Roma Ecological Assessment Report – Lots 585 and 588 on WV394
Santos Ltd

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Document prepared by:

Aurecon Australia Pty Ltd
ABN 54 005 139 873
32 Turbot Street
Brisbane
Queensland 4000 Australia

T: +61 7 3173 8000
F: +61 7 3173 8001
E: brisbane@ap.aurecongroup.com
W: aurecongroup.com

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This document is solely for the purposes of an ecological assessment and does not provide any legal advice regarding development locations and/or activities.

Contents

1. Background

1.1 Project description

Santos Ltd (Santos) have commissioned Aurecon Australia Pty Ltd (Aurecon) to undertake ecological investigations of proposed areas of development for the Roma gas fields.

The Roma gas fields are located near the township of Roma and are characterised by undulating terrain with small elevated areas including the Thomby and Grafton Range. The dominant vegetation types within the Roma gas fields include Eucalypt and/or Brigalow woodlands, Blue grass or Mitchell grass downs, and smaller areas of White Cypress Pine and Mulga (Eddie 2007). The Roma gas fields are located within the Balonne River catchment.

Much of this area has been subject to cattle grazing and other agricultural practices, as well as previous development associated with the gas fields.

This report is specific to the proposed development areas listed below and shown in Figure 1.1:

- Pipeline corridors R2, R3, R17, R75 and R78
- Well pads Raslie 14I and RM13-09
- Geotechnical survey locations situated within the above corridors and shown in Figure 1.1

These areas are collectively referred to as the 'proposed development area', and are located entirely within Lots 585 and 588 on WV394. Note that the subject of this report is solely related to Lots 585 and 588 on WV394. Where survey areas overlap additional properties, these sites will be further addressed in the report relevant to those properties/lots.

1.2 Purpose of report

The aim of this report is to provide an ecological assessment of the proposed development areas located on Lots 585 and 588 on WV394 (Figure 1.1) and to identify areas and species of notable ecological or conservation value. This report does not make any recommendations regarding the development in relation to any Santos environmental authorities or other approvals.

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Legend

- ☆ EVNT and Type A Species
- Geotech Borehole
- Corridors - Ground Truth
- Cadastre
- Watercourse

Source:
Cadastre: DERM, 2011.

A1 scale: 1:4,750
0 25 50 100 150 200 250 Meters

Date: 19/07/2011 Version: 1 Job No: 215648

Coordinate system: GDA_1994_MGA_Zone_55

Santos Upstream Ecological Assessment

Figure 1-1: Location of Proposed Pipeline Corridors Investigated

2. Methodology

2.1 Desktop methodology

Areas of development have been projected on a range of maps provided by Santos. These maps include Regional Ecosystem (RE) Mapping (version 6.0, Department of Environment and Resource Management [DERM]), Environmentally Sensitive Areas (ESA) mapping, drainage mapping and aerial photography. Where available ahead of time, these resources were reviewed to determine target areas for the field inspection. It is important to note that the RE classifications used in this report are based on the 'biodiversity status' of the vegetation and not the '*Vegetation Management Act 1999* (VM Act) status' of the vegetation.

2.2 Field methodology

The proposed corridors were assessed by four (4) ecologists (Chris Schell, Vanessa Boettcher, Gilbert Whyte and Matthew Bailey) between the 1 to the 4 of July 2011. These assessments were to determine the existing vegetation communities and habitat value of the proposed clearing within the pipeline corridors as well as to verify the RE mapping as produced by DERM.

GIS environmental constraints layers (eg RE Mapping, ESA mapping etc) and high resolution aerial photography were uploaded onto a toughbook (C5 mobile clinical assistant CFT-001 – Motion computing), with an integrated GPS used to locate surveys areas. Handheld Garmin GPS units (GPS map 76) were also used during the field investigations. It should be noted that while efforts were made to ensure the GPS co-ordinates provided in this report are accurate, a margin of error approximately +/- 15 m is expected due to the limitations of the devices used and the recording environment.

The corridors were 100 m wide (unless they were located along a property boundary) and of varying lengths, and the circular well pad areas had a radius of 175 m. Geotechnical survey locations were also assessed as part of the survey areas (a 50 m buffer zone around each survey location was assessed).

The ground-truthing of the corridors (including road corridors), well pad areas and the geotechnical survey locations included undertaking detailed flora species surveys including sampling of unknown flora, and recording all incidental fauna observations. All species known to be of conservation significance (such as endangered, vulnerable, near threatened or Type A species under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999* [EPBC Act]) were recorded using the tough book.

A list of flora species observed in the proposed development areas has been included in Appendix A. Incidental fauna observations are provided in the relevant sections throughout this report.

3. Ecological assessment

3.1 Well Pad RM13-09

General

The proposed well pad is located on Lot 585 on WV394 (Figure 1.1 and Figure 1.2). The site is generally flat, with two ephemeral drainage lines located in proximity (one to the north and one to the west) to the proposed area of disturbance. The proposed development area has been extensively disturbed as a result of previous vegetation clearing and heavy grazing by stock. The disturbance area is located to the north of the proposed powerline easement within the south-eastern corner of Lot 585 on WV394.

The development area is currently mapped as non remnant vegetation on the DERM RE mapping (Figure 1.1). There are no ESA's mapped within the development area.

No watercourses are mapped within the proposed well pad.

Figure 1.2. Aerial Photograph of RM13-09

Geotechnical survey locations

No geotechnical survey locations were assessed as part of this well pad.

Floristics

The vegetation within the proposed development area has been previously cleared. The vegetation within the well pad is characterised by a dense ground cover layer which is dominated by native and exotic grass species including *Pennisetum ciliare* (Buffel Grass), and *Melinis repens* (Red Natal Grass). Canopy and shrub layers are absent from the proposed disturbance area.

No species protected under the provisions of the EPBC Act and/or NC Act were observed within the proposed disturbance area. In addition, no Type A flora species as listed under the provisions of the NC Act were recorded within the proposed well pad.

A list of flora species observed within the proposed corridor is presented in Appendix A.

Habitat values

No incidental fauna species were recorded within the proposed disturbance area

Only a single habitat feature was associated with the proposed disturbance area was recorded (ie Dense groundcover vegetation)

The habitat value of the proposed development area is low overall, as it contains no canopy or mid storey vegetation.

3.2 Well Pad Raslie 14l

General

The proposed well pad is located on Lot 585 on WV394 (Figure 1.1 and Figure 1.3). The site is gently undulating, with an ephemeral drainage line to the east of the development area. The soils are predominantly silty-sands. The proposed development area has been extensively disturbed as a result of previous vegetation clearing and heavy grazing by stock. The disturbance area is located to the north of an existing pipeline easement.

The development area is currently mapped as non remnant vegetation on the DERM RE mapping (Figure 1.1). There are no ESA's mapped within the development area.

No watercourses are mapped within the proposed well pad.

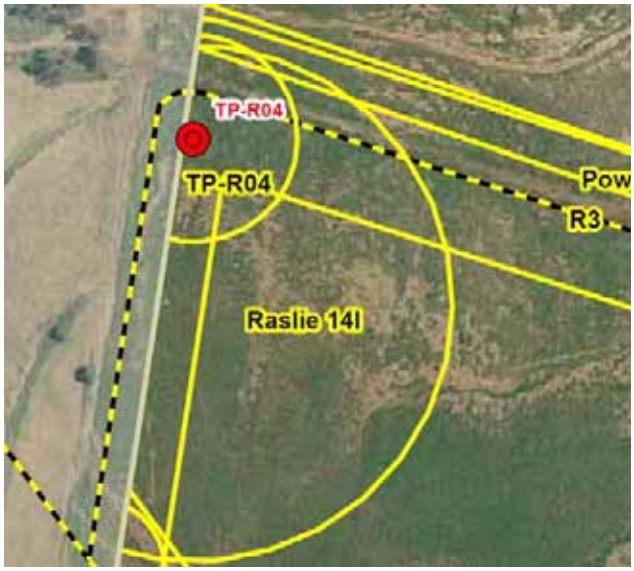

Figure 1.3. Aerial Photograph of Raslie 14l

Geotechnical survey locations

No geotechnical survey locations were assessed as part of this well pad.

Floristics

The vegetation within the proposed development area has been previously cleared. The vegetation within the well pad is characterised by a dense ground cover layer which is dominated by native and exotic grass species including *Pennisetum ciliare* (Buffel Grass), and *Melinis repens* (Red Natal Grass). Canopy and shrub layers are absent from the proposed disturbance area.

No species protected under the provisions of the EPBC Act and/or NC Act were observed within the proposed disturbance area. In addition, no Type A flora species as listed under the provisions of the NC Act were recorded within the proposed well pad.

A list of flora species observed within the proposed corridor is presented in Appendix A.

Habitat values

No incidental fauna species were recorded within the proposed disturbance area

Only a single habitat feature was associated with the proposed disturbance area was recorded (ie Dense groundcover vegetation)

The habitat value of the proposed development area is low overall, as it contains no canopy or mid storey vegetation.

3.3 Power Easement

General

The proposed power easement corridor is located along the property boundary of Lots 585 and 588 on WV394 (Figure 1.1 and Figure 1.4). A linear strip of mature, intact vegetation is contained within the proposed corridor. In addition, a single mapped, ephemeral drainage line (stream order 1) occurs within the eastern portion of the alignment (Figure 1.1). The site is gently undulating, and the soils are predominantly silty-sands. The northern portion of the proposed corridor has been extensively disturbed and an access track is located in this area. In addition, the understorey has and ground stratum within this corridor have been impacted by heavy grazing by stock..

The proposed corridor is currently mapped as non remnant vegetation on the DERM RE mapping (Figure 1.1). There are no ESA's mapped within the corridor.

There is one (1) watercourse mapped within the south-west section of the corridor (stream order 1). The land within the corridor is gently sloped towards, and is likely to drain into, this watercourse. This watercourse was not observed in flow at the time of the investigation (ie ephemeral watercourse).

Figure 1.4. Aerial Photograph of Power Easement

Geotechnical survey locations

One (1) geotechnical survey location is located within the corridor (RM-35).

Floristics

The vegetation within the proposed corridor has been previously cleared, and an existing cleared access road traverses the corridor (along the property boundary fence). The vegetation within the corridor is characterised by a canopy of *Eucalyptus populnea* (Poplar Box) and *Casuarina cristata* (Belah) approximating 18 m in height, a relatively sparse mid stratum of *Eremophila mitchellii* (False sandalwood) and Acacia species and a relatively dense ground cover layer of native and exotic grass and forb species. Given the linear nature of this vegetation it does not meet the requirements of remnant vegetation under the provisions of the Queensland *Vegetation Management Act 1999* (VM Act)

Two (2) *Brachychiton populneus* were recorded within the proposed corridor – the location of this tree is provided in Table 3.1 and in Figure 1.1. This species is a Type A restricted plant under the NC Act.

No species protected under the provisions of the EPBC Act were observed within the proposed corridor.

A list of flora species observed within the proposed corridor is presented in Appendix A.

Table 3.1 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
Brachychiton populneus	708738	7068038
Brachychiton populneus	708808	7068054

Habitat values

Two (2) incidental fauna species were recorded within the proposed corridor. These species were the Grey Butcherbird (*Cracticus torquatus*) and the Grey Crowned Babbler (*Pomatostomus temporalis*)

Both of these species are listed as least concern under the provisions of the NC Act and/or the EPBC Act.

Habitat features associated with the proposed corridor include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)

The habitat value of the proposed corridor is low overall, as it is linear in nature and contains limited woody vegetation and has been disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species. Species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances.

3.4 Corridor R2

General

The proposed corridor is located on both Lot 585 and 588 on WV394 and is located along the north-western portion of Lot 588 and the western boundary of Lot 585 (Figure 1.1 and Figure 1.5). The proposed disturbance area is characterised by a gently undulating landform and the soils are predominantly silty-sands. The proposed development area has been extensively disturbed as a result of previous vegetation clearing and heavy grazing by stock. An access track also runs the length of this corridor along the respective property boundary.

The development area is currently mapped as non remnant vegetation on the DERM RE mapping (Figure 1.1). There are no ESA's mapped within the development area.

No watercourses are mapped within the proposed corridor.

Figure 1.5. Aerial Photograph of R2

Geotechnical survey locations

No geotechnical survey locations were assessed as part of this corridor.

Floristics

The vegetation within the proposed disturbance area has been previously cleared. The vegetation within this area is characterised by a dense ground cover layer which is dominated by native and exotic grass species including *Pennisetum ciliare* (Buffel Grass), and *Melinis repens* (Red Natal Grass). Canopy and shrub layers are generally absent from the proposed disturbance area.

No species protected under the provisions of the EPBC Act and/or NC Act were observed within the proposed disturbance area. In addition, no Type A flora species as listed under the provisions of the NC Act were recorded within the proposed well pad.

A list of flora species observed within the proposed corridor is presented in Appendix A.

Habitat values

Three (3) incidental fauna species were recorded within the proposed disturbance area. These species were the Torresian Crow (*Corvus orru*), The Galah (*Eolophus roseicapilla*) and the Cockatiel (*Nymphicus hollandicus*). All of these species are currently listed as least concern under the provisions of the NC Act and/or EPBC Act.

Only a single habitat feature was associated with the proposed disturbance area was recorded (ie Dense groundcover vegetation)

The habitat value of the proposed development area is low overall, as it contains no canopy or mid storey vegetation.

3.5 Corridor R3

General

The proposed corridor is located on Lot 585 on WV394 and is located along the central and western portions of the lot (Figure 1.1 and Figure 1.6). The site is gently undulating, and the soils are predominantly silty-sands. Two (2) unmapped drainage lines intersect the proposed corridor within the central portion of the property. The proposed corridor has been extensively disturbed as a result of previous vegetation clearing and heavy grazing by stock. Access tracks are present along much of the corridors length.

The proposed corridor is currently mapped as non remnant vegetation on the DERM RE mapping (Figure 1.1). There are no ESA's mapped within the corridor.

The land within the corridor is gently sloped towards the unmapped drainage lines, and is likely to drain into these areas. No water was present within these drainage lines at the time of the investigation (ie ephemeral watercourse).

Figure 1.6. Aerial Photograph of R3

Geotechnical survey locations

One (1) geotechnical survey location is located within the corridor (ie TP-R04).

Floristics

The vegetation within the proposed corridor has been previously cleared, and an existing cleared access road traverses the corridor (along the property boundary fence). The vegetation within the

corridor is characterised by a dense ground cover layer, with very sparse shrub and sub-canopy layers.

The corridor has a dense ground layer which is co-dominated by *Pennisetum ciliare* (Buffel Grass), with other species including *Verbena tenuisecta* (Mayne's Curse), *Chloris gayana* (Rhodes Grass) and *Cymbopogon refractus* (Barbed-wire Grass). The ground cover layer also contains a range of other native and exotic grasses and herbs, covering approximately 80% of the total corridor area.

The canopy layer is dominated by sporadic patches of *Acacia harpophylla* (Brigalow) and the occasional *Eucalyptus populnea* (Poplar Box) which covers approximately 2% of the corridor area. Canopy species were generally 5 m in height. The shrub layer is generally absent from this corridor (Figure 1.1).

No species protected under the provisions of the EPBC Act and/or NC Act were observed within the proposed disturbance area. In addition, no Type A flora species as listed under the provisions of the NC Act were recorded within the proposed corridor alignment.

A list of flora species observed within the proposed corridor is presented in Appendix A.

Habitat values

Four (4) incidental fauna species were recorded within the proposed disturbance area. Species observed consisted of the Australian Pipit (*Anthus novaeseelandiae*), the Torresian Crow (*Corvus orru*), the Willy Wagtail (*Rhipidura leucophrys*) and the Appostlebird (*Struthidea cinerea*). All species observed are currently listed as least concern under the provisions of the NC Act and/or EPBC Act.

Habitat features associated with the proposed corridor include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Watercourse habitat (including banks)

The habitat value of the proposed corridor is low overall, as it contains limited woody vegetation and has been extensively disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species. Species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances.

3.6 Corridor R17

General

The proposed corridor is located on Lot 588 on WV394 and is situated along the western boundary of the property (Figure 1.1 and Figure 1.7). The landform contained within the proposed corridor is gently undulating, with an ephemeral drainage line (stream order 1) bisecting the corridor in its northern section. The site is gently undulating, and the soils are predominantly silty-sands. The proposed corridor has been extensively disturbed as a result of previous vegetation clearing and heavy grazing by stock. An access track which follows the property boundary runs the length of the corridor.

All of the vegetation contained within this corridor is currently mapped as non remnant vegetation on the DERM certified RE mapping.

The drainage line contained water at the time of investigation; however this was as a series of pools. Water was not flowing during the current investigation

Figure 1.7. Aerial Photograph of R17

Geotechnical survey locations

No geotechnical survey locations were assessed as part of this corridor.

Floristics

Much of the vegetation within the proposed corridor has been previously cleared, however vegetation along the unmapped drainage line was characterised by scrubby regrowth dominated by *Citrus glauca* (Native lime). Other shrub species present include *Acacia harpophylla* (Brigalow), *Alectryon diversifolius* (Scrub Bonaree) and *Eremophila mitchellii* (False Sandalwood). Scrubby regrowth approximated 2 m to 4 m in height.

Vegetation away from the mapped drainage line was characterised by a dense ground layer dominated by *Pennisetum ciliare* (Buffel Grass) and *Urochloa mosambicensis* (Sabi grass). Other species including *Verbena tenuisecta* (Mayne's Curse) and *Chloris* species were also present.

No species protected under the provisions of the EPBC Act and/or NC Act were observed within the proposed disturbance area. In addition, no Type A flora species as listed under the provisions of the NC Act were recorded within the proposed corridor.

A list of flora species observed within the proposed corridor is presented in Appendix A.

Habitat values

Nine (9) incidental fauna species were recorded within the proposed development area. These species consisted of the Torresian Crow (*Corvus orru*), Pied Butcherbird (*Cracticus nigrogularis*), Galah (*Eolophus roseicapilla*), Cat (*Felix catus*), Australian Magpie (*Gymnorhina tibicen*), Blue Bonnet (*Lupinus texensis*), Noisy Miner (*Manorina melanocephala*), Cockatiel (*Nymphicus hollandicus*), and Willie Wagtail (*Rhipidura leucophrys*).

All species observed are currently listed as least concern under the provisions of the NC Act and/or EPBC Act.

Habitat features associated with the proposed disturbance area include:

- Shrubby cover suitable for shelter, foraging and perching along the watercourse
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs) at the watercourse
- Watercourse habitat (including banks)

The habitat value of the proposed development area is low overall as vegetation contained within this corridor has been subject to high levels of anthropogenic disturbance.

3.7 Corridor R75

General

The proposed corridor is located on Lot 585 on WV394 (Figure 1.1 and Figure 1.8). The site is gently undulating, with an ephemeral creek (unmapped) running parallel to the corridor for much of its length. The corridor also crosses a mapped drainage line (stream order 2) prior to terminating at an existing dam at the northern extent of the corridor (Figure 1.1). The soils in the proposed development area are dispersive clays (ie evidence of moderate gully erosion), with medium-grained sedimentary rock along the creek line. The development area has been extensively disturbed as a result of previous vegetation clearing and heavy grazing by stock. However vegetation has been retained along the length of the drainage line.

All of the vegetation contained within this corridor is currently mapped as non remnant vegetation on the DERM certified RE mapping.

This watercourse was not observed in flow at the time of the investigation (ie ephemeral watercourse).

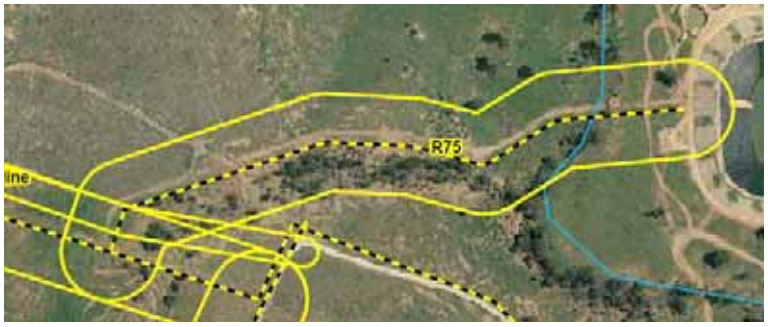

Figure 1.8. Aerial Photograph of R75

Geotechnical survey locations

One (1) geotechnical survey location was assessed as part of this corridor (ie. RM26) (Figure 1.1). The floristics and habitat values for this test-pit are discussed in the following sections. A flora species list for the Corridor R75 (including species contained within RM26) is provided in Appendix A.

Floristics

Much of the vegetation within the proposed corridor has been previously cleared, however vegetation along the unmapped drainage line was relatively intact and structurally complex. However, given the limited extent and linear nature of this vegetation, it is not mappable as remnant under the provisions of the Queensland *Vegetation Management Act 1999* (VM Act). Vegetation associated with drainage lines within this corridor is dominated by a canopy of *Eucalyptus populnea* (Poplar box). Mid stratum species include *Eremophila mitchellii* (False sandalwood), *Psydrax oleifolius* (Canthium), and *Casuarina cristata* (Belah) and *Acacia harpophylla* (Brigalow). Ground stratum species are characterised by native and exotic grasses (eg Spicy top*, Austrodanthonia tenuior* and *Buffel Grass*) as well and herbs (ie *Sida* spp.)

Generally, the vegetation outside of drainage lines was devoid of canopy and mid stratum species as a result of historic clearing to facilitate stock grazing and other agricultural practices. The vegetation within these areas was characterised by a dense ground cover of native and exotic grass and herb species. *Pennisetum ciliare* (Buffel Grass), and *Melinis repens* (Red Natal Grass) dominated much of this corridor. However native species persisted throughout all areas assessed.

No species protected under the provisions of the EPBC Act and/or NC Act were observed within the proposed disturbance area. In addition, no Type A flora species as listed under the provisions of the NC Act were recorded within the proposed well pad.

A list of flora species observed within the proposed corridor is presented in Appendix A.

Habitat values

Eleven (11) incidental fauna species were recorded within the proposed development area. These species consisted of the Red Winged Parrot (*Aprosmictus erythropterus*), Black Faced Cuckoo shrike (*Coracina novaehollandiae*), Torresian Crow (*Corvus orru*), Pied Butcherbird (*Cracticus nigrogularis*), Galah (*Eolophus roseicapilla*), Noisy Miner (*Manorina melanocephala*), Cockatiel (*Nymphicus hollandicus*), Striated Pardalote (*Pardalotus striatus*), Pale-Headed Rosella (*Platycercus adscitus*), Grey Crowned Babbler (*Pomatostomus temporalis*), and the Apostle bird (*Struthidea cinerea*).

All species observed are currently listed as least concern under the provisions of the NC Act and/or EPBC Act.

Habitat features associated with the proposed disturbance area include:

- Canopy cover suitable for shelter, foraging and perching along the watercourse
- Fissured/exfoliating tree bark at the watercourse
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs) at the watercourse
- Watercourse habitat (including banks)

The habitat value of the proposed development area is low overall, however it does contain habitat of medium value associated with the watercourse. Mature vegetation along the watercourse is likely to provide habitat suitable for a range of small to medium-sized mammals, avian fauna, reptiles and amphibians.

Although the vegetation community associated with the watercourse is structurally complex, the remaining area has been largely cleared of vegetation and has been heavily impacted as a result of stock grazing and invasion of exotic pasture species. Species likely to utilise resources within the cleared area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances.

3.8 Corridor R78

General

The proposed corridor is located on both Lot 585 and 588 on WV394 and is moves from lot 585 through and into lot 588 in an north-west, south-east direction (Figure 1.1 and Figure 1.9). Land contained within this corridor is gently undulating, and the soils are predominantly silty-sands. Two (2) unmapped drainage lines intersect the proposed corridor, one in the southern portion of Lot 585 and the other within the central portion of Lot 588 (Figure 1.1). The proposed corridor has been extensively disturbed as a result of previous vegetation clearing and heavy grazing by stock. Access tracks are present along much of the corridors length which follows an existing pipeline easement.

The proposed corridor is currently mapped as non remnant vegetation on the DERM RE mapping (Figure 1.1). There are no ESA's mapped within the corridor.

The land within the corridor is gently sloped towards the unmapped drainage lines, and is likely to drain into these areas. No water was present within these drainage lines at the time of the investigation (ie ephemeral watercourse).

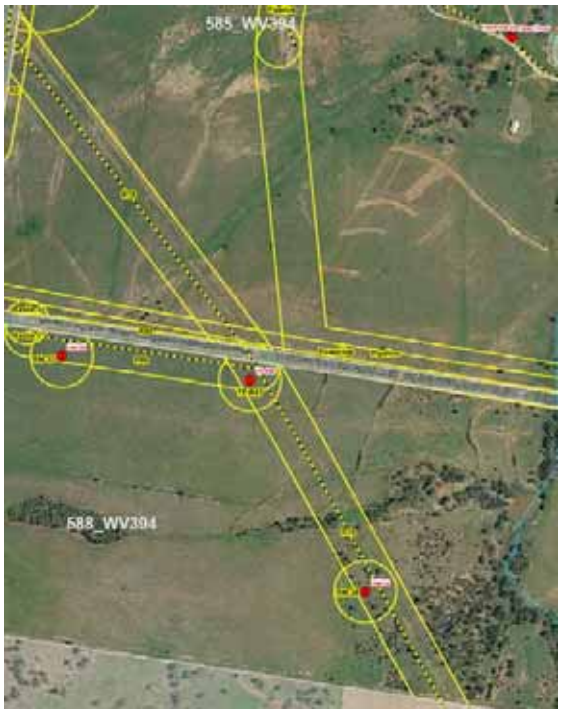

Figure 1.9. Aerial Photograph of R78

Geotechnical survey locations

Two (2) geotechnical survey locations are located within the corridor (ie. TP-R47 and RM-28).

Floristics

The vegetation within the proposed corridor has been previously cleared, and an existing cleared access road traverses the corridor (along the pipeline easement). The vegetation within the corridor is characterised by a dense ground cover layer, with very sparse shrub and sub-canopy layers.

With the exception of the southern part of the corridor within Lot 588, the proposed corridor is largely devoid of a canopy and mid-stratum. Within these areas a dense ground layer dominated by

Pennisetum ciliare (Buffel Grass), with other species including *Verbena tenuisecta* (Mayne's Curse) and *Chloris* species) is present.

However, within the southern portion of Lot 588, canopy species in the form *Acacia harpophylla* (Brigalow), *Eucalyptus populnea* (Poplar Box) are present, approximating 12 m in height. Shrub species including *Acacia oswaldii*, *Acacia excelsa* and *Eremophila mitchelli* (False sandalwood) and *Eremophila deserti* (Turkey bush) are also represented within this area. Shrub species approximate 2 m to 4 m in height (Figure 1.1).

No species protected under the provisions of the EPBC Act and/or NC Act were observed within the proposed disturbance area. In addition, no Type A flora species as listed under the provisions of the NC Act were recorded within the proposed corridor alignment.

A list of flora species observed within the proposed corridor is presented in Appendix A.

Habitat values

Six (6) incidental fauna species were recorded within the proposed disturbance area. These species consisted of the following: Golden-Headed Cisticola (*Cisticola exilis*), Black Faced Cuckoo shrike (*Coracina novaehollandiae*), Torresian Crow (*Corvus orru*), Australian Magpie (*Gymnorhina tibicen*), Variegated Fairy-Wren (*Malurus lamberti*), and the Pale-Headed Rosella (*Platycercus adscitus*).

All species observed are currently listed as least concern under the provisions of the NC Act and/or EPBC Act.

Habitat features associated with the proposed corridor include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark

The habitat value of the proposed corridor is low overall, as it contains limited woody vegetation and has been extensively disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species. Species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances.

4. Conclusion

The proposed development areas occur across a variety of landscape and vegetation types. Most the development areas occur in previously disturbed areas. However, species of significance under the provisions of the NC Act (ie Type A restricted plants) are located on site.

No areas mapped as remnant vegetation on the DERM certified RE mapping will be traversed by the proposed corridors.

Multiple watercourses occur within, or in close proximity to, development areas. The watercourses within the proposed development areas have limited fringing riparian vegetation, and subsequently have low to moderate ecological and habitat value.

No species protected under the provisions of the EPBC Act were observed within the proposed development areas during these investigations.

5. References

Eddie, C (2007) Field Guide to Trees and Shrubs of Eastern Queensland Oil and Gas Fields, First Edition, Santos Ltd, Adelaide.

Regional Ecosystem Mapping, Version 6.0, Queensland Government Department of Environment and Resource Management (DERM).

Appendix A
Flora Species List

Appendix A

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
FLORA															
Adiantaceae	*Cheilanthes aspera*	Bristly Cloak Fern	x	x											
Adiantaceae	*Cheilanthes sieberi*	Mulga Fern	x	x	x										x
Amaranthaceae	*Alternanthera dentata*	Lesser Joy Weed		x							x	x			
Anthericaceae	*Laxmannia gracilis*	Slender Wire Lilly	x												
Apiaceae	*Hydrocotyle laxiflora*	Stinking Pennywort		x											
Apocynaceae	*Alstonia constricta*	Bitter Bark				x	x	x	x	x	x	x	x	x	x
Apocynaceae	*Carissa ovata*	Currant Bush	x			x	x		x				x	x	
Apocynaceae	*Parsonsia lanceolata*	Monkey Rope				x									
Asteraceae	*Bidens bipinnata*	Cobblers Pegs	x												
Asteraceae	*Brachycome dentata*	Lobe-Seed Daisy		x											

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Asteraceae	*Calocephalus platycephalus*	Billy Buttons								x	x	x			
Asteraceae	*Calotis cuneifolia*	Purple Burr Daisy	x												x
Asteraceae	*Calotis lappulacea*	Yellow Burr Daisy	x	x			x				x	x		x	
Asteraceae	*Chrysocephalum apiculatum*	Yellow Buttons	x				x			x				x	x
Asteraceae	*Cirsium vulgare*	Spear Thistle, Black Thistle	x		x										x
Asteraceae	*Conyza bonariensis*	Fleabane	x												
Asteraceae	*Conyza canadensis*	Fleabane	x	x			x				x	x		x	
Asteraceae	*Epaltes australis*	Spreading Nut heads	x												
Asteraceae	*Podolepis jaceoides*	Showy Copper Wire Daisy	x				x							x	
Asteraceae	*Pterocaulon sphacelatum*	Apple Bush	x								x	x			

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Asteraceae	*Senecio latus*	Fire Weed	x												
Asteraceae	*Sonchus oleraceus*	Common Sow thistle	x			x									
Asteraceae	*Tagetes minuta*	Stinking Rodger	x												
Asteraceae	*Xanthium occidentale*	Noogoora Burr	x		x	x					x	x			
Asteraceae	*Xanthium spinosum*	Bathurst Burr		x											
Brassicaceae	*Lepidium africanum*	Pepper Cress	x												
Cactaceae	*Harrisia spp*	Harrisia Cactus	x												
Cactaceae	*Opuntia stricta*	Prickly Pear			x					x	x	x			
Cactaceae	*Opuntia tomentosa*	Velvety Tree Pear	x	x					x				x		x
Campanulaceae	*Wahlenbergia communis*	Large Bluebells		x											
Capparaceae	*Apophyllum anomalum*	Warrior Bush	x			x					x	x			
Capparaceae	*Capparis loranthifolia*	Nipan, Wait A While										x			x
Casuarinaceae	*Allocasuarina luehmannii*	Bull Oak	x												

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Casuarinaceae	*Casuarina cristata*	Belah	x	x		x	x		x	x	x	x	x	x	x
Chenopodiaceae	*Einadia nutans*	Climbing Saltbush	x												
Chenopodiaceae	*Maireana microphylla*	Small-Leaf Bluebush	x	x	x		x				x	x		x	x
Chenopodiaceae	*Maireana villosa*	Silky Bluebush				x									
Chenopodiaceae	*Salsola kali*	Roly Poly	x		x						x	x			x
Chenopodiaceae	*Sclerolaena birchii*	Galvanised Burr	x	x	x	x	x		x		x	x	x	x	x
Chenopodiaceae	*Sclerolaena muricata*	Black Rolly-Polly	x			x					x	x			
Convolvulaceae	*Bonamia media var. media*			x											
Convolvulaceae	*Dichondra repens*	Kidney Weed	x												
Cupressaceae	*Callitris glaucophylla*	White Cypress Pine	x												
Cyperaceae	*Cyperus gracilis*	Bunchy Sedge	x		x		x				x	x		x	x
Cyperaceae	*Cyperus polystachyos*	Bunchy Sedge	x												
Cyperaceae	*Fimbristylis dichotoma*	Fimbristylis	x	x	x	x	x				x	x		x	x

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Euphorbiaceae	*Chamaesyce drummondii*	Caustic Weed	x	x											
Euphorbiaceae	*Phyllanthus gunnii*	Scrubby Spurge					x							x	
Fabaceae	*Indigofera linnaei*	Birdsville Indigo		x											
Fabaceae	*Medicago scutellata*	Snail Medic				x									
Fabaceae	*Medicago polymorpha*	Burr Medic	x	x	x	x									x
Goodeniaceae	*Scaevola spinescens*	Prickly Fan Flower							x		x	x	x		
Hemerocallidaceae	*Dianella longifolia*	Flax Lily	x												
Juncaceae	*Juncus usitatus*	Juncus	x	x		x	x				x	x		x	
Lamiaceae	*Plectranthus parviflorus*	Native Coleus	x	x											
Laxmanniaceae	*Lomandra multiflora*	Many-Flowered Mat-Rush		x											
Laxmanniaceae	*Lomandra leucocephala*	Lomandra	x												
Laxmanniaceae	*Lomandra filiformis*	Wattle Mat Rush	x												
Laxmanniaceae	*Lomandra longifolia*	Lomandra	x												
Malvaceae	*Abutilon* sp.	Abutilon	x												

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Malvaceae	*Malvastrum americanum*	Spiny Malvastrum	x			x									
Malvaceae	*Sida rhombifolia*	Paddy's Lucerne		x	x										
Malvaceae	*Sida rohlenae*	Shrub Sida	x			x									
Malvaceae	*Sida subspicata*	Queensland Hemp	x	x	x	x									
Meliaceae	*Owenia acidula*	Emu Apple		x											
Mimosoideae	*Acacia deanei*	Dean's Wattle		x											
Mimosoideae	*Acacia excelsa*	Iron Wood	x	x											
Mimosoideae	*Acacia harpophylla*	Brigalow		x		x	x		x		x	x	x	x	x
Mimosoideae	*Acacia oswaldii*	Umbrella Wattle	x	x							x	x			
Myoporaceae	*Eremophila debilis*	Winter Apple		x							x	x			
Myoporaceae	*Eremophila deserti*	Turkey bush	x		x				x		x	x	x		
Myoporaceae	*Eremophila mitchellii*	False Sandalwood	x	x		x	x		x		x	x	x	x	
Myrsinaceae	*Anagallis arvensis*	Scarlet Pimpernel		x											

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Myrtaceae	*Angophora floribunda*	Rough-Barked Apple	x												
Myrtaceae	*Eucalyptus chloroclada*	Dirty Gum	x												
Myrtaceae	*Eucalyptus populnea*	Poplar Box	x	x					x		x	x	x		
Oleaceae	*Jasminum didymum*	Native Jasmine	x	x											
Oxalidaceae	*Oxalis stricta*	Yellow Wood Sorrel	x												
Papaveraceae	*Argemone ochroleuca*	Mexican Poppy		x				x		x					x
Poaceae	*Alloteropsis semialata*	Cockatoo Grass									x	x			
Poaceae	*Aristida calycina var. calycina*	Dark Wiregrass			x		x		x	x			x	x	
Poaceae	*Aristida caput medusae*	Curly Head Wire Grass	x							x					
Poaceae	*Aristida jerichoensis*	Jericho Wire Grass		x				x	x		x	x	x		x
Poaceae	*Austrodanthonia tenuior*			x	x	x	x	x	x	x	x	x	x	x	x

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Poaceae	*Austrostipa verticillata*	Slender Bamboo Grass	x	x	x	x	x		x				x	x	
Poaceae	*Avena sativa*	Common Oats	*x*												
Poaceae	*Capillipedium spicigerum*	Scented-Top Grass	x												
Poaceae	*Chloris pectinata*	Chloris	x	x	x	x			x		x	x	x		
Poaceae	*Chloris truncata*	Chloris	x	x					x		x	x	x		
Poaceae	*Chrysopogon fallax*	Golden-Beard Grass				x				x					
Poaceae	*Cymbopogon refractus*	Barbed-Wire Grass		x											
Poaceae	*Cynodon dactylon*	Couch Grass													
Poaceae	*Dichanthium sericeum*	Queensland Blue Grass	x	x	x	x	x	x	x	x	x	x	x	x	x
Poaceae	*Enneapogon avenaceus*	Bottle Washers		x	x				x		x	x	x		x
Poaceae	*Eragrostis brownii*	Browns Lovegrass	x	x	x	x	x							x	x
Poaceae	*Eragrostis cilianensis*	Stink grass	x	x											

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Poaceae	*Eragrostis elongata*	Lavender Grass		x		x									x
Poaceae	*Heteropogon contortus*	Black Spear Grass	x												x
Poaceae	*Leptochloa digitata*	Cane grass		x											
Poaceae	*Melinis repens*	Red Natal	x												
Poaceae	*Panicum effusum*	Inquisitive Grass	x	x	x				x				x		x
Poaceae	*Paspalidium distans*	Shotgrass/ Brigalow Grass		x	x				x				x		
Poaceae	*Paspalum dilatatum*	Paspalum			x										
Poaceae	*Pennisetum ciliare*	Buffel Grass	x	x	x	x	x	x			x	x		x	x
Poaceae	*Perotis rara*	Comet Grass	x												
Poaceae	*Sorghum halepense*	Johnson Grass	x												
Poaceae	*Sporobolus actinocladus*	Katoora Grass	x	x	x		x				x	x		x	
Poaceae	*Sporobolus caroli*	Desert Sporobolus	x	x											

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Poaceae	*Sporobolus creber*	Western Rats Tail Grass	x	x		x			x		x	x	x		
Poaceae	*Themeda triandra*	Kangaroo Grass	x												
Poaceae	*Tragus australianus*	Small Burr Grass													
Poaceae	*Urochloa mosambicensis*	Urochloa		x	x	x	x		x		x	x	x	x	x
Portulacaceae	*Portulaca pilosa*	Hairy Pigweed	x		x						x	x			
Proteaceae	*Grevillea striata*	Beefwood	x												x
Ranunculaceae	*Ranunculus lappaceus*	Australian Buttercup	x												
Rhamnaceae	*Ventilago viminalis*	Supplejack		x											
Rubiaceae	*Psydrax oleifolius*	Canthium	x	x					x		x	x	x		
Rutaceae	*Citrus glauca*	Lime Bush	x	x		x	x				x	x		x	x
Rutaceae	*Geijera parviflora*	Wilga	x			x	x		x		x	x	x	x	
Santalaceae	*Santalum lanceolatum*	Sandalwood	x								x	x			
Sapindaceae	*Alectryon diversifolius*	Scrub Boonaree	x			x			x				x		

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Sapindaceae	*Alectryon oleifolius*	Boonaree													
Sapindaceae	*Atalaya hemiglauca*	Whitewood	x				x				x	x		x	x
Sapindaceae	*Dodonaea viscosa*	Sticky Hopbush	x						x				x		
Scrophulariaceae	*Verbascum virgatum*	Twiggy Muellein	x												
Solanaceae	*Lycium ferocissimum*	African Box Thorne	x			x	x		x		x	x	x	x	
Solanaceae	*Solanum americanum*	American Nightshade	x	x											
Solanaceae	*Solanum ellipticum*	Tomato Bush	x	x											
Solanaceae	*Solanum nigrum*	Black Nightshade		x											
Solanaceae	*Solanum* sp.	Nightshade	x												
Sterculiaceae	*Brachychiton populneus*	Kurrajong	x												
Thymelaeaceae	*Pimelea microcephala*	Pussy Tail									x	x			
Verbenaceae	*Verbena bonariensis*	Purple top		x											

Family Name	Scientific Name	Common Name	(Lot 585)	Corridor R75 (Lot 585)	Corridor B982 (Lot 585)	Corridor R17 (Lot 588)	Corridor R2 (Lot 588)	Corridor TPR47 (Lot 588)	Corridor R86 (Lot 588)	Corridor RM35 (Lot 588)	Corridor R78 (Lot 585)	Corridor R78 (Lot 588)	Power Easement	Pad B982	Corridor R3 (Lot 585)
Verbenaceae	*Verbena officinalis*	Common Verbena, Native Verbena						x	x	x			x		
Verbenaceae	*Verbena tenuisecta*	Mayne's Curse	x	x	x	x	x	x	x	x	x	x	x	x	