Santos Ltd
ABN 80 007 550 923
60 Flinders Street
Adelaide, South Australia 5000
Telephone: 61 8 8116 5000
Facsimile: 61 8 8116 5050
www.santos.com

03/09/2024

Santos Reference: CB24-08

Chief Executive
RPI Act Development Assessment Team
Department of State Development and Infrastructure
PO Box 15009
City East 4002

Via email: RPIAct@dsdilgp.qld.gov.au

Dear Sir/Madam,

Please find attached an application for a Regional Interests Development Approval (RIDA) under the *Regional Planning Interests Act 2014* (RPI Act). This application seeks to authorise petroleum activities on PL 1046 within the Channel Country Strategic Environmental Area (SEA).

This application includes the following information:

- Attachment 1 – Assessment Application Form;
- Attachment 2 – Current State Tenure Title Search;
- Attachment 3 – Resource Authority Public Report;
- Attachment 4 – Assessment Report; and
- Attachment 5 – GIS Files.

Payment of the application fee of $13,719.00 was made on 03/09/2024

Please do not hesitate to contact Ky-Ann Worthington-Sheppard on (07) 3838 3000 or Ky-Ann.Worthington-Sheppard@santos.com should you have any queries in relation to the application.

Yours sincerely,

David Gornall

Manager Environment EA and PNG – Onshore

Santos Limited

Santos

Attachment 1 – RPI Act Assessment Application Form

Regional Planning Interests Act 2014

Assessment Application Form

Approved under section 94 of the *Regional Planning Interests Act 2014*. Version 3.2 is effective from 13 November 2023.

Before lodging your application

- read 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* here:

  Areas of regional interest | Planning (statedevelopment.qld.gov.au)

- consider contacting the RPI Act Development Assessment Team on 07 3328 4811 or email RPIAct@dsdilgp.qld.gov.au for general queries, or to request a pre-application discussion on the proposed application.

Purpose of application form

This form is to be used when making an assessment application for a Regional Interests Development Approval (RIDA) under the *Regional Planning Interests Act 2014* (RPI Act).

Definitions

Expressions highlighted in bold italic type have the same meaning as in the RPI Act or in regulations made under the RPI Act.

How to make the Assessment Application

Section 29 of the RPI Act states:

An assessment application must be:

i. made to the chief executive in the approved form; and

ii. accompanied by a report:

» *assessing the resource activity or regulated activity's impact on the area of regional interest; and*

» *identifying any constraints on the configuration or operation of the activity; and*

iii. accompanied by the fee prescribed under a regulation.

The applicant must complete all sections of the form either on the form or as an attachment.

Where to lodge

Provide **1 electronic copy** of the completed application form and the supporting information to the chief executive:

- **Email** RPIAct@dsdilgp.qld.gov.au
- **Post** RPI Act Development Assessment Team DSDILGP, PO Box 15009, City East QLD 4002
- **Hand deliver** RPI Act Development Assessment Team DSDILGP**,** Level 13, 1 William Street, Brisbane.

(For hand deliveries, contact the RIDA Development Assessment Team on 07 3328 4811).

1. Property description of the land the subject of the application

Identify all lots or parts of lots on which the activity is proposed, and the total area of disturbance. Provide a map.

Lot on Plan description *(e.g. 1RP12345)*	Orientos Station (2528PH429)
Street address/suburb/locality and postcode	Cameron Corner QLD 4492
Closest town	Durham

2. Application details

Attach a map that clearly shows all relevant areas of regional interest on the land the subject of the application and the corresponding proposed location of the proposed activity/activities

Identify the area/s of regional interest (ARI) in the application area and the area of the ARI to be disturbed

Area of regional interest (ARI)	Area of disturbance	Area of regional interest (ARI)	Area of disturbance
☐ Priority agricultural area	___ ha	☐ Priority living area	___ ha
☐ Strategic cropping area	___ ha	☒ Strategic environmental area	42.4 ha

Identify the resource or regulated activity

☐ Resource activity: mining and other resource activities (not petroleum and gas). (*Add the type of mining on this form (e.g. coal, bauxite)*
☒ Resource activity: petroleum and gas
☐ Regulated activity: broadacre cropping *(Only relevant where the application relates to a strategic environmental area*)
☐ Regulated activity: water storage (dam) (*Only relevant where the application relates to a strategic environmental area)*

Provide a detailed description of the proposed activities

Provide a description of the proposed activities for which approval is sought, location and the surface area of the activities.

Area of regional interest	Activity	Location	Total area of disturbance (ha)
Channel Country SEA	*New petroleum wells and associated infrastructure – please refer to Assessment Report*	*2528PH429 (Orientos Station)*	*42.4 ha*

Provide a description of current land use

Provide a description of what the land is currently being used for (e.g. horticulture, irrigated cropping, dryland grazing, nature conservation, residential, manufacturing and industrial, etc.) and the surrounding land within a 1km radius.

Attach a map that clearly shows the area and location of all existing land uses and activities on the land the subject of the application, and within a 1km radius of the boundaries of the land that is the subject of the application.

Please refer to Assessment Report.

The proposed Hector 2, Hector Southeast 3 & Roulette 1 development is located on the Orientos Station (Lot 2528 on Plan PH429), a 1,442 km^2 cattle station.

The primary land uses on the Orientos Station are cattle grazing and petroleum activities. Sections of this station have been subject to long-term grazing from pastoral operations.

3. Supporting information to accompany this application

Report *(addressing matters set out in section 29(b) of the RPI Act)*

Maps, GIS data files, site plans *(proposed activities)*

Other documents *(optional)*

4. Other relevant information to accompany this application *Attach map/s to identify the location of this information and lot on plan details.*		
Are there any *resource authorities* or applications for *resource authorities* over all or part of the land the subject of the application? *(e.g. for exploration or resource development)*	☒ Yes *PL 1046*	☐ No
Is there a *SCL protection decision* over all or part of the land the subject of the application?	☐ Yes *(Provide decision number/s)*	☒ No
Is there an *environmental authority* (EA) over all or part of the land the subject of the application?	☒ Yes *EPPG03517415*	☐ No
Are there any easements over any part of the land the subject of the application?	☐ Yes *(Include nature, location and dimensions of each easement e.g. for access, infrastructure)*	☒ No
Attach a current title search for each lot or part of a lot the subject of the application *(NOTE: the searches must be obtained no more than 3 business days prior to making the application.)*	☒ Tick to confirm title searches are attached.	
Attach GIS data files for the proposed activities identified in section 2 above.	☒ Tick to confirm data files are attached.	
Is an exemption from public notification for the assessment application under section 34(3) of the RPI Act sought?	☐ Yes *(Attach written request including justification for the exemption)*	☒ No

5. Landowner details		
Name/s of all landowner/s	Jennifer Ann Betts & Bradley Ross Betts	
Postal address/es	Orientos via Tibooburra, NSW, 2880	
Telephone/mobile number and/or email address/es (non-mandatory)		
Is the applicant the owner (as defined in schedule 1 to the RPI Act) of the land the subject of the application?	☐ Yes	☒ No *Refer to Assessment Report*

Is it necessary, under section 30 of the RPI Act, to provide a copy of the application to the owner of the land? *(NOTE: proof of delivery will be required.)*	☐ Yes	☒ No

6. Applicant/authorised person details

Section 28 of the RPI Act prescribes who may be the applicant for a RIDA for a resource activity or regulated activity to be carried out in an area of regional interest. The decision about the application is issued to the applicant. The applicant need not be the owner of the land. The authorised person for a company (if applicable) is the contact person for the applicant and need not be the applicant (for example, director, company secretary or sole director). However, formal documents, such as any requirement notice and the decision about the application, will be sent to the applicant at the address for service stated below.

Applicant/s name (individual or company name in full), include ABN or ACN number if applicable	Santos Limited ABN 80 007 550 923
Applicant's postal address and email address for service	Level 22, 32 Turbot Street, Brisbane QLD 4000
Authorised contact person for applicant: name, position and company	Ky-Ann Worthington-Sheppard, Environmental Advisor, Santos Limited
Contact phone number and/or mobile number	(07) 3838 3000
Contact email address	Ky-Ann.Worthington-Sheppard@santos.com onshoreenvcompliance@santos.com

7. Electronic documentation

Where an email address is provided in section 6 above, does the applicant consent to receiving written information relating to this assessment application, required or permitted to be provided under the *Regional Planning Interests Act 2014* or any other State law, in an electronic format pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001*?	☒ Yes ☐ No

8. Application fee *(Fees are prescribed in the Regional Planning Interests Regulation 2014)*

Amount payable	*$13,719.00*	
Reference number *(Contact RIDA assessment team for a reference number)*	RPI24/005	
Payment option *(Contact RIDA assessment team for account details)*	☒ Direct deposit	Date deposited: 03/09/2024
	☐ Cheque attached	

9. Use and Disclosure of Information Statement

The information is collected in accordance with the RPI Act and will be used by Queensland Government Agencies for the processing and assessment of your assessment application, and may involve the chief executive:

1. and other officers of DSDILGP, and any consultants engaged by or on behalf of the chief executive, reviewing the information provided for the purpose of considering and assessing your assessment application
2. providing a copy of the assessment application to relevant Queensland Government Agencies prescribed as assessing agencies for the assessment application (including the local government), the Gasfields Commission Queensland or any person asked to provide advice or comment on the assessment application.

The assessment application and the accompanying report will also be made publicly available on the DSDILGP website from the time the assessment application is made until the time it lapses or is withdrawn or, if is decided, until the end of the last period during which an appeal may be made against a decision on the application. However, information will not be made publicly available on the DSDILGP website to the extent that it is provided by an owner of land (as defined in Schedule 1 to the RPI Act) (an *owner*) who is not the applicant, and is commercial-in-confidence or personal information, and that owner has not consented to its disclosure, or to the extent that it is information which is considered to be sensitive security information.

Where an application proposes a resource or regulated activity in a Priority Agricultural Area (PAA) and the applicant is required to provide information about the productive capacity or operation of a priority agricultural land use to address the prescribed solutions in the Regional Planning Interests Regulation 2014 (Schedule 2, Part 2), the information is to be provided in a separate document attached as an appendix to the assessment application report and the application must:

- identify the source of the information provided, including whether the information was provided by an owner other than the applicant
- state whether an owner other than the applicant agrees to the information being made publicly available on the DSDILGP website; and if so, provide the express written agreement of that owner to the information being made publicly available on the DSDILGP website.

If an owner, other than the applicant, does not provide express written agreement, the information will not be made available on the DSDILGP website with the other application information. You may also be required to publicly notify your application. A notice about the chief executive's decision relating to your application will also be publicly notified.

Your personal details will not be disclosed for a purpose outside this assessment process, except where required by legislation (including the *Right to Information Act 2009*). This information may be stored in a database by DSDILGP.

The information collected will be retained as required by the *Public Records Act 2002*.

10. Declaration

This declaration needs to be made by the individual applicant or, when the applicant is a company, an authorised person or persons who have the authority to act on behalf of that company in accordance with the *Corporations Act 2001* (Cth). Where the declaration is made by a person who is authorised in writing to make that declaration on behalf of the company, evidence of that authorisation must accompany the application.

☒ By making this application, I declare that all the information in this application is true and correct and that I have read and understood the '*Use and Disclosure of Information statement*' on this form.

Signature of Applicant	
Signature of applicant/authorised person:	
Name and Position:	David Gornall, Manager Environment EA and PNG – Onshore, Santos Limited
Date:	03/09/2024
Signature of Applicant	
Signature of applicant/authorised person:	
Name and Position:	
Date:	

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Attachment 2 – Current State Tenure Title Search

Current State Tenure Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**17666180**	**Search Date:**	03/09/2024 10:31
Date State Tenure Created:	21/10/1995	**Request No:**	49205503
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 bought 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:
   a. the granting of this lease to the lessee;
   b. the lessee 's use and occupation of the land; or
   c. 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:
   a. 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.
   b. be effected on a "claims occurring" basis; and
   c. 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

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)

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Attachment 3 – Resource Authority Public Report

PL 1046 Resource authority public report

PL 1046 Resource authority public report

Queensland Government

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PL 1046 Resource authority public report

Queensland Government

Permit details

Permit ID:	PL 1046
Type:	Petroleum Lease
Status:	Granted
Lodged date:	09/01/2018
Grant date:	08/05/2019
Commencement date:	08/05/2019
Expiry date:	07/05/2027
Plan/program expiry date:	07/05/2024
Current term:	8 years
Work program type:	
Conditions:	
Locality:	approximately 67km South West of the Ballera Gas Plant
Remarks:	
Act permit granted under:	Petroleum and Gas (Production and Safety) Act 2004
Act now administered under:	Petroleum and Gas (Production and Safety) Act 2004

Holders

Authorised holder representative (AHR)

Santos Limited
Team Leader Tenures Compliance Level 22, Santos Place 32 Turbot Street BRISBANE QLD 4000

Holders

	Holder name	Share %	Status	Held from	Held to	Authorised holder
*	SANTOS LIMITED Team Leader Tenures and Compliance GPO Box 1010 BRISBANE QLD 4001	37.500000000000	Current	08/05/2019		Yes
*	DELHI PETROLEUM PTY. LTD. Level 8 80 Flinders Street ADELAIDE SA 5000	30.000000000000	Current	08/05/2019		No
*	SANTOS PETROLEUM PTY LTD Team Leader, Tenures and Compliance Level 22, Santos Place 32 Turbot street Brisbane QLD 4000	25.000000000000	Current	08/05/2019		No
*	VAMGAS PTY LTD Team Leader, Tenures and Compliance Level 22, Santos Place 32 Turbot Street Brisbane QLD 4000	7.500000000000	Current	08/05/2019		No

Tenancy type: Tenancy in Common

PL 1046 Resource authority public report

Queensland Government

Area

Location:	View Map
Mining district:	Quilpie
Local authority:	Bulloo Shire Council
Area:	17 Sub-blocks
Exclusions:	
Marked out date:	

Sub-blocks

BIM	Block	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	44			C	D																					
Cooper Creek	3428	A	B	C			F	G				L	M				Q	R	S	T		V	W	X	Y	

Background land

No data available

Survey plans

Plan No.	Description	Date received	Locality	Volume	Folio
MP46607	PWL OF RAFFLE NORTH WEST 1	26/08/2019			
MP46314	PWL OF HECTOR SOUTH EAST 2\nCorrection of lease received 23/11/2022	27/06/2022			

Relinquishment details

No data available

Sub-blocks retained

No data available

Term history

Term	Date notice issued	Date lodged	Date approved	Date commenced	Date term ends	Term	Act granted under
2019 - 2027		09/01/2018	08/05/2019	08/05/2019	07/05/2027	8 years	Petroleum and Gas (Production and Safety) Act 2004

Native title

Outcome	Process
Private ILUA	Existing Private ILUA

Purpose and minerals

Prescribed Purpose
conventional gas

Prescribed minerals
Conventional Gas

PL 1046 Resource authority public report

Queensland Government

Related permits

Pre-requisite permits:	ATP 1189
Dependent permits:	DAA 2026

Financial

Rent details

Area units:	52
Rate/unit area:	$171.72

PL 1046 Resource authority public report

Queensland Government

Activities

Activity name	Activity / Dealing No	Status	Date received	Expected completion	Date completed	Remarks
Mortgage	336659	Registered	20/11/2020		09/12/2020	MMOL Reference:336659. A mortgage in an interest of DELHI PETROLEUM PTY. LTD. 30.000000000000% to Westpac Banking Corporation , Level 3, Westpac Place, 275 Kent Street, Sydney QLD 2000.
Sublease	299980	Registered	14/01/2020		15/01/2020	MMOL Reference:299980. Sublessee Name(s):SANTOS LIMITED-32.630000000000, SANTOS PETROLEUM PTY LTD-18.720000000000, SANTOS AUSTRALIAN HYDROCARBONS PTY LTD-1.200000000000, VAMGAS PTY LTD-7.512500000000, DELHI PETROLEUM PTY LTD-23.200000000000, LATTICE ENERGY LIMITED-16.737500000000. Sublease Term:Indefinitely. Sublease Area:Whole

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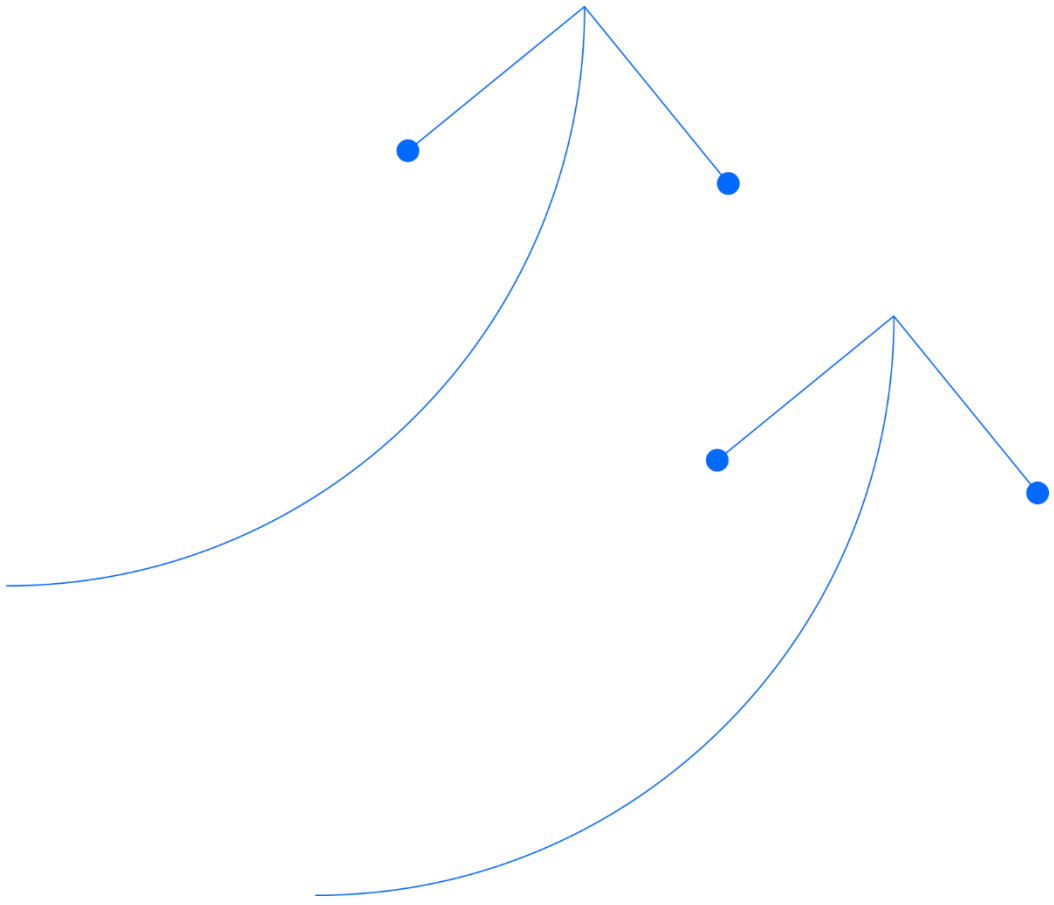
Attachment 4 – Assessment Report

Santos

REGIONAL INTERESTS DEVELOPMENT APPLICATION ASSESSMENT REPORT RPI24/005 SANTOS (HECTOR 2, HECTOR SOUTHEAST 3 & ROULETTE 1 DEVELOPMENT)

03/09/2024



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Abbreviations and Definitions

Acronym / Term	Description
ºC	Degrees Celsius
ABARES	Australian Bureau of Agricultural and Resource Economics
ATP	Authority to Prospect
BOM	Bureau of Meteorology
BPA	Biodiversity Planning Assessment
CDZ	Construction Disturbance Zone
DBH	Diameter at breast-height
DEH	Department for Environment and Heritage, South Australia
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
EEZ	Environmental Exclusion Zones
ENSO	El-Nino Southern Oscillation
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
ESA	Environmentally Sensitive Area
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
NCAP	No Concern at Present
P&G Act	*Petroleum and Gas (Production and Safety) Act 2004*
PL	Petroleum Lease
PPL	Petroleum Pipeline Lease
Proposed activities	Construction and operation of one buried oil pipeline (Patroclus to Genoa)
RE	Regional Ecosystem

Acronym / Term	Description
RIDA	Regional Interests Development Approval
RoW	Right of Way
RPI Act	*Regional Planning Interests Act 2014*
RPI Reg	*Regional Planning Interests Regulation 2014*
RSI	Residual Significant Impact
SEA	Strategic Environmental Area
Site	The footprint of the proposed activities including the outer construction boundary
SLC	Special Least Concern

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 Figure 1, 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

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

1.2. Notification

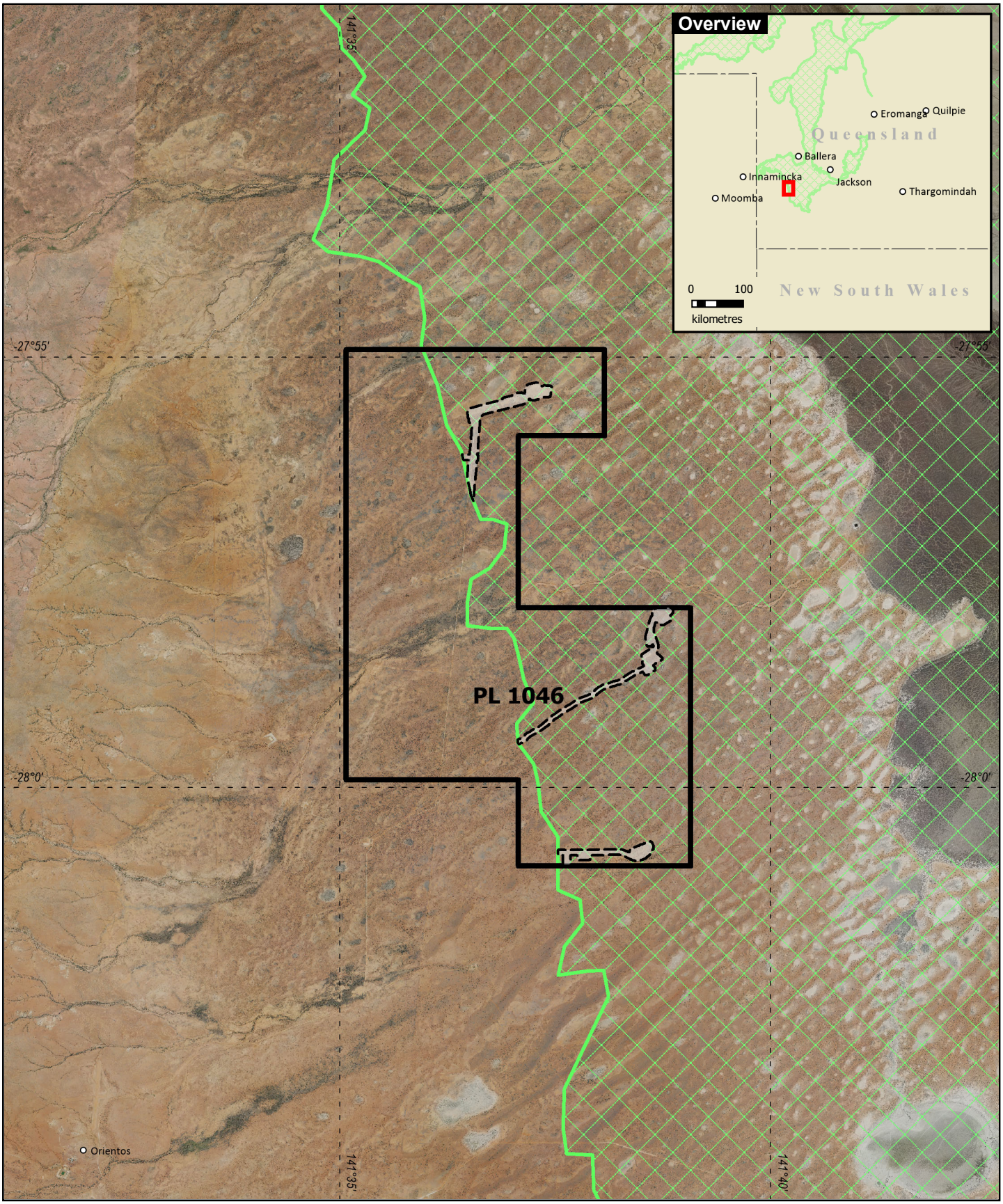
In accordance with Section 34(2) of the RPI Act and Section 13 of the RPI Reg, notification of this RIDA application is not mandatory as the proposed Hector 2, Hector Southeast 3 and Roulette 1 development is not located in an 'area of regional interest' that is a priority living area. The owners of the land subject to this RIDA application (i.e. the owners of the Orientos and Nappa Merrie stations) will, however, be provided with a copy of the RIDA application within five business days of submitting the application in accordance with Section 30 of the RPI Act and Schedule 5 of the RPI Reg.

1.3. Landholder Copy of the Application

In accordance with Section 30 of the RPI Act and Schedule 5 of the RPI Reg, a copy of the application will be given to the landowner within 5 business days after the application is made.

1.4. Referral

In accordance with Section 12(2) and Schedule 1 of the RPI Reg, this RIDA application is referrable to the Queensland Department of Environment, Science and Innovation (DESI) and the Queensland Department of Resources (DoR).



Legend

- PL 1046
- Strategic Environmental Area
- Construction Disturbance Zone

Santos

Cooper Basin

PL 1046

Regional Location or Proposed Activities

0 4

kilometres

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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 41.14 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 Figure 2. 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 Figure 2 is a construction disturbance zone (CDZ) which 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 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 Figure 2. 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	
		Access Tracks	

	Location	Resource Activity	Area of disturbance (hectares)
		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**

Proposed Infrastructure

- Access Road
- Flowline - Gas
- Flowline - Oil
- Borrow Pit
- Temporary Work Area
- Well Pad

Other

- PL 1046
- Strategic Environmental Area
- Construction Disturbance Zone

Inset A

Hector 2

PL 1046

Inset B

Hector Southeast 3

PL 1046

Inset C

Roulette 1

See Inset A

See Inset B

See Inset C

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PL 1046

Proposed Infrastructure and Construction Disturbance Zone

kilometres

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GDA 2020

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 Act.

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:

(a) the natural hydrologic processes of the area characterised by –

(i) natural, unrestricted flows in and along stream channels and the channel network in the area; and

(ii) overflow from stream 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 water quality in the stream channels and aquifers and on flood plains in the area;

(c) 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.

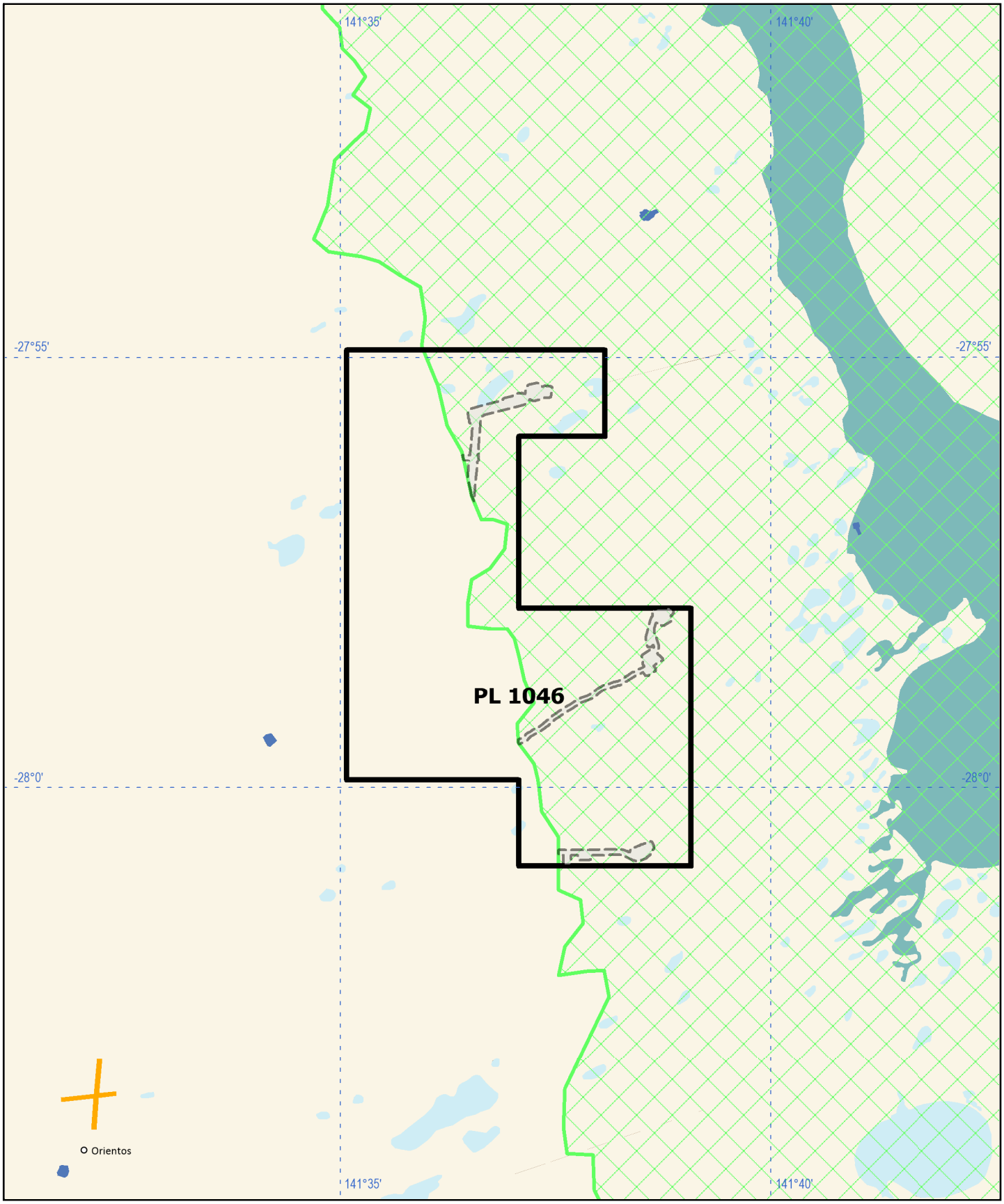
The El-Nino Southern Oscillation (ENSO) exerts significant influence on inter-annual climate variability across the region, producing marked fluctuations in the amount, timing and distribution of rainfall. As such, there is considerable

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 and Nappa Merrie Stations (2528PH429). Orientos Station is a 1,442 km^2 cattle station and Nappa Merrie Station is a 7,275 km^2 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 Figure 3).

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.



Legend

- PL 1046
- Strategic Environmental Area
- Construction Disturbance Zone

Australian Land Use and Management Classification
Version 8 (October 2016)

- Airports/aerodromes
- Grazing native vegetation
- Lake
- Marsh/wetland - production
- Reservoir/dam

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PL 1046

Land Use

0 4

kilometres

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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 catchment area of approximately 300,000 km^2.

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

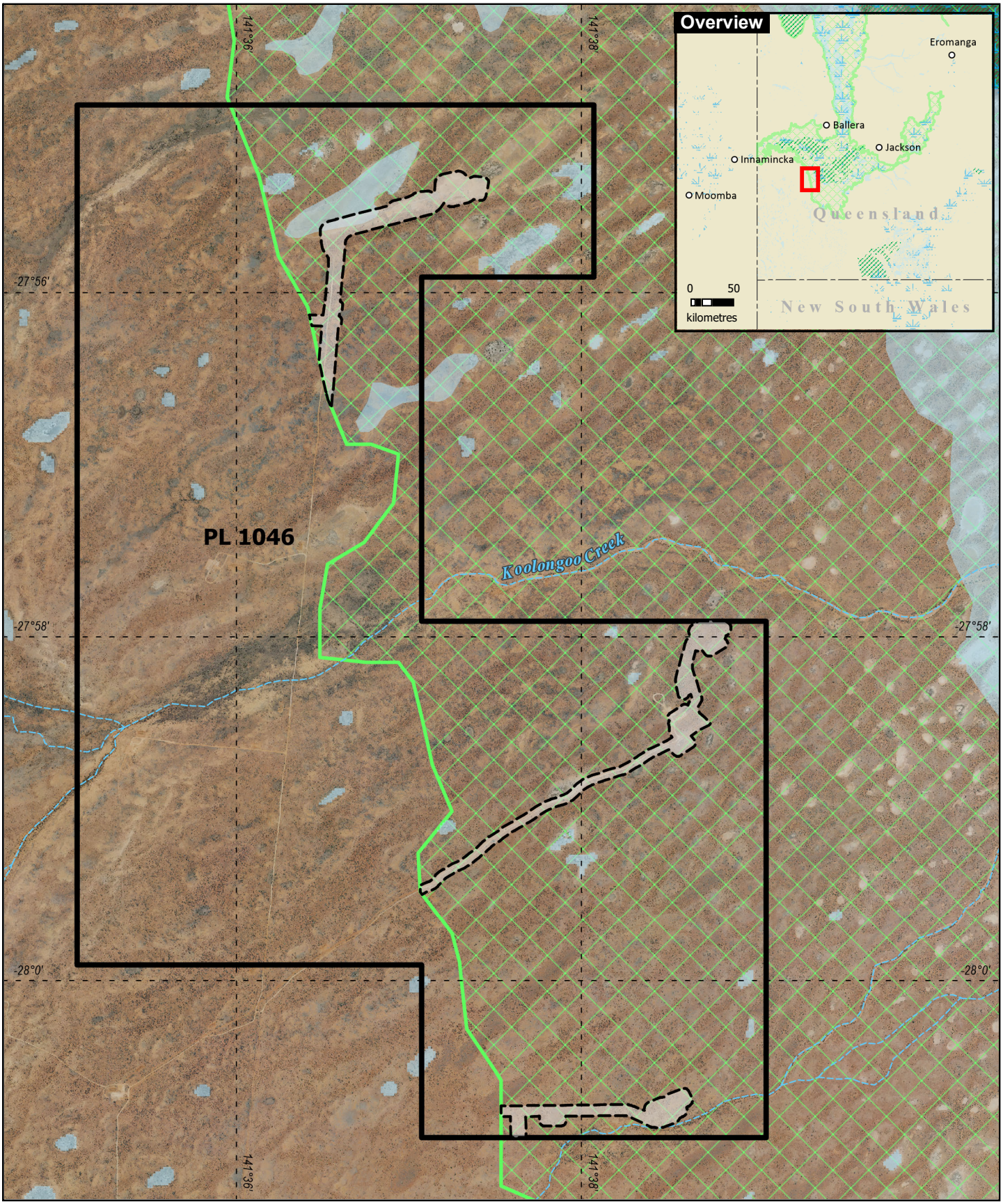
As shown in Figure 4, the portion of the proposed Hector 2, Hector Southeast 3 and Roulette 1 development that is located within the Channel Country SEA does not intersect any waterways, however it is located in relatively close proximity to a number of unnamed waterways that flow in an easterly direction 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 Figure 4, 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.



Legend

- PL 1046
- Strategic Environmental Area
- Construction Disturbance Zone
- Watercourse / drainage
- Subject to inundation

Wetland management area

- High ecological significance (HES)
- General ecological significance (GES)

Santos

Cooper Basin

PL 1046

Wetlands and Watercourses

0 2
kilometres

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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 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 **Error! Reference source not found.** (Queensland Govenment, 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^{o}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

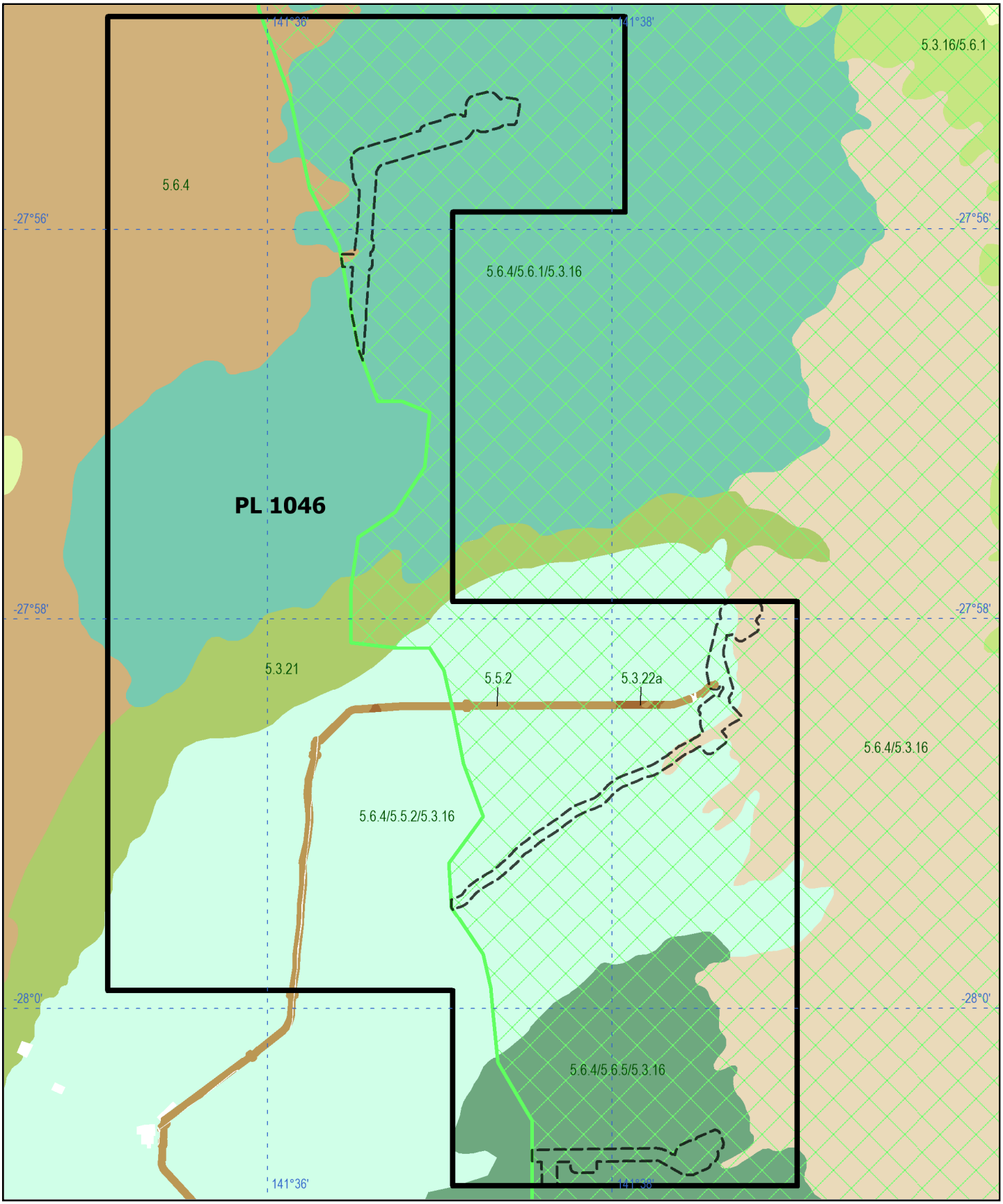
3.6.1. Vegetation

Vegetation within and surrounding the proposed Hector 2, Hector Southeast 3 and Roulette 1 development is mapped as a variety of REs (refer to Figure 5), 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*.



Legend

- PL 1046
- Strategic Environmental Area
- Construction Disturbance Zone

Regional Ecosystems

- 5.3.13/5.3.16
- 5.3.16
- 5.3.16/5.6.1
- 5.3.21
- 5.3.22a
- 5.5.2
- 5.6.4
- 5.6.4/5.3.16
- 5.6.4/5.5.2/5.3.16
- 5.6.4/5.6.1/5.3.16
- 5.6.4/5.6.5/5.3.16

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PL 1046

Regional Ecosystems

0 2

kilometres

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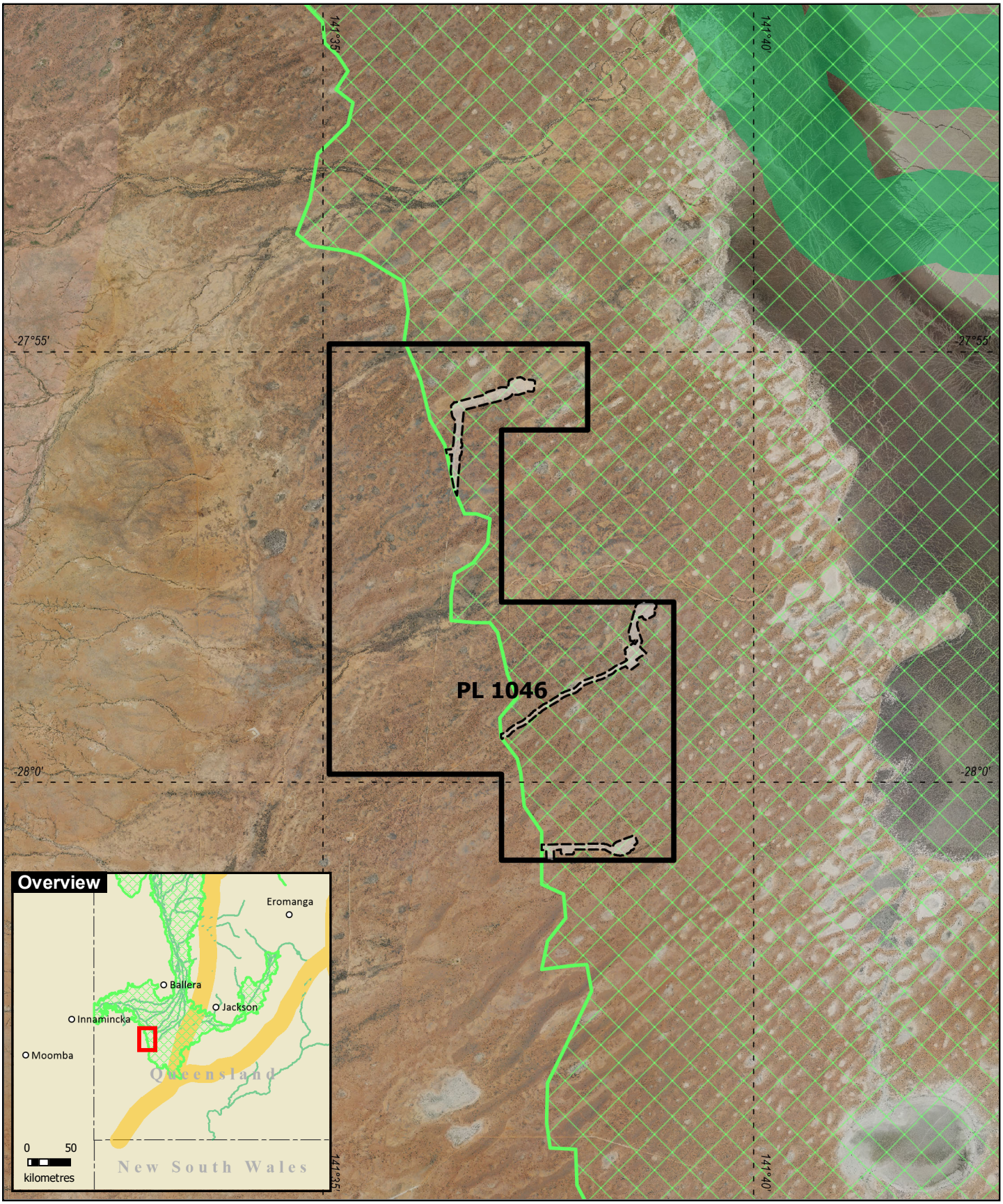
GDA 2020

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 Figure 6, 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 Figure 6, 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).



Legend

- PL 1046
- Strategic Environmental Area
- Construction Disturbance Zone

Queensland statewide corridor

- Terrestrial Corridor
- Riparian Corridor

Santos

Cooper Basin

PL 1046

Wildlife Corridors

0 4

kilometres

Rev 3 Date: 30/07/2024 File No. ENVIR 1017e.WOR

GDA 2020

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 Bearcat 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 crease 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 native 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 spare 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
14 Required outcome *The activity will not result in a widespread or irreversible impact on an environmental attribute of a strategic environmental area.*	✓	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.
15 Prescribed solution *The application demonstrates either—* *a. 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* b. *all of the following—*	✓	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.
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;	✓	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, Item15(2) of the RPI Reg.
ii. the construction and operation footprint of the activity on the environmental attribute is minimised to the greatest extent possible;	✓	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.
iii. the activity does not compromise the preservation of the environmental attribute within the strategic environmental area;	✓	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.
iv. if the activity is to be carried out in a strategic environmental area identified in a regional plan—the activity will	✓	The Channel Country SEA is not identified in the Southwest Regional Plan.

Schedule 2, Part 5 RPI Reg		Relevance to Application
contribute to the regional outcomes, and be consistent with the regional policies, stated in the regional plan.		

6. References

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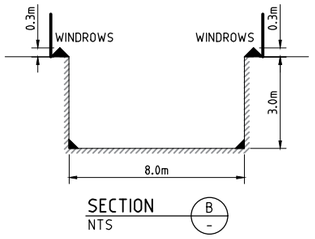
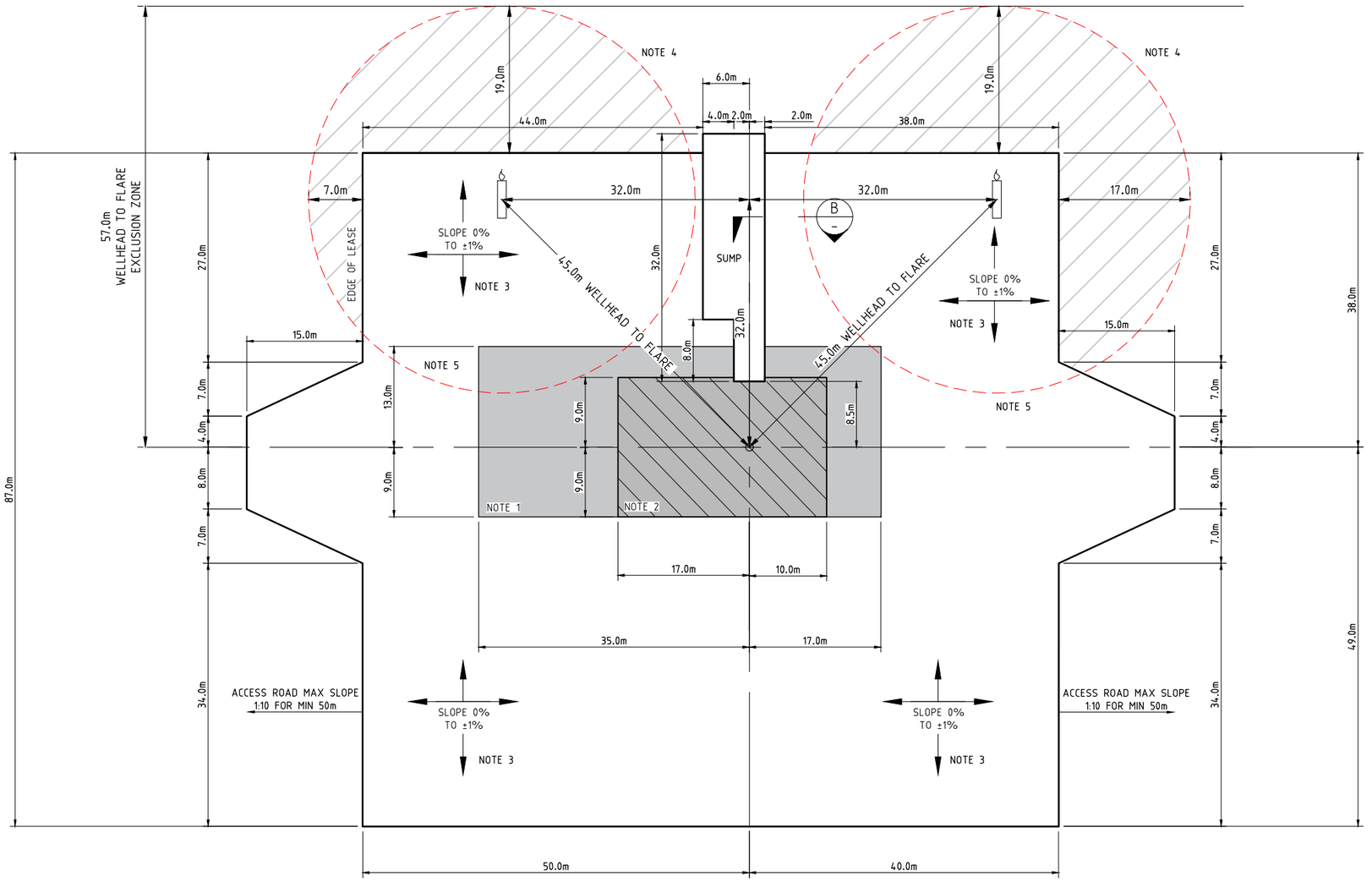
Appendix A – Proposed Well Lease Layout During Drilling

LEASE INFO	
LEASE DISTURBANCE AREA	10,303m²
OFF LEASE DISTURBANCE AREA EXCLUSION ZONE	1,883m²
CAPPING AREA EXCLUDING HARDSTAND & SUMP	7,710m²
RIG HARDSTAND	486m²
SUMP VOLUME	672m³
SUMP AREA	224m²



SECTION B
NTS



PLAN A
SCALE 1:250

SCALE 1:250 0 5 10 15 20 25 METRES

NOTES:

1. LEASE LEVEL TOLERANCE IN RIG PAD AREA (GREY SHADED) = +/- 50mm - 15mm MAX DIFFERENCE ACROSS ANY 3m LENGTH. GROUND COMPACTION TO BE FIRM ENOUGH TO SUPPORT RIG.
2. 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 ANY 3m HEIGHT.
3. GRADIENTS OF +/- 1% CAN BE USED ACROSS THE LEASE IN ALL AREAS OTHER THAN THOSE COVERED BY NOTE 1.
4. OFF LEASE AREAS TO HAVE VEGETATION CLEARED TO ENSURE COMPLIANCE WITH FLARE STACK EXCLUSION ZONE.
5. DASHED RED CIRCLE REPRESENTS 25m EXCLUSION ZONE AROUND 2 X POSSIBLE FLARE LOCATIONS. WHERE POSSIBLE FLARE LOCATION TO BE SPECIFIED.

No	DATE	DRN	CHKD	ENG	Q.A.	PROJ	ACC	CP	DESCRIPTION
0	20/08/20	FYF	GDA	-					ISSUED FOR CLIENT REVIEW

REVISIONS

DRG No.	SUBJECT

REFERENCE DRAWINGS

A.B.N. 80 007 550 923

DRN:	FYF
DATE:	20/08/20
SCALE:	1:250
CHKD:	GDA
ENG:	-
Q.A.:	
PROJ:	
ACC:	

FLARE STACK EXCLUSION ZONES
ENSIGN 967 RIG

Santos

DRAWING No.

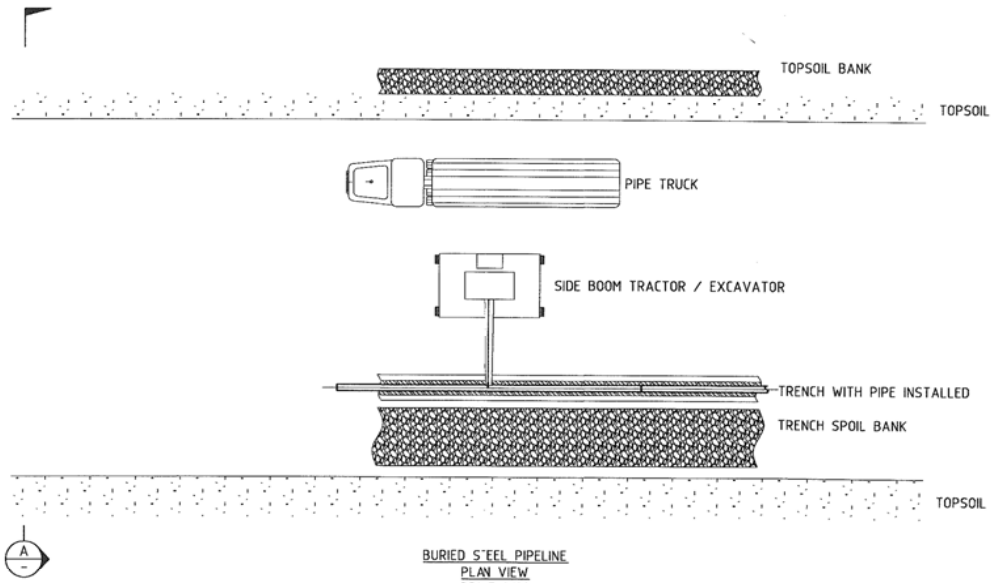
REV A

CADFILE No. -

AUTOCAD

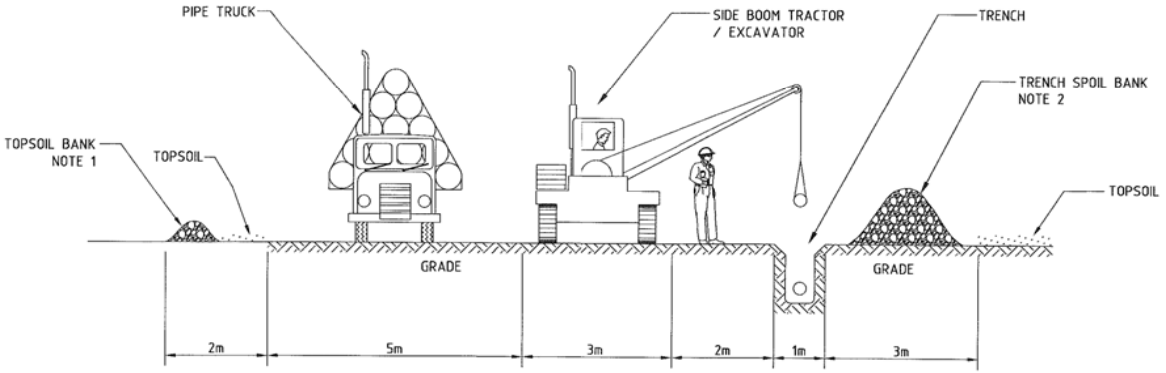
A1SHEET

Appendix B – Typical Buried Pipeline Right-of-Way



BURIED STEEL PIPELINE
PLAN VIEW
SCALE 1:100

0 2.5 5.0 7.5 10
SCALE 1:100 METRES



BURIED STEEL & <DN150 GRE PIPELINE
ELEVATION VIEW

0 1 2 3 4 5
SCALE 1:50 METRES

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
0									ORIGINAL ISSUE

REVISIONS

1500-40-817 DRG No.

STANDARD BELL HOLE DESIGN SUBJECT

REFERENCE DRAWINGS

DRN: FYF
DATE: 01/11/11
SCALE: AS SHOWN
CHKD: MWK
ENG:
Q.A: TI-VG
PROJ: 5307054
ACC:
A.B.N. 80 007 550 923

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

Santos

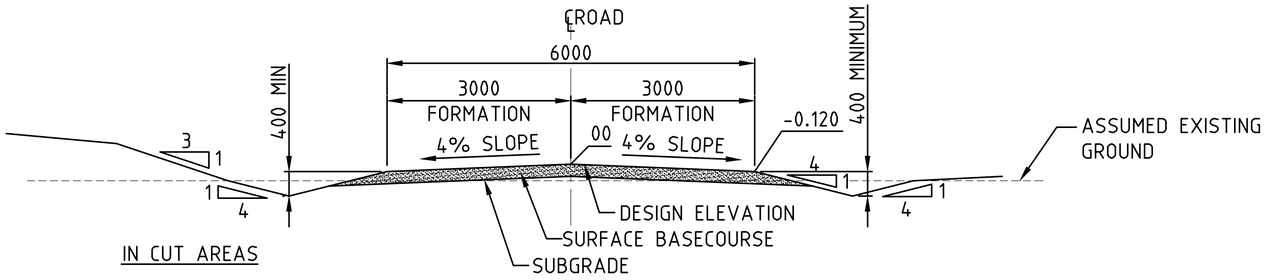
DRAWING No. 1500-50-1276 REV 0

CADFILE No. -

AUTOCAD

BURIED STEEL AND < DN150 GRE PIPELINE INSTALLATION - RIGHT OF WAY A1SHEET

Appendix C – Typical Road Cross Section for Class D Roads

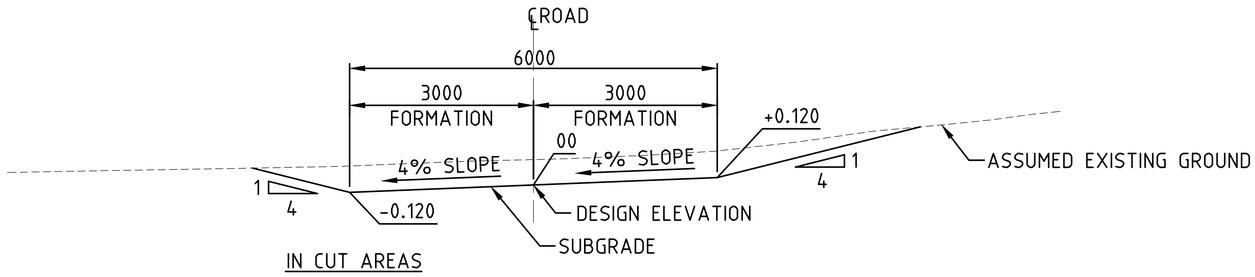


PAVEMENT MATERIAL - CLASS C ROAD

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)	
GRADE CHANGE %	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

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL THE COMPLETE CONTRACT DOCUMENTS AND SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. FOR SITE PREPARATION, EXCAVATION AND BACKFILL REFER TO PROJECT SPECIFICATION.
4. FOR ROAD CONSTRUCTION REFER TO ROAD WORKS SPECIFICATION 1515-120-S006.
5. SIDE BATTER SLOPES FOR CLASS D ROAD SHALL BE 4 HORIZONTAL TO 1 VERTICAL IN CUT AND FILL.
6. 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.
7. 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

8. 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

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

1000 0 1000 2000 3000 4000

SCALE 1:50 SCALE IN mm

No	DATE	DRN	CHKD	ENG	Q.A.	PROJ	ACC	DESCRIPTION
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

REVISIONS

DRG No.	SUBJECT

REFERENCE DRAWINGS

DRN: FYFE
DATE:
SCALE: AS SHOWN
CHKD:
ENG: SJM
Q.A.:
PROJ:
ACC:
A.B.N. 80 007 550 923

CIVIL STANDARD DRAWING
TYPICAL ROAD CROSS SECTION
CLASS D ROADS

Santos

DRAWING No. 0001-040-DDR-0005

REV C

CADFILE No. - aaaa-40-005-1

TYPICAL ROAD CROSS SECTIONS - CLASS D ROAD (FOR ELEVATED SECTIONS)

SHEET 1

AUTOCAD

Appendix D – Database Search Results

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 22-Mar-2024

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	19
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	14
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	2
EPBC Act Referrals:	7
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	1

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Coongie lakes	10 - 20km upstream from Ramsar site	In feature area

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Amytornis barbatus barbatus Bulloo Grey Grasswren, Grey Grasswren (Bulloo) [67065]	Endangered	Species or species habitat known to occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lophochroa leadbeateri leadbeateri Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) [82926]	Endangered	Species or species habitat may occur within area	In buffer area only
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat likely to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Notomys fuscus Dusky Hopping-mouse, Wilkiniti [125]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys australis Plains Rat, Palyoora, Plains Mouse [108]	Vulnerable	Species or species habitat may occur within area	In feature area
PLANT			
Frankenia plicata [4225]	Endangered	Species or species habitat likely to occur within area	In feature area
Sclerolaena walkeri [16152]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Xerothamnella parvifolia [3141]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Cooper Creek Swamps - Nappa Merrie	QLD	In buffer area only
Cooper Creek - Wilson River Junction	QLD	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Ballera Lateral Gas Pipeline	2006/2563	Controlled Action	Completed	In buffer area only
Not controlled action				

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Gas Pipeline from Psyche to Winninia	2002/797	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
QSN3 Project, expand 935km gas pipeline and supporting infrastructure	2009/5072	Not Controlled Action	Completed	In buffer area only
Thoar 3D seismic survey at Cooper Creek-Wilson River floodplain	2003/1178	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
QSN Underground Gas Pipeline	2008/4043	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Texas Tickalara Holdings Petroleum Production Project	2021/9088	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

Bioregional Assessments			[Resource Information]
SubRegion	BioRegion	Website	Buffer Status
Cooper	Lake Eyre Basin	BA website	In feature area

Geological and Bioregional Assessments			[Resource Information]
Name	State	Website	Buffer Status
Cooper GBA region	QLD, SA, NSW	GBA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: Native
Queensland status: Rare and threatened species
Records: Confirmed
Date: All
Latitude: -27.9479
Longitude: 141.6239
Distance: 50
Email: francesca.ordonez@engeny.com.au
Date submitted: Friday 22 Mar 2024 16:31:13
Date extracted: Friday 22 Mar 2024 16:40:07

The number of records retrieved = 2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Falconidae	*Falco hypoleucos*	grey falcon		V	V	2
animals	reptiles	Boidae	*Aspidites ramsayi*	woma		NT		1

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.*
The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.*
The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).
This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Santos

Attachment 5 – GIS Files