



2. THE PROPOSAL

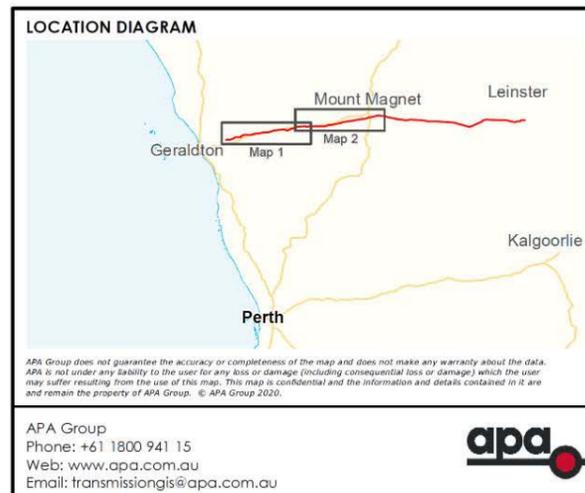
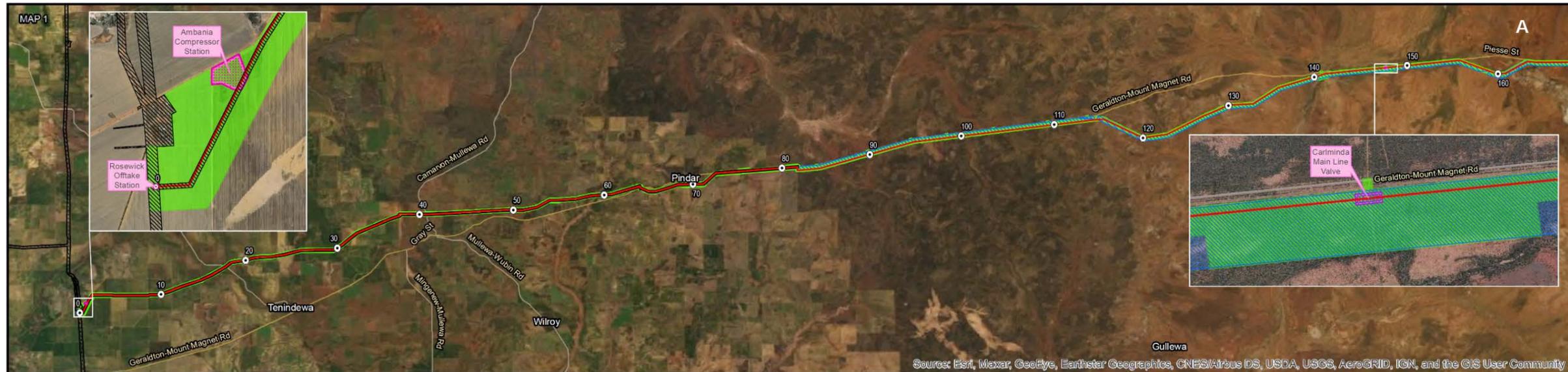
2.1 Background

APA Northern Goldfields Interconnect Pty Ltd is an entity of the APA Group (herein referred to as APA). APA is Australia's largest natural gas infrastructure business and is embarking on a new gas pipeline infrastructure project that will connect existing gas assets in the Mid West region with existing gas assets in the Northern Goldfields region of Western Australia (WA). The pipeline may also connect new gas production areas to these regions. The capacity across the Mid West Pipeline (MWP) System is expected to be fully contracted by end of Quarter 1 2021, and the GGP is already fully contracted. In order to meet the future natural gas needs of the Mid West and Goldfields regions, expansion of the existing pipeline network is required to facilitate new capacity.

The Proposal includes the construction and operation of the NGI pipeline and associated infrastructure. The NGI pipeline will be buried with the route commencing at Ambania (approximately 50 km east of Geraldton) and connecting into the existing GGP at approximately 40 km south of Leinster. The new pipeline will be approximately 580 km in length. The associated aboveground facilities will be sparsely located along the route of the pipeline and include a new compressor station in Ambania. The proposed NGI pipeline alignment and location of the aboveground facilities are shown in **Figure 2-1**. The construction of the Proposal will include clearing of up to approximately 2,286 ha (of which approximately 1,934 ha is native vegetation (85%)) within a development envelope of approximately 12,404 ha.

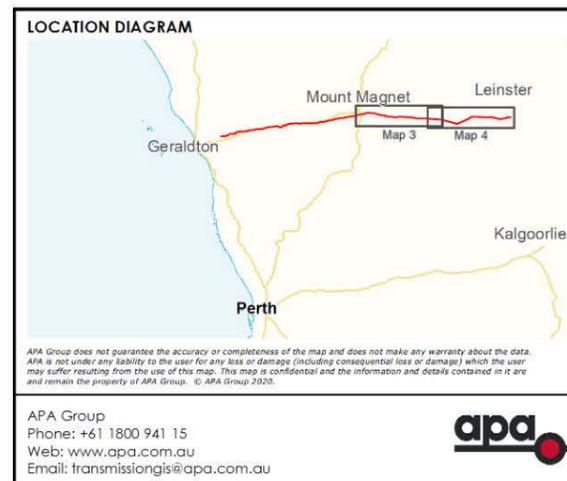
The Proposal traverses agricultural land, which includes a mix of cropping and pastoral land uses. The pipeline alignment will make use of existing infrastructure corridors, such as the DBNGP easement and GNEGIC (**Section 1.3.3**), where possible, in order to reduce the extent of disturbance required for the Proposal and in keeping with the proposed use of the land (**Figure 1-2**).

Finalisation of the preferred pipeline alignment has been informed by engagement with directly relevant landholders and other stakeholders (refer to **Section 3**), and the outcomes of environmental and engineering investigations.



- LEGEND:**
- Kilometre Point (KP)
 - Proposed Pipeline Alignment
 - ▨ Aboveground Facility
 - ▨ Development Envelope
 - ▨ Dampier to Bunbury Natural Gas Pipeline (DBNGP)
 - ▨ Geraldton North Eastern Goldfields Infrastructure Corridor (GNEGIC)

| | | | | |
|---|----------------|-------|------------|---------------|
| PROJECT: Northern Goldfields Interconnect | | | | |
| TITLE: Proposal Development Envelope | | | | |
| SUBTITLE: Map 1 and 2 | | | | |
| DATE: 25/11/2020 | | | | |
| DATA SOURCE: Pipeline, Development Envelope, KP's, Facilities: APA Group Coastline, Roads, Towns: LGATE DBNGP and GNEGIC: DMIRS | | | | |
| DOCUMENT NUMBER: 560-MAP-L-7835 | | | | |
| 1.0 | Issued for Use | AZ | | 25/11/20 |
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| Revision | Description | Drawn | Checked/QC | Approved DATE |
| SCALE: 1:470,000 @ A3 GDA2020 | | | | |



- LEGEND:**
- Kilometre Point (KP)
 - Proposed Pipeline Alignment
 - ▨ Aboveground Facility
 - Development Envelope

| | | | | | |
|--|----------------|-------|------------|----------|----------|
| PROJECT: Northern Goldfields Interconnect | | | | | |
| TITLE: Proposal Development Envelope | | | | | |
| SUBTITLE: Map 3 and 4 | | | | | |
| DATE: 25/11/2020 | | | | | |
| DATA SOURCE: Pipeline, Development Envelope, KP's, Facilities: APA Group Coastline, Roads, Towns: LGATE | | | | | |
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| Revision | Description | Drawn | Checked/QC | Approved | DATE |
| SCALE: 1:470,000 @ A3 GDA2020 | | | | | |
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Figure 2-1: Proposal Development Envelope
20199-RP-HSE-0001



2.2 Justification

2.2.1 Rationale and Benefits

The Proposal will create new opportunities for the supply of natural gas for mining and industrial development, as well as other growth opportunities in the Mid West and Goldfields regions. The Proposal will thereby facilitate growth and development of these sectors within regional WA, which will contribute to increased employment opportunities and economic growth.

The Proposal will also provide greater access to existing and new natural gas fields, which will support the regions processing and power generation growth requirements to provide ongoing, reliable and affordable energy solutions.

APA's investment in the NGI will help stimulate significant economic development in Western Australia and has the potential to unlock hundreds of millions of dollars of investment in the Mid West and Goldfields region, which is rich in gold, potash and battery minerals such as vanadium, nickel and rare earths.

The project represents a \$460 million investment that creates a platform for further growth as more and more resources customers seek energy solutions, including renewables and battery storage underpinned by natural gas.

2.2.2 Alternative Options Considered

Early alignment definition undertaken during the early concept stage of the Proposal resulted in a number of potential options being proposed. The subsequent NGI pipeline alignment route selection process identified up to six potential feasible alignments (**Figure 2-2**).

There was limited variability in the proposed alignment in the western portion of the NGI pipeline, between Ambania to approximately 50 km east of Mount Magnet, due to the philosophy of constructing the new pipeline with the DBNGP easement and GNEGIC corridor. However, the options considered in the eastern portion of the alignment, from 50 km east of Mount Magnet to the connection point at the GGP, were more varied with a total of six alignments (route options A to F) being identified.

The feasible route options identified were assessed for environmental, heritage, engineering and landholder constraints through detailed desktop studies. The outcomes of these studies informed the selection of the preferred NGI pipeline alignment. Key constraints considered in the route selection assessment process included:

- Preferential alignment with third party existing and proposed infrastructure corridors (DBNGP easement and GNEGIC);
- Environmental values, such as Threatened and Priority Flora, Threatened and Priority ecological communities, Threatened and Priority fauna (and important habitats), wetlands, lands managed by the Department of Biodiversity, Conservation and Attractions (DBCA) and environmentally sensitive areas (ESAs);
- Cultural heritage values, such as Aboriginal heritage sites (particularly Registered sites) and historic heritage sites;



- The interests of stakeholders such as landholders, Traditional Owners (including Native Title Determined Claims and Registered Claims), tenement holders and other interested parties.
- Land tenure types and coexistence, including existence of mining tenements and land uses (e.g. cropping and sheep/cattle farming);
- Constructability constraints such as topographic features, including hills, ridges, sand dunes, and watercourses that present difficult, unsafe, or costly challenges for construction or reinstatement;
- Geology, such as the presence of outcrops (that also have heritage and environmental values) soil types and substrate; and
- Engineering design criteria, including bends, road/infrastructure crossings and drainage.

After the strategic consideration of the potential options, Route F was selected as the preferred alignment. The key reasons for the selection of the route were intentional avoidance of an ESA, minimising the number of intersections with landholder interests, and minimising intersection with known sites of Aboriginal heritage importance.

Since the selection of the preferred alignment, further refinements have been made to take into consideration engagement with affected landholders and other stakeholders, and the outcomes of the baseline environmental surveys. Specifically, the refinements to the alignment and construction methodology have been made to:

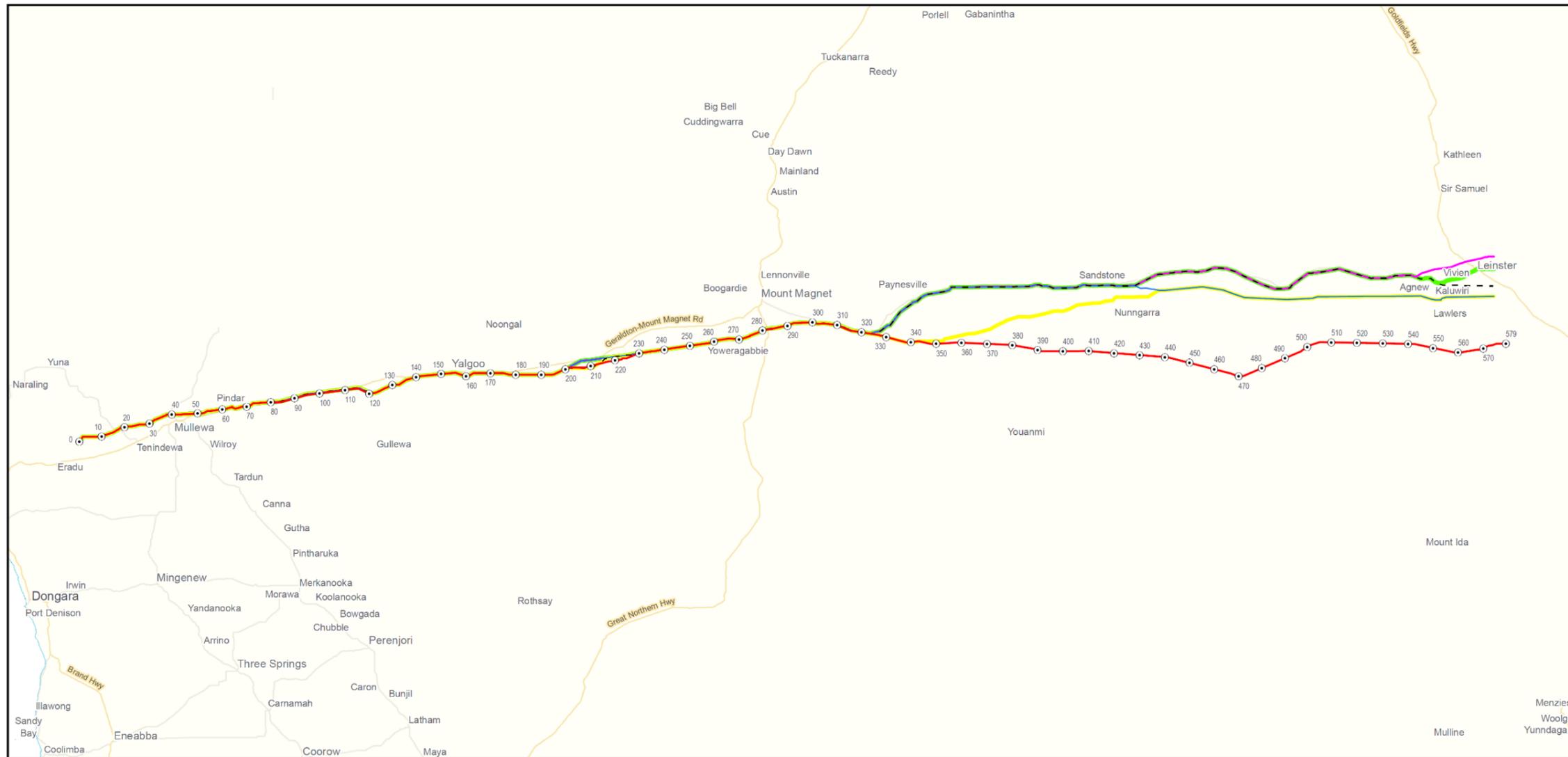
- Seek to avoid and minimise the potential impact to the Commonwealth-listed Threatened Ecological Community (TEC) and State-listed Priority Ecological Community (PEC) Eucalypt Woodlands of the Western Australian Wheatbelt (Eucalypt Woodlands), as mapped during the baseline flora and vegetation survey. The Eucalypt Woodlands TEC/PEC was mapped as occurring in four discrete locations (three patches), representing only approximately 0.3% of the total development envelope;
- Avoid disturbance to the Commonwealth and State listed Threatened *Eucalyptus beardiana* individuals. Where the alignment was unable to avoid traversing the area containing the single population of 55 individuals, the Proponent is proposing to underbore the pipeline within this area, as opposed to the standard open trench construction method. As a result, no individuals will be cleared;
- Seek to avoid disturbance to conservation significant fauna, specifically inactive Malleefowl mounds and Brush-tailed Mulgara burrows, and fauna habitats that support (or have the potential to support) conservation significant fauna, specifically granite outcrops, breakaways and banded ironstone ridges;
- Avoid and minimise disturbance to remnant native vegetation within the Murrum Station, through consultation with the pastoral station owner;
- Avoid disturbance to the Registered Site of Kerbar Cliffs of known Aboriginal heritage value, which comprises a number of engravings and paintings on the walls of a rock shelter. The alignment within the development envelope has been deviated to avoid intersection with the mapped buffer of this Registered Site. However, in recognition that the cliffs extend through the area (north-south



direction), the Proponent is proposing to underbore the pipeline within this area, where practicable, to avoid the potential for indirect impacts;

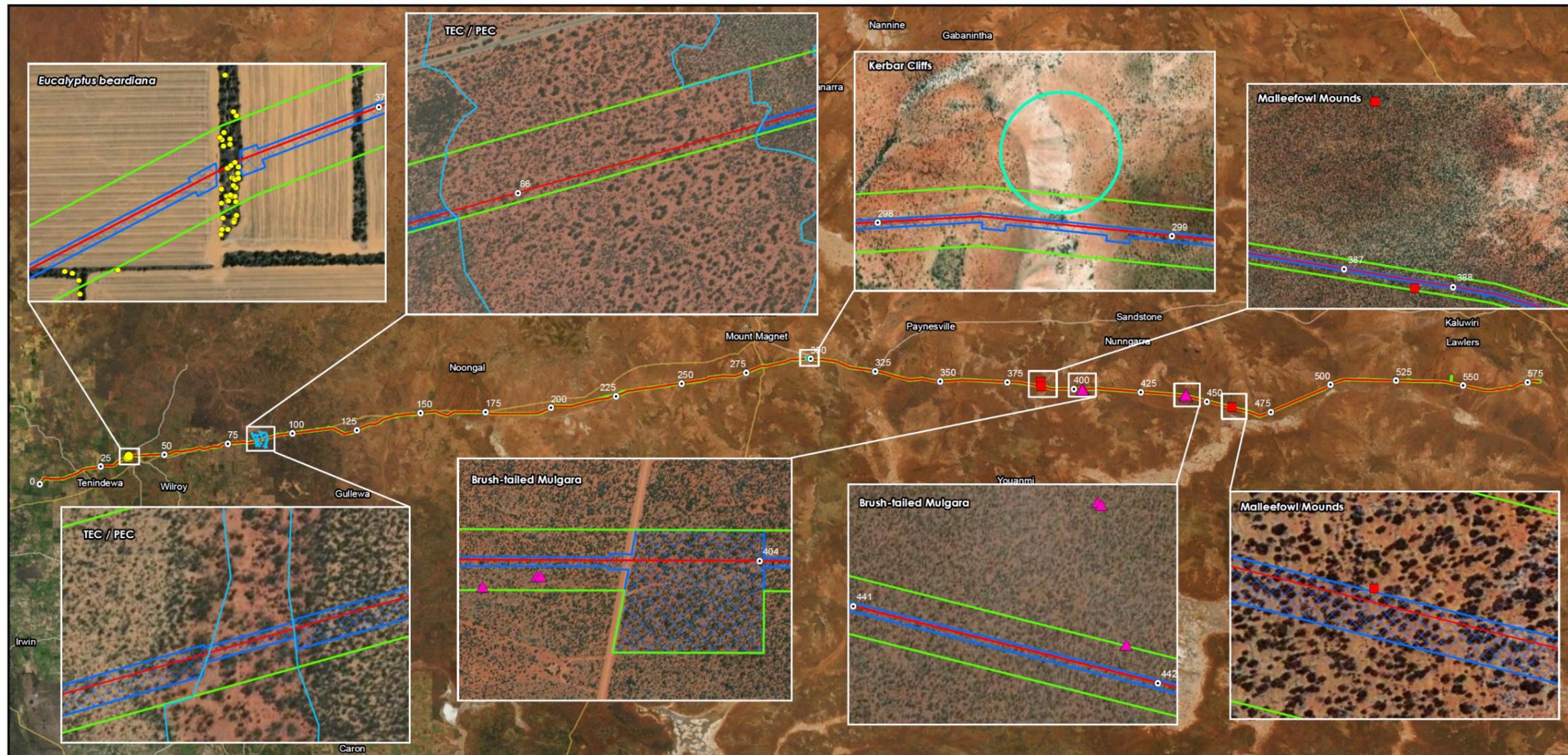
- Provide further separation distance between the pipeline construction disturbance footprint and the homestead on Murrum Station; and
- Relocate the NGI pipeline closer to an unused airstrip on Murrum Station, to reduce the extent of vegetation clearing required for the CROW, as communicated by the landholder.

The key environmental and heritage 'avoidance areas' identified for the Proposal are shown in **Figure 2-3**.



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| <p>LOCATION DIAGRAM</p> <p style="font-size: small;">APA Group does not guarantee the accuracy or completeness of the map and does not make any warranty about the data. APA is not under any liability to the user for any loss or damage (including consequential loss or damage) which the user may suffer resulting from the use of this map. This map is confidential and the information and details contained in it are and remain the property of APA Group. © APA Group 2020.</p> <p>APA Group Phone: +61 1800 941 15 Web: www.apa.com.au Email: transmission@apa.com.au</p> | <p>LEGEND:</p> <ul style="list-style-type: none"> ⊙ Kilometre Point (KP) — Proposed Pipeline Alignment (Route F) <p>Superseded Alignment Options</p> <ul style="list-style-type: none"> — Route A — Route B - - - Route C — Route D — Route E | <p>PROJECT: Northern Goldfields Interconnect</p> <p>TITLE: Pipeline Route Alignment Options</p> <p>SUBTITLE:</p> <p>DATE: 27/11/2020</p> <p>DATA SOURCE: Pipelines, KP's, Facilities: APA Group Coastline, Roads, Towns: LGATE</p> <p>DOCUMENT NUMBER: 560-MAP-L-7833</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <td>1.0</td> <td>Issued for Use</td> <td>AZ</td> <td></td> <td>27/11/20</td> </tr> <tr> <td>0.1</td> <td>Draft</td> <td>AZ</td> <td></td> <td>19/11/20</td> </tr> <tr> <td>Revision</td> <td>Description</td> <td>Drawn</td> <td>Checked/QC</td> <td>Approved DATE</td> </tr> </table> <p>SCALE: 1:1,730,000 @ A3</p> <p style="text-align: right;">GDA2020</p> | 1.0 | Issued for Use | AZ | | 27/11/20 | 0.1 | Draft | AZ | | 19/11/20 | Revision | Description | Drawn | Checked/QC | Approved DATE |
| 1.0 | Issued for Use | AZ | | 27/11/20 | | | | | | | | | | | | | |
| 0.1 | Draft | AZ | | 19/11/20 | | | | | | | | | | | | | |
| Revision | Description | Drawn | Checked/QC | Approved DATE | | | | | | | | | | | | | |

Figure 2-2: NGI Pipeline Route Alignment Options Considered



LOCATION DIAGRAM

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LEGEND:

- Kilometre Point (KP)
- Proposed Pipeline Alignment
- ▨ Indicative Disturbance Footprint
- Development Envelope
- Roads
- Freeway
- Highway
- Main, Sealed
- *Eucalyptus beardiana* (Threatened)
- Malleefowl (Threatened) Mounds (Inactive)
- ▲ Brush-tailed Mulgara (Priority 4)
- Kerbar Cliffs (Registered Site)
- TEC / PEC (Focused Vision 2020)
- Eucalypt woodlands of the Western Australian Wheatbelt

PROJECT: Northern Goldfields Interconnect

TITLE: Proposal Avoidance Areas

SUBTITLE:

DATE: 11/01/2021

DATA SOURCE:
KPs, Proposed Alignment, Development Envelope: APA Group.
Towns, Roads: Landgate.
Fauna Records: Kingfisher & Focused Vision.
Kerbar Cliffs: DPLH, TEC / PEC: Focused Vision.

DOCUMENT NUMBER: 560-MAP-L-7849

| Revision | Description | Drawn | Checked/QC | Approved | DATE |
|----------|-------------|-------|------------|----------|----------|
| 0.3 | Revision | SP | | | 11/01/21 |
| 0.2 | Revision | SP | KM | | 3/12/20 |
| 0.1 | Draft | SP | KM | | 30/11/20 |

SCALE: 1:1,650,000 @ A3 GDA2020

Figure 2-3: Proposal Avoidance Areas



2.3 Proposal Description

APA is proposing to implement the Proposal, which is to construct a new 580 km gas pipeline with a nominal diameter of 300 mm starting at Ambania and connecting into the existing GGP at approximately 40 km south of Leinster. The Proposal includes the NGI pipeline and compression station in Ambania, with associated aboveground facilities located sparsely along the route of the pipeline. The development envelope for the Proposal includes the area to be occupied by permanent infrastructure as well as temporary construction infrastructure (**Figure 2-1**).

Table 2-1 formally identifies the Proposal and proponent, and provides a short description of the Proposal. Further Proponent details are provided in **Section 1.2**.

The key physical and operational elements of the Proposal and the locations and proposed extents of these elements are presented in **Table 2-2**. The summary of the key Proposal characteristics has been prepared in accordance with the EPA Instructions and template: Defining the key proposal characteristics (EPA, 2017).

The Proposal is further described in **Section 2.5** to **Section 2.10**, with the development envelope shown on **Figure 2-1**. The development envelope is equivalent to the Pipeline Licence, which APA have submitted to DMIRS on 2 December 2020. The Proposal has an indicative disturbance footprint of up to approximately 2,286 ha, within the overall development envelope of approximately 12,404 ha. Further discussion of the development envelope and indicative disturbance footprint is provided in **Section 2.3.1**.

Table 2-1: Summary of the Proposal

| Summary of the Proposal | |
|-------------------------|---|
| Proposal title | Northern Goldfields Interconnect Pipeline |
| Proponent name | APA Northern Goldfields Interconnect Pty Ltd (part of APA Group) |
| Short description | The Proposal is to construct and operate a new 580 km long buried 300 mm diameter gas pipeline between Ambania and the existing GGP. The Proposal also includes supporting aboveground facilities, including a compressor station at Ambania and other supporting infrastructure. |



Table 2-2: Key Proposal Characteristics

| Element | Location | Proposed Extent |
|--|--|--|
| Infrastructure | | |
| Buried gas pipeline | Linear infrastructure extending the length of the development envelope (Figure 2-1). | Clearing or disturbance within the development envelope of up to approximately 2,286 ha, comprised of approximately: |
| Aboveground facilities, including: <ul style="list-style-type: none"> ▪ Rosewick offtake; ▪ Ambania compressor station; ▪ Yoweragabbie scraper station; ▪ Mainline valve stations; ▪ Wildara delivery station; and ▪ Weebo Inlet Station | Located at various locations along the pipeline (Figure 2-1). The location of the Yoweragabbie Scraper Station will have suitable land available for the future option of the installation of an adjoining compressor station. | <ul style="list-style-type: none"> ▪ 1,934 ha of native vegetation; and ▪ 353 ha of cleared land/pasture. Within this, the aboveground facilities will require the following approximate permanent disturbance: <ul style="list-style-type: none"> ▪ Rosewick offtake – disturbance of up to 0.1 ha; ▪ Ambania compressor station – disturbance of up to 4.1 ha; ▪ Yoweragabbie scraper station – disturbance of up to 1.1 ha (inclusive of allowance for a future compressor); ▪ Mainline valve stations – total disturbance of up to 0.6 ha; ▪ Wildara delivery station – disturbance of up to 0.5 ha; and ▪ Weebo inlet station– disturbance of up to 0.1 ha. |
| Construction and Support Facilities | | |
| Construction right of way (CROW), construction turn-around and passing bays and work areas, e.g. for underboring (i.e. horizontal directional drilling) | Located adjacent to the pipeline during construction. | Clearing or disturbance within the development envelope of up to 1,850 ha. Generally a 30 m wide corridor with extra areas for turnarounds and work areas. |
| Pipeline laydown areas and construction facilities, including construction camps with mobile offices and | Where practicable, the pipeline laydown areas and temporary construction areas will be located in areas of existing disturbance. | Clearing or disturbance within the development envelope of up to 395 ha. Clearing or disturbance within the development envelope of up to 395 ha. |



| Element | Location | Proposed Extent |
|--|---|---|
| ablutions, and equipment laydown areas | <p>Up to six construction camps are proposed to support the Proposal. The construction camps will be located within the development envelope or broader surrounds. In those circumstances where the camps are located external to the development envelope, they will be in existing cleared areas.</p> <p>The mobile offices and equipment laydown areas will be situated within the construction camps.</p> | <p>Up to six construction camps may be required, each with associated offices, ablutions and laydown areas.</p> <p>Up to approximately eight turkey nests may be required for the Proposal. Each turkey nest is anticipated to be approximately 110 m x 90 m.</p> |
| Turkey nests | Located adjacent to the pipeline during construction. | |
| Construction access points/tracks | <p>The access points/tracks will provide access to the CROW. Construction access will preferentially use existing tracks, where possible. Existing tracks may require improvement works, including widening, to facilitate access of larger vehicles (trucks) and machinery/equipment.</p> | Clearing or disturbance of up to 42 ha may be cleared for construction access. |
| Groundwater bore(s) | <p>If required, a groundwater bore would be within the vicinity of the Ambania compressor station.</p> <p>Any other additional groundwater bores, if required along the NGI pipeline, will be identified by the construction Contractor and subject to a water licence (refer to Section 2.6.6).</p> | The groundwater bore would be constructed in an existing cleared area on agreement with the landholder. No clearing of remnant native vegetation is anticipated. |



| Element | Location | Proposed Extent |
|--|---|---|
| Operational Elements | | |
| Operation of the constructed NGI pipeline and associated above ground facilities | | APA will operate the pipeline system in accordance with regulatory and APA standards, and standard management and maintenance practices. |
| Operation right of way (ROW) | Located adjacent to the as-built NGI pipeline | The operational area for the pipeline will generally require a 4 m wide access track and a mulched/cleared section over the buried pipeline and between the pipeline warning markers. The access track will be maintained as a ROW along the NGI pipeline to provide access for operational site maintenance, including servicing, equipment and integrity checks and general site maintenance. The ROW will be located within the Pipeline Licence area. The establishment of the operational ROW will be limited in the western section of the pipeline (between approximately KP0 to KP80) to minimise the alignment's intersection with agricultural properties. It is anticipated that the operational ROW will have a disturbance area of approximately 200 ha. |

2.3.1 Development Envelope

The Proposal will be constructed and operated within the development envelope shown in **Figure 2-1**. This development envelope will be equivalent to the Pipeline Licence Area granted pursuant to the Petroleum Pipeline Licence under the *Petroleum Pipelines Act 1969*.

The development envelope accommodates the NGI pipeline and permanent aboveground facilities, including the potential future adjoining compressor station to the Yoweragabbie scraper station (refer to **Section 2.5.2**), and associated construction areas. The development envelope comprises an area of approximately 12,404 ha, of which approximately 13% (1,547 ha) is pre-existing cleared areas. As outlined in **Section 1.3.3**, the siting and extent of the development envelope has been developed to maximise co-location with the existing DBNGP corridor and GNEGIC (**Figure 2-1**).

Disturbance required for the Proposal will be contained within, and form a sub-set of, the development envelope. The indicative disturbance footprint of the NGI pipeline



and permanent aboveground facilities is approximately 2,286 ha, as shown in **Figure 2-1**. This includes disturbance within the development envelope required for temporary construction activities, such as laydown and work areas, construction camps, construction access points/tracks, and turkey nests. These will be preferentially located in areas with limited and/or pre-existing disturbed vegetation, where practicable. These areas will also avoid known environmental or heritage sensitivities (refer to **Section 4**). The final disturbance footprint will be refined as the detailed design stage progresses, while seeking to utilise existing cleared areas where possible and minimise potential impacts to known environmental or heritage values (refer to **Section 4**).

2.4 Proposal Timing

APA anticipates that construction works will take place between Quarter 3 2021 and Quarter 2 2022. APA intends final commissioning to be complete by end of Quarter 2 2022, with first gas supplied shortly after. The specific timing and schedule of the Proposal will be influenced by approvals, design, procurement, contracting and construction.

The pipeline will be constructed progressively. It is proposed that construction will progress from the Ambania compressor station to the tie-in point with the GGP. It is anticipated that construction will be completed by a single, mainline construction workforce. However, additional workforces may be established for discrete sections to expedite works. The specific construction work program will be defined by the selected construction Contractor.

2.5 Proposal Infrastructure

2.5.1 Pipeline

The NGI pipeline will include an approximately 580 km long natural gas, high pressure pipeline (DN300, i.e. 300 mm diameter) with connection into associated aboveground facilities, as described in detail in **Section 2.5.2 (Figure 2-1)**. The pipeline will be designed for a minimum operating life of 40 years. The pipeline design specifications are detailed in **Table 2-3**.

The NGI pipeline will be underground (i.e. buried). The depth of cover for the length of the pipeline will comply with the requirements of the Australian and New Zealand Standard (AS/NZ) 2885.1 *Australian Pipeline Standard – Design and Construction*. The pipeline will generally be buried at a minimum depth of 0.75 m (**Table 2-4**). Where the pipeline is adjacent to the Mid West Pipeline, the minimum depth of cover will be consistent with the existing depth of cover for the Mid West Pipeline.

The minimum depth of cover may be deeper (up to approximately 2 m–5 m) at specific locations through consultation, and where appropriate, with landholders or to accommodate horizontal directional drilling (HDD) construction methods. The minimum depth of cover may be increased at third party infrastructure crossing locations (e.g. telecommunication infrastructure, water infrastructure, roads/tracks and railways), watercourses and depending on the method of construction (**Table 2-4**).



Table 2-3: NGI Pipeline Design Specifications

| Pipeline Design Specifications | |
|--------------------------------------|--|
| Substance to be conveyed | Natural gas |
| Pipeline outside diameter | 300 mm (DN 300) |
| Pipe wall thickness | Standard wall thickness of 7.5 mm, with heavy wall thickness of 10.31mm |
| Pipeline material of construction | Carbon steel pipe with specification to American Petroleum Institute (API) 5L X60 PSL2 HFW line pipe |
| Design life | 40 years |
| Design capacity (maximum) | 4.0 million standard m ³ /day |
| Design temperature (maximum) | 65°C |
| Design temperature (minimum) | -10°C |
| Design pressure (maximum) | 15.3 MegaPascals (MPa) |
| Maximum allowable operating pressure | 15.3 MPa |

2.5.2 Permanent Aboveground Facilities

The NGI pipeline will comprise the following associated aboveground assets and facilities (**Figure 2-1**):

- Rosewick offtake;
- Ambania compressor station;
- Yoweragabbie scraper station;
- Two Mainline Valve (MLV) Stations; these being Carlinda MLV and Dandaraga MLV;
- Wildara delivery station; and
- Weebo inlet station – below ground but adjacent to the Wildara delivery station.

Further detail on these facilities is provided below.

2.5.2.1 Rosewick Offtake

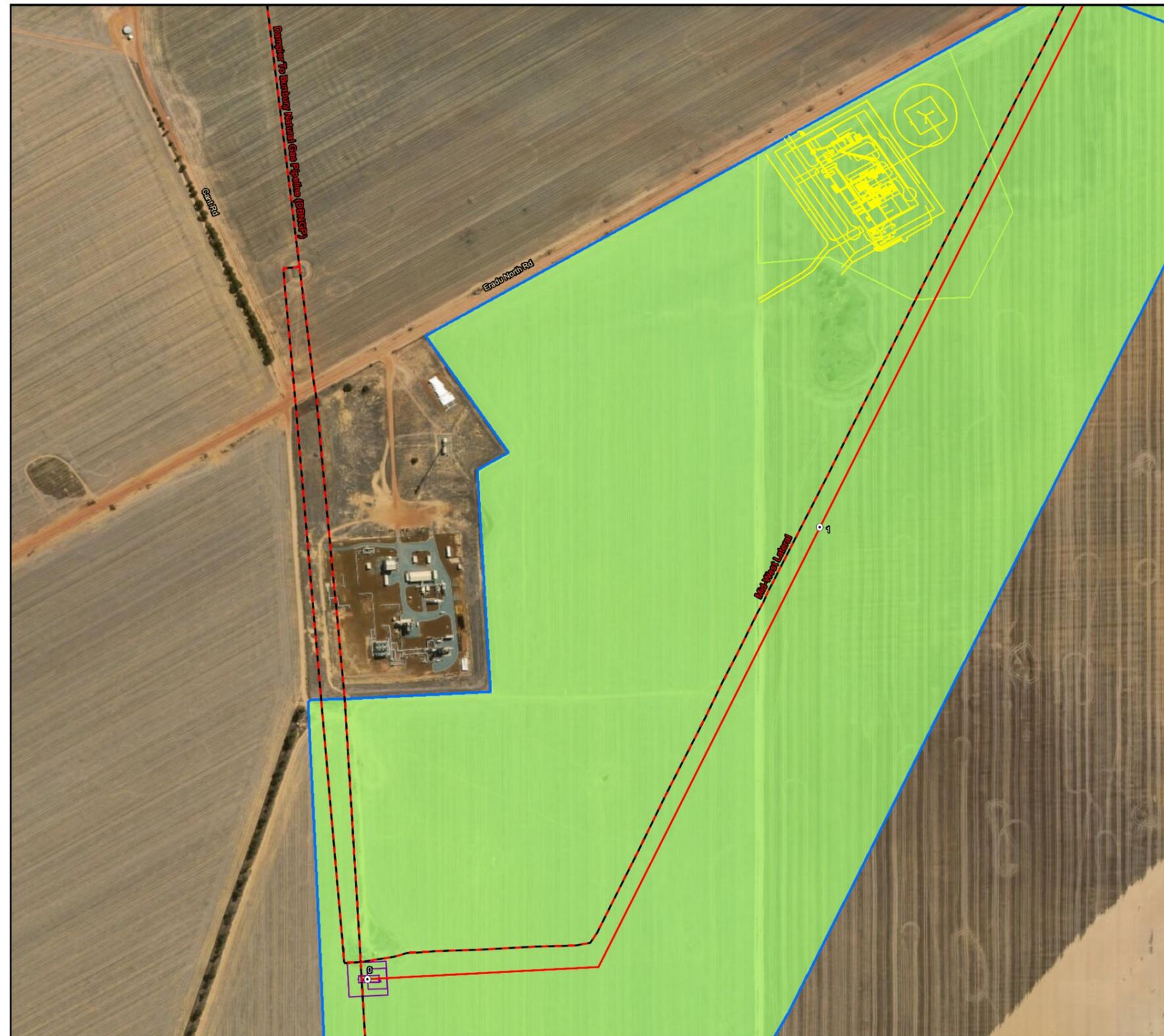
The Rosewick offtake is proposed to be located at KP0, which is adjacent to the DBNGP and immediately south of the Eradu North Meter Station for the existing APA MWP offtake station. The offtake will be located in an existing disturbed area (paddock) and be approximately 0.1 ha (approximately 50 m x 50 m) (**Figure 2-4**).



The Rosewick offtake will enable gas to flow from the DBNGP to the NGI pipeline and will consist of a:

- Fenced compound with at least one access gate;
- Tie-in to the DBNGP with electrical isolation;
- Manual isolation valve with pressurisation bypass; and
- Monolithic Insulating Joint (MIJ), and buried outlet to the Ambania compressor station.

The Rosewick offtake will not require any power or water supply for operations.



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PROJECT: Northern Goldfields Interconnect
TITLE: Ambania Compressor Station and Rosewick Offtake Station
SUBTITLE:

DATE: 15/12/2020

DATA SOURCE:
 KPs, Proposed Alignment, Ambania and Rosewick Stations, Development Envelope, Disturbance Footprint: APA Group Geonoma, Roads, Existing Pipelines, Coastline: LGATE Aerial Imagery: ESRI

LEGEND:

- Kilometre Point (KP)
- Proposed Pipeline Alignment
- Existing Pipeline Alignment
- Ambania Compressor Station (Indicative Layout)
- Rosewick Offtake Station (Indicative Layout)
- Indicative Disturbance Footprint
- Development Envelope

DOCUMENT NUMBER: 560-MAP-L-7847

| Revision | Description | Drawn | Checked/QC | Approved | Date |
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| 0.1 | DRAFT | AZ | | | 25/11/2020 |

SCALE: 1:5,500 @ A3

Coordinate System: GDA2020

LOCATION DIAGRAM

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Figure 2-4: Rosewick Offtake and Ambania Compressor Station Locality Plan with Indicative Layout



2.5.2.2 Ambania Compressor Station

The Ambania compressor station will be constructed near the start of the NGI pipeline at approximately KP1.5. As with the Rosewick offtake, the compressor station is proposed to be in a pre-existing disturbed area (paddock). Access to the station will be via existing roads and tracks. The compressor station will take gas from the Rosewick offtake via an interconnecting pipeline. The compressor station will then deliver the gas to the NGI pipeline to be directed towards the tie-in connection to the GGP (Weebo inlet station).

The compressor station will be approximately 4.1 ha (approximately 370 m x 190 m) and consist of two gas turbine driven gas compressor units (expected to be Solar Turbines Centaur C50 compressor packages or similar) that will pressurise the gas for transportation through the NGI pipeline to the GGP. The compressor station will have station isolation, pressurisation and blowdown, which will be provided by the station valve skid. Two air cooled heat exchangers will be installed to cool the gas discharging into the pipeline when the compressor is operating under maximum design conditions.

The station will include a vent system, comprising a low pressure vent, piping and silencer to AS/NZS 2885 and API Standard RP 521 *Guide for Pressure-Relieving and Depressuring Systems* to meet the dispersion and noise requirements for the compressor station. The blowdown vent stack, which will allow the compressor station to be depressurised during any system upset or in emergency conditions, will be located at a safe distance from the compressor station and access road to the site. The station will also be equipped with alarms and shutdowns, as protective systems of the gas turbine and gas compressor, and include fire and gas detection and fire suppression system. Site control, communications, remote telemetry and Supervisory Control And Data Acquisition (SCADA) systems will also be installed.

A bi-directional pig trap with the associated piping will be installed downstream of the compressor station valves and MLV to launch pigs to the Yoweragabbie scraper station. Intelligent pigs are used to inspect the pipeline without stopping the flow of gas in the pipeline.

The station compressor design will be based on a flow requirement only from the DBNGP into the GGP. However, the piping design will allow for future piping modifications to enable compression from the GGP to DBNGP.

The compressor station will comprise of various filtration and separation equipment used to remove liquids and impurities. An oily water system will be installed to collect water and any small oil spills from the facility, which will drain into a drum bund. A closed liquids drain tank will be installed as a collection tank for automatic and manual dump systems of the gas turbine compressor unit. The tank will be designed, constructed, tested and installed in accordance with Australian Standard (AS) 1940 *Storage and Handling of Flammable and Combustible Liquids* and AS1692 *Steel tanks for flammable and combustible liquids*. The tank will be fully banded and made to allow manual operation of the pump to remove the liquids from the tank for appropriate disposal, if required.

The compressor station site will also include a maintenance workshop/warehouse and office, temporary accommodation and crib/toilet facilities. As no external electrical power is available to the site, power will be generated on site for construction and



permanent operational purposes. Diesel generators will be used to provide power during construction. For operations, micro turbines are proposed to be the primary electrical site power supply, with gas generators operating in a standby configuration.

A new groundwater bore may be installed to provide onsite water usage during operations with potable water to be transported to site for consumption.

The compressor station will be fenced, with a firebreak maintained, and site lighting and lightning protection provided.

A typical comparable compressor station, the DBNGP compressor station 7 (located approximately 700 m south-west of the proposed Ambania compressor station), is shown in **Figure 2-5**.



(source: Dampier to Bunbury Pipeline, 2020)

Figure 2-5: Typical Comparable Compressor Station – DBNGP Compressor Station