

Santos

ATTACHMENT 2

(UPDATED – REV 2) REGIONAL INTERESTS DEVELOPMENT APPLICATION ASSESSMENT REPORT

RPI24/005 SANTOS (HECTOR 2, HECTOR SOUTHEAST 3 & ROULETTE 1 DEVELOPMENT)

09/10/2024

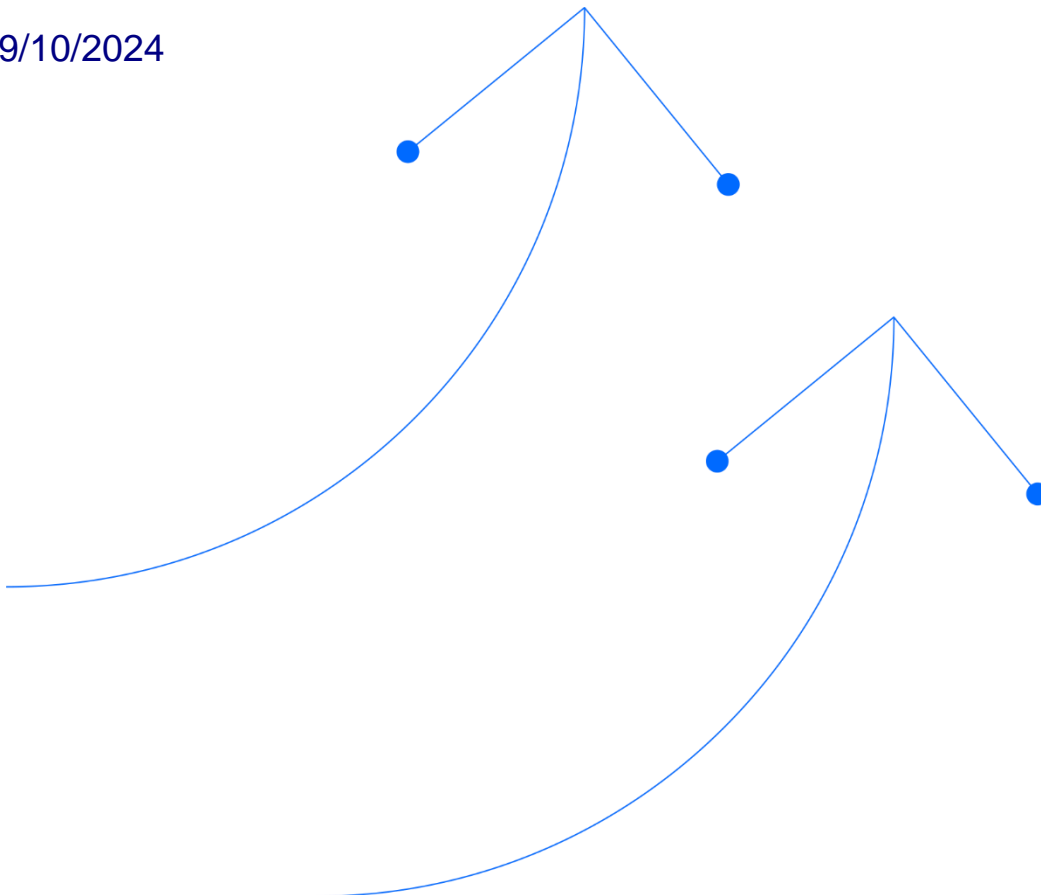


Table of contents

Revision	3
Abbreviations and Definitions	3
1. Introduction	5
1.1. Applicant and Related Approvals	5
2. Proposed Development	7
2.1. Hector 2, Hector Southeast 3 and Roulette 1 Development	1
3. Environmental Attributes	4
3.1. General	5
3.2. Land Use	5
3.3. Hydrological Processes and Beneficial Flooding	7
3.4. Water Quality	9
3.5. Geomorphic Processes	10
3.6. Riparian Processes and Wildlife Corridors	10
4. Potential Impacts to Environmental Attributes and Proposed Mitigation	15
4.1. Hydrological Processes and Beneficial Flooding	15
4.2. Water Quality	15
4.3. Geomorphic Processes	16
4.4. Riparian Processes and Wildlife Corridors	16
5. Required Outcome Assessment	18
6. References	20
Appendix A – Proposed Well Lease Layout During Drilling	21
Appendix B – Typical Buried Pipeline Right-of-Way	22
Appendix C – Typical Road Cross Section for Class D Roads	23

Revision

Revision Version	Date	Further Information
Rev 1	4 September 2024	Original Submission
Rev 2	9 October 2024	Response to Information Request

Abbreviations and Definitions

Acronym / Term	Description
°C	Degrees Celsius
ABARES	Australian Bureau of Agricultural and Resource Economics
BOM	Bureau of Meteorology
CDZ	Construction Disturbance Zone
DERM	Department of Environment and Resource Management, Queensland
DES	Department of Environment and Science, Queensland
DESI	Department of Environment, Science and Innovation, Queensland
DoR	Department of Resources, Queensland
DSDMIP	Department of State Development, Manufacturing, Infrastructure and Planning, Queensland
EA	Environmental Authority
ENSO	El-Nino Southern Oscillation
GAB	Great Artesian Basin
GDE	Groundwater Dependent Ecosystem
GES	General Ecological Significance
HES	High Ecological Significance
km	Kilometres
km ²	Square kilometres
Linear infrastructure	Powerlines, pipelines, roads and access tracks
m	Meters
mm	Millimetres
P&G Act	<i>Petroleum and Gas (Production and Safety) Act 2004</i>
PL	Petroleum Lease
PPL	Petroleum Pipeline Lease
Proposed activities	Construction and operation of one buried oil pipeline (Patroclus to Genoa)
RE	Regional Ecosystem
RIDA	Regional Interests Development Approval
RoW	Right of Way
RPI Act	<i>Regional Planning Interests Act 2014</i>

Acronym / Term	Description
RPI Reg	<i>Regional Planning Interests Regulation 2014</i>
RSI	Residual Significant Impact
SEA	Strategic Environmental Area
Site	The footprint of the proposed activities including the outer construction boundary

1. Introduction

Santos Limited (Santos) is the principal holder of Petroleum Licence (PL) 1046 on which part of the proposed Hector 2, Hector Southeast 3 and Roulette 1 development is planned to occur. As described in Table 1 and illustrated in **Error! Reference source not found.**, the proposed Hector 2, Hector Southeast 3 and Roulette 1 development is comprised of three new conventional petroleum wells and supporting infrastructure (well leases, gas flowlines, access tracks and borrow pits).

Table 1: Summary of the Proposed Development

Development Name	Development Description	Tenement	Associated EA	Property Name	Lot on Plan
Hector 2, Hector Southeast 3 and Roulette 1	Three new conventional petroleum wells and supporting infrastructure including well leases, flowlines, access tracks and borrow pits	PL 1046	EPPG03517415	Orientos & Nappa Merrie Stations	2528PH429 & 450SP274333

The proposed Hector 2 Hector Southeast 3 & Roulette 1 development is located partly within the Channel Country Strategic Environmental Area (SEA) which, under Section 7 of the *Regional Planning Interests Act 2014* (RPI Act), is an 'area of regional interest'. A Regional Interest Development Approval (RIDA) is required to carry out a resource activity within an 'area of regional interest' (unless the resource activity is an 'exempt resource activity' under Part 2 Division 2 of the RPI Act, which the proposed development is not).

This assessment report has been prepared as part of a RIDA application for the proposed Hector 2, Hector Southeast 3 and Roulette 1 development. It has been prepared in accordance with the *Statutory Guideline 01/14: How to make an assessment application for a regional interests development approval under the Regional Planning Interests Act 2014* (DSDMIP, 2019) and *Statutory Guideline 05/14: Carrying out resource activities and regulated activities within a Strategic Environmental Area* (Queensland Treasury, 2020). It contains:

- A description of the proposed development (Section 2);
- A description of the relevant environmental attributes of the land subject to the application (Section 3);
- An evaluation of the potential impacts on the relevant environmental attributes as a result of the proposed development (Section 4); and
- An assessment of how the proposed development meets the required outcome for SEAs in Schedule 2, Part 5 of the *Regional Planning Interests Regulation 2014* (RPI Reg) (Section 5).

1.1. Applicant and Related Approvals

Santos Limited, is the holder of PL 1046 and associated Environmental Authority (EA) EPPG03517415, and primary applicant for PPL 2053 and associated Environmental Authority and is therefore an *eligible person* under s28 of the RPI Act as per Part 5 s15 (2A), this application relates to a petroleum resource activity involving conventional gas or oil (as per the definition in Part 5 Section 15 (3) of the RPI Regulation) which will be carried out under a petroleum lease that has been in effect before 22 December 2023.

Other RIDAs associated with tenure PL 1046 include:

- RPI20/001 Santos - Hector East
- RPI21/031 Santos - Hector Southeast 2
- RPI21/029 Santos – Hector 3D

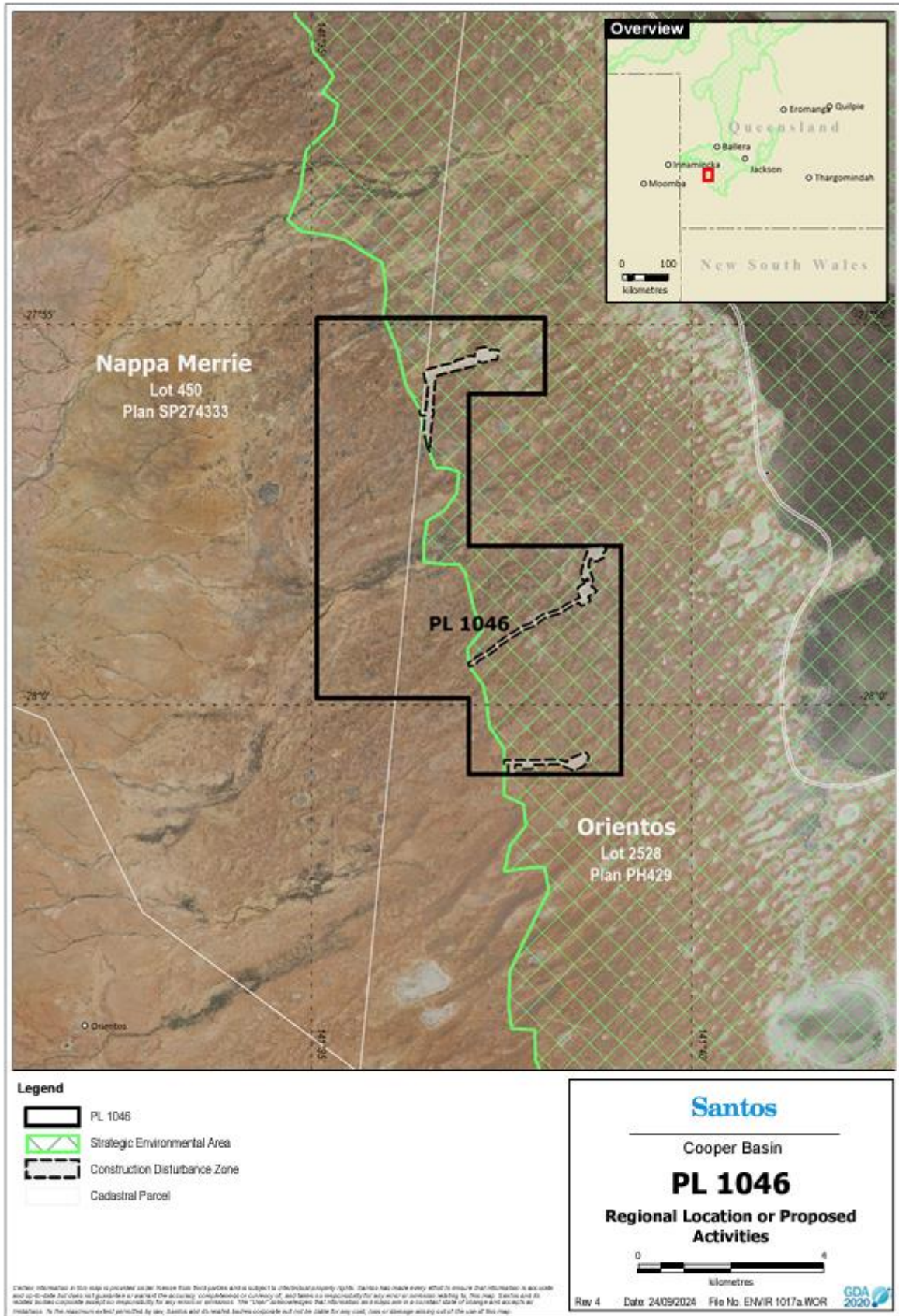


Figure 1: Regional Location of the Proposed Development

2. Proposed Development

Santos is proposing to construct and operate the Hector 2, Hector Southeast 3 and Roulette 1 development which is comprised of three new conventional petroleum wells and supporting infrastructure including well leases, flowlines, access tracks and borrow pits on PL 1046 (refer on Figure 2 and Section 2.1). The maximum area of disturbance within the Channel Country SEA associated with the proposed development is 42.37 ha (Table 2).

The proposed location for the new wells and supporting infrastructure for the Hector 2, Hector Southeast 3 and Roulette 1 development is shown in **Error! Reference source not found.**. The location for the new wells and supporting infrastructure has been selected in accordance with the following site planning principles:

- Maximise the use of areas of pre-existing disturbance;
- In order of preference, avoid, minimise and mitigate any impacts, including cumulative impacts, on areas of native vegetation and other areas of ecological value;
- Minimise disturbance to land that may result in land degradation;
- In order of preference, avoid then minimise isolation, fragmentation, edge effects and dissection of tracts of vegetation;
- In order of preference, avoid then minimise clearing of native mature trees;
- Maximise co-location of linear infrastructure corridors; and
- Minimise the width of linear infrastructure corridors to the greatest practicable extent.

Also shown in **Error! Reference source not found.** is a Construction Disturbance Zone (CDZ) which totals 165.34ha. This CDZ area will not be the full extent of disturbance and has been defined to allow flexibility for final well and borrow pit placement and linear infrastructure alignments. As the design of the Hector 2, Hector Southeast 3 and Roulette 1 development progresses, the preferred location for the new wells and supporting infrastructure may shift within the CDZ to avoid cultural heritage, environmental and engineering constraints. However, the maximum area of disturbance within the Channel Country SEA and CDZ will not exceed the disturbance outlined in Table 2.

The GIS files provided with this RIDA application reflect the current proposed location for the new wells and supporting infrastructure as shown in **Error! Reference source not found.**. Therefore, they are also subject to change (within the bounds of the CDZ and maximum area of disturbance) as the design of the Hector 2, Hector Southeast 3 and Roulette 1 development progresses.

Table 2: Proposed Resource Activities

	Location	Resource Activity	Area of disturbance (hectares)
Channel Country Strategic Environmental Area (SEA)	Lot 2528 Plan PH429	Hector 2	
		1 Well Pad	20.06
		2 Borrow Pits	
		Temporary Work Areas	
		Access Tracks	
		Buried Oil Flowline	
		Buried Gas Flowline	
		Hector Southeast 3	
		1 Well Pad	9.27
		3 Borrow Pits	

	Location	Resource Activity	Area of disturbance (hectares)
		Access Tracks	
		Buried Oil Flowline	
		Roulette 1	
		1 Well Pad	13.04
		2 Borrow Pits	
		Access Tracks	
		Buried Oil Flowline	
		Buried Gas Flowline	
Total Disturbance			42.37

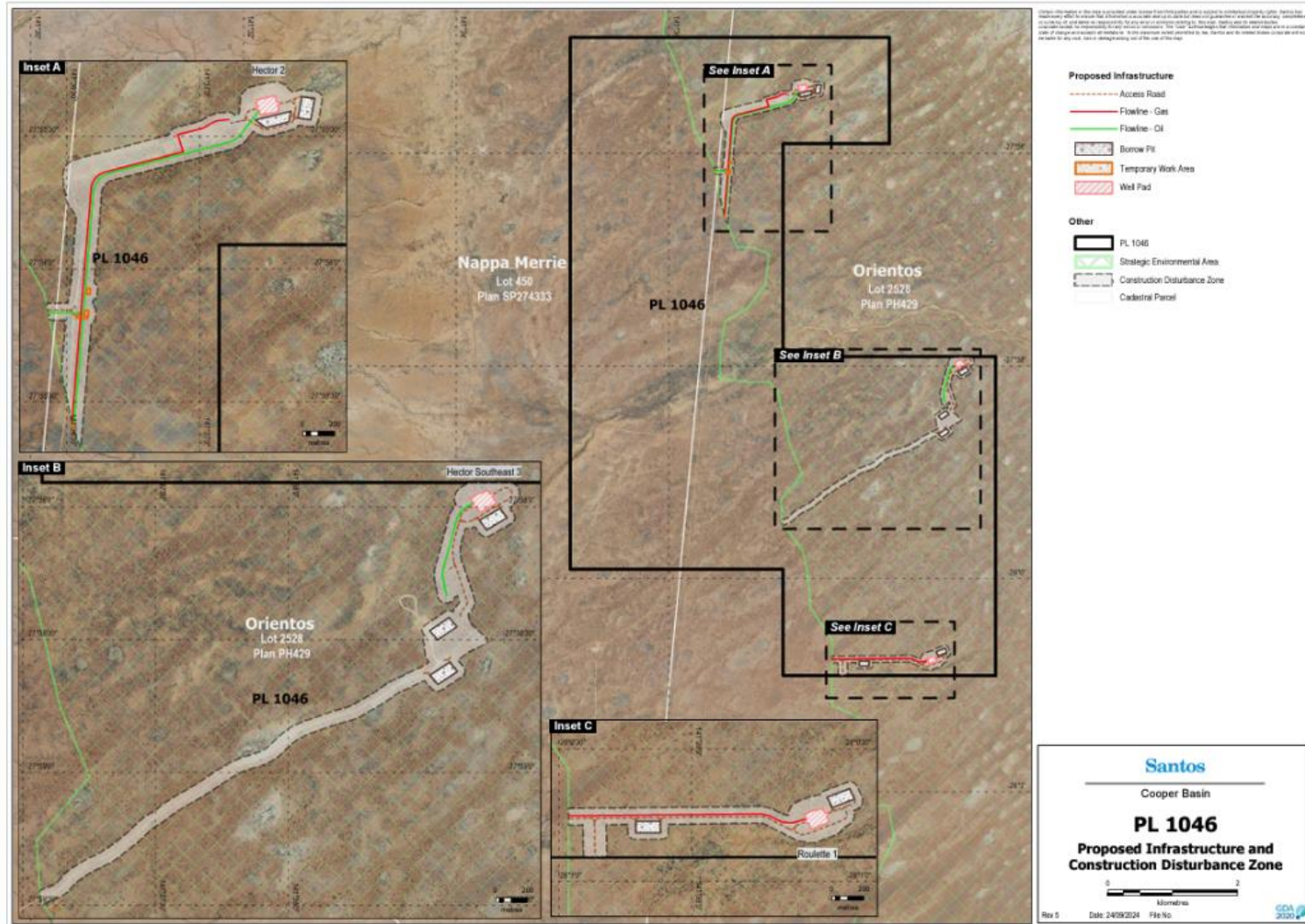


Figure 2: Proposed Development and Construction Disturbance Zone

2.1. Hector 2, Hector Southeast 3 and Roulette 1 Development

The following sections describe the design, construction, operation and decommissioning of the proposed Hector 2, Hector Southeast 3 and Roulette 1 development.

2.1.1. Conventional Petroleum Well and Lease

Three well leases are proposed to be constructed within the Channel Country SEA to accommodate modular drilling and ancillary equipment, including a derrick, power generators, pipe handling equipment, tanks, chemical injection skid, drilling sumps and associated stockpile, flares, and office areas.

The operations proposed and reservoirs targeted meet the definition of conventional gas or oil as per Schedule 2 Part 5 Section 15 (3) of the RPI Regulation.

The layout of a typical well lease during drilling is provided in Appendix A.

Construction

Once the drilling rig is in place on the well pad, drilling will be undertaken for approximately 11 days. Drilling fluid will be continuously circulated down the drill pipe and back to the surface equipment to balance underground pressure (if required), cool the drill bit and flush out rock cuttings. A drilling fluids sump would be used to contain drilling fluids and is designed to exclude overland flow.

Following the completion of drilling, the drilling rig will be dismantled and transported from site and partial rehabilitation will commence, including the removal of drilling fluids from the drilling sump if required and backfilling of the drilling fluids sump. It is expected that sumps will be backfilled within 6 months of drilling completion. Nevertheless, flood alerts will be monitored to ensure affected sumps are emptied and backfilled before forecast floodwater has the potential to impact the site.

Drilling activities would be scheduled during periods where surface water is expected to be absent from the site, and outside of flood events / inundation periods. The wells would be drilled in accordance with Santos Management System (SMS) Onshore Drilling and Completions Technical Standards, which are consistent with industry standards from the American Petroleum Institute (API) and NORSOK. These standards provide minimum construction requirements and good industry practice for petroleum production. The preliminary well design is a 2-string design with 7-5/8" steel surface casing and 3-1/2" chrome steel tubing. These strings would be cemented either back to surface or to inside the previous casing.

Operation

During operation of the wells, surface facilities will be used for the purpose of petroleum production. Surface facilities will include the wellhead and a tie-in riser. The wellhead consists of equipment which supports the various pipe strings, seals off the well, and controls the paths and flow of reservoir fluids. The tie-in riser connects the well to the flowline and enables transportation of the extracted petroleum.

Well stimulation techniques including hydraulic fracturing may be used to increase the recovery of resources by increasing the permeability of the reservoir. Hydraulic fracturing involves pumping a fluid under pressure into the reservoir to open up and connect fractures within the reservoir rock, thereby increasing the opportunity for the resource to move within the reservoir rock and flow toward the well. After the fracture process is completed, fluids that return to surface when the pressure is released are captured for reuse, recycling or transported to a licenced water management facility.

It is feasible that workover operations will be required for the wells in the future. Workover operations include activities such as cleaning out of production conduits and replacing tubing, retrieving or drilling out obstructions in the well and well bore decommissioning. For some workovers, a workover rig and associated infrastructure (i.e. a drilling fluids sump) will need to be setup within the proposed disturbance footprint for a temporary duration. Workover operations will also be scheduled to be completed when no surface water is expected to be present on site and outside of flood events/inundation periods.

Decommissioning

The wells will be decommissioned at end-of-life in accordance with the requirements of the *Petroleum and Gas (Production and Safety) Act 2004* (P&G Act 2004) and the relevant conditions of the EA for PL 1046.

2.1.2. Buried Flowlines

To commercialise petroleum from the wells, buried flowlines are required to connect the wells to existing petroleum gathering infrastructure. The flowlines will consist of a 100-millimetre (mm) diameter (DN 100) steel pipe, buried to a depth of around 750 mm.

Construction

A right-of-way (ROW) width of approximately 15 m is required for installation of the proposed buried flowlines. This area comprises the topsoil bank on either side of the ROW, access for pipe truck and side boom tractor/excavator, the flowline trench, and a trench spoil bank (refer Appendix B for typical layout).

Once the flowline is laid within the trench, it will be tested, bedded with padding placed around it, backfilled and compacted. Hydrotest water will not be released to land; it will be transported to the nearest licensed water management facility for treatment and/or disposal.

The ROW will then be reinstated to the condition and profiles existing at the commencement of activities. All wheel and equipment ruts along the flowline route would be filled in and levelled by grading. Topsoil and seed stock removed during installation would be re-spread over the ROW and windrows removed. Where seed stock has not been displaced during installation, the area would be lightly scarified to promote regrowth.

Operation

Once operational, the flowlines would transport petroleum into existing petroleum gathering infrastructure. Pipeline maintenance activities, such as pigging and inspections would also be carried out from time to time. A maximum 3 m wide corridor within the rehabilitated ROW will be used for the inspections via light vehicles. No formed roads will be required.

Decommissioning

The flowlines will be decommissioned at end-of-life in accordance with the P&G Act and the relevant conditions of the EA for PL 1046.

2.1.3. Access Tracks

Approximately 8 kilometres (km) of new access tracks would be constructed to provide access to the wells leases and borrow pits.

Construction

The proposed access tracks would be up to 13 m in width to accommodate a trafficable roadway and table drains either side of the roadway, spaced out as per Santos Class D Road classification spacing recommendations (refer Appendix C for typical layout). Access track width may increase above 13 m when cutting into areas of elevated topography. The roadway would be graded and capped with clay or similar locally available borrow pit material.

Operation

The proposed access tracks will be used for ongoing access to the well leases. The proposed access tracks will be designed to convey natural surface water flows consistent with the existing hydrology and will not be accessed during prolonged wet weather.

Decommissioning

At the end of operations, the access tracks will be rehabilitated in accordance with the relevant conditions of the EA for PL 1046 or left in place for future use by the landholder subject to agreement.

2.1.4. Borrow Pits

New borrow pits will be established close to the well leases. These borrow pits will be used to provide a source of material for the construction of new infrastructure and ongoing maintenance of the well leases and access tracks associated with the proposed development.

The side batters of the borrow pits will be maintained at a slope of approximately 6:1 (3:1 maximum) and the batters of the entrance/exit will be maintained at a slope of approximately 7:1.

The borrow pits will be restored by ripping floor and sides to a depth of approximately 500 mm generally along the contour. Stockpiled topsoil and vegetation are then re-spread to a uniform depth over the entire area from which it

was removed. The sides and floor of the borrow pits are graded to give a contoured finished as required by the relevant conditions of the EA for PL 1046.

3. Environmental Attributes

Section 7 of the RPI Reg prescribes the following environmental attributes for the Channel Country SEA (as of 2 August 2024):

- (a) *the natural hydrologic processes of the area characterised by –*
- (i) *natural, unrestricted flows in and along watercourse channels and the channel network in the area; and*
 - (ii) *overflow from watercourse channels and the channel network onto the flood plains of the area, or the other way; and*
 - (iii) *natural flow paths of water across flood plains connecting waterholes, lakes, and wetlands in the area; and*
 - (iv) *groundwater sources, including the Great Artesian Basin and springs, that support waterhole persistence and ecosystems in the area;*
- (b) *the natural geomorphic processes of the area characterised by—;*
- (i) *natural erosion; and*
 - (ii) *the transport and deposit of sediment by water throughout the catchments and along the watercourse systems;*
- (c) *the functioning riparian processes of the area characterised by native riparian vegetation associated with watercourses, lakes, flood plains and wetlands;*
- (d) *the functioning wildlife corridors of the area characterised by—*
- (i) *natural habitat in the watercourse systems; and*
 - (ii) *permanent waterholes and springs;*
- (e) *the natural water quality in the watercourse channels and aquifers and on flood plains in the area characterised by physical, chemical and biological attributes that support and maintain natural aquatic and terrestrial ecosystems*
- (f) *the beneficial flooding of land that supports flood plain grazing and ecological processes in the area.*

The *Statutory Guideline 05/14: Carrying Out Resource Activity and Regulated Activity within a Strategic Environmental Area* (Queensland Treasury, 2020) summarises the above attributes to broadly relate to:

- Hydrologic processes;
- Beneficial flooding;
- Water quality;
- Geomorphic processes.
- Riparian processes; and
- Wildlife corridors.

The relevance of the above environmental attributes to the proposed Hector 2, Hector Southeast 3 and Roulette 1 development is described below.

3.1. General

3.1.1. Climate

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development is located in an arid to semi-arid region of central Australia where the average rainfall is low. The seasons in the region are characterised by dry, hot summers and short, dry winters.

Data from the Bureau of Meteorology (BoM) 'Orientos Station' weather station (station number 045029), which is located approximately 30 km south-east of the proposed Hector 2, Hector Southeast 3 and Roulette 1 development, shows that (Queensland Government, 2024):

- During the summer months (December to February), the average maximum and minimum temperatures are 37.1 and 23.3 degrees Celsius (°C) respectively.
- During the winter months (June to August), the average maximum and minimum temperatures are 20.5°C and 7.1°C respectively.
- Average annual rainfall is 189 mm per year.
- The average summer and winter rainfall is 24.3 millimetres (mm) per month and 12 mm per month respectively.

The El-Nino Southern Oscillation (ENSO) exerts significant influence on inter-annual climate variability across the region, producing marked fluctuations in the amount, timing and distribution of rainfall. As such, there is considerable year-to-year variation in rainfall, particularly during the summer months which can range from 'failed' wet seasons to 'normal' and above average rainfall, and tropical cyclone activity.

3.2. Land Use

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development is located on the Orientos (2528PH429) and Nappa Merrie Stations (450SP274333). Orientos Station is a 1,442 km² cattle station and Nappa Merrie Station is a 7,275 km² cattle station with a carrying capacity of 13,000 cattle (Nascon Media, 2016). The primary land uses within and surrounding the proposed Hector 2, Hector Southeast 3 and Roulette 1 development on the Orientos and Nappa Merrie Stations are cattle grazing and petroleum activities (refer to **Error! Reference source not found.**).

Santos has been carrying out petroleum activities on the Orientos and Nappa Merrie Stations for some time, with several Santos owned and operated wells and associated infrastructure already present on these stations.

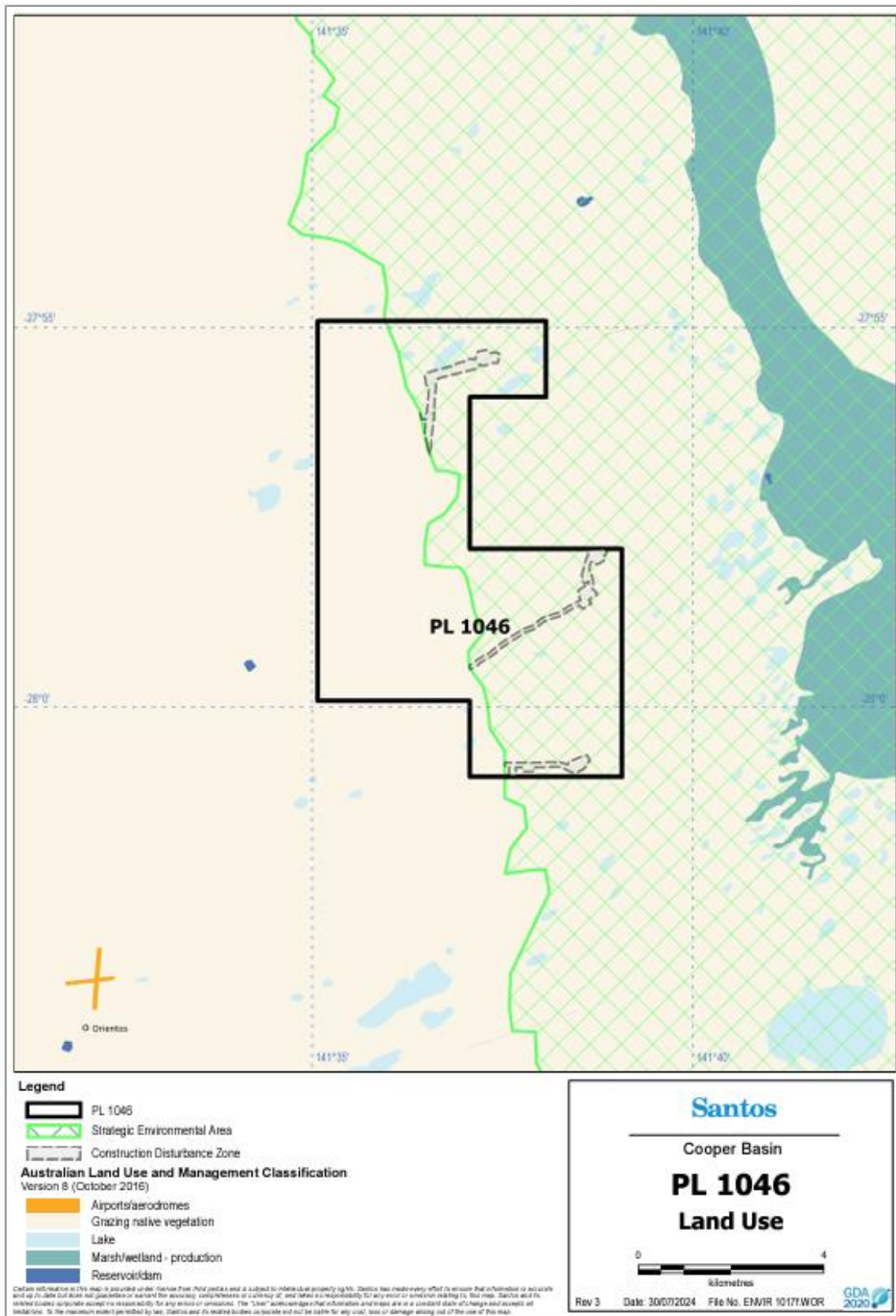


Figure 3: Land Uses Within and Surrounding the Proposed Development

3.3. Hydrological Processes and Beneficial Flooding

3.3.1. Regional Surface Water Hydrology

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development is situated in the Channel Country region of south-west Queensland. The Channel Country is characterised by vast flat lying, braided, flood and alluvial plains surrounded by gravel or gibber plains, dunefields and low ranges.

The hydrological and geomorphic processes in the Channel Country are dominated by Cooper Creek. Cooper Creek is approximately 1,500 km long and stretches from the Warrego Range in Queensland to Lake Eyre in South Australia. It has a catchment area of approximately 300,000 km².

Flows within Cooper Creek are usually confined to the main channel. However, during periods of high rainfall, Cooper Creek becomes a largely flooded plain with overland flows concentrating at the point where Cooper Creek crosses the Queensland – South Australia border. Contrastingly, during extended periods of no or little rainfall, Cooper Creek contracts to a series of isolated waterholes.

3.3.2. Local Surface Water Hydrology

As shown in **Error! Reference source not found.**, the portion of the proposed Hector 2, Hector Southeast 3 and Roulette 1 development that is located within the Channel Country SEA does not intersect any waterways, however it is located in relatively close proximity to a number of unnamed waterways that flow in an easterly direction towards Cooper Creek. The proposed development is also situated on the Cooper Creek floodplain meaning that the area is likely to experience intermittent overland flow during rainfall events, potentially resulting in localised ponding of surface water.

3.3.3. Wetlands

As shown in **Error! Reference source not found.**, the proposed Hector 2, Hector Southeast 3 and Roulette 1 development intersects two relatively large natural palustrine wetland areas, both of which are associated with Cooper Creek and Regional Ecosystem (RE) 5.3.16a. These wetlands are both classified as general ecological significance (GES) wetlands.

3.3.4. Fish Passage

Queensland waterways for water barrier works mapping shows that the portion of the proposed Hector 2, Hector Southeast 3 and Roulette 1 development that is located within the Channel Country SEA does not intersect any waterways that, under the *Fisheries Act 1994*, provide for fish passage.

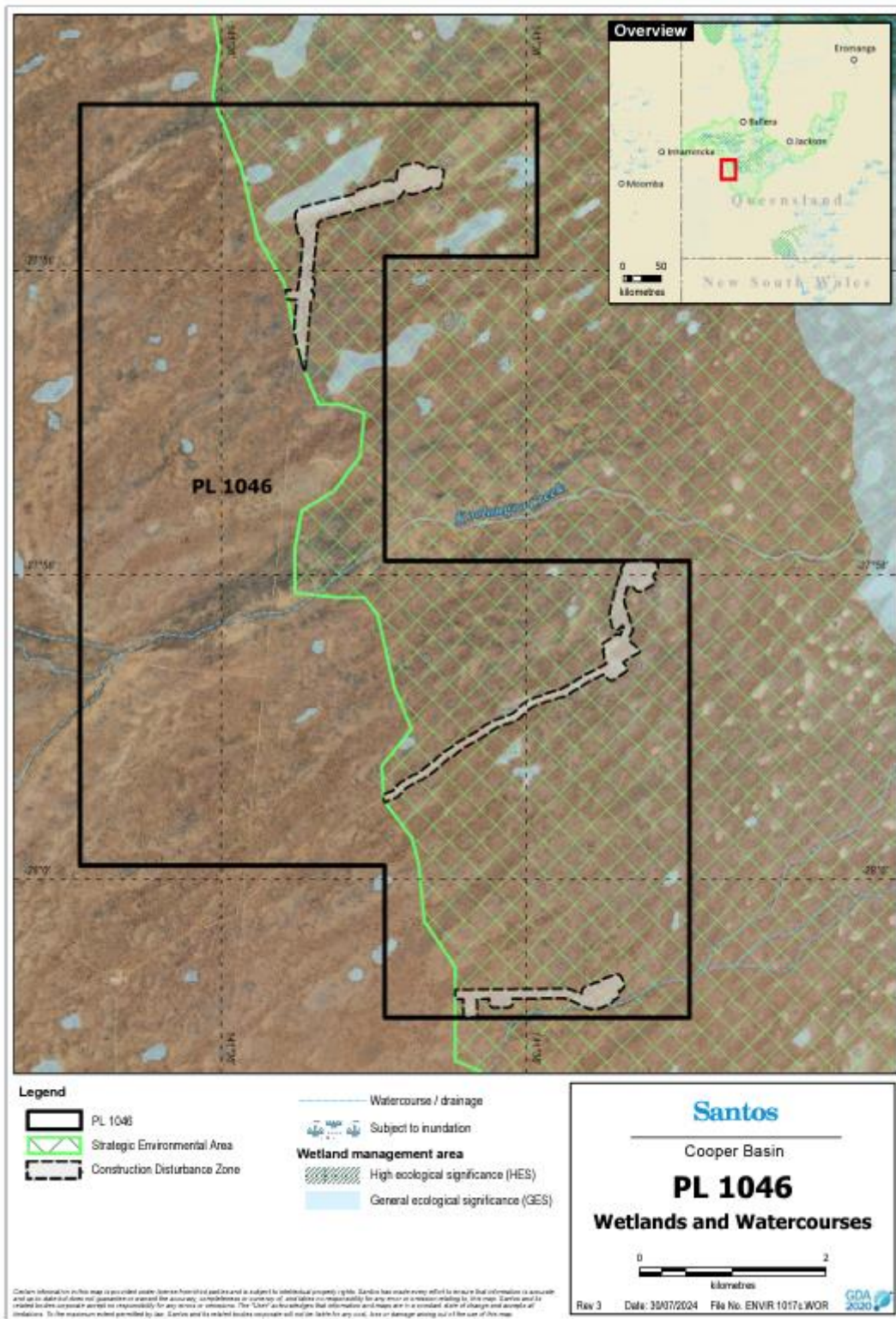


Figure 4: Wetlands and Watercourses

3.3.5. Regional Groundwater Hydrology

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development is situated within the Eromanga Basin within the Great Artesian Basin (GAB). The main GAB aquifers (i.e. in the Eromanga Basin stratigraphy) in relation to the proposed development are the Birkhead, Hutton, and Toolachee Epsilon Formations. The aquifers of the Eromanga Basin are considered highly productive aquifers over most of the GAB. Shallow groundwater is generally found within the Quaternary and Tertiary alluvium formations associated with the very flat structures of flood plains and is absent where the Winton Formation occasionally outcrops. Groundwater from Tertiary sediments and the Winton Formation is characterised by relatively high concentrations of sodium and magnesium, with EC concentrations ranging from 900 to 13,000 µS/cm (Golder Associates, 2019).

3.3.6. Local Groundwater Hydrology

Within Santos’ tenements in the Cooper Basin, only the upper aquifers of the Eromanga Basin sequence are of economic interest to the local community. This is due to the significant depth of the water bearing formations in the Cooper Basin and the general unreliability of the groundwater quality that may be encountered (i.e. it may have a high salinity and contain free and dissolved hydrocarbons).

Registered groundwater bores in the vicinity of the proposed Hector 2, Hector Southeast 3 and Roulette 1 development confirm the significant depth of water bearing formations in the region. There are seven registered groundwater bores within an approximately 20 km radius of the proposed development with depths (where available) of up to 2.3 km:

- RN 6055 (171.19 m depth)
- RN 12198 (92.05 m depth)
- RN 13537 (23.00 m depth)
- RN 22973 (no longer used and depth not available)
- RN 23103 (2162.60 m depth)
- RN 23742 (2296.40 m depth)
- RN 23765 (2110.40 m depth)

3.3.7. Groundwater Dependent Ecosystems

No surface, terrestrial or subterranean groundwater dependent ecosystem (GDE) areas are mapped in close proximity to the proposed Hector 2, Hector Southeast 3 and Roulette 1 development. However, a relatively large potential GDE aquifer underlies proposed development (refer to Table 3).

Table 3: Groundwater Dependent Ecosystems

Type of GDE	GDE Rule Set Name	GDE Confidence
Potential GDE Aquifers	Recharge Zones	High Confidence

3.4. Water Quality

Historical (1965 – 2023) water quality data from the Queensland Government’s Cooper Creek gauging station (station number 003103A) is summarised in Table 4: Cooper Creek Surface Water Quality (1965 – 2023) (Queensland Government, 2024). This gauging station is located approximately 65 km north-west of the proposed Hector 2, Hector Southeast 3 and Roulette 1 development; it is the closest gauging station to the proposed development.

Table 4: Cooper Creek Surface Water Quality (1965 – 2023)

Parameter	Average Value
Conductivity @ 25°C	298 µS/cm
Turbidity	526 NTU

Parameter	Average Value
pH	7.4
Total Nitrogen	1.2 mg/L
Total Phosphorus as P	0.3 mg/L
Sodium as Na	37.2 mg/L
Magnesium as Mg	6.3 mg/L
Chloride as Cl	59.5 mg/L
Fluoride as F	0.2 mg/L

3.5. Geomorphic Processes

3.5.1. Regional

Surface geology in the Channel Country SEA is dominated by Quaternary alluvium deposits associated with flood plains, with consolidated Tertiary sediments or Winton Formation on the higher ground. Cooper Creek is a large sedimentary sump accreting over a vast floodplain (Maroulis, n.d.). Fluvial processes also play a role in the geomorphology of the Channel Country as evidenced by the presence of isolated sand dunes.

3.5.2. Local

According to RE mapping, the dominant land zones within and surrounding the proposed Hector 2, Hector Southeast 3 and Roulette 1 development are land zone 3 (Cainozoic alluvial plains and piedmont fans) and land zone 6 (Cainozoic inland dunefields). Additional land systems mapping, completed as part of the Western Arid Region Land Use Study – Part 1 (DESI, 2024), indicates the proposed development traverses / is in close proximity to three land systems as described in Table 5.

The dominant soil surrounding the proposed Hector 2, Hector Southeast 3 and Roulette 1 development, as mapped by the Atlas of Living Australian Soils (1:2,000,000 scale), is Mx34 (plains with longitudinal sand dunes & clay pans).

Table 5: Land Systems

Development	Map Code	Land System Description
Hector 2, Hector Southeast 3 and Roulette 1	D2	Plains with converging and diverging dunes 5-12 metres high, with mobile crests; spinifex hummock grassland; red siliceous sands on the mobile crests and red earthy sands and sandy red earth on the dune flank with grey clays on the interdune claypan.
	D4	Plains with reticulate sand dunes 3-5 metres high; mulga; whitewood, other acacias, woollybutt grass, herbaceous tall open shrubland; red earthy sands, red siliceous sands and vegetated and bare interdune claypans.
	D6	Flat to gently undulating sand plains with low dunes less than 3 metres high; mulga, whitewood, western bloodwood, forby (sparse) tall open shrubland; red earthy sands with some sand red earths.

3.6. Riparian Processes and Wildlife Corridors

3.6.1. Vegetation

Vegetation within and surrounding the proposed Hector 2, Hector Southeast 3 and Roulette 1 development is mapped as a variety of REs (refer to **Error! Reference source not found.**), including:

- RE 5.6.4 - *Atalaya hemiglauca* +/- *Acacia aneura* +/- *Acacia* spp. +/- *Corymbia terminalis* low open woodland on reticulate sand dunes

- RE 5.3.16a - *Eragrostis australasica* sparse tussock grassland on intermittently inundated depressions on flood plains, interdune flats, clay pans and clay plains
- RE 5.6.5 - Variable sparse to open-herbland or *Triodia basedowii* hummock grassland on dune flanks, crests and sandy interdunes
- RE 5.5.2 - *Acacia aneura* low open woodland +/- *Acacia sibirica* +/- *Eremophila latrobei* on Quaternary deposits
- RE 5.3.21a - Variable sparse to open herbland, *Senna* spp. open shrubland and bare scalded areas on infrequently flooded alluvia of major rivers their distributaries, drainage channels and creeks
- RE 5.6.1 - *Crotalaria eremaea* +/- *Eragrostis eriopoda* sparse to open herbland on isolated and/or deflated sand dunes on alluvium

All of the above listed REs are classified as 'least concern' under the *Vegetation Management Act 1999*.

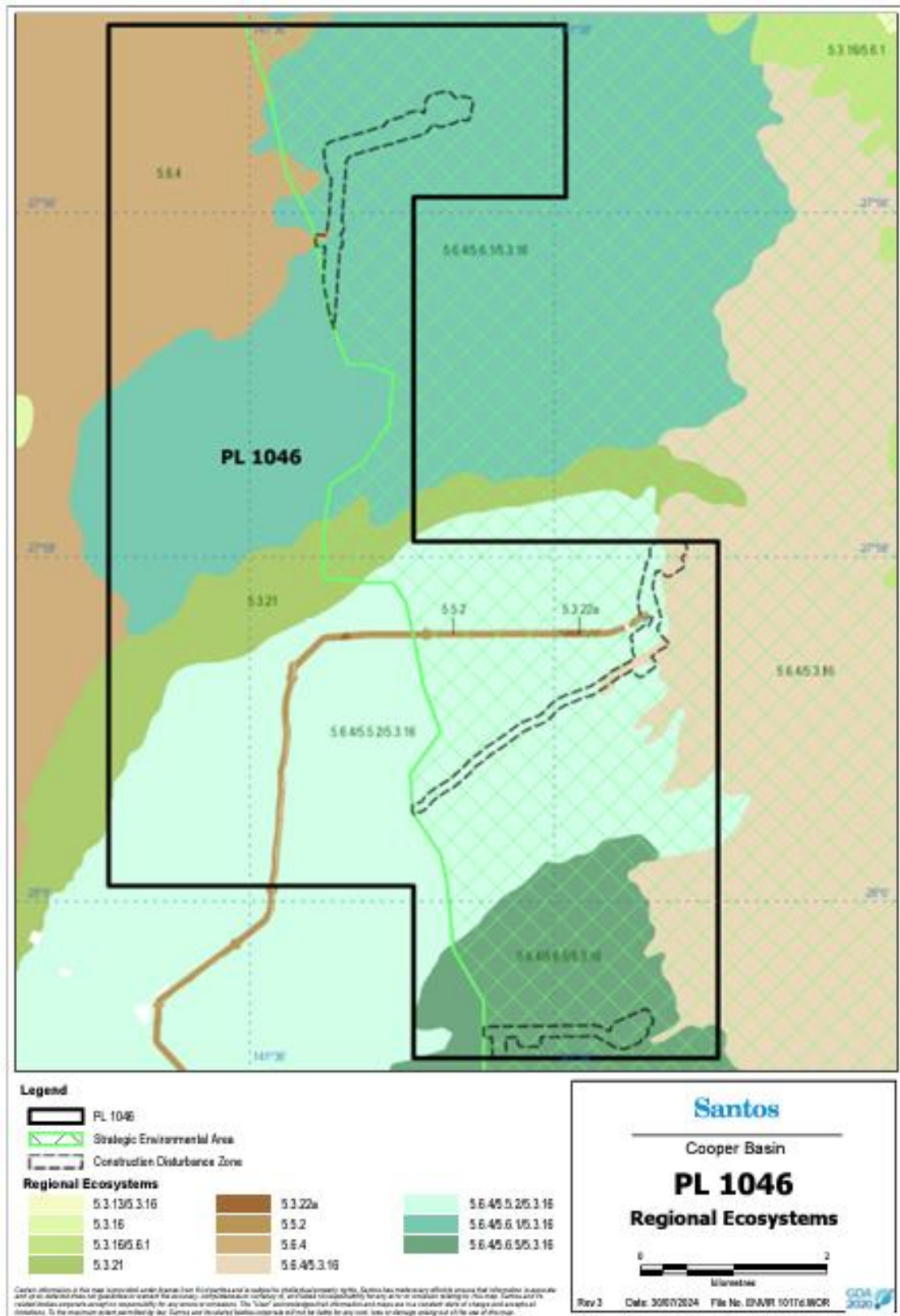


Figure 5: Regional Ecosystems

3.6.2. Riparian Biodiversity Corridors

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development is located within the Channel Country bioregion. Riparian biodiversity corridors in the Channel Country bioregion were established with the intention of connecting permanent waterholes. They are based on major channels and minor channels (250k geodata hierarchy 1, 2, and 3) necessary to capture permanent waterholes, buffered by 1 km either side and clipped to land zone 3 (DERM, 2009), and are associated with the Cooper Creek. As shown in **Error! Reference source not found.**, the closest riparian biodiversity corridor to the proposed development is located approximately 11.7 km north-east.

3.6.3. Terrestrial Biodiversity Corridors

Terrestrial biodiversity corridors in the Channel Country bioregion aim to maximise connectivity between tracts of remnant vegetation. As shown in **Error! Reference source not found.**, the closest terrestrial biodiversity corridor to the proposed Hector 2, Hector Southeast 3 and Roulette 1 development is located approximately 41 km to the east (although the associated buffer is approximately 31 km to the east).

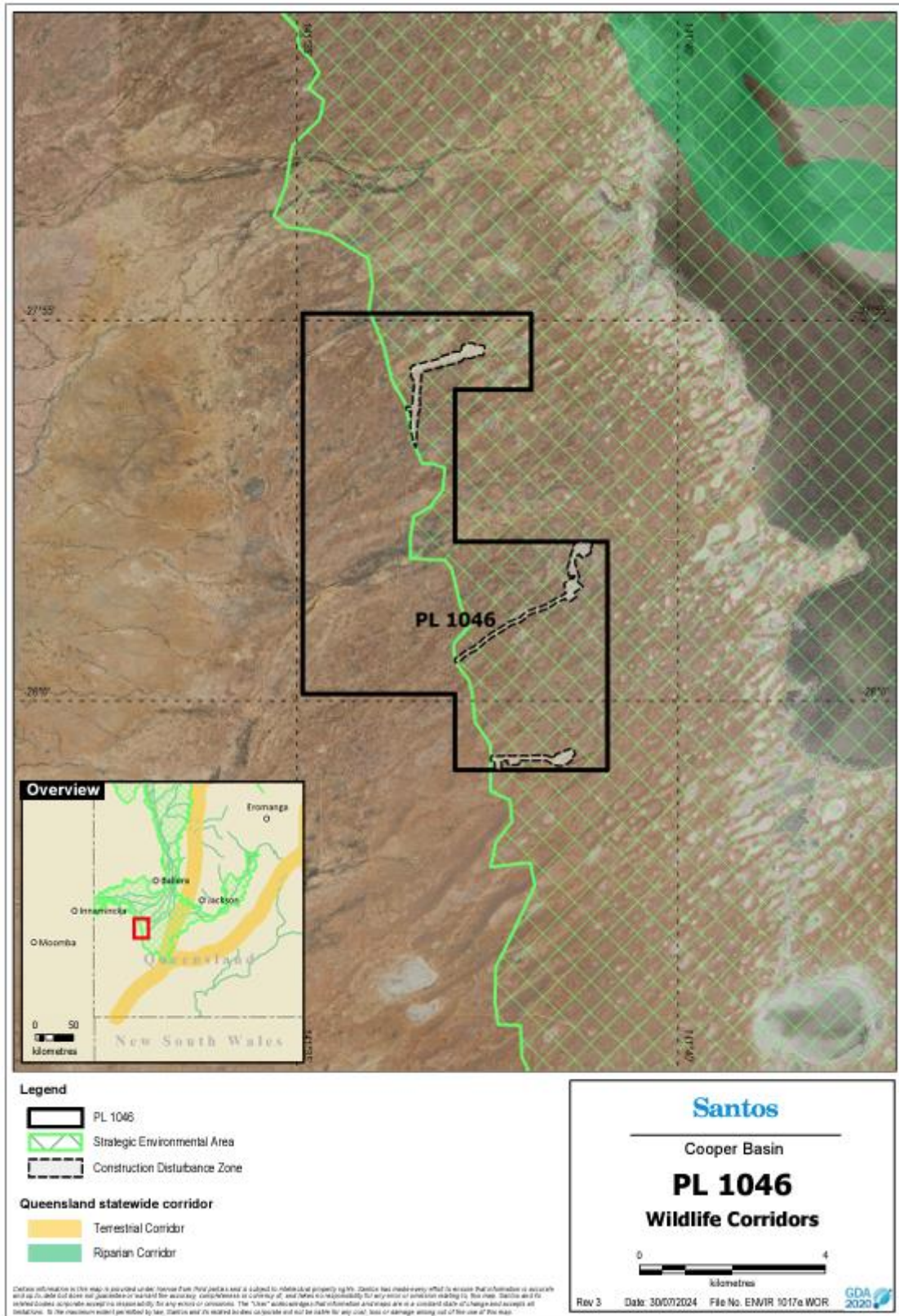


Figure 6: Wildlife Corridors

4. Potential Impacts to Environmental Attributes and Proposed Mitigation

The below sections describe potential impacts on the environmental attributes of the SEA as a result of the Hector 2, Hector Southeast 3 and Roulette 1 development, as well as how the potential impacts will (in order of priority) be avoided, minimised and mitigated.

4.1. Hydrological Processes and Beneficial Flooding

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development is considered unlikely to affect the existing hydrological processes and beneficial flooding of the Channel Country SEA given it does not intersect any waterways and relatively small disturbance footprint when compared to the total area of the Channel Country SEA. Nevertheless, the following measures will be implemented during construction and operation of the proposed development to avoid, minimise and/or mitigate potential impacts on hydrological processes and beneficial flooding:

- Infrastructure associated with the drilling program is largely temporary and drilling would be scheduled outside periods of inundation and/or flooding.
- Construction activities in close proximity to waterways will be temporary and scheduled to be completed when no surface water is expected to be present and outside of flood events.
- Surface excavations, such as the drilling fluids sump or borrow pits, have the potential to result in diversion or interception of a negligible amount of overland flow. Both are relatively small compared to the surrounding catchment, and drilling fluids sumps would be designed to exclude overland flow. These activities would also be temporary and scheduled to be completed when no surface water is expected to be present on site and outside of flood events/inundation periods.
- Drilling fluids would be removed from site, and surface excavations for drilling fluid sumps or borrow pits are to be backfilled within 6 months following the completion of drilling and are to be designed to exclude overland flow. These activities are temporary and scheduled to be completed when no surface water is expected to be present within the development and outside of flood events/inundation periods.
- Workover operations may occur throughout operation of the wells. The infrastructure and activities required for (and therefore potential impacts of) well workovers are similar to those required for initial well drilling. These would also be temporary and conducted outside of periods of inundation. Following workover operations, drilling fluids would be removed from site and sumps backfilled and workover equipment would be removed from the site.
- Access tracks would not be constructed to any flood immunity to allow the natural flow of surface water across the development.
- The proposed pipelines will be buried and the surface rehabilitated following construction to reinstate natural drainage patterns and promote the natural re-establishment of vegetation consistent with the surrounding undisturbed land.
- Following cessation of petroleum production, existing infrastructure would be rehabilitated to promote natural re-establishment of vegetation consistent to the surrounding undisturbed land.

4.2. Water Quality

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development does not intersect any waterways; however, it is situated on the Cooper Creek flood plain meaning that the area is likely to experience intermittent overland flow during rainfall events. Vegetation removal, earthworks, and site access associated with the proposed development may increase the erosion potential of the local area, which in turn may increase sedimentation of nearby waterways.

The following measures will be implemented during construction and operation of the proposed development to avoid, minimise and/or mitigate potential impacts on water quality:

- Erosion and sediment controls will be installed as necessary and as required by the conditions of the EA.

- Clearing of shrubs and large trees will be avoided where practical to aid in the retention of top-soil integrity and stability and facilitate biodiversity.
- Areas under construction which include bare soil, but are not actively being worked on, will be covered up or binded with suitable products to prevent erosion or sediment runoff.
- Rehabilitation will occur progressively during construction to further reduce disturbance levels and erosion potential of the local area.
- Construction will be scheduled to consider seasonal conditions and rainfall/flood risk.
- Construction will not commence if the local area is inundated, and if the local area is at risk of becoming inundated, works will cease and construction areas will be secured until the inundation has subsided (this will include removing all non-essential materials (e.g. hydrocarbons, chemicals and infrastructure) present on site). It is noted that due to the slow moving nature of flood waters in the Cooper Creek catchment, sufficient time is generally available to prepare local areas for potential flood impacts.
- The proposed development will not involve the discharge of water (i.e. point or diffuse sources), or the construction or operation of regulated dams or other major water generating/storage infrastructure (i.e. separator ponds, permanent camps). Hydrotest water will not be released to land; it will be transported to the nearest licenced facility for treatment and/or disposal.
- All fuels/chemicals used on site will be stored and handled in accordance with Australian Standards. Spill kits will be available on site required to contain any spills should they occur. Procedures for responding to and investigating spills should they occur will be developed and implemented as required by the conditions of the EA for PL 1047.
- All waste materials and non-essential infrastructure will be removed from site as soon as reasonably practicable following the cessation of construction.

4.3. Geomorphic Processes

As discussed in Section 4.2, the proposed Hector 2, Hector Southeast 3 and Roulette 1 development has the potential to increase the erosion potential of the local area, particularly during construction. This is considered unlikely to significantly affect geomorphic processes given the small area of proposed disturbance relative to the total area of the Channel Country SEA and the temporary nature of construction during which erosion potential is at its highest. Nevertheless, the following measures will be implemented during construction and operation of the proposed development to avoid, minimise and/or mitigate potential impacts on geomorphic processes:

- The proposed flowlines will be buried.
- Construction activities will be undertaken outside of periods of inundation.
- Minimising the total area of disturbance and vegetation clearing required by co-locating new infrastructure with existing infrastructure where possible.
- Designing access tracks without flood immunity to allow maintenance of natural overland flows.
- The ground surface will be rehabilitated progressively during construction, reducing the potential for erosion and sedimentation. Rehabilitation will aim to reinstate the natural drainage features and micro-contours and re-establish vegetation consistent with the surrounding undisturbed land such that natural erosion, sedimentation and depositional processes are maintained in the long-term.

4.4. Riparian Processes and Wildlife Corridors

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development is expected to require minimal vegetation clearing (riparian or otherwise) given the sparse structure of the vegetation communities present in the area. The REs mapped within and in close proximity to the proposed development are naturally ephemeral and resilient to disturbance, having adapted to the boom-and-bust periods associated with the Channel Country bioregion. Given their sparse structure, the REs are considered likely to respond well to rehabilitation conditions.

The proposed Hector 2, Hector Southeast 3 and Roulette 1 development is considered unlikely to compromise riparian function or critically impede the use of vegetation by fauna for migration, shelter and habitat. Nevertheless,

Santos would implement the following measures to ensure that the proposed development does not compromise vegetation processes or wildlife corridor functions:

Vegetation disturbance will be minimised as far as practicable by:

- Co-locating new infrastructure with existing infrastructure, and refining the location of new infrastructure within the CDZ to reduce the extent of clearing;
- Lopping/trimming branches rather than removing mature trees and shrubs.
- Clearing will not extend beyond the CDZ.
- Chemicals and fuels will be stored and handled in accordance with Australian Standards and spill kits will be available on site to contain any spills should they occur.
- Measures will be implemented to prevent fauna entrapment within excavation work areas, such as restricting the length of open trenches to the minimum required at any one time, ensuring breaks/bridges are installed as required for cattle and wildlife egress, and ensuring a cellar cover is installed at the new wells as soon as reasonably practicable.
- Access to and from authorised activities will occur along designated access tracks only, with speed limits implemented to reduce the likelihood of vehicle strike from fauna injuries and fatalities amongst other indirect impacts (e.g. dust and erosion).
- Rehabilitation to promote conditions suitable for the natural revegetation of disturbed areas will occur progressively.
- Infrastructure/disturbances with no future use will be rehabilitated as soon as reasonably practicable following the cessation of petroleum activities to promote the natural re-establishment of vegetation of similar species composition and density to the surrounding undisturbed land in accordance with the relevant EA conditions for PL 1046.

Given the characteristics of the vegetation to be cleared, the relatively small disturbance footprint and the implementation of the above listed management measures, the proposed Hector 2, Hector Southeast 3 and Roulette 1 development is considered unlikely to cause widespread or irreversible impacts on riparian function or wildlife corridors within the Channel Country SEA.

5. Required Outcome Assessment

Table 6 below demonstrates that the proposed Hector 2, Hector Southeast 3 and Roulette 1 development meets the required outcome and prescribed solution for SEAs in Schedule 2, Part 5 of the RPI Act.

Table 6: Requirements of Schedule 2, Part 5 of the RPI Reg

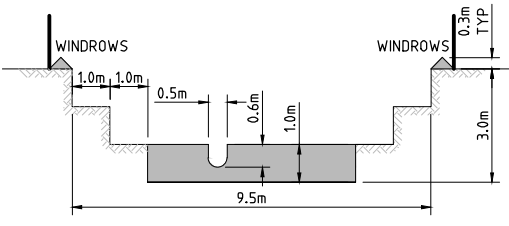
Schedule 2, Part 5 RPI Reg	Relevance to Application
<p>14 Required outcome <i>The activity will not result in a widespread or irreversible impact on an environmental attribute of a strategic environmental area.</i></p>	<p>✓ As outlined in Section 4 of this report, the proposed Hector 2, Hector Southeast 3 and Roulette 1 development has been designed to (in preferential order) avoid, minimise and mitigate potential impacts on the environmental attributes of the SEA. The potential impacts will not be widespread or irreversible.</p>
<p>15 Prescribed solution (1) <i>The application demonstrates either—</i> a. <i>the activity will not, and is not likely to, have a direct or indirect impact on an environmental attribute of the strategic environmental area; or</i> b. <i>all of the following—</i></p>	<p>✓ The application demonstrates that the proposed Hector 2, Hector Southeast 3 and Roulette 1 development will be undertaken in accordance with the prescribed solution provided in Schedule 2, Part 5, Item 15(1)(b) of the RPI Reg, as outlined below.</p>
<p>i. <i>if the activity is being carried out in a designated precinct in the strategic environmental area—the activity is not an unacceptable use for the precinct;</i></p>	<p>✓ The proposed Hector 2, Hector Southeast 3 and Roulette 1 development does not include any of the unacceptable uses prescribed by Schedule 2, Part 5, Item 15(2) of the RPI Reg.</p>
<p>ii. <i>the construction and operation footprint of the activity on the environmental attribute is minimised to the greatest extent possible;</i></p>	<p>✓ As outlined in Section 0 of this report, the location for the new wells and supporting infrastructure for the proposed Hector 2, Hector Southeast 3 and Roulette 1 development has been selected in accordance with the following site planning principles: Maximise the use of areas of pre-existing disturbance. In order of preference, avoid, minimise and mitigate any impacts, including cumulative impacts, on areas of native vegetation and other areas of ecological value. Minimise disturbance to land that may result in land degradation. In order of preference, avoid then minimise isolation, fragmentation, edge effects and dissection of tracts of vegetation. In order of preference, avoid then minimise clearing of native mature trees. Maximise co-location of linear infrastructure corridors. Minimise the width of linear infrastructure corridors to the greatest practicable extent. Application of these site planning principles has been demonstrated throughout Sections 2 to 4 of this report.</p>
<p>iii. <i>the activity does not compromise the preservation of the environmental attribute within the strategic environmental area;</i></p>	<p>✓ As outlined in Section 4 of this report, the proposed Hector 2, Hector Southeast 3 and Roulette 1 development has been designed to (in preferential order) avoid, minimise and mitigate potential impacts on the environmental attributes of the SEA.</p>

Schedule 2, Part 5 RPI Reg	Relevance to Application
<p><i>iv. if the activity is to be carried out in a strategic environmental area identified in a regional plan—the activity will contribute to the regional outcomes, and be consistent with the regional policies, stated in the regional plan.</i></p>	<p>✓ The Channel Country SEA is not identified in the Southwest Regional Plan.</p>

6. References

- ABARES. (2016). *The Australian Land Use and Management Classification Version 8*.
- DEH. (2006). *Wetland Mapping Channel Country Bioregion, South Australia*.
- DERM. (2009). *Biodiversity Planning Assessment, Channel Country Bioregion, Landscape Expert Panel Report, Version 1.1*.
- DESI. (2024, February 9). *Western Arid Region Land Use Study (WARLUS), South West Queensland Part 1 - AWA2*. Retrieved from Queensland Government Publications Portal: <https://www.publications.qld.gov.au/dataset/land-systems-warlus-awa2>
- DSDMIP. (2019). *RPI Act Statutory Guideline 01/14: How to make an assessment application for a regional interests development approval under the Regional Planning Interests Act 2014*.
- Golder Associates. (2019). *Underground Water Impact Report for Santos Cooper Basin Oil & Gas Fields, SW QLD*.
- Maroulis, D. J. (n.d.). *Channel Country landforms and the processes that shape them*.
- Nascon Media. (2016, November 4). *Property: Pre-emptive strike secures Channel Country's famed Nappa Merrie*. Retrieved from Ag Property Central: <https://www.beefcentral.com/property/property-pre-emptive-strike-secures-channel-countrys-famed-nappa-merrie/>
- Queensland Government. (2024, February 9). *Water Monitoring Information Portal*. Retrieved from Queensland Government.
- Queensland Government. (2024, February 12). *SIL0 - Australian climate data from 1889 to yesterday*. Retrieved from Queensland Government: <https://www.longpaddock.qld.gov.au/silo/point-data/#responseTab2>
- Queensland Treasury. (2020). *RPI Act Statutory Guideline 05/14: Carrying out resource activities and regulated activities in a Strategic Environmental Area*.
- Santos. (2020). *Regional Interests Development Application Assessment Report - Hector South East Gas Well and Pipeline (PL 1046 & PPL 2053)*.

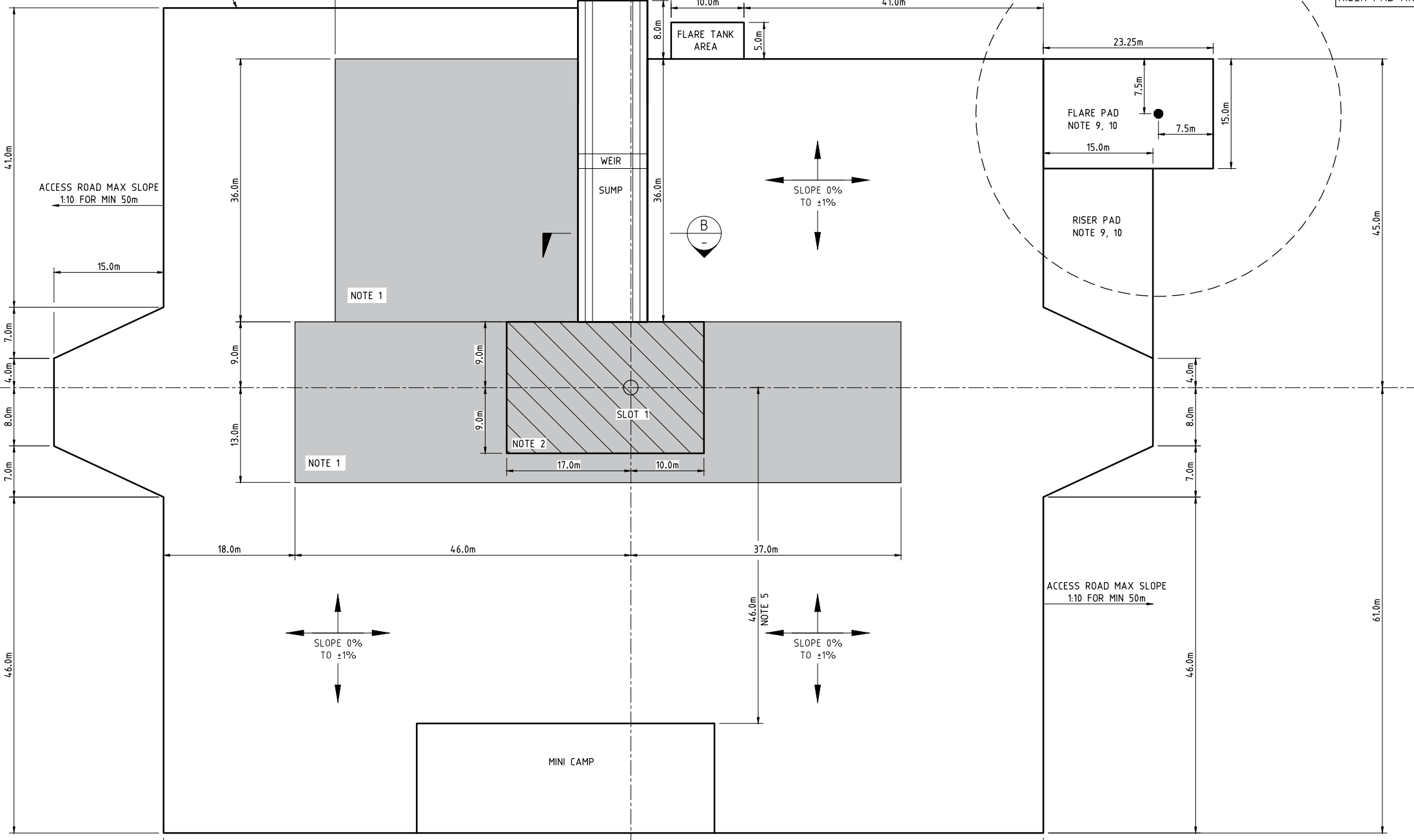
Appendix A – Proposed Well Lease Layout During Drilling



SECTION B-1 NTS

LEASE INFO	
LEASE DISTURBANCE AREA	14,552m ²
CAPPING AREA EXCLUDING HARDSTAND & SUMP & NOTE 1 AREA	11,111m ²
RIG HARDSTAND	486m ²
SUMP VOLUME	990m ³
SUMP AREA	418m ²
FLOWBACK FLARE PAD & VEG EXCLUSION AREA	1,964m ²
RISER PAD AREA	338m ²

MAXIMUM ACTIVITY AREA (NO OUTSIDE LAYDOWN OR ACTIVITY)



PLAN A-1 SCALE 1:250

REV	DATE	REVISION DESCRIPTION
SA	15/05/24	UPDATED LEASE INFO

- NOTES:**
- LEASE LEVEL TOLERANCE IN RIG PAD AREA (GREY SHADED) = +/- 25mm - 10mm MAX DIFFERENCE ACROSS AND 3m LENGTH. GROUND COMPACTION TO BE FIRM ENOUGH TO SUPPORT RIG.
 - RIG HARDSTAND PAD AREA (DIAGONAL HATCHED) TO FILLED WITH 600mm SUITABLE MOISTURE CONDITIONED CLAY AND COMPACTED. LEVEL TOLERANCE TO BE +/- 20mm, 10mm MAX DIFFERENCE ACROSS AND 3m HEIGHT.
 - GRADIENTS OF +/- 1% CAN BE USED ACROSS THE LEASE IN ALL AREAS OTHER THAN THOSE COVERED BY NOTE 1.
 - ALL FRACTURE STIMULATED GAS WELLS REQUIRE ADDITIONAL FLARE PAD WITH 25m VEGETATION EXCLUSION ZONE OFF THE LEASE.
 - 25m RADIUS EXCLUSION ZONE EXPRESSED FROM 70m OFF SUMP EDGE - INDICATED BY DOT.
 - FLARE PAD 25m EXCLUSION ZONE REQUIRES CLEARANCE OF VEGETATION ONLY - NO TOP SOIL STRIPPING.
 - FYFE TO PEG OUT EXCLUSION ZONE; ~12 PEGS.
 - FRAC FLOW BACK FLARE PAD IS TO BE PEGGED AND CONSTRUCTED ONLY FOR GAS WELLS.
 - FLOWLINE RISER PAD AND FLOWBACK FLARE PAD CONSTRUCTION MUST ADHERE TO SCOUTED/PEGGED DATA.
 - RIG LAYOUT DRAWINGS ARE GENERIC; SPECIFIC SITE REQUIREMENTS MAY NECESSITATE CONSTRUCTION OF FLARE/RISER PAD ON THE LEFT SIDE OF THE SUMP.
 - THIS DRAWING REPRESENTS AN ITERATIVE DATA CAPTURE OF INSTRUCTIONS BY SANTOS. FYFE HAS NOT ENGINEERED OR ASSESSED ANY ASPECT OF THE DRAWING

No	DATE	DRN	CHKD	ENG	Q.A.	PROJ	DESCRIPTION	DRG No.	SUBJECT	DRN:	DATE:	SCALE:	CHKD:	ENG:	Q.A.:	PROJ:	A.B.N.
5	15/05/24	FYF	MBP				UPDATED LEASE INFO			FYF	29/03/231	1:250	GDA				80 007 550 923
4	01/03/24	FYF	JRW1				FLARE PAD, RISER PAD & 25m VEGETATION EXCLUSION ZONE ADDED										
3	16/08/23	FYF	SHR				6m x 6m SUMP REMOVED & WEIR DEPTH CHANGED TO 1m										
2	26/07/23	FYF	SHR				ISSUED FOR CLIENT REVIEW										
1	09/12/22	FYF					ISSUED FOR CLIENT REVIEW										
0	06/04/21	FYF	GDA				ISSUED FOR REVIEW										

Santos DRAWING No. 9500-1124-040-LAY-0004 REV 5

Appendix B – Typical Buried Pipeline Right-of-Way

1 2 3 4 5 6 7 8 9 10 11 12

A

B

C

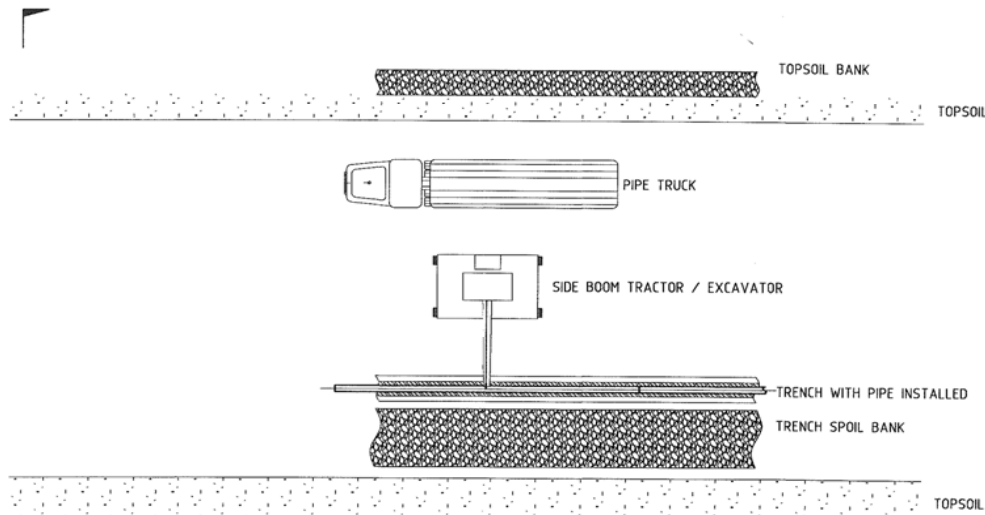
D

E

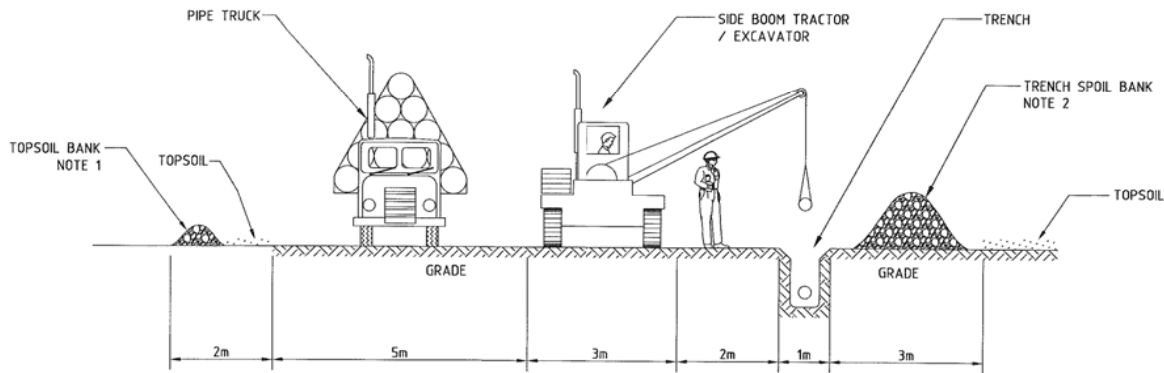
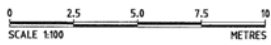
F

G

H



BURIED STEEL PIPELINE
PLAN VIEW
SCALE 1:100



BURIED STEEL & DN150 GRE PIPELINE
ELEVATION VIEW



SECTION A
SCALE: 1:50

NOTES

1. TOPSOIL SHALL BE STRIPPED FROM RIGHT OF WAY AND STOCK PILED SEPARATELY FROM SUB SOIL.
2. EXCAVATED MATERIAL SHALL BE PLACED IN PILES WITHIN THE LIMITS OF RIGHT OF WAY.
3. TURNING CIRCLE APPROXIMATELY EVERY 2km OR NEAREST CLAY PAN. EXISTING INFRASTRUCTURE TO BE USED WHERE POSSIBLE.
4. NO RESTRICTION TO RIGHT OF WAY WIDTH OVER DUNES.
5. WHERE BELLHOLES ARE REQUIRED, (eg TIE-INS, CROSSINGS) RIGHT OF WAY WIDTH TO BE INCREASED.
6. TYPICAL RIGHT OF WAY LAYOUT BASED ON STD BURIAL DEPTH OF 750mm. EXTRA DEPTH WILL INCREASE OVERALL WIDTH.

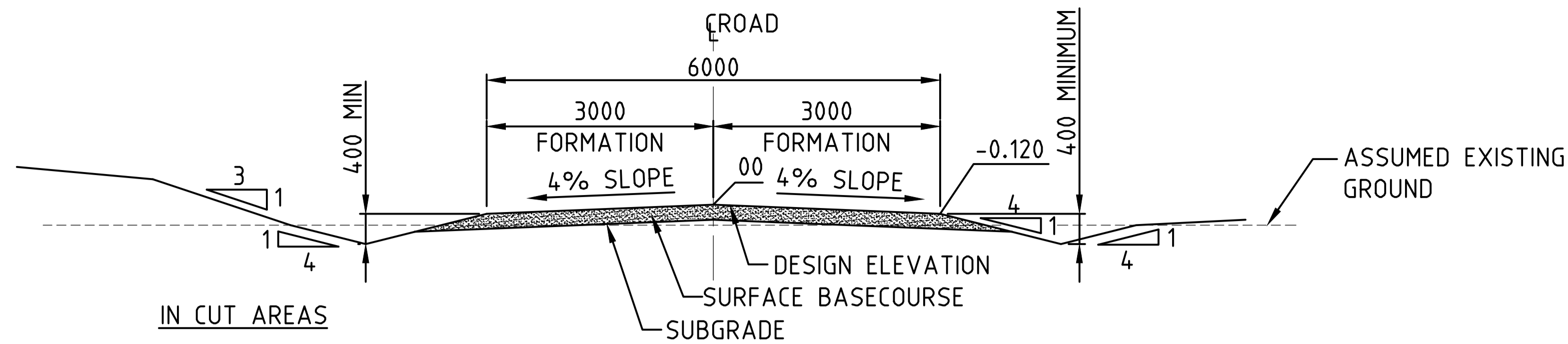
No	DATE	DRN	CHKD	ENG	Q.A.	PROJ	ACC	CP	DESCRIPTION	DRG No.	SUBJECT	DRN	FYF	DATE	SCALE	CHKD	ENG	Q.A.	PROJ	ACC	
0									ORIGINAL ISSUE	1500-40-817	STANDARD BELL HOLE DESIGN										
									REVISIONS		REFERENCE DRAWINGS										

AREA 1500 - STANDARD DRAWING
TYPICAL RIGHT OF WAY (R.O.W.) FOR
BURIED STEEL & DN150 GRE PIPELINE INSTALLATION
PLAN AND ELEVATION ILLUSTRATION

Santos DRAWING No. 1500-50-1276 REV 0

A.B.N. 80 807 550 923

Appendix C – Typical Road Cross Section for Class D Roads

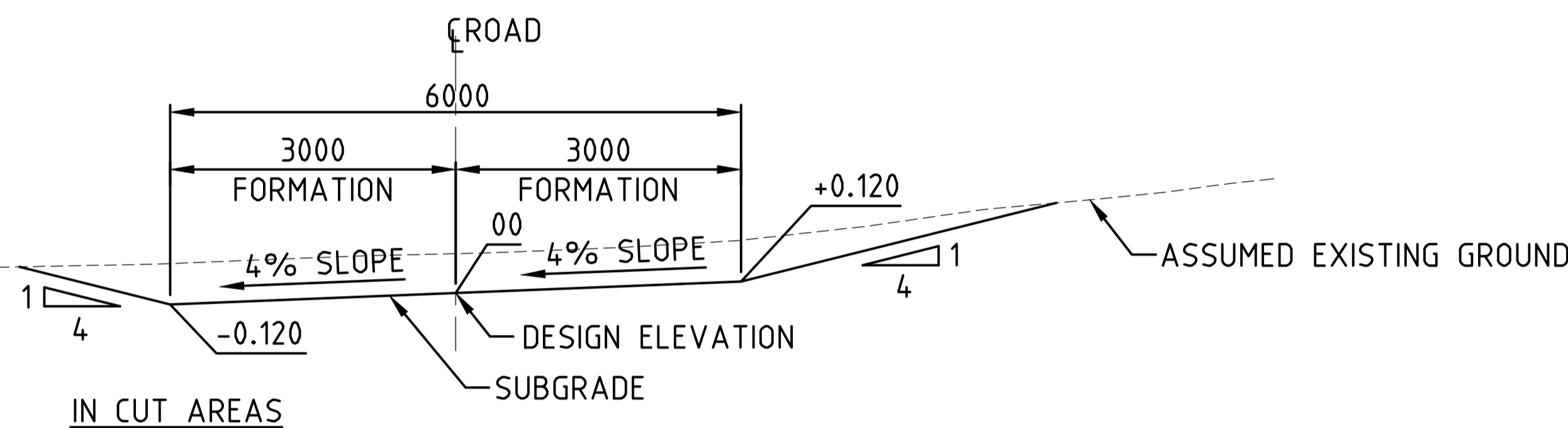


PAVEMENT MATERIAL - CLASS C ROAD

SURFACE COURSE	MINIMUM 200mm BEST AVAILABLE LOCAL (CLAY OR CLAYEY SAND) MATERIAL, COMPACTED TO 95% MMDD @ +/- 2% OMC.
SUBGRADE	REMOVE ALL VEGETATION AND COMPACT 200mm SUBGRADE TO 95% MMDD @ +/- 2% OMC.

TYPICAL SECTION - CLASS D ROAD (FOR ELEVATED SECTIONS)

SCALE 1:50



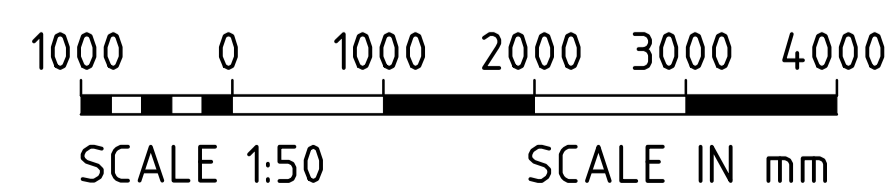
TYPICAL SECTION - CLASS D ROAD (FOR SECTIONS GRADED TO HARD SURFACE)

SCALE 1:50

ROAD CONDITION	MIN. VERTICAL CURVE LENGTH (m)	
	CLASS D	CLASS D 30kph*
1	80	30
2	80	30
3	90	30
4	120	30
5	150	30
6	180	30
7	210	40
8	240	40
9		50
10		55

CLASS D ROADS, SAND DUNE CROSSINGS

ROAD CONDITION	SPEED LIMIT	MIN. HORIZONTAL CURVE LENGTH (m)
CLASS D ROAD	80kph	500



No	DATE	DRN	CHKD	ENG	Q.A.	PROJ	ACC	DESCRIPTION	DRG No.	SUBJECT	REFERENCE DRAWINGS
C	07/11/17	FYFE	SJM					UPDATED FOR CLIENT REVIEW			
B	01/04/16	FYFE	SJM					REVISED FOR REVIEW UNDER MOC-CB-002992			
A		KBR	BC					ISSUED FOR CLIENT REVIEW			

NOTES:

- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL THE COMPLETE CONTRACT DOCUMENTS AND SPECIFICATIONS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- FOR SITE PREPARATION, EXCAVATION AND BACKFILL REFER TO PROJECT SPECIFICATION.
- FOR ROAD CONSTRUCTION REFER TO ROAD WORKS SPECIFICATION 1515-120-S006.
- SIDE BATTER SLOPES FOR CLASS D ROAD SHALL BE 4 HORIZONTAL TO 1 VERTICAL IN CUT AND FILL.
- CLEARING, GRUBBING AND STRIPPING OF FULL DEPTH (MIN. 100mm) OF TOPSOIL WITHIN THE ROAD RIGHT OF WAY SHALL BE UNDERTAKEN FOR THE NEW ROAD ALIGNMENTS.
- FOR CLASS D ROAD, FORMATION ELEVATED TO PROVIDE STABLE RUNNING SURFACE NO PROVISION FOR DRAINAGE.

ROAD CLASSES	D
ROAD WIDTH - METRES	
NORMAL WIDTH	6.0
SAND DUNE CROSSING	8.0
CULVERT/FLOODWAY	8.0

- TABLE DRAINS. TABLE DRAINS SHALL MITRE AT THE FOLLOWING SPACING.

RECOMMENDED MITRE DRAIN SPACING		
SLOPE		SPACING (m) (MAXIMUM)
%	GRADIENT	
0.5	1 : 200	120
1	1 : 100	120
2	1 : 50	100
3	1 : 33	80
4	1 : 25	60
5	1 : 20	60
6	1 : 17	50
8	1 : 12.5	30

- MINIMUM INVERT OF TABLE DRAIN TO BE BELOW PAVEMENT SUB-GRADE LEVEL.
- VERTICAL GRADE ON DUNE APPROACH ROADS TO BE LIMITED TO (10% MAX.) 6% VERTICAL GRADIENT PREFERRED.

CIVIL STANDARD DRAWING
TYPICAL ROAD CROSS SECTION
CLASS D ROADS

Santos DRAWING No. 0001-040-DDR-0005 REV C

Appendix D – Database Search Results

Queensland Titles Registry Pty Ltd
 ABN 23 648 568 101

Title Reference: 17666180	Search Date: 27/08/2024 14:56
Date State Tenure Created: 21/10/1995	Request No: 49139380
Creating Dealing:	

DESCRIPTION OF LAND

Tenure Reference: PH 15/2528
 Lease Type: ROLLING TERM LEASE
 LOT 2528 CROWN PLAN PH429
 Local Government: BULLOO
 Area: 135974.400000 Ha. (SURVEYED)
 No Land Description
 No Forestry Entitlement Area
 Purpose for which granted:
 NO PURPOSE DEFINED

REGISTERED LESSEE **INTEREST**

Dealing No: 717008480	14/01/2016	
JENNIFER ANN BETTS		1/2
BRADLEY ROSS BETTS		1/2
AS TENANTS IN COMMON		

TERM OF LEASE

Term and day of beginning of lease
 Term: 30 years commencing on 01/04/1966
 Expiring on 31/03/1996
 Extended to 31/03/2049

CONDITIONS

A126 SPECIFIED CONDITIONS FOR: Term Lease
 PURPOSE: Rolling term lease - pastoral

 STATUTORY CONDITIONS:

 Statutory conditions are the general mandatory conditions of a lease and binds the lessee in accordance with Part 2 Division 1 of the Land Act.

1. Permitted Use: The lessee must use the land only for the purpose for which the tenure was issued under the Land Act 1994.
2. Duty of Care: The lessee has the responsibility for a duty of care, for the land under the Land Act 1994.
3. Rent/Instalment: The lessee must pay the annual rent/instalment in accordance with the Land Act 1994 and the Land Regulation 2009.
 For further information on how annual rent is determined, refer to the department's website at www.dnrm.qld.gov.au.
4. Noxious plants: The lessee must keep noxious plants on the land under control. If the lessee does not comply with this condition, the Minister may bring the noxious plants under control, the cost of which will be recovered from the lessee.
5. Information to Minister: The lessee must give the Minister

CONDITIONS (Continued)

administering the Land Act 1994, information the Minister asks for about the tenure.

6. Monies for Improvements: No money for improvements is payable by the State on the forfeiture, surrender or expiry of this lease but money may be payable if the State receives payment from an incoming lessee or buyer for the improvements on the land. However, the previous lessee may apply to the Minister to remove the improvements that belong to the lessee, within a period of 3 months from the date of the forfeiture, surrender, or expiry of this lease. The lessee may only undertake the removal of the improvements in the presence of an authorised representative of the department, if required by the Minister. The lessee may only remove those improvements if all monies due from the lessee to the department under this lease have been paid.

REGULATORY-CONDITIONS:-----

A regulatory condition relates to a lease, in accordance with the Land Regulation.

1. Indemnity: The lessee indemnifies and agrees to keep indemnified the Minister, and the State of Queensland and its Representatives, (the "Indemnified parties") against all liability, costs, loss and expenses including claims in negligence (including any claims, proceedings or demands brought by any third party, and any legal fees, costs and disbursements on a solicitor and client basis) ("Claim") arising from or incurred in connection with:
- the granting of this lease to the lessee;
 - the lessee's use and occupation of the land; or
 - personal injury (including sickness and death) or property damage or loss in connection with the performance (or attempted purported performance or non-performance) of the lease or a breach of the lease by the lessee.

The lessee hereby releases and discharges to the full extent permitted by law, the Indemnified parties from all actions, claims, proceedings or demands and in respect of any loss, death, injury, illness or damage (whether personal or property and whether special, direct, indirect or consequential financial loss) arising out of the use and occupation of the lease. To the full extent permitted by law, the Minister, the State of Queensland and their Representatives will not be liable to the lessee for any special, indirect or consequential damages, including consequential financial loss arising out of the use and occupation of the lease.

2. Public Liability: The lessee must effect a public liability insurance policy with an insurer authorised under the Insurance Act 1973 (Commonwealth) or, if not so authorised then only with the Minister's approval, which can be given or withheld in the Minister's sole discretion, naming the lessee as the insured covering legal liability for any loss of, or damage to any property and for the injury (including death) to any person arising out of anything done or omitted on or about the land or any improvements thereon and against all claims, demands, proceedings, costs, charges, and expenses whatsoever (including claims in negligence) Such policy must:
- be for an amount of not less than \$20,000,000.00 and have no per event sublimit or such higher amounts as the Minister may reasonably require.
 - be effected on a "claims occurring" basis; and
 - be maintained at all times during the currency of the lease, and upon receipt of any notice of cancellation, the

CONDITIONS (Continued)

lessee must immediately effect another public insurance policy in accordance with the terms of the lease .

The lessee must, as soon as practicable, inform the Minister, in writing, of the occurrence of any event that the lessee considers is likely to give rise to a claim under the policy of insurance effected and must ensure that the Minister is kept fully informed of subsequent actions and developments concerning the claim. The lessee must renew such policy, at the lessee's expense, each year during the currency of this lease.

The condition will be satisfied if the lessee is the State of Queensland or a statutory authority eligible for cover under the Queensland Government Insurance Fund and is insured and continues to be insured by the Queensland Government Insurance Fund. This condition will be satisfied if the lessee is the Commonwealth of Australia or a statutory authority eligible for cover under the Comcover Insurance Fund and is insured and continues to be insured by Comcover.

3. Access: The provision of access, further access or services to the land will not be the responsibility of the State.
4. Survey Costs: If the land needs to be surveyed or re-surveyed the lessee must do this at their own cost under the Survey and Mapping Infrastructure Act 2003. This survey plan must be lodged in the land registry within the specified time.
5. Extension: The lease is subject to the extensions of rolling term leases provision of the Land Act 1994 and the Minister must grant an extension of the term of a rolling term lease if the lessee makes an application in the approved form. The extension will be for the original term of the lease and may be given subject to condition changes.
6. Jurisdiction: The lessee is subject to the Land Act 1994 and all other relevant Queensland and Commonwealth legislation.
7. Compliance with Laws - the lessee must comply with all lawful requirements of the -
 - a. Local Government; and
 - b. any department within the Queensland or Commonwealth governments (including the department administering the Land Act 1994), local authority or statutory instrumentality having jurisdiction over the land, or the development, use and occupation of the land, in regard to its use, occupation and development of the land.

SPECIAL-CONDITIONS:-----

These conditions relate to this lease.

Improvements or development on or to the land

1. The lessee must during the whole term of the lease, to the satisfaction of the relevant authorities, maintain all improvements and boundary fencing on the land in a good and substantial state of repair.

Quarry material

1. The lessee must allow any person authorised under the Forestry Act 1959 access to the leased land for the purpose of cutting and removing timber or removing other forest products, or quarry material, or other material from the leased land. Except as hereinafter provided the lessee must not interfere with any forest products or remove any quarry material (including any stone, gravel, sand, earth, soil, rock, guano or clay which is not a mineral within the meaning of the Mineral Resources Act 1989) or other material upon the leased land without the permission of the Minister administering the Land Act 1994 except under the authority of and in compliance in every respect with

Queensland Titles Registry Pty Ltd
 ABN 23 648 568 101

Title Reference:	17666180
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CONDITIONS (Continued)

the requirements or a permit, licence, agreement or contract granted or made under the Forestry Act 1959.

ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by Lease No. 17666180
2. EASEMENT IN GROSS No 708042385 09/09/2004 at 12:19 burdening the land
 VAMGAS PTY LTD A.B.N. 76 006 245 110
 SANTOS LIMITED A.B.N. 80 007 550 923
 DELHI PETROLEUM PTY LTD A.B.N. 65 007 854 686
 SANTOS PETROLEUM PTY LTD A.B.N. 95 000 146 369
 ORIGIN ENERGY RESOURCES LIMITED A.B.N. 66 007 845 338
 SANTOS AUSTRALIAN HYDROCARBONS PTY LTD A.B.N. 83 010 850 487
 ORIGIN ENERGY CSG LIMITED A.B.N. 68 001 646 331
 over
 EASEMENT G ON SP157755
3. TRANSFER No 715191588 09/07/2013 at 11:13
 EASEMENT IN GROSS: 708042385
 VAMGAS PTY LTD TENANT IN COMMON 601/8000
 SANTOS LIMITED TENANT IN COMMON 3263/10000
 DELHI PETROLEUM PTY LTD TENANT IN COMMON 29/125
 SANTOS PETROLEUM PTY LTD TENANT IN COMMON 117/625
 ORIGIN ENERGY RESOURCES LIMITED TENANT IN COMMON 1339/8000
 SANTOS AUSTRALIAN HYDROCARBONS PTY LTD
 TENANT IN COMMON 3/250
4. EASEMENT IN GROSS No 708106877 05/10/2004 at 08:53 burdening the land
 SANTOS LIMITED A.B.N. 80 007 550 923
 DELHI PETROLEUM PTY LTD A.B.N. 65 007 854 686
 SANTOS PETROLEUM PTY LTD A.B.N. 95 000 146 369
 VAMGAS PTY LTD A.B.N. 76 006 245 110
 over
 EASEMENT H ON SP163455
5. AMENDMENT OF LEASE CONDITIONS No 715965240 21/08/2014 at 05:00
 THE CONDITIONS OF THE WITHIN TENURE ARE HEREBY AMENDED.

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
717904160	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	17/03/2017 10:35	CURRENT
719767646	EXEMPT CONS SEC 322AA LAND ACT 1994	02/12/2019 08:28	CURRENT
723375458	NT DETERM NATIVE TITLE ACT 1993 (CTH)	05/07/2024 09:49	CURRENT
723376306	NT DETERM NATIVE TITLE ACT 1993 (CTH)	05/07/2024 13:37	CURRENT

UNREGISTERED DEALINGS

NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current State Tenure Search **

Information provided under section 34 Land Title Act (1994) or section 281 Land Act (1994)