INTRODUCTION

1.1 Preamble

BHP Billiton Iron Ore Pty Ltd (BHP Billiton Iron Ore) is preparing a Public Environmental Review document to seek approval for mining at Southern Flank as part of its Mining Area C (MAC) project (the Proposal).

Onshore Environmental Consultants Pty Ltd (Onshore Environmental) was recently commissioned by BHP Billiton Iron Ore to undertake an Environmental Impact Assessment (EIA) to assess the potential impacts of the Proposal on those identified flora and vegetation values (Onshore Environmental, 2016). The impact assessment identified a number of potentially significant impacts to biodiversity, and hence BHP Billiton Iron Ore has reviewed the Indicative Additional Impact Assessment Area and made modifications to the disturbance area to reduce the impacts to biodiversity.

This document describes any changes to the results of the impact assessment (Onshore Environmental, 2016) if the Modified Indicative Additional Impact Assessment Area is implemented (Figure 1). This document should be read in conjunction with the Onshore Environmental (2016) report.
2 EVALUATION OF IMPACTS

2.1 Significant Flora

Ten plant taxa currently listed as Priority flora have been recorded within the Proposed MAC Development Envelope to date, with eight of these taxa situated within the Indicative Additional Impact Assessment Area and Modified Indicative Additional Impact Assessment Area (Figure 2).

Modifications to the boundary of the Indicative Additional Impact Assessment Area have resulted in a reduced impact for three of the eight significant flora. The impact on *Rhagodia* sp. Hamersley (M. Trudgen 17794) has been reduced from 11 populations to eight populations, for *Rostellularia adscendens* var. *latifolia* the impact on five populations has been reduced to four populations, and for *Eremophila magnifica* subsp. *magnifica* the impact on four populations has been reduced to three populations (Table 1, Appendices 1 and 2).

Table 1 Number of populations for significant flora occurring within the Proposed MAC Development Envelope, Indicative Additional Impact Assessment Area, and Modified Indicative Additional Impact Assessment Area. Also refer to Appendices 1 and 2.

<table>
<thead>
<tr>
<th>Significant Taxon</th>
<th>Proposed MAC Development Envelope</th>
<th>Indicative Additional Impact Assessment Area</th>
<th>Modified Indicative Additional Impact Assessment Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Acacia bromilowiana</em> (P4)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><em>Aristida jerichoensis</em> var. <em>subspinulifera</em> (P3)</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><em>Aristida lazaridis</em> (P2)</td>
<td>3</td>
<td>1 (plus 1 partially)</td>
<td>1 (plus 1 partially)</td>
</tr>
<tr>
<td><em>Eremophila magnifica</em> subsp. <em>magnifica</em> (P4)</td>
<td>9</td>
<td>3 (plus 1 partially)</td>
<td>2 (plus 1 partially)</td>
</tr>
<tr>
<td><em>Grevillea saxicola</em> (P3)</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><em>Nicotiana umbratica</em> (P3)</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><em>Rhagodia</em> sp. Hamersley (M. Trudgen 17794) (P3)</td>
<td>13</td>
<td>10 (plus 1 partially)</td>
<td>3 (plus 5 partially)</td>
</tr>
<tr>
<td><em>Rostellularia adscendens</em> var. <em>latifolia</em> (P3)</td>
<td>9</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><em>Sida</em> sp. Barlee Range (S. van Leeuwen 1642) (P3)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><em>Triodia</em> sp. Mt Ella (M.E. Trudgen 12739) (P3)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
FIGURE 2
Location of significant flora within the Proposed MAC Development Envelope and Modified Indicative Additional Impact Assessment Area

Legend
- Orange: Additional Impact Assessment Area
- Green: Previously Approved Areas
- Red: Additional/OSA
- Purple: Proposed/Withdrawing Areas C/Development Envelope
- Black: MAC Development Envelope
- Light Green: Proposed/Withdrawing Areas A
- Yellow: Proposed/Withdrawing Areas B
- Brown: Significant Flora
- White: Other Flora
2.2 Introduced Flora

A total of 19 introduced (weed) species have been recorded from the Proposed MAC Development Envelope to date (excluding previously approved areas) (Figure 3). There were seven weed species recorded from the Indicative Additional Impact Assessment Area, and eight weeds within the Modified Indicative Additional Impact Assessment Area (Table 2). None of these taxa are listed as Declared Pests under the BAM Act.

Modifications to the Indicative Additional Impact Assessment Area are unlikely to increase the impact of introduced flora. The majority of weeds occur on disturbed surfaces and are actively being managed around the villages and mining operations.

Table 2 Presence of introduced flora within the Proposed MAC Development Envelope, Indicative Additional Impact Assessment Area, and Modified Indicative Additional Impact Assessment Area.

<table>
<thead>
<tr>
<th>Significant Taxon</th>
<th>Proposed MAC Development Envelope</th>
<th>Indicative Additional Impact Area</th>
<th>Modified Indicative Additional Impact Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bidens bipinnata</em> (Bipinnate Beggartick)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><em>Cenchrus ciliaris</em> (Buffel Grass)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><em>Chloris barbata</em> (Purpletop Chloris)</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td><em>Chloris virgata</em> (Feathertop Rhodes Grass)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Citrullus colocynthis</em> (Colocynth)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Conyza bonariensis</em> (Flaxleaf Fleabane)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Conyza sumatrensis</em> (Tall Fleabane)</td>
<td>X</td>
<td></td>
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<tr>
<td><em>Cucumis melo subsp. agrestis</em> (Ulcardo Melon)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Cynodon dactylon</em> (Couch Grass)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Datura leichhardtii</em> (Native Thornapple)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Digitaria ciliaris</em> (Summer Grass)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Euphorbia hirta</em> (Asthma Plant)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Malvastrum americanum</em> (Spiked Malvastrum)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Setaria verticillata</em> (Whorled Pigeon Grass)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Sigesbeckia orientalis</em> (Indian Weed)</td>
<td>X</td>
<td></td>
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<tr>
<td><em>Solanum nigrum</em> (Black Berry Nightshade)</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td><em>Sonchus oleraceus</em> (Common Sowthistle)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Tridax procumbens</em> (Tridax)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Vachellia farnesiana</em> (Mimosa Bush)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
FIGURE 3

Location of introduced (weed) species within the Proposed MAC Development Envelope and Modified Indicative Additional Impact Assessment Area

Legend
- Proposed Mining Area C Development Envelope
- Indicative Additional Infrastructure Area
- Indicative Additional ODA
- Indicative Additional Pit Area
2.3 Vegetation

A total of 34 vegetation associations have been described and mapped within the Proposed MAC Development Envelope (Figure 4). The vegetation associations have been classified into 13 Broad Floristic Formations on the basis of the dominant vegetation stratum (Table 3). Twenty-nine of the 34 vegetation associations occurred within the Indicative Additional Impact Assessment Area (10,729.4 ha), and 26 vegetation associations occurred within the Modified Indicative Additional Impact Assessment Area (10,233.7 ha), representing a reduced overall impact on native vegetation (Table 3).

There were 15 vegetation associations within the Indicative Additional Impact Assessment Area that supported significant flora and hence were determined to be of local significance. Thirteen of these vegetation associations were represented within the Modified Indicative Additional Impact Assessment Area (Table 3).

One vegetation association within the Indicative Additional Impact Assessment Area was found along major drainage lines, and three supported Mulga on valley floors. The major drainage line vegetation association was outside the Modified Indicative Additional Impact Assessment Area and therefore impacts to this association were removed. Impacts to the three Mulga vegetation associations equivalent to ‘Valley Floor Mulga’ identified in Onshore Environmental (2016) were altered as follows:

- Low Open Forest of Acacia aptaneura and Acacia pruinocarpa over Open Hummock Grassland of Triodia melvilei, Triodia wiseana and Triodia pungens over Tussock Grassland of Themeda triandra, Chrysopogon fallax and Aristida inaequiglumis on red brown loam on plains (SP AaApr TmTwTp TtChfAri) - impacts reduced from 220.56 ha to 180.40 ha;
- Low Open Forest of Acacia catenulata subsp. occidentalis and Acacia aptaneura over Very Open Tussock Grassland of Aristida obscura, Digitaria ammophila and Chrysopogon fallax on red brown clay loam on lower stony plains (SP AcaoAa ArobDiaChf) - impacts increased slightly from 44.29 ha to 47.70 ha; and
- Tussock Grassland of Themeda triandra and Eulalia aurea with Low Woodland of Eucalyptus xerothermica and Acacia aptaneura over Open Shrubland of Acacia pruinocarpa, Acacia tumida var. pilbarenensis and Eremophila longifolia on red brown clay loam on unincised drainage lines and floodplains (FP TtEua ExAa AprAtpErlo) - no alteration of impacts.

Two vegetation associations supporting a dominant Mulga canopy had more than 50 percent of their total mapped area within the Modified Indicative Additional Impact Assessment Area (Appendix 3). The impacts to these two associations were altered as follows:

- Low Woodland of Acacia aptaneura and Acacia pruinocarpa over Shrubland of Eremophila jucunda subsp. pulcherrima, Acacia marramamba and Codonocarpus cotinifolius over Open Hummock Grassland of Triodia wiseana and Triodia pungens on red brown loam on hill slopes (HS AaAapr ErjpAmarCocf TwTp) - reduced impacts from 521.84 ha to 351.10 ha, proportion impacted reduced from 73 % to 49 % (Appendix 3); and
- Low Open Forest of Acacia catenulata subsp. occidentalis and Acacia aptaneura over Very Open Tussock Grassland of Aristida obscura, Digitaria ammophila and Chrysopogon fallax on red brown clay loam on lower stony plains (SP AcaoAa ArobDiaChf) - impacts increased from 44.29 ha to 47.70 ha, proportion impacted reduced from 50 % to 54 % (Appendix 3).
Mulga vegetation occurring on uplands in the Pilbara is not recognised as being conservation significant, hence, the impact to ‘HS AaApr ErjpAmarCocf TwTp’ is considered to be very low. ‘Valley Floor Mulga’ within the Hamersley subregion is considered to be an ‘ecosystem at risk’ (Kendrick 2001). Vegetation association ‘SP AcaoAa ArobDiaChf’ is considered equivalent to the valley floor mulga ecosystem at risk. However, this ecosystem is not currently nominated as a PEC by DPaW, suggesting a low level of perceived conservation significance. The overall impact is therefore considered to be low.

The remaining 24 vegetation associations have less than 22 percent of their mapped occurrence within BHP Billiton Iron Ore’s Pilbara mapping database represented within the Modified Indicative Additional Impact Assessment Area (Appendix 3). Impacts to these vegetation associations from clearing are therefore considered to be minor.
### Table 3  Vegetation associations mapped within the Proposed MAC Development Envelope, Indicative Additional Impact Assessment Area, and Modified Indicative Additional Impact Assessment Area. * denotes local significance.

<table>
<thead>
<tr>
<th>Map Code</th>
<th>Broad Floristic Formation</th>
<th>Vegetation Association</th>
<th>Area (ha) within Proposed MAC Development Envelope</th>
<th>Area (ha) within Indicative Additional Impact Assessment Area</th>
<th>Area (ha) within Modified Indicative Additional Impact Assessment Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALCRETE PLAINS</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CP TwTa Ese AbPlApyp</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia wiseana</em> and <em>Triodia angusta</em> with Open Mallee of <em>Eucalyptus socialis</em> subsp. <em>eucentrica</em> and Open Shrubland of <em>Acacia bivenosa, Petalostylis labicheoides</em> and <em>Acacia pyrifolia var. pyrifolia</em> on light brown clay loam on calcrete plains and rises</td>
<td>28.80</td>
<td>16.93</td>
<td>18.30</td>
</tr>
<tr>
<td>FLOOD PLAINS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP Ev Aa EuaErbTt</td>
<td><em>Eucalyptus</em> Woodland</td>
<td>Woodland of <em>Eucalyptus victrix</em> over Low woodland of <em>Acacia aptaneura</em> over Open Tussock Grassland of <em>Eulalia aurea, Eriachne benthamii</em> and <em>Themeda triandra</em> on orange clay loam on floodplains</td>
<td>1.30</td>
<td>0.50</td>
<td>0.00</td>
</tr>
<tr>
<td>FP AaApApt TtChfErb</td>
<td><em>Acacia Low Open Forest</em></td>
<td>Low Open Forest of <em>Acacia aptaneura, Acacia paraneura</em> and <em>Acacia pteraneura</em> over Open Tussock Grassland of <em>Themeda triandra, Chrysopogon fallax</em> and <em>Eriachne benthamii</em> on red brown clay loam on floodplains</td>
<td>5.26</td>
<td>2.88</td>
<td>0.00</td>
</tr>
<tr>
<td>FP AaAcaoAp ErlnSolPto ArcErdiArj</td>
<td><em>Acacia Low Open Woodland</em></td>
<td>Low Open Woodland of <em>Acacia aptaneura, Acacia catenulata subsp. occidentalis</em> and <em>Acacia paraneura</em> over Low Open Shrubland of <em>Eremophila lanceolata, Solanum lasiophyllum</em> and <em>Ptilotus obvatus</em> over Very Open Tussock Grassland of <em>Aristida contorta, Eragrostis dielsii</em> and <em>Aristida jerichoensis var. subspinulifera</em> on red brown clay loam on hardpan intergrove plains</td>
<td>1.41</td>
<td>1.32</td>
<td>1.30</td>
</tr>
<tr>
<td>Map Code</td>
<td>Broad Floristic Formation</td>
<td>Vegetation Association</td>
<td>Area (ha) within Proposed MAC Development Envelope</td>
<td>Area (ha) within Indicative Additional Impact Assessment Area</td>
<td>Area (ha) within Modified Indicative Additional Impact Assessment Area</td>
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</tr>
<tr>
<td>*FP TtEua ExAa AprAtpErlo</td>
<td>Themeda Tussock Grassland</td>
<td>Tussock Grassland of <em>Themeda triandra</em> and <em>Eulalia aurea</em> with Low Woodland of <em>Eucalyptus xerothermica</em> and <em>Acacia aptaneura</em> over Open Shrubland of <em>Acacia pruinocarpa</em>, <em>Acacia tumida</em> var. <em>pilibrensis</em> and <em>Eremophila longifolia</em> on red brown clay loam on unincised drainage lines and floodplains</td>
<td>134.69</td>
<td>56.18</td>
<td>56.20</td>
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<td><strong>FOOTSLOPES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*FS Ts CdHc AancAiGrwh</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia</em> sp. Shovelanna Hill (S. van Leeuwen 3835) with Low Open Woodland of <em>Corymbia deserticola</em> subsp. <em>deserticola</em> and <em>Hakea chordophylla</em> over Open Shrubland of <em>Acacia ancistrocarpa</em>, <em>Acacia inaequilatera</em> and <em>Grevillea wickhamii</em> subsp. <em>hispidula</em> on red brown sandy loam on footslopes and stony plains</td>
<td>6,170.72</td>
<td>1,276.30</td>
<td>1,163.60</td>
</tr>
<tr>
<td>FS TsTpTw Ell AbApaAanc</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia</em> sp. Shovelanna Hill (S. van Leeuwen 3835), <em>Triodia pungens</em> and <em>Triodia wiseana</em> with Low Open Woodland of <em>Eucalyptus leucophloia</em> subsp. <em>leucophloia</em> and Open Shrubland of <em>Acacia bivenosa</em>, <em>Acacia pachyachra</em> and <em>Acacia ancistrocarpa</em> on red brown loam on footslopes and low undulating hills</td>
<td>58.73</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>GORGES AND GULLYS</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>*GG CcolCfEll ErmuThmbCya</td>
<td>Callitris Low Open Forest</td>
<td>Low Open Forest of <em>Callitris culemnaris</em>, <em>Corymbia ferritica</em> and <em>Eucalyptus leucophloia</em> subsp. <em>leucophloia</em> over Open Tussock Grassland of <em>Eriachne mucronata</em>, <em>Themeda</em> sp. Mt Barricade (M.E. Trudgen 2471) and <em>Cymbopogon ambiguus</em> and Very Open Hummock Grassland of <em>Triodia pungens</em> on orange brown loam on upper gorges</td>
<td>15.39</td>
<td>15.39</td>
<td>12.50</td>
</tr>
<tr>
<td>Map Code</td>
<td>Broad Floristic Formation</td>
<td>Vegetation Association</td>
<td>Area (ha) within Proposed MAC Development Envelope</td>
<td>Area (ha) within Indicative Additional Impact Assessment Area</td>
<td>Area (ha) within Modified Indicative Additional Impact Assessment Area</td>
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</tr>
<tr>
<td>*GG CFEllFib AhDovmAsha CyaErmuThmb</td>
<td>Corymbia Low Woodland</td>
<td>Low Woodland of Corymbia ferriticola, Eucalyptus leucophloia subsp. leucophloia and Ficus brachypoda over Open Shrubland of Acacia hamersleyensis, Dodonaea viscosa subsp. mucronata and Astrotricha hamptonii over Open Tussock Grassland of Cymbopogon ambigusus, Eriachne mucronata and Themeda sp. Mt Barricade on red brown loam along clifflines and gorges</td>
<td>1,603.49</td>
<td>736.78</td>
<td>775.10</td>
</tr>
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<td>*GG TtErmuThmb EllChCf AtsGoroPl</td>
<td>Themeda Tussock Grassland</td>
<td>Tussock Grassland of Themeda triandra, Eriachne mucronata and Themeda sp. Mt Barricade with Low Open Woodland of Eucalyptus leucophloia subsp. leucophloia, Corymbia hamersleyana and Corymbia ferriticola over High Shrubland of Acacia tumida var. pilbarensis, Gossypium robinsonii and Petalostylis labicheoides on red brown sandy loam in narrowly incised rocky drainage lines</td>
<td>633.80</td>
<td>132.67</td>
<td>95.60</td>
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<tr>
<td><strong>HILL CRESTS AND UPPER HILL SLOPES</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>HC TpTwTs EllCh AarGooKeve</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of Triodia pungens, Triodia wiseana and Triodia sp. Shovelanna Hill (S. van Leeuwen 3835) with Low Open Woodland of Eucalyptus leucophloia subsp. leucophloia and Corymbia hamersleyana over Low Shrubland of Acacia arida, Gompholobium oreophilum and Keraudrinia velutina subsp. elliptica on red brown loam on hills</td>
<td>157.49</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>HC Tw Ah EkkEgCh</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of Triodia wiseana with Shrubland of Acacia hamersleyensis and Open Mallee of Eucalyptus kingsmillii subsp. kingsmillii, Eucalyptus gamophylla and Corymbia hamersleyana (mallee form) on red brown loam and silty loam on hill crests</td>
<td>1,113.81</td>
<td>239.35</td>
<td>231.40</td>
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<td>Map Code</td>
<td>Broad Floristic Formation</td>
<td>Vegetation Association</td>
<td>Area (ha) within Proposed MAC Development Envelope</td>
<td>Area (ha) within Indicative Additional Impact Assessment Area</td>
<td>Area (ha) within Modified Indicative Additional Impact Assessment Area</td>
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<tr>
<td>HC TwTsTp EIICh Ah</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia wiseana</em>, <em>Triodia</em> sp. Shovelanna Hill (S. van Leeuwen 3835) and <em>Triodia pungens</em> with Low Open Woodland of <em>Eucalyptus leucophloia</em> subsp. <em>leucophloia</em> and <em>Corymbia hamersleyana</em> over Open Shrubland of <em>Acacia hamersleyensis</em> on red brown clay loam on hill crests and upper hill slopes</td>
<td>87.79</td>
<td>58.03</td>
<td>61.30</td>
</tr>
<tr>
<td><strong>HILL SLOPES AND UNDULATING LOW HILLS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*HS AaApr ErjpAmarCocf TwTp</td>
<td>Acacia Low Woodland</td>
<td>Low Woodland of <em>Acacia aptaneura</em> and <em>Acacia pruinocarpa</em> over Shrubland of <em>Eremophila jucunda</em> subsp. <em>pulcherrima</em>, <em>Acacia marramamba</em> and <em>Codonocarpus cotinifolius</em> over Open Hummock Grassland of <em>Triodia wiseana</em> and <em>Triodia pungens</em> on red brown loam on hill slopes</td>
<td>578.98</td>
<td>521.84</td>
<td>351.10</td>
</tr>
<tr>
<td>HS TbrTw Ell</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia brizoides</em> and/or <em>Triodia wiseana</em> with Low Open Woodland of <em>Eucalyptus leucophloia</em> subsp. <em>leucophloia</em> on brown sandy loam on steep hill slopes</td>
<td>2,297.42</td>
<td>455.43</td>
<td>207.40</td>
</tr>
<tr>
<td>HS Tp Ell SeggGrwhErll</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia pungens</em> with Scattered Low Trees of <em>Eucalyptus leucophloia</em> subsp. <em>leucophloia</em> and Scattered Shrubs of <em>Senna glutinosa</em> subsp. <em>glutinosa</em>, <em>Grevillea wickhamii</em> subsp. <em>hispidula</em> and <em>Eremophila latrobei</em> subsp. <em>latrobei</em> on skeletal orange brown loam on stony hill slopes</td>
<td>95.46</td>
<td>69.19</td>
<td>68.30</td>
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<tr>
<td>HS TsTw EGrwhSeggAb</td>
<td>Triodia Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia</em> sp. Shovelanna Hill (S. van Leeuwen 3835) and <em>Triodia wiseana</em> with Very Open Mallee of <em>Eucalyptus gamophylla</em> over Open Shrubland of <em>Grevillea wickhamii</em> subsp. <em>hispidula</em>, <em>Senna glutinosa</em> subsp. <em>glutinosa</em> and <em>Acacia bivenosa</em> on red brown sandy clay loam on hill slopes</td>
<td>0.33</td>
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<td>Area (ha) within Indicative Additional Impact Assessment Area</td>
<td>Area (ha) within Modified Indicative Additional Impact Assessment Area</td>
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<tr>
<td>*HS TsTwTp EllCh AhiAaa</td>
<td>Hummock Grassland</td>
<td>Hummock Grassland of Triodia sp. Shovelanna Hill (S. van Leeuwen 3835), Triodia wiseana and Triodia pungens with Low Open Woodland of Eucalyptus leucophloia subsp. leucophloia and Corymbia hamersleyana over Low Open Shrubland of Acacia hilliana and Acacia adoxa var. adoxa on red brown sandy loam on hill slopes</td>
<td>10,913.43</td>
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<td>HS TwTpTbr Ell Ep</td>
<td>Hummock Grassland</td>
<td>Hummock Grassland of Triodia wiseana, Triodia pungens and Triodia brizoides with Low Open Woodland of Eucalyptus leucophloia subsp. leucophloia over Open Mallee of Eucalyptus pilbarensis on red brown loam on steep hill slopes</td>
<td>14.32</td>
<td>10.06</td>
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<td>Hummock Grassland of Triodia wiseana, Triodia pungens and Triodia sp. Shovelanna Hill (S. van Leeuwen 3835) with Low Open Woodland of Eucalyptus leucophloia subsp. leucophloia over Open Shrubland of Acacia pruinocarpa, Acacia aptaneura and Acacia ancistrocarpa on red brown loam on plains and low hills</td>
<td>346.91</td>
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<td>HS Tp AaApr ErfrAmarSegl</td>
<td>Hummock Grassland</td>
<td>Open Hummock Grassland of Triodia pungens with Low Open Woodland of Acacia aptaneura and Acacia pruinocarpa over Open Shrubland of Eremophila fraseri, Acacia marramamba and Senna glutinosa subsp. x lierssenii on red brown loam on undulating hills</td>
<td>48.91</td>
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**MAJOR DRAINAGE LINES**

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<th>Area (ha) within Indicative Additional Impact Assessment Area</th>
<th>Area (ha) within Modified Indicative Additional Impact Assessment Area</th>
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<tr>
<td>*MA EcrEvEx ApypAtpGoro TtEuaCyp</td>
<td>Low Open Forest of Eucalyptus camaldulensis subsp. refugens, Eucalyptus victrix and Eucalyptus xerothemica over High Shrubland of Acacia pyrifolia var. pyrifolia, Acacia tumida var. pilbarensis and Gossypium robinsonii over Open Tussock Grassland of Themeda triandra, Eulalia aerea and Cymbopogon procerus on red brown clay loam on major drainage lines</td>
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<td>30.06</td>
<td>0.00</td>
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<td>Vegetation Association</td>
<td>Area (ha) within Proposed MAC Development Envelope</td>
<td>Area (ha) within Indicative Additional Impact Assessment Area</td>
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<td>------------------------</td>
<td>-----------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>MA AtpApypAse Ecr ThmbTtCyp</td>
<td>Acacia High Shrubland</td>
<td>High Shrubland of <em>Acacia tumida</em> var. <em>pilbarensis</em>, <em>Acacia pyrifolia</em> var. <em>pyrifolia</em> and <em>Acacia sericophylla</em> with Scattered Trees of <em>Eucalyptus camaldulensis</em> subsp. <em>refulgens</em> over Open Tussock Grassland of <em>Themeda</em> sp. Mt Barricade (M.E. Trudgen 2471), <em>Themeda triandra</em> and <em>Cymbopogon procerus</em> on brown loam and gravels on major drainage channels</td>
<td>41.23</td>
<td>0.00</td>
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</table>

**MEDIUM DRAINAGE LINES**

| ME TpTlo ExAcICh PlApyGoro | *Triodia* Hummock Grassland | Hummock Grassland of *Triodia pungens* and *Triodia longiceps* with Low Woodland of *Eucalyptus xerothermica*, *Acacia citrinoviridis* and *Corymbia hammersleyana* over High Shrubland of *Petalostylis labicheoides*, *Acacia pyrifolia* var. *pyrifolia* and *Gossypium robinsonii* on red brown clay loam on medium drainage lines and surrounding floodplains | 1,924.75 | 676.89 | 0.00 |

| ME TtArCYa ChEll AmPlAml | *Themeda* Open Tussock Grassland | Open Tussock Grassland of *Themeda triandra*, *Aristida inaequiglumis* and *Cymbopogon ambiguus* with Low Open Woodland of *Corymbia hammersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Shrubland of *Acacia monticola*, *Petalostylis labicheoides* and *Androcalva luteiflora* on red brown alluvium on minor and medium drainage lines | 213.75 | 75.14 | 79.60 |

<p>| ME TtChfEua ExEvlCh PlApaApyp | <em>Themeda</em> Tussock Grassland | Tussock Grassland of <em>Themeda triandra</em>, <em>Chrysopogon fallax</em> and <em>Eulalia aurea</em> with Low Open Woodland of <em>Eucalyptus xerothermica</em>, <em>Eucalyptus victrix</em> and <em>Corymbia hammersleyana</em> and Shrubland of <em>Petalostylis labicheoides</em>, <em>Acacia pachyacra</em> and <em>Acacia pyrifolia</em> var. <em>pyrifolia</em> on red sandy loam on medium drainage lines | 28.91 | 0.00 | 0.00 |</p>
<table>
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<th>Vegetation Association</th>
<th>Area (ha) within Proposed MAC Development Envelope</th>
<th>Area (ha) within Indicative Additional Impact Assessment Area</th>
<th>Area (ha) within Modified Indicative Additional Impact Assessment Area</th>
</tr>
</thead>
<tbody>
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<td>ME TtEuEte ApypAtpPl EvCh</td>
<td>Themeda Tussock Grassland</td>
<td>Tussock Grassland of Themeda triandra, Eulalia aurea and Eriachne tenuiculmis with High Shrubland of Acacia pyrifolia var. pyrifolia, Acacia tumida var. pilbarensis and Petalostylis labicheoides and Open Woodland of Eucalyptus victrix and Corymbia hamersleyana on red brown silty loam on medium drainage lines and flood plains</td>
<td>35.85</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>*MI AtpPlAm TpTs ChEll</td>
<td>Acacia Open Scrub</td>
<td>Open Scrub of Acacia tumida var. pilbarensis, Petalostylis labicheoides and Acacia monticola over Open Hummock Grassland of Triodia pungens and Triodia sp. Shovelanna Hill (S.van Leeuwen 3835) with Low Open Woodland of Corymbia hamersleyana and Eucalyptus leucophloia subsp. leucophloia on red brown sandy loam on minor drainage lines</td>
<td>1,896.65</td>
<td>825.19</td>
<td>768.00</td>
</tr>
<tr>
<td>MI PIAtpAm ChEll TwTp</td>
<td>Petalostylis Shrubland</td>
<td>Shrubland of Petalostylis labicheoides, Acacia tumida var. pilbarensis and Acacia monticola with Low Open Woodland of Corymbia hamersleyana and Eucalyptus leucophloia subsp. leucophloia over Open Hummock Grassland of Triodia wiseana and Triodia pungens on red brown loam on minor drainage lines</td>
<td>161.62</td>
<td>105.28</td>
<td>86.60</td>
</tr>
<tr>
<td>STONY PLAINS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*SP AaAapr TmTwTp TtChfAri</td>
<td>Acacia Low Open Forest</td>
<td>Low Open Forest of Acacia aptaneura and Acacia pruinocarpa over Open Hummock Grassland of Triodia melvilei, Triodia wiseana and Triodia pungens over Tussock Grassland of Themeda triandra, Chrysopogon fallax and Aristida inaequiglumis on red brown loam on plains</td>
<td>491.47</td>
<td>220.56</td>
<td>180.40</td>
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<tr>
<td>*SP AcaoAa ArObDiaChf</td>
<td>Acacia Low Open Forest</td>
<td>Low Open Forest of Acacia catenulata subsp. occidentalis and Acacia aptaneura over Very Open Tussock Grassland of Aristida obscura, Digitaria ammophila and Chrysopogon fallax on red brown clay loam on lower stony plains</td>
<td>68.80</td>
<td>44.29</td>
<td>47.70</td>
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<td>Map Code</td>
<td>Broad Floristic Formation</td>
<td>Vegetation Association</td>
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<td>Area (ha) within Indicative Additional Impact Assessment Area</td>
<td>Area (ha) within Modified Indicative Additional Impact Assessment Area</td>
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<tr>
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<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>SP TpTb Eg PlAbAanc</td>
<td><em>Triodia</em> Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia pungens</em> and <em>Triodia basedowii</em> with Open Mallee of <em>Eucalyptus gamophylla</em> and Shrubland of <em>Petalostylis labicneoides</em>, <em>Acacia bivenosa</em> and <em>Acacia ancistrocarpa</em> on red brown loamy sand on stony plains and footslopes</td>
<td>260.17</td>
<td>42.91</td>
<td>42.90</td>
</tr>
<tr>
<td>*SP TpTm AaExAcao ApaErfffAads</td>
<td><em>Triodia</em> Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia pungens</em> and <em>Triodia melvillei</em> with Low Open Woodland of <em>Acacia aptaneura</em>, <em>Eucalyptus xerothermica</em> and <em>Acacia catenulata</em> subsp. <em>occidentalis</em> and Open Shrubland of <em>Acacia pachyacra</em>, <em>Eremophila forrestii</em> subsp. <em>forrestii</em> and <em>Acacia adiurgens</em> on red brown clay loam or silty loam on stony plains and floodplains</td>
<td>3,346.43</td>
<td>1,927.01</td>
<td>1,032.90</td>
</tr>
<tr>
<td>*SP TsTwTp EgEt AbApaApr</td>
<td><em>Triodia</em> Hummock Grassland</td>
<td>Hummock Grassland of <em>Triodia sp.</em> Shovelanna Hill (S. van Leeuwen 3835), <em>Triodia wiseana</em> and <em>Triodia pungens</em> with Very Open Mallee of <em>Eucalyptus gamophylla</em> and <em>Eucalyptus trivalva</em> over Open Shrubland of <em>Acacia bivenosa</em>, <em>Acacia pachyacra</em> and <em>Acacia pruinocarpa</em> on red brown sandy loam and clay loam on stony plains</td>
<td>1,188.37</td>
<td>814.58</td>
<td>657.70</td>
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FIGURE 4
Vegetation map for the Proposed MAC Development Envelope, showing the Modified Indicative Additional Impact Assessment Area

Datum: GDA94
Projection: MGA Zone 50

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Hummock Grassland of Triodia pungens, Triodia wiesana and Triodia sp. Shovelanna Hill (S. van Leeuwen 3835) with Low Woodland of Eucalyptus leucophloia subsp. leucophloia and Corymbia hamersleyensis over Low Shrubland of Acacia aneura and Ceratophyllum occidentalis on red brown loam on hill crests and upper hill slopes.

Hummock Grassland of Triodia pungens and Triodia wiesana with Low Woodland of Eucalyptus leucophloia subsp. leucophloia on red brown loam on hill crests and upper hill slopes.

Hummock Grassland of Triodia pungens and Triodia wiesana with Very Open Shrubland of Acacia bivenosa and Corymbia hamersleyana over Open Mallee of Eucalyptus kingsmillii on red brown loam on hill crests.

Hummock Grassland of Triodia pungens and Triodia wiesana with Very Open Shrubland of Acacia bivenosa and Corymbia hamersleyana over Open Mallee of Eucalyptus kingsmillii on red brown loam on hill crests.

Hummock Grassland of Triodia pungens and Triodia wiesana with Very Open Shrubland of Acacia bivenosa and Corymbia hamersleyana over Open Mallee of Eucalyptus kingsmillii on red brown loam on hill crests.

Hummock Grassland of Triodia pungens and Triodia wiesana with Very Open Shrubland of Acacia bivenosa and Corymbia hamersleyana over Open Mallee of Eucalyptus kingsmillii on red brown loam on hill crests.
**Vegetation Association Map Legend**

**Page 2**

**Figure 4**

- **Major Drainage**
  - MA AtpAppAsa Ecr ThmThTtCyp
  - MA EcrEvEx ApygApplGoro TtEuaCyp

- **Medium Drainage**
  - ME TpTo ExAcCh PlApppGoro
  - ME TtArCya CHEll AmPiAr
  - ME TtChEuEx EvEch PlApaAppp
  - ME TtEuaEto AppAtpPl EvCh

- **Minor Drainage**
  - MI AtpPlAm TpTs CHEll
  - MI PlAtpAm CHEll TwTt

- **Other**
  - Cleared

- **Mine Accommodation**
  - Indicative Additional Infrastructure Areas
  - Indicative Additional OSA
  - Indicative Additional Pits
  - Indicative OSA Area
  - Indicative Pit Area
  - ROM
  - Topsoil
  - Previously Approved Areas
  - Indicative Additional Infrastructure
  - Ministerial Statement 491 (Northern Flank)

**Ontshore**

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**Figure:**

- **4**

**Date:**

- 30/06/2015

**Sheet Size:**

- A3

**Status:**

- FINAL
2.4 Vegetation Condition

Vegetation condition within the Proposed MAC Development Envelope ranged from completely degraded to pristine (Figure 5) with the largest proportion of Development Envelope rated as excellent (61 percent) or very good (25 percent) (Table 4). Smaller areas supported vegetation condition rated as pristine (3 percent), good (4 percent), degraded (<1 percent) or completely degraded (6 percent).

Vegetation condition for the majority of the Modified Indicative Additional Impact Assessment Area was rated as excellent (84 percent), with deep and inaccessible gorges rated as pristine (8 percent) (Table 4). These gorges were situated predominantly within the proposed footprint of the Southern Flank Pit and adjacent OSAs (Figure 5). Vegetation condition declined to good on flood plains and stony plains due primarily to grazing by domestic stock.

Modification of the Indicative Additional Impact Assessment Area resulted in a reduced impact to vegetation where condition was rated as excellent, very good, good and completely degraded (Table 4). Pristine vegetation was the only condition class where the impact increased by 58 ha (Table 4).

Table 4 Vegetation condition within the Proposed MAC Development Envelope, Indicative Additional Impact Assessment Area, and Modified Indicative Additional Impact Assessment Area. Note: percentages provide proportional representation of the total area.

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<th>Area within the Proposed MAC Development Envelope (ha)</th>
<th>Area within the Indicative Additional Impact Assessment Area (ha)</th>
<th>Area within the Modified Indicative Additional Impact Assessment Area (ha)</th>
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<tr>
<td>Completely Degraded</td>
<td>2,168.02 (6.1%)</td>
<td>74.11 (0.6%)</td>
<td>0.60 (&lt;0.1%)</td>
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<tr>
<td>Degraded</td>
<td>304.29 (0.8%)</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Good</td>
<td>1,425.72 (4.0%)</td>
<td>527.27 (4.3%)</td>
<td>350.10 (3.4%)</td>
</tr>
<tr>
<td>Very Good</td>
<td>9,005.84 (25.0%)</td>
<td>1,463.59 (11.9%)</td>
<td>511.80 (5.0%)</td>
</tr>
<tr>
<td>Excellent</td>
<td>21,934.85 (60.9%)</td>
<td>9,473.21 (77.2%)</td>
<td>8,580.80 (83.8%)</td>
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<td>Pristine</td>
<td>1,189.64 (3.2%)</td>
<td>732.73 (6.0%)</td>
<td>790.70 (7.7%)</td>
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2.5 Cumulative Impacts

Alterations to the Modified Indicative Additional Impact Assessment Area are minor and do not alter the cumulative flora and vegetation impact described in Onshore Environmental (2016).

---

1 Total includes cleared areas.
FIGURE 5
Vegetation condition map for the Proposed MAC Development Envelope, showing the Modified Indicative Additional Impact Assessment Area

Legend

Vegetation Condition
- Cleared
- Degraded
- Good
- Very Good
- Excellent
- Pristine

Min. Accommodation
Previously Approved Areas
Indicative Additional Infrastructure Area
Indicative Additional OSA
Indicative Additional Pit Area
Ministerial Statement 491 (Northern Flank)
Proposed Mining Area C Development Envelope

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3 CONCLUSION

A recent revision of the Indicative Additional Impact Assessment Area has reduced the overall impact to flora and vegetation values, but not altered any conclusions made in the impact assessment report.

None of the 26 vegetation associations represented within the Indicative Additional Impact Assessment Area and the Modified Indicative Additional Impact Assessment Area are of Federal or State conservation significance, and all are well represented within the Pilbara bioregion. The eight Priority flora taxa occurring within the Indicative Additional Impact Assessment Area have also been recorded on surrounding tenements and have a relatively wide distribution within the Pilbara bioregion. There are no significant cumulative impacts predicted for flora or vegetation.

In conclusion, it has been determined that the Proposal is unlikely to have a significant impact on flora and vegetation values, and will therefore meet the EPA’s objective “To maintain representation, diversity, viability and ecological function at the species, population and community level” (EPA 2013).
4 REFERENCES


APPENDIX 1

Significant flora populations defined within the MAC Development Envelope and Indicative Additional Impact Assessment Area
Aristida lazaridis populations within the Proposed MAC Development Envelope

Appendix 1.3

BHPBIO
Eremophila magnifica subsp. magnifica populations within the Proposed MAC Development Envelope

Appendix 1.4
Rhagodia sp. Hamersley (M. Trudgen 17794) populations
within the Proposed MAC Development Envelope

Appendix 1.6
Significant Flora Legend
Significant Flora
Priority 3

- Rostellularia adscendens - R.a

500m Population Buffer

Rostellularia adscendens subsp. adscendens populations within the Proposed MAC Development Envelope

Appendix 1.7

Legend
- Mine Accommodation
- Indicative Additional Infrastructure Areas
- Indicative Additional OSA
- Indicative Additional Pits
- ROM
- Proposed Mining Area C Development Envelope
- Previously Approved Areas

BHPBIO

Figure: 1.7

Date: 15/05/2016

Sheet Size: A3

Status: FINAL

Scale: 1:75,000

Datum: GDA94

Projection: MGA Zone 50

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OSA 31
OSA 32
OSA 33
OSA 34
OSA 35
OSA 36

TSD 1
TSD 2

ROM Pad 1
ROM Pad 2

South Flank

Crusher 1
Crusher 2

Packsaddle Village

Coondewanna Airstrip

Mulla Mulla

Crusher 3
Crusher 4 (ROM)

Sup Flanks

P4 Misc
P3 Misc

E Pit
D Pit

P1 Pit
P2 Pit

B Pit
A Pit

B Misc
A Misc

R Pit
P5 Pit

P1 West Pit
P2 East Pit

OSA 1
OSA 2
OSA 3
OSA 4
OSA 5
OSA 6
OSA 7
OSA 8
OSA 9
OSA 10
OSA 11
OSA 12
OSA 13
OSA 14
OSA 15
OSA 16
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OSA 42
OSA 43

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Significant Flora Legend

Significant Flora

Priority 3

Triodia sp. Mt Ella (M.E. Trudgen 12739) - T.mr

00m Population Buffer

BHPBIO

Triodia sp. Mt Ella (M.E. Trudgen 12739) populations within
the Proposed MAC Development Envelope

Appendix 1.9
APPENDIX 2

Significant flora populations defined within the MAC Development Envelope and Modified Indicative Additional Impact Assessment Area
APPENDIX 2.1
Location of Acacia bromilowiana populations within the Proposed MAC Development Envelope and Modified Indicative Additional Impact Assessment Area

Significant Flora Legend
- Acacia bromilowiana - A.b
- 500m Population Buffer

Legend:
- Significant Flora
- Priority 4

Figure: A2.1
Date: 23/09/2016
Sheet Size: A3
Status: FINAL

GSM Reference
- MAC_SigF_Pop_Acacia bromilowiana

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- GSM

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APPENDIX 2.2

Location of Aristida jerichoensis var. subspinulifera populations within the Proposed MAC Development Envelope and Modified Indicative Additional Impact Assessment Area

Legend
- Mine Accommodation
- Indicative Additional Infrastructure Area
- Ministerial Statement 491 (Northern Flank)
- Proposed Mining Area C Development Envelope
- Previously Approved Areas
- Indicative Additional OSA
- Indicative Additional Pit Area

Significant Flora Legend

Significant Flora
Priority 2
- Aristida jerichoensis - A.j
- 500m Population Buffer

Figure: A2.2
Sheet Size: A3
Status: FINAL
Date: 23/09/2016

GSM Reference: MAC_SigF_Pop_Aristida jerichoensis
Requested by: Drawn by: GSM

PO Box 7215
Eaton WA 6232
admin@griffinspatial.com.au
+61 8 9725 3213

Location: Packsaddle Village
Coondewanna Airstrip
Mulla Mulla
OSA 5 and 8
Crusher 3
P4 Misc
OSA 1
Crusher 2
C Pit
D Pit
P1 East Pit
P2 Pit
OSA 12
P3 Pit
P4 Pit
CWS2
B OSA
B Pit
B Misc
Crusher 4 (ROM)

GSM:
175,000
Datum: GDA94
Projection: MGA Zone 50
Sheet Size:
Date: FINAL

Significant Flora Legend

Significant Flora
Priority 2
- Aristida jerichoensis - A.j
- 500m Population Buffer

Figure: A2.2
Sheet Size: A3
Status: FINAL
Date: 23/09/2016

GSM Reference: MAC_SigF_Pop_Aristida jerichoensis
Requested by: Drawn by: GSM

PO Box 7215
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+61 8 9725 3213

Location: Packsaddle Village
Coondewanna Airstrip
Mulla Mulla
OSA 5 and 8
Crusher 3
P4 Misc
OSA 1
Crusher 2
C Pit
D Pit
P1 East Pit
P2 Pit
OSA 12
P3 Pit
P4 Pit
CWS2
B OSA
B Pit
B Misc
Crusher 4 (ROM)
APPENDIX 2.3

Location of Aristida lazaridis populations within the Proposed MAC Development Envelope and Modified Indicative Additional Impact Assessment Area

Significant Flora Legend

- Aristida lazaridis - A.l
- 500m Population Buffer
APPENDIX 2.5

Location of *Grevillea saxicola* populations within the Proposed MAC Development Envelope and Modified Indicative Additional Impact Assessment Area

---

**Significant Flora Legend**

**Significant Flora**

**Priority 3**

*Grevillea saxicola* - G.s

500m Population Buffer
Significant Flora

Significant Flora
Priority 3
- Rhagodia sp. (Harnersley, M. Trudgen 17794) - R.h

500m Population Buffer

APPENDIX 2.6

BHPBIO

Rhagodia sp. Harnersley (M. Trudgen 17794) populations within the Proposed MAC Development Envelope

Previously Approved Areas

Indicative Additional Pit Area

Reserved for future development

Ministerial Statement 491 (Northern Flank)

Coomlewanna/Airstrip

Detritals

Indicative Additional Infrastructure Area

Figure: 2.6  Date: 15/08/2016
Sheet Size: A3 Status: FINAL

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APPENDIX 2.7

Location of Rostellularia adscendens var. latifolia populations within the Proposed MAC Development Envelope and Modified Indicative Additional Impact Assessment Area
Location of Sida sp. Barlee Range (S. van Leeuwen 1642) populations within the Proposed NIAC Development Envelope and Modified Indicative Additional Impact Assessment Area

APPENDIX 2.8

Significant Flora Legend
Significant Flora
Priority 3
- Sida sp. Barlee Range (S. van Leeuwen 1642) - S.br
- 500m Population Buffer

Legend
- Mine Accommodation
- Indicative Additional Infrastructure Area
- Indicative Additional OSA
- Indicative Additional Pit Area
- Indicative Additional Additional Impact Assessment Area
- Residential Statement 491 (Northern Flank)
- Proposed Mining Area C Development Envelope
- Previously Approved Areas

S.br S.br S.br S.br

Figure: A2.8 Date: 23/09/2016
Sheet Size: A3 Status: FINAL

GSM Reference
MAC_SigF_Pop_Sida sp. Barlee Range
Requested by
Drawn by
GSM
23/09/2016

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admin@griffinspatial.com.au
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Significant Flora Legend
- Sida sp. Barlee Range (S. van Leeuwen 1642) - S.br
- 500m Population Buffer

Figure:
Sheet Size:
Date:
Status:

GSM Reference
MAC_SigF_Pop_Sida sp. Barlee Range
Requested by
Drawn by
GSM
23/09/2016

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Location of Triodia sp. Mt Ella (M.E. Trudgen 12739) populations within the Proposed NAAC Development Envelope and Modified Indicative Additional Impact Assessment Area

Significant Flora Legend
Significant Flora
Priority 3
- Triodia sp. Mt Ella (M.E. Trudgen 12739) - T.mr

500m Population Buffer
APPENDIX 3

Representation of 34 vegetation associations occurring within the Proposed MAC Development Envelope, Indicative Additional Impact Assessment Area, and Modified Indicative Additional Impact Assessment Area, with reference to the extent recorded from consolidated vegetation mapping across BHP Billiton Iron Ore’s Pilbara tenements. Shaded cells represent vegetation associations where >30 percent of the current mapped extent within BHP Billiton Iron Ore’s Pilbara tenure is within the Indicative Additional Impact Assessment Area.
<table>
<thead>
<tr>
<th>Vegetation Code</th>
<th>Total area (ha) in consolidated mapping of BHPBIO Pilbara tenure</th>
<th>Total area (ha) within the Indicative Additional Impact Assessment Area</th>
<th>% of total consolidated mapping area within the Indicative Additional Impact Assessment Area</th>
<th>Total area (ha) within the Modified Indicative Additional Impact Assessment Area</th>
<th>% of total consolidated mapping area within the Modified Indicative Additional Impact Assessment Area</th>
</tr>
</thead>
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<td>Total area (ha) within the Indicative Additional Impact Assessment Area</td>
<td>% of total consolidated mapping area within the Indicative Additional Impact Assessment Area</td>
<td>Total area (ha) within the Modified Indicative Additional Impact Assessment Area</td>
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