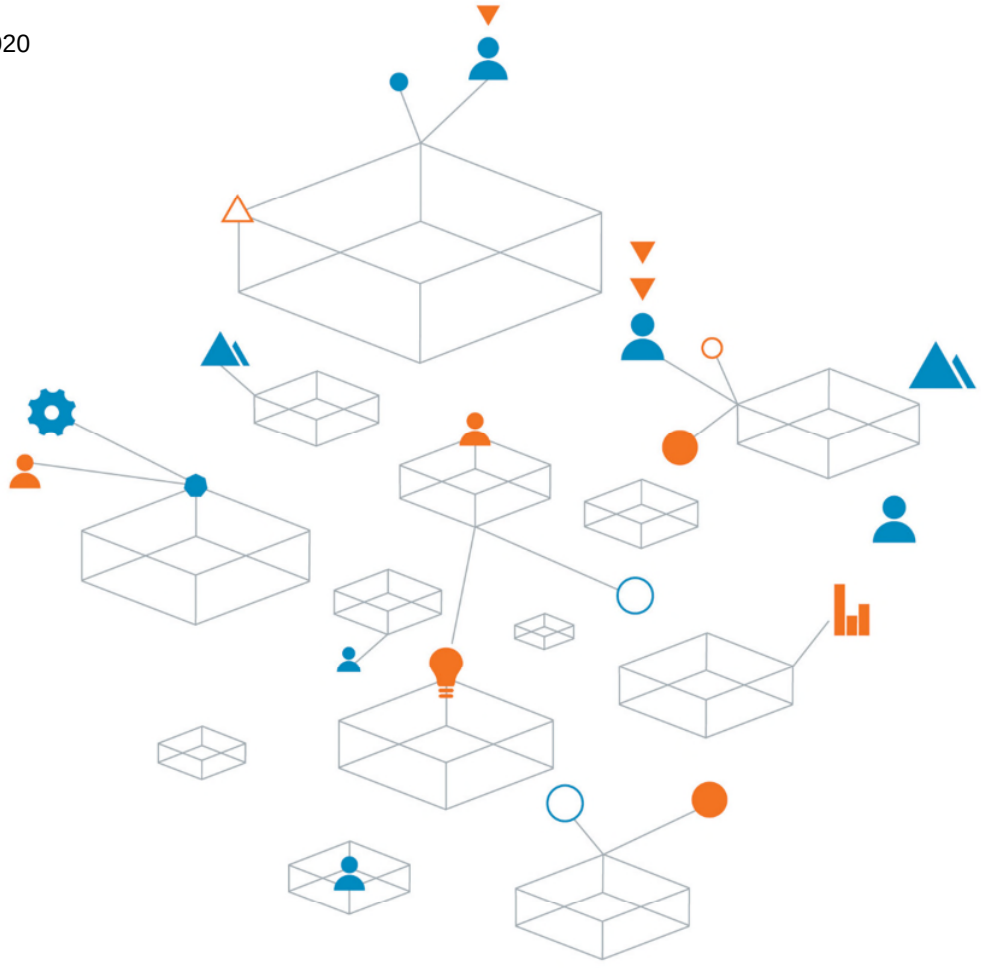
Jemena Eastern Gas Pipeline (1) Pty Ltd and Jemena Eastern Gas Pipeline (2) Pty Ltd

Eastern Gas Pipeline - Port Kembla Lateral Looping Modification Report

754-MELEN269488

15 May 2020



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Eastern Gas Pipeline - Port Kembla Lateral Looping Modification Report

Prepared for
Jemena Eastern Gas Pipeline (1) Pty Ltd and Jemena Eastern Gas Pipeline (2) Pty Ltd

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15 May 2020

754-MELEN269488_1_v4

Quality information

Revision history

Revision	Description	Date	Originator	Reviewer	Approver
v1 draft	Modification Report	01/04/2020	Liz Geer	Erin Pears	Erin Pears
v2 draft	Modification Report	22/04/2020	Anna Gallagher	Emma Waterhouse	Erin Pears
v3 final	Modification Report	28/04/2020	Anna Gallagher	Emma Waterhouse	Erin Pears
v4 final	Modification Report	15/05/2020	Anna Gallagher	Emma Waterhouse	Erin Pears
V5 final	Modification Report	18/05/2020	Erin Pears	Erin Pears	Erin Pears

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v5 final	1	PDF	Jodi Wood	19/05/2020

Table of contents

Tables

Figures

Appendices

Abbreviations

Acronym/abbreviation	Full name
AEC	area of environmental concern
ADDA	Aboriginal due diligence assessment
AIE	Australian Industrial Energy
APGA	Australian Pipelines and Gas Association
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BDAR	biodiversity development assessment report
CLM	contaminated land management
CLM Act	*Contaminated Land Management Act 1997* (NSW)
Coffey	Coffey Services Australia Pty Ltd
CEMP	construction environmental management plan
CoPC	chemical of potential concern
DECCW	NSW Department of Environment, Climate Change and Water
DPIE	NSW Department of Planning Industry and Environment
DPI	NSW Department of Primary Industries
EGP	Eastern Gas Pipeline
EES	environmental effects statements
EIS	environmental impact statement
EMS	environmental management system
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPA	Environment Protection Authority (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Cwth)*
HDD	horizontal directional drilling
Jemena	Jemena Eastern Gas Pipeline (1) Pty Ltd and Jemena Eastern Gas Pipeline (2) Pty Ltd
km	kilometre
NSW	New South Wales
m	metre
m BGL	metres below ground level

Acronym/abbreviation	Full name
MNES	matters of national environmental significance
OEH	Office of Environment and Heritage
OEMP	operational environmental management plan
OT	open trenching
PCT	plant commmunity type
POEO	*Protection of the Environment Operations Act 1997* (NSW)
PSI	preliminary site investigation
SEPP	state environmental planning policy
SSI	state significant infrastructure
TEC	threatened ecological community
WCC	Wollongong City Council

1. Introduction

Jemena Eastern Gas Pipeline (1) Pty Ltd and Jemena Eastern Gas Pipeline (2) Pty Ltd (Jemena) are proposing to duplicate the existing Port Kembla lateral pipeline, which forms part of the Eastern Gas Pipeline (EGP). The EGP is a key natural gas supply artery between gas fields in the Gippsland Basin in Victoria and to New South Wales (NSW) and Australian Capital Territory (ACT).

The EGP was recently transitioned to State Significant Infrastructure and accordingly the proposed Port Kembla lateral looping modification (proposed modification) may be assessed as a modification under section 5.25 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Jemena submitted the Eastern Gas Pipeline Modification Scoping Report (GHD 2019) to the Department of Planning, Industry and Environment (DPIE) in November 2019 outlining the proposed approach to preparing the modification report, including the level of environment assessment and community engagement proposed. The approach was approved by the Department in their direction letter dated 6 December 2019.

1.1. The Eastern Gas Pipeline

The EGP transports natural gas from Longford in Victoria to Hoskinstown, just outside the ACT and Wilton and Horsley Park near Sydney. The EGP transports natural gas to demand centres in Sydney, Canberra and Wollongong as well as regional centres such as Bairnsdale, Cooma, Nowra and Bomaderry.

The EGP is 797-km-long and was constructed from 457 mm diameter high tensile steel in November 2000. The pipeline is buried along its length to a minimum of 750 mm of pipe cover. A 20-m-wide easement centred on the pipeline is provided along its length to allow access for inspection and maintenance. Several above ground facilities are located along the pipeline to allow the EGP to be operated safely and efficiently, including compressor stations, mainline valves, meter stations, receiver stations and scraper stations. The EGP has a capacity exceeding 350 terajoules of gas per day.

An additional 25.7 km of lateral pipelines provide connections from the EGP to Smithfield, the Moomba-Sydney Pipeline at Wilton, Bairnsdale and Port Kembla. The existing Port Kembla lateral pipeline is approximately 6.3-km-long and is located between the suburbs of Kembla Grange and Cringila. This lateral pipeline supplies gas from the EGP to industrial users in Port Kembla. Figure 1 shows the alignment of the EGP, gas supply areas and locations of existing lateral pipelines.

A detailed environmental impact assessment process was undertaken for the EGP to meet the combined legislative requirements of Victoria and NSW, as well as the Commonwealth. The environmental impact statement (EIS) for the EGP was finalised in November 1996 (EGP, 1996), and subsequently received approval. Pipeline licences for the EGP were issues under both Victorian and NSW legislation (also see Section 3 Statutory context).

1.2. The proposed modification

The proposed modification is a duplication of the existing Port Kembla lateral pipeline, which forms part of the EGP. The existing lateral pipeline transports gas from the EGP to Port Kembla industrial users, although gas can also be transported in the other direction. The Port Kembla lateral pipeline has a design capacity of 32 petajoules per annum. The operating pressure of the pipeline is consistent with that of the EGP.

The modification is required to increase the amount of gas that can be transported from the Port Kembla Gas Terminal to the EGP. The terminal is a separate project to be developed by Australian Industrial Energy (AIE) (GHD 2019a) and was approved under the EP&A Act in April 2019. The liquefied natural gas (LNG) import terminal will re-gasify the LNG for input to the NSW gas transmissions network.

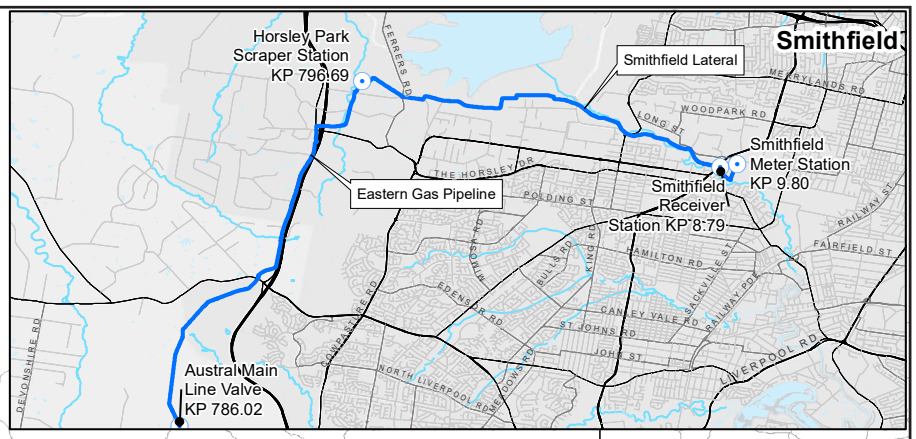
Jemena

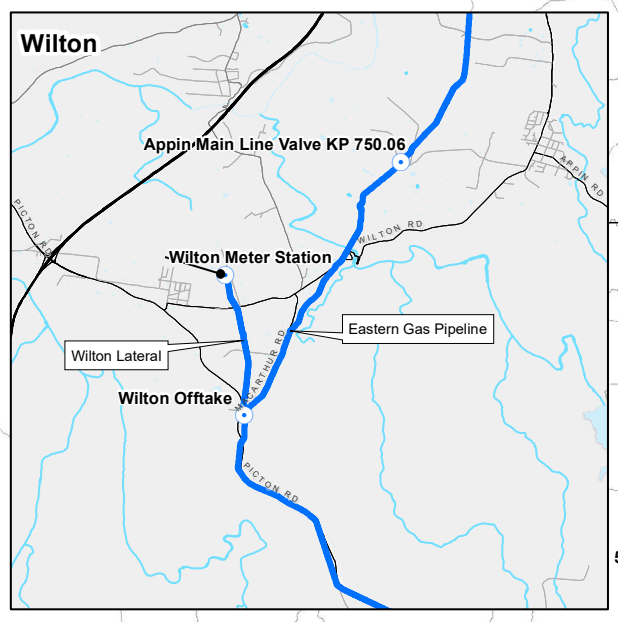
Eastern Gas Pipeline
Port Kembla Looping Project
Overview Map

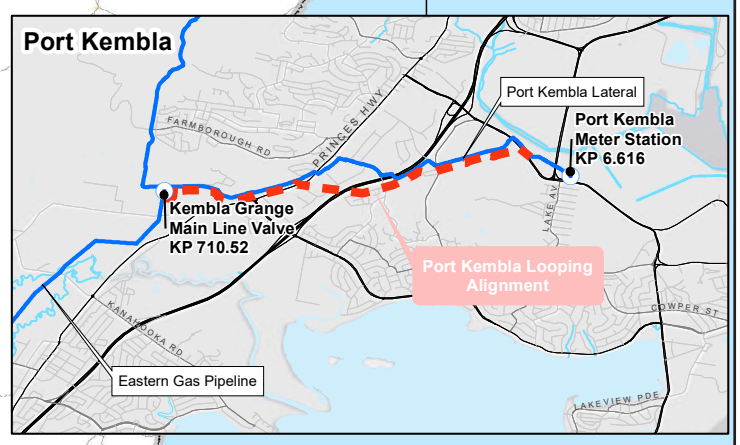
N

Facility Locations
Port Kembla Looping Alignment
EGP & Laterals
Major Roads / Highways
Built Up Area

0 10 20 40 60 80 100
Kilometres







580 - Austral Main Line Valve KP 786.02
576 - Raby Road Main Line Valve KP 774.24
570 - Menangle Park Main Line Valve KP 762.64
Smithfield Lateral
Wilton Lateral
Appin Main Line Valve KP 750.06
Port Kembla Lateral
580 - OBriens Gap Main Line Valve KP 718.34
547 - Yallah Offtake KP 702.18
546 - Albion Park Offtake Station KP 698.349
546 - Albion Park Main Line Valve KP 691.09
540 - Bomaderry Main Line & Offtake Valve KP 650.56
538 - Nowra Main Line & Offtake Valve KP 640.12
535 - Oallen/Nerriga Scraper Station KP 561.98
534 - Hoskinstown Meter Station KP 504.08
533 - Molonglo Main Line Valve KP 497.45
530 - Michelago Main Line Valve & Compressor Station KP 458.83
528 - Cooma Main Line Valve & Offtake KP 393.36
Eastern Gas Pipeline
526 - Bombala Offtake KP 308.97
525 - Mila Compressor Station KP 289.69
522 - Cann River Main Line Valve KP 225.22
519 - Patricia Baleen Meter Station KP
520 - Orbost Main Line Valve KP 145.84
521 - East Gippsland Compressor Station
515 - Bairnsdale Main Line Valve
517 - Bairnsdale Meter/ Regulator Station
510 - Longford Compressor Station KP 0
Bairnsdale Lateral
VicHub Pipeline
Longford Compressors Suction Pipeline
LCS Inlet Drainage Pipeline

New South Wales
ACT
Victoria
Tasman Sea
Bass Strait

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	HU	AG	19.05.2020

SOURCE: Eastern Gas Pipeline Port Kembla Looping Project Overview Map, GAS-MAR-MA-PL-006 Port Kembla Looping Project Overview Map.pdf

N
0 20 40 60 80 100
SCALE (A3) KILOMETRES

drawn	HU
approved	AG
date	19.05.2020
scale	AS SHOWN
original size	A3

coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: EASTERN GAS PIPELINE SUPPLY AREA

project no: MELEN269488-R03 | figure no: FIGURE 1 | rev: A

ALFILE: MELEN269488_R03_GRA002_v0

The LNG will be sourced from worldwide suppliers and transported by LNG carriers to the Port Kembla Gas Terminal. A new pipeline from the terminal will connect to the tie-in facility in Cringila ('AIE tie-in facility') (GHD 2019). The proposed modification will connect at a flange/pipe at the outlet of the AIE tie-in facility.

The proposed modification will provide additional capacity from the terminal to the EGP of up to 214 petajoules per annum. The modification can be constructed and operated without disrupting the supply to Port Kembla users through the existing lateral. The existing Port Kembla lateral was developed within 20-m-wide right of way clearing and has an operational easement varying in width from 6 m to 10 m. Where possible, the proposed modification will be installed within the existing Port Kembla lateral easement (Jemena 2020).

The proposed modification will connect to the EGP by constructing a new tie-facility (EGP tie-in facility), which will consist of a metering station. The EGP tie-in facility will be located 30 m south of the existing Kembla Grange Main Line Valve station (MLV). The EGP tie-in facility is required as it will allow the modification to operate independently of the Kembla Grange MLV station.

The proposed modification includes:

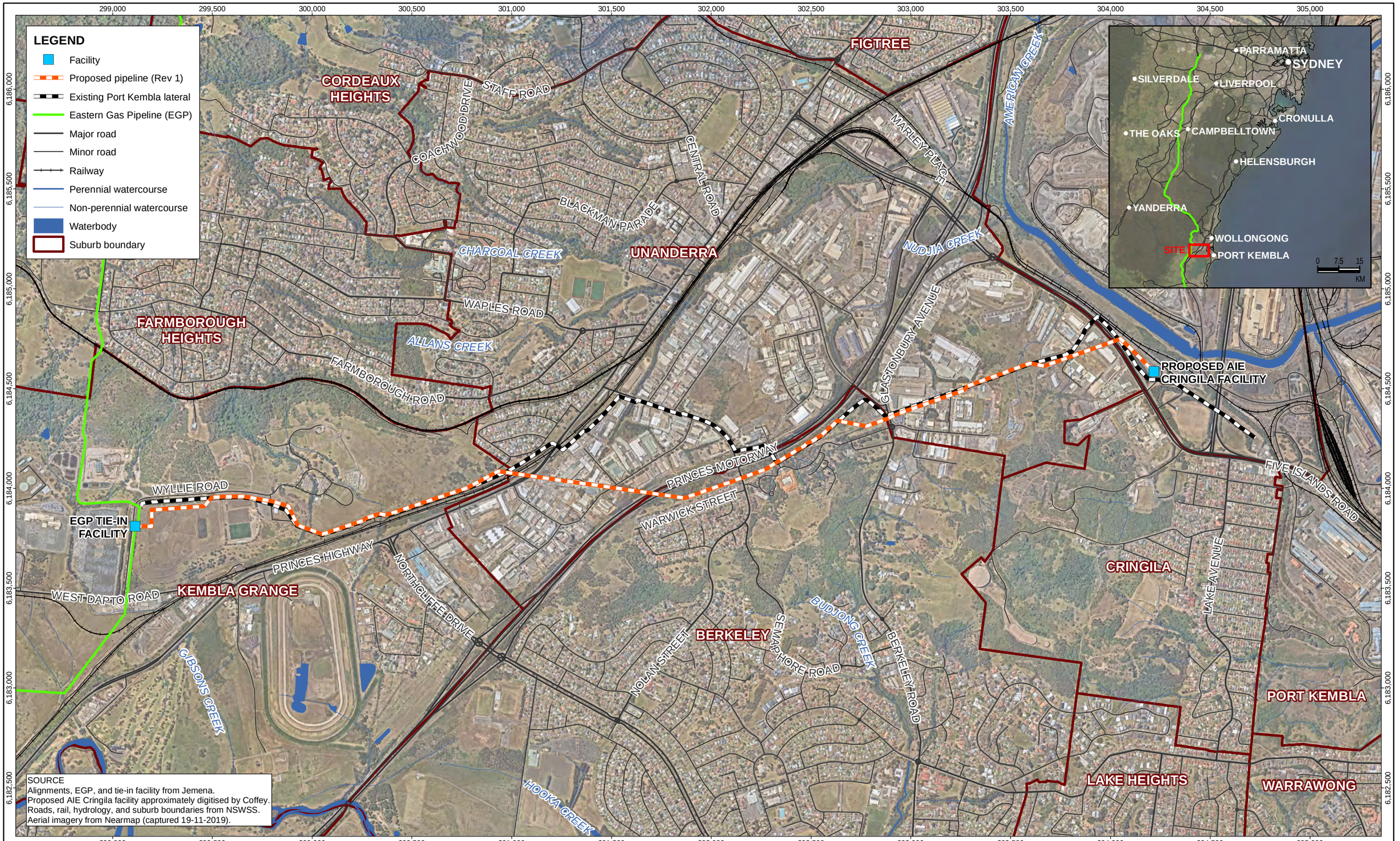
- Construction of approximately 5.6 km of 18- to 22-inch diameter carbon steel gas pipeline, buried adjacent to, or co-located within, the existing pipeline easement (proposed pipeline).
- Construction of an EGP tie-in facility located in Kembla Grange to connect the proposed pipeline to the existing EGP.
- Connection to the Port Kembla Gas Terminal AIE tie-in facility.

Figure 2 displays the proposed modification in relation to the existing Port Kembla lateral pipeline alignment.

1.3. Purpose of this report

This modification report provides an assessment of the potential environmental impacts of the proposed modification, in accordance with the requirements of the EP&A Act. The report provides:

- An overview of the proposed modification.
- A description of the statutory context for the proposed modification.
- Details of stakeholder engagement completed for the proposed modification.
- An assessment of the potential environmental impacts of the proposed modification, in line with the impacts identified in the scoping report.
- A consistency assessment of the modification against the mitigation measures contained in the approved environmental impact statement (EIS) prepared for the EGP.



SOURCE
Alignments, EGP, and tie-in facility from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
Roads, rail, hydrology, and suburb boundaries from NSWSS.
Aerial imagery from Nearmap (captured 19-11-2019).

MXD ref: MELEN269488_R03_GIS001_v0_4

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	GH	AG	15.05.20

N

0 175 350 525 700
SCALE 1:17,500 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

coffey
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client:	JEMENA
project:	MODIFICATION REPORT PORT KEMBLA LATERAL LOOPING PROJECT
title:	PROPOSED PROJECT LOCATION
project no:	MELEN269488-R03
figure no:	FIGURE 2
rev:	A

2. Proposed modification overview

The proposed modification is designed to accommodate the maximum gas flows between the proposed Port Kembla Gas Terminal and the EGP.

The proposed modification will connect a new lateral looping pipeline at the AIE tie-in facility situated adjacent to Jemena's existing Port Kembla lateral pipeline easement off Five Islands Road, Cringila; and at an EGP tie-in facility located south of Jemena's mainline valve station on Wyllie Road, Kembla Grange.

The proposed modification is located within the Illawarra region of NSW, approximately 80 km south of Sydney. The preferred route for the new pipeline traverses the suburbs of Unanderra, Berkeley, Cringila and Kembla Grange. Wollongong is located approximately 5 km to the north and Port Kembla about 3 km to the southeast (see Figure 2).

2.1. Key components

2.1.1. EGP tie-in facility

The proposed EGP tie-in facility will be located east of Wyllie Road, Kembla Grange within a large vacant property and open space and 30 m south of the existing Kembla Grange MLV station. The permanent fence line boundary for the EGP tie-in facility will encompass an area of approximately 2,700 m^2 with equipment to enable metering of gas flows into the EGP.

The metering facility will include skid mounted equipment/infrastructure with a footprint of about 100 m^2 and will be located within the permanent fence line. The tie-in facility will allow the proposed modification to operate independently of the existing Kembla Grange MLV station and Port Kembla lateral pipeline.

2.1.2. Lateral looping pipeline

The proposed modification will be a duplication (looping) of the existing Port Kembla lateral pipeline, which currently runs between Kembla Grange and Cringila. The design specifications for the new lateral looping pipeline include:

- Diameter nominal (DN)/internal diameter of 200 mm (DN200)
- Initial capacity of 55 petajoules of gas per annum, increasing to 110 petajoules per annum
- Maximum operating pressure consistent with the EGP
- Pipeline easement width of between 6 m to 10 m.

The alignment for the lateral looping pipeline predominantly follows the existing Port Kembla lateral pipeline easement with route deviations required to account for physical, technical or environmental constraints. Table 1 describes each section of the proposed lateral looping pipeline alignment relative to the Port Kembla lateral pipeline.

Table 1: Proposed lateral looping pipeline alignment relative to the existing Port Kembla lateral pipeline

Proposed pipeline section	Deviation from EGP easement	Alignment description
EGP tie-in facility	No	The EGP tie-in facility will be constructed within a large vacant property (West Dapto Road, Kembla Grange). The facility will be located approximately 30 m south from the existing Kembla Grange MLV station, which is located adjacent and east of Wyllie Road.

Proposed pipeline section	Deviation from EGP easement	Alignment description
Wyllie Road	No	The alignment runs parallel to Wyllie Road, within the existing or adjacent to the Port Kembla lateral pipeline easement deviating south before approaching Wollongong Lawn Cemetery.
South Coast Line railway reserve north of Princes Highway	No	The alignment runs parallel to the South Coast Line railway and will be installed north of the Port Kembla lateral pipeline easement. A minor deviation is required outside the existing easement before approaching a major infrastructure crossing.
South Coast Line railway and Princes Highway - crossing	Yes	The existing Port Kembla lateral pipeline easement crosses Princes Highway and the South Coast railway line at the level crossing. Multiple constraints arise at the existing easement crossing including an underground sewerage main, an aboveground sewerage pipe and a buried communications conduit. East of the Princes Highway crossing, the existing Port Kembla lateral pipeline easement runs with the Nolan Street road reserve. The major infrastructure crossings present physical and technical constraints for the construction of the new pipeline. To effectively address these constraints, the proposed alignment crosses the railway line and Princes Highway about 310 m west of the lateral pipeline easement crossing, with the alignment running within an industrial driveway (243A Princess Highway).
243A Princess Highway	Yes	Following the Princes Highway crossing, the alignment runs through a light industrial area until approaching Doyle Avenue. This lot is designated for electrical facilities (not yet constructed).
Doyle Ave and Princes Motorway crossing	Yes	East of Doyle Avenue, the alignment crosses an overhead transmission line easement and the Princes Motorway.
Overhead transmission line easement to Nolan Street crossing	Yes	West of the Princes Motorway crossing, the alignment runs parallel to an existing overhead transmission line easement.
East of Nolan Street	Yes	The alignment runs parallel to the overhead transmission line easement and re-joins with the EGP Port Kembla lateral easement north of Nan Tien Temple.
Nan Tien Temple to Berkeley Road	No	From Nan Tien Temple, the alignment runs directly adjacent to the Port Kembla lateral pipeline easement.
West of Berkley Road	Yes	The alignment deviates south from the Port Kembla lateral pipeline easement west of Berkley Road near a high-voltage power station.
East of Berkley Road	No	East of the Berkley Road crossing, the alignment runs adjacent to the Port Kembla lateral pipeline easement.
Waynote Place crossing	Yes	Approaching the Waynote Place crossing, the alignment runs parallel to an existing overhead transmission line easement and continues towards Five Islands Road.
Five Islands Road crossing	Yes	The alignment runs parallel to an existing overhead transmission line easement at the Five Islands Road crossing and deviates 140 m south of the existing Port Kembla lateral pipeline crossing of this road. The Five Islands Road crossing presents physical and technical constraints for the construction of the new pipeline.
Vicinity to the proposed AIE Cringila facility	Yes	Following the Five Island Road crossing, the alignment deviates at an angle from the existing Port Kembla lateral pipeline easement by up to 48 m before the connection point at the proposed AIE Cringila facility.

2.1.3. AIE tie-in facility

The lateral looping pipeline will connect to AIE's proposed Cringila facility, part of the AIE's Port Kembla Gas Terminal Project. The proposed modification will connect to the AIE tie-in facility at an existing flange/pipe at the outlet of the facility located within AIE's development footprint.

The AIE facility received approval on 24 April 2019 as part of the Port Kembla Gas Terminal Project under the EP&A Act. The facility serves as a connection point for the proposed modification and is not a component to be assessed as part of the modification application.

2.2. Construction

The proposed lateral looping pipeline will be installed using standard techniques, including a combination of open trenching and horizontal directional drilling (HDD). Construction will be in accordance with the Australian Pipelines and Gas Association (APGA) Code of Environmental Practice (2017) and AS2885.3:2012 Pipelines - Gas and liquid petroleum – Operation and maintenance.

Approximately 3.8 km of pipeline will be installed via open trenching, and 1.8 km via HDD. Trenches will be excavated to approximately 1.7 to 2.0 m below ground level (mBGL). Deeper localised excavations will be required to facilitate HDD entry and exit points. The sections that will require the use of HDD methods are located within Unanderra, as listed below.

- Section from 243a Princes Highway across Doyle Avenue and the F6 Princes Motorway, with major infrastructure crossings at the South Coast Line railway (also known as the Illawarra railway line) and Princes Highway.
- Section from the junction of Berkeley Road/Gladstonbury Avenue across Lathe Place.
- Section from Waynote Place to Five Islands Road.

A 20-m-wide pipeline construction right-of-way will be established as well as workspace and laydown areas for temporary facilities to support construction activities. These areas are defined as the 'proposed workspace and laydown areas' as shown in Figure .

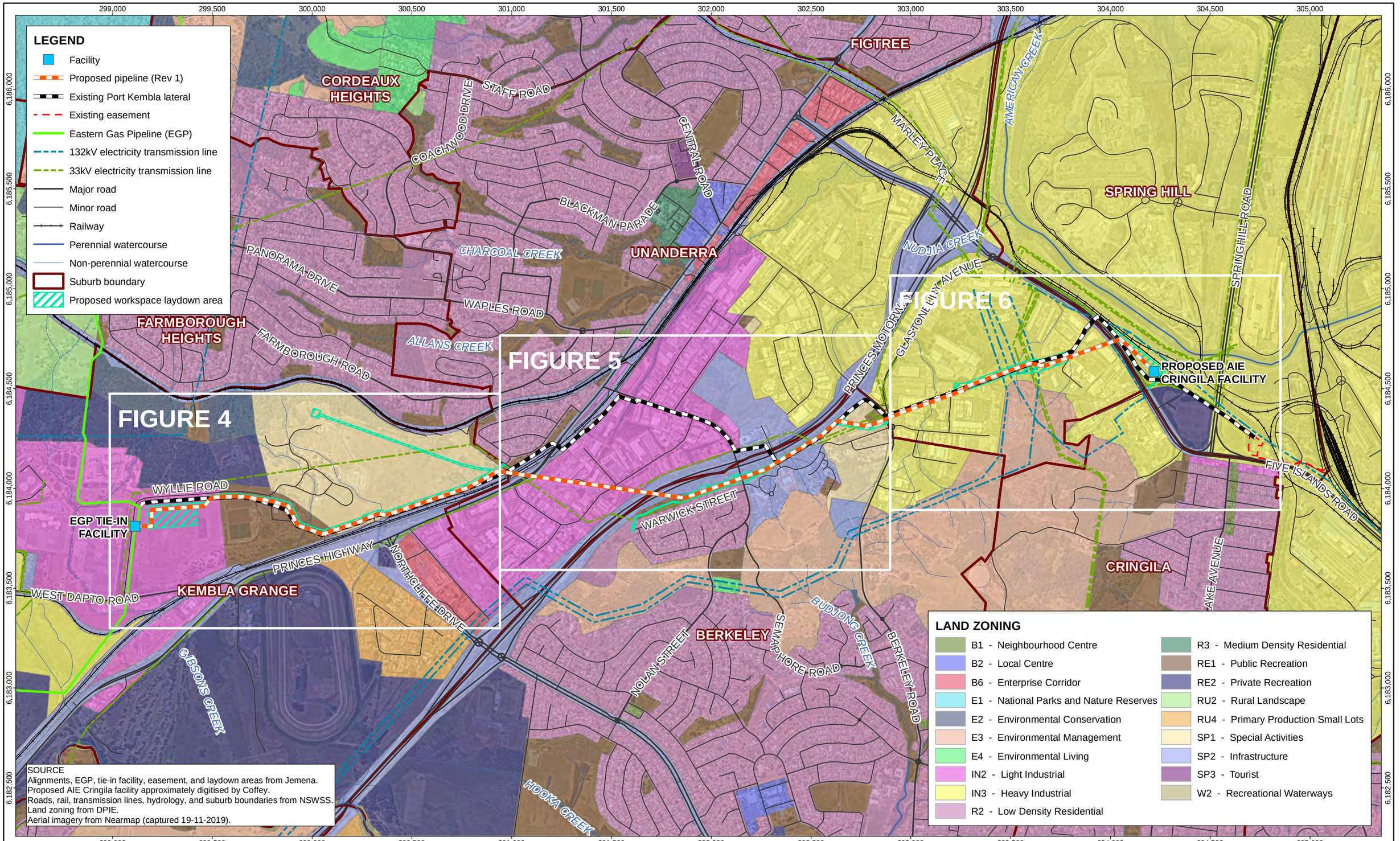
Construction of the proposed modification is expected to take approximately six months to complete. Construction will be progressive, moving from one work location to the next. Most works will be planned to occur during standard construction hours; Monday to Friday between 7:00 am to 6:00 pm and 8:00 am to 1:00 pm on Saturdays. If any works take place outside of standard construction hours, directly affected noise receptors, such as residents, will be notified as the project progresses.

2.3. Operation

The proposed modification will be operated in accordance with the requirements of the Operational Environmental Management Plan (OEMP) prepared for the operational stage for the approved EGP, including Licence No. 26 and Jemena's Environmental Management System (EMS) (version 4 September 2018). Associated standards and codes guiding the OEMP include:

- The Australian Pipelines and Gas Association (APGA) Code of Environmental Practice (2017)
- AS2885.3:2012 Pipelines - Gas and liquid petroleum – Operation and maintenance
- AS/NZS ISO 31000:2009 Risk Management.

The OEMP details the environmental management framework for the EGP, and provides guidance on management measures that prevent or minimise the environmental impact of operation, maintenance and minor construction activities carried out by Jemena and/or its contractors. The OEMP will be updated to include the operation of the proposed modification.



SOURCE
Alignments, EGP, tie-in facility, easement, and laydown areas from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
Roads, rail, transmission lines, hydrology, and suburb boundaries from NSWSS.
Land zoning from DPIE.
Aerial imagery from Nearmap (captured 19-11-2019).

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	GH	AG	15.05.20

N

0 175 350 525 700
SCALE 1:17,500 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

coffey
A TETRA TECH COMPANY

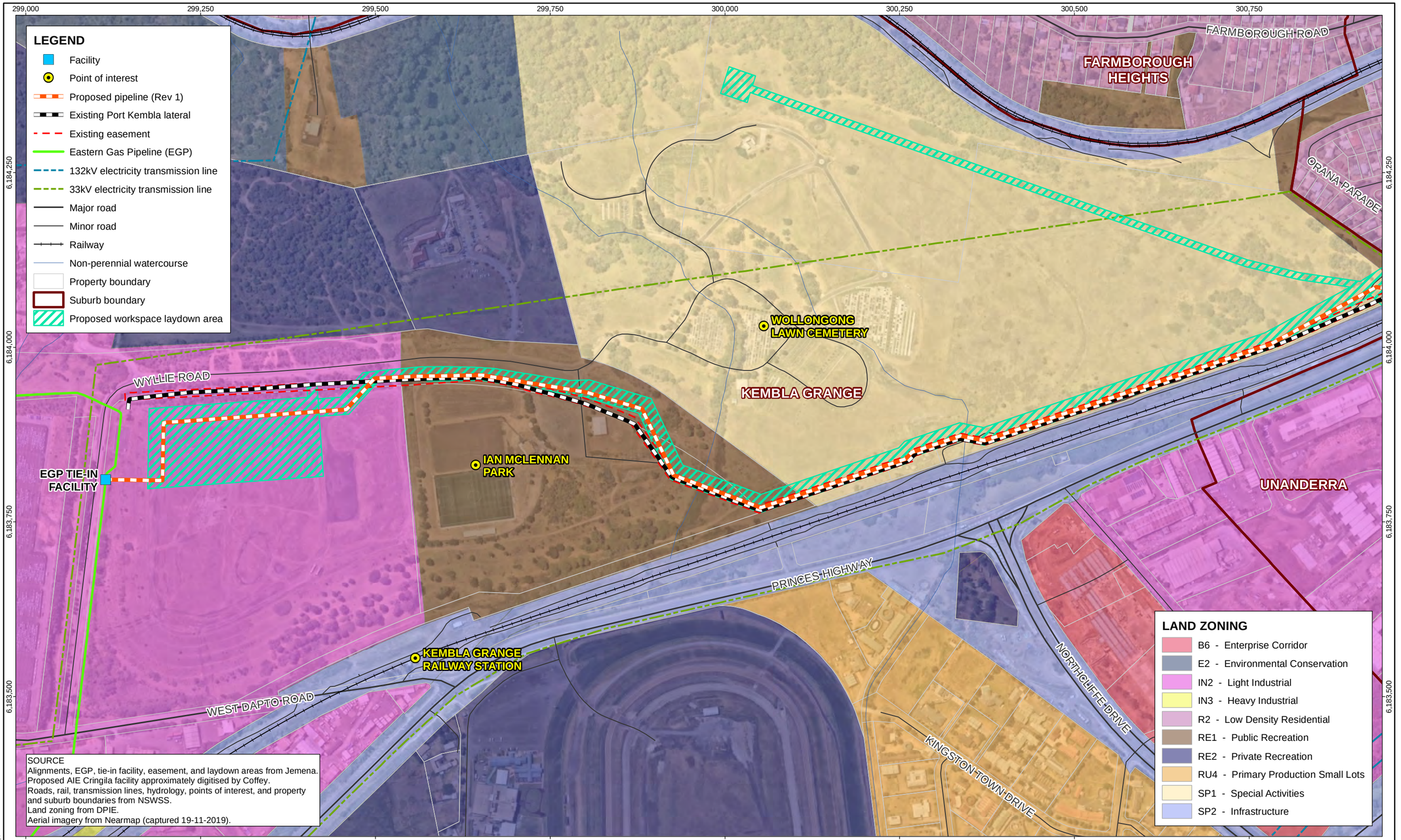
client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: LAND USE AND ZONING

project no: MELEN269488-R03 | figure no: FIGURE 3 | rev: A

MXD ref: MELEN269488_R03_GIS002_v0_3



SOURCE
Alignments, EGP, tie-in facility, easement, and laydown areas from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
Roads, rail, transmission lines, hydrology, points of interest, and property and suburb boundaries from NSWSS.
Land zoning from DPIE.
Aerial imagery from Nearmap (captured 19-11-2019).

MXD ref: MELEN269488_R03_GIS002A-C_v0_4

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	GH	AG	15.05.20

N

0 50 100 150 200
SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

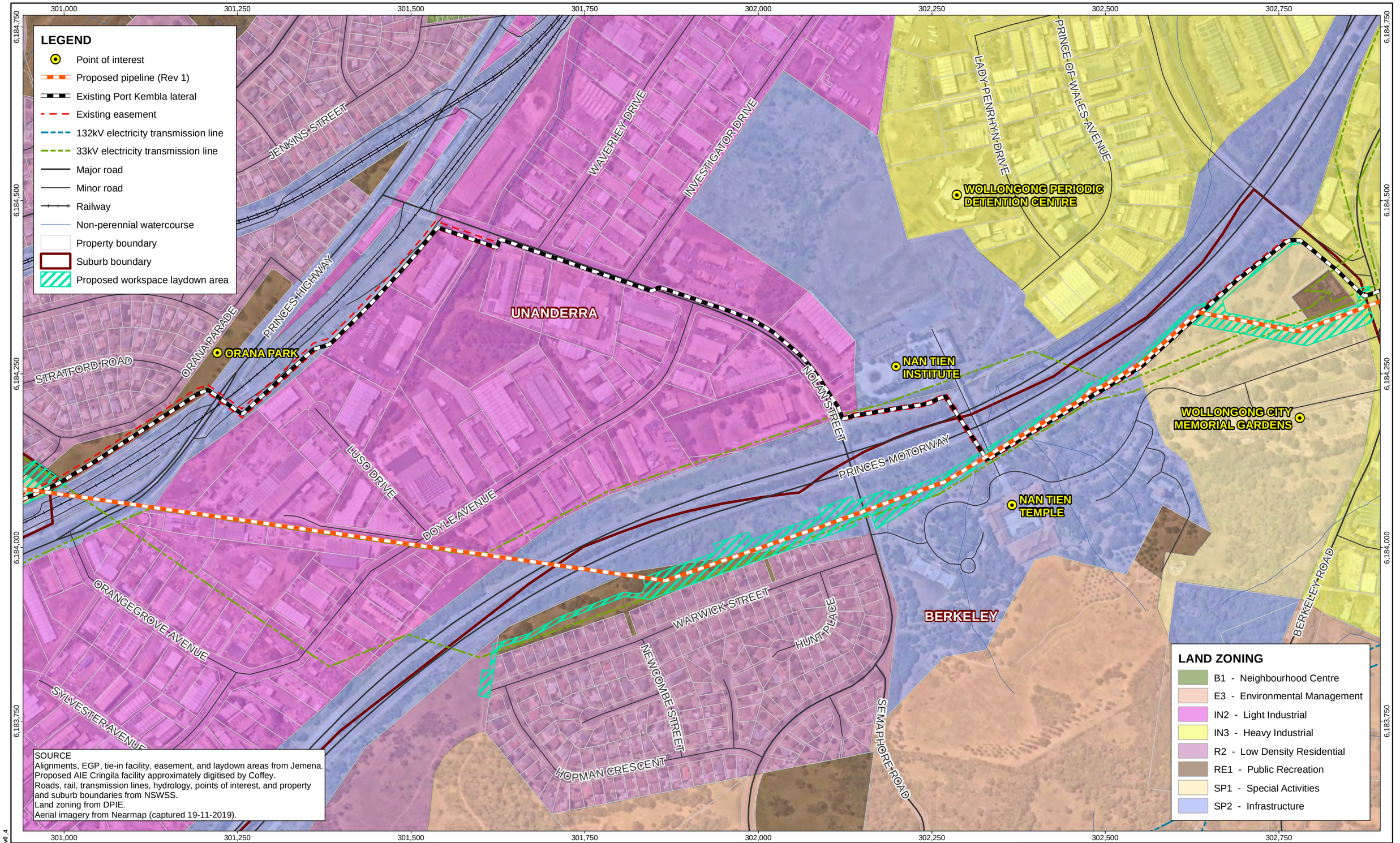
coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: LAND USE AND ZONING

project no: MELEN269488-R03 | figure no: FIGURE 4 | rev: A



SOURCE
Alignments, EGP, tie-in facility, easement, and laydown areas from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
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revision no.	description	drawn	approved	date
A	ORIGINAL ISSUE	GH	AG	15.05.20

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SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: LAND USE AND ZONING

project no: MELEN269488-R03 | figure no: FIGURE 5 | rev: A

MXD ref: MELEN269488_R03_GIS002A-C_v0_4

303,000 303,250 303,500 303,750 304,000 304,250 304,500 304,750

6,185,000 6,184,750 6,184,500 6,184,250 6,184,000

LEGEND

- Facility
- Point of interest
- Proposed pipeline (Rev 1)
- Existing Port Kembla lateral
- Existing easement
- 132kV electricity transmission line
- 33kV electricity transmission line
- Major road
- Minor road
- Railway
- Perennial watercourse
- Non-perennial watercourse
- Property boundary
- Suburb boundary
- Proposed workspace laydown area

UNANDERRA
WAYNOTE PLACE
FIVE ISLANDS ROAD
SPRING HILL
SPRINGHILL ROAD
ALLANS CREEK
PROPOSED AIE CRINGILA FACILITY
LATHE PLACE
INDUSTRIAL ROAD
WAREHOUSE PLACE
BERKELEY
CRINGILA
BHP CENTENARY PARK
CRINGILA OVAL
BARRY STREET
GORRELL STREET

LAND ZONING

- B1 - Neighbourhood Centre
- E3 - Environmental Management
- IN2 - Light Industrial
- IN3 - Heavy Industrial
- R2 - Low Density Residential
- RE1 - Public Recreation
- RE2 - Private Recreation
- SP2 - Infrastructure

SOURCE
Alignments, EGP, tie-in facility, easement, and laydown areas from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
Roads, rail, transmission lines, hydrology, points of interest, and property and suburb boundaries from NSWSS.
Land zoning from DPIE.
Aerial imagery from Nearmap (captured 19-11-2019).

303,000 303,250 303,500 303,750 304,000 304,250 304,500 304,750

MXD ref: MELEN269488_R03_GIS002A-C_v0_4

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	GH	AG	15.05.20

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SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: LAND USE AND ZONING

project no: MELEN269488-R03 | figure no: FIGURE 6 | rev: A

3. Statutory context

This section describes the statutory and planning framework for the approved EGP project and the proposed modification, including provisions of relevant Commonwealth and State legislation, plans and policies.

3.1. Approved development

A coordinated approval process was undertaken for the EGP project to fulfil the legislative requirements in accordance with NSW, Victorian, and Commonwealth governments (EGP 1996).

3.1.1. Commonwealth legislation

An EIS was originally prepared and approved under the *Environmental Protection (Impact of Proposals) Act 1974* (Cwth) in November 1996 (EGP 1996) as part of the coordinated approval process. This act has since been repealed and replaced by *Environment Protection and Biodiversity Act* 1999 (EPBC Act). The EPBC Act requires the assessment and approval of projects that are likely to result in a significant impact on matters of national environmental significance (MNES).

An assessment of potential impacts on MNES from the proposed modification determined that referral under the EPBC Act is not required. Further details of this assessment are provided in Section 5.2.2.

3.1.2. Victorian legislation

The EIS for the EGP was approved under the *Environment Effects Act 1978* (Victoria) as part of the coordinated approval process. A licence to construct, operate and maintain the pipeline was approved under the *Pipelines Act 1967* (Victoria).

3.1.3. New South Wales legislation and policy

The key NSW legislation regulating the proposed modification are the EP&A Act and the Pipelines Act 1967. Other relevant legislation and policies are summarised in Table 2.

Environmental Planning and Assessment Act 1979

The EP&A Act is the principal legislation governing environmental planning and assessment for development projects in NSW. The EIS for the EGP project finalised in 1996 was originally approved under Part 5 of the EP&A Act. The EGP has since been contemporised to be designated as State Significant Infrastructure (SSI) under Part 5 of the EP&A Act, which includes infrastructure that are deemed to have a wider significance due to potential impacts, size and/or economic value.

The proposed modification will be assessed as a SSI modification under section 5.25 of the EP&A Act. Section 5.25(3) of the act requires that a request for the Minister's approval of a modification be lodged with the Planning Secretary, and that the Planning Secretary may notify the proponent of environmental assessment requirements.

Jemena submitted a modification scoping report to the Planning Secretary in November 2019, identifying the environmental assessment requirements for this modification report (GHD 2019). The assessment requirements were endorsed by the Department of Planning, Industry and Environment in December 2019. This modification report addresses these requirements, so that the Minister may consider (and grant approval of) the proposed modification under section 5.25(4) of the EP&A Act.

Pipelines Act 1967

A licence to construct, operate and maintain a pipeline is required under the *Pipelines Act 1967* (NSW). A licence for the EGP was granted by the Minister of Energy on 12 November 1997 under Licence No. 26.

A number of variations to Pipeline Licence No. 26 have since been granted, including to extend the pipeline and allow for construction and operation of laterals, including the Port Kembla lateral pipeline (in October 2001). The construction and operation of this lateral was considered to be consistent with the operating parameters for the approved EGP i.e., had a similar operating pressure and design capacity (GHD 2019). A further amendment to Licence No. 26 will be undertaken for the operation of the proposed modification following determination of the modification.

The requirements discussed above, and those of other relevant legislation, policies and guidelines are summarised in Table 2.

Table 2: Summary of NSW assessment and approval requirements

Legislation and policies	Relevance
EP&A Act	Approval of the proposed modification is required under section 5.25 of the EP&A Act.
Biodiversity Conservation Act 2016	An assessment of the impacts to biodiversity from the proposed modification is required under section 7.9 of the BC Act. A biodiversity development assessment report (BDAR) has been prepared to address this requirement. The BDAR report is provided in Appendix B.
Biosecurity Act 2015	The act provides for the prevention, elimination, minimisation and management of biosecurity risk, including the introduction, spread or increase of weed or pest into NSW through identification, classification and control of priority weeds. Weeds found within the proposed modification area were documented as part of the biodiversity assessment. Jemena has duties under the act to manage biosecurity risks relevant to the modification project.
Contaminated Land Management Act 1997	The act promotes better management of contaminated land within NSW. Potentially contaminated areas that may be disturbed by a project should be investigated and managed in accordance with the act. A preliminary site investigation (PSI) was completed for the proposed modification to identify the presence of contamination within the project footprint and surrounds; and assess potential contamination-related impacts from construction.
National Parks and Wildlife Act 1974	The act aims to protect Aboriginal heritage, particularly significant Aboriginal sites. Under Part 6, Division 1, section 86 of the Act, it is an offence to harm or desecrate Aboriginal objects or places. The act requires that a due diligence assessment be undertaken to assess potential impacts to Aboriginal heritage. An Aboriginal cultural heritage due diligence assessment was completed for the modification project. The due diligence assessment report is provided in Appendix C.
Protection of the Environment Operations Act 1997	The purpose of this act is to protect land, air or water. Relevant regulations under the act include; Protection of the Environment Operations (Noise Control) Regulation 2017 and Protection of the Environment Operations (Waste) Regulation 2014. Appropriate measures will be included in the Construction Environmental Management Plan (CEMP) to address relevant requirements of the regulations.
Road Act 1993	Consent from the responsible road authority is required to excavate or disturb a public road under section 138 of the Act. Consent will be obtained as required prior to construction of the proposed modification.
Water Management Act 2000	The Act requires a water licence be obtained for controlled activities that may cause aquifer interference, including for example obstruction to water flow, or taking of water, is required. Depths to groundwater in the proposed modification project area are likely to vary between 5 and 10 m below ground level. The requirement for a water licence will be determined prior to construction.

Legislation and policies	Relevance
Coastal Management State Environmental Planning Policy (SEPP)	The proposed modification project area is located in in coastal management area defined under section 13 of the Coastal Management SEPP. As part of the biodiversity assessment, it was determined unlikely that the proposed modification would have adverse effect on the coastal management area. Therefore, consent is not required under SEPP.
Koala Habitat Protection State Environmental Planning Policy (SEPP)	The proposed modification is located within the Wollongong City Council area which is listed under the Koala Habitat Protection SEPP. However, a Koala Plan of Management is not required for the modification project as the modification contained less than 15% of Koala feed tree species.
State and Environmental Planning Policy No 33 – Hazardous and Offensive Development	A hazardous facility is located within the vicinity of the proposed modification. A pipeline safety management study was undertaken in accordance with SEPP No 33 and is provided in Appendix D.

4. Stakeholder engagement

Jemena recognises the importance of stakeholders and is committed to open, transparent and inclusive engagement throughout the proposed modification. As the owner and operator of the existing EGP and the Port Kembla lateral pipeline, Jemena has established relationships with relevant key stakeholders in the area and landholders affected by the proposed modification. Jemena also owns and operates the area's gas networks, delivering gas to industrial and residential users every day.

Jemena commenced initial engagement in relation to the proposed modification including the lateral looping pipeline alignment in April 2019 with relevant key stakeholders, including landholders (existing and new EGP landholders), Wollongong City Council, Transport for NSW, and NSW Roads and Maritime Services. Feedback from this early initial engagement was incorporated in the route development and infuriated the scoping stage for the proposed modification.

Jemena has continued to engage with relevant landholders, stakeholders and interest groups. Through building on existing relationships in the area, Jemena has been able to work collaboratively with landholders and stakeholders to:

- Allow for site access across the entire proposed alignment for surveys (in accordance with conditions of access) to support development of the proposed modification
- Understand current and proposed land uses to assist in the design of the lateral looping pipeline
- Further refine the alignment with stakeholder's current and proposed infrastructure in the area
- Understand any constraints or concerns that may need to be considered by Jemena and the proposed modification
- Understand land tenure requirements, and any other interested parties in the land.

Key stakeholders engaged to date include:

- NSW DPIE
- NSW Roads and Maritime Services
- Wollongong City Council
- Transport for NSW
- Sydney Trains
- 'Dial Before you Dig' and third-party utilities
- Affected landholders and occupiers
- Illawarra Local Aboriginal Land Council
- Relevant local, state and federal elected representatives.

Jemena will continue to engage and consult with these stakeholders as the proposed modification progresses into detailed design and construction. Sydney Trains confirmed that no works or impacts are proposed within the rail reserve and ongoing engagement will be through Transport for NSW for rail crossings (via HDD) and any associated consents.

5. Environmental assessment

The environmental assessment for the proposed modification was informed by a preliminary environmental assessment prepared as part of the scoping report. The preliminary assessment addressed potential environmental impacts for key environmental aspects that may result during construction and/or operation of the proposed modification, and identified areas requiring additional assessment.

Several environmental aspects were considered to have minor environmental impacts or would result in low risks with the adoption of standard mitigation measures in accordance with the APGA Code of Environmental Practice. These aspects included hydrology, flooding and groundwater, air quality, noise and vibration, non-Aboriginal heritage, landscape and visual amenity, traffic and transport, socio-economic, and cumulative impacts. No further assessment has been undertaken on these aspects.

Additional environmental assessment was recommended for the following aspects:

- Biodiversity: Identify and assess the potential impacts to biodiversity due to vegetation removal during construction activities, operation and maintenance
- Aboriginal cultural heritage: Identify and assess potential Aboriginal cultural heritage and sensitivities within the modification project area
- Hazard and risk: Identify and assess credible hazards and risks associated with the proposed modification.

Assessment of the potential for land contamination within the alignment and other work areas has also been completed.

The proposed modification is a duplication of the existing lateral pipeline and is considered not to significantly alter the nature or scale of the approved EGP EIS and the existing Port Kembla lateral. Standard mitigation measures outlined in the approved EGP EIS (November,1996), along with mitigation measures per the APGA Code of Environmental Practice, will be implemented during construction and operation of the proposed modification.

The scoping report for the proposed modification was approved by DPIE (in its letter of 6 December 2019) in support of the request for a modification under Section 5.25 of the EP&A Act. The department also confirmed the need for further environmental assessment to be undertaken for the three key environmental aspects identified above. Specialist reports were prepared to address these environmental aspects and inform the preparation of this modification report, as follows:

- Contaminated land - preliminary site investigation (Appendix A)
- Biodiversity development assessment report (Appendix B)
- Aboriginal cultural heritage due diligence assessment (Appendix C)
- Pipeline safety management study (Appendix D).

The following sections summarise the key findings of the environmental assessment carried out for the proposed modification.

5.1. Existing environment

5.1.1. Land use

Land zoning for the modification project is classified under the Wollongong Local Environmental Plan 2009.The modification project mainly traverses heavy industrial and light industrial zones as shown in Figure 3.The proposed lateral looping pipeline alignment crosses the South Coast Line railway, Princes Highway and the F6 Princes Motorway. Other roads traversed include Doyle Ave, Nolan Street, Berkeley Road, Waynote Place, and Five Islands Road.

The proposed lateral looping pipeline crosses five non-perennial creeks. Waterbodies surrounding the modification project include American Creek, Budjong Creek, Allans Creek, and Hooka Creek (see Figure 2).

Key places of interest located near to or surrounding the proposed modification are listed below:

- BHP Centenary Park (Sporting Fields), Spring Hill
- Wollongong City Memorial Gardens and Crematorium, Berkeley
- Nan Tien Temple, Berkeley
- Nan Tien Institute (Educational institute), Berkeley
- Wollongong Lawn Cemetery, Kembla Grange
- Ian McLennan Park (Sporting Fields), Kembla Grange
- Kembla Grange Racecourse and Golf Range, Kembla Grange
- Macedonian Church Sv. Petka (Place of Worship), Kembla Grange.

5.1.2. Land contamination

A PSI (Coffey 2020) was prepared to provide an assessment of soils, geology and potential contamination for the footprint of the proposed modification including the proposed pipeline alignment, workspaces and laydown areas (project area). The PSI report is provided in Appendix A. The PSI comprised of a site walkover by a suitably qualified and experienced contaminated land consultant and a desktop study of available information related to potentially contaminating activities in the project area.

Soils landscape and geology

The existing landscape for the proposed modification is defined within three soil landscape types; Gwynneville (typically sandy loam overlying clay), disturbed terrain (typically consisting of artificial fill) and Fairy meadow (typically sand overlying clay). The soils are underlain by six geological units; Dapto Latite Member, Anthropogenic deposits, Illawarra Coal Measures, Broughton Formation, Anthropogenic deposits - fill on Quaternary deposits, and Alluvial fan deposit.

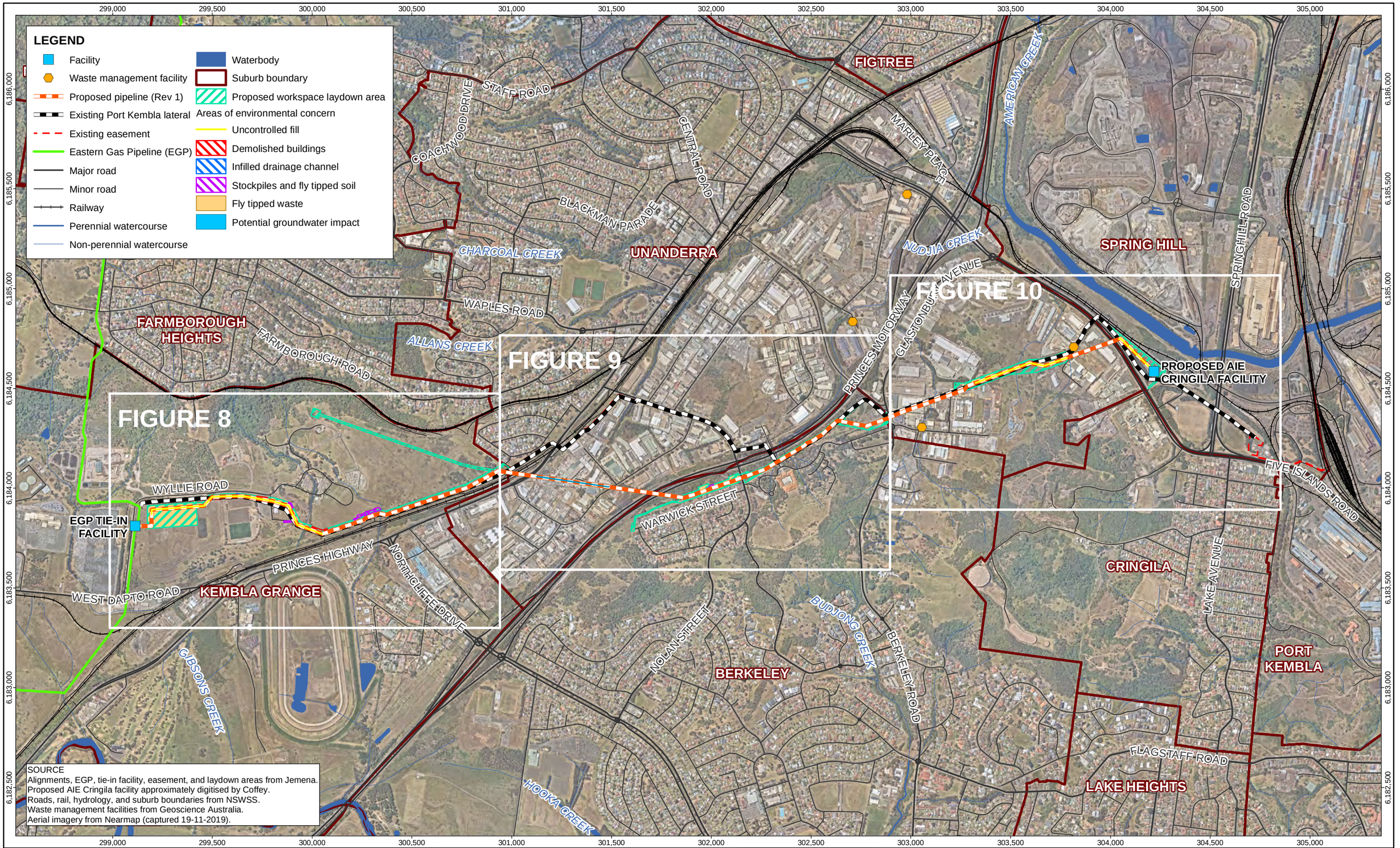
Potential sources of land contamination

Two NSW EPA contaminated land database searches identified five notified properties within 250 m of the lateral looping pipeline alignment. The PSI concluded that these sites are unlikely to be a potential source of contamination encountered or disturbed during construction activities as the properties are not within the project area and are unlikely to be disturbed.

Six potential sources of contamination (areas of environmental concern) were identified within the project area, which are listed below and shown in Figure .

- Fly-tipped waste (including suspected bonded and friable asbestos containing material)
- Uncontrolled fill
- An infilled drainage channel
- Previously demolished buildings
- Stockpiles of unknown origin
- Groundwater at 243A Princes Highway, Unanderra.

Two registered waste management facilities were identified within 250 m of the project area (Figure 10). These facilities are unlikely to act as potential sources of contamination encountered or disturbed during construction, as both properties are outside of the project area.



SOURCE
Alignments, EGP, tie-in facility, easement, and laydown areas from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
Roads, rail, hydrology, and suburb boundaries from NSWSS.
Waste management facilities from Geoscience Australia.
Aerial imagery from Nearmap (captured 19-11-2019).

MXD ref: MELEN269488_R03_GIS003_v0_4

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	GH	AG	15.05.20

N

0 175 350 525 700
SCALE 1:17,500 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: AREAS OF ENVIRONMENTAL CONCERN

project no: MELEN269488-R03 | figure no: FIGURE 7 | rev: A

299,000 299,250 299,500 299,750 300,000 300,250 300,500 300,750

6,184,250 6,184,000 6,183,750 6,183,500

LEGEND

- Facility
- Proposed pipeline (Rev 1)
- Existing Port Kembla lateral
- Existing easement
- Eastern Gas Pipeline (EGP)
- Major road
- Minor road
- Railway
- Non-perennial watercourse
- Property boundary
- Suburb boundary
- Proposed workspace laydown area
- Proposed pipeline (Rev 1) buffer (250m)

Areas of environmental concern

- Uncontrolled fill
- Demolished buildings
- Infilled drainage channel
- Stockpiles and fly tipped soil
- Fly tipped waste

FARMBOROUGH ROAD
FARMBOROUGH HEIGHTS
ORANA PARADE
KEMBLA GRANGE
WYLLIE ROAD
EGP TIE-IN FACILITY
Uncontrolled fill including slag
Farm house and sheds in this area demolished circa 1961
Number of overgrown stockpiles in this area
Infilled drainage channel (circa 1977)
Overgrown stockpile (approx 600m3). Unlikely to be disturbed during construction.
Overgrown stockpile (approx 1,500m3). May be disturbed during construction to facilitate alignment of pipeline around an existing water pipe
Overgrown stockpile (approx 2m3)
Stockpile (approx 900m3) adjacent to workspace laydown area
Overgrown stockpile (approx 160m3). Unlikely to be disturbed during construction.
Overgrown stockpile (approx 10m3)
Fly tipped waste including suspected asbestos-containing materials
Farm house and sheds in this area demolished circa 1977
UNANDERRA
PRINCES HIGHWAY
WEST DAPTO ROAD
CANTERBURY ROAD
NORTHCLIFFE DRIVE
KINGSTON TOWN DRIVE

SOURCE
Alignments, EGP, tie-in facility, easement, and laydown areas from Jemena.
Proposed pipeline buffer from Coffey.
Roads, rail, hydrology, and property and suburb boundaries from NSWSS.
Aerial imagery from Nearmap (captured 19-11-2019).

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0 50 100 150 200
SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

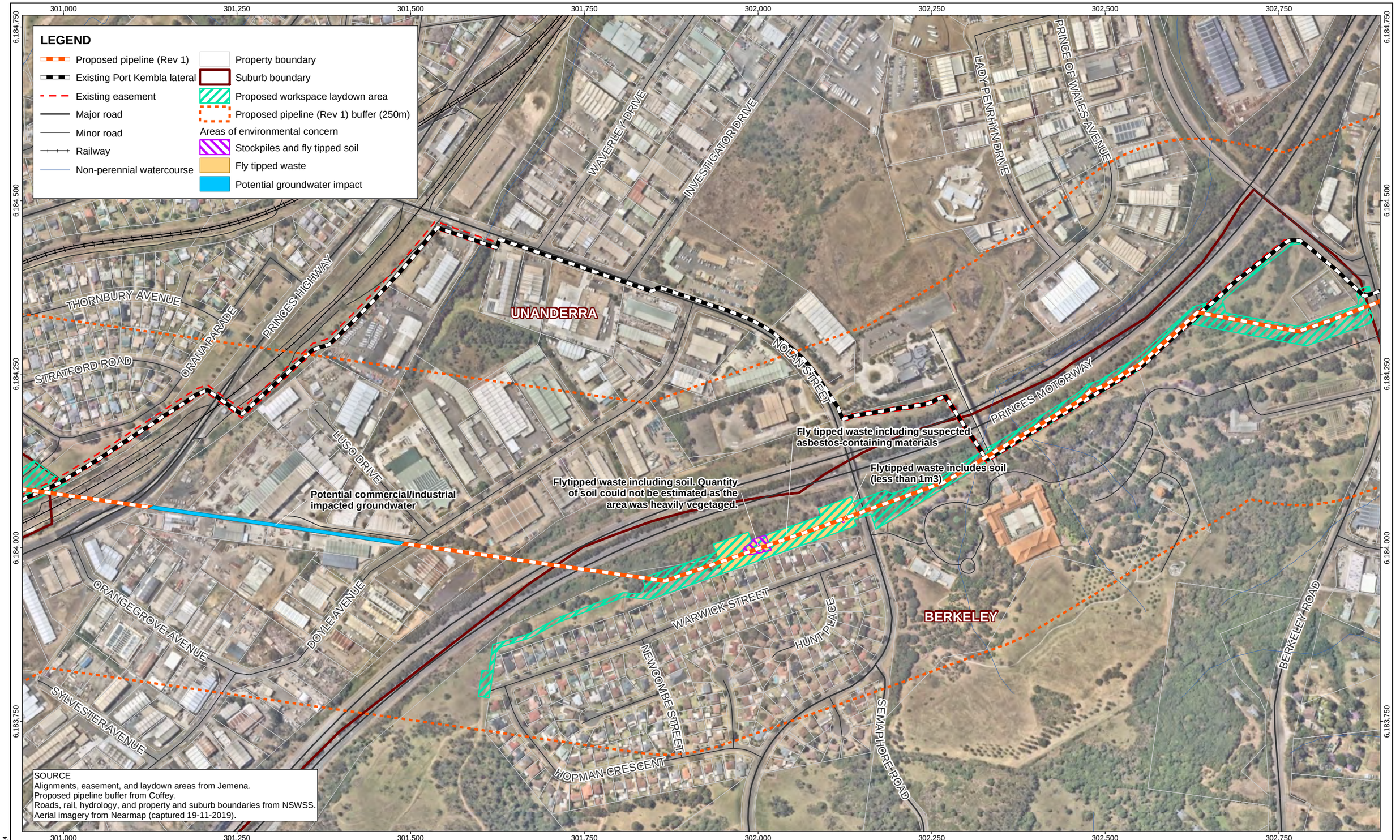
coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: AREAS OF ENVIRONMENTAL CONCERN

project no: MELEN269488-R03 | figure no: FIGURE 8 | rev: A



SOURCE
Alignments, easement, and laydown areas from Jemena.
Proposed pipeline buffer from Coffey.
Roads, rail, hydrology, and property and suburb boundaries from NSWSS.
Aerial imagery from Nearmap (captured 19-11-2019).

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N

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SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	22.04.2020
scale	AS SHOWN
original size	A3

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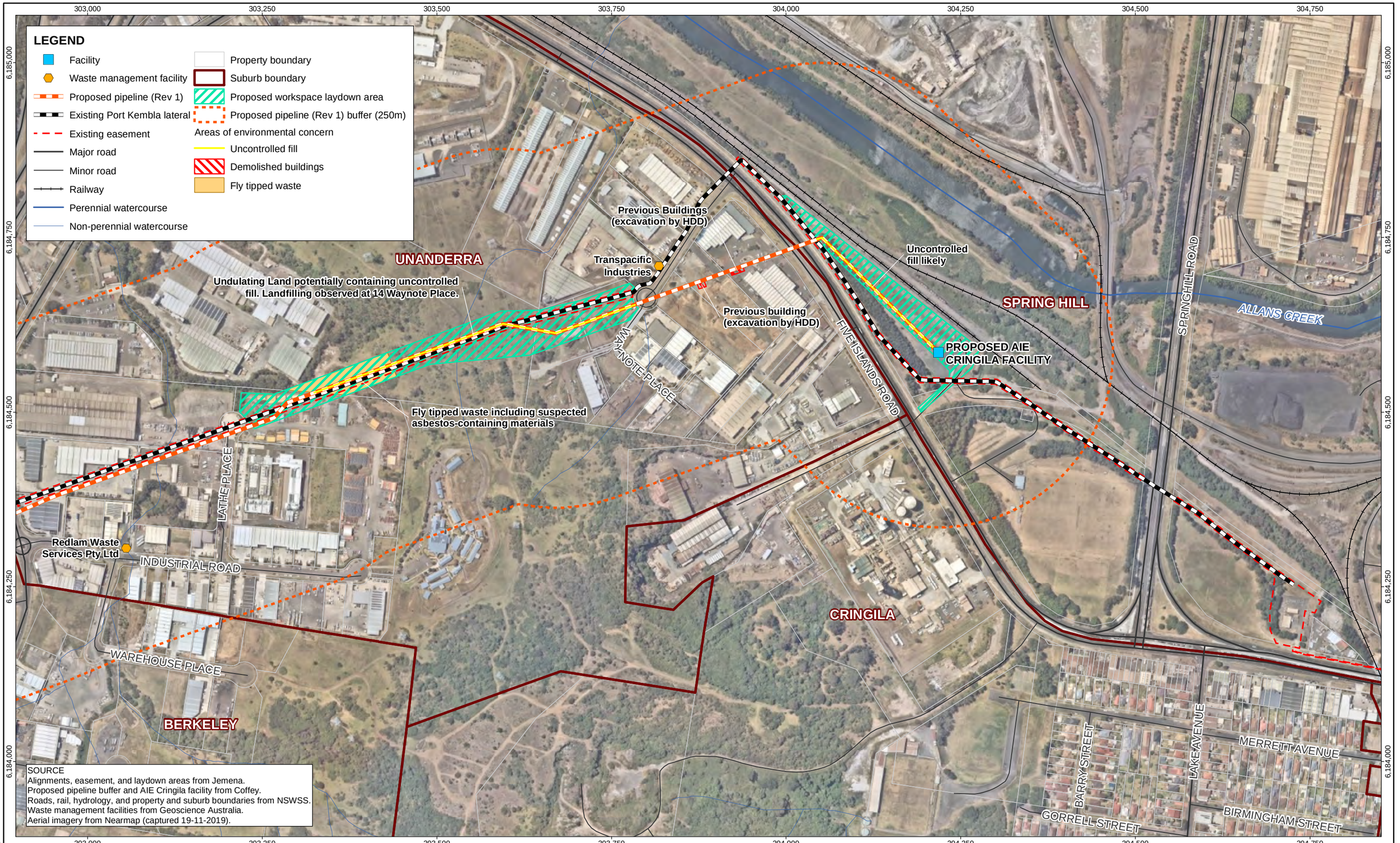
client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: AREAS OF ENVIRONMENTAL CONCERN

project no: MELEN269488-R03 | figure no: FIGURE 9 | rev: A



SOURCE
Alignments, easement, and laydown areas from Jemena.
Proposed pipeline buffer and AIE Cringila facility from Coffey.
Roads, rail, hydrology, and property and suburb boundaries from NSWSS.
Waste management facilities from Geoscience Australia.
Aerial imagery from Nearmap (captured 19-11-2019).

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0 50 100 150 200
SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: AREAS OF ENVIRONMENTAL CONCERN

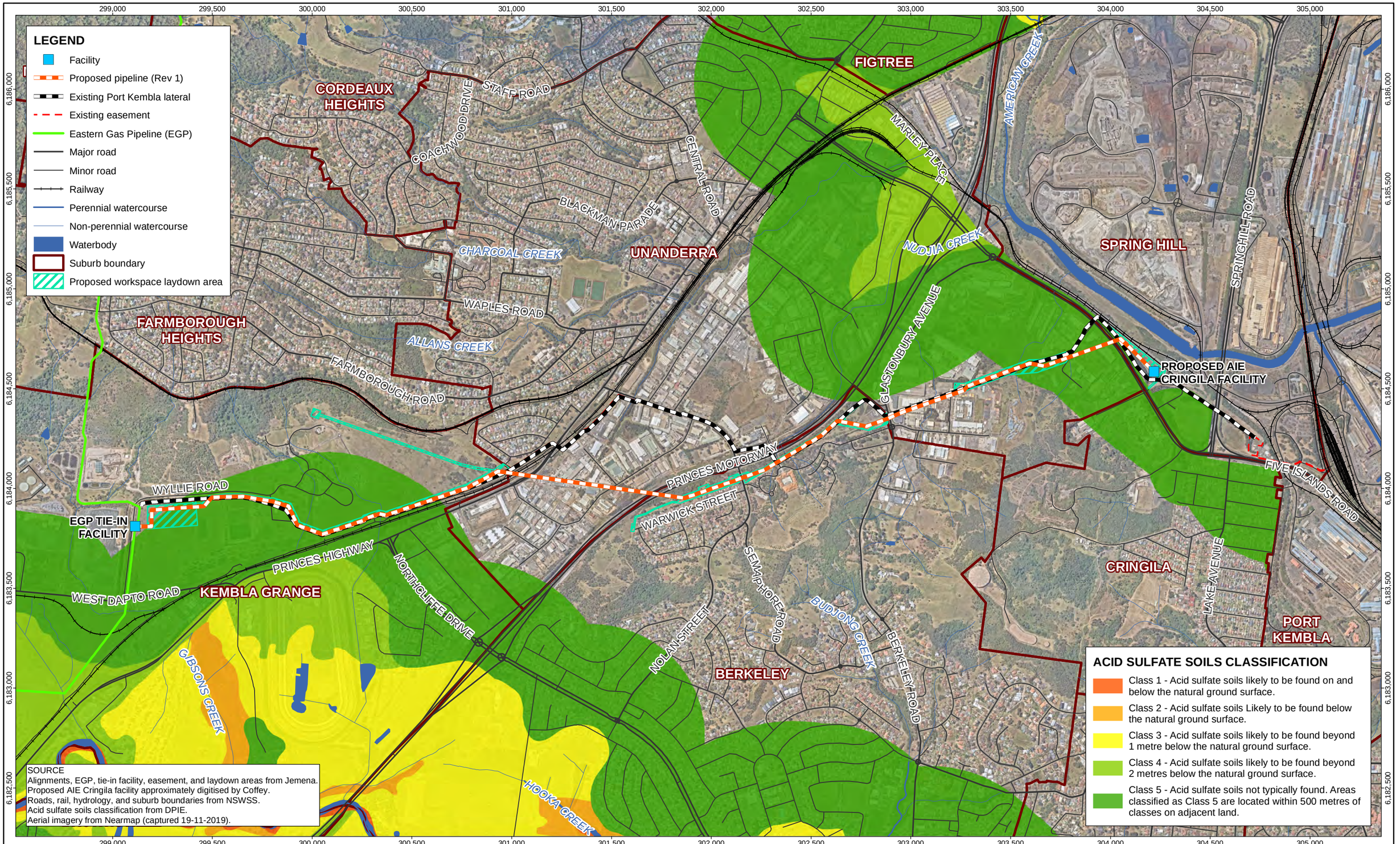
project no: MELEN269488-R03 | figure no: FIGURE 10 | rev: A

Acid sulfate soils

The project area contains two areas mapped as Class 5 for acid sulfate soils (Figure 11), including:

- 550 m of the pipeline alignment extending west from Five Islands Road; HDD installation methods are planned for this section.
- Approximately 1.5 km of the pipeline alignment within the following locations: EGP tie-in facility railway reserve north of the Princes Highway and Wyllie Road. Open trench installation methods are planned for this section.

The acid sulfate soils classification system designates an area as Class 5 if it is located within 500 m of a Class 1,2,3 or 4 acid sulfate soils area. A Class 5 area does not typically contain acid sulfate soils. If construction activities have the potential to lower the water table below 1 m on adjacent Class 1,2,3 or 4 land and is adjacent to a Class, 1, 2, 3 or 4 area, then an acid sulfate soils assessment may be required (Coffey 2020).



SOURCE
Alignments, EGP, tie-in facility, easement, and laydown areas from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
Roads, rail, hydrology, and suburb boundaries from NSWSS.
Acid sulfate soils classification from DPIE.
Aerial imagery from Nearmap (captured 19-11-2019).

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0 175 350 525 700
SCALE 1:17,500 (A3) METRES

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original size	A3

coffey
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client:	JEMENA
project:	MODIFICATION REPORT PORT KEMBLA LATERAL LOOPING PROJECT
title:	ACID SULFATE SOILS CLASSIFICATION
project no:	MELEN269488-R03
figure no:	FIGURE 11
rev:	A

MXD ref: MELEN269488_R03_GIS004_v0_4

5.1.3. Biodiversity

A biodiversity development assessment report (BDAR) was prepared by Biosis which assessed the potential impacts to biodiversity from the proposed modification (Appendix B).

Database searches and regional vegetation mapping were reviewed to help plan the biodiversity field investigation following the requirements outlined under the NSW Biodiversity Assessment Method (DPIE 2017).

Plant community types and native vegetation

Biosis defined two investigation areas as part of the BDAR:

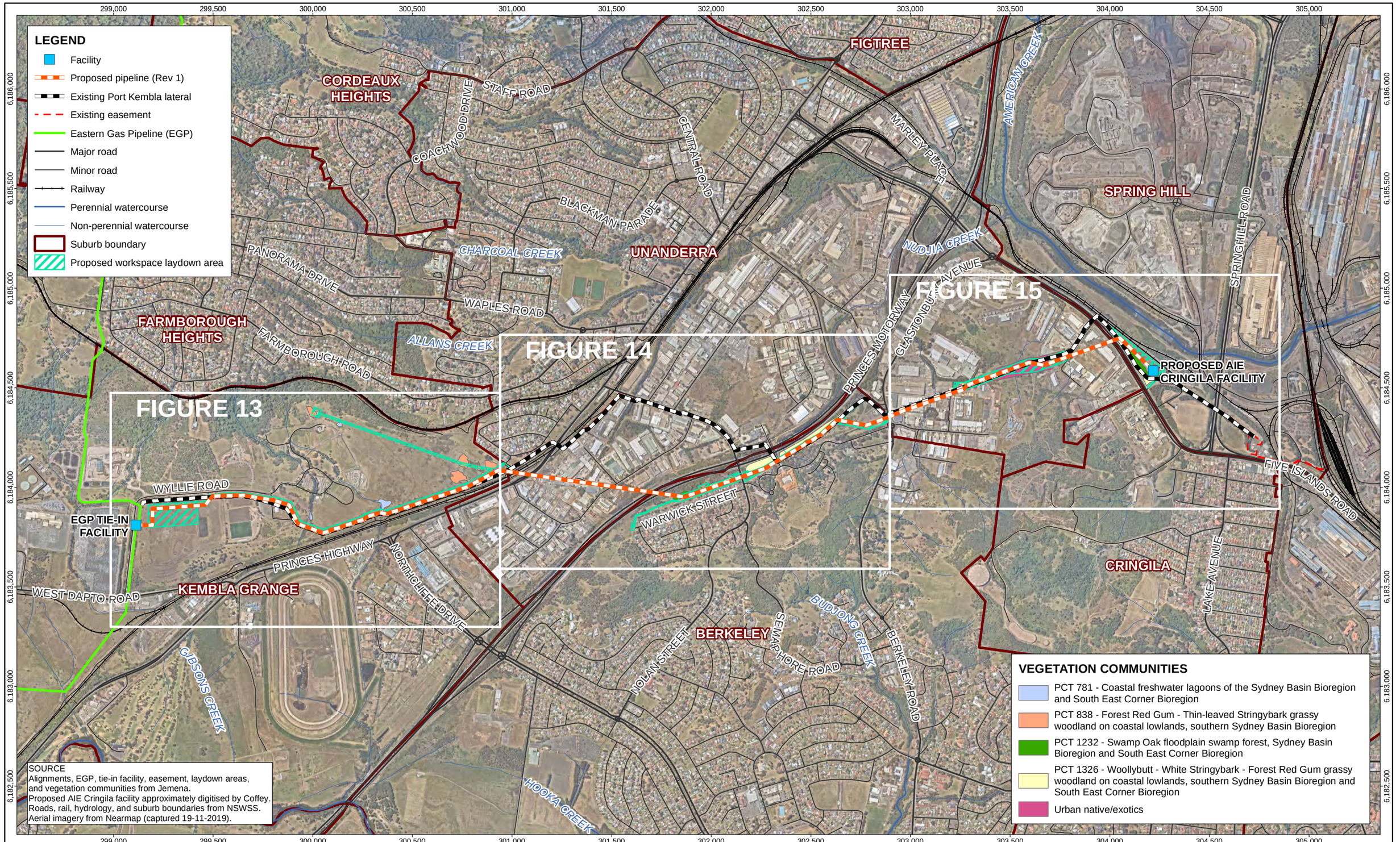
- Study area: Includes the footprint of the proposed modification including the pipeline alignment and construction workspace areas, with a 5m buffer
- Subject land area: Encompassed the footprint of the proposed modification including the pipeline alignment and construction workspace areas, with a broader 1,500 m buffer.

The proposed modification is located within an area of moderate to high levels of disturbance and is surrounded by dense urban landscape features. Three hectares of native vegetation is present within the study area.

Eight plant community types (PCTs) were identified in the subject land area of which two PCTs were found within the smaller study area (Figure 12). Details of the two PCTs are provided in Table 3.

Table 3: Plant community types within the biodiversity study area for the proposed modification

Feature	PCT 781	PCT 838
Scientific name	Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	Forest Red Gum – thin-leaved stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion
PCT name	Coastal Freshwater Wetland	Forest Red Gum – thin-leaved stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion
Area defined within subject land area	0.04 ha	0.33 ha
***Biodiversity Conservation Act* (status)**	Endangered	Critically Endangered
EPBC Act List of Threatened Ecological Communities (TEC) status	Not listed	This community did not meet the minimum thresholds for the relevant EPBC Act listed threatened ecological community.



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0 175 350 525 700

SCALE 1:17,500 (A3) METRES

Projection: GDA 1994 MGA Zone 56

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client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: NATIVE VEGETATION

project no: MELEN269488-R03 | figure no: FIGURE 12 | rev: A

MXD ref: MELEN269488_R03_GIS005_v0.3

299,000 299,250 299,500 299,750 300,000 300,250 300,500 300,750

6,184,250 6,184,000 6,183,750 6,183,500

LEGEND

- Facility
- Proposed pipeline (Rev 1)
- Existing Port Kembla lateral
- Existing easement
- Eastern Gas Pipeline (EGP)
- Major road
- Minor road
- Railway
- Non-perennial watercourse
- Property boundary
- Suburb boundary
- Proposed workspace laydown area

FARMBOROUGH ROAD
FARMBOROUGH HEIGHTS
ORANA PARADE
WYLLIE ROAD
KEMBLA GRANGE
EGP TIE-IN FACILITY
UNANDERRA
PRINCES HIGHWAY
NORTHCLIFFE DRIVE
KINGSTON TOWN D
WEST DAPTO ROAD

SOURCE
Alignments, EGP, tie-in facility, easement, laydown areas, and vegetation communities from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
Roads, rail, hydrology, points of interest, and property and suburb boundaries from NSWSS.
Aerial imagery from Nearmap (captured 19-11-2019).

VEGETATION COMMUNITIES

- PCT 781 - Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion
- PCT 838 - Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion

299,000 299,250 299,500 299,750 300,000 300,250 300,500 300,750

MXD ref: MELEN269488_R03_GIS005A-C_v0_3

revision	no.	description	drawn	approved	date
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SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

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original size	A3

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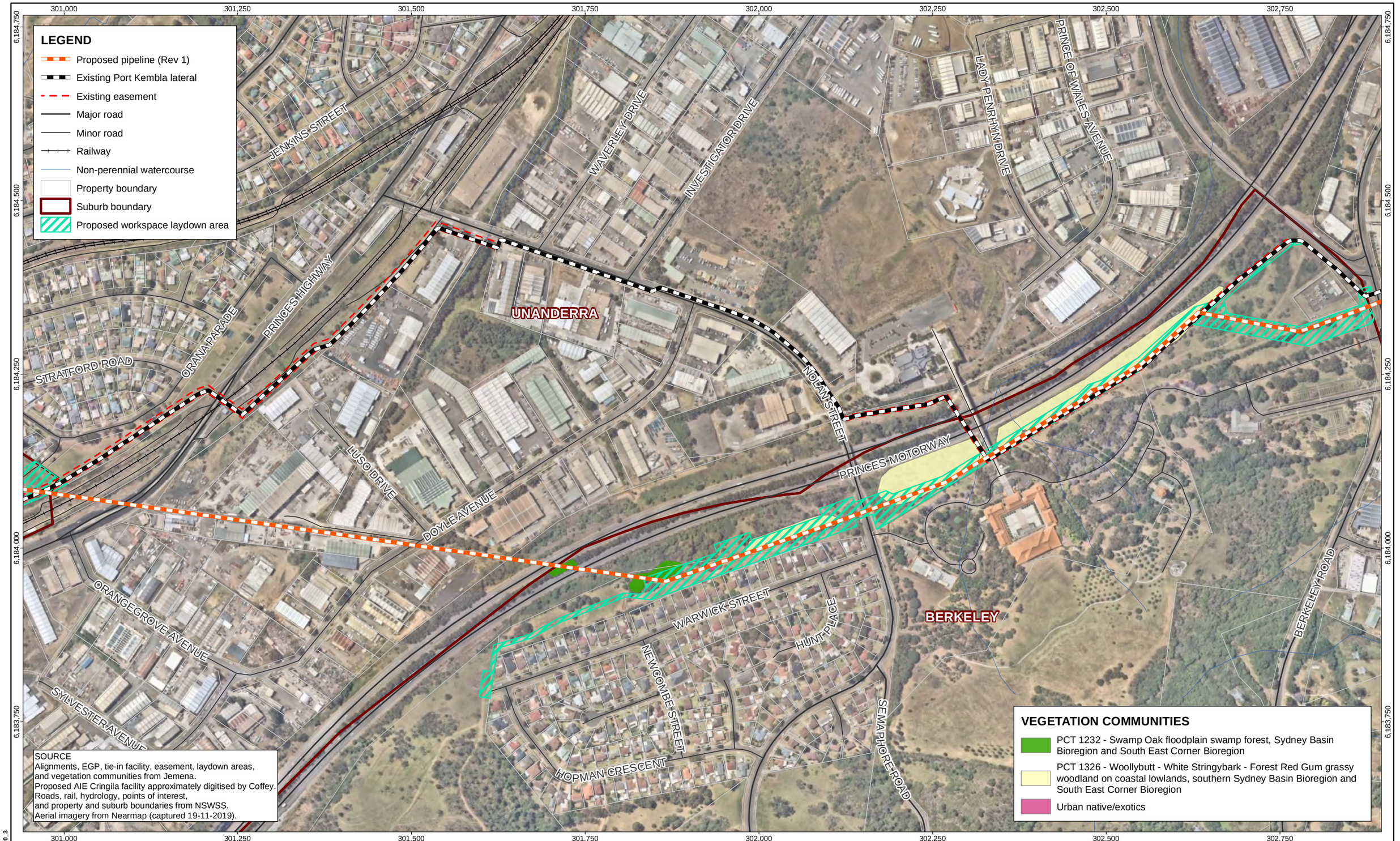
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: NATIVE VEGETATION

project no: MELEN269488-R03 | figure no: FIGURE 13 | rev: A



MXD ref: MELEN269488_R03_GIS005A-C_v0_3

revision no.	description	drawn	approved	date
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0 50 100 150 200

SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: NATIVE VEGETATION

project no: MELEN269488-R03 | figure no: FIGURE 14 | rev: A

303,000 303,250 303,500 303,750 304,000 304,250 304,500 304,750

6,185,000 6,184,750 6,184,500 6,184,250 6,184,000

LEGEND

- Facility
- Proposed pipeline (Rev 1)
- Existing Port Kembla lateral
- Existing easement
- Major road
- Minor road
- Railway
- Perennial watercourse
- Non-perennial watercourse
- Property boundary
- Suburb boundary
- Proposed workspace laydown area

UNANDERRA
WAYNOTE PLACE
SPRING HILL
FIVE ISLANDS ROAD
SPRINGHILL ROAD
ALLANS CREEK
PROPOSED AIE CRINGILA FACILITY
LATHE PLACE
INDUSTRIAL ROAD
WAREHOUSE PLACE
BERKELEY
CRINGILA

VEGETATION COMMUNITIES

- PCT 1232 - Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion
- PCT 1326 - Woollybutt - White Stringybark - Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion
- Urban native/exotics

SOURCE
Alignments, EGP, tie-in facility, easement, laydown areas, and vegetation communities from Jemena.
Proposed AIE Cringila facility approximately digitised by Coffey.
Roads, rail, hydrology, points of interest, and property and suburb boundaries from NSWSS.
Aerial imagery from Nearmap (captured 19-11-2019).

303,000 303,250 303,500 303,750 304,000 304,250 304,500 304,750

MXD ref: MELEN269488_R03_GIS005A-C_v0_3

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	GH	AG	15.05.20

N

0 50 100 150 200
SCALE 1:5,000 (A3) METRES

Projection: GDA 1994 MGA Zone 56

drawn	GH
approved	AG
date	15.05.2020
scale	AS SHOWN
original size	A3

coffey
A TETRA TECH COMPANY

client: JEMENA

project: MODIFICATION REPORT
PORT KEMBLA LATERAL LOOPING PROJECT

title: NATIVE VEGETATION

project no: MELEN269488-R03 | figure no: FIGURE 15 | rev: A

Two other native vegetation types, which are not identified as naturally occurring PCTs, were recorded within the study area. These areas consist of planted native plants. A total of 0.06 ha was defined as planted Swamp Oak in the eastern portion of the subject land area, along the Five Islands Road. A linear patch, 0.5 ha in size of Planted Woodland vegetation, was identified east of Nolan Street and adjacent to the Princes Motorway (see Figure 12). Both of these vegetation types did not align with the definition of naturally occurring PCTs in NSW and further assessment was not required.

Threatened flora species

Three flora species were assessed as having a moderate likelihood of occurrence following an assessment of flora habitat within the subject land area:

- Square raspwort (*Haloragis exalata* subsp. *Exalata*) (listed as Vulnerable under the BC Act and EPBC Act)
- *Lespedeza juncea* subsp. sericea (listed as Endangered under the BC Act)
- Illawarra zieria (*Zieria granulata*) (listed as Endangered under the BC Act and EPBC Act).

No threatened flora species were identified as being present in the subject land area during targeted surveys.

Threatened fauna species

The desktop assessment identified the potential for 34 threatened species to occur within the study area. Following detailed assessment of habitat requirements and fauna habitat assessments, only the green and golden bell frog (*Litoria aurea*), listed as Endangered under the BC Act and Vulnerable under the EPBC Act, was assessed as being likely to be present and triggered the need for targeted surveys. The species was not detected in the targeted surveys and no breeding habitat was identified.

5.1.4. Aboriginal cultural heritage

Biosis completed the Aboriginal Cultural Heritage Due Diligence Assessment to identify and assess potential impacts to Aboriginal cultural heritage from the proposed modification. The assessment was undertaken in accordance with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010) and is provided in Appendix C.

The assessment included:

- A review of existing archaeological studies considering a landscape, regional and local context
- Desktop review on environmental conditions, geomorphological processes and past land use activities
- Review of registered Aboriginal archaeological sites within 5 km of the proposed modification
- Assessment of the potential to encounter Aboriginal sites, objects and places such as stone artefacts scatters, archaeological deposits, shell middens, modified trees, rock shelters and Aboriginal places
- Archeological survey focusing on Aboriginal archaeological sites visible on the ground surface.

The assessment identified 16 Aboriginal archaeological sites (artefacts and one art pigment) within 5 km of the proposed modification. None of the registered Aboriginal cultural heritage sites were located within study area.

The proposed modification project area was assessed based on a several environmental conditions to identify areas that have low, moderate and high archaeological potential. The proposed modification landscape is dominated by disturbed soil, which was already removed, disturbed or buried. The assessment found that there is low to nil archaeological and Aboriginal site potential for the proposed modification.

5.2. Impact assessment

Jemena has sought to avoid and mitigate impacts through the route selection and identification of areas for HDD. This section provides a summary of the potential impacts of the project on the environmental aspects identified in the scoping report, as well as identifying additional mitigation measures to be implemented.

5.2.1. Land contamination

Six potential sources of contamination were identified in the proposed modification project area. Some potential may exist to encounter acid sulfate soils during construction.

Further investigations are being completed to assess the presence of contamination and identify the need for mitigation measures or remediation, prior to construction. If acid sulfate soils are confirmed, an acid sulfate soil management plan will be implemented during construction to manage potential impacts from exposure of soils.

5.2.2. Biodiversity

Construction of the pipeline is predicted to require clearing of 0.33 ha of Coastal Freshwater Wetland (PCT 781) and partial removal of the 0.04 ha of Forest Red Gum (PCT 838), as a result of open trenching and associated excavations. Removal of 0.56 ha of planted native vegetation will also be required. The detailed design phase of the proposed modification prior to construction will seek to further avoid or minimise impacts to PCTs in these areas. The impacts are considered worst case for offsetting.

An offset is required for PCTs where vegetation will be cleared due to construction or operation of proposed developments. Based on the vegetation zone integrity scores, one (1) ecosystem credit is required for the Coastal Freshwater Wetland (PCT 781) and four (4) ecosystem credits is required for the Forest Red Gum (PCT 838) community. Offsetting will be performed for the proposed modification either through the transfer and retirement of biodiversity credits, or paying into the BCT Offset Fund.

As the Swamp Oak and Planted Woodland native plant vegetation areas were found not to support habitat for threatened species (hallow-bearing trees or nests), they did not meet the threshold for assessment and offsetting requirements in accordance with the NSW Biodiversity Assessment Method (DPIE 2017).

No threatened flora species or fauna species were found in the subject land and the project is not predicted to impact on either threatened flora of fauna with implementation of the mitigation measures developed for the EGP project.

5.2.3. Aboriginal cultural heritage

The project area is highly disturbed and was assessed as having a low likelihood of archaeological potential. The project is unlikely to impact on Aboriginal cultural heritage values. The mitigation measures developed for the EGP project will be implemented to manage any unexpected finds during construction.

5.2.4. Hazard and risk assessment

A safety management study was undertaken to identify credible hazards and risks associated with the proposed modification (Worley 2020). Where possible, physical protection measures and procedural protection measures will be implemented to control risks and comply with AS2885.3:2012 Pipelines - Gas and liquid petroleum – Operation and maintenance. Out of 53 identified threats associated with the proposed modification, nine were deemed non-credible, five were noted as construction-specific issues (not strictly addressed within the safety management study), 33 were considered controlled threats and five threats were considered as not currently controlled.

The proposed modification project area is classed as a T1 (residential) location, requiring a no-rupture design for the pipeline. External impacts will be controlled through the pipeline design incorporating measures such as separation (through depth of cover), and resistance to penetration (through pipeline wall thickness). No sensitive land has been identified within 50 m of the proposed alignment for the pipeline, which also complies with tolerable risk criteria specified in the NSW Department of Planning Hazardous Industry Planning Advisory Paper No. 4: Risk Criteria for Land Use Planning (DOP 2011).

Threats that are not currently controlled had actions raised for further analysis. Key actions included assessing the potential for low pipeline temperatures, and temperature below AEMO specification at Kembla Grange, and reviewing security requirements for above-ground facilities. Further details are also required on the proposed pipeline crossing adjacent to the temple along with continual work with Wollongong City Council on the proposed road crossing associated with the Northcliffe Drive extension. These actions aim to control the threats by providing additional details to what was available at the preliminary design stage.

6. Conclusion

This modification report has been prepared to document the potential impacts of the proposed modification and support Jemena's request to seek approval for the modification to the existing approval of the EGP. The assessment of the potential environmental impacts of the proposed modification as a modification to the EGP EIS under the EP&A Act has been endorsed by DPIE.

The proposed modification involves the construction of a new pipeline adjacent to the existing Port Kembla Lateral pipeline. The modification largely utilises the existing easement, with some deviation to avoid constraints.

The scoping report for the proposed modification identified the need for further assessment of the potential impacts of the modification project on biodiversity and Aboriginal cultural heritage, as well as completion of a safety management study to identify potential hazards and risks for the project. An assessment of the potential for land contamination and acid sulfate soils being encountered along the alignment has also been completed.

The assessment has concluded that the impacts of the proposed modification are consistent with those identified in the EGP EIS and can be managed with implementation of the mitigation measures in the development of a project specific CEMP and OEMP. Biodiversity offsets will be secured for the removal of vegetation, in accordance with the NSW Biodiversity Assessment Method.

7. References

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Appendix A – Contaminated land - preliminary site investigation

Appendix B - Biodiversity development assessment report

Appendix C - Aboriginal cultural heritage due diligence assessment

Appendix D – Pipeline safety management study

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