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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 (Appendix B):

- R4 Geotechnical Sites

1.2 Purpose of report

The aim of this report is to provide an ecological assessment of the proposed development areas located on Lot 167 (Figure 1, Appendix B) 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.
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 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 Regional Ecosystem classifications used in this report are based on the ‘biodiversity status’ of the vegetation and not the ‘Vegetation Management Act 1999 status’ of the vegetation.

2.2 Field methodology

The four proposed geotechnical sites were assessed by one (1) Aurecon ecologist (Karen Bowland) on 16 June 2011. These assessments were to determine the existing vegetation communities and habitat value of the proposed clearing within the proposed pit areas as well as to verify the RE mapping as produced by the Department of Environment and Resource Management (DERM).

GIS layers of the proposed development areas and environmental constraints mapping (eg RE Mapping, ESA mapping) and high resolution aerial photography were uploaded onto a toughbook (C5 mobile clinical assistant CFT-001 – Motion computing) with an integrated GPS to assist in locating the areas to be assessed whilst on site. 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 accuracy of GPS co-ordinates provided in this report, they should only be considered to be accurate to +/- 15 metres due to the limitations of the GPS devices used.

The geotechnical sites were circular areas with a radius of 20 metres. The ground-truthing of the geotechnical sites 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) were recorded using the toughbook.

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 R4 Geotechnical Sites

General

The subject site does not contain any mapped REs. No remnant or significant vegetation was recorded within or surrounding the subject site during the assessment.

There are no Ecologically Sensitive Areas within or surrounding the subject site.

A 1st order stream exists approximately 500 m to the east of the subject site (Figure 1). No major roads or access tracks traverse the subject site.

The subject site is bordered by cultivated paddocks to the west.

Floristics

The vegetation community present on the subject site was cleared land dominated by Buffel grass with isolated woody shrubs and fallen timber.

No Type A species were recorded during the site assessment.

No flora species of conservation significance under the EPBC Act or NC Act were detected during the site assessment.

Habitat values

The habitat values within the proposed pit areas are low due to the dominance of Buffel grass and only isolated shrub species present. No rocky outcrops, watercourses or other significant features exist within the subject area. There was some woody debris camouflaged within the study area which may provide habitat for reptile species. A number of bird species were recorded during the site assessment. However, the majority of species recorded were birds of open country.

Fauna species that were recorded during the subject site included Apostlebird (*Struthidea cinerea*), Australian Magpie (*Cracticus tibicen*), Black-shouldered Kite (*Elanus axillaris*), Cane Toad (*Rhinella marina*), Cockatiel (*Nymphicus hollandicus*), Crested Pigeon (*Lophotes ocyphaps*), Galah (*Eolophus roseicapillus*), Magpie-lark (*Grallina cyanoleuca*), Red-rumped Parrot (*Psephotus haemotonotus*), Torresian Crow (*Corvus orru*) and Whiptail Wallaby (*Macropus parryi*).

No fauna species on conservation significance under the EPBC Act or NC Act were observed during the site assessment.
4. Conclusion

The R4 geotechnical sites occur on Buffel grass plains with isolated woody shrubs and scattered fallen timber. The nature of the subject site is highly disturbed.

The proposed development does not contain any mapped Regional Ecosystems and no Ecologically Sensitive Areas exist in or within 400m of the subject site.

There are no watercourses within the proposed development area. A 1st order stream exists approximately 500 m to the east of the subject site.

No Type A restricted plant species were observed within the proposed geotechnical sites.

No flora or fauna species protected under the provisions of the EPBC Act or NC Act were observed within the proposed geotechnical sites during the ecological assessment.
5. **References**


Appendix A
Flora species list
### Appendix A

<table>
<thead>
<tr>
<th>Species</th>
<th>Common name</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Alstonia constricta</em></td>
<td>Bitter Bark</td>
</tr>
<tr>
<td><em>Atalaya hemiglauca</em></td>
<td>Whitewood</td>
</tr>
<tr>
<td><em>Capparis loranthifolia</em></td>
<td>Nipan, Wait a while</td>
</tr>
<tr>
<td><em>Capparis sepiaria</em></td>
<td>Wild Caper Bush</td>
</tr>
<tr>
<td><em>Carissa ovata</em></td>
<td>Currant Bush</td>
</tr>
<tr>
<td><em>Eremophila mitchellii</em></td>
<td>False Sandalwood</td>
</tr>
<tr>
<td><em>Geijera parviflora</em></td>
<td>Wilga</td>
</tr>
<tr>
<td><em>Lycium ferocissimum</em></td>
<td>African Boxthorn</td>
</tr>
<tr>
<td><em>Oxalis stricta</em></td>
<td>Yellow Wood Sorrel</td>
</tr>
<tr>
<td><em>Pennisetum ciliare</em></td>
<td>Buffel Grass</td>
</tr>
<tr>
<td><em>Sida cordifolia</em></td>
<td>Flannel weed</td>
</tr>
<tr>
<td><em>Verbena tenuisecta</em></td>
<td>Mayne’s Curse</td>
</tr>
</tbody>
</table>
Appendix B

Figures of the survey area
Appendix B