

Regional Interests Development Application Assessment Report

Proposed Conventional Petroleum Wells

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1. Introduction

Santos Limited undertakes petroleum activities within petroleum lease (PL) 301 located approximately 180 km east of Thargomindah, QLD (Figure 1). These existing petroleum activities are undertaken with the Channel Country Strategic Environmental Area (SEA) Part 2, Division 2 of the *Regional Planning Interests Act 2014*. PL 301 (a *resource authority* under the *Regional Planning Interests Act 2014*) and the associated environmental authority (EA) EPPG0383513 are held by Santos Limited; an *eligible person* under the *Regional Planning Interests Act 2014*.

Santos Limited proposes to undertake additional petroleum activities within the Channel Country SEA requiring approval under s28 of the *Regional Planning Interests Act 2014*. These proposed petroleum activities are described in Section 2.

Non-Notifiable Application

In accordance with Section 34(2) of the *Regional Planning Interests Act 2014*, and Section 13 of the *Regional Planning Interests Regulation 2014*, the assessment application is not notifiable, as the activities are not proposed to be carried out in an area of regional interest that is a priority living area. Notwithstanding, the proposed activities would be located solely on Lot 1 SP209773 forming part of Naryilco Station, a 7,510 km² cattle station operated by the same landholder: S. Kidman & Co. Ltd. Discretionary notification under s34(4) would not be necessary given that the very large size of the cattle station and the landholder will receive a copy of the application as described below.

Landholder Copy of the Application

In accordance with Section 30 of the *Regional Planning Interests Act 2014* and Schedule 5 of the *Regional Planning Interests Regulation 2014*, a copy of the application will be given to the landowner within 5 business days after the application is made.

Referable Application

In accordance with Section 12(2) of the *Regional Planning Interests Regulation 2014*, the application is referable to the Department of Environment and Heritage Protection (DEHP) and the Department of Natural Resources and Mines (DNRM).

2. Proposed Activities

Santos Limited proposes to undertake the following resource activities on Lot 1 SP209773 within the Channel Country SEA (Figure 1):

1. Construction of access tracks.
2. Construction of two conventional petroleum wells.
3. Construction of above-ground pipelines.
4. Use of existing borrow pits.

The proposed disturbance associated with the above is provided in Table 1.

Table 1: Proposed disturbance

Proposed Infrastructure	Length	Proposed Disturbance
Access Tracks	0.25 km	0.25 ha
Above-ground pipelines	0.5 km	0.15 ha
Borrow pits and well pads	N/A	4.8 ha
		5.2 ha

Descriptions of the above resource activities are provided below with definitions provided in Appendix A.

2.1. Access tracks

Proposed access tracks are required to provide drilling equipment access to the proposed conventional petroleum well sites and for ongoing operational access (Figure 1). Existing access tracks would be utilised to minimise the length of proposed access tracks required.

The proposed access tracks would be up to 6 m wide and constructed by lightly grading the route and capping the surface with clay or similar locally available borrow pit material. The proposed access tracks are not designed to be used during wet weather conditions and will therefore not be constructed to any flood immunity, and will facilitate the passage of surface water keeping with existing hydrology. However, it is noted that the proposed access tracks would be located outside of the flood area for all available mapped flood extents (1989, 1990, 1997, 2000, 2004, 2006 and 2010 flood extents) and do not intersect any watercourses.

2.2. Conventional Petroleum Wells

Two drilling pads would be constructed to accommodate modular drilling and ancillary equipment including a derrick, power generators, pipe handling equipment, tanks, drilling sumps, flares, and office areas (Figure 1). The layout of a typical drilling pad is provided in Appendix B.

Once the drilling rig is in place on the well pad, drilling will be undertaken for approximately 8 days per well. 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 sump with an operating volume of approximately 300 kL would be used to contain drilling fluids. Following the completion of drilling, the rig would be dismantled and transported from site and partial rehabilitation would be commenced including:

- removing drilling fluids from the drilling sump;
- backfilling the drilling sump; and

141° 56' E

141° 58' E

142° 00' E

28° 00' S

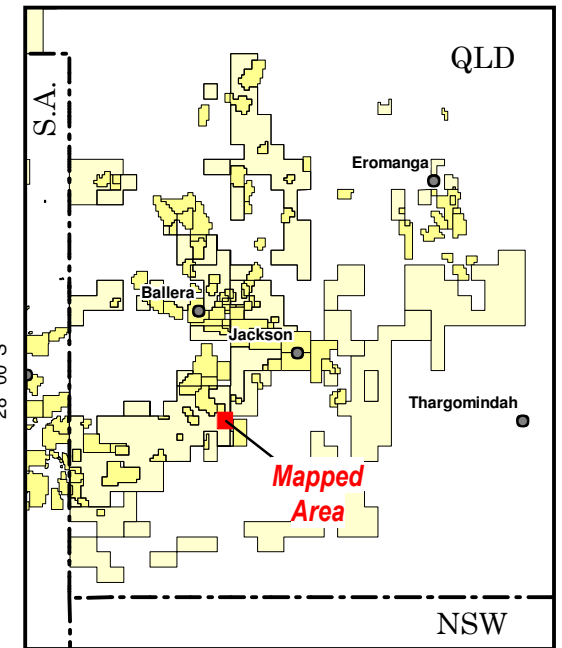
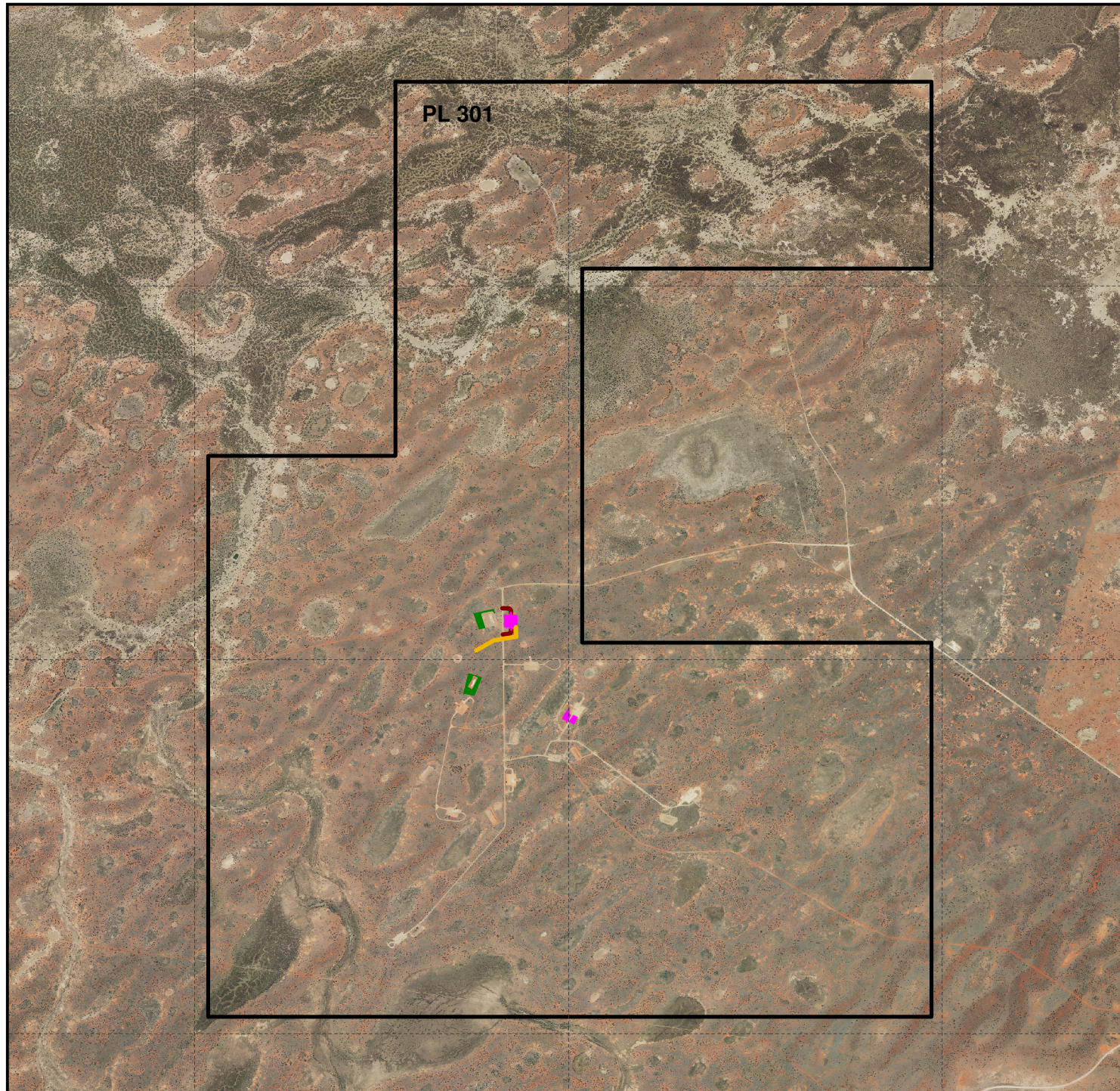
28° 02' S

28° 04' S

141° 56' E

141° 58' E

142° 00' E

**Areas of new disturbance**

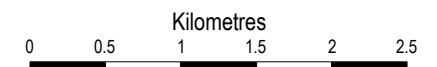
- Proposed access track
- Proposed pipeline
- Proposed petroleum well pad
- Proposed borrow pit

Santos

Queensland

PL 301**Zeus**

Figure 1
Proposed Infrastructure



Scale: 1:50,000

31 January 2017, File No. TOTA66 274c



- partial ripping and respreading of topsoil and rootstock on excess lease areas to promote revegetation.

Drilling would be undertaken in accordance with the *Water Bore Drillers' Licensing Handbook* (Department of Natural Resources and Mines, 2016) prescribed under the *Water Act 2000*, and the minimum standards and good industry practice provided by *Minimum Construction Requirements for Water Bores in Australia* (Australian Government National Water Commission, 2012), including the isolation of overburden formations with steel surface casing, steel production casing, and cement.

2.3. Above-ground Pipelines

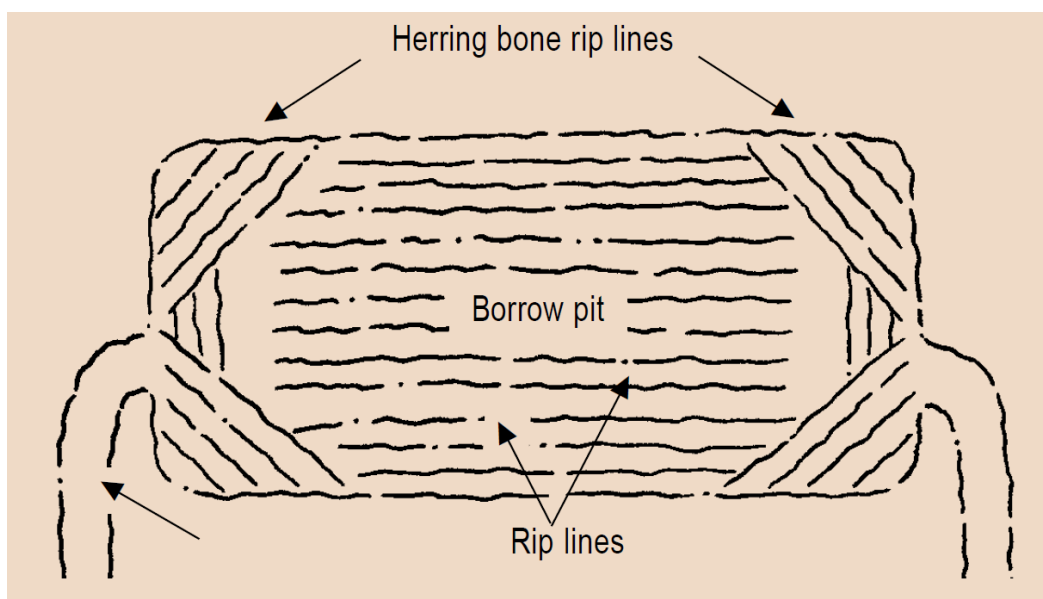
Up to a 3 m right-of-way (RoW) for the proposed pipeline route would be lightly graded to allow access of vehicles required for pipeline construction. Up to 100 mm diameter above-ground steel pipeline sections would be transported and temporarily stored along the proposed pipeline route prior to joining together the tubing connections of each pipe section. The proposed pipeline would be raised approximately 200 mm above ground level on prefabricated supports located along the proposed pipeline route. Details of prefabricated supports are provided in Appendix C.

2.4. Existing Borrow Pits

Two existing borrow pits are proposed to be used to provide a source of material required to construct a stable and supportive surface for well leases and access tracks. Erosion within the borrow pit is controlled through construction of diversion banks around the perimeter of the borrow pit to exclude surface water flow and maintaining the existing side batters at a slope of approximately 3:1. Batters of the entrance / exit to the borrow pit are maintained at a slope of approximately 7:1.

The borrow pit will be progressively restored following extraction by returning overburden and ripping the floor and sides of the borrow pit to a minimum depth of 500 mm generally along the contour (Figure 2). Stockpiled topsoil and vegetation will then be respread to a uniform depth over the entire area from which it was removed. The sides and floor of the pit will be graded to give a contoured finish, consistent with adjacent undisturbed land.

Figure 2: Example borrow pit ripping for rehabilitation



3. Environmental attributes

Section 7 of the Regional Planning Interests Regulation 2014 prescribes the following environmental attributes relevant to 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 RPI Act Guideline 05/14 summarises the above attributes to broadly relate to:

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

The relevance of the above environmental attributes to the proposed activities is described below.

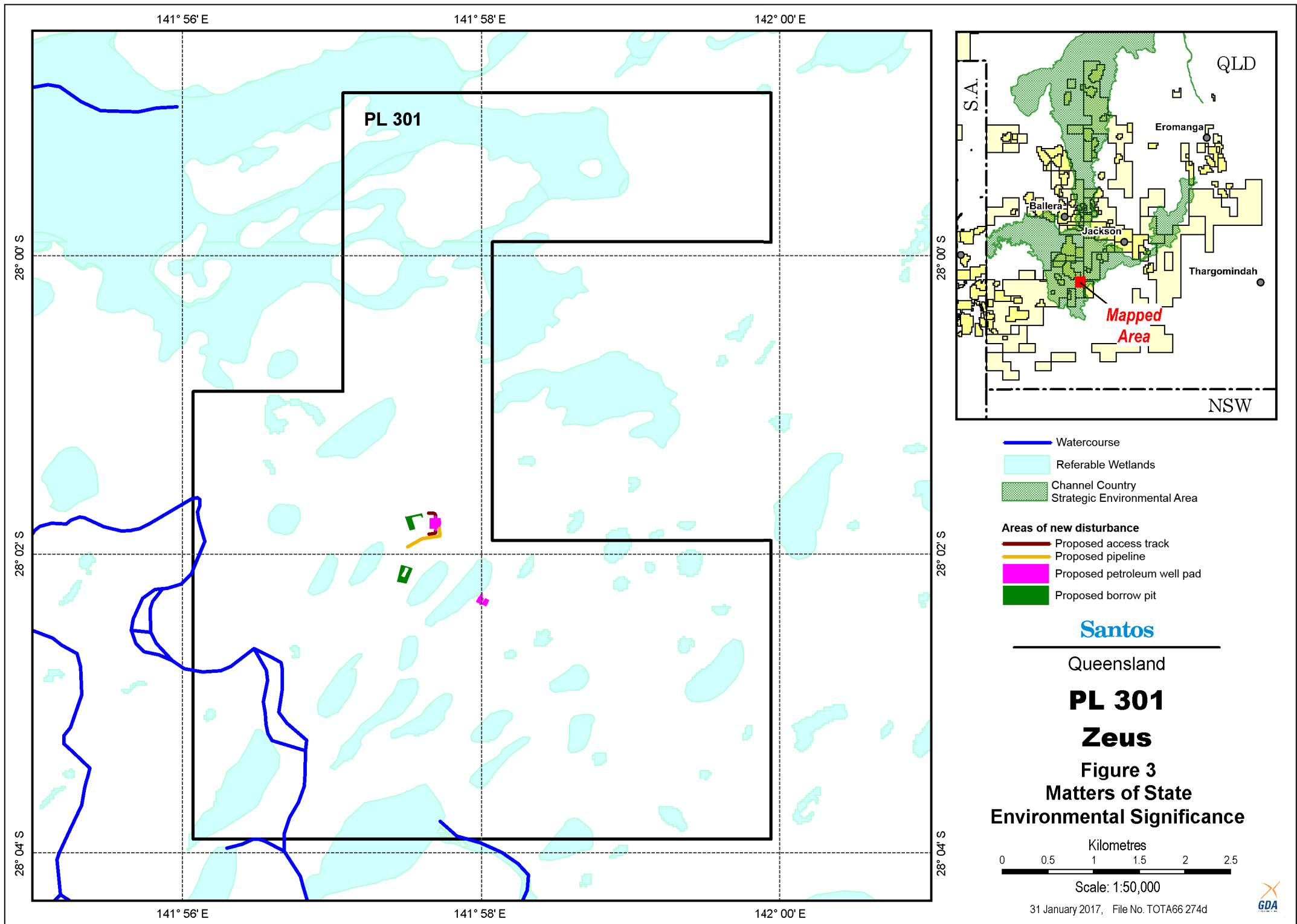
3.1. Riparian process

The proposed activities would be undertaken wholly within the regional ecosystems (REs) 5.6.4 / 5.3.16a consisting of *Atalaya hemiglauca* ± *Acacia aneura* ± *Acacia* spp. ± *Corymbia terminalis* tall shrubland on sand dunes (5.6.4) and *Eragrostis australasica* sparse tussock grassland on alluvial plains and clay pans between dunes (5.3.16a). At their closest point, the proposed activities would be undertaken approximately 30m from RE 5.3.22a consisting of sparse herbland on clay pans and lakes. These REs do not include any riparian vegetation.

As shown on Figure 3, the proposed activities located approximately 1.5 km from the closest watercourse / riparian zone and RE containing riparian vegetation; RE 5.3.2 consisting of *Eucalyptus camaldulensis* ± *E. coolabah* open woodland on levees and banks of drainage lines. There are no known groundwater sources in the area, including the Great Artesian Basin and springs, that support waterhole persistence and ecosystems.

3.2. Wildlife corridors

The proposed activities would be located in an area of minimal wildlife corridors due to the negligible-poor connectivity within REs 5.6.4 and 5.3.16a consisting of sparse tussock grasslands and shrubland on sand dunes as shown on Figure 4.



3.3. Water quality

Surface Water

The proposed activities are wholly located within the Cooper Creek basin. Historical (1965-2016) water quality data from the QLD Government's Cooper Creek gauging station 003103A is summarised in Table 2.

Table 2: Cooper Creek surface water quality (1956-2016)

Parameter	Average Value
Conductivity @ 25°C	345 µS/cm
Turbidity	512 NTU
pH	7.4
Total Nitrogen	1.4 mg/L
Total Phosphorus as P	0.4 mg/L
Sodium as Na	44.6 mg/L
Magnesium as Mg	7.4 mg/L
Chloride as Cl	62.6 mg/L
Fluoride as F	0.2 mg/L

Groundwater

Shallow groundwater is generally found with 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 are characterised by a higher proportion of sodium and magnesium and is generally not suitable for irrigation given its high sodium hazard and very high salinity hazard¹.

There are no known groundwater sources, including the Great Artesian Basin and springs, that support waterhole persistence and ecosystems in the area.

3.4. Hydrologic processes

Regional

Topography is limited to low undulating topography between the drainage channel system. 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 low resistant hills and tablelands are remnants of the flat-lying Cretaceous sediments.

The drainage system is dominated by the Cooper Creek Basin draining towards Lake Eyre. During periods of high rainfall, the flat topography and drainage channel system becomes a largely flooded plain with water flow concentrating where Cooper Creek crosses the QLD-SA border. The Cooper Creek system catchment covers an area of approximately 300,000 km². Generally, Cooper Creek streamflow is confined to the main channels, but every 3-4 years, flows are sufficient to inundate parts

¹ Golder Associates 2013 *Underground Water Impact Report For Santos Cooper Basin Oil & Gas Fields, SW QLD*

of the Cooper floodplain via a network of tributary channels. During extended periods of no flow, the Cooper Creek contracts to a series of waterholes¹.

Local

The proposed activities are located outside of the extent of the flood area for all available mapped flood extents (1989, 1990, 1997, 2000, 2004, 2006 and 2010 flood extents) and is dominated by highly permeable sands with a typically low runoff coefficient. Notwithstanding, the area of the proposed activities would experience intermittent surface water flows during storm events, causing localised ponding of surface water. At its closest point, one of the proposed well pads is located approximately 10 m from an arid / semi-arid non-floodplain wetland that would experience ponding of water in response to rainfall events, followed by extended periods of no surface water².

3.5. Geomorphic processes

Regional

Surface geology 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 floodplain³.

Local

Surface geology at the location of the proposed activities solely consists of mapping unit Qs/d summarised as “well sorted fine to medium quartz sand; dunes, sandplain with dunes”⁴. These Quaternary materials are subject to ongoing transport processes. However, the typically minimal gradient of the Cooper Creek floodplain (approximately 10cm / km)² and location of the proposed activities outside of the extent of the flood area for all available mapped flood extents (1989, 1990, 1997, 2000, 2004, 2006 and 2010 flood extents) would limit significant short-term geomorphic change.

3.6. Beneficial flooding

The proposed activities are located outside of the flood area for all available mapped flood extents (1989, 1990, 1997, 2000, 2004, 2006 and 2010 flood extents) and is dominated by permeable sands with a typically low runoff coefficient. Notwithstanding, the area of the proposed activities would experience intermittent surface water flows during storm events, causing shallow ponding of surface water on nearby clay pans¹.

3.7. Climate

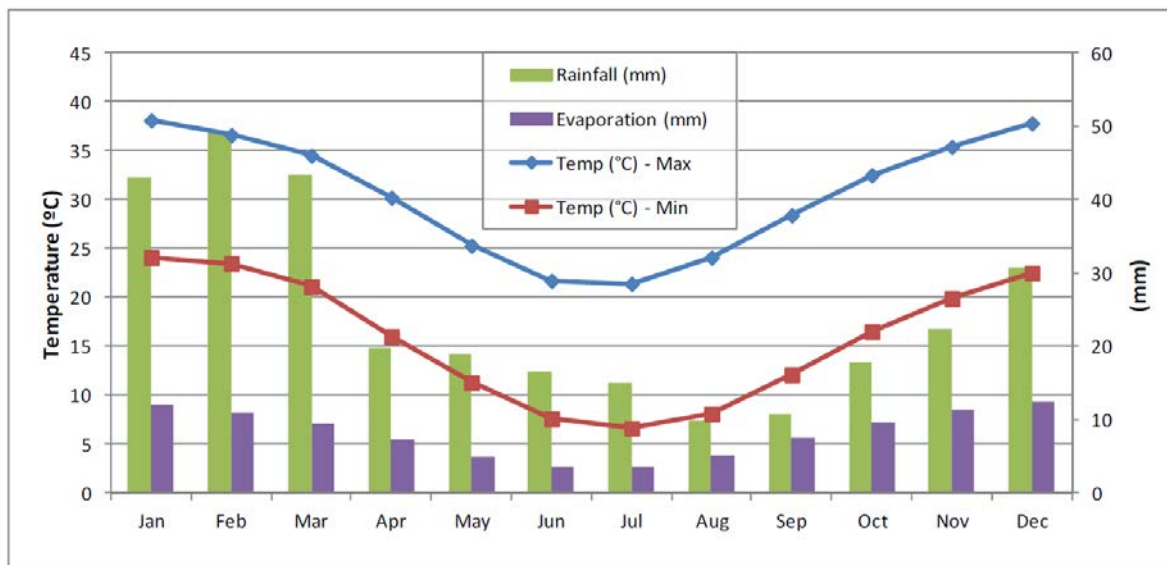
The Channel Country SEA is located in an arid to semi-arid region of central Australia where the average rainfall is low. Seasons in the area are characterised by dry, hot summers and short, very dry winters as shown on Figure 5.

² Department of Environment and Heritage Protection (2017), *Queensland wetland classification method*, WetlandInfo, <https://wetlandinfo.ehp.qld.gov.au/wetlands/what-are-wetlands/definitions-classification/classification-systems-background/typology.html>

³ Maroulis, J (undated) *Channel Country landforms and the processes that shape them*. University of Southern QLD Faculty of Education/Australian Centre for Sustainable Catchments.

⁴ Qld Department of Natural Resources and Mines (2015) *Detailed surface geology – Queensland*

Figure 5 – Monthly average rainfall and temperature for Windorah Station (1931-2012)⁵



3.8. Land use

The proposed activities are located on Naryilco Station, a 7,510 km² pastoral lease that operates as a cattle station with a capacity of up to 12,000 head of cattle⁶.

⁵ Golder Associates (2013) *Underground Water Impact Report For Santos Cooper Basin Oil & Gas Fields, SW QLD*

⁶ S. Kidman & Co Ltd (2017) *Naryilco*, <http://www.kidman.com.au/properties/13/naryilco>

4. Potential impacts on environmental attributes

4.1. Riparian process

The proposed activities would not impact riparian processes as they would be located approximately 1.5 km from the riparian zone / watercourse and RE containing riparian vegetation. Accordingly, the proposed activities would not cause a widespread or irreversible impact on riparian processes within the Channel Country SEA.

4.2. Wildlife corridors

The proposed activities would not impact wildlife corridors due to the negligible-poor connectivity within REs 5.6.4 and 5.3.16a consisting of sparse tussock grasslands and shrubland on sand dunes. Accordingly, the proposed activities would not cause a widespread or irreversible impact on wildlife corridors within the Channel Country SEA.

4.3. Water quality

Construction for the proposed activities is scheduled to be completed outside of the wet season and would be undertaken approximately 1.5 km from the closest watercourse. Notwithstanding the large distance to the closest watercourse and limited sediment available in the area of the proposed activities dominated by fine to medium quartz sand, erosion controls would be implemented in accordance with EA EPPG0383513. Following the completion of petroleum activities, disturbed land would be rehabilitated to pre-activity condition. Petroleum wells would be completed with steel surface casing, steel production casing, and cement to isolate the well from aquifers, including the Great Artesian Basin, and other geological units.

Given the location and nature of the proposed activities, and implementation of the above management measures, the proposed activities would not cause a widespread or irreversible impact on water quality within the Channel Country SEA.

4.4. Hydrologic processes

Construction for the proposed activities is scheduled to be completed outside of the wet season and would be undertaken approximately 1.5 km from the closest watercourse. At its closest point, one of the proposed well-pads would be located approximately 10 m from an arid / semi-arid non-floodplain wetland. The proposed activities would be located outside of the extent of the flood area for all available mapped flood extents (1989, 1990, 1997, 2000, 2004, 2006 and 2010 flood extents). Notwithstanding, the area of the proposed activities would experience localised ponding of surface water during heavy rainfall, the frequency and duration of such ponding would be relatively minimal outside of the wet season, and given that the area is dominated by highly permeable sands with a very low runoff coefficient.

Above-ground pipelines would be raised approximately 200 mm above ground level on prefabricated supports to avoid impacts to the existing surface hydrology. Similarly, access tracks would be not be constructed with flood immunity, allowing the natural passage of surface water to avoid impacts to the existing surface hydrology.

The proposed use of the borrow pits and construction of well pads would include the construction of berms to divert overland flow and minimise potential erosion. However, minimal overland flow would be diverted due to the low runoff coefficient of the surrounding permeable sands and the small footprint (approximately 4.8 ha) relative to the sub-catchment area. Petroleum wells would be completed with steel surface casing, steel production casing, and cement to isolate the well from aquifers, including the Great Artesian Basin, and other geological units.

Following the completion of petroleum activities, disturbed land would be rehabilitated to pre-activity condition. Given the location and nature of the proposed activities, and implementation of the above management measures, there would be no widespread or irreversible impacts on the hydrologic processes within the Channel Country SEA.

4.5. Geomorphic processes

The proposed activities would be located away from the sources / areas of significant geomorphic processes; approximately 1.5 km from the closest watercourse and outside of the extent of the flood area for all available mapped flood extents (1989, 1990, 1997, 2000, 2004, 2006 and 2010 flood extents). Following the completion of petroleum activities, disturbed land would be rehabilitated to pre-activity condition. Given the distance to these major sources of geomorphic change and the surface geology at the location of the proposed activities, it is not envisaged that there would be widespread or irreversible impacts on the geomorphic processes within the Channel Country SEA.

4.6. Beneficial flooding

The proposed activities would be located outside of the extent of the flood area for all available mapped flood extents (1989, 1990, 1997, 2000, 2004, 2006 and 2010 flood extents) and not significantly divert or impound surface water flows contributing to flood flows. Following the completion of petroleum activities, disturbed land would be rehabilitated to pre-activity condition. Accordingly, it is not envisaged that there would be widespread or irreversible impacts on beneficial flooding within the Channel Country SEA.

4.7. *Regional Planning Interests Regulation 2014* assessment criteria

Part 5, Schedule 2 of the *Regional Planning Interests Regulation 2014* provides criteria for assessment by agencies. In accordance with Section 14(3) of the *Regional Planning Interests Regulation 2014*, if the application demonstrates compliance with either of the prescribed solutions stated in Part 5, Schedule 2, the proposed activity will meet the required outcome for the regional interest. Critically, the application demonstrates that the prescribed solution provided in s15(1)(a) will be met as the proposed activities are located in a section of the SEA that is largely devoid of relevant environmental attributes. The RPI Guideline 05/14 *Carrying out resource activities and regulated activities in a Strategic Environmental Area* provides examples of how activities would meet the s15(1)(a) prescribed solution, including the following:

RPI Guideline Example – s15(1)(a) prescribed solution	Relevance to the application
The activity will not have any direct or indirect release of contaminants to waters including groundwater from the operation of the activity.	✓ The proposed activities would not include the direct or indirect release of contaminants to waters

RPI Guideline Example – s15(1)(a) prescribed solution	Relevance to the application
<p>The activity will not result in any potential or actual adverse effect on a wetland, lake, watercourse or spring.</p>	<p>✓ The proposed activities would be carried out approximately 1.5 km from any lake, watercourse or spring.</p> <p>At its closest point, the one of the proposed well pads is located approximately 10 m from an arid / semi-arid non-floodplain wetland. Berms would be constructed up-slope of this well pad to divert overland flow and minimise potential sediment and erosion impacts on the wetland. Following the completion of petroleum activities, disturbed land would be rehabilitated to pre-activity condition</p>
<p>Water storage dams are located off stream or not in major watercourses.</p>	<p>✓ The proposed activities would not include the direct or indirect release of contaminants to waters</p>
<p>Undertaking construction activities in times when there is no water present.</p>	<p>✓ The proposed activities would be located outside of the extent of the flood area for all available mapped flood extents (1989, 1990, 1997, 2000, 2004, 2006 and 2010 flood extents), and would not be undertaken when surface water is present.</p>
<p>The activity will not inhibit the overflow or flow of surface water in or out of the wetland or watercourse (e.g. wells on stilts) post-construction.</p>	<p>✓ At its closest point, the one of the proposed well pads is located approximately 10 m from an arid / semi-arid non-floodplain wetland. Berms would be constructed up-slope of this well pad to divert overland flow and minimise potential sediment and erosion impacts on the wetland. However, this diversion would not inhibit or decrease the flow of surface water that would currently flow towards the wetland.</p> <p>Above-ground pipelines would be raised approximately 200 mm above ground level on prefabricated supports to avoid impacts to the existing surface hydrology. Similarly, access tracks would be not be constructed with flood immunity, allowing the natural passage of surface water to avoid impacts to the existing surface hydrology.</p>
<p>Operation of the activity will not result in actual or potential adverse effects on groundwater.</p>	<p>✓ Operation of the proposed activities do not include the direct or indirect discharge of contaminants to groundwater. Petroleum wells would be completed with steel surface casing, steel production casing, and cement to isolate the well from aquifers, including the Great Artesian Basin, and other geological units. Following the completion of petroleum activities, disturbed land would be rehabilitated to pre-activity condition</p>
<p>The activity will not result in the clearing of native vegetation within or adjoining watercourses, lakes, wetlands or springs</p>	<p>✓ The proposed activities would not include the clearing of native vegetation within or adjoining watercourses, lakes, wetlands or springs. Following the completion of petroleum activities, disturbed land would be rehabilitated to pre-activity condition.</p>
<p>Water storage dams are located off stream or not in major watercourses.</p>	<p>✓ The proposed activities would be located approximately 1.5 km from watercourses and do not include the construction or operation of water storage dams.</p>

RPI Guideline Example – s15(1)(a) prescribed solution	Relevance to the application
The activity is separated from wildlife corridors by an appropriate buffer (e.g. 200 metres) and will not result in actual or potential adverse effects onto the integrity or functioning of the corridor.	✓ There are no known wildlife corridors within 200 m of the proposed activities.

The application also demonstrates the prescribed solution provided in s15(1)(b) will also be met.

Part 5, Schedule 2 of the <i>Regional Planning Interests Regulation 2014</i>	Relevance to the application
14 Required outcome <i>The activity will not result in a widespread or irreversible impact on an environmental attribute of a strategic environmental area.</i>	✓ The proposed activities would not result in a widespread or irreversible impact on each of the environmental attributes as provided in Sections 4.1-4.6. Notwithstanding, the application also demonstrates that the required outcome would be achieved as the proposed activities would be undertaken in accordance with the below prescribed solution.
15 Prescribed solution <i>(1) 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</i>	✓ The proposed activities are located in a section of the SEA that is largely devoid of relevant environmental attributes as described in Section 4.1-4.6. Accordingly, the proposed activities are not likely to have a measurable impact on the environmental attributes of the SEA, especially given the management/mitigation measures described throughout Section 4.
<i>(b) all of the following— (i) if the activity is being carried out in a designated precinct in the strategic environmental area—the activity is not an unacceptable use for the precinct;</i>	✓ The proposed activities do not include any of the unacceptable uses prescribed by Section 15(2) of the <i>Regional Planning Interests Regulation 2014</i> .
<i>(ii) the construction and operation footprint of the activity on the environmental attribute is minimised to the greatest extent possible;</i>	✓ Existing access tracks, pipelines, well pads and borrow pits would be utilised to minimise the disturbance footprint for the proposed construction activities. The disturbance required for construction of access tracks (up to a 10 m right-of-way) and pipeline construction (up to a 3 m right-of-way) is the minimum trafficable and/or safe disturbance required to facilitate the proposed activities. An existing camp located outside of PL 301 will be utilised to avoid disturbance associated with construction of additional camps.

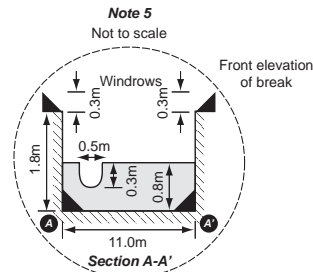
Part 5, Schedule 2 of the <i>Regional Planning Interests Regulation 2014</i>	Relevance to the application
<i>(iii) the activity does not compromise the preservation of the environmental attribute within the strategic environmental area;</i>	✓ The proposed activities are located in a section of the SEA that is largely devoid of relevant environmental attributes as described in Section 4.1-4.6. Accordingly, the proposed activities would not compromise the preservation of relevant environmental attributes within the strategic environmental area, especially given the management/mitigation measures described throughout Section 4.
<i>(iv) if the activity is to be carried out in a strategic environmental area identified in a regional plan—the activity will contribute to the regional outcomes, and be consistent with the regional policies, stated in the regional plan.</i>	✓ The South West Regional Plan does not identify the Channel Country Strategic Environmental Area.

Appendix A

Definitions

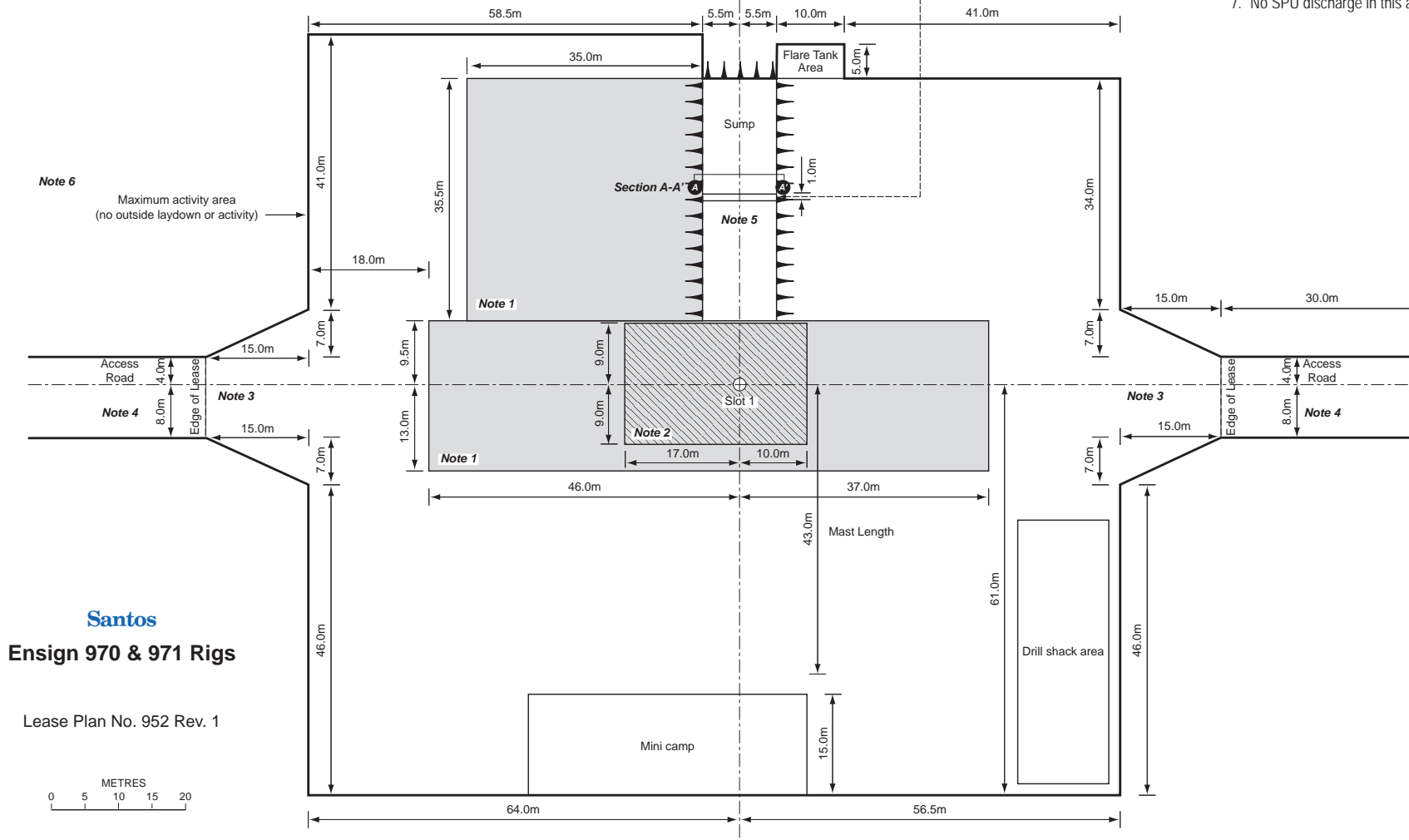
Activity	Definition
Well pad	An area of up to approximately 1.5 hectares (e.g. approximately 120 m x 120 m) used to provide a stable platform for the temporary storage and operation of drilling equipment (e.g. drilling rig) required for construction and subsequent operation of a petroleum well.
Above-ground pipeline	A cleared linear alignment approximately 3 m wide required to facilitate construction of petroleum pipeline
Access track	A cleared track approximately 6 m in width constructed of earthen material to facilitate access of drilling equipment to well pads.
Borrow pit	A source of shallow earthen material excavated to provide a construction material for well pads and access tracks.

Appendix B
Proposed Drilling Pad Layout



Notes:

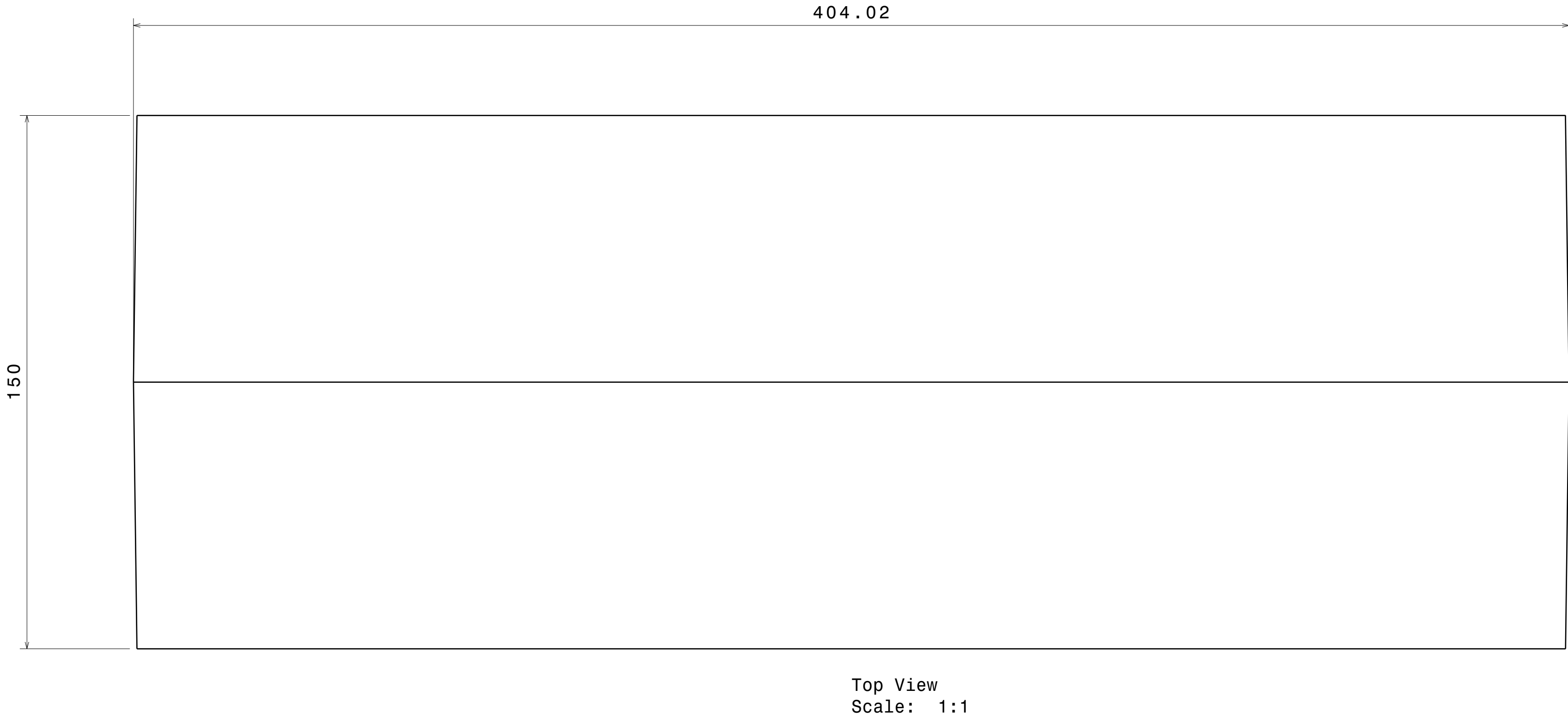
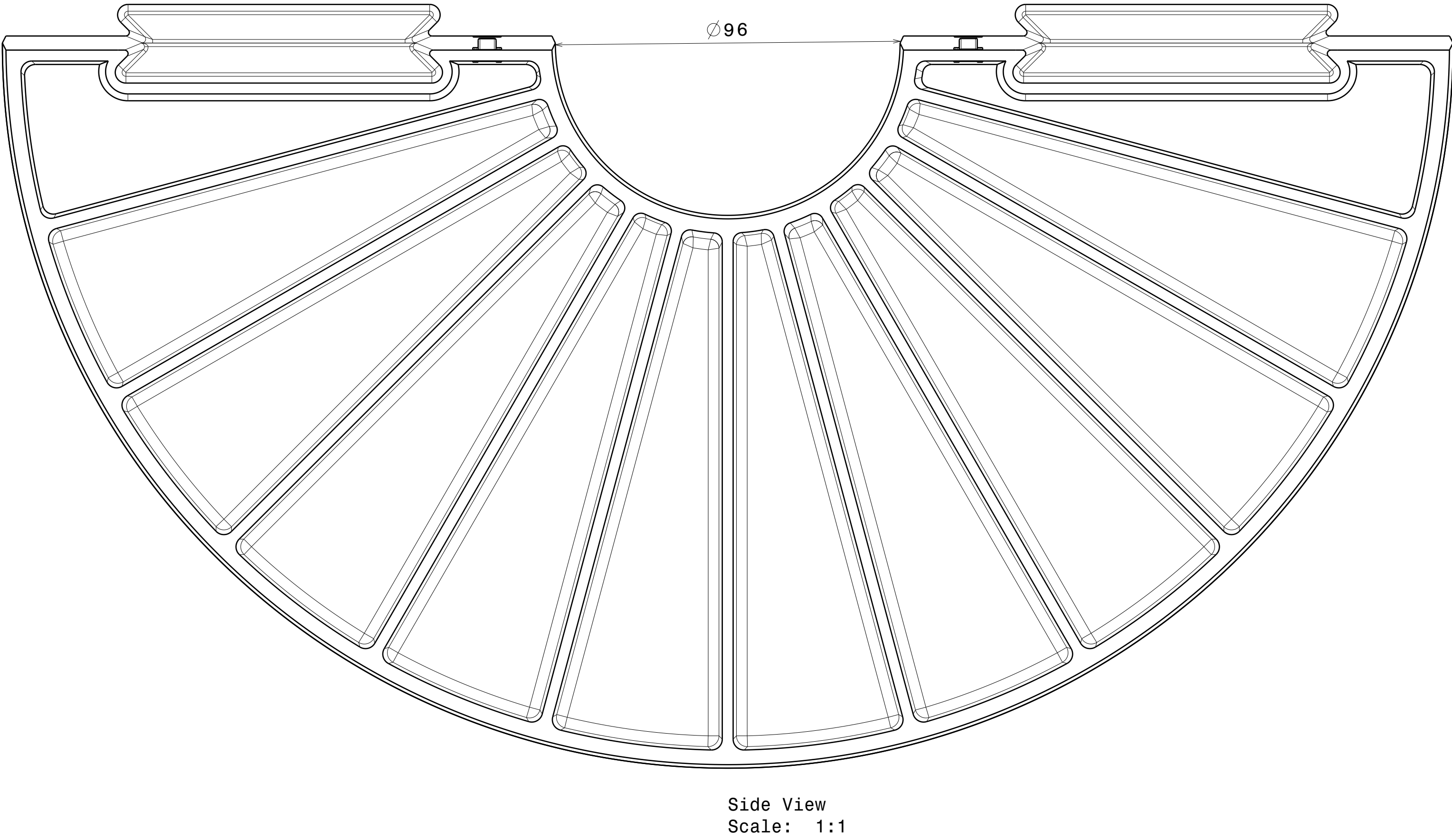
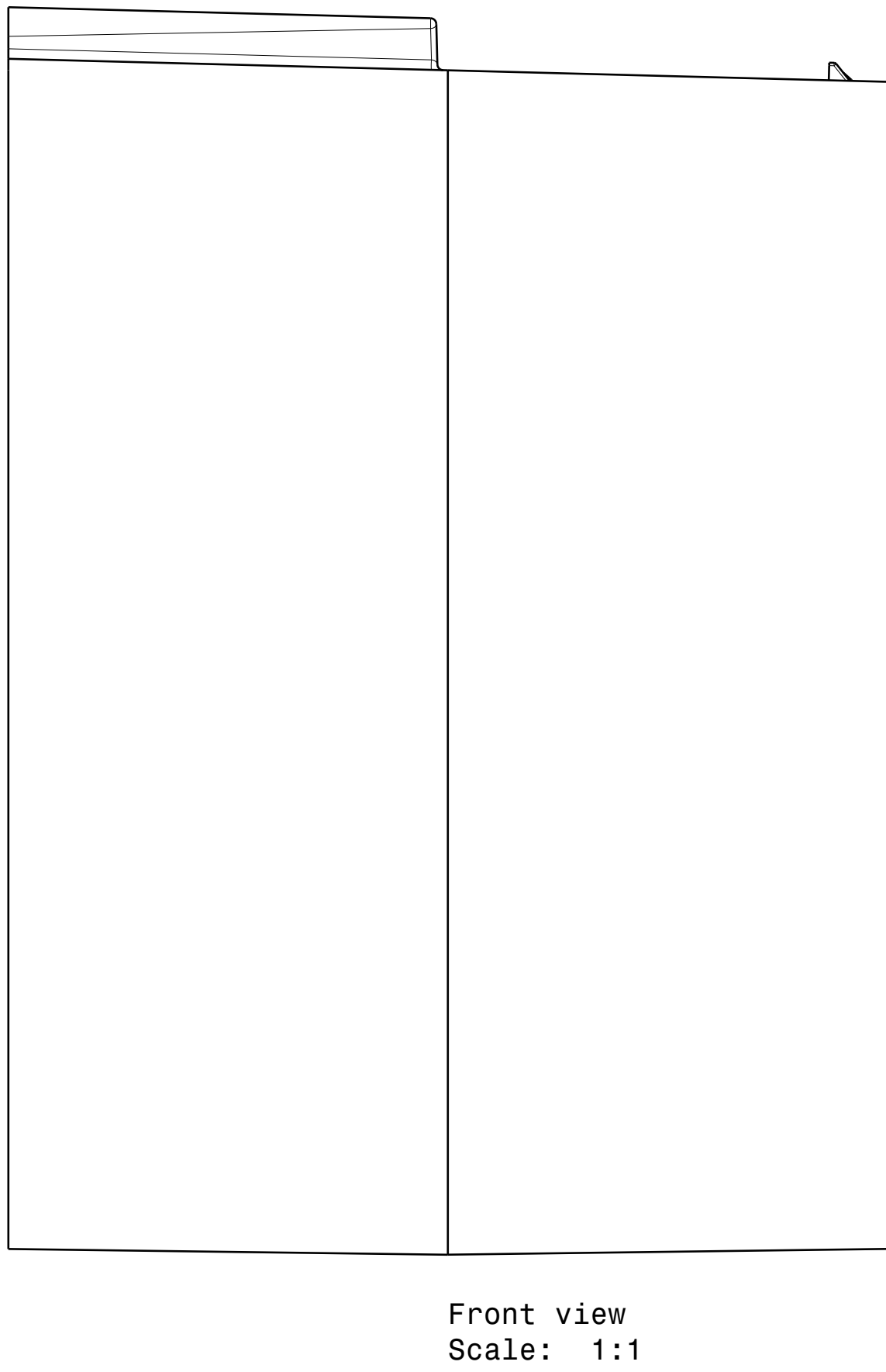
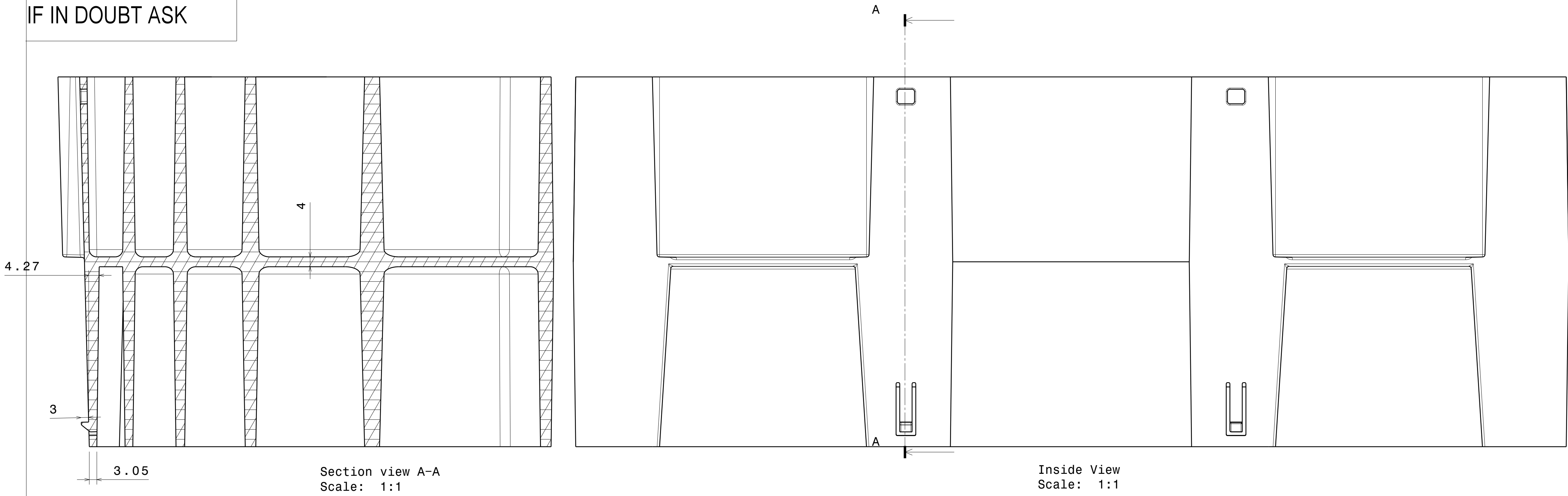
1. Lease level tolerance in rig pad area (grey shaded) = 25mm (max) & ground compaction to be firm enough to support rig
2. Rig hardstand pad area (diagonal hatched) to be excavated & clay compacted
3. Slope on skidding locations not to exceed 1 degree in direction of skid path
4. Lease access roads to be as straight as possible leading onto the lease with minimal slope & will taper back gradually from 12m wide at edge of lease to the standard Santos road specification of 6m wide
5. Sump to be 1.8m deep & to have 30cm windrows pushed up on sides except for face of sump & do not under cut sump walls
6. Single access road to be located between lease & water area, access road location is flexible, all road bend radiuses must be 50m, **See Single Access Rd Plan No 942 Rev. 0 for options**
7. No SPU discharge in this area



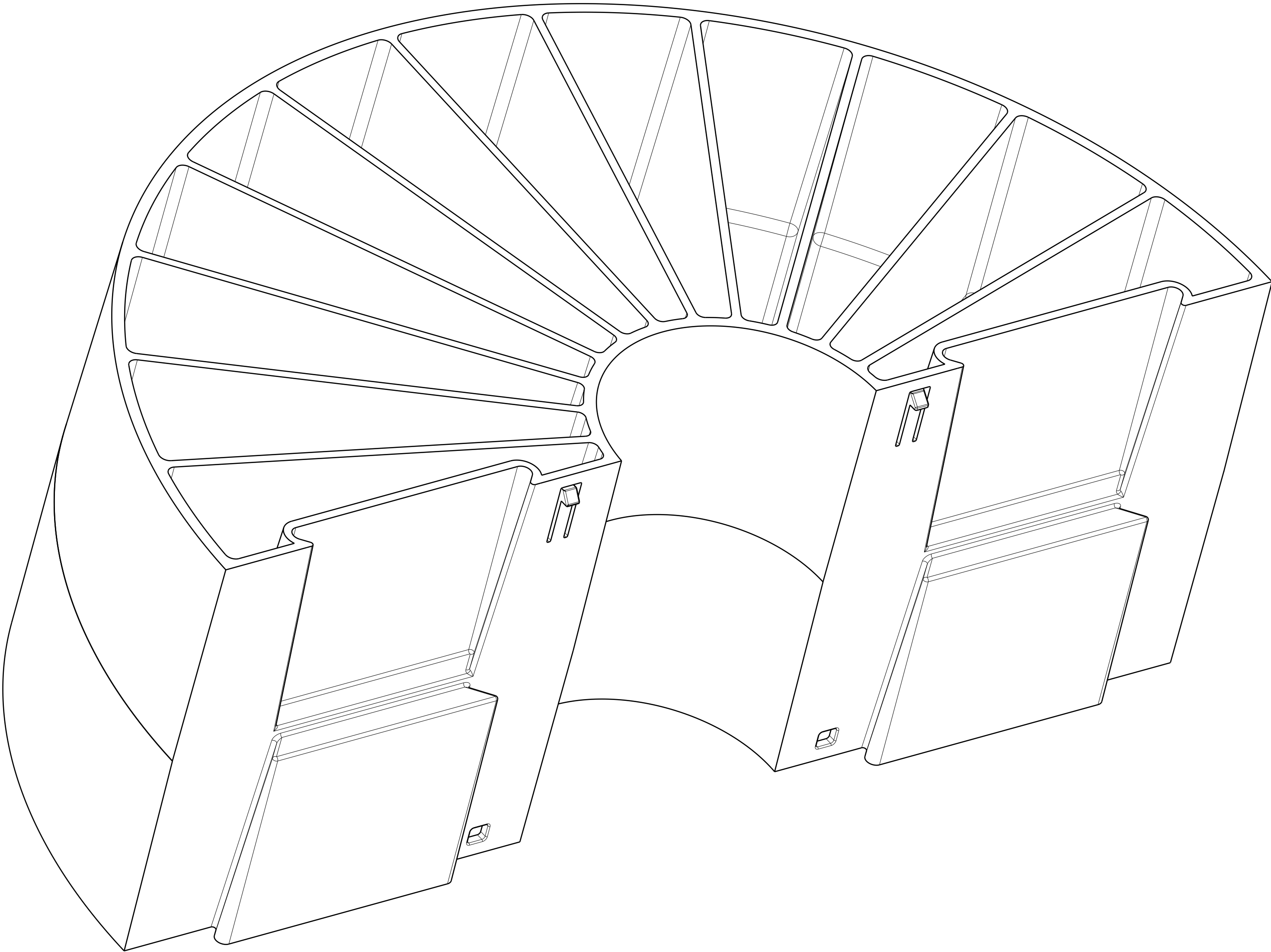
Appendix C

Prefabricated Above-Ground Pipeline Support

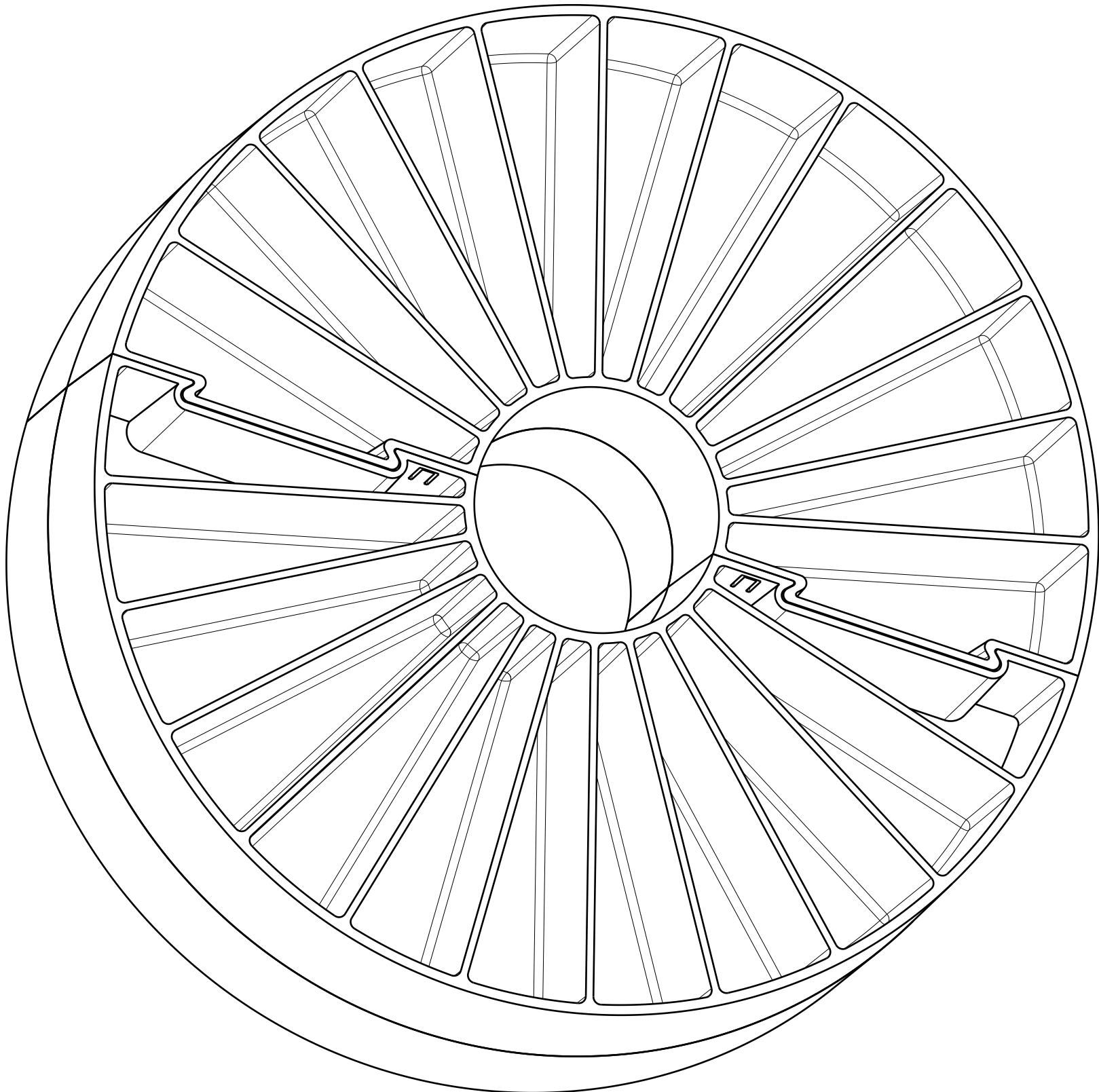
IF IN DOUBT ASK



ISSUE	DESCRIPTION	T/O No.	DRAWN	DATE	APPROVED	DATE
A	RELEASE FOR TOOLING	tba	EC	13-9-12	—	—



Isometric view
Scale: 1:1



Iso Assy View
Scale: 1:2

NOTES

ALL DIMENSIONS IN MILLIMETERS

MAXIMUM DEVIATION FROM SURFACE DATA +/- 0.1 MM UNLESS OTHERWISE SPECIFIED

SURFACE FINISH RELEASE POLISH ONLY UNLESS OTHERWISE SPECIFIED

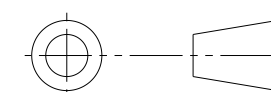

QUALITY NOTE

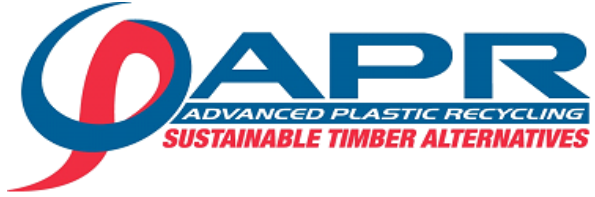
SINK
Product may have up to 3% sinkage

SURFACE FINISH
Product may have small amounts of flash on the parting lines

Notice

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 THIRD ANGLE PROJECTION	 <i>Advanced Plastic Recycling</i> 9500 Churchill Road KILBURN, SA 5084 TELEPHONE (08) 8389 4089 FACSIMILE (08) 8389 4086 A.B.N. 75 8389 432 720	DESIGNED	E.C	SCALE	X : X	MATERIAL	TF PP
		DRAWN	E.C	© DATE	XXXX/XXXX	SHRINKAGE 1.2 %	
		CHECKED	E.C	APPROVED	C.L	SHEET 1 OF 1	
		PART NAME				PART NO.	
		PIPE SUPPORT					
		400 OD x 100 ID ROLLING				400x100 RPS	



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