project design resulting from on-going detailed project engineering.
- Adjustment of infrastructure locations or approach angles to address specific design requirements from Tamboran or third-party asset owners such as the NT Department of Logistics and Infrastructure (DLI)
- Refinement of the Disturbance Footprint such as the location, dimensions, and number of additional work areas, hydro test water storages, and truck turnarounds, based on detailed construction planning.

The proposed approach (micro-siting change management procedure) to Disturbance Footprint changes confined to within the Project Area is as follows:

- Technical expert(s) (e.g. geotechnical / pipeline engineer, flora or fauna spotter), or others, identify the need to change the location of a project component
- Technical expert(s), pipeline environmental manager, and others as required, assess the proposed change of location, seeking to avoid and mitigate environmental impacts of the new location in accordance with the environmental decision-making hierarchy (as per section 26 of the EP Act).
- Technical expert(s) and the pipeline environmental manager prepare a ‘self-assessment’ of the environmental impacts of the micro-siting change, including a review of whether the change complies with Project approvals, permits and agreements. The self-assessment will be documented in a brief report, signed by the technical expert(s) and pipeline environmental manager, and maintained in APA’s environmental management system.
- The self-assessment report will determine whether the new location will significantly alter the magnitude, extent or duration of environmental impacts assessed in this referral.
- If surveys and assessments demonstrate that the change complies with Project approvals, permits and agreements and it will not significantly alter the magnitude,

extent or duration of environmental impacts assessed in this Referral, , then it is proposed to document the proposed design change and supporting assessments and undertake the change, on the basis that the change is considered to be consistent with the existing assessment.

- If the realignment or design change is likely to significantly alter the magnitude, extent or duration of environmental impacts to the extent that there is potential for significant impact to environmental factors or Matters of National Environmental Significance (MNES) then the change may require referral and assessment under the EP Act or EPBC Act.

APA will undertake the following environmental assessments:

- Vegetation mapping and if suitable habitat is identified, field surveys for threatened species in areas outside of the Survey Area (but still within the Project Area)
- Archaeological surveys unless the proposed realignment or design change is within the existing Survey Area or is already authorised through an appropriate agreement.
- Where relevant to the nature and extent of the change, the following assessments will be undertaken:
    - Noise and air quality assessments to assess whether the changes would result in impacts to sensitive receptors
    - Assessment of land use, hydrology, water resources, soils, and traffic and transport, where changes to the design may increase adverse impacts for these matters.

This change management process seeks to ensure compliance with the EP Act and EPBC Act while providing reasonable flexibility in the location of the Project elements.

2.6 Project Commitments

APA is committed to implementing a range of measures to minimise the potential for significant impacts to the environment. When planning, constructing and operating the Project APA will implement the following measures:

- The Disturbance Footprint will remain within the Project Area
- Design, construction and operation of the Project will comply with conditions of the Authority Certificate
- Limit vegetation clearing to the minimum practicable extent along the CROW
- Minimise the clearing of sensitive or significant vegetation where practicable
- Avoid placement of project infrastructure over channels and flow paths where practicable
- Incorporate appropriate design measures where infrastructure is located within waterways
- Design waterway crossings to not impede/alter the direction of surface water flow
- Undertake works, in watercourses when the channels are dry
- Waterway rehabilitation will be consistent with surrounding environment and contours of the channel at the time of construction
- Avoid areas of severe erosion potential where practicable
- Minimise erosion risk by refining construction techniques, and incorporating erosion and sediment control methods
- Undertake pre-clearing surveys to identify the presence of endangered, vulnerable or rare and other significant flora and fauna species where they are likely to occur.

- Implement the proposed Change Management Process to reduce environmental impacts where appropriate resulting from pre-clearing surveys
- Work with the pastoral lessee to limit disruption to the pastoral lessee's use of the land for pastoral and other purposes
- Consult with DLI to develop management measures for the crossing of the Sturt Highway
- Rehabilitate additional work areas to be consistent with the surrounding area
- Rehabilitate the CROW to provide for a stable landform
- Properly Clear the Right of Way minimise impacts on adjoining vegetation.
- Undertake annual post-construction monitoring of waterway crossing sites at the end of the wet season, until it has been established that the areas are stable and self-sustaining
- Develop a project specific Environmental Management Plan in accordance with the requirements of Section 5.1.3 of this referral prior to the commencement of construction.

3.0 Strategic and Statutory Context

The Project is subject to requirements under both NT and Commonwealth legislation and regulations. The primary environmental legislation relating to the Project is the EP Act and the EPBC Act. Other key legislation relevant to the Project are listed in Table 9.

Table 9: Relevant Commonwealth and Territory Legislation

Act	Description
Commonwealth	
Environment Protection and Biodiversity Conservation Act 1999	The Commonwealth EPBC Act provides protection of the environment, heritage and biodiversity conservation. Under the EPBC Act, actions that are likely to cause a significant impact on MNES will require formal assessment by the Commonwealth Environment Minister through a referral process. A referral will be submitted to DCCEEW for consideration. It is unlikely the Project will require assessment or approval under the EPBC Act, as it is not expected to have a significant impact on any MNES.
Native Title Act 1993	The Act provides for the recognition and protection of native title and to establish ways in which future dealings affecting native title may proceed. A search of the Native Title Register indicated that there are two Native Title determinations in the Project Area. APA has engaged with the Northern Land Council to seek to negotiate an ILUA with Native Title Holders whose rights and interests may be impacted by the Project.
Northern Territory	
Energy Pipeline Act 1981	APA will require a Pipeline Licence and Pipeline Management Plan for the construction operation, maintenance, and cessation of use or abandonment of the pipeline for the conveyance of energy-producing hydrocarbons.
Environment Protection Act 2019	Under the Act, the NT EPA regulates the environment impact assessment process to identify potential environmental impacts of development proposals. This Referral has been prepared for the NT EPA's consideration as to whether further assessment is required. Further environmental assessment may require the submission of an Environmental Impact Assessment (EIA) under a tiered assessment pathway.
Land Titles Act 2000	An Act to consolidate and reform the law about the registration of land and interests in land and for related purposes. The Act provides for the creation of easements. APA will seek to secure an easement over the pipeline alignment.
Northern Territory Aboriginal Sacred Sites Act 1989	The Act depicts the need to preserve and promote Aboriginal tradition in relation to land in the NT. This Act establishes procedures for the protection and registration of sacred sites. The Act establishes offences for entry onto, work on, or desecration of, sacred sites without appropriate certification or in contravention of the certification. APA has applied for an Authority Certificate over the Project Area.
Pastoral Land Act 1992	The Act provides a form of tenure over Crown land to facilitate the sustainable use of pastoral leasehold land for pastoral purposes and the economic viability of the pastoral industry. While the Act is the governing statute for the pastoral industry in the Northern Territory, there are other biosecurity, environmental, native title, and land access laws that operate in unison. APA will seek to secure a sub-lease of pastoral land for surface facilities. The clearing of native vegetation on pastoral land will be regulated under a clearing permit.
Traffic Act 1987	The Act regulates traffic and for other purposes. A permit is required where construction will occur within an NT road reserve. APA, or its principal contractor, will obtain a permit to work within the Stuart Highway Road reserve. A Traffic Management Plan will also be required.

Act	Description
Water Act 1992	The Water Act provides for the investigation, use, control, protection, management, and administration of water resources within the Northern Territory. The Water Act legislates the extent to which both surface and groundwater can be used and for what purpose. Waste discharge to natural waters is prohibited unless licensed under the Act. APA requires a total of 70ML of water over 6 months for construction and commissioning. APA will obtain a groundwater extraction licence for 40ML and will source 30ML of water from Tamboran or associated companies under an existing water extraction licence.

3.1 Government Strategies for Gas

The Future Gas Strategy (Australian Government Department of Industry Science and Resources 2024) (Future Gas Strategy) and the NT Our Territory Gas Strategy Climate Change Response (NT Government 2021) identifies Australia will require the production and use of gas as an energy resource to achieve net zero through to 2050 and beyond. The Future Gas Strategy requires continued investment in, and development of, gas supply and transport infrastructure to achieve the energy transition with thriving industries.

The development of the Northern Territory economy is anticipated to include the use of its gas reserves. The Northern Territory Roadmap to Renewables: Fifty percent by 2030 (Northern Territory Independent Expert Panel 2017) identified that following the expected downward pressure on wholesaled electricity costs by renewable energy, significant growth opportunities may be provided through the use of gas to fuel new precursor chemical gas intensive industries as well as be the backup generation.

The final report of the Independent Scientific Inquiry into Hydraulic Fracturing in the NT (2018) made 135 recommendations (later 138) which have been implemented (Scientific Inquiry into Hydraulic Fracturing: Final Implementation Report) (NT Government 2023). The implementation of these requirements has occurred through the NT Government approval process and assessment process for new projects.

3.1.1 Need for the Project

As identified in the Unlocking the Beetaloo: Beetaloo Strategic Basin Plan (Australian Government Department of Industry, Science Energy and Resources 2021) the construction of a pipeline in the Beetaloo sub basin is required to connect to existing pipelines to supply gas to the NT.

APA's Sturt Plateau Pipeline will deliver necessary facilitating infrastructure to transport gas produced initially by the SPCF to Darwin.

3.2 Principles of Environmental Protection and Management

Part 1 of the EP Act sets out the principles of environment protection and management (Part 2 of the EP Act) as:

- Principles of ecologically sustainable development
- Environmental decision-making hierarchy
- Waste management hierarchy.

The following sections, aligned with Part 2 of the EP Act, have been incorporated to describe how these duties have been upheld by APA in the planning, development and design of the Project.

Table 10: Principles of Environment Protection and Management

Principles of environment protection and management	Consideration
The following principles of ecologically sustainable development have been taken into consideration in the design of the proposed action.	
Decision-making principle • Decision-making process should provide for community involvement in relation to decisions and actions that affect the community. • Decision-making processes should effectively integrate both long-term and short-term environmental and equitable (unbiased) considerations.	APA has consulted with community and stakeholders about the Project and will continue to engage with stakeholders over the life of the Project. APA will continue to implement its Stakeholder Engagement Plan. Decisions and actions that have the potential to affect the community will consider community, social, economic, and cultural values and perspectives. The EP Act statutory process will provide further opportunity for community involvement in relation to decisions and actions that affect the community via a statutory process for any member of the community to comment on the Project. The impact assessment considers both the (short term, localised) construction phase enabling infrastructure, and the long-term operations. A range of technical studies have been conducted into the potential environmental and social impacts of the Project and, in turn, are informing the planning and design of the Project. Decision-making during the early planning and feasibility stages will be undertaken with full consideration of potential significant environmental impact – noting that environment includes the social, economic, cultural, and biophysical environments.
Principle of proportionality Decision-making processes should ensure that decisions or actions directed at minimising harm or a risk of harm or impact to the environment are proportionate to the harm or risk of harm or impact that is being addressed.	A range of management and mitigation measures have been proposed to prevent or limit potential environmental impacts taking into consideration the risk of harm or impact from the Project. See Table 15 and Sections 5.1.3.1, 5.2.3.1 and 6.1.3.

Precautionary principle
• In instances with a threat of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing preventative measures.
• Decision-making should be guided by:
  ○ a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and
  ○ an assessment of the risk-weighted consequences of various options.
	Several technical studies have been undertaken within the Project Area to inform the impact assessment of the Project. Studies include:
	• vegetation communities and habitat mapping
	• surface water impact assessment
	• air quality impact assessment
	• greenhouse gas emissions assessment
	• cultural heritage assessment
	• traffic impact assessment
	• noise and vibration impact assessment
	• social and economic impact assessment.
	A geotechnical investigation and further soil characterisation will be undertaken within the Project Area to further inform design.
	Potential impacts and have been identified and described under the relevant preliminary key environmental factor.
	Preliminary mitigation and management measures have been proposed to ensure impacts are environmentally acceptable.
	These measures will be refined as the Project design progresses.

Principles of environment protection and management	Consideration
	A precautionary approach to the assessment of impacts has been taken where there are known environmental knowledge gaps and uncertainty, these will continue to be considered and refined as the Project progresses.
Principle of evidence-based decision-making • Decisions should be based on the best available evidence in the circumstances that is relevant and reliable.	This referral has been prepared by a team of technical specialists who are able to identify best available information, and their work has been technically peer reviewed. To inform decision making for the project and assessment of environmental risk, the following steps have been undertaken: • Collation of desktop and database information relevant to the site's environment. • Assessment of data gaps preventing proper quantification of potential impacts and environmental risk assessment. • Collection of field data to fill identified gaps. Where the information is incomplete, and/or where the level of uncertainty is significant the principle of evidence-based decision-making has been utilised to assess the design decisions being made. Investigation of environmental processes and potential significant impacts have been technically peer reviewed where appropriate.
Principle of intergenerational and intergenerational equity • The present generation should ensure that the health, diversity, and productivity of the environment is maintained or enhanced for the benefit of present and future generations.	APA will ensure the health, diversity, and productivity of the environment is maintained through the implementation of the mitigation hierarchy and minimising the environmental impacts during the design and construction of the Project.
Principle of sustainable use • Natural resources should be used in a manner that is sustainable, prudent, rational, wise and appropriate.	The primary materials used for the project are natural rock and fill, derived from nearby quarries. This is a once-off extraction of natural materials that have low ecological value while in situ. The proposed facility does not intend to use natural resources on an ongoing basis.
Principle of conservation of biological diversity and ecological integrity • Biological diversity and ecological integrity should be conserved and maintained.	Throughout the design and construction phases of the Project, the conservation of biological diversity and ecological integrity has and will consistently be a fundamental consideration including • Reducing the indicative Disturbance Footprint to conserve terrestrial communities • Revising the construction methodology and timing to minimise impacts on water quality.
Principle of improved valuation, pricing, and incentive mechanisms	APA understands that environmental factors should be included in the valuation of assets and services and acknowledges that the cost of the Proposal should include environmental impact mitigation, management, and maintenance activities. These requirements will be considered during the overall costing of the Project.

Principles of environment protection and management	Consideration
The following management hierarchies must be taken into consideration in the design of the proposed action.	
Environmental decision-making hierarchy 1. In making decisions in relation to actions that affect the environment, decision-makers, proponents and approval holders must apply the following hierarchy of approaches in order of priority: • ensure that actions are designed to avoid adverse impacts on the environment. • identify management options to mitigate adverse impacts on the environment to the greatest extent practicable. • if appropriate, provide for environmental offsets in accordance with the EP Act for residual adverse impacts on the environment that cannot be avoided or mitigated. 2. In making decisions in relation to actions that affect the environment, decision-makers, proponents and approval holders must ensure that the potential for actions to enhance or restore environmental quality is identified and provided for to the extent practicable.	The environmental decision-making hierarchy has been applied through site selection, design, consultation with stakeholders, and environmental assessment. The preferred alignment was selected to avoid unacceptable impacts (e.g. sacred sites) and minimise impacts where they are unavoidable (e.g. sensitive/significant vegetation). Actions to enhance or restore environmental quality are provided for in the environmental management framework.
Waste management hierarchy a) Avoidance of the production of waste b) Minimisation of the production of waste c) Re-use of waste d) Recycling of waste e) Recovery of energy and other resources from waste f) Treatment of waste to reduce potentially adverse impacts g) Disposal of waste in an environmentally sound manner.	The project is expected to produce waste typical of a civil construction project. This includes the risk of accidental waste production such as hydrocarbon spills. Through its design and construction stages, the project will seek to construct the facilities as efficiently as possible and to meet the following objectives: • Minimise waste generation • Prevent pollution events from occurring • Comply with waste management obligations and legislation • Identify and characterise waste • Ensure waste is safely managed appropriately to end point disposal, reuse, or recycling. Waste will be controlled for the Project controls outlined in the CEMP, including the disposal of construction and putrescible waste at a licenced waste management facility, onsite sewage treatment and disposal of effluent to land.

4.0 Consultation

The EP Act requires proponents to engage with stakeholders who may be affected by their proposal and to support these communities and the public to understand the potential impacts and benefits of a proposal. The NT EPA's Stakeholder Engagement and Consultation Guidance for Proponents (NT EPA, 2021) recognises that stakeholder consultation is an important component of social, cultural, and health impact assessments, over and above formal opportunities for feedback on documents placed on public exhibition.

Stakeholder engagement is an essential process supporting environmental impact assessment. It provides potentially affected and interested stakeholders with information about the Project's potential impacts and benefits as well as the opportunity to communicate concern which will be considered during the Project design and execution. Meaningful stakeholder engagement supports the early identification of issues, addresses community concerns and expectations, and leads to better decision-making outcomes.

4.1 General Duty under Section 43 of the EP Act

The importance of community involvement in the environmental impact assessment process, particularly of Aboriginal people and communities, is expressly recognised in the objectives of the EP Act). Specifically, these objectives include:

- To provide for broad community involvement during the process of environmental impact assessment and environmental approval; and
- To recognise the role that Aboriginal people have as stewards of their country as conferred under their traditions and recognised in law, and the importance of participation by Aboriginal people and communities in environmental decision-making processes.

Section 43 of the EP Act prescribes the General Duty of Proponents when undertaking an Environmental Impact Statement process. Table 11 summarises how APA has addressed and will continue to address its general duty.

Table 11: Consideration of APA's General Duty

Section 43 General Duty	Comment
Have communities that may be affected by the proposed action been provided with information and opportunities for consultation?	APA undertook community consultation to inform stakeholders of the Project and seek the communities' feedback. This is documented in detail in Appendix H. APA has established a webpage dedicated to the Project: https://www.apa.com.au/about-apa/our-projects/sturt-plateau-pipeline-project/. The community may contact APA with queries about the Project via an email address and 1800 number provided on the Project webpage.
Has consultation with affected communities, including Aboriginal communities' been undertaken in a culturally appropriate manner?	APA is currently engaged in a formal consultation process with the Northern Land Council as the agent for the Top End PBC. While no formal consultation with Native Title Holders has occurred outside of this engagement, it's important to note that local Aboriginal people have been included in broader community consultations. As members of the communities where APA has been engaging, Aboriginal residents have had equal opportunities to access information and raise questions, just like any other community member. This approach ensures that while the formal consultation process proceeds through proper channels, the wider Aboriginal community remains informed and engaged through general community consultation efforts.
Has community knowledge and understanding (including scientific and traditional knowledge and understanding) of the natural and cultural values of areas that may be impacted by the proposed action been sought and documented?	

Section 43 General Duty	Comment
Have Aboriginal values and the rights and interests of Aboriginal communities' been addressed in relation to areas that may be impacted by the proposed action?	APA recognises Aboriginal values and the rights and interests of Aboriginal communities. APA has applied for an Authority Certificate under the Northern Territory Aboriginal Sacred Sites Act 1989. The Subject Land for the Authority Certificate covers the entire Project Area. APA is currently engaged in a formal consultation process with the Northern Land Council as the agent for the Top End PBC, the Native Title Body Corporate and will seek to negotiate an ILUA covering the entire Project Area. A cultural heritage survey of the Survey Area was undertaken between 9-13th September 2024 with NLC-nominated representatives from the relevant Native Title Holder groups.

4.2 Objectives of Stakeholder Consultation

APA's key objectives of stakeholder consultation for the Project are to:

- Foster connection and effective relationships that inform its understanding of the region and stakeholder priorities associated with developing the Beetaloo Basin.
- Recognise its responsibility to respect the environment, views, and rights of the people it interacts with.
- Advocate and manage reputation to protect interests and reinforce the critical role of gas in Australia's energy transition.

APA's approach to stakeholder consultation for the Project aims to:

- Be consistent, planned, and coordinated
- Recognise and involve diverse stakeholders
- Align with the developing regulations and industry good practice
- Be planned with the clear purpose of facilitating constructive and positive relationships, being open and transparent, and demonstrating that stakeholders' views are heard and acknowledged
- Be flexible, innovative, and considerate of consultation fatigue.

APA's stakeholder consultation objectives and approach are guided by the NT EPA's Stakeholder Engagement and Consultation Guidance for Proponents (NT EPA, 2021) and also align with the International Association for Public Participation's (IAP2) core values of engagement, as principles for best practice stakeholder engagement (IAP2, 2016) – including that public participation:

- Is to be based on the belief that those who are affected by a decision have a right to be involved in the decision-making process.
- Promotes sustainable decisions by recognising and communicating the needs and interests of others.
- Seeks input from participants and will clearly communicate to participants how their input is used.
- Provides participants with the information they need to participate in a meaningful way (NT EPA, 2021).

4.3 Overview of Stakeholder Consultation

APA's stakeholder consultation program for the Project was designed to address two key priorities:

1. Ongoing consultation with relevant regulatory bodies to maintain open communication lines throughout the planning process and to ensure project refinements aligned with compliance requirements.
2. Targeted community and stakeholder engagement activities, carefully calibrated to match the Project's relatively small scale and isolated nature.

The targeted approach to community and stakeholder engagement allowed for meaningful dialogue with affected parties while avoiding unnecessary engagement that could create unwarranted concerns or expectations.

Table 12 provides an overview of the stakeholders consulted and how their feedback informed the project.

Table 12: Key Stakeholders Identified and Consulted

Group/Stakeholder	Method	How feedback has informed project development
First Nations		
• Custodians of sacred sites • Native Title holders, as determined through the Northern Land Council	• Aboriginal Areas Protection Authority will undertake consultation with Custodians of sacred sites to inform an Authority Certificate. • Guided by Northern Land Council consultation is ongoing. • Archaeological survey in consultation with NLC nominated representatives of Traditional Owner Groups.	APA will continue to work with First Nations Stakeholders to ensure that the project progresses in line with regulatory requirements, focusing on mitigating potential impacts on cultural heritage. APA will also work with members of the local Aboriginal community to investigate broader opportunities for social and community benefits.
Local Government		
Roper Gulf Regional Council	• Email to introduce the Project • Factsheet provided for context • Meeting for inputs	The council has acknowledged that there will be limited interaction with council assets and services due to the remote location. However, APA has committed to keeping the Council informed of progress and will seek advice on matters related to them as they arise.
Barkly Regional Council (Elliot Local Authority)	• Email to introduce the Project • Factsheet provided for context • Meeting for inputs	The Elliott Local Authority also acknowledged that there will be limited interaction with council assets and services due to the remote location. However, they noted key constraints the region faced during the wet season that will inform the development of Site and Workforce Management Plans.
Landholders		
Shenandoah Station and Hayfield Station pastoral lessee	• Email to introduce the Project • Factsheet provided for context • Ongoing engagement	APA has an existing relationship and access agreement in place with the Landholder for the Amadeus Pipeline. Consultation has informed the development of a project-specific Land Access Plan and management measures to minimise the impacts of project work on station operations.

Group/Stakeholder	Method	How feedback has informed project development
Essential Services		
NT Health and Elliot Health Centre	• Email to introduce the project • Factsheet provided for context • Meeting for inputs	Feedback will inform the development of recruitment procedures, site emergency management procedures, and workforce management plans to minimise demands on local services and ensure the health and safety of project workers in the isolated location.
NT Police, Fire and Emergency Services - Elliott Police Station	• Email to introduce the project • Factsheet provided for context	No direct feedback on the project was received. However, as per information on the challenges related to providing emergency services in remote areas received from Elliot Health, all site emergency management procedures and workforce management plans will be planned to minimise reliance on local services and socialise with local authorities before construction.
Northern Territory Government and statutory bodies		
Aboriginal Areas Protection Authority	• Email to introduce the project • Factsheet provided for context • Face to face meetings • Application for an Authority Certificate	Ongoing discussions have informed the route alignment, and the eventual output will contribute to the development of the Project Cultural Heritage Management Plan.
Department of Industry, Tourism and Trade – Energy Development Branch	• Email to introduce the project • Factsheet provided for context • Face to face meetings	Feedback has shaped the regulatory approvals approach and risk assessment processes.
Department of Industry Tourism and Trade - Business and Workforce – Big Rivers Region,	• Email to introduce the project • Factsheet provided for context • Face to face meetings	Input will help develop strategies to involve local businesses in the supply chain and suggestions are being considered to support greater Indigenous participation.
Department of Environment, Parks and Water Security – Rangelands, Environmental Assessments, Water Branch	• Email to introduce the project • Factsheet provided for context • Face to face meetings • Phone calls	Feedback has influenced the regulatory approvals approach and informed tenure options for the Project.
Department of Infrastructure, Planning and Logistics – Transport and Civil Services	• Email to introduce the project • Factsheet provided for context • Face to face meetings • Ongoing emails	Stakeholder input has led to the refinement of the Project camp location, interactions with the road corridor, and boring methodology.
Commonwealth Government		
Department of Climate Change, Energy, the Environment and Water	• Email to introduce the project • Factsheet provided for context • Face to face meetings	Feedback has influenced the regulatory approvals approach.
Regional economic development and participation		
Regional Development Australia NT	• Email to introduce the project • Factsheet provided for context • Face to face meetings	Feedback has informed the development of the Stakeholder Engagement Plan and resulted in a

Group/Stakeholder	Method	How feedback has informed project development
		wider approach to engagement related to local participation.
Local businesses		
Surrounding service businesses: • Daly Waters Historic Pub • Daly Waters Hi-Way Inn • Dunmarra Wayside Inn	• Email to introduce the project • Factsheet provided for context • Meeting for inputs	No feedback specifically informed the project. However, business feedback will be incorporated into broader project planning to inform opportunities for local business partnerships.

4.4 Ongoing Stakeholder Engagement

Building on the stakeholder engagement program conducted during the regulatory approval process, APA remains committed to maintaining open lines of communication with key stakeholders throughout the Project's lifecycle. As the Project transitions towards construction, ongoing engagement will focus on keeping stakeholders informed of Project progress, addressing emerging concerns, and maximising opportunities for local participation.

4.4.1 Communication Methods

To facilitate continuous and effective two-way communication with stakeholders throughout the Project lifecycle, APA has established and maintains the following platforms:

- Project-specific webpage: APA has created a dedicated webpage for the Sturt Plateau Pipeline Project (https://www.apa.com.au/about-apa/our-projects/sturt-plateau-pipeline-project/). This serves as a central hub for Project information, updates, and contact details.
- Project email address: A dedicated Project email address (beetaloo@apa.com.au) and a direct phone line (1800 413 200) are provided on the webpage, allowing stakeholders to easily reach out with queries, concerns, or feedback.

4.4.2 Key Ongoing Stakeholders

The following stakeholders have been identified as crucial for continued engagement as the Project progresses:

- Pastoral lessee (A.P.N Pty Limited): As the directly affected landholder, regular communication will be maintained to address any concerns and minimise impacts on their operations.
- Northern Land Council and Top End PBC/CLA Aboriginal Corporation RNTBC: Ongoing consultation to ensure continued respect for Aboriginal values, rights, and interests.
- Local communities: Residents of Elliott, Daly Waters, and surrounding areas will be kept informed of Project developments and given opportunities to participate in APA social investment initiatives.
- Northern Territory Government departments: Continued engagement to ensure compliance with regulatory requirements and to address any emerging issues.
- Local governments: Roper Gulf Regional Council and Barkly Regional Council (Elliott Local Authority) will be kept informed of Project progress and community impacts.

- Essential services providers: Ongoing communication with NT Health, Elliott Health Centre, and NT Police, Fire, and Emergency Services to inform the development of site emergency management plans.
- Local businesses: Continued engagement with surrounding service businesses to maximise local economic benefits.

4.4.3 Future Stakeholder Engagement

Table 13 outlines our approach to stakeholder engagement during the construction phase of the Project. The engagement strategies are tailored to meet the needs and expectations of various stakeholder groups, ensuring effective communication and collaboration throughout the project's development.

Table 13 Future Stakeholder Engagement

Stakeholder	Approach	Method	Purpose
NT Government - Elected Representatives and Local Government • Relevant Ministers (Chief Minister, Minister for Mining, Minister for Environment, etc.) • Member for Barkly • Member for Katherine • Mayors and representatives of Roper Gulf Regional Council and Barkley Regional Council	Consult	• Letters and emails • Meetings as required	• Provide updates on project status, including construction commencement, works program, and management plans • Communicate opportunities for project participation, local content and social benefits.
NT and Federal Government Departments • AAPA • Department of Lands, Planning and Environment • Department of Mining and Energy • Department of the Chief Minister and Cabinet • DCCEEW • Pastoral Land Board	Consult and collaborate	• Letters and emails • Meetings as required • Telephone calls	• Provide project updates as the project is further defined • Confirm all project approvals are in place for commencement of construction
First Nations People and Representative Groups: • Northern Land Council (NLC) as representative of Top End (Default PBC/CLA) Aboriginal Corporation RNTBC	Collaborate	• Face-to-face meetings (or preferred engagement method) • Letters and emails	• Provide updates on project status, construction commencement, works program, and management plans • Communicate opportunities for project participation, including job and supply opportunities • ILUA implementation

Stakeholder	Approach	Method	Purpose
Landholders and Pastoralists: • A.P.N Pty Limited (property name – Hayfield and Shenandoah)	Involve	• Face-to-face meetings (or preferred engagement method) • Letters and emails	• Provide updates on project status, construction commencement, works program, and management plans • Work closely with landholders to ensure project impacts are minimised
General Public and all Stakeholders	Inform	• Website updates • Management of communication pathways	• Provide updates on project status, construction commencement, works program, and management plans • Provide access to the project grievance mechanism

4.4.4 Engagement Materials

To support our engagement activities, APA has developed and will continue to update the following materials as required:

- Project information sheets
- Key messages and frequently asked questions documents
- Contact information for key APA personnel
- Website content
- Media holding statements

4.4.5 Timing

The specific timing for each engagement activity will be determined as the Project progresses. APA will maintain flexibility in adjusting its engagement schedule as needed to accommodate stakeholder availability and Project developments.

By implementing this comprehensive stakeholder engagement strategy, APA aims to foster transparent communication, build strong relationships, and ensure the successful delivery of the Project while addressing the concerns and interests of all stakeholders involved.

5.0 Environmental Factors

The objective of the Referral is to inform the NT EPA, NT government authorities, stakeholders, and the public about the potential significant environmental, social and economic impacts of the proposed Project, and the measures proposed to avoid, mitigate and/or offset those impacts.

The NT EPA will assess the information in this Referral to determine whether the Project requires assessment under the EP Act. The NT EPA's framework for the assessment of environmental impact uses 14 environmental factors divided in five themes to provide a systematic approach to organising environmental information and to establish environmental objectives against which proposals will be assessed.

The NT EPA will conduct an environmental impact assessment on the Referral to determine whether the Project has the potential to have a significant impact on the environment.

The potential for a significant impact is assessed by the context and intensity of the proposed activity's impact and the sensitivity value and quality of the environment proposed to be impacted (considering the duration, magnitude and geographic extent).

Table 14 provides the definition of the significance of an impact used to rate impacts in this Referral.

Table 14 Significance of Impact

Rating	Definition
Major	Arises when an impact will potentially cause irreversible or widespread harm to an environmental value that is irreplaceable because of its uniqueness or rarity. Avoidance through appropriate design responses is the only effective mitigation.
High	Occurs when the proposed activities are likely to exacerbate threatening processes affecting the intrinsic characteristics and structural elements of the environmental value. While replacement of unavoidable losses is possible, avoidance through appropriate design responses is preferred to preserve its intactness or conservation status.
Moderate	Although reasonably resilient to change, the environmental value would be further degraded due to the scale of the impact or its susceptibility to further change. The abundance of the environmental value ensures it is adequately represented in the region, and that replacement, if required, is achievable.
Low	Occurs where an environmental value is of local importance and temporary and transient changes will not adversely affect its viability provided standard environmental management controls are implemented.
Negligible	Impact on the environmental value will not result in any noticeable change in its intrinsic value and hence the proposed activities will have negligible effect on its viability. This typically occurs where the activities occur in industrial or highly disturbed areas.

Pre-referral screening conducted for the Project determined that it has the potential to impact two of the 14 environmental factors. A copy of the pre-referral screening is provided in Appendix A. Environmental factors that were screened out of further assessment via the Pre-Referral Screening Tool and justifications are provided in Table 15.

The environmental factors in Table 15 were not assessed in detail due to the following considerations:

- The environmental values are not likely to be significantly impacted.
- Threatened and migratory fauna species are not likely to be significantly impacted.
- The environmental impacts of the Project are readily understood.
- The impacts are limited in extent and duration.

Whilst the potential for significant impact to environmental factors was assessed in the absence of mitigation measures, relevant mitigation measures are provided in Table 15. The proposed mitigation measures are readily available and proven to be effective in reducing the potential for significant impacts. The environmental factors requiring further assessment either due to the potential for significant impacts or because there is insufficient information to assess the potential for significant impacts are:

- Terrestrial ecosystems: Riparian vegetation values.
- Community and economy: Community division over Project benefits and impacts.

A summary of the potential impacts and residual impact rating is provided in Table 16.

Table 15 NT EPA Environmental Factors Not Detailed Assessment

Theme	Factor	Reasons Why Factor Not Assessed	Technical Studies	Significance of Impact Without Mitigation
Land	Landforms	The topography of the Project Area is relatively flat without distinctive physical landforms. The Project will therefore not have a significant impact on the variety and integrity of distinctive landforms.	Nil.	Negligible
	Terrestrial environmental quality	The Project is not located within an area of high risk of erosion or contamination. The impact to the quality and integrity of land and soils from the Project is not considered to be significant because: • The Project is not located within an area of high erosion risk • Soil properties are within the optimal range for revegetation success • The Project is linear in nature with a discrete Disturbance Footprint that traverses a range of land units • Climatic conditions at the time of construction will reduce the potential for soil loss due to rainfall • Construction methodology will reduce the risk of adversely impacting soil quality and integrity • Areas utilised for construction activities will be impacted and exposed for a limited time. • The Project is not an inherently contaminating activity • Accidental spills or loss of containment of fuels or chemicals will not result in significant environmental harm. The Project will therefore not have a significant impact on the quality and integrity of the land and soils. No further assessment is required. Mitigation measures reducing potential impact The protection of the quality and integrity of land and soils to ensure environmental values are supported and maintained will be managed through the CEMP. The CEMP will outline procedures for vegetation clearing, topsoil removal, subsoil removal and replacement following placement of the pipeline. A decommissioning and rehabilitation plan will be developed in consultation with stakeholders prior to the Projects end of life.	Nil. (Soil types and classes at Project Area identified in Ecological Assessment (Appendix D))	Low
Water	Hydrological processes	The impact to hydrological processes from the Project is not considered to be significant because: • The construction method aims to restore existing surface levels after the pipeline is buried • The pipeline will have no measurable impact on flooding or stormwater flows • Impacts to surface water flows can be readily addressed through engineering and design The Project has been assessed against the significant impact criteria presented in the DCCEEW guideline (DCCEEW, 2022). Due to the relatively small and temporary surface disturbance caused by the Project, it will not have a significant impact on a water resource. The Project will therefore not have a significant impact on hydrological processes. No further assessment is required. Mitigation measures reducing potential impact The protection of the quality of water to ensure environmental values are supported and maintained will be managed through the CEMP. The proposed construction method will restore existing surface levels after the pipeline is buried, ensuring no measurable impact on flooding or stormwater flows	Surface Water Assessment (Appendix H).	Low
	Inland water environmental quality	The Project's construction is scheduled for commencement of construction in the dry season when the monthly average rainfall ranges from 0 mm – 30 mm from April to October. Trenching of the pipeline will not impact on water quality within the identified waterways or the ephemeral water body during this period. The Project will therefore not have a significant impact on inland water environmental quality. No further assessment is required. Mitigation measures reducing potential impact The CEMP will outline the erosion and sediment control measures for the Projects construction.	Surface Water Assessment (Appendix H).	Low
	Aquatic Ecosystems	The impact to aquatic ecosystems from the Project is not considered to be significant because: • The construction method aims to restore existing surface levels after the pipeline is buried • The pipeline will have no measurable impact on flooding or stormwater flows • Impacts to surface water flows can be readily addressed through engineering and design The Project has been assessed against the significant impact criteria presented in the DCCEEW guideline (DCCEEW, 2022). Due to the relatively small and temporary surface disturbance caused by the Project, it will not have a significant impact on aquatic ecosystems. Mitigation measures reducing potential impact Works will be staged to avoid ground disturbing works when the ground is saturated. The proposed construction method will restore existing surface levels after the pipeline is buried, ensuring no measurable impact on flooding or stormwater flows.	Nil	Negligible

Theme	Factor	Reasons Why Factor Not Assessed	Technical Studies	Significance of Impact Without Mitigation
Sea	Coastal processes Marine environmental quality Marine ecosystems	No disturbance will be required within the marine or coastal environment. The Project will not impact coastal processes, marine environmental quality or marine ecosystems Pipe for the Project will be delivered by ship to the Port of Darwin. Existing hardstand at the Marine Industry Park CUF is proposed to be used as a temporary laydown are for pipes. The CUF does not form part of the Project Area.	Nil.	Negligible
Air	Air quality	The impact to air quality from the Project is not considered to be significant because: • The Project is located in generally flat terrain, with no significant topographical features or complex terrain that would affect the dispersion of air pollutants from the Project site. • There are no significant potential anthropogenic dust emission sources in Project Area. The area is sparsely populated. • The closest human sensitive receptors not associated with construction activities in the immediate vicinity of the Project are Dunmarra roadhouse and Hayfield Station homestead which are greater than 3 km away from the Project Area. • The potential for any adverse air quality impacts at surrounding sensitive areas will be minimal, and air emissions during operations have not been considered further. The air quality impacts from the Project's operation are expected to be negligible. The Project will therefore not have a significant impact on air quality. No further assessment is required. Mitigation measures reducing potential impact The CEMP will outline the erosion and sediment control measures, including dust suppression for the Project's construction.	Air Quality and Greenhouse Gas Assessment (Appendix B)	Low
	Atmospheric processes	The impact to atmospheric processes from the Project is not considered to be significant because: • No significant Scope 1, 2 or 3 greenhouse gas (GHG) emission sources have been identified for the Project's operation. • The contribution of the Project construction emissions to annual national and NT GHG emissions is estimated at 0.004% and 0.10% respectively. • Scope 1 GHG emissions sources for the 6-month construction period from land clearing, diesel consumption from the operation of construction equipment and generators, and use of petroleum-based oils and greases, are estimated to be 17,040 tCO2-e. • Scope 1 GHG emissions from construction and operation of the Project are well below the relevant threshold in the Large Emitter's Policy and the National Greenhouse and Energy Reporting (NGER) scheme reporting threshold. • Once operational, GHG emissions from the Project will be negligible. The Project will therefore not have a significant impact on atmospheric processes. No further assessment is required.		Low
People	Culture and Heritage	The impact to culture and heritage from the Project is not considered to be significant because: • Abstract of Records indicates that AAPA has previously consulted over and issued Authority Certificates over the area and there is no registered or recorded sacred sites or restricted work areas within ~1 km of the Project Area. • Archaeological survey of the site determined that there is low risk of impact to European or Aboriginal heritage for the majority of the Project Area. • APA has applied for an Authority Certificate under the Northern Territory Aboriginal Sacred Sites Act 1989. The Subject Land for the Authority Certificate covers the entire Project Area. Construction and operation of the Project will comply with the conditions of the Authority Certificate. The Project will therefore not have a significant impact on culture and heritage. No further assessment is required. Mitigation measures reducing potential impact APA will develop and implement an environmental management plan that includes a Cultural Heritage Management Plan with an unexpected finds protocol for the protection of items of heritage value or Aboriginal artifacts.	Cultural Heritage Desktop Assessment (Appendix D).	Low
	Human health	The impact to human health from the Project is not considered to be significant because: • The Project's location is isolated from populated areas. Isolated receptors are not located in close proximity to the Project Area. • Modelling has determined that no exceedances of the most stringent night-time noise level limit have been predicted. • Modelling has determined that, at Hayfield Homestead, cumulative noise impact is not predicted. The Project will therefore not have a significant impact on human health. No further assessment is required.	Construction Noise and Vibration Assessment (Appendix F)	Negligible

Table 16: Potential Impacts and Avoidance/Mitigation Measures

Factor	Environmental value	Potential impacts and benefits	Mitigation Measures Reducing Potential Impacts	Residual Impact
LAND				
Terrestrial ecosystems	Riparian vegetation	• Clearing of approximately 22 ha of sensitive or significant vegetation (riparian vegetation). • Introduction of pest flora and fauna species.	The protection of aquatic ecosystems to ensure environmental values are supported and maintained will be managed through the CEMP, including: • Erosion and Sediment Control Plan • Fire Management Plan • Hazardous Substances Management Plan • Land Clearing Management Plan • Waste Management Plan • Rehabilitation Management Plan • Weed and Pest Management Plan	Low
PEOPLE				
Community and Economy	Native Title Holder rights and interests	• Community division over project benefits and impacts could have a noticeable and significant effect on community cohesion and social dynamics. • Economic impacts (positive) • Traffic impacts during construction • Stakeholder concerns.	• ILUA • Traffic Management Plan • Community and Social Performance Management Plan • Workers' temporary construction camp • Emergency Management Plan • Transparent Social Investment Program • Stakeholder Engagement Plan	Low

5.1 Terrestrial Ecosystems

The NT EPA's objective for terrestrial ecosystems is to:

Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.

The Terrestrial Ecosystem factor was identified for further consideration in this Referral due to impacts to sensitive/significant vegetation.

5.1.1 Environmental Values

An Ecological Assessment was prepared using desktop assessment and field survey of the Survey Area (Appendix E). The field survey was undertaken from 28 May 2024 to 2 June 2024 and consisted of:

- Systematic, targeted and incidental flora surveys.
- Vegetation community mapping and assessments.
- Systematic, targeted and incidental fauna surveys.

Details of the survey method and area are included in Appendix E.

A Surface Water Assessment was prepared using desktop assessment and field data collected during the ecology field survey (Appendix I)

5.1.1.1 Threatened species

No threatened or migratory fauna species were observed within the Project area during the 2024 field assessment. Three species were incidentally observed within the broader region over the field survey period: Gouldian Finch, Grey Falcon, and Glossy Ibis. The following species were determined to have a moderate or high likelihood of occurring within the Project area based on outcomes of desk- and field-based assessments:

- Gouldian Finch
- Grey Falcon
- Painted Honeyeater
- Australian Painted-snipe
- Northern Blue-tongued Skink
- Yellow-spotted Monitor
- Oriental Pratincole
- Glossy Ibis.

5.1.1.2 Ephemeral Waterways

The Surface Water Assessment (Appendix I) determined that:

- There are no permanent waterways in the Project Area
- The Project Area crosses the southern end of a large ephemeral waterbody within the Newcastle Creek catchment, east of the Stuart Highway
- The Project Area crosses a 2nd order ephemeral stream east of the Stuart Highway and a 1st order ephemeral stream west of the Stuart Highway.

5.1.1.3 Vegetation Communities

The Survey Area intersects seven distinct ground-truthed vegetation communities. Ground-truthed vegetation communities were extrapolated over the broader Project Area based on Ground-truthed vegetation communities are shown in Figure 13 and the structural classification of each community according to Brocklehurst et al. (2007) is provided in Table 17.

Sensitive or Significant Vegetation

Sensitive or significant vegetation in the NT is identified in the NT Land Clearing Guidelines (DEPWS, 2024), these guidelines provide a framework for assessing potential impacts on significant and sensitive vegetation.

Riparian vegetation is a type of sensitive or significant vegetation. Riparian vegetation is defined as plant species or an assemblage of species that grow beside or near waterways (including swamps, lakes, and creek systems) and are dependent on them for their existence (DEPWS, 2024).

Potential riparian vegetation within the Survey Area includes:

- *E. microtheca* open woodland on floodplains
- *E. microtheca* and *Lophostemon grandiflorus* open woodland on floodplain fringes.

The value of riparian vegetation within the Disturbance Footprint was assessed against the criteria in the Land Clearing Guidelines (DEPWS 2024) as follows:

- The riparian vegetation communities impacted by the Disturbance Footprint are not extensive and the key indicator species in *Eucalyptus microtheca*, which is typified as a facultative phreatophyte and not highly dependent of groundwater sources for survival.
- There was no known presence or likelihood of occurrence of threatened or otherwise significant plants or animals within the riparian vegetation communities.
- There was no known occurrence of high density phreatophytic vegetation.
- The local and regional impact to the riparian communities is likely to be low.

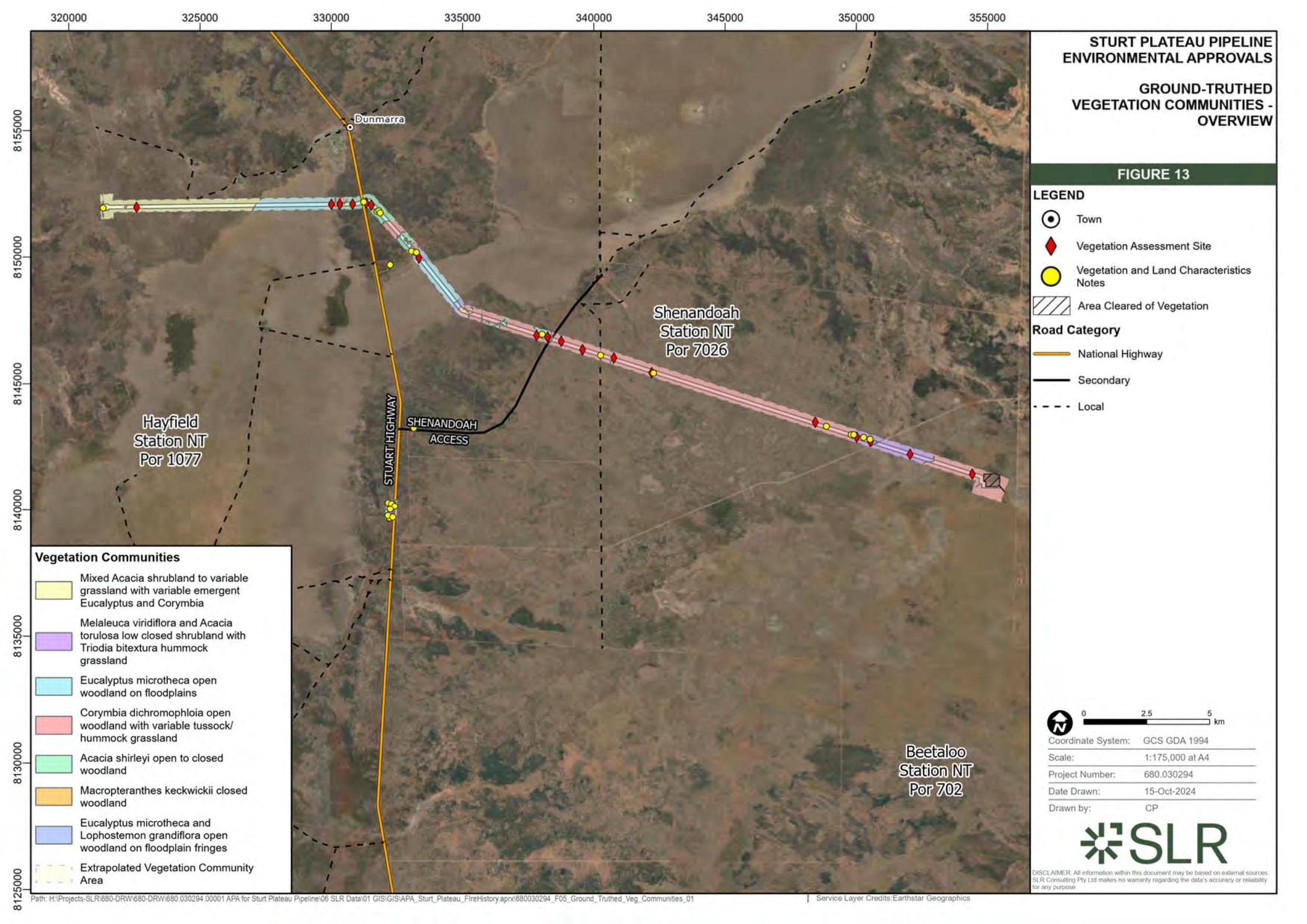
Riparian vegetation within the Disturbance Footprint is considered to be low value.

5.1.1.4 Groundwater Dependent Ecosystems

The potential occurrence of Groundwater Dependent Ecosystems (GDEs) within the Project Area was assessed through the combination of desk- and field-based assessments. A review of SREBA GDE model layer available on NR Maps indicated the potential presence of a terrestrial GDE within the western portion of the Project Area. However, ground-truthing vegetation assessments identified that western portions of the Project Area are dominated by phreatophytic vegetation (*Eucalyptus microtheca*), which is not reliant upon groundwater. Furthermore, a review of SREBA bore water level and groundwater level raster layers indicated that groundwater depth in the vicinity of the Project Area is >70 meters below ground level. Therefore, vegetation within the Project Area does not have capacity to interact with groundwater due to the depth of the water table. Furthermore, the GDE Atlas indicated that no aquatic or subterranean GDEs are present within the Project Area. Overall, the Project Area does not interact with any known or potential GDEs.

5.1.1.5 Weeds

Seven introduced flora species were identified within the Survey Area during the field survey Table 18). Of these, most are commensurate with those occurring within the surrounding region and land use (i.e. cattle grazing). Introduced flora species generally occurred in low abundance within the Survey Area and were generally isolated to sections of existing access tracks and prior disturbance. No Weeds of National Significance (WoNS) were identified within the Survey Area and only two Weed Management Act 2001 (WM Act) declared weed species (Class B) were identified; Hyptis and Flannel Weed. These two species are also listed under DEPWS (2021a) as Category 4 weeds. All remaining introduced flora species are not listed under the WM Act or category under DEPWS (2021a) (Table 18).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Por 1077
STUART HIGHWAY
SHENANDOAH
ACCESS
Beetaloo
Station NT
Por 702
Vegetation Communities
Mixed Acacia shrubland to variable grassland with variable emergent Eucalyptus and Corymbia
Melaleuca viridiflora and Acacia torulosa low closed shrubland with Triodia bitextura hummock grassland
Eucalyptus microtheca open woodland on floodplains
Corymbia dichromophloia open woodland with variable tussock/ hummock grassland
Acacia shirleyi open to closed woodland
Macropteranthes keckwickii closed woodland
Eucalyptus microtheca and Lophostemon grandiflora open woodland on floodplain fringes
Extrapolated Vegetation Community Area
STURT PLATEAU PIPELINE
ENVIRONMENTAL APPROVALS
GROUND-TRUTHED
VEGETATION COMMUNITIES -
OVERVIEW
FIGURE 13
LEGEND
Town
Vegetation Assessment Site
Vegetation and Land Characteristics Notes
Area Cleared of Vegetation
Road Category
National Highway
Secondary
Local
0
2.5
5
km
Coordinate System: GCS GDA 1994
Scale: 1:175,000 at A4
Project Number: 680.030294
Date Drawn: 15-Oct-2024
Drawn by: CP
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DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.
Path: H:\Projects-SLR\680-DRW\680-DRW\680.030294.00001 APA for Sturt Plateau Pipeline\06 SLR Data\01 GIS\GIS\APA_Sturt_Plateau_FireHistory.aprx\680030294_F05_Ground_Truthed_Veg_Communities_01
Service Layer Credits:Earthstar Geographics

Table 17: Ground-truthed Vegetation Community Descriptions

Veg. #	Corresponding SREBA BVG	Ground-truthed vegetation community description	Environmental description and soils
1	Corymbia/Eucalyptus woodland (run-on areas and heavier soils)	Mixed Acacia shrubland to variable grassland with variable emergent Eucalyptus and Corymbia.	Flats and run-on areas transitioning from yellow to grey clay loam.
2	Melaleuca low open woodland on floodplains and drainage depressions.	Melaleuca viridiflora and Acacia torulosa low closed shrubland with Triodia bitextura hummock grassland.	Drainage depressions on grey/brown clay, sandy loam.
3	Coolabah low open woodland on clay.	Eucalyptus microtheca open woodland on floodplains.	Floodplains on cracking, black clays.
4	Corymbia/Eucalyptus open woodland on sandy loam.	Corymbia dichromophloia open woodland with variable tussock/hummock grassland.	Flats and plains on red/brown clay, sandy loam.
5	Lancewood forest.	Acacia shirleyi open to closed woodland.	Minor rises on red/brown sandy clay loam.
6	Bullwaddy shrubland and woodland.	Macropteranthes keckwickii closed woodland.	Flats, run-on areas and minor rises on a red/grey/yellow sandy, clay loam.
7	Coolabah, Lophostemon and Gutta Percha swamps.	E. microtheca and Lophostemon grandiflorus open woodland on floodplain fringes.	Floodplain fringes on variable black, cracking clays to heavy, grey clay loam.

Table 18: Introduced Flora Species identified within the Survey Area during the Field Assessment

Family	Scientific name	Common name	WoNS	WM Act class	DEPWS (2021a) category
Fabaceae	Stylosanthes hamata	Carribbean Stylo	No	-	-
Fabaceae	Stylosanthes scabra	Shrubby Stylo	No	-	-
Fabaceae	Vachellia farnesiana	Mimosa Bush	No	-	-
Lamiaceae	Mesosphaerum suaveolens	Hyptis	No	B	4
Malvaceae	Sida cordifolia	Flannel Weed	No	B	4
Passifloraceae	Passiflora foetida	Stinking Passion Flower	No	-	-
Poaceae	Urochloa mosambicensis	Sabi Grass	No	-	-

5.1.2 Potential Impacts

The terrestrial ecosystem values that have the potential to be significantly impacted are sensitive or significant vegetation and associated habitats due to the unavoidable impact to riparian vegetation.

Potential impacts from the Project are:

- Direct removal of sensitive or significant vegetation and associated fauna habitat
- Introduction of pest flora species.

5.1.2.1 Sensitive or Significant Vegetation

The primary potential impact to terrestrial ecosystems and habitat is direct loss of riparian vegetation through land clearing where the CROW crosses the ephemeral wetland and the two ephemeral creeks (stream order 1 and stream order 2). Approximately 22 ha of potential riparian vegetation will be cleared for construction comprising approximately 20 ha of E. microtheca open woodland on floodplains and 2 ha of E. microtheca and Lophostemon grandiflorus open woodland on floodplain fringes.

There will be short-term localised impact on riparian vegetation within the additional work areas (~5 ha) and a long-term localised impact on riparian vegetation communities where the pipeline access track will be required during operation (17 ha).

The Ecological Assessment provided in Appendix E concluded that the habitats present in the riparian vegetation communities are unlikely to support any threatened species that were assessed as having a moderate or high likelihood of occurring within the Project Area.

5.1.2.2 Weeds

Another potential impact to vegetation and habitat within the Project Area is the potential for reduced habitat quality caused by the introduction and spread of weeds. Riparian vegetation is vulnerable to disturbances such as weed invasion.

5.1.2.3 Threatened or migratory species

Potential impacts to these species were assessed against the MNES Significant impact guidelines (DoE, 2013). The assessment is provided in (Appendix E). The outcome of the assessment is that none of these species will be significantly impacted by development of the Project.

5.1.3 Environmental Protection and Management

5.1.3.1 Mitigation Measures

APA will implement strategies provided in APGA (2022) to mitigate impacts to water (e.g., hydrology and watercourses) and soil (erosion) to minimise the risk of impacts to aquatic ecosystems. These include applying appropriate sediment and erosion controls, regular monitoring of the area, reduction of the extent and duration of soil disturbance, control of water movement through the area and stabilisation of areas immediately after works.

Timing of Construction

Construction is proposed to commence in the dry season when surface water is absent, and soil moisture is low. This will aid minimising impacts to aquatic ecosystem values and will also facilitate streamlined workflow, reducing the duration of construction.

Pre-clearance Survey

Prior to the commencement of vegetation clearing, pre-clearance surveys will be undertaken. Where possible the additional work areas will be located in sparsely vegetated areas thereby to minimise any impacts on riparian vegetation communities. Proposed changes to the location of additional work areas will be managed in accordance with the procedure outlined in Section 2.5.

Rehabilitation

Native groundcover vegetation and non-woody shrubs will be reinstated via natural top-soil seedbank after clearing occurs. Routine maintenance of woody regrowth above the pipeline and a 3 m buffer area to incorporate vehicle movement will be maintained during the operation phase. Additional work areas will be rehabilitated with native groundcover vegetation.

This will aid in managing the risk of impacts to riparian vegetation, watercourses, and water quality via erosion, and fauna habitat values within the Project Area. Reinstating native groundcover species will also aid in reducing the potential for introduced flora to establish within cleared areas.

Weed Hygiene

Biosecurity management strategies provided in APGA (2022) are recommended to be applied at all stages of the Project. This will result in the Project having a low risk of instigating the establishment and proliferation of introduced flora and fauna species. To assist with this, native groundcover and non-woody shrubs will be encouraged to grow over any cleared area excluding the above ground facility sites. This will reduce the likelihood of introduced species establishing and will also reduce the net loss of biodiversity values within the Project Area due to vegetation clearing during the construction phase of the Project.

NT Land Clearing Guidelines

The NT Land Clearing Guidelines (DEPWS, 2024) state that sensitive and significant vegetation types should be excluded from the proposed clearing footprint and appropriate native vegetation buffers retained to protect them.

The preferred pipeline alignment avoids clearing of sensitive and significant vegetation to the extent that is practicable. Due to the linear nature of the Project clearing of riparian vegetation is unavoidable. In lieu of excluding sensitive or significant vegetation from the proposed clearing footprint and retaining appropriate native vegetation buffers APGA (2022) impact management strategies to water (e.g., hydrology and watercourses) and soil (erosion) will be adopted to minimise the risk of impacts.

These include applying appropriate sediment and erosion control on slopes, regular monitoring of the area, reduction of the extent and duration of soil disturbance, control of water movement through the area and stabilisation of areas immediately after works. Additionally, it is recommended that native groundcover vegetation and non-woody shrubs be reinstated via natural top-soil seedbank after any clearing occurs. This will aid in managing the risk of impacts to riparian vegetation, watercourses, and water quality via erosion.

Proposed Environmental Management Plans

APA will implement a range of construction and operations environmental management plans (EMPs) to ensure impacts and risks to the receiving environment are acceptable and remain as low as reasonably practicable.

The EMPs set key objectives and targets with management and mitigation measures which are aimed to prevent or minimise higher risk impacts identified during the site risk assessments. APA will regularly review and assess their performance against these EMPs and aims for continuous improvement.

Management plans to support the implementation of their Environmental Management Framework (EMF) include (but not limited to) the following:

Related EMPs to minimise and mitigate the impact from disturbance of riparian vegetation include:

- Construction Environmental Management Plan
- Erosion and Sediment Control Plan
- Fire Management Plan
- Hazardous Substances Management Plan
- Land Clearing Management Plan
- Waste Management Plan
- Rehabilitation Management Plan
- Weed and Pest Management Plan

Table 19 to Table 25 list the mitigation activities, monitoring, corrective actions and reporting for the EMPs listed above.

Table 19: Erosion and Sediment Control Pan

Objective	Mitigation / Controls	Monitoring	Performance Indicators	Corrective Actions	Reporting and Records
The ESCP objectives are: To minimise off-site impacts (by-products of erosion). To deliver stable landforms that will not pollute downstream environments. Provide clear, concise and standardised practices for operations. Provide clarity for planners, supervisors and contractors. Improve auditability and conformance to standards.	During Construction Drainage control – prevention or reduction of soil erosion caused by concentrated flows and appropriate management and separation of the movement of clean and dirty water through the area of concern. Erosion control – prevention or minimisation of soil erosion (from dispersive, non-dispersive or competent material) caused by rain drop impact and exacerbated overland flow on disturbed surfaces. Sediment control – trapping or retention of sediment either moving along the land surface, contained within runoff (i.e. from up-slope erosion) or from windborne particles. Primary control of sediment will be via sediment dams, designed and constructed generally in accordance with the APGA Code of Environmental Practice (2022). A Sediment and Erosion Control Plan will be developed by a suitably qualified person.	Maintenance and routine inspection should be undertaken as follows: During Construction • Weekly monitoring of the sediment and erosion control structures will occur and after each significant rainfall event that may have impacted the functionality of the ESC measure. • For sediment control structures (e.g. sediment dams), check for sediment deposition and the requirement for its removal. • When the CROW is accessible, daily site inspection taking place during periods of runoff inducing rainfall. Post Construction • Prior to 1 November each year (prior to onset of wet season) check for areas that may be susceptible to erosion along the ROW. • A routine inspection mid-way through the wet season (e.g. February) to check for evidence of erosion along the pipeline ROW.	Settled sediment must be removed from sediment dams when the volume of the sediment exceeds 75% of the capacity of the structure.	Should an ESCP structure become damage or require maintenance, rectification work will occur as soon as practicable. A suitably qualified person shall be used to install and inspect the structure.	All inspection records (weekly and event based) will be kept during the construction of the project. All Sediment and Erosion Control Plans will be kept on site, and these will be used as the basis of the inspection activities. Rainfall records will be kept for the duration of construction

Table 20: Land Clearing Management Plan

Objective	Mitigation / Controls	Monitoring	Performance Indicators	Corrective Actions	Reporting and Records
Restrict land clearing to the minimum required for the project. Minimise the potential for introduction and spread of weeds. Promote awareness of protection of flora and fauna. Native vegetation reestablishment comparable to that of the surrounding ecosystems	During Construction Conduct site induction. Delineate clearing boundaries prior to any clearing occurring. Minimising area of clearing Where possible, avoid land clearing for construction during the Wet Season (Nov-Mar). Progressive clearing of sections of the Project footprint. Vehicles to use existing tracks. Hire a spotter-catcher to relocate fauna during clearing. Where reasonable and practicable, implement the Change Management Procedure to reduce potential impacts. This measure should consider the opinion of the fauna spotter-catcher and/or other specialist input.	During Construction Daily observation will be recorded, including plant and equipment prestart checks that include environmental observations (including weather, erosion, sediment control dust, etc.). The Weekly Environmental Checklist will be completed as part of general environmental site inspection to ensure all relevant environmental controls listed in Environmental Management Plans are in place and any required maintenance and/or remediation works are identified and undertaken. Weed Inspection. Pre-clearance checklist. Register all fauna sightings and fatalities.	Presence/absence of significant flora. No vegetation clearance or ground disturbance outside of the approved footprint. No change in the density or diversity of declared weeds from baseline conditions. No fauna injury and/or death related to Project activities.	Reported as incident and follow-up investigation. Update procedures as necessary, and/or implement rehabilitation plan for over-cleared area. Review weed hygiene measures. Implement weed controls appropriate to the species detected.	Fauna interaction register retained for recording interactions and fatalities. Fauna injuries: Report to Wildlife hotline: 1800 453 941.

Table 21: Fire Management Plan

Objective	Mitigation / Controls	Monitoring	Performance Indicators	Corrective Actions	Reporting and Records
Minimise the impact of bushfires caused by Project activities.	During Construction Conduct site induction. Provide fire control training (i.e., extinguishers). Regular fire control equipment checks. Appropriate storage of flammable and combustible materials. Inspection of hotspots for identification of high fuel loads and associated risks. Monitor regional bushfire information websites. Maintenance of machinery according to the Fire Management Plan. Control vegetation, particularly weeds during Wet Season. Maintain spot fire response capability (i.e., fire extinguishers fitted in all vehicles and machinery) to prevent fires from spreading. Implement a hot work permit system to manage hot works such as welding of pipe.	During Construction Daily check of regional bushfire status, fire danger and ratings, active working areas and fuel loads and flammable material storage. Monthly firefighting equipment and infrastructure maintenance, inspection, and service.	No bushfires attributable to project activities other than prescribed burning. No uncontrolled prescribed burning. No unauthorised lighting of fires.	Investigate cause of fire and update procedures as necessary (Fire Management Plan and Waste Management Plan). Notify the Site Manager, HSE and personnel for safety purposes.	Incident report form and submission to NT EPA if required by legislation. Incident notification form to NT WorkSafe. Hazardous substances and fuel inventories. Register of prescribed burning activities

Table 22: Hazardous Substances Management Plan

Objective	Mitigation / Controls	Monitoring	Performance Indicators	Corrective Actions	Reporting and Records
To safely manage, store, handle and dispose of fuels and chemicals. Avoid or minimise the uncontrolled release of chemicals to the environment. No human health issues or incidents from the use of fuels and chemicals.	During Construction Conduct site induction. Provide employee training. Management of hazardous substances in accordance with legislation and Australian Standards. Hazardous substances are to be stored as far away as possible from surface water and groundwater wells. Spill kits to be located at all hazardous substance storage locations where appropriate. Mobile spill kits are available for use in specific work areas. Hazardous substances and spill management as per the Hazardous Substances Management Plan.	During Construction Monthly check of hazardous substance storage locations and spill kits. Monthly hazardous substances inventory review and/or when new hazardous substance bought to site. As required update the Safety Data Sheets register. Daily logistics checks for hazardous substances inputs/outputs and deliveries.	Number of incidents reported leading to potential long-term impact and/or environmental harm. Number of incidents reported leading to impact to human health. Number of hazardous substance non-compliance breaches of legislative standards. No contamination of the environment by hazardous goods. Any spills are addressed, and appropriate remedial action has been implemented.	Use spill kit material to clean up immediately the spill. All contaminated material will be disposed of at an authorised licensed facility or treated on-site through bioremediation. Investigate cause of spill and update procedures as necessary.	Incident report form and submission to NT EPA, if required by legislation. Incident notification form to NT WorkSafe if required by legislation. Hazardous substances and fuel inventories.

Table 23: Waste Management Plan

Objective	Mitigation / Controls	Monitoring	Performance Indicators	Corrective Actions	Reporting and Records
Prevent environmental impacts caused by waste generation. Efficient use of resources and minimization of waste generation and disposal. Appropriate disposal of wastes over the life of the Project	During Construction Conduct site induction. Waste is to be transported by a licenced waste handler to a suitable licensed offsite facility for treatment or disposal. Recyclables to be transferred to recycling facility. Separation of waste for disposal, recycling and recovery Removal of residual waste to landfill. Appropriate storage of flammable and combustible materials. Provision of the appropriate number and types of bins on site for each of the different types of waste. Bins will be clearly marked and monitored for cross-contamination of wastes. For office waste, providing receptacles or processes for recycling (as a minimum), paper, general waste, aluminium cans, and bottles), mobile phones, batteries and fluorescent lighting tubes. Oil, batteries to be transported off-site for disposal. Vegetation waste (weed free) will be managed on site through reuse for ground surface stabilization and rehabilitation.	During Construction Daily checks of work areas for potential waste issues. Monthly sweep of the area to collect any windblown waste.	Number of incidents which occur in relation to waste generation sites. Volume of waste disposal and associated cost. Volume of waste minimized and reused/recycled wherever possible	Notification of the Contractor. Incident report with full investigation from the Supervisor. Copies of the incident and investigation recorded in the Incident Register. Improvement of remedial measures to be implemented in the Waste Management Plan.	Incident Register. Waste Management Plan review and improvement.

Table 24: Weed and Pest Management Plan

Objective	Mitigation / Controls	Monitoring	Performance Indicators	Corrective Actions	Reporting and Records
No spread of existing Declared Weeds within the Project Area. Prevent the introduction of new Declared Weed species across the Project Area. Minimise impact of existing pests on site's biodiversity and prevent new animal pest species.	During Construction Weed identification and management included in site induction and training. Management of weeds in accordance with the NT Government Weed Management Handbook (NTG, 2021). Source off-site materials from sites that have been declared weed-free. Survey disturbance area for weeds prior to commencement of clearing/construction and control/eradicate, as appropriate, existing infestations. Clean, check and certify all earth-moving equipment and vehicles as weed-free before entering site. Vehicle hygiene measures will be employed to prevent the introduction and spread of invasive species and pathogens when mobilising vehicles and equipment to site.	During Construction Quarterly surveying for the presence of weeds, focussing on: • Areas to be disturbed that are in the vicinity of any weed occurrence. • Areas that have soil, sand or gravel introduced. • Drainages, particularly after floods. Post Construction Inspections every 2 years to ensure no change in the density or diversity of declared weeds along the CROW from the baseline conditions.	No new declared weed species introduced into the Project Area. No increase in declared weed infestations from baseline conditions. No weed complaints. Reduction of weed zones in weed mapping. No noticeable increase in the presence of pest or vermin surrounding the Project Area. No incidents and observations of new or increased pest species in the Project Area.	Review weed hygiene measures. Implement weed controls appropriate to the species detected. Engage with pastoralist, local government agency for advice and/or input regarding culling programs. Ensure most humane for respective pest. Baiting, trapping, or shooting.	Weed Monitoring - photos and weed control register. Weed mapping data. New occurrences of WoNS to be reported to the NT Weeds Branch. Completion of the pest fauna register.

Table 25: Rehabilitation Management Plan

Objective	Mitigation/Controls	Monitoring	Performance Indicators	Corrective Actions	Reporting and Records
Landforms are geotechnically safe, stable, non-polluting, erosion resistant functioning landform that does not present an unacceptable risk to environmental values. Surface stability is consistent with the landform design and comparable to the local landscape	During Construction Detailed engineering design, specifications and 'as-constructed' drawings of landforms are complied with.	During Construction Landform Construction Audit. Records of material movement and re-use/disposal. Environmental Inspections pre-construction. Post Construction Environmental Inspections post construction. Monitoring of re-vegetated areas to ensure environmental targets are met.	Landforms are stable and consistent with design criteria/preconstruction landforms and comparable to the local landscape.	Rework landforms to achieve pre-construction levels. Treat erosion in accordance with ESCP.	Inspection report and corrective actions register.
Rehabilitate disturbed areas to support self-sustaining vegetation and habitats similar to surrounding areas. Note, the rehabilitation of the ROW will be restricted to grasses to establish surface cover whilst maintaining access.	Post Construction Undertaken as per the Rehabilitation Management Plan, including: • Returning surface levels to natural contours. • Ameliorating construction impacts to soil texture, structure, and chemical composition, where required. • Reinstating natural drainage patterns. • Reinstating roadways and road reserves in accordance with regulatory requirements. • Reinstating fencing and access tracks in accordance with the requirements of landowners. • Spreading of cleared vegetation back over disturbed areas. • Completing revegetation through seeding as appropriate. • Installing permanent erosion control measures (such as contour banks) in erosion prone areas.	Post Construction Records of inspections and monitoring as per Weeds and Pest Management Plan Records of material characterisation, movement, and reuse. Safety and environmental Inspections pre and post rehabilitation. Landscape/Vegetation Monitoring.	Within the easement Soil properties compatible with supporting vegetation. Rehabilitation materials capacity to retain water and nutrient resources is consistent with the target ecosystems of the local landscape. Native ground cover and non-woody shrubs will be allowed to grow. . Establish at least 70% ground cover (combined plant and mulch). Weed species not impacting upon revegetation. Outside of the easement Soil properties compatible with supporting vegetation. Rehabilitation materials capacity to retain water and nutrient resources is consistent with the target ecosystems of the local landscape. Riparian vegetation that is comprised of local provenance native species self-sustaining and similar in form and function to vegetation communities present prior to clearing. Dominant shrub/tree species comprised of local provenance native species that are self-sustaining and similar in form and function to reference sites. Soil properties compatible with supporting vegetation. Rehabilitation materials capacity to retain water and nutrient resources is consistent with the target ecosystems of the local landscape.	Review weed hygiene measures. Implement weed controls appropriate to the species detected. Re-seed, soil sampling and soil amendments if required. Relieve surface compaction through ripping where required.	Weed Monitoring - photos and weed control register. Weed mapping data. New occurrences of WoNS to be reported to the NT Weeds Branch. Monitoring of revegetation success – photos and percentage cover. Records of material characterisation, movement, and reuse. Inspection report and corrective actions register. Inspection report and corrective actions register.

5.1.3.2 Other Statutory Decision-making Processes

In determining whether the Project has the potential to have a significant impact on the environment, the NT EPA may consider other statutory decision-making processes that may mitigate the potential environmental impact of the Project and will ensure the NT EPA's environmental factor objective is met.

In the absence of NT EPA guidelines, the considerations provided in the Western Australian Environmental Projection Authority Interim Guidance – Taking decision-making processes into account in EIA (EPA, 2021) have been used to assess whether there is another statutory decision-making process, what that process is, and whether that process can mitigate the potential impacts of the proposal on the environment in a manner that is consistent with the NT EPA's environmental objectives.

An assessment against the Western Australian EPA guidelines is provided in Table 26. The clearing of native vegetation on pastoral land is regulated under the Pastoral Land Act. A permit to interfere with a waterway is required under the Water Act. These statutory decision-making processes can mitigate impacts to riparian vegetation and will meet the NT EPA's objective for aquatic ecosystems.

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Table 26: Other Statutory Decision-making Processes that can Mitigate Impacts on Terrestrial Ecosystems

Statutory decision-maker and department (if required)	Legislation or agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment?	
			Relevant impact	Can the statutory decision-making process mitigate impacts and how will the NT EPA's objective be met?
Minister for Mining and Energy Department of Mining and Energy (DME)	Energy Pipeline Act 1981	Pipeline licence and consent to construct.	Landforms Soil quality and integrity	The Minister for Mining may include conditions in the pipeline licence requiring APA to reinstate, level, re-grass, reforest and contour land which may be damaged or deleteriously affected by the Project. A pipeline management plan will be submitted to DME prior to the commencement of construction and will include a CEMP with auditable outcomes for aquatic ecosystems.
Pastoral Land Board Department of Agriculture/DLPE	Pastoral Land Act 1992	Permit to clear native vegetation on pastoral land.	Sensitive or significant vegetation	Yes. A permit to clear native vegetation will define outcomes to ensure that action meets the objectives of the Pastoral Land Act 1992 to prevent or minimise degradation of or other damage to the land and its indigenous plant and animal life. These outcomes will be defined and approved by PLB to ensure that impacts associated with clearing vegetation are mitigated to an acceptable level. This will include auditable outcomes for the clearing footprint and rehabilitation of disturbed areas. A permit to clear native vegetation is considered suitable to mitigate impacts to sensitive or significant vegetation by ensuring that the impact to riparian vegetation is restricted to the area specified within the permit and that rehabilitation of disturbed areas is undertaken. By meeting these outcomes and the objectives of the Pastoral Land Act 1992 the NT EPA's objective for aquatic ecosystems will be met. Regulation of the potential impacts on the environment from the clearing of sensitive or significant vegetation is therefore not expected to be required under the EP Act.
			Introduction and spread of weeds	Yes. A permit to clear native vegetation will define outcomes to ensure that action meets the objectives of the Pastoral Land Act 1992 to prevent or minimise degradation of or other damage to the land and its indigenous plant and animal life. These outcomes will be defined and approved by PLB to ensure that impacts associated with weeds are mitigated to an acceptable level. This will include an auditable outcome to prevent the introduction or spread of any new weed species or populations during construction, operation or decommissioning. By meeting these outcomes and the objectives of the Pastoral Land Act 1992 the NT EPA's objective for aquatic ecosystems will be met. Regulation of the potential impacts on the environment from the clearing of sensitive or significant vegetation is therefore not expected to be required under the EP Act.
Controller of Water DLPE	Water Act 1992	Permit to interfere with a waterway – protects waterways from damage by setting out the conditions for carrying out specific works on an area of land.	Sensitive or significant vegetation associated with a waterway	Yes. A permit to interfere with a waterway will define outcomes to ensure that action meets the objectives of the Water Act 1992 to prevent or minimise degradation of or other damage to the land and its indigenous plant and animal life. Conditions may include requirements such as: • ensuring works are undertaken in accordance with the plans provided as part of the application • requiring an erosion and sediment control plan be endorsed by a suitably qualified professional prior to the commencement of construction • monitoring and reporting to the Controller at set dates, to demonstrate that the risk management actions are in place and effective or • rehabilitation. By meeting these outcomes and the objectives of the Water Act 1992 the NT EPA's objective for aquatic ecosystems will be met. Regulation of the potential impacts on the environment from the clearing of sensitive or significant vegetation associated with a waterway is therefore not expected to be required under the EP Act.

5.1.4 Residual Impact

Assuming the effective implementation of the mitigation measures listed above, it is concluded that the Project is unlikely to have a significant impact on the aquatic ecosystems due to riparian vegetation disturbance and the NT EPA's objective for Aquatic Ecosystem protection will be met.

5.2 Community and Economy

The NT EPA's objective for community and economy is to:

Enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians.

The Community and Economy factor was identified for further consideration in this Referral because APA is in the early phase of consultation with Native Title Holders therefore there is uncertainty regarding impacts to the rights and interests of Native Title Holders.

5.2.1 Environmental Values

The Project site is situated across two large pastoral leases: Hayfield Station and Shenandoah Station. These areas are characterised by open plains, flood country, scrub, and sand hills. The Stuart Highway, the main road through Central Australia, separates the two stations and runs north-south across the Project site. It stretches from Darwin in the NT through Tennant Creek and Alice Springs to Port Augusta in South Australia.

The closest community infrastructure to the Project is the Dunmarra Roadhouse, a petrol station and rest stop on the highway, about 3 km north of the Project. Other nearby settlements include Daly Waters, approximately 50 km north, which offers roadhouses, pubs, accommodations, a regional airstrip without commercial services, and various services for regional road users and tourists.

Several remote Aboriginal communities and family outstations are located within 30-50 km of the Project, including Jingaloo, Lily Hole, Murranji, and Marlinja, near the historically significant Newcastle Waters pastoral station and historic township.

The nearest community with local-level services like health, education, and police is the town of Elliott, about 70 km to the south. Residents seeking higher-level social infrastructure and services like hospitals, tertiary education, and civic services would need to travel about 280 km north to Katherine or 330 km south to Tennant Creek from the Project site.

The Project is situated in an isolated region across two large pastoral stations separated by the Stuart Highway. The closest human sensitive receptors to the Project are:

- Hayfield homestead, 3 km northeast of the Project
- Dunmarra, 3 km north of the intersection of the Project with the Stuart Highway
- Tamboran's Camp, 3.3 km south-southeast of the eastern end of the pipeline corridor. This camp is associated with Tamboran's exploration and appraisal activities which will provide the gas to be transmitted through the SPP.
- APA's Temporary Construction Camp 9 km southwest of the Project.

The Project crosses two areas with native title determinations: the Shenandoah Pastoral Lease and Hayfield Pastoral Lease. The Traditional Owners and claimants under the determinations are:

- Shenandoah:
  - The Kinbininggu Group
  - The Bamarrnganja Group
- Hayfield:
  - The Kinbininggu Group
  - The Marlinja Group
  - The Warranangku Group.

Both areas are administered by the Top End Prescribed Body Corporate (PBC), an agent PBC responsible for many native title determinations in the NT. It functions under the Native Title Act 1993 as an agent for native title holders.

5.2.2 Potential Impacts

An assessment of potential social impacts was undertaken in accordance with the NT EPA Guidelines for the Preparation of an Economic and Social Impact Assessment (NT EPA,2013) (Appendix H). The social impact assessment incorporated the following technical studies:

- Construction Noise and Vibration Assessment (Appendix G)
- Air Quality and Greenhouse Gas Assessment (Appendix B)
- Traffic Impact Assessment (Appendix J)
- Cultural Heritage Assessment (Appendix C and Appendix D)
- Surface Water Impact Assessment (Appendix I)
- Economic Impact Assessment (Appendix F),

Potential impacts and benefits to community and economy are summarised in Table 27.

Table 27: Social Impact Assessment

Category	Description of potential impact	Environmental Trigger or Change	Population Affected	Duration	Extent	Positive or negative	Potentially significant impact	Mitigation measures (Section 5.2.3)
Safety	Potential risk of traffic accidents and decreased safety for road users	Increased traffic during the construction phase (1,948 additional heavy vehicle trips over six months)	Residents, tourists, and road users along the Stuart Highway	Short-term (6 months during construction)	Regional (along Stuart Highway corridor)	Negative	No	Safety and Traffic Management
	Potential decreased health outcomes amongst local communities due to increased risk of communicable diseases and potential increase in anti-social behaviour	Influx of construction workforce (up to 133 workers) from outside the region	Local residents in Elliott and surrounding communities, particularly populations exhibiting characteristics of vulnerability (e.g., Aboriginal People, those with pre-existing health conditions)	Short-term (primarily during the 6-month construction period), with potential for longer-term impacts	Regional (communities served by Elliott Health Centre and surrounding areas)	Negative		
Employment opportunities	Creation of new job opportunities but limited local employment due to project isolation and specialised skill requirements	Project construction and operation	Working age population in surrounding communities (e.g. Elliott, Daly Waters)	Short-term for construction (6 months), Long-term but limited for operations (2 personnel)	Regional (Big Rivers and Barkly regions)	Positive		Local Industry, Employment and Training
Training opportunities	Potential for on-site certification and skill development for local workers	Project construction activities	Local workforce, particularly Indigenous workers	Short-term (during 6-month construction period)	Localised (Project Area and immediately surrounding communities)	Positive		

Category	Description of potential impact	Environmental Trigger or Change	Population Affected	Duration	Extent	Positive or negative	Potentially significant impact	Mitigation measures (Section 5.2.3)
Housing availability and affordability	Temporary increased demand for accommodation, potential strain on local housing/accommodation.	Influx of construction workforce (up to 133 workers)	Local residents, tourists, project workers	Short-term (6-month construction period)	Localised (communities near Project Area - Daly Waters, Dunmarra, Elliott)	Negative		Accommodation and Housing
Amenity	Temporary noise, dust, and visual impacts affecting rural amenity	Construction activities and increased traffic	Nearby residents (e.g. Hayfield Homestead, Tamboran Workforce Accommodation Camp)	Short-term (6-month construction period)	Localised (immediate project vicinity).	Negative		Environmental Management
Service provision and potential for overloading services	Potential strain on local health services, particularly emergency services	Presence of construction workforce.	Local residents, emergency services providers and project workers.	Short-term (6-month construction period)	Regional (Elliott Health Centre service area)	Negative		Health and Emergency Services
Recreational and cultural opportunities	Potential impacts on access to cultural sites	Project presence in culturally significant area.	Local Indigenous communities	Short-term during construction, potential long-term impacts	Localised (Project Area and immediate surroundings)	Negative		Cultural Heritage Protection
Community cohesion and inclusion	Potential for community division over project benefits and impacts.	Project development and associated economic opportunities	Residents of Elliott and surrounding communities	Long-term (throughout project lifecycle)	Regional (communities in Big Rivers and Barkly regions)	Negative		Community Engagement and Cohesion

5.2.3 Social Impact Management

5.2.3.1 Mitigation measures

The Project, with its relatively short six-month construction timeline and a small peak workforce of 133 personnel, presents unique challenges for monitoring and managing social impacts. The limited duration and scale of the Project make it difficult to observe, measure, and respond to social changes in real time. However, this constraint does not diminish the importance of proactive social impact management.

The following measures and management plans have been designed with these constraints in mind, focusing on initiatives that can deliver meaningful outcomes within a short period while also laying the groundwork for potential longer-term benefits.

Safety and Traffic Management

- Implement a comprehensive Traffic Management Plan, including reduced speed limits around key intersections as required.
- Conduct driver safety training for all project personnel.
- Coordinate with local authorities to improve signage and road safety measures along key routes.
- Locate the workers' temporary construction camp near the construction area to minimise travel requirements.

Local Industry, Employment and Training

- Further develop the Community and Social Performance Management Plan (CSPMP) to maximise opportunities for local businesses and workers.
- Establish partnerships with key stakeholders such as DME to investigate the feasibility of facilitating relevant skill development programs.
- Provide information and capacity building support for local businesses to meet project requirements.
- Host supplier information sessions to inform local businesses about upcoming opportunities.

Accommodation and Housing

- Utilise on-site workers' temporary construction camp to minimise pressure on local housing.
- Coordinate with local accommodation providers for any off-site housing needs during early works, commissioning and demobilisation works.

Health and Emergency Services

- Develop and implement a detailed Emergency Management Plan in consultation with local service providers.
- Provide comprehensive on-site health services for workers to minimise impact on local facilities.
- Ensure workers are aware of and comply with requirements to be entirely self-sufficient for medications and other necessities.
- Establish clear communication protocols with local emergency services for coordinated response in emergencies.

Cultural Heritage Protection

- Strictly adhere to AAPA Authority Certificate conditions
- Finalise and strictly adhere to the ILUA.
- Provide cultural awareness training for all project personnel.

Community Engagement and Cohesion

- Implement a transparent Social Investment Program to deliver shared benefits.
- Continue to implement the Stakeholder Engagement Plan to facilitate easy and open two-way communication and include strategies for addressing potential community division.

Environmental Management

- Implement a comprehensive CEMP addressing potential social and environmental impacts.

5.2.4 Other statutory decision-making processes

Table 28 provides a list of other statutory decision-making processes that may mitigate the potential environmental impact of the Project on the NT EPA's environmental factor objective is met.

5.2.5 Residual Impact

While the Project is relatively small in scale and of short duration, its presence in a remote and culturally significant area necessitates careful consideration of its social implications.

The assessment indicates that most potential negative impacts can be managed through planned mitigation measures. Safety, housing, and local amenity are expected to be minimally affected. However, community division over project benefits and impacts is a significant concern. The Project's impact on local employment and training opportunities is likely to be modest.

Assuming effective implementation of the above mitigation measures, it is concluded that the Project is unlikely to have a significant impact on the Community and Economy and the NT EPA's objective will be met.

Table 28: Other Statutory Decision-making Processes that can Mitigate Impacts on Community and Economy

Statutory decision-maker and department (if required)	Legislation or agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment?	
			Relevant impact	Can the statutory decision-making process mitigate impacts and how will the NT EPA's objective be met?
AAPA	Northern Territory Aboriginal Sacred Sites Act 1989	Authority Certificate – protects sacred sites from damage by setting out the conditions for carrying out specific works on an area of land.	Sacred sites	Yes. Authority Certificates are based on consultations with Custodians and provide clear instructions on what can and cannot be done in and around sacred sites. The final Project design and construction methodology will comply with the conditions of the Authority Certificate and thereby ensure that sacred sites are protected. It is an offence under the Northern Territory Aboriginal Sacred Sites Act 1989 not to comply with the conditions of an Authority Certificate. The Aboriginal Areas Protection Authority process of consulting with Custodians will document the presence of sacred sites and the Authority Certificate will delineate restricted work areas and conditions to ensure the protection of sacred sites. The NT EPA's objective to protect culture and heritage will be met.
Native Title Registrar (for the registration of the ILUA)	Native Title Act 1993	Indigenous Land Use Agreement - agreement between Native Title Holders and APA about the use and management of areas of land and/or waters.	Native Title Holders' rights and interests.	Yes. An ILUA is a voluntary agreement designed to protect the rights and interests of Native Title Holders. APA is committed to negotiating with Native Title Holders via the Northern Land Council with the view to securing a voluntary ILUA that acknowledges and respects the rights and interests of the Traditional Owners. An ILUA is an agreement under the Native Title Act 1993 that covers an area of land (or water) where native title has either been determined to exist, or where it is claimed to exist. Once registered under the Act the ILUA would be a legally binding agreement between the Native Title Holders and APA. A registered ILUA is a key signal to all decision-making authorities and regulators that the project has been considered by the traditional owners and is acceptable within the framework of the ILUA. Statutory decision makers under the Energy Pipeline Act 1981, Pastoral Land Act 1992 and Water Act 1992 must consider whether the grant of a statutory approval may impact the rights and interests of Native Title Holders. The successful negotiation of an ILUA will ensure that Native Title Holders consent to the Project. The NT EPA's objective for community and economy will therefore be met. Regulation of the potential impacts to community and economy is therefore not expected to be required under the EP Act.
Minister for Mining and Energy DME	Energy Pipeline Act 1981	Pipeline licence and consent to construct.		
Pastoral Land Board Department of Agriculture/DLPE	Pastoral Land Act 1992	Sublease, non-pastoral use permit and permit to clear native vegetation on pastoral land.		
Controller of Water DLPE	Water Act 1992	Permit to interfere with a waterway – protects waterways from damage by setting out the conditions for carrying out specific works on an area of land. Water extraction licence - regulates water extraction in order to meet the objectives of the Georgina Wiso water allocation plan.		

6.0 Cumulative Impacts

The potential impacts of an individual project considered in isolation may not reflect the full extent of impacts to environmental, social and economic receptors. Cumulative impacts are defined by the NT EPA (2021a) as impacts that can accumulate as a result of additive or interactive processes and actions, a combination of multiple minor impacts over time and impacts resulting from the activities of multiple projects operating in a region. When numerous projects occur in close proximity to each other they have the potential to create cumulative impacts, both positive and negative that differ in severity and/or duration depending on the spatial and temporal overlap of projects. By considering Project impacts in the context of cumulative impacts from other projects, a more comprehensive impact assessment of the Project can be undertaken.

6.1 Environmental Factors

Cumulative impacts to the social and economic environmental factor have the potential to be significant: There is low potential for significant cumulative impacts to all other environmental factors.

6.1.1 Relevant Projects

While relatively small in scale, the Project is part of a broader program of exploration and appraisal activities. The residual impacts of the Project on its own will not have a significant impact on social and economic values. However, even small projects can have larger effects when combined with other initiatives.

6.1.2 Assessment of Potential Impacts

Economic Development and Employment

While this project alone may have limited local employment opportunities, when considered alongside other Beetaloo Basin initiatives, it contributes to a cumulative increase in economic activity in the region. This could lead to:

- Gradual growth in local skills and experience in the gas industry
- Potential for local businesses to develop capabilities to service multiple projects
- Cumulative economic benefits through various community investment programs.

Overall, this would benefit the social and economic outcomes of communities in a region facing relatively high unemployment levels and social disadvantage.

Infrastructure and Services

The Project's impact on local infrastructure and services may be minimal, but when combined with other projects, there could be:

- Increased pressure on road infrastructure due to cumulative traffic increases
- Gradual strain on local services (health, emergency) as multiple projects operate in the region
- Potential for improved infrastructure as a result of cumulative industry presence (e.g., road upgrades, telecommunications improvements).

The cumulative impact on infrastructure and services has the potential to be both positive and negative. Careful and coordinated planning would need to occur to manage overwhelming existing assets and services. However, greater regional development and investment could enhance service provision and living standards for affected communities.

Social and Community Dynamics

While this project may have a limited direct impact on community dynamics, the cumulative effect of multiple projects could lead to:

- Gradual changes in community composition if there's an influx of workers or associated businesses
- Potential for community division to deepen or heal over time, depending on how benefits and impacts are managed across projects
- Cumulative effects on traditional land use and access, particularly for Indigenous communities.

While the Project might have limited direct impacts, the cumulative effect of multiple projects could substantially alter the social landscape of the affected communities, necessitating careful, culturally sensitive, and equitable management strategies.

Cultural Heritage

While this project is taking significant steps to protect cultural heritage, the cumulative impact of multiple projects in the region could lead to:

- Increased risk of inadvertent damage to cultural sites due to more widespread activity
- Potential for both positive and negative impacts on cultural practices and connection to Country resulting from greater funding for and awareness of cultural practices.

While individual projects may take significant steps to protect cultural heritage, the cumulative impact of multiple projects presents a complex challenge. The potential for inadvertent damage and the mixed effects on cultural practices underscore the need for a holistic, collaborative approach that prioritises safeguarding cultural heritage while also exploring ways to positively reinforce cultural connections to the land.

Regional Development

The cumulative effect of this project and others could contribute to broader regional development trends:

- Gradual shift in regional economic focus towards the gas industry
- Potential for improved regional planning and coordination as multiple projects operate in the area
- Cumulative contributions to community development through various project-specific initiatives.

The cumulative effects of multiple projects on regional development could drive significant economic and social changes. While there are opportunities for economic growth, improved planning, and community development, careful management and equitable distribution of benefits are essential to ensuring that these changes lead to sustainable and inclusive regional progress.

Workforce and Population Dynamics

While this project's workforce requirements are limited, the cumulative effect of multiple projects could lead to:

- Gradual changes in regional demographics if there's a trend towards more FIFO workers
- Potential for skills development and training initiatives that become more viable with multiple projects.

The potential increase in FIFO workers and the associated social impacts emphasise the necessity for thorough planning and community engagement. Simultaneously, the opportunities for skills development and training could offer long-term benefits for the local population, promoting economic growth and stability in the region.

Stakeholder Engagement Fatigue

With multiple projects in the region, there's a risk of:

- Cumulative burden on stakeholders, particularly Traditional Owners, to engage with numerous consultation processes
- Potential for confusion or conflicting messages if different projects have different approaches to engagement and benefit-sharing.

The combined impact on various groups involved, especially Traditional Owners and the possibility of mixed or confusing messages emphasise the need for organised, clear, and respectful communication strategies. To minimise these risks, the Government could take a proactive role in coordinating messaging and engagement activities, and proponents, such as APA, should explore working together to simplify consultation processes.

6.1.3 Mitigation Measures

While the Project may have relatively minor impacts in many areas, it's important to recognise its role within the broader development of the Beetaloo Basin. The Project should be considered within the larger context of regional development, and management strategies should consider both the specific impacts of this project and the cumulative effects of multiple projects in the area. This may involve:

- Collaboration with other project proponents in the region to address shared challenges
- Collaboration with key stakeholder groups and participation in regional planning initiatives to ensure coordinated development
- Adaptive management approaches that can respond to emerging cumulative impacts.

Cumulative Impact Management

- Participate in regional planning initiatives to address broader development impacts.
- Collaborate with other project proponents on shared challenges and opportunities.

Workforce Management

- Implement a Workforce Code of Conduct to manage worker behaviour both on and off-site.
- Provide cross-cultural awareness training for all workers, with a focus on respect for local communities and cultures.

Adaptive Management

- Establish a grievance mechanism for community members to raise concerns.

Communication and Transparency

- Maintain a project website with regular updates on project progress and community initiatives.
- Produce and distribute regular community project updates.
- Host periodic community information sessions to provide updates and gather feedback.

6.1.4 Residual impact

When considering the broader Beetaloo Basin development, the cumulative impacts of this project, although individually small, may contribute to more significant regional changes over time. Ongoing stakeholder engagement and adaptive management are important for responding to emerging cumulative impacts.

Assuming effective implementation of the above mitigation measures, it is concluded that the Project is unlikely to have a significant cumulative impact on the Community and Economy and the NT EPA's objective will be met.

7.0 Matters of National Environmental Significance

The EPBC Act is focussed on Matters of National Environmental Significance (MNES), which are based primarily on Australia's responsibilities under international agreements. There are nine MNES protected under the EPBC Act, they are:

- Listed threatened species and ecological communities
- Listed migratory species
- Ramsar Wetlands of International Importance
- Commonwealth marine environment
- World Heritage properties
- National heritage places
- The Great Barrier Reef Marine Park
- Nuclear actions (including uranium mining)
- A water resource, in relation to an unconventional gas development or coal mining development (the Water Trigger).

The MNES relevant to this project are:

- Listed threatened species
- The Water Trigger.

7.1 Listed Threatened Species

The Ecological Assessment for the Project (Appendix E) performed a significant impact assessment in accordance with Significant Impact Guidelines 1.1 (DoE, 2013) and concluded that the Project is unlikely to have a significant impact on listed threatened species:

- Gouldian Finch (Erythrura gouldiae)
- Grey Falcon (Falco hypoleucos)
- Painted Honeyeater (Grantiella picta)
- Australian Painted-snipe (Rostratula australis), and
- Northern Blue-tongued Skink (Tiliqua scincoides intermedia).

7.2 The Water Trigger

On 15 December 2023, the Water Trigger was amended to include consideration of likely significant impacts on water resources in relation to all types of unconventional gas. At the time of submitting this referral, an updated Significant Impact Guideline 1.3 had not been published. Therefore, the Project was assessed against the Significant Impact Guidelines 1.3: Coal Seam Gas and Large Coal Mining Developments – Impacts on Water (DCCEEW, 2022) as covering all forms of unconventional gas.

The Project is likely to remain outside the scope of the Water Trigger because it is not integral to the production of unconventional gas. Irrespective of this, a precautionary assessment against the Significant Impact Guidelines 1.3 was undertaken and determined that the Project is unlikely to have a significant impact on a water resource because:

- The use of water during the construction phase may have the potential to cause very minor, localised drawdown. Water use is managed by DLPE under the Georgina Wiso water allocation plan which has allocated 10,000 ML/year to petroleum activities and almost 160,000 ML/year to other consumptive uses (e.g., industry and mining activities). The 70 ML required for this Project will be a short-term use during the construction phase and no significant impact on groundwater quantity or quality is anticipated.
- During the operational phase of the action no significant amounts of water will be required. The transport process of gas is typically dry, involving gas and mechanical operations without water dependency.
- No GDEs will be impacted.

Due to the relatively small and temporary surface disturbance caused by the Project, it will not have a significant impact on water resources (Appendix I).

The Project is unlikely to be a controlled action as it is unlikely that it will have a significant impact on EPBC Act listed threatened species or a water resource. The Project is likely to have a low level of residual impact due to the small scale localised clearing within the Project Area and the implementation of routine mitigation, avoidance and adaptive management measures discussed in Section 5.1.3 and Appendix E.

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Appendix A Pre-Referral Screen

Environmental Referral

Sturt Plateau Pipeline

APA SPP Pty Ltd

SLR Project No.: 680.030294.00001

6 December 2024

Appendix B Air Quality and Greenhouse Gas Assessment

Environmental Referral

Sturt Plateau Pipeline

APA SPP Pty Ltd

SLR Project No.: 680.030294.00001

6 December 2024

Appendix C Cultural Heritage Desktop Assessment (Redacted)

Environmental Referral

Sturt Plateau Pipeline

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Appendix D Cultural Heritage Field Assessment (Confidential)

Environmental Referral

Sturt Plateau Pipeline

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Appendix E Ecological Assessment

Environmental Referral

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Appendix F Economic Impact Assessment

Environmental Referral

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Appendix G Construction Noise and Vibration Assessment

Environmental Referral

Sturt Plateau Pipeline

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Appendix H Social Impact Assessment

Environmental Referral

Sturt Plateau Pipeline

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Appendix I Surface Water Impact Assessment

Environmental Referral

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Appendix J Traffic Impact Assessment

Environmental Referral

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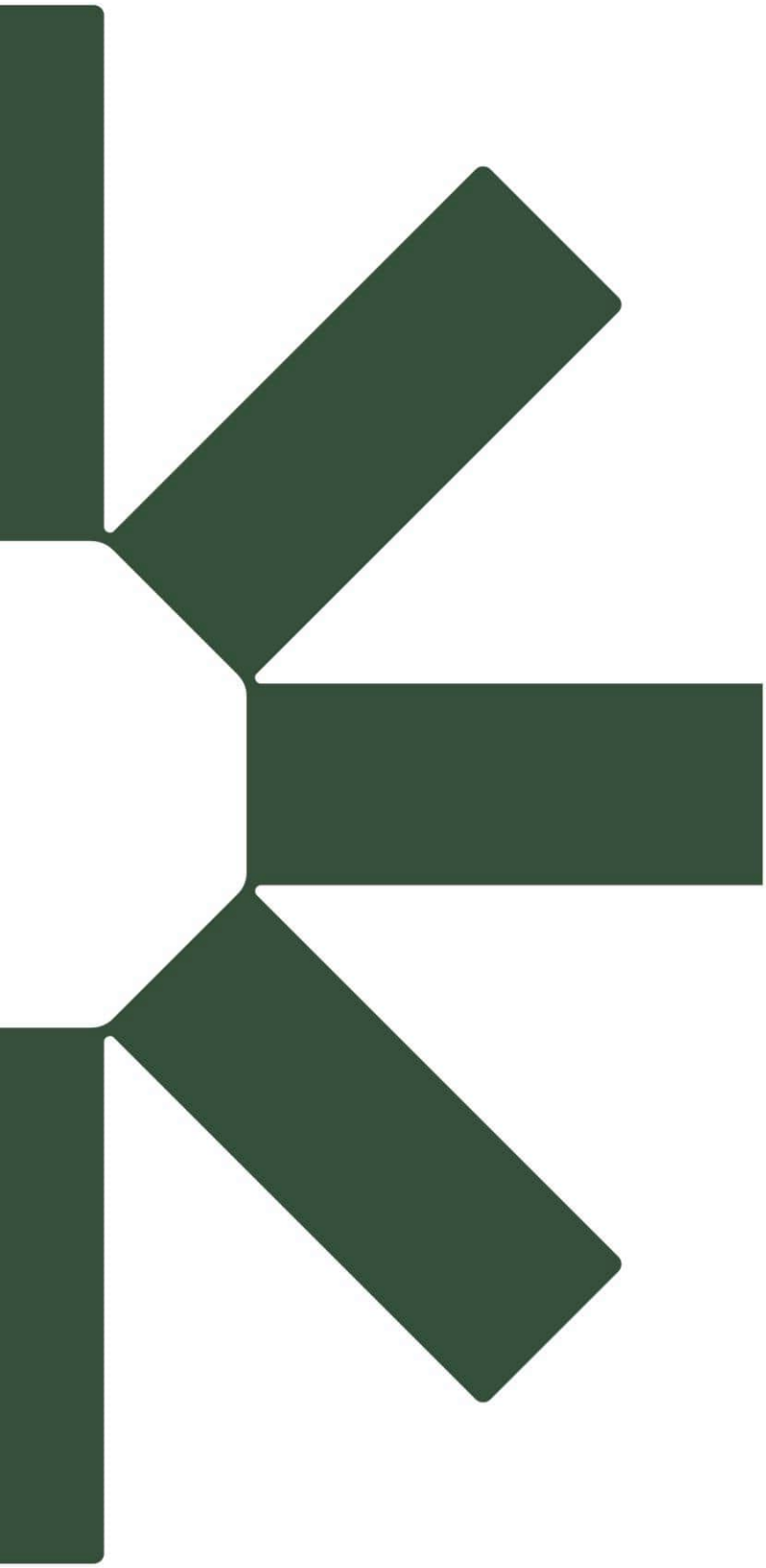

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