

# INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD

## Santos Narrabri Gas Project Independent Environmental Audit Report 2023

**Santos NSW (Eastern) Pty Ltd**

**Development Consent SSD 6456 (as of 30 September 2020)**

**August/September 2023 Audit**



Prepared for

**NSW Government  
Department of Planning and Environment**

### Report Version

Version	Date	Prepared by
Final Report	13 November 2023	<p>Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEIANZ Lead / Principal Auditor Integrated Environmental Systems Pty Ltd PO Box 98 Battery Point, Hobart, Tasmania 7004</p> <p>Jamie Lees B.Sc. (Agriculture) Principal Consultant/Director ESG Consulting Chapel Hill Qld 4069</p> <p>Adam Jones B.Ec. LLB, B.Com, GradCertEnv Lawyer Suite 503, 9-13 Bronte Road Bondi Junction NSW 2022</p>

## Document Title and History

Document Title: Santos Narrabri Gas Project Independent Environmental Audit Report 2023			
Document History:			
Version	Description and Date	Issued by	Certified by
Draft Report	Draft report issued to Santos on 23 October 2023 for Santos's review and comment, and provision of information to complete minor gaps in the draft report.	Kurt Hammerschmid, Lead Auditor	Not applicable
Revised Draft Report	Revised draft report issued to Santos on 3 November 2023 for Santos's review and comment, and provision of information to complete remaining minor gaps. The revised draft report includes corrections and refinements (including changes to observations) initiated by the Auditors. The revised draft report also includes changes in audit findings and observations based on additional information provided by Santos. The additional information enabled the Auditors to determine that occasional errors of fact or misunderstandings had occurred during the conduct of the audit and preparation of the draft report as issued on 23 October 2023.	Kurt Hammerschmid, Lead Auditor	Not applicable
Final Report	Final report with minor corrections and refinements initiated by the Auditors, and minor changes to incorporate additional information received from Santos. The Lead Auditor issued this final report to Santos on 13 November 2023 for Santos's submission to the Planning Secretary / NSW Department of Planning and Environment.	Kurt Hammerschmid, Lead Auditor	Kurt Hammerschmid, Lead Auditor

Cover page photos, left to right:

- Leewood Facility produced water pond (22 August 2023)
- Dewhurst 43 well pad erosion and sediment control (22 August 2023)
- Dewhurst 35 well pad entry gate (22 August 2023)

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Issued by:  (Kurt Hammerschmid)

Date: 13 November 2023

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## Audit Details

<b>Operation Audited:</b>	Santos NSW (Eastern) Pty Ltd, Narrabri Gas Project located approximately 25 kms southwest from the centre of Narrabri, NSW 2390
<b>Dates of Auditors' on-site attendance:</b>	<ul style="list-style-type: none"> <li>14 to 18 August 2023, 30 August to 1 September 2023 and 5 September 2023 – Santos Brisbane office (8 days)</li> <li>5 and 6 September 2023 – Santos Brisbane office (2 days)</li> <li>12 to 15 September 2023 (3 Days) – Santos Brisbane office (via teleconference) (3 days)</li> <li>22 to 25 August 2023 – Santos Narrabri (3.5 days)</li> </ul>
<b>Santos Narrabri Audit Contact:</b>	██████████, Environmental Advisor, Santos Onshore Oil & Gas
<b>Lead Auditor:</b>	Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEIANZ Lead / Principal Auditor Integrated Environmental Systems Pty Ltd PO Box 98 Battery Point, Hobart, Tasmania 7004
<b>Auditor:</b>	Jamie Lees B.Sc. (Agriculture) Principal Consultant/Director ESG Consulting Chapel Hill Qld 4069
<b>Report Reviewer:</b>	Adam Jones B.Ec. LLB, B.Com, GradCertEnv Lawyer Suite 503, 9-13 Bronte Road, Bondi Junction NSW 2022
<b>Scope of the Audit:</b>	<ul style="list-style-type: none"> <li>This independent environmental audit was conducted in accordance with the NSW Government's <i>Independent Audit Post Approval Requirements</i>, issued in May 2020 (IPAR).</li> <li>The scope of the audit included all relevant conditions (but excluding Definitions and Appendices unless otherwise specified in this report) specified in: <ul style="list-style-type: none"> <li>Development Consent SSD 6456</li> <li>Petroleum Exploration Licence 238 (PEL 238)</li> <li>Petroleum Assessment Lease 2 (PAL 2)</li> <li>Petroleum Production Lease 3 (PPL 3)</li> <li>Water Access Licence (WAL) Nos. 36546, 43548, 43553, 15819 and 15847</li> </ul> </li> <li>This audit was limited to the site of the Santos Narrabri Gas Project within the Project boundary specified in Development Consent SSD 6456.</li> <li>The audit period for this audit is from 30 September 2020 (the date of approval of Development Consent SSD 6456) to 15 September 2023 (the last day of the Well Integrity Specialist interviews during this audit).</li> </ul>
<b>Santos and other personnel interviewed during the Audit:</b>	<ul style="list-style-type: none"> <li>██████████ – Environmental Advisor</li> <li>██████████ – Senior Staff Well Integrity Engineer</li> <li>██████████ – Senior Drilling Engineer</li> <li>██████████ – Senior Advisor Cultural Heritage</li> <li>██████████ – Senior Environmental Advisor</li> <li>██████████ – Senior Incident, Emergency Response and Compliance Adviser</li> <li>██████████ – Team Lead NSW Regional</li> <li>██████████ – Principal Adviser Landholder Relations</li> <li>██████████ – Manager Regional</li> <li>██████████ – Operations Coordinator</li> <li>██████████ – Santos NGP Operator</li> <li>██████████ – Ontoto (Remote Satellite/Telemetry Contractor)</li> </ul>
<b>Persons in attendance at Opening Meeting on 22 August 2023:</b>	<ul style="list-style-type: none"> <li>██████████ – Operations Coordinator</li> <li>██████████ – Environmental Advisor</li> <li>██████████ – Senior Environmental Advisor</li> <li>██████████ – Construction Supervisor</li> <li>Kurt Hammerschmid – Lead Auditor</li> <li>Jamie Lees – Audit Facilitator</li> </ul>



Persons in attendance at Closing Meeting on 30 October 2023:	<ul style="list-style-type: none"><li>██████████ – Environmental Advisor</li><li>██████████ – Team Lead Environmental Assurance (Acting)</li><li>██████████ – Acting Manager Onshore Environment</li><li>Kurt Hammerschmid – Lead Auditor</li><li>Jamie Lees – Audit Facilitator</li></ul>																																																																																																																																																																																																		
Santos Narrabri Operational Areas visited/inspected between 22 and 25 August 2023:	<p><u>22 August 2023</u></p> <ul style="list-style-type: none"><li>Narrabri Operations and Logistics Centre (outside SSD 6456 Project boundary)</li><li>Leewood Facilities (in PAL 2) – Produced Water Ponds and Water Treatment Facility</li><li>Bibbiewindi Facilities (in PAL 2) including, groundwater bore (BWD 1), water management ponds and water balance tank, gas and water pumping infrastructure, Gas Flare, Gas Compressor infrastructure and rehabilitation area.</li><li>Well Pads 5, 6 7, 10, 16, 17, 27 and flow lines in PAL 2</li><li>Well Pads 35 and 43 in PEL 238</li><li>Forestry Corporation of NSW access tracks including flow line crossings in PAL 2 and PEL 238.</li></ul> <p><u>24 August 2023</u></p> <ul style="list-style-type: none"><li>Wilga Park Power Station and produced water ponds (outside SSD 6456 Project boundary)</li><li>Wilga Park Flare and flow lines in PPL 3</li><li>Coonarah 4 Well Pad and Flow Lines in PPL 3</li><li>Yarrie Lake (outside SSD 6456 Project boundary).</li></ul> <p><u>24 August 2023</u></p> <ul style="list-style-type: none"><li>Tintsfeld 6 well pad and Ventia workover rig (outside SSD 6456 Project boundary).</li></ul> <p><u>25 August 2023</u></p> <ul style="list-style-type: none"><li>Leewood Facilities – Meteorology Station, Flow Line and Leewood Groundwater Bore (LWD 1)</li><li>Dewhurst 43 Well Pad – second inspection.</li></ul>																																																																																																																																																																																																		
Operational status during field inspections on between 22 and 25 August 2023:	<ul style="list-style-type: none"><li>Track maintenance along Forestry Corporation of NSW access track (X-Line)</li><li>Gas Well Head inspections and generator maintenance – various wells</li><li>Shallow groundwater bore drilling at Dewhurst 43 was inactive – shift break</li><li>There are 22 active pilot wells; however, only 7 pilot wells were extracting produced water during the audit period.</li></ul>																																																																																																																																																																																																		
Weather conditions during field inspections on 22 and 25 August 2023 (Narrabri Airport AWS):	<p><b>Narrabri, New South Wales</b> <b>August 2023 Daily Weather Observations</b></p> <table><tr><th rowspan="2">Date</th><th rowspan="2">Day</th><th colspan="2">Temps</th><th rowspan="2">Rain</th><th rowspan="2">Evap</th><th rowspan="2">Sun</th><th colspan="2">Max wind gust</th><th colspan="4">9 am</th><th colspan="4">3 pm</th></tr><tr><th>Min</th><th>Max</th><th>Dir</th><th>Spd</th><th>Time</th><th>Temp</th><th>RH</th><th>Cld</th><th>Dir</th><th>Spd</th><th>MSLP</th><th>Temp</th><th>RH</th><th>Cld</th><th>Dir</th><th>Spd</th><th>MSLP</th></tr><tr><th></th><th></th><th>°C</th><th>°C</th><th>mm</th><th>mm</th><th>hours</th><th></th><th>km/h</th><th>local</th><th>°C</th><th>%</th><th>g<sup>th</sup></th><th>km/h</th><th>hPa</th><th>°C</th><th>%</th><th>g<sup>th</sup></th><th>km/h</th><th>hPa</th></tr><tr><td>19</td><td>Sa</td><td>-0.3</td><td>17.6</td><td>0</td><td></td><td></td><td>WSW</td><td>41</td><td>11:20</td><td>8.1</td><td>75</td><td></td><td>WSW</td><td>9</td><td>1022.9</td><td>17.3</td><td>31</td><td></td><td></td></tr><tr><td>20</td><td>Su</td><td>3.9</td><td>23.9</td><td>0</td><td></td><td></td><td>S</td><td>31</td><td>11:50</td><td>14.8</td><td>57</td><td></td><td>SSE</td><td>13</td><td>1025.9</td><td>23.5</td><td>29</td><td></td><td></td></tr><tr><td>21</td><td>Mo</td><td>3.5</td><td>23.9</td><td>0</td><td></td><td></td><td>W</td><td>30</td><td>12:47</td><td>14.9</td><td>55</td><td></td><td>SSW</td><td>7</td><td>1025.0</td><td>23.1</td><td>27</td><td></td><td></td></tr><tr><td>22</td><td>Tu</td><td>5.8</td><td>27.0</td><td>0</td><td></td><td></td><td>N</td><td>46</td><td>11:37</td><td>19.9</td><td>45</td><td></td><td>NNE</td><td>24</td><td>1022.8</td><td>26.6</td><td>24</td><td></td><td></td></tr><tr><td>23</td><td>We</td><td>5.0</td><td>22.9</td><td>0</td><td></td><td></td><td>W</td><td>28</td><td>12:19</td><td>15.5</td><td>46</td><td></td><td>S</td><td>15</td><td>1024.5</td><td>22.5</td><td>22</td><td></td><td></td></tr><tr><td>24</td><td>Th</td><td>4.9</td><td>23.8</td><td>0</td><td></td><td></td><td>SSE</td><td>35</td><td>02:02</td><td>13.7</td><td>53</td><td></td><td>SSE</td><td>9</td><td>1027.1</td><td>23.1</td><td>23</td><td></td><td></td></tr><tr><td>25</td><td>Fr</td><td>3.8</td><td>24.2</td><td>0</td><td></td><td></td><td>SE</td><td>39</td><td>01:02</td><td>14.6</td><td>57</td><td></td><td>S</td><td>7</td><td>1027.8</td><td>23.0</td><td>28</td><td></td><td></td></tr></table>	Date	Day	Temps		Rain	Evap	Sun	Max wind gust		9 am				3 pm				Min	Max	Dir	Spd	Time	Temp	RH	Cld	Dir	Spd	MSLP	Temp	RH	Cld	Dir	Spd	MSLP			°C	°C	mm	mm	hours		km/h	local	°C	%	g <sup>th</sup>	km/h	hPa	°C	%	g <sup>th</sup>	km/h	hPa	19	Sa	-0.3	17.6	0			WSW	41	11:20	8.1	75		WSW	9	1022.9	17.3	31			20	Su	3.9	23.9	0			S	31	11:50	14.8	57		SSE	13	1025.9	23.5	29			21	Mo	3.5	23.9	0			W	30	12:47	14.9	55		SSW	7	1025.0	23.1	27			22	Tu	5.8	27.0	0			N	46	11:37	19.9	45		NNE	24	1022.8	26.6	24			23	We	5.0	22.9	0			W	28	12:19	15.5	46		S	15	1024.5	22.5	22			24	Th	4.9	23.8	0			SSE	35	02:02	13.7	53		SSE	9	1027.1	23.1	23			25	Fr	3.8	24.2	0			SE	39	01:02	14.6	57		S	7	1027.8	23.0	28		
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## Audit Reference Table

The Audit Reference Table below cross-references the relevant section of the NSW Government's *Independent Audit Post Approval Requirements*, issued in May 2020 (IPAR) (first column) to the section of this audit report where the IPAR section is addressed (second column).

### Audit Reference Table

Relevant section of IPAR with summary of requirement	Section of this audit report where IPAR section is addressed
Section 3.1.1 (Auditor competence)	Sections 2.2 and 3.1, and Appendix D
Section 3.1.1 (Independence of Auditor and technical specialists)	Section 3.1 and Appendix E
Section 3.1.2 (Agreement to the Auditor)	Section 3.1 and Appendix D
Section 3.1.3 (Technical specialists)	Section 3.1 and Appendices G and H
Section 3.2 (Scope development)	Sections 3.2, 3.7, 4.1 and 4.8, and Appendices B and C
Section 3.3.1.a (Audit scope – Assessment of compliance with all conditions of consent)	Sections 2.4 and 4.4, and Appendix A
Section 3.3.1.b (Audit scope – Assessment of compliance with all post approval and compliance documents)	Sections 2.4 and 4.6, and Appendix A
Section 3.3.2.a (Audit scope – Review of environmental performance including assessment of actual impacts compared to predicted impacts)	Section 4.12
Section 3.3.2.b (Audit scope – Review of environmental performance including physical extent of the development)	Section 4.12
Section 3.3.2.c (Audit scope – Review of environmental performance including incidents, non-compliances and complaints)	Sections 4.9, 4.10 and 4.11
Section 3.3.2.d (Audit scope – Review of environmental performance including the performance of the project having regard to agency policy and issues identified through consultation)	Sections 1, 4.7 and 8
Section 3.3.2.e (Audit scope – Review of environmental performance including feedback received from the DPE and other agencies and stakeholders)	Sections 1, 4.7 and 8, and Appendix B
Section 3.3.3 (Audit scope – Status of implementation of previous independent audit findings, recommendations and actions)	Section 4.5
Section 3.3.4 (Audit scope – High level assessment of whether Environmental Management Plans and Sub-plans are adequate)	Section 4.6
Section 3.3.5 (Audit scope – Any other matters considered relevant by the Auditor or the DPE)	Section 4.7
Section 3.4 (Opening and closing meetings)	Audit Details (pages 4 and 5 of audit report) and Section 3.6
Section 3.5 (On-site interviews)	Audit Details (page 4 of audit report), Section 3.4 and Appendix A
Section 3.6 (Site inspections)	Audit Details (page 5 of audit report), Section 3.5 and Appendices A and F
Section 3.7.1 (Evaluation of compliance – Evidence based evaluation including: review of relevant records, interviews with site personnel, photographs, GIS figures as relevant and available, site inspections, monitoring data and analysis, delivery records)	Sections 3.3, 4.2 and 7, and Appendices A and F
Section 3.7.2 (Evaluation of compliance – Document evaluation)	Section 4.6 and Appendix A
Section 3.8 (Compliance status descriptors)	Sections 3.8 and 3.9, and Appendix A
Section 4.1 (Version control)	Page 2 of audit report
Section 4.2.1 (Contents – Introduction including: background of the Project, audit team, audit objectives, audit scope, temporal period covered by the audit)	Sections 2.1 to 2.5
Section 4.2.2.1 (Contents – Audit methodology – documentation from Planning Secretary agreeing to the Auditor)	Section 3.1 and Appendix D
Section 4.2.2.2 (Contents – Audit methodology – how the audit scope was developed)	Section 3.2
Section 4.2.2.3 (Contents – Audit methodology – summary of the audit process)	Sections 3.3 and 7
Section 4.2.2.4 (Contents – Audit methodology – site personnel interviewed)	Audit Details (page 4 of audit report), Section 3.4 and Appendix A
Section 4.2.2.5 (Contents – Audit methodology – details of site inspections undertaken)	Audit Details (page 5 of audit report), Section 3.5 and Appendices A and F
Section 4.2.2.6 (Contents – Audit methodology – summary of the consultation undertaken)	Section 3.7

Relevant section of IPAR with summary of requirement	Section of this audit report where IPAR section is addressed
Section 4.2.2.7 (Contents – Audit methodology – meanings of compliance descriptors used)	Section 3.8
Section 4.2.3.1 (Contents – Audit findings – list of approvals and documents audited)	Section 4.1
Section 4.2.3.2 (Contents – Audit findings – summary of assessment of compliance)	Section 4.2
Section 4.2.3.3 (Contents – Audit findings – summary of any notices, orders, penalty notices or prosecutions issued in relation to the Project Approval during the audit period)	Section 4.3
Section 4.2.3.4 (Contents – Audit findings – exception reporting of all non-compliances identified during audit period)	Section 4.4
Section 4.2.3.5 (Contents – Audit findings – status of actions arising from previous audits and progress or outcomes of each action)	Section 4.5
Section 4.2.3.6 (Contents – Audit findings – adequacy of Environmental Management Plans, Sub-plans and compliance documents)	Section 4.6
Section 4.2.3.7 (Contents – Audit findings – other matters considered relevant by Auditor or the DPE)	Section 4.7
Section 4.2.3.8 (Contents – Audit findings – documentation of feedback from consultation with DPE and other agencies and stakeholders)	Section 4.8 and Appendices B and C
Section 4.2.3.9 (Contents – Audit findings – summary of and response to complaints)	Section 4.9
Section 4.2.3.10 (Contents – Audit findings – details of and management of incidents)	Section 4.10
Section 4.2.3.11 (Contents – Audit findings – actual and predicted impacts, and physical extent of development)	Section 4.12
Section 4.2.3.12 (Contents – Audit findings – evidence collected through site inspections)	Appendices A and F
Section 4.2.3.13 (Contents – Audit findings – evidence provided by personnel interviewed)	Appendix A
Section 4.2.3.14 (Contents – Audit findings – continual improvement opportunities)	Section 4.13
Section 4.2.3.15 (Contents – Audit findings – key strengths)	Section 4.14
Section 4.2.4 (Contents – Recommendations and opportunities for improvement)	Sections 3.9, 4.4 and 5, and Appendix A
Section 4.2.5.1 (Contents – Appendices – Independent Audit Table)	Appendix A
Section 4.2.5.2 (Contents – Appendices – agreement of Planning Secretary)	Appendix D
Section 4.2.5.3 (Contents – Appendices – consultation with DPE and other agencies or stakeholders)	Appendices B and C
Section 4.2.5.4 (Contents – Appendices – Independent Audit Declaration Form)	Appendix E
Section 4.2.5.5 (Contents – Appendices – reports by agreed technical specialists as required)	Section 3.1 and Appendices G and H
Section 4.2.5.6 (Contents – Appendices – site inspection photographs)	Appendix F
Section 4.3.1 (Proponent review and response to draft audit report)	Document Title and History (page 2 of audit report)
Section 4.3.2 (Proponent response to audit findings)	Section 6
Section 4.4 (Declaration from Auditor)	Appendix E
Section 4.5 (Report submission)	Document Title and History (page 2 of audit report) and Section 2.6

# 1 Executive Summary

The Narrabri Gas Project (NGP) is a Coal Seam Gas Project located approximately 25 kms southwest from the centre of Narrabri, NSW.

The Applicant, Santos NSW (Eastern) Pty Ltd (Santos), has continuously operated the NGP during the audit period. The audit period is defined as the period from 30 September 2020 (the date of approval of Development Consent SSD 6456) to 15 September 2023 (the last day of the Well Integrity Specialist interviews during this audit).

This August/September 2023 audit of the Narrabri Gas Project was conducted by Integrated Environmental Systems Pty Ltd and approved experts in Groundwater and Well Integrity. The audit team comprised:

- Kurt Hammerschmid (Lead Auditor);
- Jamie Lees (Audit Facilitator and Auditor);
- Adam Jones (review of the draft and final versions of the audit report prior to issue);
- Andrew Moser (Groundwater Specialist); and
- Gordon Duncan (Well Integrity Specialist).

The Lead Auditor and Audit Facilitator attended the Santos NGP site from Tuesday morning 22<sup>nd</sup> August 2023 to Friday morning 25<sup>th</sup> August 2023.

This August/September 2023 audit was conducted in accordance with the NSW Government's *Independent Audit Post Approval Requirements*, issued in May 2020 (IPAR). The overall findings of this audit are as follows:

- A total of 210 conditions across Development Consent SSD 6456, PEL 238, PAL 2, PPL 3, and WAL Nos. 36546, 43458, 43533, 15819 and 15847 were audited.
- As recorded in this audit report, this audit identified 131 'compliant' findings, 2 'non-compliant' findings (and a corresponding number of recommendations), and 77 'not triggered' findings.
- Santos was compliant with 131 out of the 133 applicable conditions (i.e. all conditions except those which were 'not triggered').

This audit report includes 89 observations. Observations are provided for Santos's consideration as opportunities for improvement, enabling continual improvement to be demonstrated in statutory compliance, risk reduction, and environmental management, practices and performance across the Project.

No major or systemic (i.e. widespread) environmental issues were identified during this August/September 2023 audit. The Auditors consider that the relatively low number of non-compliances identified during this independent environmental audit indicates that during the audit period, Santos is generally implementing the required measures detailed in the approved Environmental Management Plans for the Narrabri Gas Project.

## 2 Introduction

Santos NSW (Eastern) Pty Ltd (Santos) is the operator (the Applicant) of the Narrabri Gas Project (referred to in this audit report as “the Project” or “NGP”). The Project is a Coal Seam Gas project located approximately 25 kms southwest from the centre of Narrabri, NSW.

Santos NSW (Eastern) Pty Ltd is a wholly owned subsidiary of Santos Limited.

Santos previously purchased the Narrabri Gas Project from Eastern Star in 2011.

Santos has continuously operated the Narrabri Gas Project during the ‘audit period’, defined as the period from 30 September 2020 to 15 September 2023.

This audit is the first independent environmental audit of the Narrabri Gas Project since the approval of Development Consent SSD 6456 on 30 September 2020.

### 2.1 Background

Figure 1 below summarises the history of the Narrabri Gas Project to date.

Figure 1 Project History



In 2011, Santos NSW (Eastern) Pty Ltd (Santos), purchased Eastern Star Gas Limited providing the opportunity to explore and access significant gas reserves in NSW. This acquisition included the current petroleum tenements, gas field infrastructure and Wilga Park Power Station at Narrabri NSW.

The Wilga Park Power Station, gas wells and gas gathering system were approved by the Narrabri Shire Council in November 2002 (DA 76/2003). Approval to expand the power station capacity and gas field gathering systems and infrastructure was granted in December 2008 (MP 07\_0023) and has since been modified seven times. The Power Station continues to operate under its own Development Consent and can increase electricity production for the NSW power grid if additional gas is supplied.

In 2016 Santos submitted the State Significant Development (SSD) Application Number 6456 for the Narrabri Gas Project. The Project involves drilling up to 850 coal seam gas wells to produce up to 200 terajoules (TJ) of gas a day for the domestic gas market over a period of at least 20 years, which is sufficient to supply up to 50% of NSW's gas demand.

The Independent Planning Commission of NSW approved the SSD 6456 application on 30 September 2020.

#### Narrabri Gas Project Approvals

Development Consent SSD 6456 was granted under Section 4.38 of the *Environmental Planning and Assessment Act 1979* on 30 September 2020. As of August 2023, Development Consent SSD 6456 has not since been modified.

The Project was determined as a controlled action under the *Environment Protection and Biodiversity Conservation Act* (Cth) and was granted EPBC 2014/7376 approval on 24 November 2020. The Project occurs within the Petroleum Tenements PEL 238, PAL 2 and PPL 3. Santos has secured the required Water Access Licences for the predicted water extraction volumes.

Development Consent SSD 6456 requires Santos to implement the Project in Phases:

- Phase 1 – ongoing exploration and appraisal activities;
- Phase 2 – construction activities for production wells and related infrastructure;
- Phase 3 – gas production operations; and
- Phase 4 – gas well and infrastructure decommissioning, rehabilitation and mine closure.

#### Variations to PEL 238, PAL 2 and PPL 3 Conditions

On 5 September 2023, the PEL 238, PAL 2 and PPL 3 conditions were stated to be varied to align with the Department of Regional NSW *Code of Practice for Construction, operation and decommissioning of petroleum wells* (first issued in February 2023) and remove conditions relating to the superseded Code of Practice Coal Seam Gas Well Integrity (2012). The tenements were stated to be varied by separate Instruments of Variation, signed by the Minister's delegate and dated 29 August 2023, as follows:

Tenement	Conditions omitted on 5 September 2023	New (unnumbered) condition imposed on 5 September 2023
PEL 238	9-13, 15, 16	The lease holder must design, construct, operate, maintain and decommission all petroleum wells in accordance with the Code of Practice for construction, operation and decommissioning of petroleum wells (Department of Regional NSW, February 2023), published on the Department's website, as amended or replaced from time to time.
PAL 2	6, 9, 10 and 12	
PPL 3	6, 9, 10 and 12	

The above variations to PEL 238, PAL 2 and PPL 3 took effect on 5 September 2023, within the audit period which ended on 15 September 2023.

In the Independent Audit Table within Appendix A of this audit report, the Auditors have reproduced the wording of the above omitted conditions for PEL 238, PAL 2 and PPL 3 and provided comments regarding Santos's previous compliance with those conditions (i.e. prior to 5 September 2023). However, in accordance with the Compliance Status Descriptors in the IPAR (see Section 3.8 of this audit report) the Auditors have regarded the above omitted conditions for PEL 238, PAL 2 and PPL 3 as 'not triggered'.

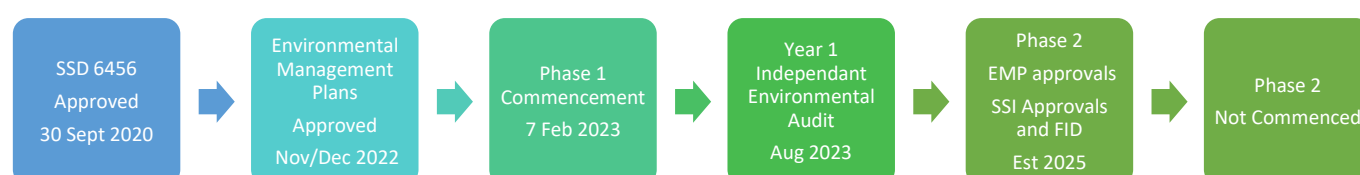
The Auditors consider that the new (unnumbered) condition for PEL 238, PAL 2 and PPL 3 covers the content of the omitted conditions in PEL 238, PAL 2 and PPL 3 by incorporating the requirements in the *Code of Practice for construction, operation and decommissioning of petroleum wells* (Department of Regional NSW, as first issued in February 2023). Santos's compliance against this Code of Practice (as amended in May 2023) is the subject of the Independent Well Integrity Specialist's audit report in Appendix H of this audit report.

#### Phased Commencement

Phase 1 commenced on 7 February 2023. Prior to the commencement of Phase 1, Santos completed extensive stakeholder consultation on a comprehensive suite of Environmental Management Plans as required by Development Consent SSD 6456. This consultation process occurred over a 2-year period with all plans being approved during November and December 2022.

Figure 2 below summarises the operational commencement dates for Phase 1 and the timing of this Independent Environmental Audit as required by condition D9 of SSD 6456. Figure 2 estimates Phase 2 commencement as 2025. However, the timing of Phase 2 is subject to additional State Significant Infrastructure (SSI) approvals, revision and subsequent approval of updated Environmental Management Plans (EMPs) and groundwater model, and the Final Investment Decision (FID) by Santos.

Figure 2 Operational commencement





### Existing Infrastructure

Existing infrastructure within the SSD 6456 Project boundary incorporates gas wells, gas gathering lines and supporting water management infrastructure that was previously approved, installed and operated by Eastern Star Gas since the late 1990s, prior to Santos acquiring Eastern Star Gas in 2011.

Prior to the approval of Development Consent SSD 6456 on 30 September 2020, there were 47 existing well heads excluding Plugged and Abandoned (P&A) wells, within the Project boundary. As of August 2023 and for the audit period, Santos did not drill any new gas pilot or production wells, and has only developed 2 well pads and constructed 7 shallow groundwater monitoring bores. The number and status of the wells in petroleum tenements PEL 238, PAL 2 and PPL 3 as of August 2023, is recorded below.

Wells within SSD 6456 Project Boundary				
Petroleum Title	Producing	Suspended	Shut in	P&A
PEL 238	2	5	5 <sup>1</sup>	24 <sup>2</sup>
PAL 2	15	15 <sup>1</sup>	-	20 <sup>2</sup>
PPL 3	-	5	-	6

<sup>1</sup> Includes one shut in well in PEL 238 and one suspended well in PAL 2 which have each been converted to a groundwater monitoring bore.

<sup>2</sup> Includes one plugged well in PEL 238 and one plugged well in PAL 2 which have each been converted to a groundwater monitoring bore.

Note: The construction and P&A of all wells within the Project Boundary occurred prior to the approval of Development Consent SSD 6456 on 30 September 2020.

### Project Locations within Audit Scope

The key locations within the Project Boundary that are within the scope of this audit are listed below.

Infrastructure Location	Tenement	Summary of Infrastructure at Location
Dewhurst	PEL 238	<ul style="list-style-type: none"> <li>Coal Seam Gas – Well Pads and Gas Wells</li> <li>Gas gathering equipment</li> <li>Water and gas flow lines</li> <li>Water Supply Bore</li> <li>Access Tracks.</li> </ul>
Leewood surface facilities	PAL 2	<ul style="list-style-type: none"> <li>Water management facilities; e.g. produced water ponds, water treatment facility and tanks</li> <li>Gas and water flow lines</li> <li>Pumps and pipe</li> <li>Monitoring equipment</li> <li>Demountable office facilities</li> <li>Proposed Irrigation area</li> <li>Water Supply Bore</li> <li>Meteorological Station.</li> </ul>
Bibblewindi Surface Facilities	PAL 2	<ul style="list-style-type: none"> <li>Water management facilities; e.g. produced water ponds, and balance tank</li> <li>Pumps and pipes including flow lines</li> <li>Monitoring equipment</li> <li>Gas Compressor and flare</li> <li>Gas gathering system.</li> </ul>



Infrastructure Location	Tenement	Summary of Infrastructure at Location
Bibblewindi/Bohena	PAL 2	<ul style="list-style-type: none"> <li>Coal Seam Gas – Well Pads and Gas Wells</li> <li>Gas gathering equipment</li> <li>Water and gas flow lines</li> <li>Water Supply Bore</li> <li>Access Tracks.</li> </ul> <i>Note: Bohena 3 and 7 well abandonment is planned.</i>
Coonarah/Wilga Park	PPL 3	<ul style="list-style-type: none"> <li>Conventional gas field (not coal seam gas) including Well Pads and Gas Wells (there is no production from this gas field)</li> <li>Water and Gas flow lines.</li> </ul> <i>Note: Coonarah 4 well abandonment is planned.</i>

#### Facilities associated with the NGP which are outside of Audit Scope

The Narrabri Operations and Logistics Centre, Wilga Park Power Station, Tintfield Gas Wells, Flow lines and associated Produced Water Ponds are authorised and regulated under separate approvals (i.e. not Development Consent SSD 6456) and are not included in this audit scope.

Natural gas from the SSD 6456 Project area is authorised to be sent to the Wilga Park Power Station for beneficial reuse to generate electricity that is supplied to the NSW energy grid.

#### Independent Environmental Audit

Santos engaged Integrated Environmental Systems Pty Ltd to conduct this independent environmental audit.

This audit was conducted in accordance with the NSW Government's *Independent Audit Post Approval Requirements*, issued in May 2020 (IPAR).

This audit is intended to satisfy condition D9 of Development Consent SSD 6456, which requires Santos to commission an independent environmental audit of the Narrabri Gas Project within one year of physical commencement of Phase 1 of the Project (i.e. 7 February 2023) and once every three years afterwards.

## **2.2 Audit Team**

Integrated Environmental Systems Pty Ltd (presently based in Hobart, Tasmania) provides professional independent auditing services in a number of specialised areas of environmental management within the heavy industrial sectors inclusive of resource, chemical, oil and gas and utilities industries.

#### Kurt Hammerschmid

Kurt Hammerschmid has more than 35 years' direct experience in the heavy industrial and resources sectors and more than 25 years' experience as a Lead Auditor (Compliance and Management Systems). Kurt Hammerschmid has audited in all states in Australia and in over 20 countries.

As the Principal Auditor and Director of Integrated Environmental Systems Pty Ltd, Kurt Hammerschmid has extensive on-site environmental experience in the resources industry through previous employment with Energy Resources Australia at Ranger Uranium (NT), Comalco Minerals and Alumina at Weipa (Qld), Hamersley Iron at Dampier (WA) and Rio Tinto Environmental Services in Melbourne.

Kurt Hammerschmid holds a Bachelor's Degree in Environmental/Water Chemistry (1986) from the University of Canberra and a Master's Degree in Pollutant Loadings to the Hawkesbury/Nepean catchment, west of Sydney (Macquarie University, 1992). Over the past 27 years, Kurt Hammerschmid has conducted over 750 Environmental Management System, Environmental Legal Compliance and Environmental Performance Audits for a wide range of exploration, resource/heavy industry clients.

### Jamie Lees

Jamie Lees has more than 20 years' experience in the resources sector working in operational and corporate environmental leadership roles across NSW and Queensland and the broader Asia Pacific region. Jamie Lees has expertise in environmental management, major project development, environmental approvals, and compliance including environmental auditing. As a trained Auditor, Jamie Lees has led environmental management system and ESG standards alignment audits and supported Integrated Environmental Systems Pty Ltd in conducting environmental compliance audits in New Zealand. Jamie Lees holds a Bachelor of Science (Agriculture) (Charles Sturt University, 1992).

### Adam Jones

Adam Jones has more than 20 years' experience as a legal practitioner in NSW and has been regularly contracted by Integrated Environmental Systems Pty Ltd to conduct environmental compliance audits in NSW and Queensland and conduct independent legal reviews of audit reports. Adam Jones holds a Graduate Certificate of Environment (Macquarie University, 2021).

### Andrew Moser (Groundwater Specialist)

Andrew Moser is a qualified geologist with over 34 years of domestic and international experience, a large portion of which has been within the CSG sector in the Surat Basin directly. Andrew Moser is a registered professional geoscientist (RPGeo) with the AIG, with formal technical accreditation in the field of hydrogeology. Andrew Moser has direct and extensive experience in Coal Seam Gas operations and compliance.

### Gordon Duncan (Well Integrity Specialist)

Gordon Duncan is a recognised global technical expert on well integrity with over 40 years of experience in the oilfield industry specialising in technical and commercial drilling, completions and well services and is a current Member of the International Well Control Forum (IWCF) Well Integrity Taskforce. Gordon Duncan has extensive experience in supervising completion and well intervention to maintain and improve well integrity standards for major global petroleum companies and now delivers training globally, on advanced Well Integrity Management and other well design and completion technical areas.

## **2.3 Audit Objectives**

The objective of this independent environmental audit was to assess the status of compliance of the Santos Narrabri Gas Project against the conditions of Development Consent SSD 6456, and review and assess the Santos Narrabri Gas Project against the matters required under Section 3.3 of the NSW Government's *Independent Audit Post Approval Requirements*, issued in May 2020 (IPAR).

## **2.4 Audit Scope**

The scope of this independent environmental audit included an assessment of the Applicant's compliance with the matters described in Section 3.3 of the IPAR and applicable conditions of:

- Development Consent SSD 6456;
- Petroleum Exploration Licence 238 (PEL 238);
- Petroleum Assessment Lease 2 (PAL 2);
- Petroleum Production Lease 3 (PPL 3);
- Water Access Licence (WAL) Nos. 36546, 43548, 43553, 15819 and 15847.

The Auditors developed this audit scope according to the requirements in condition D9 of the Development Consent SSD 6456 (other than the "hazard audit" referred to in condition D9(d), which the Planning Secretary advised was not required) and Sections 3.2 and 3.3 of the IPAR.

## **2.5 Audit Period**

The temporal period covered by this independent environmental audit ('audit period') is from 30 September 2020 (the date of approval of Development Consent SSD 6456) to 15 September 2023 (the last day of the Well Integrity Specialist interviews during this audit).

## 2.6 Audit Report Submission

Section 4.5 of the IPAR requires the submission of the final independent audit report and the Applicant's response to audit findings within three months of commencement of the independent audit, unless otherwise agreed with the Planning Secretary. The office-based audit commenced at Santos's Brisbane offices on Monday 14<sup>th</sup> August 2023, and the on-site inspection component of this audit at Narrabri commenced on Tuesday morning 22<sup>nd</sup> August 2023 and concluded on Friday morning 25<sup>th</sup> August 2023.

The Auditors consider that the audit 'commenced' on 14 August 2023 (i.e. the first day of the Auditors' attendance in the Santos Brisbane office) and ended on 15 September 2023. The Auditor's on-site attendance commenced on Tuesday 22<sup>nd</sup> August and ended on Friday morning 25<sup>th</sup> August 2023. The appointed Groundwater and Well Integrity specialists completed their component of the audit between 5 September and 15 September 2023.

Santos intends to submit this audit report to the Planning Secretary via the Major Projects Portal on 13 November 2023 (i.e. within three months of 14 August 2023), unless otherwise agreed with the Secretary.

## 3 Audit Methodology

### 3.1 Selection and Endorsement of Auditors

Santos engaged Integrated Environmental Systems Pty Ltd to conduct this independent environmental audit. The audit team comprised of:

- Kurt Hammerschmid (Lead Auditor);
- Jamie Lees (Audit Facilitator and Auditor);
- Adam Jones (review of the draft and final versions of the audit report prior to issue);
- Andrew Moser (Groundwater Specialist); and
- Gordon Duncan (Well Integrity Specialist).

Each member of the audit team provided the Planning Secretary with a signed Declaration of Independence Form (Appendix A in the IPAR) as required by Section 3.1.1 of the IPAR.

The Planning Secretary endorsed the appointment of the audit team by emailed letter on 3 August 2023 and on 11 August 2023 for the Well Integrity Specialist. These endorsement letters are reproduced in Appendix D of this audit report. The Groundwater Specialist (expert) and Well Integrity Specialist (expert) are independent of each other, Santos and Integrated Environmental Systems Pty Ltd.

### 3.2 Audit Scope Development

The audit scope was developed according to the requirements in condition D9 of Development Consent SSD 6456 and Sections 3.2 and 3.3 of the IPAR. This process included written consultation with the DPE and with relevant agencies.

The content of this audit report (including sub-headings and overall layout) was determined by the requirements in Section 4.2 of the IPAR. For example, the Independent Audit Table in Appendix A of this audit report was prepared in accordance with Section 4.2.5 of the IPAR.

Appendix B of this audit report sets out the environmental issues raised by the agencies which provided written responses to the Lead Auditor during the agency consultation process.

Appendix C of this audit report reproduces the consultation letter and agency responses received.

Appendices G and H of this audit report respectively comprise the required independent expert (audit) reports for Hydrogeological (Groundwater) and Well Integrity.

### 3.3 Compliance Evaluation

This independent environmental audit was conducted by:

- interviews with Project personnel and direct verification of compliance against relevant conditions in the field; and
- 'sampling' a range of the documents, records and data associated with the Project and related activities.

The nature of sampling during any form of compliance audit is such that it may not necessarily identify everything that the Project is, or is not, doing in relation to an individual condition of Development Consent SSD 6456.

The Lead Auditor's Independent Audit Declaration in respect of the conduct of this independent environmental audit is set out in Appendix E of this audit report.

### 3.4 Site Interviews

The Auditors attended the Santos Narrabri Gas Project site (located approximately 25 km southwest from Narrabri NSW) from Tuesday morning 22<sup>nd</sup> August 2023 to Friday morning 25<sup>th</sup> August 2023 (3.5 days). Interviews were conducted in person with relevant Santos personnel. The Santos personnel who were interviewed during this audit are identified in the 'Audit Details' pages of this audit report.

Compliance assessment information provided by Santos personnel during this audit, is recorded in the Independent Audit Table within Appendix A of this audit report in the 'Evidence Collected' column.

### 3.5 Site Inspections

The Auditors conducted site inspections at the NGP on 22<sup>nd</sup> August to 25<sup>th</sup> August 2023. The 'Audit Details' pages in this audit report identify the Project areas which the Auditors inspected during their on-site attendance. Due to time restrictions and the geographic expanse of the Project, not all well pads, flowlines and access track locations were inspected.

Appendix F of this audit report comprises selected photographic evidence collected during these site inspections. These photographs are referred to in the 'Evidence Collected' column for the relevant condition in the Independent Audit Table within Appendix A of this audit report.

### 3.6 Opening and Closing Meetings

An on-site opening meeting was held on 22 August 2023 at the at Narrabri Operations and Logistics Centre, Narrabri NSW, and a closing meeting was held at the Santos Brisbane office on 30 October 2023. The attendees at the opening and closing meetings are listed in the attendance sheets reproduced below. Position titles of the attendees are indicated in the 'Audit Details' pages of this audit report.

Narrabri Gas Project - Compliance Audit  
Date: 22 August 2023.

OPENING MEETING ATTENDEES

NAME	POSITION
[REDACTED]	Supervisor - Operations Coordinator
Kurt Hammersland	Lead Auditor
[REDACTED]	Senior Environmental adviser
JAMIE LEES	ENVIRONMENTAL ADVISOR
	AUDIT FACILITATOR

**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**  
A.B.N. 44 079 213 988

**INDEPENDENT ENVIRONMENTAL AUDIT (IEA)  
CLOSE OUT MEETING**

PROJECT - Narrabri Gas Project      MEETING DATE: 30 October 2023  
LOCATION: Santos (Corporate Office) - Turbot Street Brisbane

NAME	TITLE	COMPANY	SIGNATURE
[REDACTED]	ENV ADVISOR	SANTOS	[Signature]
[REDACTED]	Team Lead Env Advisor	SANTOS	[Signature]
[REDACTED]	Env Manager/Officer	IES	[Signature]
JAMIE LEES	Auditor	ESG Consulting	[Signature]
Kurt Hammersland	Auditor	IES	Attended via video conference

At the opening meeting on 22 August 2023, the objectives of the audit, the scope of the audit, the resources required and methodology to be applied were discussed.

At the closing meeting on 30 October 2023, preliminary audit findings were presented, recommendations were made, and post-audit actions and timing for preparation and issue of this audit report were confirmed.

### 3.7 Consultation

In preparation for on-site audit attendance, the Lead Auditor consulted the agencies and stakeholders as indicated in the letters reproduced in Appendix C of this audit report, using the contact details set out below.

The agencies and stakeholders which responded in writing to the Lead Auditor's consultation letters are recorded below.

Agencies/stakeholders which provided a written response				
Agency/ Stakeholder	Contact Name	Position Title	Email	Address
Department of Planning and Environment	Joel Curran	Senior Compliance Officer	<a href="mailto:compliance@planning.nsw.gov.au">compliance@planning.nsw.gov.au</a> <a href="mailto:joel.curran@planning.nsw.gov.au">joel.curran@planning.nsw.gov.au</a>	4 Parramatta Square 12 Darcy Street Parramatta NSW 2150
Heritage NSW – Department of Planning and Environment	Nicole Davis	Manager Assessments	<a href="mailto:heritagemailbox@environment.nsw.gov.au">heritagemailbox@environment.nsw.gov.au</a>	4 Parramatta Square 12 Darcy Street Parramatta NSW 2150
Department of Regional NSW – Resources Regulator	Jenny Ehmsen	Principal Compliance Auditor	<a href="mailto:nswresourcesregulator@service-now.com">nswresourcesregulator@service-now.com</a>	PO Box 344 Hunter Region Mail Centre NSW 2310 516 High Street Maitland NSW 2320
Department of Planning and Environment – Crown Lands	Vicky Lyons	A/Group Leader Property Management, Tamworth	<a href="mailto:cl.enquiries@crownland.nsw.gov.au">cl.enquiries@crownland.nsw.gov.au</a> <a href="mailto:tamworth.crownlands@crownland.nsw.gov.au">tamworth.crownlands@crownland.nsw.gov.au</a>	PO Box 388 66-68 Frome Street Moree NSW 2400
Gilgandra Shire Council	David Neeves	General Manager	<a href="mailto:council@gilgandra.nsw.gov.au">council@gilgandra.nsw.gov.au</a>	PO Box 23 15 Warren Road Gilgandra NSW 2827
NSW Health – Hunter New England Health District	Dr David Durrheim, AM	Director of Health Protection	<a href="mailto:David.Durrheim@health.nsw.gov.au">David.Durrheim@health.nsw.gov.au</a>	Locked Mail Bag 9783 Tamworth NEMSC NSW 2348 7 Bligh Street Tamworth NSW 2340
Fire & Rescue NSW	Luke Loseby	Station Officer, Team Leader Fire Safety, Operation Liaison and Special Hazards Unit	<a href="mailto:OpsLiaison@fire.nsw.gov.au">OpsLiaison@fire.nsw.gov.au</a>	Locked Bag 12 1 Amarina Avenue Greenacre NSW 2190
Siding Spring Observatory – The Australian National University	Associate Professor Chris Lidman	Director, Siding Spring Observatory	<a href="mailto:christopher.lidman@anu.edu.au">christopher.lidman@anu.edu.au</a>	Observatory Road Coonabarabran NSW 2357
People for the Plains (via an invitation from the Independent Chair of the NGP CCC)	Stuart Murray	Delegate of People for the Plains on the Santos NGP CCC	Not disclosed, to maintain confidentiality of respondent	Not disclosed
People for the Plains (via an invitation from the Independent Chair of the NGP CCC)	Anthony Pickard	Alternate Delegate of People for the Plains on the Santos NGP CCC	Not disclosed, to maintain confidentiality of respondent	Not disclosed

The agencies/stakeholders which did not respond in writing to the Lead Auditor's consultation letters are recorded below.

Agencies/stakeholders which did not provide a written response				
Agency/ Stakeholder	Contact Name	Position Title	Email	Address
NSW Environment Protection Authority	Carmen Dwyer	Executive Director, Regulatory Operations Regional	<a href="mailto:info@epa.nsw.gov.au">info@epa.nsw.gov.au</a>	6 Parramatta Square 10 Darcy Street Parramatta NSW 2150
Department of Planning and Environment – Biodiversity and Conservation Division	Samantha Wynn	Senior Team Leader – Planning, North West, Biodiversity and Conservation	<a href="mailto:info@environment.nsw.gov.au">info@environment.nsw.gov.au</a> <a href="mailto:rog.nw@environment.nsw.gov.au">rog.nw@environment.nsw.gov.au</a>	PO Box 2111 48-52 Wingewarra Street Dubbo NSW 2830
Biodiversity Conservation Trust	Alan Goodwin	Director Regional Delivery	<a href="mailto:info@bct.nsw.gov.au">info@bct.nsw.gov.au</a> <a href="mailto:bct@environment.nsw.gov.au">bct@environment.nsw.gov.au</a>	4 Parramatta Square 12 Darcy Street Parramatta NSW 2150
Department of Planning and Environment – Water	Giselle Howard	Executive Director Water Planning	<a href="mailto:water.assessments@dpie.nsw.gov.au">water.assessments@dpie.nsw.gov.au</a> <a href="mailto:info@environment.nsw.gov.au">info@environment.nsw.gov.au</a>	4 Parramatta Square 12 Darcy Street Parramatta NSW 2150
NSW Natural Resources Access Regulator	Tim Baker	Senior Water Regulation Officer	<a href="mailto:nrar.enquiries@nrar.nsw.gov.au">nrar.enquiries@nrar.nsw.gov.au</a> <a href="mailto:tim.baker@dpie.nsw.gov.au">tim.baker@dpie.nsw.gov.au</a>	4 Parramatta Square 12 Darcy Street Parramatta NSW 2150
Department of Planning and Environment – Environment and Heritage Group	Robert Smith	Executive Director, Park Operations (Inland), National Parks and Wildlife Service	<a href="mailto:npws.northerninlandbranch@environment.nsw.gov.au">npws.northerninlandbranch@environment.nsw.gov.au</a> <a href="mailto:rog.nw@environment.nsw.gov.au">rog.nw@environment.nsw.gov.au</a>	4 Parramatta Square 12 Darcy Street Parramatta NSW 2150
WaterNSW	Annita Devine	Water Regulation Officer	<a href="mailto:enquiries@waternsw.com.au">enquiries@waternsw.com.au</a>	PO Box 890 3 Caroline Way Narrabri NSW 2390
Forestry Corporation of NSW	Jarrold Dashwood	Forest Occupancy Supervisor – Western Region	<a href="mailto:dubboadmin@fcnsw.com.au">dubboadmin@fcnsw.com.au</a> <a href="mailto:info@fcnsw.com.au">info@fcnsw.com.au</a>	PO Box 865 Suite 2, 1st Floor, 168-172 Brisbane Street Dubbo NSW 2830
Department of Regional NSW – Mining, Exploration and Geoscience	Christine Fawcett	Manager Environmental Operations	<a href="mailto:titles@regional.nsw.gov.au">titles@regional.nsw.gov.au</a> <a href="mailto:christine.fawcett@planning.nsw.gov.au">christine.fawcett@planning.nsw.gov.au</a>	PO Box 344 Hunter Region Mail Centre NSW 2310 516 High Street Maitland NSW 2320
Transport for NSW	Mark Ozinga	Principal Manager, Land Use Planning & Development – Freight, Strategy & Planning Division	<a href="mailto:mark.ozinga@transport.nsw.gov.au">mark.ozinga@transport.nsw.gov.au</a> <a href="mailto:development.west@transport.nsw.gov.au">development.west@transport.nsw.gov.au</a>	PO Box K659 Haymarket NSW 1240 18 Lee Street Chippendale NSW 2008
Narrabri Shire Council	Robert Williams	General Manager	<a href="mailto:council@narrabri.nsw.gov.au">council@narrabri.nsw.gov.au</a>	PO Box 261 46-48 Maitland Street Narrabri NSW 2390
Gunnedah Shire Council	Eric Groth	General Manager	<a href="mailto:council@infogunnedah.com.au">council@infogunnedah.com.au</a> <a href="mailto:ericgroth@infogunnedah.com.au">ericgroth@infogunnedah.com.au</a>	PO Box 63 63 Elgin Street Gunnedah NSW 2380
Warrumbungle Shire Council	Roger Bailey	General Manager	<a href="mailto:info@warrumbungle.nsw.gov.au">info@warrumbungle.nsw.gov.au</a> <a href="mailto:roger.bailey@warrumbungle.nsw.gov.au">roger.bailey@warrumbungle.nsw.gov.au</a>	PO Box 191 14-22 John Street Coonabarabran NSW 2357
Dams Safety NSW	Heather Middleton	Manager Mining Impacts	<a href="mailto:info@damsafety.nsw.gov.au">info@damsafety.nsw.gov.au</a>	4 Parramatta Square 12 Darcy Street Parramatta NSW 2150
NSW Rural Fire Service	David Boverman	Manager Development	<a href="mailto:info@fire.nsw.gov.au">info@fire.nsw.gov.au</a>	4 Murray Rose Avenue Sydney Olympic Park NSW 2127



Agencies/stakeholders which did not provide a written response				
Agency/ Stakeholder	Contact Name	Position Title	Email	Address
		Planning and Policy		
SafeWork NSW	Kane Scott	Acting Director WHS Regional	<a href="mailto:contact@safework.nsw.gov.au">contact@safework.nsw.gov.au</a>	Locked Bag 2906 Lisarow NSW 2252, 92-100 Donnison Street Gosford NSW 2250
North West Local Land Services	James Hutchinson -Smith	General Manager	<a href="mailto:admin.northwest@lils.nsw.gov.au">admin.northwest@lils.nsw.gov.au</a> <a href="mailto:james.hutchinsonsmith@lils.nsw.gov.au">james.hutchinsonsmith@lils.nsw.gov.au</a>	PO Box 466 101 Barwan Street Narrabri NSW 2390
Narrabri Gas Project Greenhouse Gas Emissions Advisory Group	Garry West	Independent Chair	<a href="mailto:garry.west@gbwconsulting.com.au">garry.west@gbwconsulting.com.au</a>	
Narrabri Gas Project Biodiversity Advisory Group	Garry West	Independent Chair	<a href="mailto:garry.west@gbwconsulting.com.au">garry.west@gbwconsulting.com.au</a>	
Narrabri Gas Project Aboriginal Cultural Heritage Group	Garry West	Independent Chair	<a href="mailto:garry.west@gbwconsulting.com.au">garry.west@gbwconsulting.com.au</a>	
Narrabri Gas Project Water Technical Advisory Group	Garry West	Independent Chair	<a href="mailto:garry.west@gbwconsulting.com.au">garry.west@gbwconsulting.com.au</a>	
Narrabri Gas Project Community Consultative Committee	Garry West	Independent Chair	<a href="mailto:garry.west@gbwconsulting.com.au">garry.west@gbwconsulting.com.au</a>	

### 3.8 Compliance Status Descriptors

The Auditors assessed compliance with each condition of the Development Consent in accordance with the following 'audit finding' compliance status descriptors, as required in Section 3.8 (Table 2) of the IPAR.

Status	Description
Compliant	The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.
Non-compliant	The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit.
Not triggered	A requirement has an activation or timing trigger that has not been met during the temporal scope of the audit being undertaken (may be a retrospective or future requirement), therefore an assessment of compliance is not relevant.

### 3.9 Observations

Section 3.8 of the IPAR notes that: "The auditor may make observations, including identifying any opportunities for improvement in relation to any compliance requirement or any other aspect of the project."

The Auditors have made observations within this audit report in accordance with Section 3.8 of the IPAR. The numbered observations included in the Independent Audit Table within Appendix A of this audit report are in addition to the compliance status descriptors in Section 3.8 of this audit report.

## 4 Audit Findings

### 4.1 Approvals and Documents Audited

The Auditors conducted this independent environmental audit as required by condition D9 of Development Consent SSD 6456 in accordance with the IPAR.

Development Consent SSD 6456 is the “consent” referred to in condition D9. The Auditors determined that the additional approval instruments that condition D9 required to be directly audited comprised:

- Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions
- Petroleum Exploration Licence 238 (PEL 238), Schedule 3 – Work Program
- Petroleum Assessment Lease 2 (PAL 2) – Environmental Management Conditions
- Petroleum Production Lease 3 (PPL 3) – Environmental Management Conditions
- Water Access Licence (WAL) No. 36546 – Water Licence Conditions
- Water Access Licence (WAL) No. 43553 – Water Licence Conditions
- Water Access Licence (WAL) No. 43548 – Water Licence Conditions
- Water Access Licence (WAL) No. 15819 – Water Licence Conditions
- Water Access Licence (WAL) No. 15847 – Water Licence Conditions

As part of this independent environmental audit, the Auditors reviewed the Strategies, Plans and Programs listed in Section 4.6 of this audit report.

The ‘Evidence Collected’ column for each condition of consent in the Independent Audit Table within Appendix A of this audit report identifies additional documents that were reviewed during this independent environment audit.

The Auditors have considered Section 3.2 of the IPAR, and investigated environmental issues which were raised by agencies during the audit consultation process.

The Auditors’ responses to these environmental issues are recorded in the ‘Agency/Stakeholders Consultation Comments and Auditors’ Response’ table within Appendix B of this audit report. Where relevant, the Auditors’ responses are also incorporated into the Audit Findings and Recommendations in the Independent Audit Table within Appendix A of this audit report.

### 4.2 Compliance Performance

The Summary of Compliance Performance in Table 1 below summarises Santos’s performance against the conditions of consent in Development Consent SSD 6456, PEL 238, PAL 2, PPL 3, and WAL Nos. 36546, 43458, 43533, 15819 and 15847, as assessed in this independent environmental audit. The Auditors identified that Santos was compliant with 131 out of 133 conditions which had been triggered as of August 2023.

**Table 1: Summary of Compliance Performance**

Condition and Audit Finding	Compliant	Non-compliant	Not triggered
<b>Development Consent SSD 6456 (as of 30 September 2020) Part A – Administrative Conditions (28 conditions)</b>	22	0	6
<b>Development Consent SSD 6456 (as of 30 September 2020) Part B – Specific Environmental Conditions (86 conditions)</b>	57	1	28
<b>Development Consent SSD 6456 (as of 30 September 2020) Part C – Additional Procedures (7 conditions)</b>	0	0	7
<b>Development Consent SSD 6456 (as of 30 September 2020) Part D – Environmental Management, Reporting and Auditing (13 conditions)</b>	7	1	5
<b>Petroleum Exploration Licence 238 Schedule 2 – Petroleum Exploration Licence Conditions (18 conditions)</b>	10	0	8
<b>Petroleum Exploration Licence 238 Schedule 3 – Work Program (2 conditions)</b>	1	0	1
<b>Petroleum Assessment Lease 2 (17 conditions)</b>	8	0	9
<b>Petroleum Production Lease 3 (19 conditions)</b>	8	0	11
<b>Water Access Licence No. 36546 (4 conditions)</b>	4	0	0
<b>Water Access Licence No. 43548 (4 conditions)</b>	3	0	1
<b>Water Access Licence No. 43553 (4 conditions)</b>	3	0	1
<b>Water Access Licence No. 15819 (4 conditions)</b>	4	0	0
<b>Water Access Licence No. 15847 (4 conditions)</b>	4	0	0
<b>Total (210 Conditions)</b>	131	2	77

#### 4.3 Summary of Agency Notices, Orders, Penalty Notices or Prosecutions

During the audit period, no agency notices, orders, penalty notices or prosecutions were received by Santos in relation to the Narrabri Gas Project:

#### 4.4 Non-compliances

Appendix A of this audit report contains an Independent Audit Table for the assessment of Santos's compliance against each condition of the Development Consent SSD 6456.

Section 4.2 of this audit report provides a summary of non-compliances. Table 2 below is extracted from Appendix A of this audit report, and shows only the 'non-compliant' audit findings and recommendations against the relevant conditions of consent.

Table 2: Non-compliances and Recommendations

Condition of Consent	Condition Requirement	Details of non-compliance	Recommendation	Unique ID for non-compliance
Condition B70 of SSD 6456	<p><b>Waste – Waste Management Plan</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare a Waste Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s;</li> <li>(b) be prepared in consultation with the EPA, Council, and the owner of any waste facilities or land on which waste is proposed to be disposed;</li> <li>(c) describe the measures to be implemented to ensure: <ul style="list-style-type: none"> <li>(i) Compliance with the waste operating conditions in this consent;</li> <li>(ii) Compliance with the <i>Protections of the Environment Operations (Waste) Regulation 2014</i>; and</li> <li>(iii) Reasonable and feasible waste minimisation and management measures are being deployed.</li> </ul> </li> <li>(d) be consistent with the outcomes of the Produced Salt Beneficial Re-Use and Disposal Study;</li> <li>(e) identify all waste streams generated by the development (including produced water, salt and drill mud/cuttings);</li> <li>(f) identify the fate of those streams (including identification of the specific receiving facilities which have agreed to accept those wastes);</li> <li>(g) describe the waste management system in detail, including a contingency strategy if beneficial reuse and/or disposal options become unavailable; and</li> </ul>	<p><b>Non-compliance No. 1</b> – The Waste Management Plan does not satisfy paragraphs (g) and (h)(ii) of condition B70 in that the Plan:</p> <ul style="list-style-type: none"> <li>• does not describe the waste management system in detail, including a contingency strategy if beneficial reuse and/or disposal options become unavailable (paragraph (g)); and</li> <li>• does not define what constitutes a waste-related incident or non-compliance and does not include a protocol for identifying and notifying the Department and relevant stakeholders of these events (paragraph (h)(ii)).</li> </ul>	<p><b>Recommendation No. 1</b> – Santos should review and update the Waste Management Plan to satisfy the requirements in paragraphs (g) and (h)(ii) of condition B70.</p>	<b>NC1</b>

Condition of Consent	Condition Requirement	Details of non-compliance	Recommendation	Unique ID for non-compliance
	<p>(h) include a monitoring program that:</p> <p>(i) evaluates and reports on:</p> <ul style="list-style-type: none"> <li>the effectiveness of the waste management system;</li> <li>ongoing classification of waste (including salt); and</li> <li>compliance against the waste operating conditions and the EPL; and</li> </ul> <p>(ii) defines what constitutes a waste-related incident or non-compliance and includes a protocol for identifying and notifying the Department and relevant stakeholders of these events.</p>			
Condition D13 of SSD 6456	<p><b>Access to Information</b></p> <p>From the commencement of Phase 1, until the completion of all rehabilitation required under this consent, the Applicant must:</p> <p>(a) make copies of the following information publicly available on its website:</p> <p>(i) the document/s listed in condition A2(c);</p> <p>(ii) current statutory approvals for the development;</p> <p>(iii) approved strategies, plans and programs;</p> <p>(iv) detailed plans for the Phases of the development;</p> <p>(v) minutes of CCC and Advisory Group meetings;</p> <p>(vi) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs</p>	<p><b>Non-compliance No. 2</b> – As of August 2023, Santos had not satisfied paragraphs (a)(ii), (a)(xii) and (b) of condition D13 in that:</p> <ul style="list-style-type: none"> <li>the Santos NGP Water Access Licences (WAL Nos. 36546, 43458, 43533, 15819 and 15847) were not publicly available on the Santos NGP website or Santos Water Portal (website) (paragraph (a)(ii)); and</li> <li>the Santos NGP Annual Reviews for 2021, 2022 and 2023 (i.e. the Santos letters dated 26 March 2021, 28 March 2022 and 13 March 2023 to the DPE) were not publicly available on the Santos NGP website (paragraph (a)(xii)); and</li> <li>the version of PPL 3 which was publicly available on the Santos NGP website was not up-to-date (i.e. the Santos NGP website as of August 2023 included an obsolete version of PPL 3) (paragraph (b)).</li> </ul>	<p><b>Recommendation No. 2</b> – Santos should make copies of:</p> <ul style="list-style-type: none"> <li>the Santos NGP Water Access Licences (WAL Nos. 36546, 43458, 43533, 15819 and 15847) publicly available on the Santos NGP website or Santos Water Portal (website); and</li> <li>the Santos NGP Annual Reviews for 2021, 2022 and 2023 publicly available on the Santos NGP website.</li> </ul> <p>No action is required in relation to the public availability of PPL 3 on the Santos NGP website, which Santos had updated as of 31 October 2023.</p>	<b>NC2</b>

Condition of Consent	Condition Requirement	Details of non-compliance	Recommendation	Unique ID for non-compliance
	<p>approved under the conditions of this consent;</p> <p>(vii) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;</p> <p>(viii) a summary of the current phase/s and progress of the development;</p> <p>(ix) contact details to enquire about the development or to make a complaint;</p> <p>(x) a complaint register, updated monthly;</p> <p>(xi) a record of all incidents and non-compliances;</p> <p>(xii) the Annual Reviews of the development;</p> <p>(xiii) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant's response to the recommendations in any audit report; and</p> <p>(xiv) any other matter required by the Planning Secretary; and</p> <p>(b) keep such information up to date.</p>			

#### 4.5 Previous Audit Non-compliances and Recommendations

There are no previous audit recommendations. This audit is the first independent environmental audit of the Narrabri Gas Project since the approval of Development Consent SSD 6456 on 30 September 2020.

#### 4.6 Environmental Management Plans, Sub-Plans and Compliance Documents

The Auditors sighted the following Environmental Management Plans (EMPs), sub-plans and compliance documents (as referred to in Section 4.2.3/6 of the IPAR) for the Narrabri Gas Project, which are required for Phase 1 of the Project under Development Consent SSD 6456:

- Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision 0, issued on 21 February 2022)
- Biodiversity Management Plan (Eco Logical Australia Pty Ltd / Onward Consulting Pty Ltd, Onward Document No. NGP-001P-0B PLN, Santos Doc ID: 0041-150-PLA-0009, Revision No. 0B, issued on 11 November 2022)
- Biodiversity Offset Strategy (Eco Logical Australia Pty Ltd, Project Number: 19NEW-13556, Status: Final, Version No. 0B, last saved on 11 November 2022) (Attachment 1 of the Biodiversity Management Plan)
- Environment Management Strategy (Doc ID: 0041-150-PLA-0003, Revision No. 0A, issued on 10 November 2022)
- Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)
- Field Development Protocol (Doc ID: 0041-150-PLA-0002, Revision No. 0C, issued on 18 November 2022)
- Fire Management Plan (Doc ID: 0041-150-PLA-0004, Revision No. 0E, issued on 15 November 2022)
- Historic Heritage Management Plan (Doc ID: 0041-150-PLA-0007, Revision 0B, issued 18 November 2022)
- Noise Management Plan (Doc ID: 0041-150-PLA-0008, Revision No. 0B, issued on 11 November 2022)
- Produced Salt Beneficial Reuse and Disposal Study (Doc ID: 0041-150-PLA-0006, Revision No. 0B, issued on 24 October 2022)
- Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision No. 0C, issued on 18 November 2022)
- Waste Management Plan (Doc ID: 0041-150-PLA-0005, Revision No. 0D, issued on 18 November 2022)
- Water Management Plan (Doc ID: 0041-150-PLA-0010, Revision No. 0D, issued on 11 November 2022)
- Erosion and Sediment Control Plan (Doc ID: 0041-150-PLA-0021, Revision No. 0B, issued on 11 November 2022)
- Site Water Balance (Doc ID: 0041-150-PLA-0017, Revision No. 0C, issued on 24 October 2022)
- Surface Water Management Plan (Doc ID: 0041-150-PLA-0016, Revision No. 0B, issued on 11 November 2022)
- Groundwater Water Management Plan (Doc ID: 0041-150-PLA-0015, Revision No. 0E, issued on 11 November 2022)
- Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022) including a Managed Release Protocol (Section 6) and Salt Management Plan (Section 7)
- Irrigation Management Plan (Doc ID: 0041-150-PLA-0020, Revision No. 0B, issued on 24 October 2022)
- Dust Suppression Protocol (Doc ID: 0041-150-PLA-0022, Revision No. 0B, issued on 24 October 2022)
- Produced Salt Beneficial Reuse and Disposal Study (Doc ID: 0041-150-PLA0006, Revision No. 0B, issued on 24 October 2022)
- Pollution Incident Response Management Plan (Doc ID: 0041-150-PLA-0019, Revision No. 0A, issued on 31 October 2022)
- Dam Safety Emergency Plan (Doc ID: 0041-150-PLA0014, Revision No. 0A, issued on 31 October 2022) (Attachment 1 of the Pollution Incident Response Management Plan).



The Auditors noted that the Air Quality and Greenhouse Gas Management Plan (AQGGMP) required under condition B23 of SSD 6456 has not been prepared as of August 2023. An AQGGMP is required prior to the commencement of Phase 2.

As much as reasonably practicable, the Auditors assessed the adequacy and implementation of each of these EMPs, sub-plans and compliance documents (i.e. the documents listed above) during this audit.

Relevant EMPs, sub-plans and compliance documents are referred to in the 'Evidence Collected' column against the applicable conditions of consent in the Independent Audit Table within Appendix A of this audit report.

Opportunities for improvement in relation to EMPs, sub-plans and compliance documents are identified in the Auditors' numbered observations against applicable conditions of consent in the Independent Audit Table within Appendix A of this audit report.

Overall, the Auditors consider that with relatively few exceptions (identified as non-compliances within this audit report), the EMPs, sub-plans and compliance documents reviewed at the time of this audit were adequate, and that as of August 2023, there was evidence that these Environmental Management Plans, sub-plans and compliance documents were implemented at the Santos Narrabri Gas Project.

Subject to the exceptions (i.e. non-compliances) identified in Table 3 above and in the Independent Audit Table within Appendix A of this audit report, the Lead Auditor considers that as of August 2023, Santos has effectively implemented the relevant EMPs, sub-plans and compliance documents to the extent that these documents were applicable to Phase 1 of the Narrabri Gas Project.

The Auditors consider that as of August 2023, with relatively few exceptions (identified as non-compliances in this audit report), Santos's Environmental Management Plans, sub-plans and compliance documents are adequate for the relevant purposes of Development Consent SSD 6456.

#### **4.7 Other Relevant Matters**

In conducting this audit, the Auditors have taken into account relevant regulatory requirements and legislation and the Auditors' knowledge of the Project. In particular, the Auditors have considered the following matters as being relevant to the environmental management and environmental performance of the Narrabri Gas Project during the audit period:

- As of August 2023, the NGP is in the early stages of implementing Phase 1 with only limited development activities having commenced. The Environmental Management Plans were approved in November/December 2022, and processes and programs are still being embedded within the Project.
- The Auditors noted that EMP implementation and compliance is dependent on one internal Santos environmental employee based out of Brisbane, supported by various specialist contractors. Despite the current effectiveness of this employee, the Auditors consider that reliance on one employee may not be adequate in the medium to long term due to the complexity of the Project.
- The Auditors noted the occurrence of internal incident reporting delays not consistent with the internal Santos incident reporting procedure during the audit period, identifying the potential requirement for additional training of NGP employees and contractors.

The Auditors consider that the relatively low number of non-compliances identified during this independent environmental audit indicates that during the audit period, Santos is generally implementing the required measures detailed in the approved Environmental Management Plans for the Project.

The DPE did not raise any matters to be considered during this audit other than as advised in its email of 7 August 2023 in response to the Lead Auditor's consultation letter of 2<sup>nd</sup> August 2023 (refer to Appendices B and C of this audit report).

## 4.8 Consultation Outcomes

Prior to the Auditors' on-site attendance at this independent environmental audit, the Lead Auditor consulted with the DPE and other agencies and stakeholders as identified in Section 3.7 of this audit report.

Appendix B of this audit report contains full details of consultation outcomes. Appendix B reproduces each response received in relation to the Lead Auditor's consultation letters (refer to Appendix C of this audit report). Appendix B also includes the Auditors' response to the relevant environmental issues raised by respondents, and cross-references relevant conditions in the Independent Audit Table within Appendix of this audit report.

The agency and stakeholder responses to the Lead Auditor's consultation letters are summarised below:

- the Department of Planning and Environment confirmed it had no specific focus areas for the audit and agreed with the proposed wording of the audit consultation letter and list of agency/stakeholder consultees (email of 6 August 2023);
- Heritage NSW referred to the relevant requirements (in sections 5.8 and 5.9) of the Aboriginal Cultural Heritage Management Plan required under Development Consent SSD 6456, without raising any specific issues regarding those requirements (emailed letter of 25 August 2023);
- the NSW Resources Regulator referred to the relevant environmental management conditions of the petroleum leases (PEL 238, PAL 2 and PPL 3) and requested observations where rehabilitation procedures, practices and outcomes represent best industry practice;
- the Department of Planning and Environment – Crown Lands, confirmed it had no comments in relation to the audit (emailed letter of 11 August 2023);
- Gilgandra Shire Council stated it had no comments in relation to this audit (emailed letter of 15 August 2023);
- NSW Health – Hunter New England Health District requested input into the scope of future audits (i.e. not relevant to this audit) (email of 8 August 2023);
- Fire and Rescue requested input into relevant requirements under conditions B72 and B73 at Phase 2 of the Project (i.e. not relevant to this audit) (email of 9 August 2023);
- the Siding Spring Observatory referred to the relevant requirements (in condition B65(a)-(d)) of Development Consent SSD 6456 and requested confirmation that: a) these requirements were being met; and b) the conclusion in Section K of the Response to Submissions (i.e. the flares would have a negligible effect on Observatory operations) is still the case (emailed letter of 21 August 2023);
- the Independent Chair (Garry West) of the NGP Community Consultative Committee (CCC) stated that he will forward the audit consultation letter to members of the CCC to ascertain if anyone wishes to respond to the invitation (email of 9 August 2023) – which resulted in responses from the Delegate and Alternate Delegate of People for the Plains as described below;
- the Delegate (Stuart Murray) for the People for the Plains on the NGP Community Consultative Committee accepted the Lead Auditor's invitation to provide input into the audit (email of 19 August 2023), then advised it was not possible in the time available to provide meaningful input into the audit (email of 22 August 2023). For context, the Auditors note that:
  - Stuart Murray received an invitation to provide input into the audit via Garry West, the Independent Chair of the NGP CCC; and
  - the audit consultation period for the agencies and stakeholders listed in Section 3.7 of this audit report was 14 days (i.e. from 7<sup>th</sup> to 21<sup>st</sup> August 2023);
- the Alternate Delegate (Anthony Pickard) for the People for the Plains representative on the NGP Community Consultative Committee provided the Auditors with gas analysis information from circa 1998-1999 (i.e. prior to this audit period), and requested the current gas analysis for these wells (email of 22 August 2023).

## **4.9 Complaints**

During the audit period, no formal complaints were received by Santos in relation to the NGP, either directly from any government regulators or agencies, or from any other stakeholder.

## **4.10 Notified Incidents**

During the audit period, no 'incident' (as defined in Development Consent SSD 6456) occurred at the NGP which required notification to the DPE or other regulator under condition D6 of Development Consent SSD 6456 or any other approval instrument for the NGP.

## **4.11 Notified Non-compliances**

During the audit period, no 'non-compliance' (as defined in Development Consent SSD 6456) occurred at the NGP which required notification to the DPE or other regulator under condition D7 of SSD 6456 or any other approval instrument for the NGP.

## **4.12 Actual versus Predicted Environmental Impacts**

In conjunction with the assessment of the adequacy and implementation of each of Santos's EMPs, sub-plans and compliance documents for the NGP, for Phase 1 activities during the audit period the Auditors assessed actual (i.e. operational) impacts versus predicted impacts of the NGP (i.e. as predicted in the February 2017 Environmental Impact Statement (EIS) documentation defined in the Development Consent SSD 6456). The Auditors did not identify any exceedance of predicted environmental impacts during this August/September 2023 audit.

To the extent possible (the entire Project boundary was not accessed at the time of this audit due to the extent of the petroleum lease and time limitations of this audit), the physical development boundary was compared with the approved boundary using both visual observation during the on-site audit and desktop review. Based on the on-site inspection and desktop review, the physical development boundary was considered to be consistent with (i.e. within) the approved Project boundary as defined in Development Consent SSD 6456.

## **4.13 Continual Environmental Management Improvement Opportunities**

It was evident during this independent environmental audit that Santos is generally implementing the required measures detailed in the approved Environmental Management Plans for the Narrabri Gas Project. The Santos NGP EMPs, sub-plans and compliance documents are generally of a high standard.

The Auditors identified that Santos does not have a consolidated Environmental Risk Register for the NGP, to identify and manage inherent and residual environmental risks. A potential improvement opportunity exists for Santos to develop, utilise and maintain a site-wide Environmental Risk Register to assist in prioritising and managing environmental risks.

The Auditors consider that if Santos rectifies the non-compliances and implements the relevant observations identified in this audit report, there is potential for further improvement in the environmental management and environmental performance of the Project.

## **4.14 Key Strengths**

The Auditors identified that during the audit period, the key strengths of the Santos Narrabri Gas Project included:

- the comprehensive project knowledge and environmental compliance commitment by the lead Santos environmental employee based out of the Santos Brisbane office; and
- the availability and implementation of the Santos Integrated Disturbance Planning (IDP) process to support the infrastructure siting and disturbance activities.

## **5 Recommendations**

### **5.1 Non-compliances**

For the non-compliances identified in this audit report, the Auditors have provided recommended actions (i.e. recommendations) for Santos to address those non-compliances. These recommendations are included in Table 3 within Section 4.4 of this audit report, and also in the Independent Audit Findings and Recommendations for the relevant consent conditions in the Independent Audit Table within Appendix A of this audit report.

### **5.2 Observations**

The Independent Audit Table within Appendix A of this audit report includes individually numbered observations. The Auditors have provided these observations as opportunities for improvement, for Santos's consideration to enable continual improvement to be demonstrated in statutory compliance, environmental management and environmental practices across the operation.

## **6 Santos Response to Audit Findings**

### **6.1 Non-compliances**

Santos personnel informed the Auditors that they will record Santos's responses to the identified 'non-compliant' audit findings and recommendations in a 'non-compliance audit findings action plan' document, having regard to the table example in Appendix D of the IPAR.

### **6.2 Observations**

Santos personnel informed the Auditors that they will record Santos's responses to the observations in this audit report in an 'audit observations response' document, having regard to the table example in Appendix D of the IPAR.

## 7 Limitations of Audit

The scope of this independent environmental audit included an assessment of the Applicant's compliance with the applicable conditions of Development Consent SSD 6456, PEL 238, PAL 2, PPL 3, and WAL Nos. 36546, 43458, 43533, 15819 and 15847, and an assessment of other relevant matters as described in Section 3.3 of the IPAR. The Auditors developed this audit scope according to the requirements in condition D9 of the Development Consent SSD 6456 (other than the "hazard audit" referred to in condition D9(d), which the Planning Secretary advised was not required) and Sections 3.2 and 3.3 of the IPAR.

The period covered by this independent environmental audit ('audit period') is from 30 September 2020 (the date of approval of SSD 6456) to 15 September 2023 (the last day of the Well Integrity Specialist interviews during this audit).

Unless otherwise indicated, in this audit report a reference to "Santos Narrabri", "Santos" and "Santos NSW (Eastern) Pty Ltd" is a reference to the Applicant (as defined in the Development Consent).

This independent environmental audit was conducted by interviews with Project personnel and direct verification of compliance against relevant conditions in the field, and 'sampling' a range of the documents, records and data associated with the Project. The nature of sampling during any form of compliance audit is such that it may not necessarily identify everything that Santos is, or is not, doing in relation to an individual consent condition.

This August/September 2023 audit and associated audit report was commissioned by Santos to comply with condition D9 of the Development Consent. No other warranty, expressed or implied, is made as to the professional advice indicated in this report. Note that this report may not contain sufficient information for the purposes of other parties or for other uses.

The content of this audit report applies only to matters which were available to and/or evident to the Auditors at the time of this independent environmental audit and within the scope of the audit. The status of environmental compliance can change in a limited time, which may be important if the report is used after any protracted delay.

The content of this audit report is based on the observations made during both office-based auditing and field inspections and the associated documents and records reviewed, that were provided by Santos during the audit. Field inspection locations were selected by the Auditors to ensure that a representative sample of field activities could be inspected/audited against relevant conditions. Field inspections were completed at various locations and infrastructure associated with the Santos Narrabri Gas Project and applicable to consent conditions.

Environmental compliance audits such as this independent environment audit are typically based on the selective testing of the information and data being examined. Non-compliances may exist and not be detected. An environmental compliance audit is not designed to identify and detect all instances of non-compliance against a consent condition, as the audit is not performed continuously throughout the audit period.

The audit findings, recommendations and observations expressed in this audit report have been formed and are based on the above limitations.

No analytical samples were collected during this audit to verify any former or current monitoring programs in place or data collected.

This audit report does not, and does not purport to, give legal advice on the actual or potential liabilities of the operation, or draw conclusions as to whether any particular circumstances constitute a breach of relevant legislation. Only qualified legal practitioners who are retained to provide legal advice can provide this advice.

## 8 Conclusion

This independent environmental audit of Santos's compliance with the conditions of Development Consent SSD 6456, PEL 238, PAL 2, PPL 3, and WAL Nos. 36546, 43458, 43533, 15819 and 15847, and an assessment of other relevant matters as described in Section 3.3 of the IPAR, was conducted in August/September 2023 by Integrated Environmental Systems Pty Ltd, with additional independent experts in groundwater and well integrity.

This audit report is the first independent environmental audit report completed at the Narrabri Gas Project since the grant of the Development Consent on 30 September 2020.

This August/September 2023 audit was conducted in accordance with the NSW Government's *Independent Audit Post Approval Requirements*, issued in May 2020 (IPAR). The overall findings of this audit are as follows:

- A total of 210 conditions across Development Consent SSD 6456, PEL 238, PAL 2, PPL 3, and WAL Nos. 36546, 43458, 43533, 15819 and 15847 were audited.
- As recorded in this audit report, this audit identified 131 'compliant' findings, 2 'non-compliant' findings (and a corresponding number of recommendations), and 77 'not triggered' findings.
- Santos was compliant with 131 out of the 133 applicable conditions (i.e. all conditions except those which were 'not triggered').

This audit report includes 89 observations. Observations are provided for Santos's consideration as opportunities for improvement, enabling continual improvement to be demonstrated in statutory compliance, risk reduction, and environmental management, practices and performance across the Project.

No major or systemic (i.e. widespread) environmental issues were identified during this August/September 2023 audit. The Auditors consider that the relatively low number of non-compliances identified during this independent environmental audit indicates that during the audit period, Santos is generally implementing the required measures detailed in the approved Environmental Management Plans for the Narrabri Gas Project.



## **Appendix A:**

### **Independent Audit Table**

The Independent Audit Table which commences on the next page, provides detailed information regarding the findings identified in this independent environmental audit against the conditions of Development Consent SSD 6456, PEL 238, PAL 2, PPL 3, and WAL Nos. 36546, 43458, 43533, 15819 and 15847. Observations are provided for Santos's consideration as opportunities for improvement, enabling continual improvement to be demonstrated in statutory compliance, risk reduction, and environmental management, practices and performance across the Project.

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition A1	<p><b>Obligation to Minimise Harm to the Environment</b></p> <p>In meeting the conditions of this consent, the Applicant must implement all reasonable and feasible measures to prevent and, if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction, operation or rehabilitation of the development.</p>	<ul style="list-style-type: none"> <li>Documents listed against relevant conditions within this Appendix A</li> <li>Field inspection photos in Appendix F</li> </ul>	<p>Subject to the 'non-compliant' audit findings identified in this audit report (none of which were major or systemic), there was evidence during this August/September 2023 audit that Santos is carrying out the Narrabri Gas Project (NGP) generally in accordance with the applicable conditions of Development Consent SSD 6456.</p> <p>Santos was able to demonstrate the development, implementation and use of functional and effective environmental planning processes, to ensure that environmental risk and material harm is minimised and effectively controlled across the NGP.</p> <p>In relation to Phase 1 of the NGP, this audit did not identify any evidence of material harm to the environment, resulting from project development work completed by Santos to date.</p> <p>The Auditors consider that Santos is carrying out Phase 1 of the NGP in a manner that manages the known risks to the environment from the infrastructure and activities conducted to date. During field inspections, no environmental harm was observed beyond the work areas where Project activities are authorised.</p> <p><u>Agency/stakeholder consultation comments</u></p> <p>In conducting this audit, the Auditors have considered comments received from agencies and stakeholders during the audit consultation process (refer to Appendices B and C of this audit report) as summarised in Section 4.8 of this audit report.</p> <p>To the extent that agency/stakeholder comments are relevant to this independent environmental audit and the audit period, the Auditors have referred to those comments in the audit findings against relevant conditions in this audit report.</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition A2	<p><b>Terms of Consent</b></p> <p>The applicant must carry out the development:</p> <ul style="list-style-type: none"> <li>(a) in compliance with the conditions of this consent;</li> <li>(b) in accordance with all written directions of the Planning Secretary; and</li> <li>(c) generally, in accordance with the EIS.</li> </ul> <p>Note: The general layout of the development is shown in Appendix 2.</p>	<ul style="list-style-type: none"> <li>• NGP Environmental Impact Statement (EIS) (2017)</li> <li>• Field inspection photos in Appendix F</li> </ul>	<p>Subject to the 'non-compliant' audit findings identified in this audit report, during the audit Santos was able to demonstrate that it was carrying out Phase 1 of the development:</p> <ul style="list-style-type: none"> <li>• in compliance with the conditions of Development Consent SSD 6456;</li> <li>• in accordance with the written directions of the Planning Secretary applicable to Phase 1; and</li> <li>• in general compliance with commitments made in approved NGP Environmental Management Plans and the February 2017 Project EIS.</li> </ul> <p>During this audit, the Auditors sighted requested documents, records and data relating to the Development Consent conditions that were applicable in August/September 2023. The Auditors conducted field inspections of the relevant petroleum infrastructure, locations and activities associated with Phase 1 of the development.</p> <p>The Auditors consider that the actual environmental impacts of the NGP to date have been controlled by Santos in accordance with the general commitments made in the Phase 1 Environmental Management Plans and were generally consistent with the predicted impacts as described in the February 2017 Project EIS.</p>	<b>Compliant</b>	
Condition A3	<p><b>Terms of Consent</b></p> <p>The Applicant must comply with any written directions of the Planning Secretary on:</p> <ul style="list-style-type: none"> <li>(a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and</li> </ul>	<ul style="list-style-type: none"> <li>• Documents listed against relevant conditions within this Appendix A</li> </ul>	<p>As required by Development Consent SSD 6456, Santos's Environmental Management Plans (and associated sub-plans) for Phase 1 of the development were: a) prepared in consultation with relevant regulatory agencies and Advisory Groups; and b) approved by the Planning Secretary in November and December 2022.</p> <p>As audited on a representative sampling approach, relevant sections of this audit report describe how Santos is complying with relevant approval</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(b) the implementation of any actions or measures contained in any such document.		<p>conditions, commitments and other regulatory obligations applicable to Phase 1 of the development, as directed by the Planning Secretary.</p> <p>This audit report also describes how Santos is implementing relevant Phase 1 actions and measures that were: a) requested in writing by the Planning Secretary; and b) contained in relevant documents issued by Santos for Phase 1 of the development.</p>		
Condition A4	<b>Terms of Consent</b> The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency with the documents listed in condition A2(c). In the event of any inconsistency between the document/s listed in condition A2(c), the most recent document prevails.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>It was stated that during the audit period, there was no known instance of an inconsistency between:</p> <ul style="list-style-type: none"> <li>the conditions of this consent and directions of the Planning Secretary and the documents listed in condition A2(c); or</li> <li>any of the documents listed in condition A2(c).</li> </ul>	<b>Compliant</b>	
Condition A5	<b>Staged Development</b> The Applicant may only undertake the development in the following stages: <ul style="list-style-type: none"> <li>(a) Phase 1, comprising ongoing exploration and appraisal activities;</li> <li>(b) Phase 2, comprising construction activities for production wells and related infrastructure;</li> <li>(c) Phase 3, comprising gas production and operation; and</li> <li>(d) Phase 4, comprising gas well and infrastructure decommissioning, rehabilitation and mine closure.</li> </ul>	<ul style="list-style-type: none"> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> </ul>	<p>Phase 1 of the NGP commenced on 7 February 2023. Phases 2, 3 and 4 are not approved and have not commenced.</p> <p>The approved Field Development Plan (Doc ID: 0041-150-PLA-0023) describes the Phase 1 activities.</p>	<b>Compliant</b>	
Condition A6	<b>Staged Development</b> Condition A5 does not prevent the Applicant from carrying out the development of phases	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Phase 1 of the NGP commenced on 7 February 2023. Phases 2, 3 and 4 are not approved and have not commenced.	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	concurrently, subject to the other conditions of this consent.		It was stated that Phase 2 approval and development, is subject to a Final Investment Decision (FID) by Santos and other approvals required by this Development Consent.		
Condition A7	<b>Notification of Commencement, Completion or Suspension of Phases</b>  At least two weeks prior to commencement or completion of each Phase of the development, the Applicant must notify the Department of the relevant date via the Major Project Portal.	<ul style="list-style-type: none"> <li>Letter dated 4 November 2022 from Santos Development Manager NSW/NT to DPE (via the Major Project Portal) providing two weeks notification prior to the commencement of Phase 1 as required by this condition of consent</li> <li>Screenshot of the Major Project Portal for SSD 6465-PA-50 confirming submission of the commencement letter (the Auditors note that the NSW Major Project Portal does not provide details on the actual document submission date)</li> <li>Email dated 8 February 2023 from Santos Environmental Approvals Lead to DPE (Stephen O'Donoghue) confirming the actual commencement date of the NGP</li> </ul>	On 4 November 2022, Santos issued a letter via the Major Project Portal to the DPE (Stephen O'Donoghue as nominee for the Planning Secretary) providing the required two weeks prior notification of the commencement of Phase 1 activities scheduled for 21 November 2022.  The planned commencement of these activities was subject to the completion of remaining approvals.  Phase 1 commenced on 7 February 2023 after Santos secured the required additional approvals. The Auditors sighted an email dated 8 February 2023 from Santos (██████████), Environmental Approvals Lead to the DPE (Stephen O'Donoghue) confirming that activities had commenced with the mobilisation of equipment for the purposes of drilling shallow groundwater monitoring bores. No further correspondence was received from the DPE.	<b>Compliant</b>	
Condition A8	<b>Notification of Commencement, Completion or Suspension of Phases</b>  If petroleum mining operations are suspended during Phase 1 to Phase 3, the Applicant must	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Santos commenced Phase 1 of the development on 7 February 2023.	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	notify the Department immediately via the Major Projects Portal of the suspension, and then again prior to the recommencement of operations.		<p>It was stated that since the commencement of Phase 1, NGP operations have not been suspended by either:</p> <ul style="list-style-type: none"> <li>Santos making an internal business decision to suspend the NGP; or</li> <li>a government/regulator directive.</li> </ul> <p>The Auditors and Santos consider that this condition has not been triggered as of August 2023.</p>		
Condition A9	<p><b>Phased Commencement</b></p> <p>The Applicant shall not commence:</p> <p>(a) Phase 2 until a planning approval is granted for a transmission pipeline to deliver gas from the development to the domestic gas network; and</p> <p>(b) Phase 3 until a transmission pipeline to deliver gas from the development to the domestic gas network commissioned, to the satisfaction of the Planning Secretary.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Narrabri Lateral Pipeline (SSI-53307723) Projects Fact Sheet (July 2023)</li> </ul>	<p>The Auditors and Santos consider that this condition has not been triggered as of August 2023.</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) The Narrabri Lateral Pipeline (SSI-53307723) status on the NSW Major Projects Portal is listed as “Prepare EIS”. The Auditors sighted the Project’s Fact Sheet (July 2023) that provides an update on the SSI assessment process.</p> <p>It was stated that the assessment and determination of the transmission pipeline project could occur during 2024. As of August 2023, the commencement timeframe for Phase 2 is reliant on the outcomes of the Narrabri Lateral Pipeline (SSI-53307723) approval and other Santos business decisions.</p> <p>(b) Phase 3 – The commencement timeframe is also reliant on the outcomes of the Narrabri Lateral Pipeline (SSI-53307723) approval and other Santos business decisions.</p>	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition A10	<b>Phased Commencement</b> Condition A9 does not prevent gas from the development being sent to the Wilga Park Power Station or any local industry.	<ul style="list-style-type: none"> <li>Appendix F – Photo 1 Wilga Park Power Station</li> </ul>	<p>As of August 2023, Coal Seam Gas from the NGP is only supplied to the Wilga Park Power Station for beneficial reuse from existing operating wells.</p> <p>The power station, gas wells and gas gathering system were approved by the Narrabri Shire Council in November 2002 (DA 76/2003). Approval to expand the power station capacity and gas field gathering systems and infrastructure was granted in December 2008 (MP 07_0023) and has been modified 7 times since. Santos acquired the Wilga Park Power Station project (see Photo 1) from Eastern Star Gas Limited in 2011.</p> <p>It was stated that the Wilga Park Power Station supplies approximately 17-18 MW/day of power to the local electricity grid. The gas from these operating wells is not supplied to any other user.</p>	<b>Compliant</b>	
Condition A11	<b>Limits of Consent – No consent granted for workers accommodation, power generation facility or flaring infrastructure (other than for non-routine safety flaring)</b> Consent is not granted or refused in respect of: <ul style="list-style-type: none"> <li>(a) the Westport workers accommodation facility;</li> <li>(b) the Leewood power generation facility; and</li> <li>(c) flaring infrastructure at pilot wells or production wells.</li> </ul>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> </ul>	<p>As of August 2023, it was stated that Santos has not sought any additional consents relating to the activities identified in the paragraphs of this condition on the basis that:</p> <ul style="list-style-type: none"> <li>There is no current requirement for the Westport worker's accommodation facility for Phase 1 of the project. This facility currently does not exist.</li> </ul> <p>It was stated that the Westport worker's accommodation facility may be considered for later stages of the NGP (as and if needed).</p> <ul style="list-style-type: none"> <li>The Leewood power generation facility is proposed but has not been developed. The development of this facility would be subject to future Financial Investment Decisions (FIDs) by Santos.</li> <li>No new flares were installed during the audit period. No flare-related infrastructure is planned, consistent with the Field</li> </ul>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			Development Plan (Doc ID: 0041-150-PLA-0023).		
Condition A12	<b>Limits of Consent – Petroleum mining operations</b> Petroleum mining operations may be carried out in the project area until 31 December 2045. <b>Note:</b> Under this consent, the Applicant is required to decommission and rehabilitate the project area and carry out other requirements in relation to petroleum mining operations. Consequently, this consent will continue to apply in all respects other than to permit the carrying out of petroleum mining operations until the rehabilitation of the project area and other requirements have been carried out to the required standard.	<ul style="list-style-type: none"> <li>Environmental Management Strategy (Doc ID: 0041-150-PLA-0003, Revision No. 0A, issued on 10 November 2022)</li> </ul>	This limit of consent is acknowledged in Section 1.1.2 of the Santos NGP Environmental Management Strategy, which states: "Petroleum mining operations may be carried out in the Project area until 31 December 2045, in accordance with consent condition A12."	<b>Compliant</b>	
Condition A13	<b>Limits of Consent – Gas Production</b> During Phase 2, the Applicant may develop a maximum of 850 gas production wells in the project area, on a maximum of 425 well pads, including pilot wells developed as part of Phase 1 (but excluding any wells developed prior to this consent).	<ul style="list-style-type: none"> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> </ul>	The Auditors and Santos consider that this condition has not been triggered as of August 2023, as Phase 2 has not commenced (see condition A7).  As of August 2023, only two new well pads (one constructed and one commencing construction) have been developed since the commencement of Phase 1. These well pads will form part of the approved maximum of 425 well pads in Phase 2.  As of August 2023, and for the audit period, no wells have been constructed. All existing wells were constructed prior to the approval of Development Consent SSD 6456.  Phase 1 permits Santos to construct and operate up to 25 well pads and up to 25 pilot wells. The Auditors sighted the Field Development Plan (FDP) (Doc ID: 0041-150-PLA-0023) which details the planned activities to construct 12 well pads and 6 pilot wells (FDP, section 5).	<b>Not triggered</b>	
Condition A14	<b>Limits of Consent – Gas Production</b> The Applicant may produce a maximum of 200 terajoules of gas per day from wells	<ul style="list-style-type: none"> <li>Daily Toolbox reports: 22 August 2023,</li> </ul>	As of August 2023, the current daily gas production for the NGP averages approximately 4 TJ per day, significantly less than 200 TJ per day.	<b>Compliant</b>	



Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	constructed prior to the date of this consent and wells developed as part of Phase 1.	<p>23 August 2023 and 24 August 2023</p> <ul style="list-style-type: none"> <li>Narrabri Load (2022-2023) inc transport diesel.xls worksheet used for EPL 20350 Annual Return reporting</li> </ul>	<p>The auditors sighted daily toolbox reports, reporting gas production of 3.5 TJ for 22 August 2023, 4.0 TJ for 23 August 2023 and 4.1 TJ for 24 August 2023.</p> <p>The Auditors sighted the internal EPL 20350 (for PAL 2 and PEL 238) calculation worksheet - <i>Narrabri Load (2022-2023) inc transport diesel.xls</i>, which recorded the total gas produced for the reporting period 1 May 2022 to 30 April 2023 at 1.32 PJ/annum (i.e., 1320 TJ/ annum). This is equivalent to 3.62 TJ/day or 1.8% of the maximum allowable daily production under this condition of consent.</p> <p>It was stated that Production Engineers monitor real-time extraction of produced water and gas. Monitoring data exists for each well at the NGP and is accessible from the Brisbane central control room and field operators.</p>		
Condition A15	<p><b>Limits of Consent – Gas Production</b></p> <p>The Applicant may extract up to a maximum of 37.5 gigalitres of produced water from the project area over the life of the development subject to:</p> <p>(a) commencing at Phase 3, 10 megalitres of produced water from the project area per day; and</p> <p>(b) commencing at Phase 3, a cumulative maximum of:</p> <p>(i) 7.5 gigalitres of produced water from the project area by the end of Year 3;</p> <p>(ii) 13.5 gigalitres of produced water from the project area by the end of Year 6;</p> <p>(iii) 19 gigalitres of produced water from the project area by the end of Year 10;</p>	<ul style="list-style-type: none"> <li>Spreadsheet – Water Production Data for Narrabri from July 2022</li> <li>Screen Shot of Spotfire Produced water database Showing produced water daily actuals for the period 15 April 2023 to 26 May 2023</li> <li>Site Water Balance (Doc ID: 0041-150-PLA-0017, Revision No. 0C, issued on 24 October 2022)</li> <li>Water Management Plan (Doc ID: 0041-150-PLA-0010, Revision No. 0D,</li> </ul>	<p>As of August 2023, Santos has commenced only Phase 1 of the NGP (see condition A7). Phases 2 and 3 have not been approved and have not commenced.</p> <p>Santos has secured the required Water Access Licences (WAL Nos. 36546, 43548 and 43553) as referenced in Section 4.1.3 and Table 4.2 of the Site Water Balance – Phase 1 (Doc ID: 0041-150-PLA-0017) for the Gunnedah-Oxley Basin MDB Porous Rock Water Source. These WALs provide a total annual allocation entitlement of 3650 ML.</p> <p>The Auditors noted that WAL Nos. 15819 and 15847 are for extraction from a different groundwater source (Southern Recharge Groundwater Source) and are each limited to 5 ML annually.</p> <p>This allocation entitlement allows for an unadjusted extraction volume of 79.9 GL over the approved</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(iv) 26 gigalitres of produced water from the project area by the end of Year 15; (v) 32 gigalitres of produced water from the project area by the end of Year 20; and (vi) 37.5 gigalitres of produced water from the project area by the end of Year 25.	issued on 11 November 2022) <ul style="list-style-type: none"> <li>Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> <li>Irrigation Management Plan (Doc ID: 0041-150-PLA-0020, Revision No. 0B, issued on 24 October 2022)</li> <li>Groundwater Modelling Plan (GModP) (Doc ID: 0041-150-PLA-0012) as Attachment 3 of the Groundwater Water Management Plan (Doc ID: 0041-150-PLA-0015, Revision No. 0E, issued on 11 November 2022)</li> </ul>	<p>project term to 31 December 2045. This exceeds the 37.5 GL maximum volume authorised under this condition of consent. The Water Management Plan, Produced Water Management and Irrigation Management Plan consider the management requirements and beneficial reuse opportunities for this produced water.</p> <p>The Auditors sighted a screenshot of the “Spotfire” produced water monitoring database and a spreadsheet titled “Water Production Data for Narrabri from July 2022” providing water volume data for all active producing pilot wells. The Auditors calculated the extracted volume of produced water commencement of Phase 1 (7 February 2023) to 31 August 2023 to be 47,975 m<sup>3</sup> (0.048 GL) from the Gunnedah-Oxley Basin MDB Porous Rock Water Source.</p> <p>This condition does not apply to groundwater extraction from the existing pilot wells prior to the commencement of Phase 1.</p> <p>Section 6 of the Groundwater Modelling Plan (GModP) (Doc ID: 0041-150-PLA-0012), details the requirement to update the groundwater model for Phases 2 and 3. Future updates of the groundwater model will inform updated produced water extraction volume forecasts.</p>		
Condition A16	<b>Limits of Consent – Gas Well Integrity</b> The Applicant must design, construct, operate, maintain and decommission all: (a) gas wells in accordance with the Code of Practice for Coal Seam Gas Well Integrity (2012, as may be updated or amended); and (b) gas and water gathering lines in accordance with relevant standards including the <i>Code of Practice for Upstream Polyethylene Gathering Networks – CSG Industry</i> (2019) and <i>AS/NZS</i>	<ul style="list-style-type: none"> <li>Audit interview (██████) – Santos Senior Staff Well Integrity Engineer)</li> <li>Code of Practice Construction, Operation and Decommissioning of Petroleum Wells (May 2023)</li> </ul>	As of August 2023 and for the audit period, Santos did not drill any new gas pilot or production wells. There are currently 52 well heads within the NGP SSD 6456 approval boundary of varying operational status; e.g. 12 are producing, and 40 are either suspended or shut in. All gas wells were installed by Eastern Star Gas, prior to Santos acquiring Eastern Star Gas in 2011. Phase 1 development of the NGP will occur in accordance with the approved Field Development Plan (Doc ID: 0041-150-PLA-0023).	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p><i>4130:2018 Polyethylene (PE) Pipes for Pressure Application</i>, unless otherwise agreed for individual gas wells or gathering lines by the Planning Secretary, in consultation with the EPA, Resources Regulator and MEG.</p> <p>Any application to vary the requirements of the code for individual gas wells or gathering lines must be accompanied by a detailed justification of the proposed variation, demonstrating that the variation to the code would not compromise the Applicant's ability to comply with the conditions of this consent and any relevant EPL or PPL.</p> <p><b>Note:</b> The Code of Practice for Coal Seam Gas Well Integrity and the Petroleum Onshore Act 1991 provide a number of reporting and notification requirements for gas wells and related petroleum mining operations, including location surveys, annual reporting, operational reporting (for seismic programs, pilot wells and production wells), drilling notifications, well completion reporting, decommissioning (plug and abandonment) reporting, cementing reporting, and incident reporting.</p>	<ul style="list-style-type: none"> <li>Appendix H – Independent Well Integrity Audit report</li> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> <li>Gas Leakage Survey completed in May 2023 by Heath Pipeline Services P/L</li> <li>EQD OEC Results Report – Details on Demand. CSV</li> <li>Appendix F – Photo 2 OEC Well Head Inspection Checklist</li> </ul>	<p>The Auditors note that the <i>Code of Practice for construction, operation and decommissioning of petroleum wells</i> (May 2023), superseded the <i>Code of Practice for Coal Seam Gas Well Integrity</i> (2012) during the audit period, and as of 5 September 2023, the conditions of PEL 238, PAL 2 and PPL 3 were amended to include reference to this Code and omit conditions relating to the superseded 2012 Code.</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) For this audit, an Independent Well Integrity expert (Gordon Duncan) reviewed Santos's current management systems and maintenance practices and proposed well abandonment designs against the current <i>Code of Practice for construction, operation and decommissioning of petroleum wells</i> (May 2023) – see Well Integrity Specialist Report in Appendix H of this audit report.</p> <p>Based on interviews with Santos Well Integrity engineers and technical document reviews, the Independent Well Integrity expert has assessed Santos to be compliant with the <i>Code of Practice for construction, operation and decommissioning of petroleum wells</i> (May 2023), which incorporates requirements of the superseded 2012 Code.</p> <p><b>Observation No. 1</b> – As part of ongoing and improved well integrity processes, Santos should consider the expert's comments in the Independent Well Integrity Audit Report (see Appendix H of this audit report) in relation to elements of the <i>Code of Practice for construction, operation and decommissioning of petroleum wells</i> (May 2023).</p> <p>It was stated that the EPA has raised concerns about actual gas leaks from specific wells. Santos conducts annual leak-detection</p>		

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>surveys (first completed in May 2023) to address these concerns. Additionally, Santos completes monthly Operator Essential Care (OEC) inspections of all gas well heads, including monitoring gas levels with mobile gas detectors (see Photo 2). Detection of any leaks would result in a work order being raised for corrective actions.</p> <p>As of August 2023 and for the audit period, there have been no gas leaks detected that would constitute an incident or non-compliance and require reporting to the EPA.</p> <p>It was stated that the EPA also conducts routine independent gas detection monitoring of the Well Heads as part of ongoing compliance monitoring and regulation of the NGP.</p> <p>(b) It was stated that all gas and watering lines at the NGP existed prior to the approval of Development Consent SSD 6456. It was stated that these lines are inspected and maintained in accordance with the Operator Essential Care (OEC) inspection program and the SAP work order preventative maintenance program.</p> <p><b>Observation No. 2</b> – Prior to the commencement of Phase 2, Santos could conduct an assessment of compliance of all gas and watering lines against the requirements of the <i>Code of Practice for Upstream Polyethylene Gathering Networks – CSG Industry</i> (2019) and <i>AS/NZS 4130:2018 Polyethylene (PE) Pipes for Pressure Application</i>.</p>		

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition A17	<b>Limits of Consent – Hydraulic Fracturing</b> The Applicant must not undertake any hydraulic fracturing of coal seams in the project area at any time.	<ul style="list-style-type: none"> <li>Narrabri Gas Project SSD-6456 DPIE Assessment Report, issued June 2020</li> </ul>	<p>It was stated that the coal seams are sufficiently permeable to release coal seam gas and hydraulic fracturing (fracking) is not required to stimulate gas production. The NGP SSD 6456 DPIE Assessment Report (paragraph 38) confirms this position.</p> <p>It was stated that future drilling activities will require High-Risk Activities (HRA) notification to the Resources Regulator. This notification would include the drilling methodology and confirm that hydraulic fracturing will not be used.</p>	<b>Compliant</b>	
Condition A18	<b>Limits of Consent – Hours of Operation</b> The Applicant may undertake approved petroleum mining operations 24 hours a day, 7 days a week. <b>Note:</b> Construction and operational activities are limited by the noise criteria in Part B.	<ul style="list-style-type: none"> <li>Alternative Mechanism Agreement dated 18 November 2022 (name withheld due to confidentiality requirements)</li> <li>Alternative Mechanism Agreement dated 10 November 2022 (name withheld due to confidentiality requirements)</li> </ul>	<p>Since the commencement of Phase 1 of the Project on 7 February 2023 and as of August 2023, Santos has been installing groundwater monitoring bores. These drilling rigs operate 24 hours a day when on shift.</p> <p>The Auditors sighted two Alternative Mechanism Agreements dated 18 November 2022 and 10 November 2022 respectively that had been secured with sensitive receivers in accordance with conditions B11 and B18. These agreements allow Santos to conduct activities that may generate higher noise and dust levels than the relevant criteria at the nominated residence or land.</p> <p>As of August 2023 and for the audit period, it was stated that there have been no exceedances of the noise criteria in Tables 2 and 3 of SSD 6456.</p> <p>The Auditors sighted the NGP complaints register and confirmed no noise-related complaints had been received for the audit period.</p>	<b>Compliant</b>	
Condition A19	<b>Surrender of Existing Development Consents</b> Within 6 months of commencement of Phase 1, unless the Planning Secretary agrees otherwise, the Applicant must surrender the development consents for the Bibblewindi Gas Exploration Pilot	<ul style="list-style-type: none"> <li>Letter dated 1 August 2023 from DPE (Stephen O'Donoghue) confirming the surrender of the Dewhurst Gas Exploration</li> </ul>	<p>Notices to surrender Bibblewindi Gas Exploration Pilot Expansion (SSD-5934) and Dewhurst Gas Exploration Pilot Expansion (SSD-6038) were submitted by Santos to the DPE on 19 July 2023.</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>Expansion (SSD-5934) and Dewhurst Gas Exploration Pilot Expansion (SSD-6038) in accordance with the EP&amp;A Regulation.</p> <p><b>Note:</b> This requirement does not include the surrender of construction and occupation certificates for existing and proposed building works under the former Part 4A of the EP&amp;A Act or Part 6 of the EP&amp;A Act as applies from 1 September 2018. The surrender should not be understood as implying that works legally constructed under a valid consent or approval can no longer be legally maintained or used.</p>	<p>Pilot Expansion (SSD-6038) consent</p> <ul style="list-style-type: none"> <li>Letter dated 1 August 2023 from DPE (Stephen O'Donoghue) confirming the surrender of the Bibblewindi Gas Exploration Pilot Expansion (SSD-5934) consent</li> </ul>	<p>These notices were made within 6 months of Phase 1 commencing on the 7 February 2023.</p> <p>The auditors sighted two letters dated 1 August 2023 from the DPE (Stephen O'Donoghue) confirming the receipt of the notices on 19 July 2023 to surrender the consents for Dewhurst Gas Exploration Pilot Expansion (SSD-6038) and Bibblewindi Gas Exploration Pilot Expansion (SSD-5934).</p> <p>The Auditors confirmed that the requirements of this condition have been satisfied.</p>		
Condition A20	<p><b>Surrender of Existing Development Consents</b></p> <p>Upon the commencement of development under this consent, and before the surrender of the development consents required under condition A18, the conditions of this consent prevail to the extent of any inconsistency with the conditions of those consents.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Santos acknowledges this Development Consent condition.	<b>Compliant</b>	
Condition A21	<p><b>Planning Agreement</b></p> <p>Within 6 months of commencement of development under this consent, the Applicant must enter into a PA with the Council in accordance with:</p> <p>(a) Division 7.1 of Part 7 of the EP&amp;A Act; and</p> <p>(b) the terms of the offer in Appendix 8.</p>	<ul style="list-style-type: none"> <li>Narrabri Gas Project Planning Agreement Deed jointly executed by Narrabri Shire Council and Santos NSW (Eastern) Pty Ltd (undated)</li> <li>Email dated 27 June 2023 from [REDACTED] (Development Manager NSW) to [REDACTED] (President Upstream Gas and Liquids) and [REDACTED] (VP Upstream QLD/Onshore) confirming execution of the Planning Agreement</li> </ul>	<p>The Auditors sighted the Narrabri Gas Project Planning Agreement Deed jointly executed by Narrabri Shire Council and Santos NSW (Eastern) Pty Ltd (undated).</p> <p>The Auditors sighted an email dated 27 June 2023 from [REDACTED] (Development Manager NSW) to [REDACTED] (President Upstream Gas and Liquids) and [REDACTED] (VP Upstream QLD/Onshore) confirming the execution of the Planning Agreement.</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) The Planning Agreement Deed was in accordance with Section 7.4 (i.e. the "Planning agreements" provision within Division 7.1 of Part 7) of the Environmental Planning and Assessment Act 1979.</p>	<b>Compliant</b>	



Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>Narrabri Shire Council Tax Invoice (Inv No. 20221477) dated 21 December 2022 for the first \$2 million instalment</li> </ul>	<p><b>Observation No. 3</b> – The Planning Agreement Deed with the Narrabri Shire Council is not dated. Santos should ensure the Planning Agreement is correctly dated for future reference.</p> <p>(b) The auditors confirmed that Schedule 1 of the executed Planning Agreement Deed is consistent with the SSD 6456 Appendix 8 and sighted the Narrabri Shire Council Tax Invoice (Inv No. 20221477) dated 21 December 2022 for the first \$2 million instalment (out of a \$10 million contribution). It was stated that the Tax Invoice was paid prior to the 4 January 2023 due date, however, no evidence was provided.</p> <p>Future contribution payments are subject to Santos making the Final Investment Decision (FID) to formally approve and execute the entire Project, inclusive of Phases 2 and 3. As of August 2023, this FID has not been made.</p> <p>The Auditors confirmed that the Planning Agreement commenced within 6 months of the commencement of Phase 1 development on 7 February 2023.</p>		
Condition A22	<p><b>Community Consultative Committee</b></p> <p>The Applicant must establish and operate a CCC for the development in accordance with the Department's <i>Community Consultative Committee Guidelines: State Significant Projects</i> (2016) or its latest version, and to the satisfaction of the Planning Secretary. The CCC must be operational prior to commencement of Phase 1.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>The CCC is an advisory committee only. The Department, EPA, and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.</li> <li>In accordance with the Guidelines, the Committee should comprise an independent chair and appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Letter dated 13 November 2020 from DPIE (Stephen O'Donoghue) approving Garry West as the Chair of the CCC and advisory groups</li> <li>Letter dated 25 January 2021 from DPIE (Stephen O'Donoghue) approving the CCC members</li> <li>CCC meeting minutes held on 17 February 2021</li> </ul>	<p>The Auditors sighted a letter dated 13 November 2020 from the DPIE (Stephen O'Donoghue) formally advising Santos that Garry West has been appointed as the Chair of the Narrabri Gas Community Consultative Committee (CCC).</p> <p>The Auditors sighted a letter dated 25 January 2021 from the DPIE (Stephen O'Donoghue) formally appointing the NGP CCC members comprising representatives from community and stakeholder groups. The appointment was consistent with the Department's CCC Guidelines.</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	representation from the Applicant, Council and the local community.		<p>The Auditors sighted the minutes of the first CCC meeting held on 17 February 2021, which was prior to the commencement of Phase 1 on 7 February 2023. These minutes are published on the Santos NGP website (see condition D13(a)(v) of SSD 6456).</p> <p>In accordance with the CCC Guidelines, the CCC has been meeting frequently: three meetings in 2021, four meetings in 2022 and two meetings in 2023 as of August 2023.</p>		
Condition A23	<p><b>Staging, Combining and Updating Strategies, Plans or Programs</b></p> <p>With the approval of the Planning Secretary, the Applicant may:</p> <ul style="list-style-type: none"> <li>(a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);</li> <li>(b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined);</li> <li>(c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development); and</li> <li>(d) combine any strategy, plan or program required by this consent with any similar</li> </ul>	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> <li>• Letter of 8 March 2021 from Santos to the DPIE's Director of Resource Assessments (Planning Secretary's nominee) requesting the Planning Secretary's approval for staging of Management Plans under condition A23(a), and combining the Managed Release Protocol and Salt Management Plan for Phase 1 activities with the Produced Water Management Plan under condition A23(b)</li> <li>• Letter of 14 April 2021 from Planning Secretary's nominee to Santos, with approval of requests in Santos's letter of 8 March 2021</li> </ul>	<p>Santos stated that due to Phase 1 of the Project commencing on 7 February 2023, the strategy, plans or programs required under the various conditions of consent in SSD 6456 are currently in their original approved version.</p> <p>By letter of 8 March 2021 to the DPIE's Director of Resource Assessments (Planning Secretary's nominee), Santos requested the approval of the Planning Secretary to:</p> <ul style="list-style-type: none"> <li>• stage specific management plans for Phase 1 activities, as described in Attachment A to the letter, under condition A23(a); and</li> <li>• combine the Managed Release Protocol and Salt Management Plan for Phase 1 activities, with the Produced Water Management Plan, under condition A23(b).</li> </ul> <p>By letter of 14 April 2021 to Santos, the Planning Secretary's nominee approved the above requests.</p>	Compliant	



Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	strategy, plan or program required by a consent or approval for an adjoining mine subject to common, shared or related ownership or management.				
Condition A24	<b>Staging, Combining and Updating Strategies, Plans or Programs</b>  If the Planning Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Santos acknowledges this Development Consent condition.  It was stated that this Development Consent condition was included as a “practical” requirement to improve the review efficiency of a strategy, plan or program.	<b>Compliant</b>	
Condition A25	<b>Public Infrastructure – Protection of Public Infrastructure</b>  Unless the Applicant and the applicable authority agree otherwise, the Applicant must: <ul style="list-style-type: none"> <li>(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the development; and</li> <li>(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development, to the satisfaction of the applicable authority.</li> </ul> <b>Note:</b> This condition does not apply to any damage to roads caused by the development.	<ul style="list-style-type: none"> <li>Forestry Corporation of NSW – Forestry Permit for Land Use for Access and Activities Associated with Petroleum Titles Petroleum (Onshore) Act 1991, dated 20 December 2012</li> </ul>	The Auditors and Santos consider that this condition has not been triggered during the audit period. It was stated that NGP activities have not impacted or required the relocation of any public infrastructure since the approval of Development Consent SSD 6456.  The Note to this condition states that the condition does not apply to any damage to roads caused by the development. However, the definition of “public infrastructure” in SSD 6456 is “linear and related infrastructure that provides services to the general public, such as roads, ...”.  In field inspections conducted during this audit, the Auditors observed Santos maintaining access tracks within the Forestry Corporation of NSW land, using a third-party contractor. It was stated that Santos maintains access roads in a shared capacity with Forestry Corporation of NSW – Forestry Permit for Land Use for Access and Activities Associated with Petroleum Titles Petroleum (Onshore) Act 1991, dated 20 December 2012.	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			It was stated that the Forestry Corporation of NSW tracks have been used by Santos during the audit period.		
Condition A26	<b>Demolition</b> All demolition of applicable structures must be carried out in accordance with <i>Australian Standard AS 2601-2001 The Demolition of Structures</i> (Standards Australia, 2001).	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition has not been triggered, as it was stated that no structures have been demolished as of August 2023 and for the audit period.	Not triggered	
Condition A27	<b>Structural Adequacy</b> All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of the BCA.  <b>Notes:</b> <ul style="list-style-type: none"> <li>Under Part 6 of the EP&amp;A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.</li> <li>Part 8 of the EP&amp;A Regulation sets out the requirements for the certification of the development.</li> </ul>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>As of August 2023 and for the audit period, no buildings have been constructed by Santos within the Project boundary.</p> <p>The Auditors and Santos consider that this condition has not been triggered.</p> <p>The key operational facilities for the NGP include:</p> <p><u>Santos Narrabri Operations and Logistics Centre</u></p> <p>The Santos Narrabri operations and logistics centre (which provides operational support to all NSW operations) is located 5.5 km west of Narrabri. This facility includes an office and warehouse building, demountable offices, ablution facilities, a workshop igloo shed, parking areas and a laydown yard.</p> <p>This facility existed prior to the approval of Development Consent SSD 6456, and is outside the SSD 6456 Project boundary and does not form part of the NGP. This facility was upgraded in 2013 under a Development Consent issued by Narrabri Council.</p> <p><u>Leewood Facility</u></p> <p>Located approximately 24.5 km south-west of Narrabri, this facility includes produced water and brine management ponds, demountable offices and ablution facilities, a water treatment facility</p>	Not triggered	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>incorporating water holding tanks, ancillary infrastructure including pumps, pipes, Leewood (LWD) groundwater bore, meteorology station and communication equipment.</p> <p>This facility and associated infrastructure were approved through a REF in 2013 and a Part 5 Approval in 2015, prior to the approval of Development Consent SSD 6456.</p> <p><u>Bibblewindi Facility</u></p> <p>Located approximately 36 km southwest of Narrabri, this facility includes produced water ponds, a water balance tank, booster pumps, a gas compressor station (non-operational), a gas flare used for process safety and the Bibblewindi (BWD) groundwater bore.</p> <p>The produced water ponds were constructed by Eastern Star Gas in 2006 prior to Santos acquiring the project in 2011. An upgrade to the water management infrastructure and construction of the gas compressor station occurred in approximately 2015, prior to the approval of Development Consent SSD 6456.</p>		
Condition A28	<p><b>Operation of Plant and Equipment</b></p> <p>All plant and equipment used in the project area, or to monitor the performance of the development, must be:</p> <p>(a) maintained in a proper and efficient condition; and</p> <p>(b) operated in a proper and efficient manner.</p>	<ul style="list-style-type: none"> <li>OEC Well Head inspection checklist</li> <li>Inspection of Leewood groundwater bores and meters</li> <li>Inspection of Leewood Facilities Meteorological Station</li> <li>1<sup>st</sup> August 2023 Dashboard/Device Status Report issued by Ontoto</li> </ul>	<p><u>Maintenance of NGP Plant and Equipment</u></p> <p>Santos was able to demonstrate that diligent preventative and reactive maintenance programs were in place for existing infrastructure and equipment across the NGP field.</p> <p>Santos utilises the commercially available SAI360 database for scheduling maintenance, audit/inspection processes and related tasks on all relevant NGP infrastructure.</p> <p>The Auditors sighted examples of maintenance requests and work orders raised during 2021/22/23 for NGP infrastructure, inclusive of environmental related infrastructure, as follows:</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>May 2023 NGP Gas Leakage Survey Report by Heath Pipeline Services P/L</li> <li>Preventative maintenance on the Leewood Pond sump pumps completed on the 21<sup>st</sup> August 2023 (i.e. under Work Order 40300729)</li> <li>Monthly OEC check (Audit No. AUD-0003751) for the Bibblewindi Facilities Area completed on the 17<sup>th</sup> June 2022</li> <li>Flare ignitor replacement at Bibblewindi on the 2<sup>nd</sup> August 2023 under WO No. 40296298</li> <li>Express Work Order No. 40340561 (dated 6<sup>th</sup> August 2023) for a Leak Detection and Repair (LDAR) Investigation of the BBW wells 12, 17, 21H and 25</li> <li>Corrective Work Order No. 40248879 (dated 7<sup>th</sup> December 2022) to conduct a scheduled 2-yearly well integrity major service on BBW16 (WO No. 40241320)</li> <li>Corrective Work Order No. 40070778 (dated 13<sup>th</sup> April 2021) to conduct a Phased Array Ultrasonic</li> </ul>	<p><u>Leewood Ponds/Sump Pumps</u></p> <p>Preventative maintenance on the Leewood Pond sump pumps occurs on a weekly frequency. This was most recently completed on 21 August 2023 (i.e. under Work Order 40300729).</p> <p>The servicing of generators at the Leewood facility occurs on a monthly frequency.</p> <p><u>Bibblewindi Facility/Flare</u></p> <p>The Auditors sighted the monthly Operator Essential Care (OEC) check (Audit No. AUD-0003751) for the Bibblewindi Facilities Area completed on 17 June 2022. A range of relevant actions and work orders were raised, but no major non-conformances were raised during this audit.</p> <p>As a second example, the flare ignitor at Bibblewindi was recently replaced on the 2 August 2023 under WO No. 40296298. The replacement of this ignitor was identified to be production critical.</p> <p>The Auditors sighted Santos NGP Bibblewindi Flare Inspection Register (for Asset No. 9047-FAC-FLA), which has been utilised since July 2022. This register identifies the completion of a total of 14 inspections between 25 July 2022 and 18 August 2023.</p> <p><b>Observation No. 4</b> – Ideally, Work Order Numbers raised from monthly inspections should be defined within an additional column on the Santos NGP Bibblewindi Flare Inspection Register.</p> <p>The Auditors sighted Express Work Order No. 40340561 (dated 6<sup>th</sup> August 2023) to conduct a Leak Detection and Repair (LDAR) Investigation of the BBW wells 12, 17, 21H and 25 utilising a FLIR Optical Camera – Eagle Gas Monitor, which detected a minor leak (15 ppm) at BBW 17.</p>		

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<p>Testing (PUAT) inspection on piping and vessel at BBW16</p> <ul style="list-style-type: none"> <li>Santos NGP Bibblewindi Flare Inspection Register (Asset No. 9047-FAC-FLA)</li> <li>Dewhurst Well 26 OEC Audit List (2020 – 2023)</li> <li>Email correspondence between Ontoto and Santos NGP (dated 1<sup>st</sup> August 2023) requesting and approving a Purchase Order for inactive loggers/equipment at LWDMW4 &amp; BWD5 monitoring points</li> <li>As identified in this audit report, field inspection of a wide range of environmental monitoring equipment across the NGP between the 22<sup>nd</sup> and 25<sup>th</sup> August 2023)</li> <li>Field inspection of the construction and installation of the groundwater monitoring bore at Dewhurst 43 during the field inspections conducted at NGP in August 2023</li> </ul>	<p>The Auditors sighted a Corrective Work Order No. 40248879 (dated 7 December 2022) to conduct a scheduled 2-yearly well integrity major service on BBW16 (WO No. 40241320). This was identified to be production critical.</p> <p>The Auditors sighted a second Corrective Work Order No. 40070778 (dated 13 April 2021) to conduct a Phased Array Ultrasonic Testing (PUAT) inspection on piping and vessel at BBW16.</p> <p><u>Dewhurst Well 26</u></p> <p>The Auditors sighted the Dewhurst Well 26 OEC Audit List, demonstrating that operator inspections have been completed at this facility since 31 August 2020 (i.e. mostly at daily frequencies). This register also defines the required a) weekly, b) monthly and c) yearly inspections, checks and walkdowns required to be completed at this facility.</p> <p><b>Observation No. 5</b> – Inspection Registers utilised and maintained by Santos NGP should not be titled as “Audit” lists, as these are only limited to visual inspections of each facility listed in these registers.</p> <p><u>NGP Installed Environmental Monitoring Equipment</u></p> <p>Equipment used to monitor the environmental performance of the development primarily comprise the following:</p> <ul style="list-style-type: none"> <li>a) groundwater monitoring sensors (both water quality and standing water levels);</li> <li>b) measurement of water take (i.e. volume) from groundwater extraction bores, that is used for both construction works and dust suppression; and</li> <li>c) meteorological station.</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>Field inspection of Low Point Drain LPD DWH27-1</li> <li>Gas Leakage Survey report for survey completed from 9<sup>th</sup> to 12<sup>th</sup> May 2023 by Heath Pipeline Services P/L for all wells across the NGP</li> <li>Biodiversity monitoring contractor (E2M), site-based induction competencies (various completion dates between 17 February 2021 and 25 August 2023)</li> <li>E2M Contractor Statement of Attainment - PMASUP236-Operate vehicles in the field dated 24 May 2021</li> <li>E2M Contractor Journey Management Plan dated 4 September 2023</li> <li>Job Hazard Analysis for the Narrabri Gas Project (NGP) Biodiversity Monitoring Program and Rehabilitation Monitoring Program dated 30 August 2023</li> <li>Appendix F – Photo 3 Leewood ponds</li> <li>Appendix F – Photo 4 RO Plant</li> </ul>	<p>Data from the above monitoring is made available by telemetry and is held by external service provider, Ontoto in a cloud-based database. Ontoto email Santos NGP monthly “Device Status” reports (as a PDF) to identify the equipment and sensors that are active/inactive.</p> <p>The Auditors sighted the 1<sup>st</sup> August 2023 Dashboard/Device Status Report issued by Ontoto, which lists the status (active, inactive, terminated) for 19 sensors installed in the field.</p> <p>As a representative example, the Auditors sighted email correspondence between Ontoto and Santos NGP (dated 1 August 2023) requesting and approving a Purchase Order for inactive loggers/equipment at LWDMW4 &amp; BWD5 monitoring points.</p> <p><u>NGP Meteorological Station</u></p> <p>It was stated that the NGP meteorological station was installed approximately 3 to 4 years ago by service provider, Ontoto. This station is a single 5 in 1 facility, manufactured and supplied by Campbell Scientific.</p> <p><b>Observation No. 6</b> – Santos could reconfirm with Ontoto that the NGP meteorological station remains fully serviced and calibrated at all times, inclusive of demonstrating the retention of all completed service and calibration records.</p> <p><u>Leewood Production Ponds</u></p> <p>Pond levels at Leewood and Bibblewindi are recorded by instrumentation/telemetry and made available on a Aquatech dashboard (i.e. displaying water levels and volume in ML for each cell).</p> <p>The Reverse Osmosis plant and irrigation infrastructure at Leewood was not operational as of August 2023. In the future, this infrastructure will</p>		

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>Appendix F – Photo 5 Drilling of a groundwater monitoring bore at Dewhurst 43</li> <li>Appendix F – Photo 6 Water extraction bore</li> <li>Appendix F – Photo 7 Example of road widening completion at the NGP</li> <li>Forestry Corporation of NSW – Forestry Permit for Land Use for Access and Activities Associated with Petroleum Titles Petroleum (Onshore) Act 1991, dated 20 December 2012</li> </ul>	<p>the primary process to treat and irrigate the water from these ponds.</p> <p>Santos maintains a water balance for NGP storages, enabling sufficient pond storage capacity to be monitored and maintained at all times. It was stated that if required, the field can be shut down if excessive volumes of water are being held/stored.</p> <p>For both volume (ML) and relative height (m), both the Leewood brine ponds and produced water ponds have a defined: a) maximum operating water level; b) trigger water level; c) spillway; and d) embankment crest (see Photo 3).</p> <p>It was stated that as of August 2023, the water currently stored within the Leewood ponds was too high in electrical conductivity to enable this water to either be reused or irrigated, in the absence of firstly being treated through the RO Plant, which was not operational In August 2023 (see Photo 4). It was stated that Osmoflow continues to conduct periodic checks and maintenance of this installation.</p> <p><u>Ontoto Monthly Reports</u></p> <p>For the last 3 years, Ontoto has been generating and emailing Santos NGP monthly “Device Status” reports (as a PDF) to identify the monitoring equipment and sensors that are active/inactive. These reports are issued as a monthly communication confirming that: a) monitoring equipment is operational; and b) required data is being generated and of the required quality.</p> <p>The above data is held by Ontoto in the cloud and is forwarded to Santos for its retention in Historian.</p> <p>Authorised Santos personnel retain a direct log-in to the Ontoto dashboard (i.e. administration access exists for relevant data).</p>		

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>Calibration of the Santos NGP devices is completed in the field by Ontoto personnel and records retained. Any drifting of the installed sensors within the field can be detected.</p> <p>It was stated that Ontoto are progressing their third-party ISO27001 certification, with the pre-certification audit complete and the final certification audit scheduled for October 2023.</p> <p><u>Groundwater Monitoring Bores</u></p> <p>In 2023, AECOM was responsible for project managing the installation of 10 groundwater monitoring bores.</p> <p>The Auditors inspected the construction and installation of the groundwater monitoring bore at Dewhurst 43 during the field inspections conducted at NGP in August 2023 (see Photo 5).</p> <p><u>Water Extraction Bores</u></p> <p>Santos utilises several water extraction bores for drilling, construction and dust control. Each of these bores is fitted with two data loggers and Ontoto supplied telemetry. One data logger provides data to Santos, whilst the second logger provides data to Water NSW. The Water NSW meter is specifically tagged/certified as required.</p> <p>Ontoto installed each of these water meters and the required satellite loggers, as it was stated that Water NSW does not have satellite non-urban water meters/ loggers. An example of this installation is provided in Photo 6.</p> <p>Once installed and commissioned, instrumentation allows for total water extraction to be read at 10 minute intervals which is recorded in Ontoto's cloud based database.</p> <p>It was stated that Water NSW receives total volume extracted data once every 24 hour period.</p>		



Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><u>High Point Valves/Low Point Drains</u></p> <p>HPVs and LPDs across the NGP are inspected under a formal OEC. Corrective maintenance (CM) requests are raised as and when needed. For the NGP's HPVs/LPDs, the only CMs in SAP were from 2020 and 2021, with no CMs entered since 2021 (i.e. CMs for LPD DWH30-1 were not identified to be within Santos's SAP database).</p> <p><u>Road Maintenance (Pilliga State Forest)</u></p> <p>Forestry roads across the NGP are maintained by the Forestry Corporation of NSW under a formal agreement with Santos. This is inclusive of any required road upgrades.</p> <p>The exception to the above requires that Santos meets the costs for local earthmoving contractor, Specialised Civil Services (SCS) to complete the required road upgrades when drilling rig and associated equipment requires access (i.e. road widening is typically required). Once complete, it was stated that the Forestry Corporation of NSW typically installs and maintains the drainage after widening. An example of road widening completion is provided in Photo 7.</p> <p><u>Flowline Vegetation Control</u></p> <p>It was stated that SCS is responsible for mulching the cleared vegetation along the flowlines. In addition, the Rights of Way are inspected at quarterly intervals and mulching of vegetation is completed as required based on the OEC inspection.</p> <p><u>May 2023 Well Leak Detection Testing Survey</u></p> <p>A Gas Leakage Survey was last completed over 4 days from 9<sup>th</sup> to 12<sup>th</sup> May 2023 by Heath Pipeline Services P/L for all wells across the NGP. The issued May 2023 survey report identified: a) no priority 1 or 2 leaks; and b) only two priority 3 leaks</p>		

Development Consent SSD 6456, Schedule 2 Part A – Administrative Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>(relating to leaking glands that were promptly reported and repaired).</p> <p><u>Equipment operated in a proper and efficient manner</u></p> <p>As part of the onboarding processes, Santos ensures that the appropriate competencies are held by the relevant employee or contractor to complete the task and operate the required equipment correctly.</p> <p>The Auditors sighted the following records as evidence of compliance with the requirement to operate equipment in a proper and efficient manner:</p> <ul style="list-style-type: none"> <li>• Biodiversity monitoring contractor (E2M), site-based induction competencies (various completion dates between 17 February 2021 and 25 August 2023);</li> <li>• E2M Contractor Statement of Attainment - PMASUP236-Operate vehicles in the field dated 24 May 2021;</li> <li>• E2M Contractor Journey Management Plan dated 4 September 2023;</li> <li>• Job Hazard Analysis for the Narrabri Gas Project (NGP) Biodiversity Monitoring Program and Rehabilitation Monitoring Program dated 30 August 2023.</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions																	
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance												
Condition B1	<p><b>Gas Field Development – Locational Criteria</b></p> <ul style="list-style-type: none"><li>The Applicant must ensure that petroleum mining operations in the project area comply with the locational criteria in Table 1 (Gas field development location criteria).</li></ul> <p>Table 1: Gas field development locational criteria</p> <table><tr><th>Feature</th><th>Locational Criteria</th></tr><tr><td rowspan="4">Sensitive receivers and amenity</td><td><ul style="list-style-type: none"><li>No project related infrastructure within 200 metres of any residence (occupied or otherwise), unless otherwise agreed with the landowner, and a copy of this agreement has been forwarded to the Planning Secretary</li><li>No well pads within 100 metres of any privately-owned land or other land not owned by the Applicant, unless otherwise agreed with the landowner, and a copy of this agreement has been forwarded to the Planning Secretary</li><li>Production well pads to be spaced at least 750 metres apart</li><li>Pilot well pads to be spaced at least 250 metres apart</li><li>No telecommunications towers within 500 metres of any residence (occupied or otherwise), unless otherwise agreed with the landowner, and a copy of this agreement has been forwarded to the Planning Secretary</li></ul></td></tr><tr><td>Conservation areas</td><td><ul style="list-style-type: none"><li>No surface infrastructure within 200 metres of Yarrle Lake property boundary</li><li>No surface infrastructure within 50 metres of Brigalow State Conservation Area</li><li>No sub-surface infrastructure below Brigalow State Conservation Area, from the ground surface to a depth of at least 110 metres</li><li>No surface infrastructure within 50 metres of Brigalow Nature Reserve</li></ul></td></tr><tr><td>Water resources</td><td><ul style="list-style-type: none"><li>No non-linear infrastructure within any watercourse or watercourse buffer zone as determined by Strahler stream order (and shown in Appendix 5), including:<ul style="list-style-type: none"><li>1<sup>st</sup> order stream – 20 metre corridor plus channel width</li><li>2<sup>nd</sup> order stream – 40 metre corridor plus channel width</li><li>3<sup>rd</sup> order stream – 60 metre corridor plus channel width</li><li>4<sup>th</sup> order and greater stream – 80 metre corridor plus channel width</li></ul></li><li>No large ponds and dams, or any ponds and dams used for storage of produced water or brine, within the 1% AEP flood extent, as identified in Appendix 5 (apart from approved ponds and dams in major facilities constructed above the 1% AEP flood extent)</li></ul></td></tr><tr><td>Biodiversity</td><td><ul style="list-style-type: none"><li>No disturbance of more than 988.8 hectares of native vegetation (including derived native grassland)</li><li>No disturbance beyond the limits by vegetation type as identified in Table 6.</li><li>No disturbance beyond the limits by threatened flora species type as identified in Table 9</li><li>No disturbance beyond the limits by threatened fauna species type as identified in Table 10</li></ul></td></tr><tr><td>Heritage</td><td><ul style="list-style-type: none"><li>No disturbance of identified Aboriginal cultural heritage items, as identified in Appendix 7</li><li>No disturbance of identified historic heritage items, as identified in Appendix 7</li><li>No disturbance of other Aboriginal cultural heritage items identified during the development, if assessed in a Field Development Plan to be of high significance</li><li>No disturbance of other Aboriginal cultural heritage items and historic heritage items identified during the development, unless otherwise approved in a Field Development Plan</li></ul></td></tr></table>	Feature	Locational Criteria	Sensitive receivers and amenity	<ul style="list-style-type: none"><li>No project related infrastructure within 200 metres of any residence (occupied or otherwise), unless otherwise agreed with the landowner, and a copy of 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none"><li>Field Development Protocol (Doc ID: 0041-150-PLA-0002, Revision No. 0C, issued on 18 November 2022)</li><li>IDP Presentation_2022.pptx provides an overview of the IDP process</li><li>Appendix F – Photo 8 GIS mapping Well Pad constraints</li></ul>	<p>Since 7 February 2023 and as of August 2023, at the NGP only one well pad has been constructed (Dewhurst 43) and one other well pad (Dewhurst 35) is under construction.</p> <p>As of August 2023 and for the audit period, it was stated that there have been no incidents that have/would result in non-compliance against the locational criteria specified in Table 1.</p> <p>It was stated that Santos implements a robust Integrated Disturbance Planning (IDP) process, to ensure that all protocols described in the Field Development Protocol (FDPro) (see condition B2) are implemented.</p> <p>The Auditors sighted a demonstration of the IDP process and viewed an Integrated Disturbance Planning (IDP) 2022 presentation.</p> <p>A demonstration of the GIS spatial mapping tool was also sighted providing an example of well pad constraints mapping (e.g. sensitive receivers, distances between adjacent well pads and disturbance) (see Photo 8).</p> <p>The Auditors consider that the systems and processes implemented by Santos to ensure compliance with Table 1 appear comprehensive and demonstrate good internal governance. This assessment is based on the evidence sighted during this audit and the Auditors’ field inspection in August 2023.</p>	Compliant	
Feature	Locational Criteria																
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Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition B2	<p><b>Gas Field Development – Field Development Protocol</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare a Field Development Protocol for the development to the satisfaction of the Planning Secretary. This plan must:</p> <p>(a) be prepared by a suitably qualified and experienced person/s;</p> <p>(b) be prepared in consultation with the EPA, BCD, DPIE Water, Resources Regulator and Council;</p> <p>(c) provide a framework for siting gas field infrastructure in the project area to ensure:</p> <p>(i) compliance with the locational criteria in Table 1;</p> <p>(ii) compliance with the noise and noise quality criteria;</p> <p>(iii) compliance with applicable legislative requirements;</p> <p>(iv) consistency with the conditions of this consent, including the plans, strategies and programs; and</p> <p>(v) reasonable and feasible measures are being employed to avoid, minimise and manage the environmental impacts of the development;</p> <p>(d) describe the process for siting gas field infrastructure, based on:</p> <p>(i) detailed constraints and avoidance analysis (including avoidance of faulting);</p> <p>(ii) incremental and cumulative disturbance review;</p>	<ul style="list-style-type: none"> <li>Field Development Protocol (Doc ID: 0041-150-PLA-0002, Revision No. 0C, issued on 18 November 2022)</li> <li>Letter dated 9 December 2022 from DPE (Stephen O'Donoghue) approving Revision No. 0C of the FDPPro</li> <li>Mark Vile, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> <li>Servaes van der Meulen, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> <li>IDP Presentation_2022.pptx providing an overview of the IDP process</li> <li>Biodiversity Management Plan (Doc ID: 0041-150-PLA-0009, Revision No. 0B, issued on 11 November 2022)</li> <li>Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</li> </ul>	<p>As of August 2023, the current Field Development Protocol (FDPPro) is Revision No. 0C, issued on 18 November 2022 (Doc ID: 0041-150-PLA-0002). The FDPPro is available on the Santos NGP website.</p> <p>The Auditors sighted a DPE letter dated 9 December 2022, approving this version of the FDPPro. Approval of the FDPPro occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) Section 1.3 of the FDPPro states that the FDPPro was prepared by Servaes van der Meulen and Mark Vile of Onward Consulting Pty Ltd who are suitably qualified and experienced. The Auditors sighted Servaes van der Meulen and Mark Vile's CVs and confirmed their experience and qualifications.</p> <p>(b) Section 1.4 of the FDPPro states that consultation occurred with the agencies named in this paragraph. Appendix C includes records of this consultation.</p> <p>(c) Section 1.2 of the FDPPro describes the framework for siting gas field infrastructure (Figure 1.1). The framework includes:</p> <p>(i) <i>compliance with the locational criteria in Table 1</i> – Section 5 and Table 5.1 describes the constraints planning process to ensure compliance with Appendix B (Table B1) which details the Project infrastructure locational criteria and constraints as defined in Table 1 of SSD 6456. Table B1 references the relevant protocol within the FDPPro.</p> <p>The Auditors sighted a presentation on the Santos IDP process that provides an</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(iii) in-field micro-siting, including:</p> <ul style="list-style-type: none"> <li>ground-truthing survey against all locational criteria;</li> <li>ecological survey, in accordance with the Biodiversity Management Plan;</li> <li>cultural heritage survey, in accordance with the Aboriginal Cultural Heritage Management Plan;</li> </ul> <p>(iv) detailed infrastructure design; and</p> <p>(e) describe the process for implementing the plan, in accordance with the Field Development Plan.</p>		<p>overview of the process of assessing locational criteria and constraints;</p> <p>(ii) <i>compliance with the noise and noise quality criteria</i> (Section 10.9);</p> <p>(iii) <i>compliance with applicable legislative requirements</i> (Section 3.1). The IDP process specifically requires consideration of all applicable legislation;</p> <p>(iv) <i>consistency with the conditions of this consent, including the plans, strategies and programs</i> (Section 3.3 and Table 6.1);</p> <p>(v) <i>reasonable and feasible measures are being employed to avoid, minimise and manage the environmental impacts of the development</i> (Section 1.2). It was stated that the protocols detailed in the FDPPro describe how all reasonable and feasible measures, as appropriate, will be implemented to prevent, mitigate or minimise material harm to the environment that may result from the proposed Phase 1 activities. The Auditors confirmed that these measures are described throughout the FDPPro.</p> <p>(d) The <i>process for siting gas field infrastructure</i> is described in Section 5 of the FDPPro and represented in Figure 5.1. The siting process includes:</p> <p>(i) <i>detailed constraints and avoidance analysis (including avoidance of faulting)</i>; (Sections 5.2 and 5.3);</p> <p>(ii) <i>predicting and reconciling incremental and cumulative disturbance over the life of the Project</i> (Sections 5.2 and 5.3);</p> <p>(iii) <i>in-field micro-siting process</i> includes: incorporating field scouting (ground</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>truthing) against locational criteria, ecological surveys (Section 5.3), cultural heritage surveys (Section 5.3). Ecological and Cultural heritage surveys are required to be undertaken in accordance with the processes and procedures detailed in the referenced Biodiversity Management Plan (BMP) and Aboriginal Cultural Heritage Management Plan (ACHMP), respectively;</p> <p>(iv) <i>detailed design and management control planning</i> (Section 5.4). The Auditors sighted a presentation on the Santos IDP process that ensures that the siting gas field infrastructure process is followed and documented.</p> <p>(e) Section 6 of the FDPPro describes the key strategies for the management and mitigation of impacts that will be <i>implemented through the FDP</i>. Table 6.1 references the relevant management plans for describing specific management strategies and approaches. The provisions of the management plans will be implemented as appropriate throughout the constraints planning process, as presented in Figure 5.1).</p> <p><b>Observation No. 7</b> – Table A1 in Appendix A of the FDPPro incorrectly references section 10.10 for noise and noise quality criteria. The correct reference is section 10.9.</p> <p><b>Observation No. 8</b> – The FDPPro does not incorporate the Santos Integrated Disturbance Planning (IDP) process and GIS management system as part of the required siting protocols. Santos should incorporate the IDP process in the FDPPro as a mandatory protocol to be followed for the implementation of the locational criteria and constraints analysis for siting infrastructure.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition B3	<b>Gas Field Development – Field Development Protocol</b>  The applicant must implement the approved Field Development Protocol.	<ul style="list-style-type: none"> <li>Field Development Protocol (Doc ID: 0041-150-PLA-0002, Revision No. 0C, issued on 18 November 2022)</li> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> </ul>	<p>The Auditors consider that the protocols described in the FDP are being implemented through the FDP. Therefore, this condition should be read in conjunction with condition B6 for implementation of the FDP.</p> <p>As of August 2023, there has not been any requirement to review the approved FDP.</p>	<b>Compliant</b>	
Condition B4	<b>Gas Field Development – Field Development Plan</b>  Prior to the construction of any gas field infrastructure, the Applicant must prepare a Field Development Plan for the relevant gas field infrastructure to the satisfaction of the Planning Secretary. This plan must: <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s;</li> <li>(b) be prepared in consultation with the:               <ul style="list-style-type: none"> <li>(i) EPA, DPIE Water, BCD, Resources Regulator and Council;</li> <li>(ii) owners of land not owned by the Applicant, upon which gas field infrastructure is proposed to be located;</li> <li>(iii) Community Consultative Committee;</li> <li>(iv) Water Technical Advisory Group;</li> <li>(v) Greenhouse Gas Emissions Advisory Group</li> <li>(vi) Aboriginal Cultural Heritage Advisory Group;</li> <li>(vii) Biodiversity Advisory Group</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> <li>Letter dated 11 November 2022 from DPE (Stephen O'Donoghue) approving Revision No. 0C of the FDP and requesting additional information</li> <li>Property Management Plan, signed 18 October 2022 (property identification redacted for confidentiality purposes)</li> <li>Alternative Mechanism Agreement dated 18 November 2022 (name withheld due to confidentiality requirements)</li> <li>Alternative Mechanism Agreement dated 10 November 2022 (name</li> </ul>	<p>As of August 2023, the current Field Development Plan (FDP) is Revision No. 0A, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0023). A redacted version of the FDP is available on the Santos NGP website. The Auditors sighted Attachment 2 (which has been redacted) of this FDP which is the Property Management Plan (signed 18 October 2022).</p> <p>The Auditors sighted a DPE letter dated 11 November 2022, approving this version of the FDP. Approval of this FDP occurred prior to the commencement of Phase 1 (7 February 2023) and any construction of any gas field infrastructure. This DPE approval letter dated 16 November 2022 required Santos to supply additional information, including:</p> <ul style="list-style-type: none"> <li>Property Management Plan (PMP);</li> <li>digitised spatial information of infrastructure location;</li> <li>evidence of retirement of Biodiversity Credits.</li> </ul> <p>The Auditors sighted a letter dated 22 November 2022 to the DPE confirming the submission of the PMP as an attachment and the spatial data in zip file. Evidence of retirement of the Biodiversity Credits payment receipt dated 16 January 2023,</p>	<b>Compliant</b>	



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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	<p>(c) include detailed plans of existing gas field infrastructure in the project area, and proposed gas field infrastructure to be developed under the Field Development Plan;</p> <p>(d) include incremental and cumulative analysis of compliance with the locational criteria;</p> <p>(e) provide detailed consideration of the proposed gas field infrastructure against the provisions of the Field Development Protocol;</p> <p>(f) provide the results of all surveys undertaken as part of in-field micro-siting;</p> <p>(g) describe the performance criteria to be implemented to ensure compliance with the water performance measures in Table 7, and to meet the rehabilitation objectives in Table 11, including a:</p> <p>(i) trigger action response plan to identify risks and actions to avoid exceedances of the performance criteria, including tiered triggers to provide for early detection of impacts; and</p> <p>(ii) contingency plan that expressly provides for adaptive management where monitoring indicates that there has been an exceedance of the performance criteria, or where an exceedance appears likely; and</p> <p>(h) include a:</p> <p>(i) Public Safety Management Plan, prepared in consultation with RFS, FCNSW and NSW Health, to ensure public safety and manage access in the project area, including verification of minimum safe separation distances between all potentially hazardous facilities; and</p>	<p>withheld due to confidentiality requirements)</p> <ul style="list-style-type: none"> <li>Mark Vile, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> <li>Servaes van der Meulen, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> <li>Letter 22 November 2022 to DPE from Santos (██████████) – Environmental Approvals Lead) confirming the submission of the PMP and the spatial data</li> <li>Email dated 1 February 2023 from DPE confirming receipt of evidence of the Biodiversity Credit retirement for NGP</li> <li>Email dated 18 August 2023 from Santos (██████████) detailing consultation records and screenshot from the Santos Relationship Management (SRM) database with a private landholder between 14 October 2020 and 21 October 2022</li> </ul>	<p>was confirmed by an email from the DPE (Major Projects) dated 1 February 2023.</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) Section 1.5 of the FDP states that the Plan was prepared by Servaes van der Meulen and Mark Vile of Onward Consulting Pty Ltd, who are suitably qualified and experienced. The Auditors sighted Servaes van der Meulen and Mark Vile's CVs and confirmed their experience and qualifications.</p> <p>(b) Section 1.6 of the FDP states that consultation occurred with the agencies, advisory groups and relevant landowners named in this paragraph. Appendix A of the FDP includes detailed records of this consultation; however, private landholder consultation records are not included. The Auditors confirmed private landholder consultation occurred with the relevant FDP stakeholders by sighting the PMP (signed 18 October 2022) and consultation records (screenshot) from the Stakeholder Relationship Management (SRM) database.</p> <p>Santos stated that because a PMP was unable to be secured for Well Pad 34, it intends to relocate this proposed well pad to adjacent Forestry Corporation of NSW land. This amendment will require an FDP variation.</p> <p>(c) Section 4 and Figures 4.1 – 4.5 of this FDP provide detailed plans of the existing gas field infrastructure. Section 5 and Figures 5.1 and 5.2 provide plans for the proposed gas field infrastructure to be developed under the FDP.</p> <p>(d) Section 6.1 – 6.6 of the FDP details the <i>constraints and incremental change analysis</i> against the locational criteria for the proposed</p>		



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(ii) Property Management Plans, prepared in consultation with landowners upon which gas field infrastructure is proposed to be located, to manage impacts and access arrangements on the properties.	<ul style="list-style-type: none"> <li>IDP Presentation_2022.pptx providing an overview of the IDP process</li> <li>Public Safety Management Plan (Doc ID 0041-150-PLA-0025, Revision No. 0A, issued on 11 November 2022)</li> <li>Water Management Plan (Doc ID: 0041-150-PLA-0010, Revision 0D, issued on 11 November 2022)</li> <li>Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision 0C, issued on 18 November 2022)</li> </ul>	<p>gas field infrastructure. Section 6.9 and Appendix F (Figures F1 and F11) provide cumulative constraints maps showing the changes. Tables 6.4 – 6.6 provide incremental compliance analysis of the biodiversity impacts of the NGP against area limits imposed by condition B43, Table 8 in SSD 6456. It was stated that future FDP revisions will document a cumulative analysis against these limits.</p> <p>(e) Section 6 of the FDP describes the detailed process for infrastructure site selection which incorporates the protocols established in the FDP.</p> <p>The Auditors sighted the Santos IDP process and GIS spatial mapping tool that underpins the assessment of the locational criteria and constraints and ensures a detailed siting gas field infrastructure process is followed and documented.</p> <p>For the construction of the proposed gas field infrastructure, Section 6 of the FDP identifies the general management strategies to be applied and references the required management plans that provide detailed construction-specific management actions.</p> <p>(f) Section 6.4.2 of the FDP details the micro-siting exercise that was completed for the Phase 1 development footprint. Appendix C (Figure C1-C16) shows the results of ecological survey adjustments, and Appendix D (Figure D1-D11) shows the ecological micro-siting modification.</p> <p>(g) Section 1.4 and Table 1.1 of the FDP replicate Table 7 of SSD 6456 and describe the water management performance measures and provide a cross-reference to the relevant water management sub-plan. Similarly, Table 1.2 of</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>this FDP replicates Table 11 of SSD 6456 and identifies the rehabilitation objectives.</p> <p>The Water Management Plan (WMP) and its sub-plans and protocols detail the performance criteria to be implemented to ensure compliance with Table 7 of SSD 6456. Table 3.1 in Section 3.3.4 of the WMP references the relevant sub-plan and sections that describe the specific performance criteria (expressed as “performance measures”).</p> <p>Section 9 of the Rehabilitation Management Plan (RMP) details the performance criteria (Rehabilitation completion criteria) required to be achieved to ensure compliance with Table 11 of SSD 6456.</p> <p>(i) Appendix G of the FDP includes Trigger Action Response Plans (TARPs) for Biodiversity, Rehabilitation, Site Water Balance. Additional TARPs are referenced as follows:</p> <ul style="list-style-type: none"> <li>Table 6.1 of the WMP lists 17 TARPs contained within each Water Management sub-plan;</li> <li>Section 13 of the RMP details the TARPs for each specific completion criteria.</li> </ul> <p>(ii) Section 9.2 of the FDP describes the strategy that will be followed in the event of an unpredicted or unforeseen impact occurring. This strategy does not specifically describe an adaptive management approach but an approach can be inferred through the steps described in Table 9.1. The Auditors noted that Development Consent</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>SSD 6456 does not define “adaptive management”.</p> <p>(h) In relation to the required Public Safety Management Plan and Property Management Plans:</p> <p>(i) Attachment 1 to the FDP is a copy of the Public Safety Management Plan (PSMP), Revision No. 0A, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0025).</p> <p>Section 1.4 of the PSMP states that consultation occurred with the agencies named in this paragraph. Appendix A includes records for Agency consultation.</p> <p>Section 4 details public safety risks and management measures, including identifying specific sensitive receiver distances from NGP facilities. Distances provided in Table 4.1 confirms both Leewood and Bibblewindi facilities are greater than 200 metres from any residence.</p> <p>Section 4.3 considers the transport, storage and handling of hazardous substances.</p> <p>(ii) The current FDP proposes to locate gas field infrastructure on two private landholder properties. As at August 2023, only one PMP (signed 18 October 2022) has been secured. Santos stated that because a PMP was unable to be secured for a second proposed well pad (Well Pad 34), it intends to relocate this proposed well pad to adjacent Forestry Corporation of NSW land.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><b>Observation No. 9</b> – Section 5 of the FDP could be revised to list well pads as a construction activity in the dot point summary, for consistency with the reference to new well pads in section 5.4.</p> <p><b>Observation No. 10</b> – Section Reference Table A1 of the FPD incorrectly references Appendix E for results of all surveys undertaken as part of in-field micro-siting (see condition B4 (f)). The correct reference is Appendix D.</p> <p><b>Observation No. 11</b> – Section 6 of the FDP does not include a section to report on Offsetting requirements for the proposed disturbance in the FDP. Santos should consider inserting additional commentary in Section 6.4 to describe the Biodiversity Credit requirements for each Phase or future amendments of Development Consent SSD 6456.</p> <p><b>Observation No. 12</b> – Santos should consider updating Section 9.2 of the FPD to directly refer to <i>adaptive management</i> as referred to in condition B4(g)(ii).</p> <p><b>Observation No. 13</b> – Santos should consider describing the approach to adaptive management in the EMS, which should underpin the approach that will be taken across all Environmental Management Plans.</p>		
Condition B5	<p><b>Gas Field Development – Field Development Plan</b></p> <p>The Applicant must not commence Phase 1 or any subsequent phase of the development until:</p> <p>(a) a Field Development Plan for the relevant gas field infrastructure; and</p> <p>(b) any associated management plan, program or strategy updates, are approved by the Planning Secretary.</p>	<ul style="list-style-type: none"> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> </ul>	<p>Phase 1 commenced on 7 February 2023 (see condition A7 in this audit report).</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) The current Field Development Plan (FDP) is Revision No. 0A, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0023). The Auditors sighted a DPE letter dated 16 November 2022, approving this version of the FDP.</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	Note: For the avoidance of doubt, no gas field infrastructure may be constructed or operated until the relevant infrastructure has been approved in a Field Development Plan.		(b) The Auditors sighted and confirmed that all associated management plans, programs and strategies required by SSD 6456, were approved by the Planning Secretary prior to 7 February 2023. See conditions B4, B13, B41 including sub-plans, B51, B59, B61, B69, B70, B79 and B83 in this audit report.		
Condition B6	<b>Gas Field Development – Field Development Plan</b>  The applicant must implement the approved Field Development Plan.	<ul style="list-style-type: none"> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> <li>Property Management Plan, signed 18 October 2022 (property identification redacted for confidentiality purposes)</li> <li>IDP Presentation_2022.pptx providing an overview of the IDP process</li> <li>Appendix F – Photo 8 GIS mapping Well Pad constraints</li> <li>NSW Site Permit Approval for Dewhurst 35 dated 28 March 2023.</li> </ul>	The Auditors sighted evidence during this audit and during their field inspection in August 2023 to confirm implementation of the approved FDP and protocols described in the FDPPro, including: <ul style="list-style-type: none"> <li>Securing Property Management Plans and Alternate Agreements to authorise activities on private property consistent with the FDP.</li> <li>Installation of infrastructure consistent with the FDP including surface disturbance at Dewhurst 35 and 43, and installation of Shallow groundwater monitoring bores at Bibblewindi 6 and Dewhurst 43.</li> <li>The use of the Integrated Disturbance Planning (IDP) process (and online workflow tool) to support the scouting and micro-siting processes as described in FDPPro and detailed in the Integrated Disturbance Planning (IDP) 2022 presentation.</li> <li>The use of GIS spatial mapping tool mapping well pad constraints (e.g. sensitive receivers, distances between adjacent well pads and disturbance) (see Photo 8).</li> <li>NSW Site Permit Approval for Dewhurst 35 which details restricted areas and other environmental constraints that must be adhered to by Santos personnel and contractors.</li> </ul>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions																								
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance																			
			<ul style="list-style-type: none"><li>Coonarah 4 Well P&amp;A and suspension of works internal Environmental Approval for Narrabri 2023 dated 21 August 2023.</li></ul> <p>The Auditors consider that the systems and processes implemented by Santos since the commencement of Phase 1 on 7 February 2023 are consistent with the approved FDP.</p> <p><b>Observation No. 14</b> – The FDP should be updated to include the Santos Integrated Disturbance Planning (IDP) process and GIS management system as mandatory requirements to support the FDP for the implementation of the locational criteria and constraints analysis for siting infrastructure.</p>																					
Condition B7	<p><b>Noise – Noise Criteria – Operational Phase and Construction Outside Standard Hours</b></p> <p>The Applicant must ensure that the noise generated by the development – including cumulative noise generated by the Wilga Park Power Station and ancillary activities in the project area, but excluding Phase 1 and 2 construction activities during standard construction hours, and non-routine safety flaring operations – does not exceed the criteria in Table 2.</p> <p>Table 2: Operational noise criteria dB(A)</p> <table><tr><th rowspan="2">Noise Assessment Location</th><th>Day</th><th>Evening</th><th>Night</th><th>Night</th></tr><tr><th>L<sub>Aeq</sub> (15 min)</th><th>L<sub>Aeq</sub> (15 min)</th><th>L<sub>Aeq</sub> (15 min)</th><th>L<sub>A1</sub> (1 min)</th></tr><tr><td>All privately owned residences</td><td>35</td><td>35</td><td>35</td><td>45</td></tr><tr><td>Yarrle Lake, Brigalow State Conservation Area, Brigalow Nature Reserve</td><td colspan="3">50 L<sub>Aeq</sub> per sec</td><td>-</td></tr></table> <p>Notes:</p> <ul style="list-style-type: none"><li>Receiver locations are shown on the applicable figure in Appendix 3.</li><li>Condition B11 provides exemptions to complying with these criteria.</li><li>Noise criteria for Phase 1 and 2 construction activities during standard construction hours are outlined in condition B8. For the avoidance of doubt, the criteria in Table 2 apply to Phase 1 and 2 construction activities outside standard construction hours.</li><li>Noise criteria for non-routine safety flaring operations are outlined in condition B9.</li></ul>	Noise Assessment Location	Day	Evening	Night	Night	L <sub>Aeq</sub> (15 min)	L <sub>Aeq</sub> (15 min)	L <sub>Aeq</sub> (15 min)	L <sub>A1</sub> (1 min)	All privately owned residences	35	35	35	45	Yarrle Lake, Brigalow State Conservation Area, Brigalow Nature Reserve	50 L <sub>Aeq</sub> per sec			-	<ul style="list-style-type: none"><li>221121_Noise and Air agreements</li><li>Noise Management Plan (Doc ID: 0041-150-PLA-0008, Revision No. 0B, issued on 11 November 2022)</li><li>Proposal for acoustic services from external consultants, GHD dated 20 October 2022</li><li>“Narrabri Gas Project – DWH43 Civil works noise monitoring, Santos Limited” report by GHD, issued 31 May 2023</li></ul>	<p><u>Santos Wilga Park Power Station</u></p> <p>The Santos Wilga Park Power Station is not administered under SSD6456, but under DPIE Approval MP 07_0023, which was granted by state regulators in 2008 (MOD7) to the owner of the facility at the time (i.e. Eastern Star Gas or its subsidiary).</p> <p>Within its immediate vicinity, ambient noise generated across the NGP primarily occurs from the operation of the Wilga Park Power Station and ancillary activities, which operate 24 hours/7 days a week. The supply of gas to this power station is a beneficial use of the natural gas extracted from coal seams near Narrabri. Power generated from this station supplies the national/NSW grid (i.e. currently equivalent to 23,000 households in northwest NSW).</p> <p>As of August 2023, the Wilga Park Power Station is fully automated and is operated by Santos personnel in Brisbane.</p> <p>Santos personnel and relevant contractors are utilised at the power station for maintenance and repairs and to service equipment. Inspection and</p>	Compliant	
Noise Assessment Location	Day		Evening	Night	Night																			
	L <sub>Aeq</sub> (15 min)	L <sub>Aeq</sub> (15 min)	L <sub>Aeq</sub> (15 min)	L <sub>A1</sub> (1 min)																				
All privately owned residences	35	35	35	45																				
Yarrle Lake, Brigalow State Conservation Area, Brigalow Nature Reserve	50 L <sub>Aeq</sub> per sec			-																				

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>maintenance work at this facility is only completed during day shift.</p> <p><u>2022/2023 Noise Surveys</u></p> <p>At nominated sensitive receptors, Santos is required to schedule and complete a noise survey in February each year. It was stated that project development activities were occurring at the time of the most recent February 2023 noise survey.</p> <p>Noise monitoring surveys at the NGP are completed as described in Table 8.1 – Summary of monitoring program requirements within the November 2022 issue of the NGP Noise Management Plan. Both attended and unattended noise surveys were completed in the last 12 months (i.e. applicable to civil and construction works).</p> <p><u>2023 Noise Monitoring Surveys</u></p> <p>The Auditors sighted the proposal for acoustic services from external consultants GHD dated 20 October 2022 for a) completion of the compliance noise monitoring for Phase 1 in Q4 2022 and b) updated noise modelling for Phase 1.</p> <p><u>Unattended Noise Monitoring (December 2022 to August 2023)</u></p> <p>Unattended noise monitoring was conducted at Dewhurst 35, which comprised the use of one noise monitoring logger that was located on private property at Westport on Macfarlanes Road for an 8-month period from December 2022 until August 2023.</p> <p>As of August 2023, the noise monitoring consultants, GHD had not completed the required survey report for this monitoring period. It was stated that Santos expects to receive the noise report from GHD by late September 2023.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><u>Noise Monitoring (February 2023)</u></p> <p>GHD attended the NGP site on 8 February 2023 to conduct attended noise measurements of the water bore drilling operations at Bohena South 1 (well site) utilising water bore drill rig #8. Direct source measurements of the operational equipment were undertaken by the consultants.</p> <p>No exceedance in criteria in Table 2 was measured by GHD during the February 2023 noise survey at the Bohena South 1 well site.</p> <p>Site and equipment noise measurements were used to generate noise contour maps and define required buffer distances to comply with the noise limits for the Project (i.e. the measurement of actual noise against predicted impacts).</p> <p><u>Noise Monitoring (May 2023)</u></p> <p>GHD attended the NGP site on 3 May 2023 to conduct attended noise measurements of the civil works being conducted at DWH43. Direct source measurements of the operational equipment was undertaken by the consultants.</p> <p>A “Narrabri Gas Project – DWH43 Civil works noise monitoring, Santos Limited” report for Santos was issued by GHD on 31 May 2023.</p> <p>Noise measurements taken during this May 2023 survey were used to generate noise contour maps (based on noise emitted from construction equipment, inclusive of an excavator and wheeled loader) and define the required buffer distances to comply with the noise limits for the Project.</p> <p>No additional attended noise monitoring of equipment use is planned for the remainder of 2023.</p>		



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions											
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance						
Condition B8	<p><b>Noise – Noise Criteria – Construction During Standard Hours</b></p> <p>The Applicant must implement all reasonable and feasible measures to ensure that the noise generated by Phase 1 and 2 construction activities during standard construction hours – including cumulative noise generated by the development and noise from the Wilga Park Power Station and ancillary activities in the project area – does not exceed the criteria in Table 3.</p> <p><i>Table 3: Construction noise criteria dB(A) – standard construction hours</i></p> <table><tr><th>Noise Assessment Location</th><th>During Standard Construction Hours</th></tr><tr><td>All privately owned residences</td><td>40 LAeq (15 min)</td></tr><tr><td>Yarrie Lake, Brigalow State Conservation Area, Brigalow Nature Reserve</td><td>50 LAeq (2hr)</td></tr></table> <p><b>Notes:</b></p> <ul style="list-style-type: none"><li>Receiver locations are shown on the applicable figure in Appendix 3.</li><li>Operational noise criteria, including Phase 1 and 2 activities outside standard construction hours are outlined in condition B7. For the avoidance of doubt, the criteria in Table 3 do not apply to Phase 1 and 2 activities outside standard construction hours.</li></ul>	Noise Assessment Location	During Standard Construction Hours	All privately owned residences	40 LAeq (15 min)	Yarrie Lake, Brigalow State Conservation Area, Brigalow Nature Reserve	50 LAeq (2hr)	<ul style="list-style-type: none"><li>Audit interview (Environmental Advisor)</li></ul>	<p>As it relates to Phase 1 NGP construction activities, condition B8 has not been triggered to date.</p> <p><u>Coonarah Wells (Nos. 1 and 6) on PPL 3</u></p> <p>Two existing wells, both suspended, are located near the boundary of the Yarrie Lake and Brigalow conservation area. The boundary is located &gt;650 m from the edge of these two wells.</p> <p>The nearest landowner is located south of these two wells, on the Coonarah property.</p> <p>On PPL 3, Coonarah Well 1 was constructed in 1993, with a spud date of 14 August 1993. Well 6 was constructed in 2004, with a spud date of 3 August 2004. As of August 2023, both wells are currently suspended.</p> <p>It was stated that there is no plan to commence the construction of any new wells at this location in the foreseeable future (i.e. the NGP Coonarah wells will be limited to the two existing suspended wells).</p> <p>This condition will only be triggered in the future if Santos makes the decision to Plug and Abandon (P&amp;A) these two wells.</p>	Not triggered	
Noise Assessment Location	During Standard Construction Hours										
All privately owned residences	40 LAeq (15 min)										
Yarrie Lake, Brigalow State Conservation Area, Brigalow Nature Reserve	50 LAeq (2hr)										
Condition B9	<p><b>Noise – Noise Criteria – Non-Routine Safety Flaring Operations</b></p> <p>The Applicant must implement all reasonable and feasible measures to ensure that the noise generated by non- routine safety flaring operations – including cumulative noise generated by the development and noise from the Wilga Park Power Station and ancillary activities in the project area – does not exceed the criteria in Table 2 at any residence on privately-owned land.</p>	<ul style="list-style-type: none"><li>Noise Management Plan (Doc ID: 0041-150-PLA-0008, Revision No. 0B, issued on 11 November 2022)</li></ul>	<p>The requirements of condition B9 are defined within the November 2022 NGP Noise Management Plan and associated predictive noise models that have been developed.</p> <p>The above are supported by noise monitoring that was most recently completed by GHD in May 2023.</p> <p>As of August 2023, the Westport property remains the closest property to any noise sources/activities associated with the NGP. The distance between the nearest noise source, DWH42 and the Westport property is 1700 m.</p>	Compliant							

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<u>Predictive noise models</u> The predictive noise models that have been developed for the NGP are available for use in the future.		
Condition B10	<b>Noise – Noise Criteria – Non-Routine Safety Flaring Operations</b> Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the <i>NSW Noise Policy for Industry</i> (EPA, 2017). Appendix 4 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria	<ul style="list-style-type: none"> <li>“Narrabri Gas Project – DWH43 Civil works noise monitoring, Santos Limited” report by GHD, issued 31 May 2023</li> </ul>	<u>May 2023 Noise Monitoring</u> External consultants, GHD completed noise monitoring on 3 May 2023, associated with the DWH43 civil works for well pad construction. GHD submitted the final report titled “Narrabri Gas Project – DWH43 Civil works noise monitoring, Santos Limited” on 31 May 2023. The above 31 May 2023 report concluded that: “GHD attended DWH43 on 3 <sup>rd</sup> of May 2023 to conduct a noise survey of civil works being conducted at the site. Noise measurements taken were used to generate noise contour maps and define the required buffer distances to comply with the noise limits for the project”. Individual equipment noise levels, comprising excavators and wheeled loaders are provided in Appendix A – Table 3 – Noise Monitoring Results. <b>Observation No. 15</b> – Calibration certificates for the Noise Monitoring Meter used by GHD Sydney on 3 <sup>rd</sup> May 2023 were not supplied with the issued report (i.e. for the Svantek SVAN 977 Class 1 sound level meter (Serial Number: 36871)). Santos should request that the calibration data/certificates of this meter be provided as an Appendix B in the final report. It was stated that Santos is not obliged to submit the completed noise reports to the regulator. It was stated that noise monitoring results determined in 2023 will be provided within the NGP	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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			<p>January to December 2023 Annual Report, expected to be issued in March 2024.</p> <p>For the above monitoring, GHD defined the modelling assumptions to establish the site and meteorological conditions on 3 May 2023. It is acknowledged that Santos continues to maintain a meteorological station, located at Leewood.</p> <p>It was stated that Santos plans to schedule and complete additional noise monitoring when drill rigs commence operating at the NGP in 2024.</p>		
Condition B11	<p><b>Noise – Noise Criteria – Non-Routine Safety Flaring Operations</b></p> <p>The noise criteria in Tables 2 and 3 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Planning Secretary in writing of the terms of this agreement.</p>	<ul style="list-style-type: none"> <li>Agreement with “Westport”, at 919 Westport Road, Narrabri 2390, signed 18<sup>th</sup> November 2022 for Development Consent SSD 6456</li> <li>Agreement with “Westport North” (i.e. separate residence) at 919 Westport Road, Narrabri 2390, signed 13<sup>th</sup> November 2022 for Development Consent SSD 6456</li> <li>Letter from Santos to the Director of Resource Assessments, DPE, dated 21 November 2022, with accompanying agreements to exceed the noise and/or air criteria prescribed in SSD 6456, at three private residences at: a) Westport (air and noise); b) Westport North (noise)</li> </ul>	<p><u>Agreements</u></p> <p>Santos NGP Land Access personnel are responsible for securing required Alternate Mechanism Agreements with any relevant landowners.</p> <p>As of August 2023, two Alternate Mechanism Agreements existed at the NGP. These included:</p> <ol style="list-style-type: none"> <li>Agreement for air and noise with “Westport”, at 919 Westport Road, Narrabri 2390, signed 18<sup>th</sup> November 2022 for Development Consent SSD 6456;</li> <li>Agreement for noise only with “Westport North” (i.e. separate residence) at 919 Westport Road, Narrabri 2390, signed 13<sup>th</sup> November 2022 for Development Consent SSD 6456.</li> </ol> <p>A previous agreement for noise only which was signed on 18 November 2022 was also held with the “Womba” property.</p> <p>The above applies to any potential adverse/nuisance impacts associated with noise emissions (i.e. defined within Section 4 – Noise and Air Quality) applicable to the construction of new well pads on the Westport property (i.e. during Phase 1 of the NGP development). As of August</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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		only); and c) Womba (noise only).	<p>2023, formal agreements remained in place with both parties.</p> <p><u>Supply of Agreements to the Planning Secretary</u></p> <p>Copies of the three signed agreements were supplied by Santos to the Planning Secretary on 21 November 2022 (as defined in the covering letter provided to the DPE). No timeframes apply or are defined in condition B11, relating to Santos's obligation to submit these signed agreements to the Planning Secretary.</p>		
Condition B12	<p><b>Noise – Noise Operating Conditions</b></p> <p>The Applicant must:</p> <p>(a) implement all reasonable and feasible measures to:</p> <p>(i) minimise the construction, operational, low frequency and road noise of the development;</p> <p>(ii) attenuate all new plant and equipment that will operate in noise sensitive areas;</p> <p>(iii) schedule non-routine safety flaring and other non-routine maintenance activities at the Leewood facility and Bibblewindi facility that have the potential to exceed the noise criteria in Table 2, during the day period, where practicable;</p> <p>(iv) monitor and record major equipment noise levels and make this data readily available at the request of the Department or the EPA;</p> <p>(v) minimise the noise impacts of the development during noise-enhancing meteorological conditions when the noise criteria in this consent do not apply (see Appendix 4);</p>	<ul style="list-style-type: none"> <li>Noise Management Plan (Doc ID: 0041-150-PLA-0008, Revision No. 0B, issued on 11 November 2022)</li> <li>Field Development Protocol (Doc ID: 0041-150-PLA-0002, Revision No. 0C, issued on 18 November 2022).</li> <li>"Narrabri Gas Project – DWH43 Civil works noise monitoring, Santos Limited" report by GHD, issued 31 May 2023</li> <li>Narrabri Gas Project – Activities Update (May 2023)</li> <li>Narrabri Gas Project – Activities Update (July 2023)</li> <li>Noise Inversion Notification (from Ontoto)</li> </ul>	<p>Santos NGP was able to demonstrate that in relation to noise, all reasonable and feasible measures have been implemented to minimise any adverse or nuisance impacts to landowners.</p> <p>These operational controls are defined in: a) the November 2022 NGP Noise Management Plan; and b) the November 2022 Santos NGP Field Development Protocol.</p> <p>In relation to Phase 1, compliance with sub-paragraphs (i) to (v) in paragraph (a) of this condition was demonstrated by:</p> <p>(i) Operational controls have been developed and implemented to minimise the construction, operational, low frequency and road noise of the NGP development.</p> <p>(ii) Noise monitoring was completed on 3 May 2023, to measure and understand the noise emissions of well pad construction equipment utilised at DWH43. This monitoring identified that no additional attenuation of mobile plant and equipment is currently needed, based on the distances between the construction site and noise sensitive receptors.</p> <p>(iii) As of August 2023, NGP operators are limited to working on day shift between 6 am to 6 pm.</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(b) operate a suitable system to enable the public to get up-to-date information on any construction or non-routine safety flaring operations that have the potential to exceed the noise criteria in this consent; and</p> <p>(c) regularly assess meteorological and noise monitoring data and modify operations in the project area in response to this data to ensure compliance with the relevant conditions of this consent.</p>	<p>by email, dated 25 July 2023</p> <ul style="list-style-type: none"> <li>Appendix F – Photo 9 GIS image of 5.11 km distance between the Westport residence and the Bibblewindi facility</li> </ul>	<p>As of August 2023, no flare existed or was in use at the Leewood facility. The existing Bibblewindi facility includes a flare, but the nearest sensitive receptor is the Westport residence, located at a distance of 5.11 km to the Bibblewindi facility (see Photo 9). Since November 2022, a formal Alternate Mechanism Agreement existed between the owners of the Westport property and Santos.</p> <p>(iv) Refer to paragraph (ii) above, relating to noise monitoring completed by GHD in May 2023.</p> <p>(v) No public roads currently exist near any sensitive receptors at the NGP. An October 2022 Westport Property Management Plan exists, that defines in Section 2.3 – Conditions for Use of the Access Roads and Tracks, and is used by Santos and their contractors.</p> <p>In relation to Phase 1, compliance with paragraphs (b) and (c) of this condition was demonstrated by:</p> <p>(b) The Santos NGP website provides up-to-date information on scheduled construction or non-routine safety flaring operations that have the potential to exceed the noise criteria in this consent. Up-to-date information is also available to the public via the monthly NGP updates, inclusive of provision by automatic email for stakeholders that sign up to these newsletters. These updates include relevant content applicable to any construction or non-routine safety flaring operations. Monthly NGP activity updates for May and July 2023 were sighted by the Auditors;</p> <p>(c) On-line real-time meteorological data is available for the NGP. In addition, when adverse meteorological conditions exist (e.g. when noise enhancing meteorological conditions exist, including inversions) an</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>automatic email is generated and received by specific Santos NGP personnel from Ontoto (i.e. to ensure noise mitigation measures are implemented for relevant activities). The Auditors sighted the email received at 7 pm on 25 July 2023. This process also assists Santos to comply with SSD6456 Appendix 4 – Noise Compliance Assessment.</p> <p>It was stated that, relating to potential adverse noise impacts, Santos does not expect to hold a significant number of Alternative Agreements in the future at the NGP. Agreements will only be held on an as-needs basis and be applicable to development on private land or in locations near any drilling and completions on new wells where residents are located nearby.</p> <p>For Phase 1, Santos has identified the sensitive receptors that could potentially be impacted by noise (i.e. expected to comprise between 2 to 4 receptors), for which two Alternative Agreements have already been secured (i.e. Westport and Westport North properties).</p>		
Condition B13	<p><b>Noise – Noise Management Plan</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s;</li> <li>(b) be prepared in consultation with the EPA and the CCC;</li> <li>(c) describe the measures to be implemented to ensure: <ul style="list-style-type: none"> <li>(i) compliance with the noise criteria and operating conditions in this consent;</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Noise Management Plan (Doc ID: 0041-150-PLA-0008, Revision No. 0B, issued on 11 November 2022)</li> <li>• Letter dated 16 November 2022 from DPE (Stephen O'Donoghue) approving Revision No. 0B of the NMP</li> <li>• Mark Vile, Curriculum Vitae (CV) (2021) that demonstrates that he is</li> </ul>	<p>As of August 2023, the current Noise Management Plan (NMP) is Revision No. 0B, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0008). The NMP is available on the Santos NGP website.</p> <p>The Auditors sighted a letter dated 16 November 2022 from the DPE, approving this version of the NMP. Approval of the NMP occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>In relation to the paragraphs of this condition:</p> <ul style="list-style-type: none"> <li>(a) Section 1.2 of the NMP states that the Plan was prepared by Servaes van der Meulen and Mark Vile of Onward Consulting Pty Ltd as suitably qualified and experienced. The Auditors sighted Servaes van der Meulen and</li> </ul>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<ul style="list-style-type: none"> <li>(ii) reasonable and feasible noise mitigation measures are being employed; and</li> <li>(iii) noise impacts of the development are minimised during noise-enhancing meteorological conditions under which the noise criteria in this consent do not apply (see Appendix 4);</li> <li>(iv) any blasting impacts associated with the construction of the development are minimised.</li> <li>(d) describe the noise management system in detail; and</li> <li>(e) include a monitoring program that: <ul style="list-style-type: none"> <li>(i) evaluates and reports on: <ul style="list-style-type: none"> <li>• the effectiveness of the noise management system;</li> <li>• compliance against the noise criteria in this consent; and</li> <li>• compliance against the noise operating conditions;</li> </ul> </li> <li>(ii) includes a program to calibrate and validate the unattended monitoring results with the attended monitoring results over time (so the unattended noise monitoring program can be used as a trigger for further attended monitoring where there is a risk of non-compliance with the noise criteria in this consent); and</li> <li>(iii) defines what constitutes a noise exceedance, incident or non-compliance, and includes a protocol for identifying and notifying the Department and relevant stakeholders of these events.</li> </ul> </li> </ul>	<p>suitably qualified and experienced</p> <ul style="list-style-type: none"> <li>• Servaes van der Meulen, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> </ul>	<p>Mark Vile's CVs and confirmed their experience and qualifications.</p> <p>(b) Section 1.5 of the NMP states that consultation occurred with the agencies and groups named in this paragraph. Appendix A of the NMP includes records of this consultation.</p> <p>(c) Section 7.0 of the NMP states that the following section (section 7.1) details the management measures that will be implemented during the construction and operational activities of the project.</p> <p>Santos stated that Section 7 and the second heading row in Table 7.1 have incorrectly omitted a reference to the operational phase of the Project, as it is referenced in Section 7. Refer to the observation below.</p> <p>In relation to the sub-paragraphs in paragraph (c):</p> <p>(i) Section 7 and Table 7.1 of the NMP describe management measures to be implemented for compliance with the noise criteria and operating conditions in this consent.</p> <p>(ii) Section 7.1 of the NMP states that the management measures described in Table 7.1 will be implemented during the construction activities, where reasonable and feasible.</p> <p>(iii) Section 5.2 of the NMP describes how noise generated by the development will be assessed against the noise criteria during noise-enhancing meteorological conditions (Appendix 4 in SSD 6456) and will adjust work activities as required to prevent exceeding the noise criteria by 5dB. Determining noise-enhancing</p>		



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>meteorological conditions is achieved with the installation of a Meteorological Station (in accordance with condition B25) at the Leewood Facility (Section 7.2).</p> <p>(iv) Section 6.1.1 of the NMP states that no blasting is proposed for Phase 1 of the Project.</p> <p>(d) Sections 7, 8, 9 and 10 of the NMP describe the noise management system, including management measures (Table 7.1), meteorological system (Section 7.2), monitoring program (Section 8), record keeping (Section 9), incident, non-compliance management (Section 10), reporting evaluation and review (Section 11). Workforce roles and their responsibilities for implementing this noise management system are documented in the Environmental Management Strategy (Doc ID: 0041-150-PLA-0003).</p> <p>(a) Section 8 and Table 8.1 of the NMP describe the monitoring program as follows:</p> <p>(i) Table 8.1 describes the actions that will be implemented to confirm compliance with the operating conditions and conditions of consent and evaluate the effectiveness of the noise management measures.</p> <p>(ii) Table 8.1 identifies the requirement to calibrate and validate unattended monitoring results if activities will be conducted in noise-sensitive areas.</p> <p>(iii) Section 10.1 defines what constitutes noise exceedance, incident and non-compliance.</p>		



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><b>Observation No. 16</b> – Section 7 and Table 7.1 (second-row heading) of the Noise Management Plan only refer to construction activities; however, Section 7 states the management measures are for the construction and operational phases of the project. Santos should update the Noise Management Plan accordingly to reflect both Phases.</p> <p><b>Observation No. 17</b> – Santos could consider reviewing the management measures described in Table 7.1 to ensure these measures are effective in supporting compliance with the noise criteria in SSD 6456, and not only workplace behavioural/cultural matters e.g. No Swearing.</p> <p><b>Observation No. 18</b> – The definition of an “Incident” in section 10.1 of the Noise Management Plan has been truncated and is not consistent with the SSD 6456 definition. Santos should update this definition to ensure consistency between the Plan and Development Consent SSD 6456.</p> <p><b>Observation No. 19</b> – The noise monitoring TARP are not well defined in the Noise Management Plan. Santos could consider including specific TARP tables and a process flow chart in the NMP to support decision-making in response to adverse noise impacts.</p>		
Condition B14	<p><b>Noise – Noise Management Plan</b></p> <p>The Applicant must implement the Noise Management Plan once approved by the Planning Secretary.</p>	<ul style="list-style-type: none"> <li>Property Management Plan, signed 18 October 2022 (property identification redacted for confidentiality purposes)</li> <li>Alternative Mechanism Agreement dated 18 November 2022 (name withheld due to</li> </ul>	<p>During their field inspection in August 2023, the only active noise-generating operations observed by the Auditors were track maintenance on the X-Line track within the Forestry Corporation of NSW lands (active at the time of inspection) and drilling of a shallow groundwater monitoring bore at Dewhurst 43 (not active at the time of inspection).</p> <p>All observed operations were within the NSW State Forest located &gt; 2.5 km from the nearest sensitive receiver.</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<p>confidentiality requirements)</p> <ul style="list-style-type: none"> <li>Letter dated 21 November 2022 from Santos to the DPE (Stephen O'Donoghue, Director Resource Assessments), advising that Santos has entered into these agreements as per condition B11)</li> <li>Appendix F – Photo 10 Leewood Facility Meteorological Station</li> <li>Email dated 25 July 2023 (Noise Inversion Notification) from Ontoto monitoring system notifying Santos employees of noise-enhancing meteorological conditions</li> <li>Appendix F – Photo 11 Noise attenuated generator at Bibblewindi 5</li> <li>12596003-REP_DWH43 Civil Works noise monitoring Final for attended noise monitoring</li> <li>12596003-REP_NGP water bore compliance monitoring Final 31 May 2023 Acoustic Monitoring proposal dated 20 October 2022 from GHD</li> </ul>	<p>It was stated that Santos has not received any noise complaints as of August 2023 and for the audit period.</p> <p>Implementation of the Noise Management Plan was demonstrated by the sighting of:</p> <ul style="list-style-type: none"> <li>Property Management Plans and Alternate Agreements with three private properties. The DPE has been advised on these agreements in a letter dated 21 November 2022 from Santos to the DPE (Stephen O'Donoghue, Director Resource Assessments) in accordance with condition B11.</li> <li>The Meteorological Station at the Leewood Facility (see Photo 10).</li> <li>An email dated 25 July 2023 (Noise Inversion Notification) from the Ontoto monitoring system, notifying Santos employees of noise-enhancing meteorological conditions.</li> <li>Noise attenuated generator (equipment) at Bibblewindi 5 (see Photo 11).</li> <li>Commencement of the unattended noise monitoring calibration assessment including: <ul style="list-style-type: none"> <li>attended civil works monitoring (12596003-REP_DWH43 Civil Works noise monitoring Final);</li> <li>unattended monitoring (acoustic services proposal dated 20 October 2022 from GHD). Unattended monitoring at a private receptor residence for the period 22 November 2022 to 1 August 2023 (two semi-permanent monitoring stations);</li> <li>attended noise monitoring on 3 May 2023 and 8 February 2023 conducted by consultants GHD.</li> </ul> </li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>NGP Ice Breaker presentation</li> </ul>	<p>As of August 2023, the noise monitoring validation report is pending as per the Scope of Works detailed in the GHD Proposal for acoustic services dated 20 October 2022.</p> <p>The Auditors sighted evidence to confirm the implementation of this calibration assessment, including a GHD Tax Invoice dated 3 August 2023 for supply and leasing of monitoring equipment for the period 21 June 2023 to 3 August 2023 (Purchase Order 3522949) and the 12596003-REP_NGP water bore compliance monitoring Final 31 May 2023 – and 12596003-REP_DWH43 Civil Works noise monitoring Final for attended noise monitoring.</p> <ul style="list-style-type: none"> <li>Contractor awareness training pack (NGP Ice Breaker presentation) to explain environmental obligations including noise.</li> </ul>		
Condition B15	<b>Air Quality and Greenhouse Gas – Odour</b> The Applicant must ensure that no offensive odours, as defined under the POEO Act, are emitted from the development.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>It was stated that the current Phase 1 development of the NGP does not generate any offensive odours.</p> <p>Natural gas (i.e. methane) produced by the NGP development is both odourless and colourless. No odourants are added at the NGP to allow the gas to be detected.</p> <p>As of August 2023, Santos at NGP has not received any stakeholder/landowner complaints relating to odours from the NGP. The Phase 1 development is located approximately 2 km from the nearest sensitive receptor (Westport residence).</p>	<b>Compliant</b>	
Condition B16	<b>Air Quality and Greenhouse Gas – Air Quality Criteria</b> The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that air emissions generated by the	<ul style="list-style-type: none"> <li>Agreement with “Westport”, at 919 Westport Road, Narrabri 2390, signed 18<sup>th</sup> November 2022 for</li> </ul>	<p><u>Location of Sensitive Receptors</u></p> <p>The primary sensitive receptor (Westport residence) is located at the following distances from existing NGP operational and planned infrastructure:</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions																															
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance																										
	<p>development do not cause exceedances of the criteria listed in Table 5 at any residence on privately-owned land.</p> <p><i>Table 5: Air quality criteria</i></p> <table><tr><th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr><tr><td rowspan="2">Particulate matter &lt; 10 µm (PM<sub>10</sub>)</td><td>Annual</td><td><sup>a, c</sup> 25 µg/m<sup>3</sup></td></tr><tr><td>24 hour</td><td><sup>b</sup> 50 µg/m<sup>3</sup></td></tr><tr><td rowspan="2">Particulate matter &lt; 2.5 µm (PM<sub>2.5</sub>)</td><td>Annual</td><td><sup>a, c</sup> 8 µg/m<sup>3</sup></td></tr><tr><td>24 hour</td><td><sup>b</sup> 25 µg/m<sup>3</sup></td></tr><tr><td>Total suspended particulate (TSP) matter</td><td>Annual</td><td><sup>a, c</sup> 90 µg/m<sup>3</sup></td></tr><tr><td rowspan="2">Nitrogen dioxide (NO<sub>2</sub>)</td><td>1 hour</td><td><sup>a</sup> 246 µg/m<sup>3</sup></td></tr><tr><td>Annual</td><td><sup>a</sup> 62 µg/m<sup>3</sup></td></tr><tr><td rowspan="2">Ozone (O<sub>3</sub>)</td><td>1 hour</td><td><sup>a</sup> 214 µg/m<sup>3</sup></td></tr><tr><td>4 hour</td><td><sup>a</sup> 171 µg/m<sup>3</sup></td></tr></table> <p><i>Notes:</i></p> <p><sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).</p> <p><sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own).</p> <p><sup>c</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.</p>	Pollutant	Averaging period	Criterion	Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	<sup>a, c</sup> 25 µg/m <sup>3</sup>	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>	Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	Annual	<sup>a, c</sup> 8 µg/m <sup>3</sup>	24 hour	<sup>b</sup> 25 µg/m <sup>3</sup>	Total suspended particulate (TSP) matter	Annual	<sup>a, c</sup> 90 µg/m <sup>3</sup>	Nitrogen dioxide (NO <sub>2</sub> )	1 hour	<sup>a</sup> 246 µg/m <sup>3</sup>	Annual	<sup>a</sup> 62 µg/m <sup>3</sup>	Ozone (O <sub>3</sub> )	1 hour	<sup>a</sup> 214 µg/m <sup>3</sup>	4 hour	<sup>a</sup> 171 µg/m <sup>3</sup>	<p>Development Consent SSD 6456</p> <ul style="list-style-type: none"><li>Agreement with “Westport North” (i.e. separate residence) at 919 Westport Road, Narrabri 2390, signed 13<sup>th</sup> November 2022 for Development Consent SSD 6456</li></ul>	<ul style="list-style-type: none"><li>2.56 km from Dewhurst 35 (DWH35);</li><li>2.0 km from Dewhurst 43 (DWH43);</li><li>5.11 km distance between the Westport residence, and the flare at the Bibblewindi facility;</li><li>approximately 2.0 km from the planned Dewhurst 40 (DWH40) and Dewhurst 41 (DWH41) well pads that have not been constructed to date.</li></ul> <p>The Phase 1 development of the NGP has not generated air emissions that resulted in exceedances of the criteria listed in Table 5 at any residence on privately-owned land.</p> <p>As a precautionary measure, since late 2022, Santos has implemented ambient air-quality monitoring programs within the project area for PM<sub>10</sub> and PM<sub>2.5</sub> particulates.</p> <p>PM<sub>10</sub> and PM<sub>2.5</sub> particulate monitoring has recently been completed for the well pad construction at DWH43, located at a distance of approximately 2 kilometres from the nearest sensitive receptor, at “Westport”, 919 Westport Road, Narrabri 2390.</p> <p>It is acknowledged that both the Westport and Westport North properties have entered into Alternate Mechanism Agreements with Santos NGP. Section 4 of each agreement defines the Noise and Air Quality conditions applicable to the construction of new well pads on the Westport property (i.e. during Phase 1 of the development).</p>		
Pollutant	Averaging period	Criterion																													
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	<sup>a, c</sup> 25 µg/m <sup>3</sup>																													
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Condition B17	<p><b>Air Quality and Greenhouse Gas – Air Quality Criteria</b></p> <p>Air emissions generated by the development must be measured in accordance with the relevant requirements and exemptions of the <i>Approved</i></p>	<ul style="list-style-type: none"><li>Audit interview (Environmental Advisor)</li></ul>	<p>In late 2022, Santos NGP commenced a program of ambient air quality monitoring within the project area for PM<sub>10</sub> and PM<sub>2.5</sub> particulates. This air quality monitoring program is being proactively completed by Santos, and as of August 2023, no air quality monitoring program has been required</p>	<b>Compliant</b>																											

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	<i>Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> (EPA, 2007).		<p>as a compliance obligation by the Phase 1 Development Consent.</p> <p>The existing 2023 air quality monitoring program implemented at the NGP comprises: a) the use of a High Volume Air Sampler (HVAS) for PM<sub>10</sub> and PM<sub>2.5</sub> particulate monitoring (i.e. samples collected every 6 days); and b) dust deposition monitoring (i.e. samples collected at 30 day intervals). Samples required for this air quality monitoring program are collected by a suitably experienced contractor, Field's Environmental Solutions (FES).</p> <p>Given that the existing 2023 air quality monitoring program is currently not a compliance obligation, it was stated that as of August 2023, Santos has not formally assessed (e.g. by a gap analysis or internal review) whether air emissions generated by the development are measured in accordance with the relevant requirements and exemptions of the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> (EPA, 2007).</p> <p><b>Observation No. 20</b> – Santos should formally assess its air quality monitoring program to ensure that air emissions generated by the development are measured in accordance with the relevant requirements and exemptions of the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> (EPA, 2007).</p>		
Condition B18	<p><b>Air Quality and Greenhouse Gas – Air Quality Criteria</b></p> <p>The air quality criteria in Table 5 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the air quality criteria, and the Applicant has advised the Department in writing of the terms of this agreement.</p>	<ul style="list-style-type: none"> <li>Agreement with “Westport”, at 919 Westport Road, Narrabri 2390, signed 18<sup>th</sup> November 2022 for Development Consent SSD 6456</li> <li>Agreement with “Westport North” (i.e. separate</li> </ul>	<p><u>Agreements</u></p> <p>As of August 2023, three Alternate Mechanism Agreements existed at the NGP. These included:</p> <ol style="list-style-type: none"> <li>Agreement for air and noise with “Westport”, at 919 Westport Road, Narrabri 2390, signed 18<sup>th</sup> November 2022 for Development Consent SSD 6456;</li> </ol>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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		<p>residence) at 919 Westport Road, Narrabri 2390, signed 13<sup>th</sup> November 2022 for Development Consent SSD 6456</p> <ul style="list-style-type: none"> <li>Letter from Santos to the Director of Resource Assessments, DPE, dated 21 November 2022, with accompanying agreements to exceed the noise and/or air criteria prescribed in SSD 6456, at three private residences at: a) Westport (air and noise); b) Westport North (noise only); and c) Womba (noise only).</li> </ul>	<p>2. Agreement for noise only with “Westport North” (i.e. separate residence) at 919 Westport Road, Narrabri 2390, signed 13<sup>th</sup> November 2022 for Development Consent SSD 6456.</p> <p>A previous agreement for noise only which was signed on 18 November 2022 was also held with the “Womba” property.</p> <p>The above applies to any potential adverse/nuisance impacts associated with air/dust emissions (i.e. defined within Section 4 – Noise and Air Quality) applicable to the construction of new well pads on the Westport property (i.e. during Phase 1 of the NGP development). As of August 2023, formal agreements remained in place with both parties.</p> <p><u>Supply of Agreements to the DPE</u></p> <p>Copies of these three signed agreements, with a covering letter, were supplied by Santos to the Director, Resource Assessments of the DPE, on 21 November 2022. No timeframes apply or are defined in condition B18, relating to Santos’s obligation to submit these signed agreements to the DPE.</p>		
Condition B19	<p><b>Air Quality and Greenhouse Gas – Greenhouse Gas Emissions Advisory Group</b></p> <p>The Applicant must establish and facilitate the operation of a Greenhouse Gas Emissions Advisory Group for the development to the satisfaction of the Secretary. The group must:</p> <p>(a) be established in consultation with EES and EPA, comprising Greenhouse Gas experts whose appointments have been approved by the Planning Secretary, including representatives from:</p>	<ul style="list-style-type: none"> <li>Letter from Santos to the Director, Resource Assessments, NSW DPIE dated 25 January 2021 advising of the suitability of independent experts to be appointed to the GHGEAG</li> <li>Letter from the Director, Resource Assessments, NSW DPIE, dated</li> </ul>	<p>A letter from Santos to the Director, Resource Assessments, NSW DPIE dated 25 January 2021 advised the Department of the suitability of independent experts to be appointed to the Greenhouse Gas Emissions Advisory Group (GHGEAG).</p> <p>Approval of the NGP GHGEAG was received in writing from the Director, Resource Assessments, NSW DPIE on 17 February 2021.</p> <p>A total of five meetings have been held to date for the NGP GHGEAG. These were held in: a) August 2021; b) February 2022; c) September 2022;</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions																								
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	<p>(i) government including EES and EPA (if available); and</p> <p>(ii) independent experts from the scientific community (at least 2 representatives)</p> <p>(b) be established prior to the commencement of Phase 1;</p> <p>(c) meet at least twice a year;</p> <p>(d) provide advice on project-related greenhouse gas management issues, including preparation and implementation of the Air Quality and Greenhouse Gas Management Plan; and</p> <p>(e) review and monitor cumulative total emissions (and advise on the appropriate means to measure fugitive emissions).</p> <p><b>Note:</b> The Greenhouse Gas Advisory Group is an advisory committee only and has no compliance or enforcement functions.</p>	<p>17 February 2021 approving the GHGEAG</p> <ul style="list-style-type: none"><li>Minutes of the Narrabri Gas Project (NGP) Greenhouse Gas Emissions Advisory Group (GHGEAG) Meeting # 4 held on 10 November 2022</li><li>Minutes of the Narrabri Gas Project (NGP) Greenhouse Gas Emissions Advisory Group (GHGEAG) Meeting # 5 held on 15 February 2023</li></ul>	<p>d) November 2022; and e) most recently in February 2023. The minutes of these meetings are publicly available on the Santos NGP website.</p> <p>The Auditors sighted the following minutes of the GHGEAG: a) Meeting # 4 held on 10 November 2022; and b) Meeting # 5 held on 15 February 2023.</p> <p>The minutes of these meetings demonstrate that advice is being provided by the GHGEAG, on project-related greenhouse gas management issues.</p> <p>The NSW EPA is not represented on the NGP GHGEAG, as the EPA advised that it will not be available to participate (i.e. due to a potential conflict of interest).</p> <p>No documented terms of reference are known to exist for this advisory committee.</p>																					
Condition B20	<p><b>Air Quality and Greenhouse Gas – Greenhouse Gas Emissions</b></p> <p>The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that greenhouse gas emissions generated by the development do not cause exceedances of the criteria listed in Table 6.</p> <p><i>Table 6: Greenhouse gas emissions criteria</i></p> <table><tr><th>Scope</th><th>GHG Source</th><th>Total Project GHG Emissions (Mt CO<sub>2</sub>-e)</th></tr><tr><td rowspan="6">Scope 1</td><td>Fuel Use</td><td>2.20</td></tr><tr><td>Gas Flaring</td><td>2.00</td></tr><tr><td>Gas Venting</td><td>0.10</td></tr><tr><td>CO<sub>2</sub> Venting</td><td>10.90</td></tr><tr><td>Fugitive Emissions</td><td>0.05</td></tr><tr><td>Vegetation Clearance</td><td>0.20</td></tr><tr><td>Scope 2</td><td>All</td><td>18.00</td></tr></table>	Scope	GHG Source	Total Project GHG Emissions (Mt CO <sub>2</sub> -e)	Scope 1	Fuel Use	2.20	Gas Flaring	2.00	Gas Venting	0.10	CO <sub>2</sub> Venting	10.90	Fugitive Emissions	0.05	Vegetation Clearance	0.20	Scope 2	All	18.00	<ul style="list-style-type: none"><li>Audit interview (Environmental Advisor)</li><li>Heath Pipeline Services P/L May 2023 Well Leak Detection Testing Survey report</li></ul>	<p><u>Avoidance and Mitigation Measures</u></p> <p>Avoidance and mitigation measures applicable to Phase 1 of the development were stated to be relatively limited.</p> <p>As of August 2023, non-routine safety flaring at the NGP occurs only at the Bibblewindi flare.</p> <p>Minor volumes of gas venting also occur through high point vents and regulator valves within existing gathering lines across the NGP.</p> <p>Other greenhouse emissions are incurred via direct fuel consumption by NGP light and heavy vehicles, generator use etc.</p> <p><u>May 2023 Well Leak Detection Testing Survey</u></p> <p>A Well Leak Detection Testing Survey was last completed over 4 days from 9<sup>th</sup> to 12<sup>th</sup> May 2023 by Heath Pipeline Services P/L for all wells across the NGP. The issued May 2023 survey report</p>	Compliant	
Scope	GHG Source	Total Project GHG Emissions (Mt CO <sub>2</sub> -e)																						
Scope 1	Fuel Use	2.20																						
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Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>identified: a) no priority 1 or 2 leaks; and b) only two priority 3 leaks (relating to leaking glands that were promptly reported and repaired).</p> <p>Scheduled preventative and reactive maintenance of wells at the NGP is conducted as required.</p> <p><u>Venting of Carbon Dioxide</u></p> <p>It was stated that as of August 2023, NGP Phase 1 does not have the infrastructure or any mechanism to separate carbon dioxide (CO<sub>2</sub>) from the gas stream. This would require separating the gas between methane (CH<sub>4</sub>) and CO<sub>2</sub>, which may require the CO<sub>2</sub> to be vented in the future, but will also be dependent on any carbon capture technology developed and implemented in the future.</p> <p>As of August 2023, the CO<sub>2</sub> present in the gas stream is combusted in the Wilga Power Station.</p> <p><u>Vegetation Clearance</u></p> <p>Vegetation clearance is completed during field development, as required and in accordance with relevant internal and external permits.</p> <p><u>NGP Air Quality and Greenhouse Gas Management Plan</u></p> <p>A NGP Air Quality and Greenhouse Gas Management Plan (see condition B23) is not required until prior to the commencement of Phase 2 of the development.</p> <p><u>Greenhouse Gas Emissions Criteria</u></p> <p>Santos acknowledges that the total greenhouse gas emissions for Scope 1 and 2 emissions authorised for the Project are defined in Table 6.</p> <p>It was stated that the total emissions data defined in Table 6 will be tracked over the life of the Project</p>		



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			by Santos's Carbon and Sustainability Team, based in Adelaide.		
Condition B21	<p><b>Air Quality and Greenhouse Gas – Greenhouse Gas Emissions</b></p> <p>The Applicant must:</p> <p>(a) develop cumulative maximum forecasts (the total of which may not exceed the criteria in Table 6) for the greenhouse gas emissions of the development during the following periods:</p> <ul style="list-style-type: none"> <li>(i) the commencement of the development and the end of Year 3;</li> <li>(ii) the commencement of the development and the end of Year 6;</li> <li>(iii) the commencement of the development and the end of Year 9;</li> <li>(iv) the commencement of the development and the end of Year 12;</li> <li>(v) the commencement of the development and the end of Year 15;</li> <li>(vi) the commencement of the development and the end of Year 18;</li> <li>(vii) the commencement of the development and the end of Year 21;</li> <li>(viii) the commencement of the development and the end of Year 23;</li> <li>(ix) the commencement of the development and the end of Year 25;</li> </ul> <p>(b) monitor and publicly report in the Air Quality and Greenhouse Gas Management Plan the development's actual greenhouse gas emissions against cumulative forecasts;</p>	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition has not been triggered as of August 2023 because commencement of Phase 1 of the development occurred on 7 February 2023 and the end of Year 3 is 6 February 2026 (i.e. after the audit period).</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) It was stated that the date applicable to the end of Year 3 is 6 February 2026 (i.e. three years after commencement of Phase 1 of the development on 7 February 2023).</p> <p>(b) It is acknowledged that under condition D23, prior to the commencement of Phase 2 the Applicant must prepare an Air Quality and Greenhouse Gas Management Plan (AQGGMP) for the development to the satisfaction of the Planning Secretary. There is no requirement to develop and issue a NGP AQGGMP for Phase 1. No specific mechanisms have been established to date to report on greenhouse gas emissions from the NGP, for which cumulative maximum forecasts are not required until February 2026.</p> <p><b>Observation No. 21</b> – Condition B21(b) requires that Santos monitors and publicly reports in their Air Quality and Greenhouse Gas Management Plan, the development's actual greenhouse gas emissions against cumulative forecasts. Santos should reconsider utilising its existing Air Quality and Greenhouse Gas Management Plan as the forum for the provision of monitoring data and public reporting of greenhouse gas emissions from the Project.</p>	Not triggered	

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Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(c) ensure that the actual greenhouse gas emissions generated by the development at the end of the periods referred to in condition B21(a) which exceeds the forecasts for those periods are 100% offset within one year after those periods.</p> <p>(d) ensure that the offsets required under condition B21(c) are:</p> <p>(i) compliant with the requirements of the offsets integrity principles set out in the <i>Commonwealth Government's Carbon Neutral Organisations: Climate Active Carbon Neutral Standard for Organisations</i> (July 2020) as may be updated by the Commonwealth; and</p> <p>(ii) not made twice in respect of the same emissions - once an exceedance is fully offset under condition B21(c), that exceedance is not counted toward the measurement of actual greenhouse gas emissions for the measurement of actual greenhouse gas emissions for the next period under condition B21(a).</p> <p><b>Note:</b> the offsetting requirement under condition B21 operates independently of condition B20. The offsetting of an exceedance of forecast greenhouse gas emissions under condition B21 does not satisfy the Applicant's obligations under condition B20.</p>		<p>(c) Santos acknowledges that actual greenhouse gas emissions generated by the Project at the end of the periods referred to in condition B21(a) which exceeds the forecasts for those periods, are required to be 100% offset within one year after those periods (i.e. commencing in February 2027).</p> <p>(d) Condition B21(d) will apply after Year 3 of the development. Santos acknowledges that the required forecasting, calculations and assumptions need to be completed over the next 3 years to fully understand and comply with condition B21(d). This work will be progressed and completed in association with Santos's Land and Nature Based Carbon Solutions Group.</p>		
Condition B22	<p><b>Air Quality and Greenhouse Gas – Air Quality Operating Conditions</b></p> <p>The applicant must:</p> <p>(a) implement all reasonable and feasible measures to:</p> <p>(i) minimise odour, fume and particulate matter (including PM<sub>10</sub> and crustal and combustion PM<sub>2.5</sub>) emissions of the development;</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Dust Suppression Protocol (Doc ID: 0041-150-PLA-0022, Revision No. 0B, issued on 24 October 2022)</li> <li>Rehabilitation Management Plan (Doc ID: 0041-150-PLA-</li> </ul>	<p>It is acknowledged that condition B22 is partially subject to development of the AQGGMP and the requirements defined in condition B23(c)(ii), in order to determine whether all reasonable and feasible air quality and greenhouse gas mitigation measures are being implemented.</p> <p>Nevertheless, measures to minimise any potential adverse air quality impacts have been implemented by Santos for Phase 1 of the NGP. In relation to</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(ii) minimise point source and fugitive emissions of methane, carbon dioxide and other pollutants from all project related infrastructure;</p> <p>(iii) minimise any visible off-site air pollution generated by the development;</p> <p>(iv) minimise the extent of potential dust generating surfaces exposed in the project area at any given point in time;</p> <p>(v) ensure negligible contribution to baseline methane, carbon dioxide and other pollutant levels at any residence or other sensitive receiver location;</p> <p>(vi) maximise energy efficiency and reduce greenhouse gas emissions of the development;</p> <p>(vii) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note c to Table 5 above);</p> <p>(b) operate a detailed air quality management system that uses a combination of unattended and attended air quality monitoring to ensure compliance with the relevant conditions of this consent; and</p> <p>(c) regularly assess meteorological and air quality monitoring data and modify operations in the project area to ensure compliance with the relevant conditions of this consent.</p>	0001, Revision 0C, issued on 18 November 2022)	<p>paragraph (a) of this condition, these measures include:</p> <ul style="list-style-type: none"> <li>all relevant NGP plant and machinery is serviced in accordance with the manufacturer's specifications;</li> <li>diesel particulate filters are used on diesel operated equipment;</li> <li>water carts are used wherever civil construction works have the potential to create fugitive dust;</li> <li>additional control measures are defined in the Santos Dust Suppression Protocol;</li> <li>control measures are defined in the NGP Rehabilitation Management Plan;</li> <li>partial rehabilitation of existing well pads and Santos NGP controlled roads;</li> <li>use of blue metal and dust suppression polymer on existing well pads;</li> <li>use of alternate agreements for air quality (e.g. Westport Alternate Agreement). It is acknowledged that for Phase 1, it is not feasible or practical for Santos to monitor ambient methane or CO<sub>2</sub> at any residence or other sensitive receiver location, given the significant distance between the existing NGP infrastructure and these sensitive receptors;</li> <li>the beneficial reuse of the gas from existing gas wells to generate power at the Wilga Power Station, thereby significantly reducing any venting or release of this gas to the atmosphere;</li> <li>the use of solar and battery power for communications and telemetry at all NGP</li> </ul>		

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Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>operating wells, eliminating the need to utilise generators;</p> <ul style="list-style-type: none"> <li>to minimise air quality impacts of the development during adverse meteorological conditions and extraordinary events, meteorological alerts are received via SMS by the shift supervisor, and activities (e.g. construction) can be modified accordingly.</li> </ul> <p>In relation to paragraph (b) of this condition, it is not feasible during Phase 1 of the NGP for Santos to implement an air quality management system that uses an extensive network and combination of unattended and attended air quality monitoring to ensure compliance. No dust or air quality complaints have been received for the Phase 1 development to date.</p> <p>Specifically, for Phase 1, some dust monitoring (i.e. use of PM<sub>10</sub>, TSP and dust deposition) has been completed to date, primarily for internal purposes. None of the data collected to date has reached the limits defined in the SSD 6456 air quality criteria. For example, subject to a previous approval, air quality monitoring instrumentation is located near Dewhurst 4 (i.e. this monitoring location was used as a reference point for a historical SSD and not used specifically for the Phase 1 development). This monitoring site will continue to be used as a reference point for Phase 1, for any complaints relating to air quality that may be received in the future.</p> <p>In addition to the above, noise monitoring locations administered by GHD on behalf of Santos for the last six months to August 2023 also incorporate PM<sub>10</sub> and PM<sub>2.5</sub> monitoring instrumentation. Both ambient noise and dust data will be available in the September 2023 report issued by GHD. Relevant</p>		

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			<p>data will also be included in the March 2024 Annual Return.</p> <p>It was stated that subject to construction activities and regulatory requirements applicable to Phase 2, Santos may implement additional air quality monitoring in the future.</p> <p>In relation to paragraph (c) of this condition, Santos stated that it will regularly assess meteorological and air quality monitoring data as needed. Based on collected monitoring data and subject to the receipt of any complaints, it was stated that Santos will modify operations in the Project area to ensure compliance with the relevant conditions of consent.</p>		
Condition B23	<p><b>Air Quality and Greenhouse Gas – Air Quality and Greenhouse Gas Management Plan</b></p> <p>Prior to the commencement of Phase 2, the Applicant must prepare an Air Quality and Greenhouse Gas Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s;</li> <li>(b) be prepared in consultation with the EPA, NSW Health, the Greenhouse Gas Advisory Group and the CCC;</li> <li>(c) describe the measures to be implemented to ensure: <ul style="list-style-type: none"> <li>(i) compliance with the air quality criteria, greenhouse gas emissions criteria and operating conditions in this consent;</li> <li>(ii) reasonable and feasible air quality and greenhouse gas mitigation measures are being employed;</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> </ul>	<p>An Air Quality and Greenhouse Gas Management Plan is required prior to commencement of Phase 2. As of August 2023, Phase 2 of the Project has not commenced.</p> <p>The Auditors and Santos consider that this condition has not been triggered, as the NGP is currently in Phase 1.</p>	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(iii) leaks are promptly detected and repaired; and</p> <p>(iv) the air quality impacts of the development are minimised during adverse meteorological conditions and extraordinary events; and</p> <p>(d) describe the air quality management system, and leak detection and repair system, in detail;</p> <p>(e) detail baseline levels of methane, carbon dioxide and other pollutants in the project area, at representative sensitive receiver locations, and adjacent the Leewood facility;</p> <p>(f) include predicted air quality concentrations for all potential pollutants at representative sensitive receiver locations, and adjacent the Leewood facility, based on additional air quality assessment and modelling; and</p> <p>(g) include an air quality monitoring program that:</p> <p>(i) evaluates and reports on:</p> <ul style="list-style-type: none"> <li>the effectiveness of the air quality management system;</li> <li>compliance against the air quality criteria in this consent;</li> <li>compliance with air quality impact assessment criteria in the <i>Approved Methods for Modelling and Assessment of Air Pollutants in New South Wales</i> (EPA, 2016), for other relevant pollutants (including air toxics);</li> <li>composition of the coal seam gas extracted by the development;</li> </ul>				

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	<ul style="list-style-type: none"> <li>changes to baseline methane, carbon dioxide and other pollutant levels in the project area;</li> <li>compliance against the air quality operating conditions;</li> <li>leakage and detection from project related infrastructure; and</li> </ul> <p>(ii) defines what constitutes an air quality exceedance, incident or non-compliance, and includes a protocol for identifying and notifying the Department and relevant stakeholders of these events.</p>				
Condition B24	<p><b>Air Quality and Greenhouse Gas – Air Quality and Greenhouse Gas Management Plan</b></p> <p>The Applicant must implement the approved Air Quality and Greenhouse Gas Management plan, once approved by the Planning Secretary.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>An Air Quality and Greenhouse Gas Management Plan is required prior to commencement of Phase 2. As of August 2023, Phase 2 of the Project has not commenced.</p> <p>The Auditors and Santos consider that this condition has not been triggered.</p>	<b>Not triggered</b>	
Condition B25	<p><b>Meteorological Station</b></p> <p>Prior to the commencement of Phase 1 and for the life of the development, the Applicant must ensure that there is a suitable meteorological station operating in the project area that:</p> <p>(a) complies with the requirements in the <i>Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales</i> (DEC, 2007);</p> <p>(b) is capable of continuous real-time measurement of wind speed, wind direction sigma theta and temperature; and</p> <p>(c) can measure meteorological conditions in accordance with the <i>NSW Noise Policy for Industry</i> (EPA, 2017), unless a suitable</p>	<ul style="list-style-type: none"> <li>Email dated 25 July 2023 (Noise Inversion Notification) from Ontoto monitoring system notifying Santos employees of noise-enhancing meteorological conditions</li> <li>Appendix F – Photo 10 Leewood Facility Meteorological Station</li> </ul>	<p><u>Meteorological Station (Leewood Facility)</u></p> <p>The NGP meteorological station is located at the Leewood facility (see Photo 10).</p> <p>The station, with 4G Logger inclusive of Sigma Theta, was supplied and installed by Ontoto in early 2022. As defined in the technical specifications of the installed ATMOS-41 station, this station monitors the following parameters (i.e. continuous real-time measurement):</p> <ul style="list-style-type: none"> <li>Solar Radiation Range: 0-1750W/m<sup>2</sup></li> <li>Rainfall Range: 0-125 mm/hr</li> <li>Vapour Pressure Range: 0 to 47 kPa</li> <li>Humidity Range: 0-100%</li> <li>Temperature Range: -40 to 50°C</li> </ul>	<b>Compliant</b>	

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	alternative is approved by the Planning Secretary following consultation with the EPA.		<ul style="list-style-type: none"> <li>Humidity Sensor Temperature - Range: -40 to 50°C</li> <li>Barometric Pressure Range: 50-110 kPa</li> <li>Wind Direction Range: 0-359°</li> <li>Wind Speed Range: 0 to 40 m/s</li> <li>Wind Gust Range: 0 to 40 m/s</li> <li>Lightning Strike Count Range: 0-65,535 Strikes</li> <li>Lightning Average Distance.</li> </ul> <p><u>BOM Meteorological Station (Narrabri Airport)</u></p> <p>A BOM meteorological station exists at the Narrabri Airport, located 28.07 kms from the NGP meteorological station.</p> <p><u>Noise Inversion Notifications</u></p> <p>Santos has established processes with its service provider Ontoto for email notifications to be automatically generated when noise enhancing weather conditions exist, to allow Santos to implement noise mitigation measures for relevant activities.</p> <p>The Auditors sighted the email dated 25 July 2023 (Noise Inversion Notification) from Ontoto monitoring system notifying Santos employees of noise-enhancing meteorological conditions.</p>		
Condition B26	<p><b>Water – Erosion and Sediment Control</b></p> <p>The Applicant must install and maintain suitable erosion and sediment control measures in the project area, in accordance with the relevant requirements in the guidance series <i>Managing Urban Stormwater: Soils and Construction – Volume 1</i> (Landcom, 2004) and <i>2E Mines and Quarries</i> (DECC, 2008).</p>	<ul style="list-style-type: none"> <li>Erosion and Sediment Control Plan (Doc ID: 0041-150-PLA-0021, Revision No. 0B, issued on 11 November 2022)</li> <li>Appendix F – Photo 12 Dewhurst 35 Well Pad and ESCP (under construction)</li> </ul>	<p><u>New Disturbance and Erosion and Sediment Control (ESC)</u></p> <p>During their field inspection in August 2023, the Auditors sighted the Dewhurst 35 well pad which was under construction (see Photo 12) and the Dewhurst 43 well pad which had been constructed as a cut and fill pad (see Photo 13). Both well pads had various erosion and sediment controls installed.</p>	Compliant	



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		<ul style="list-style-type: none"> <li>Appendix F – Photo 13 Dewhurst 43 Well Pad and bunding (constructed)</li> <li>Appendix F – Photo 14 Dewhurst 43 Well Pad ESCP additional controls</li> <li>Dewhurst_43_Site Specific ESCP (Drawing No: 6766-0404-LDD-0001)</li> <li>Email dated 17 May 2023 from FES providing Santos with the annual ESC Audit report</li> <li>Email dated 19 June 2023 from Santos to FES authorising the ESC Audit remedial recommendations</li> </ul>	<p>The Auditors verified that a site-specific Erosion and Sediment Control Plan (ESCP) (Drawing No: 6766-0404-LDD-0001) dated 19 September 2022 had been prepared for Dewhurst 43 in accordance with Section 5.1 of the Santos NGP Erosion and Sediment Control Plan (Doc ID: 0041-150-PLA-0021). The site-specific ESCP was prepared by a Certified Professional in Erosion and Sediment Control (CPESC) (Fyfe Senior Environmental Engineer – Eva Montgomery (CPESC 8164)).</p> <p>The Auditors confirmed that the erosion and sediment controls detailed in this site-specific ESCP had been correctly constructed and to a high standard.</p> <p>During their field inspection in August 2023, the Auditors noted that although the controls were implemented in accordance with the site-specific ESCP, there had been a change to the location of drilling activities for a monitoring bore on the well pad, which created a new risk for sediment laden surface water runoff which had not originally been considered. Within 24 hours of the August 2023 field inspection, Santos had arranged for the installation of additional core logs (sediment controls) at the two internal runoff points from the Well Pad area (see Photo 14).</p> <p><b>Observation No. 22</b> – Santos should review its change management triggers and procedure, to ensure that when modifications to the type of activity or location of activity are made within the well pads, a review of proposed and existing controls (e.g. ESCP) is completed to assess the adequacy of these mitigation measures and implement additional controls as required.</p> <p><b>Observation No. 23</b> – The site-specific ESCP correctly designs the diversion of surface water around the well pad disturbance area. However, the ESCP does not consider controls for sediment</p>		

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			<p>generated from activities within the pad footprint. Santos's CPESC should consider including internal sediment controls for runoff from within the pad footprint.</p> <p><u>ESC Maintenance</u></p> <p>It was stated that Santos engages a contractor, Field's Environmental Solutions (FES) to conduct annual and 'as required' ESC audits on all ESCP areas. This program is in its second year. This contractor is charged with maintaining existing erosion and sediment controls and if required, undertake additional recommended remedial actions. The Auditors sighted an email dated 17 May 2023 providing Santos with the annual ESC Audit report, with recommendations and an email dated 19 June 2023 from Santos authorising implementation of the Audit remedial recommendations.</p> <p><b>Observation No. 24</b> – At the Bibblewindi 16 well pad, the Auditors observed that the sediment fences are being compromised from a buildup of wood chip mulch from adjacent remediated areas. Santos should review the appropriateness of these fences and consider alternative controls.</p>		
Condition B27	<p><b>Water – Water Supply</b></p> <p>The Applicant must ensure that it has enough water for all stages of the development, and if necessary, adjust the scale of the development to match its available water supply.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Site Water Balance (Doc ID: 0041-150-PLA-0017, Revision No. 0C, issued on 24 October 2022)</li> <li>Groundwater Modelling Plan (GModP) (Doc ID: 0041-150-PLA-0012) as Attachment 3 of the Groundwater Water</li> </ul>	<p>The NGP is approved to extract up to 37.5 GL of groundwater over the life of the development (see condition A15). The Site Water Balance (Doc ID: 0041-150-PLA-0017) details the water licences to support the water requirements of the NGP over the life of the development.</p> <p>It was stated that adjustments to the scale of the Project will be informed by the Groundwater Modelling Plan (GModP) (Doc ID: 0041-150-PLA-0012). Section 1.2 states that this plan comprises an important component of the overarching adaptive framework of the monitoring and</p>	<b>Compliant</b>	

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		Management Plan (Doc ID: 0041-150-PLA-0015, Revision No. 0E, issued on 11 November 2022)	<p>managing of the potential impact on groundwater resources.</p> <p>Section 6 of the GModP states that the groundwater model will be updated for Phase 2 to support a refinement on the predicted forecast of groundwater extraction volumes.</p> <p><b>Observation No. 25</b> – The Water Management Plan is unclear as to how the adaptive management framework will be implemented to determine if adjustments are required to the scale of the development to match its available water supply. Santos should update the Water Management Plan and relevant sub-plans to describe how the adaptive management framework will be implemented.</p>		
Condition B28	<p><b>Water – Water Supply</b></p> <p>Prior to the commencement of each Phase of the development, the Applicant must demonstrate that it has adequate water licences to account for the maximum predicted water take for the applicable Phase (including both short term and long term direct and indirect water take) to the satisfaction of the Planning Secretary.</p> <p><b>Note:</b> The maximum predicted water take will be based on the most recent update of the ground water model.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Refer to the audit findings for conditions A15 and B27 in this audit report.	<b>Compliant</b>	
Condition B29	<p><b>Water – Water Supply</b></p> <p>The Applicant must report on water extracted by the development each year (direct and indirect) in the Annual Review, including water taken under each water licence.</p> <p><b>Note:</b> Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain all necessary water licences for the development, including during rehabilitation and post closure.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>As of August 2023, condition B29 had not been triggered.</p> <p>It was stated that water extracted within the development each year will be next reported by Santos in March 2024, as part of the scheduled Annual Review.</p> <p>It was stated that Santos has collected and retained the water extraction data required for inclusion within the scheduled March 2024 Annual Review.</p>	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			The NGP's water extraction data is generated from in-field water meters that are linked and reported via telemetry. The data is retained by Ontoto (Santos's remote telemetry solutions provider). In addition, the updated meters utilised at the NGP enable the water extraction data to be sent directly to the relevant NSW regulator.		
Condition B30	<b>Water – Compensatory Water Supply</b> The Applicant must provide a compensatory water supply to any landowner of privately-owned land whose rightful water supply is adversely and directly impacted (other than an impact that is minor or negligible) as a result of the development, in consultation with DPIE Water, and to the satisfaction of the Planning Secretary.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>NGP Environmental Impact Statement (EIS) (2017)</li> <li>Santos Narrabri Water Management Update Q3 2023 (23 August 2023) presentation slides showing Water Balance Modelling Output</li> </ul>	<p>As of August 2023, condition B30 had not been triggered.</p> <p>As of August 2023, Santos has not been required to provide a compensatory water supply to any landowner of privately-owned land whose rightful water supply is adversely and directly impacted (other than an impact that is minor or negligible) as a result of the development.</p> <p>It was stated that if communications (e.g. a complaint by the landowner) and/or monitoring data determine that a landowner's water supply has potentially been impacted, then Santos would investigate this concern.</p> <p>It was stated that if water loss was suspected, Santos would initiate and conduct relevant monitoring/sampling of the landowner's water supply to determine and confirm any potential adverse impact.</p> <p>It was stated that the above would be facilitated by NGP Land Access personnel, inclusive of any compensatory water supply if an adverse impact of any landowner's water supply was able to be confirmed.</p> <p>In addition to the above, any potential adverse impact could also be identified by the NGP water model (i.e. if it was detected when running the model).</p> <p>For context, the coal seam being accessed at the NGP is approximately 1000 m in depth. It was</p>	Not triggered	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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			<p>stated that groundwater that is removed from the coal seam during gas extraction recharges over a very long period and is not expected to adversely impact on any localised aquifers used for agriculture.</p> <p>This is confirmed in the groundwater impact assessment (Chapter 11, Table 11-17) for the NGP EIS (2017) which concluded that the “residual significance of potential impacts of the Narrabri Gas Project on groundwater are expected to be low” (for Construction, Operation and Decommissioning phases of the Project) including for the potential impacts of:</p> <ul style="list-style-type: none"> <li>“Decline in groundwater quality in bores and in quality of supply to groundwater users and groundwater-dependant ecosystems due to depressurisation”; and</li> <li>“Induced aquifer connectivity that will impact on high-quality water resources”.</li> </ul>		
Condition B31	<b>Water – Compensatory Water Supply</b> In the event of any doubt as to whether compensatory water supply is required to be provided under condition B30, it is a matter for the Applicant to demonstrate that any adverse and direct impact to a water supply that has been identified (other than an impact that is minor or negligible) is not as a result of the development.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, condition B31 had not been triggered. Refer to the audit findings for condition B30 in this audit report.	<b>Not triggered</b>	
Condition B32	<b>Water – Compensatory Water Supply</b> The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributable to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, condition B32 had not been triggered. Refer to the audit findings for condition B30 in this audit report.	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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	identified, unless otherwise agreed with the landowner.				
Condition B33	<b>Water – Compensatory Water Supply</b> If the Applicant and the landowner cannot agree on whether the loss of water is to be attributed to the development or the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, condition B33 had not been triggered.  Refer to the audit findings for condition B30 in this audit report.	<b>Not triggered</b>	
Condition B34	<b>Water – Compensatory Water Supply</b> If the Applicant is unable to provide an alternative supply of water, then the Applicant must provide compensation, to the satisfaction of the Planning Secretary.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, condition B34 had not been triggered.  Refer to the audit findings for condition B30 in this audit report.	<b>Not triggered</b>	
Condition B35	<b>Water – Compensatory Water Supply</b> Prior to commencement of Phase 4, the Applicant shall make arrangements to provide security for any compensation to be provided under condition B34. The arrangements for security should address the following matters to the satisfaction of the Planning Secretary: (a) who the security is provided to; (b) the nature of the security; (c) how the security is to be calculated; (d) how the security may be accessed or returned; and (e) how the balance of the security is to be dealt with.  <b>Note:</b> The Water Management Plan is required to include trigger levels for investigating potentially adverse impacts on water supplies.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition has not been triggered, as the NGP is currently in Phase 1.	<b>Not triggered</b>	

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Condition B36	<b>Water – Water Discharge</b> The Applicant must ensure that all surface discharges from the development comply with: <ul style="list-style-type: none"> <li>(a) discharge limits (both volume and quality) set for the development in any EPL or RREO; and</li> <li>(b) relevant provisions of the POEO Act.</li> </ul>	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> <li>• Appendix F – Photo 4 RO Plant</li> </ul>	<p>As of August 2023, condition B36 had not been triggered, as no surface discharges have occurred from the existing Phase 1 operations at the NGP site.</p> <p>The only surface discharges that currently occur from the NGP site would be uncontaminated stormwater, generated from overland runoff from both existing rural and forested land uses.</p> <p>It was stated that in the unlikely event of spillage of any liquid hydrocarbons, this would be contained and a vacuum truck from Namoi Waste, based in Narrabri, would be utilised.</p> <p>If contaminated water is generated at the NGP, the Leewood facility would accept this water from any location within the NGP, given that sufficient containment exists at Leewood.</p> <p>The Leewood facility includes a Reverse Osmosis (RO) plant (see Photo 4) that is scheduled to be completed and commissioned as needed in the future.</p>	<b>Not triggered</b>	
Condition B37	<b>Water – Water Management Performance Measures</b> The applicant must ensure the development complies with the water management measures in Table 7.	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> <li>• Water Management Plan (Doc ID: 0041-150-PLA-0010, Revision 0D, issued on 11 November 2022)</li> <li>• Appendix F – Photo 15 Leewood produced water ponds and monitoring equipment</li> <li>• Appendix F – Photo 16 Bibblewindi 27 groundwater monitoring bore (existing)</li> </ul>	<p>The water management performance measures defined in Table 7 were stated to have been developed through IPC consultation with relevant government agencies.</p> <p>It is acknowledged that some of the performance measures defined in Table 7 are relatively broad and potentially difficult to measure and report against. Table 7 also includes some specific performance measures, as requested by relevant agencies.</p> <p>Table 3.1 in the Water Management Plan refers to water management performance measures. During their field inspection in August 2023, the Auditors sighted evidence of activities being</p>	<b>Compliant</b>	



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	<p>Table 7: Water management performance measures</p> <table><tr><th>Feature</th><th>Performance Measure</th></tr><tr><td>Water management – General</td><td><ul style="list-style-type: none"><li>Maximise water recycling, reuse and sharing opportunities</li><li>Maximise beneficial re-use of treated water</li><li>Minimise the need for discharge of treated water to Bohena Creek</li><li>Design, install, operate and maintain water management infrastructure in a proper and efficient manner</li></ul></td></tr><tr><td>Namoi alluvial aquifers and Great Artesian Basin aquifers</td><td><ul style="list-style-type: none"><li>Negligible environmental consequences to the aquifers beyond those predicted in the EIS, including:<ul style="list-style-type: none"><li>negligible change in groundwater levels;</li><li>negligible change in groundwater quality; and</li><li>negligible impact to other groundwater users</li></ul></li><li>No exceedance of the minimal harm considerations in the <i>Aquifer Interference Policy</i> (DPI, 2012)</li><li>Negligible change to baseline methane levels in groundwater user bores</li></ul></td></tr><tr><td>Gunnedah Oxley Basin aquifers</td><td><ul style="list-style-type: none"><li>Drawdown and water take to be generally consistent with the 'base case' predictions and produced water profile in the EIS</li><li>Negligible change in groundwater quality</li></ul></td></tr><tr><td>Riparian and aquatic ecosystems</td><td><ul style="list-style-type: none"><li>Maintain or improve baseline channel stability in affected watercourses</li><li>Negligible change to surface water quality in any watercourse</li><li>Negligible impact on groundwater dependent ecosystems</li><li>Design, install and maintain erosion and sediment controls in accordance with the guidance series <i>Managing Urban Stormwater: Soils and Construction – Volume 1</i> (Landcom, 2004) and <i>2E Mines and Quarries</i> (DECC, 2008)</li><li>Design, install and maintain any infrastructure within 40 metres of watercourses in accordance with the guidance series for <i>Controlled Activities on Waterfront Land</i> (DPI Water, 2012)</li><li>Design, install and maintain any creek crossings generally in accordance with the <i>Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management</i> (DPI, 2013) and <i>Why Do Fish Need To Cross The Road? 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As of August 2023, these requirements had not been incorporated into the Annual Review template.</p> <p><b>Observation No. 26</b> – The Santos NGP Annual Review template should include relevant tables and sections to report against the performance measures defined in Table 7 of Development</p>		
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Condition B38	<p><b>Water – Water Technical Advisory Group Advisory Group</b></p> <p>The Applicant must facilitate the operation of a Water Technical Advisory Group for the development to the satisfaction of the Planning Secretary. The group must:</p> <p>(a) be established in consultation with DPIE Water and EPA, and comprise a range of water experts whose appointments have been approved by the Planning Secretary, including representatives from:</p> <p>(i) government including DPIE Water and EPA (if available);</p>	<ul style="list-style-type: none"><li>Letter of approval for the NGP Water Technical Advisory Group was received from the Director, Resource Assessments, DPIE on 3 May 2021</li><li>Narrabri Gas Project (NGP) Water Technical Advisory Group (WTAG) Minutes of meeting dated 15 September 2022</li><li>Narrabri Gas Project (NGP) Water Technical Advisory Group (WTAG)</li></ul>	<p>Santos was able to demonstrate that it has facilitated the operation of a Water Technical Advisory Group (WTAG).</p> <p>The letter of approval for the NGP Water Technical Advisory Group was received from the Director, Resource Assessments, DPIE on 3 May 2021.</p> <p>A total of eight meetings have been held to date for the NGP WTAG. These meetings were held in: a) May 2021; b) September 2021; c) February 2022; d) October 2021; e) November 2021; f) December 2021; g) February 2022; h) September 2022; i) November 2022 and j) most recently in February 2023. The minutes of these meetings are available on the Santos NGP website.</p>	Compliant													

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	(ii) independent experts from the scientific community (at least 2 representatives); and (iii) local groundwater users organisations and/or landowners (at least 2 representatives); (b) be established prior to the commencement of Phase 1; (c) meet at least twice a year; and (d) provide advice on project-related water management issues, including preparation and implementation of the: (i) Groundwater model; (ii) Water Management Plan; and (iii) Field Development Plan.	Minutes of meeting dated 10 November 2022 <ul style="list-style-type: none"> <li>Narrabri Gas Project (NGP) Water Technical Advisory Group (WTAG) Minutes of meeting dated 14 February 2023</li> </ul>	The Auditors sighted the minutes for meetings of the NGP WTAG held on: a) 15 September 2022; b) 10 November 2022; and c) 14 February 2023. DPIE Water have two representatives on the NGP Water Technical Advisory Group. Their attendance at these meetings is recorded on the minutes. The NSW EPA is not represented on the WTAG. The minutes of these meetings demonstrate that advice is being provided by the WTAG on the project-related water management issues referred to in paragraph (d)(i), (ii) and (iii).		
Condition B39	<b>Water – Groundwater Model</b> The Applicant must periodically update the groundwater model for the development, to the satisfaction of the Planning Secretary. The model update must: (a) be prepared and peer reviewed by suitably qualified and experienced persons; (b) be undertaken in consultation with DPIE Water, EPA and the Water Technical Advisory Group; (c) be undertaken prior to the commencement of Phase 2, and at least every 3 years thereafter (d) be undertaken in accordance with the Australian Groundwater Modelling Guidelines (2012, or as updated) and other relevant guidelines including the IESC's Information Guidelines Explanatory Note – Uncertainty	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Groundwater Modelling Plan (GModP) (Doc ID: 0041-150-PLA-0012) as Attachment 3 of the Groundwater Water Management Plan (Doc ID: 0041-150-PLA-0015, Revision No. 0E, issued on 11 November 2022)</li> <li>Appendix G – Independent Hydrogeological Report (Ref GWA J231301) issued on 22 September 2023</li> </ul>	The Auditors and Santos consider that this condition has not been triggered. The current NGP Groundwater Model was prepared by CDM Smith for the Narrabri Gas Project EIS (Appendix F) and approved as part of Development Consent SSD 6456. The Groundwater Model has not been updated since this date. The Auditors consider that the approved Groundwater Model is suitable for the purpose of Phase 1. It was stated that groundwater data gathered in Phase 1 would inform future revisions of the Groundwater Model prior to Phase 2 in accordance with the Groundwater Modelling Plan (GModP) (Doc ID: 0041-150-PLA-0012). An independent groundwater expert was approved by the DPE for this audit. This expert (Andrew Moser of GWA) reviewed the suitability of the existing groundwater model and identified	Not triggered	

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	<p>analysis – Guidance for groundwater modelling within a risk management framework (2018);</p> <p>(e) improve the model prior to the commencement of phase 2 to be generally in accordance with the features of a Class 2 confidence level model (as per the Australian Groundwater Modelling Guidelines) ; the features of which must be based on the Water Technical Advisory Group's advice on appropriate development specific modelling objectives and criteria: and</p> <p>(f) include:</p> <p>(i) updated water modelling objectives;</p> <p>(ii) transient groundwater flow modelling;</p> <p>(iii) updated geological modelling based on all available drill data and analysis, including:</p> <ul style="list-style-type: none"> <li>detailed structure assessment (including faulting) at best practice resolution;</li> <li>consideration of neotectonics and the stress field in the project area and surrounds;</li> </ul> <p>(iv) updated hydrogeological modelling based on all well data, drilling data, hydrogeological analysis and water monitoring data for all aquifers and aquitards, including:</p> <ul style="list-style-type: none"> <li>consideration of impacts from the GABSI;</li> <li>consideration of leakage from the GAB to the Lower Namoi Groundwater Source using the heads predicted by the EIS model;</li> </ul>		<p>additional work that may been needed to the model.</p> <p>In Section 3 (Summary of Findings and Observations) of the Independent Hydrogeological Report issued on 22 September 2023 (Ref GWA J231301) (see Appendix G of this audit report), the expert stated:</p> <p><i>It is noted that it is only 10 months since the approval of the relevant plans (Santos 2022 a, b, c, d) in November 2022 and 7 months since the approval of Phase 1 in February 2023, and therefore little new data or information has been generated for review. Furthermore, as the project Phase 1 pilot has not yet commenced operation there has been no pumping of groundwater from the target CSG reservoir and therefore no potential for groundwater impacts on any aquifers from the major potential project activity.</i></p>		

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	(v) updated predictions of groundwater drawdown and water take from all applicable groundwater sources as a result of the development; and  (vi) consideration of the predicted impacts against the: <ul style="list-style-type: none"> <li>previous model predictions and monitoring results;</li> <li>water management performance measures in Table 6;</li> <li>minimal harm considerations in the NSW Aquifer Interference Policy; and</li> <li>groundwater management response triggers in the Water Management Plan.</li> </ul>				
Condition B40	<b>Water – Groundwater Model</b>  The Applicant must not commence Phase 2 of the development if the updated groundwater model for the development required under Condition B39 predicts an exceedance of the water management performance measures identified in Table 7.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition has not been triggered, as it is dependent on the groundwater model update in accordance with condition B39.	<b>Not triggered</b>	
Condition B41	<b>Water – Water Management Plan</b>  Prior to the commencement of Phase 1, the Applicant must prepare a Water Management Plan for the development to the satisfaction of the Planning Secretary. This plan must: <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary;</li> <li>(b) be prepared in consultation with DPIE Water, EPA and the Water Technical Advisory Group;</li> </ul>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul> <u>Paragraphs (a) to (c)</u> <ul style="list-style-type: none"> <li>Water Management Plan (Doc ID: 0041-150-PLA-0010, Revision No. 0D, issued on 11 November 2022)</li> <li>Letter dated 11 November 2022 from DPE (Stephen O'Donoghue), approving</li> </ul>	<u>Water Management Plan</u>  As of August 2023, the current Water Management Plan (WMP) is Revision No. 0D, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0010). The WMP and the associated sub-plans and protocols are available on the Santos NGP website.  The Auditors sighted a DPE letter dated 11 November 2022 (i.e. prior to commencement of Phase 1 on 7 February 2023), approving this version of the WMP and the associated sub-plans (and protocols).	<b>Compliant</b>	

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	<p>(c) describe the measures to be implemented to ensure that the Applicant complies with the water management performance measures (see Table 7);</p> <p>(d) include a:</p> <p>(i) <b>Erosion and Sediment Control Plan</b> that:</p> <ul style="list-style-type: none"> <li>is consistent with the requirements of <i>Managing Urban Stormwater: Soils and Construction – Volume 1: Blue Book</i> (Landcom, 2004) and <i>Volume 2E: Mines and Quarries</i> (DECC, 2008);</li> <li>identifies all activities that could cause soil erosion, generate sediment or affect flooding;</li> <li>describes measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, and manage flood risk;</li> <li>describes the location, function, and capacity of erosion and sediment control structures and flood management structures; and</li> <li>describes what measures would be implemented to maintain (and if necessary, decommission) the structures over time;</li> </ul> <p>(ii) <b>Site Water Balance</b> that includes details of:</p> <ul style="list-style-type: none"> <li>predicted annual inflows and outflows in the project area;</li> <li>sources and security of water supply for the life of the development</li> </ul>	<p>this version of the WMP and its sub-plans</p> <ul style="list-style-type: none"> <li>Letter dated 17 February 2021 from DPIE (Stephen O'Donoghue) appointing the nominated experts to prepare the Water Management Plan</li> </ul> <p><u>Paragraph (d)(i)</u></p> <ul style="list-style-type: none"> <li>Erosion and Sediment Control Plan (Doc ID: 0041-150-PLA-0021, Revision No. 0B, issued on 11 November 2022)</li> <li>Surface Water Management Plan (Doc ID: 0041-150-PLA-0016, Revision No. 0B, issued on 11 November 2022)</li> <li>Dewhurst 43 Site-specific ESCP (IDWH43PRMLV01) 19 September 2022</li> </ul> <p><u>Paragraph (d)(ii)</u></p> <ul style="list-style-type: none"> <li>Site Water Balance (Doc ID: 0041-150-PLA-0017, Revision No. 0C, issued on 24 October 2022)</li> </ul> <p><u>Paragraph (d)(iii)</u></p> <ul style="list-style-type: none"> <li>Surface Water Management Plan (Doc ID: 0041-150-PLA-0016, Revision No. 0B,</li> </ul>	<p>The following sub-headings and comments are the Auditors' assessment of Santos's compliance against paragraphs (a) to (c) of this condition.</p> <p><u>Paragraph (a)</u></p> <p>Section 1.5 states that the WMP was prepared by Mark Vile of Onward Consulting Pty Ltd, supported by Servaes van der Meulen (Onward Consulting Pty Ltd), Dr Richard Cresswell (Eco Logical Australia) and CDM Smith. The Auditors sighted the DPIE letter of 17 February 2021 in which the Planning Secretary approved the appointment of these experts as being suitably qualified and experienced to prepare the WMP.</p> <p><u>Paragraph (b)</u></p> <p>Section 1.6 of the WMP states that consultation occurred with the agencies and advisory group named in this paragraph. Appendix A includes records of this consultation.</p> <p><u>Paragraph (c)</u></p> <p>Specific water management performance measures (in Table 7 of SSD 6456) are described in the WMP (Table 3.1) and relevant sub-plans or protocols. Together, the WMP and its sub-plans and protocols satisfy paragraph (c).</p> <p>The following sub-headings and comments are the Auditors' assessment of Santos's compliance against paragraphs (d)(i) to (d)(xi) of this condition.</p> <p><u>Paragraph (d)(i) – Erosion and Sediment Control Plan</u></p> <p>As of August 2023, the current Erosion and Sediment Control Plan (ESCP) is Revision No. 0B, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0021). Within the ESCP:</p> <ul style="list-style-type: none"> <li>[Bullet Point 1] Section 5 of the ESCP states that all ESCs will be designed, maintained and</li> </ul>		

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	<p>(including authorised entitlements and licences);</p> <ul style="list-style-type: none"> <li>water storage and treatment capacity;</li> <li>water use and management in the project area, including any water transfers or sharing with neighbouring water users;</li> <li>licensed discharge points and limits; and</li> <li>reporting procedures, including the annual preparation of an updated site water balance;</li> </ul> <p>(iii) <b>Surface Water Management Plan</b> that includes:</p> <ul style="list-style-type: none"> <li>detailed baseline data on surface water flows and quality of watercourses and/or water bodies potentially impacted by the development (based on at least 3 years of monitoring data where available), including: <ul style="list-style-type: none"> <li>stream and riparian vegetation health;</li> <li>channel stability (geomorphology);</li> <li>water supply and quality for other surface water users; and</li> <li>natural methane leaks and accumulations;</li> </ul> </li> <li>a detailed description of the surface water management system;</li> </ul>	<p>issued on 11 November 2022)</p> <ul style="list-style-type: none"> <li>Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> <li>Dust Suppression Protocol (Doc ID: 0041-150-PLA-0022, Revision No. 0B, issued on 24 October 2022)</li> <li>Irrigation Management Plan (Doc ID: 0041-150-PLA-0020, Revision No. 0B, issued on 24 October 2022)</li> </ul> <p><u>Paragraph (d)(iv)</u></p> <ul style="list-style-type: none"> <li>Groundwater Management Plan (Doc ID: 0041-150-PLA-0015, Revision No. 0E, issued on 11 November 2022)</li> <li>Groundwater Baseline Report (Doc ID: 0041-150-PLA-0013, Revision No. 0E, 11 November 2022) – Attachment 2 of the GMP</li> <li>Narrabri Gas Project EIS Part C Chapter 11 Groundwater and geology, Section 11.3.1</li> </ul>	<p>installed in accordance with the guidance series <i>Managing Urban Stormwater: Soils and Construction – Volume 1: Blue Book</i> (Landcom, 2004) and <i>Volume 2E: Mines and Quarries</i> (DECC, 2008);</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 2</i>] Table 6.2 in the ESCP identifies potential ground disturbance impacts that could cause erosion and/or generate sediment. Flooding risks are identified in Sections 5.7 and 6.7, and Tables 6.1 and 8.1, in the SWMP (Doc ID: 0041-150-PLA-0016).</li> <li>[<i>Bullet Point 3</i>] Section 5 and its sub-sections in the ESCP describe general and specific management measures for minimising soil erosion and transport of sediment. The <i>Managing Urban Stormwater: Soils and Construction - Volume 1 and Volume 2</i> is referenced as the design and installation standard.</li> </ul> <p>Appendix E, F and G provide example design standard drawings. Management of flood risks are described in Section 5.7 and 6.7, and Tables 6.1 and 8.1, in the SWMP.</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 4</i>] Section 5 and Appendix C detail the requirements for site-specific ESCPs. A site-specific ESCP will identify location, function, and capacity of ESC structures (Appendix C). Section 5.6 states that no sediment basins will be constructed in Phase 1. Management of flood controls are described in Sections 5.7 and 6.7, and Tables 6.1 and 8.1, in the SWMP.</li> <li>[<i>Bullet Point 5</i>] Section 7 details the inspection program (Section 7.1) and maintenance activities (Section 7.2) to be undertaken.</li> </ul>		



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	<ul style="list-style-type: none"> <li>detailed plans, design objectives and performance criteria for water infrastructure, including: <ul style="list-style-type: none"> <li>any creek restoration works associated with the development;</li> <li>water run-off diversions and catch drains;</li> <li>water storages and sediment dams;</li> <li>water discharge pipelines and infrastructure; and</li> <li>reinstated drainage networks on rehabilitated areas of the project area;</li> </ul> </li> <li>detailed performance criteria, including trigger levels for identifying and investigating any potentially adverse impacts associated with the development, for: <ul style="list-style-type: none"> <li>downstream surface water flows and quality;</li> <li>channel stability;</li> <li>downstream flooding impacts;</li> <li>stream and riparian vegetation health;</li> <li>water supply for other water users; and</li> <li>post-mining water pollution from rehabilitated areas of the project area;</li> </ul> </li> <li>a program to monitor and evaluate:</li> </ul>	<ul style="list-style-type: none"> <li>Groundwater Monitoring Plan (Doc ID: 0041-150-PLA-0011, Revision No. 0E, issued on 11 November 2022)</li> <li>Environmental Management Strategy (Doc ID: 0041-150-PLA-0003, Revision No. 0A, issued on 10 November 2022)</li> <li>Appendix G – Independent Hydrogeological Report (Ref GWA J231301) issued on 22 September 2023</li> </ul> <p><u>Paragraph (d)(v)</u></p> <ul style="list-style-type: none"> <li>Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> <li>NGP Environmental Impact Assessment (EIS)</li> <li>Irrigation Management Plan (Doc ID: 0041-150-PLA-0020, Revision No. 0B, issued on 24 October 2022)</li> <li>Dust Suppression Protocol (Doc ID: 0041-150-PLA-0022, Revision No. 0B, issued on 24 October 2022)</li> </ul>	<p><b>Observation No. 27</b> – Condition B41(d)(i) requires the ESCP to identify all activities that could cause soil erosion, generate sediment, or affect flooding. Santos should consider updating section 6 in the ESCP to discuss flooding risks and cross-reference sections 5.7 and 6.7, and Tables 6.1 and 8.1, in the SWMP.</p> <p><b>Observation No. 28</b> – The ESCP refers to <i>Managing Urban Stormwater: Soils and Construction - Volume 1 and Volume 2</i>, but there is limited guidance on what sediment controls could be used for different activities. Future ESCP revisions could consider including a matrix to identify potential control options by activity type and include capacity guidance for future sediment basins in Phase 2 of the Project.</p> <p><u>Paragraph (d)(ii) – Site Water Balance</u></p> <p>As of August 2023, the current Site Water Balance (SWB) is Revision No. 0C, issued on 24 October 2022 (Doc ID: 0041-150-PLA-0017). The Site Water Balance includes details of:</p> <ul style="list-style-type: none"> <li>[Bullet Point 1] predicted annual inflows and outflows in the project area are detailed in Section 7 and Table 7.1. A GoldSim water balance model has been developed for the NGP. The water balance does not include potable water supply inputs as the volume has been assessed as negligible (Section 4.2.3).</li> <li>[Bullet Point 2] sources and security of water supply for the life of the development (including authorised entitlements and licences) are detailed in Section 4. Section 4.1.2 states that the SWB is only required to address Phase 1 activities, this SWB and the Groundwater Management Plan conservatively assume Phase 1 to run for a minimum of 25 years. Section 4.1.3 states</li> </ul>		

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	<ul style="list-style-type: none"> <li>compliance with the relevant performance measures listed in Table 7 and the performance criteria established above;</li> <li>controlled and uncontrolled discharges, including upstream and downstream monitoring at discharge sites;</li> <li>seepage and leachate from ponds and dams containing produced water and/or brine;</li> <li>surface water inflows, outflows and storage volumes to inform the Site Water Balance; and</li> <li>the effectiveness of the surface water management systems and the measures within the Erosion and Sediment Control Plan;</li> <li>reporting procedures for the results of the monitoring program; and</li> <li>a plan to respond to any exceedances of the performance measures or performance criteria, and repair, mitigate and/or offset any adverse surface water impacts of the development;</li> </ul> <p>(iv) <b>Groundwater Management Plan</b>, that includes:</p> <ul style="list-style-type: none"> <li>detailed baseline data of hydrogeology and groundwater levels, formation parameters (such as hydraulic conductivity, storage and yield) and quality for groundwater resources potentially impacted by the</li> </ul>	<ul style="list-style-type: none"> <li>Surface Water Management Plan (Doc ID: 0041-150-PLA-0016, Revision No. 0B, issued on 11 November 2022)</li> </ul> <p><u>Paragraph (d)(vi)</u></p> <ul style="list-style-type: none"> <li>Irrigation Management Plan (Doc ID: 0041-150-PLA-0020, Revision No. 0B, issued on 24 October 2022)</li> <li>NGP EIS – Appendix G2 (Irrigation General Concept Design), prepared by BeneTerra, 10 November 2015</li> <li>Site Water Balance (Doc ID: 0041-150-PLA-0017, Revision No. 0C, issued on 24 October 2022)</li> </ul> <p><u>Paragraph (d)(vii)</u></p> <ul style="list-style-type: none"> <li>Dust Suppression Protocol (Doc ID: 0041-150-PLA-0022, Revision No. 0B, issued on 24 October 2022)</li> <li>Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> </ul>	<p>that the Water Access Licences and water allocations detailed in Table 4.2 are sufficient to cover water extraction from the Gunnedah Oxley Basin Murray Darling Basin Porous Rock water sources (GOB) and the Great Artesian Basin Southern Recharge Groundwater water source (GAB) for the whole project.</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 3</i>] water storage and treatment capacities are detailed in Section 6 and Table 6.1.</li> <li>[<i>Bullet Point 4</i>] water use and management in the project area, including any water transfers or sharing with neighbouring water users; (Sections 5 and 5.2). All water use (irrigation) will occur within NGP facilities and on NGP land. There are no water sharing agreements. Section 5.2.1 states that water sharing opportunities will be consider during Phase 2.</li> <li>[<i>Bullet Point 5</i>] licensed discharge points and limits, which are detailed in Section 6.5. The EPL only authorises one discharge point from the Leewood treated tank; however, Santos stated that managed discharges into Bohena Creek are not planned for Phase 1.</li> <li>[<i>Bullet Point 6</i>] reporting procedures, including the annual preparation of an updated site water balance are detailed in sections 1.2 and 12.3.</li> </ul> <p><b>Observation No. 29</b> – Section 4.2.3 in the Site Water Balance states that the volume of potable water is negligible in comparison to the volume of produced water and as such has not been included in the overall water balance for Phase 1. To improve transparency, an estimated volume could be included in the Management Plan and reported in Annual Reviews.</p>		



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	<p>development (based on at least 3 years of monitoring data), including:</p> <ul style="list-style-type: none"> <li>– aquifer and aquitard health;</li> <li>– subsidence and seismicity, including a topographic baseline survey using interferometric synthetic aperture radar (or similar method as agreed by the Planning Secretary);</li> <li>– groundwater supply and quality for other water users;</li> <li>– natural methane leaks and accumulations, including in privately-owned bores and monitoring bores; and</li> <li>– groundwater dependent ecosystems;</li> <li>• a detailed description of the groundwater management and monitoring system, including a monitoring network that is capable of: <ul style="list-style-type: none"> <li>– characterising temporal and spatial variations of all potentially affected water sources;</li> <li>– verifying actual direct and indirect water take;</li> <li>– providing an early warning of any impacts to potentially affected water sources, at varying depths in the geological profile;</li> <li>– providing data to improve the confidence level class of the groundwater model as soon as reasonable and feasible; and</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• NGP EIS – Appendix G4 (Water Baseline Report)</li> </ul> <p><u>Paragraph (d)(viii)</u></p> <ul style="list-style-type: none"> <li>• Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> <li>• Produced Salt Beneficial Reuse and Disposal Study (Doc ID: 0041-150-PLA-0006, Revision No. 0B, issued on 24 October 2022)</li> </ul> <p><u>Paragraph (d)(ix)</u></p> <ul style="list-style-type: none"> <li>• Water Management Plan (Doc ID: 0041-150-PLA-0010, Revision No. 0D, issued on 11 November 2022)</li> <li>• Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> </ul> <p><u>Paragraph (d)(x)</u></p> <ul style="list-style-type: none"> <li>• Pollution Incident Response Management Plan (Doc ID: 0041-150-PLA-0019, Revision No. 0A, issued on 31 October 2022)</li> </ul>	<p><u>Paragraph (d)(iii) – Surface Water Management Plan</u></p> <p>As of August 2023, the current Surface Water Management Plan (SWMP) is Revision No. 0B, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0016). Within the SWMP:</p> <ul style="list-style-type: none"> <li>• <i>[Bullet Point 1]</i> Section 4 provides baseline data on the existing environment around the project and includes: local drainage features (Section 4.2) with drainage features at risk (Section 4.2.1), stream and riparian vegetation (Section 4.5 and EIS Appendix J1), water course geomorphology (Section 4.2.2 and EIS Appendix H section 4.6), surface water quality (Section 4.4) compiled from greater than 3 years of data (commencing in 2012), natural methane leaks and accumulations (Section 4.6, which refers to section 4.4.4 of the GMP).</li> </ul> <p>The information provided in section 4 is summarised from the detailed baseline assessments documented in the NGP Environmental Impact Assessment (EIS).</p> <ul style="list-style-type: none"> <li>• <i>[Bullet Point 2]</i> Section 7 describes the elements of the water management system and states that for Phase 1 the Surface water Management System will not include the construction of diversions, dams or basins and therefore will not result in water releases or discharges. Management of the surface water is described in the Produced Water Management Plan (Doc ID: 0041-150-PLA-0018), the Dust Production Protocol (0041-150-PLA-0022) and the Irrigation Management Plan (Doc ID: 0041-150-PLA-0020).</li> </ul>		

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	<ul style="list-style-type: none"> <li>integrating with any government monitoring networks in the area;</li> <li>detailed performance criteria, including trigger levels for identifying and investigating any potentially adverse impacts associated with the development, on: <ul style="list-style-type: none"> <li>regional and local aquifers and aquitards (alluvial and hardrock);</li> <li>ground subsidence and seismicity;</li> <li>groundwater supply and quality for other water users, including all potentially affected privately-owned licensed groundwater bores;</li> <li>groundwater dependent ecosystems; and</li> <li>aquatic habitat and stygofauna;</li> </ul> </li> <li>a program for baseline data acquisition (works and timing) for the required groundwater model updates;</li> <li>a program to monitor and evaluate: <ul style="list-style-type: none"> <li>compliance with the relevant performance measures listed in Table 7, and the performance criteria established above;</li> <li>groundwater flows, quality and yield in regional and local aquifers and aquitards (alluvial and hardrock),</li> <li>ground subsidence and seismicity;</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Dam Safety Emergency Plan (Doc ID: 0041-150-PLA0014 Revision No. 0A, issued on 31 October 2022) (Attachment 1 of the PIRMP)</li> <li>Email on 3 May 2023 and Attachment titled “PR-0007954 and EPR-0007953 May 2023 Narrabri Operations Desktop Exercise”</li> <li>EPR-003330 Narrabri Practical Exercise 2 August 2023</li> </ul> <p><u>Paragraph (d)(xi)</u></p> <ul style="list-style-type: none"> <li>Water Management Plan (Doc ID: 0041-150-PLA-0010, Revision No. 0D, issued on 11 November 2022) and associated sub-plans and protocols</li> </ul>	<p><b>Observation No. 30</b> – Santos should consider including a water management system schematic in the SWMP and WMP to assist in understanding the system's various elements.</p> <ul style="list-style-type: none"> <li>[Bullet Point 3] Section 6 and Table 6.1 describe the risks, mitigation measures and where relevant performance criteria for the surface water management system and includes: creek restoration works associated with the development (Section 6.6); water run-off diversions and catch drains (Section 6.6 and ESCP); reinstated drainage networks on rehabilitated areas of the project area (Section 6.6).</li> </ul> <p>The SWMP states that there are no new water storages and sediment dams, water discharge pipelines and infrastructure proposed for Phase 1.</p> <ul style="list-style-type: none"> <li>[Bullet Point 4] Santos is required to develop local trigger values during Phase 1 if sufficient data is available (Section 3.2.4); however; Appendix C provides default water quality indicator values. Section 8 and Table 8.1 detail the surface water performance criteria and include: downstream surface water flows and quality (Sections 8.3.1 and 8.3.2), channel stability (Section 8.4); downstream flooding impacts (Section 11.2); stream and riparian vegetation health (Sections 10.7 and 11.2); and water supply for other water users (Section 9 and Table 9.1). Post-mining water pollution from rehabilitated areas of the project area has not been considered as the project has only commenced Phase 1.</li> <li>[Bullet Point 5] Sections 8.2, 8.3 and 8.4 describe the program to monitor surface water and creek channel stability. The ESCP, SWB and PWMP monitoring programs supplement</li> </ul>		

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	<ul style="list-style-type: none"> <li>– geological fracturing and heterogeneity;</li> <li>– water loss/seepage/leakage from water storages and project related infrastructure into the groundwater system;</li> <li>– potential cross-contamination of aquifers, including migration from lower aquifers to the GAB;</li> <li>– sub-surface leakage of methane, drilling fluids and saline groundwater;</li> <li>– groundwater inflows, outflows and storage volumes to inform the Site Water Balance;</li> <li>– the effectiveness of the groundwater management systems;</li> <li>• reporting procedures for the results of the monitoring program; and</li> <li>• a plan to respond to any exceedances of the groundwater performance criteria, and repair, mitigate and/or offset any adverse groundwater impacts of the development;</li> </ul> <p>(v) <b>Produced Water Management Plan</b>, that includes:</p> <ul style="list-style-type: none"> <li>• detailed baseline data on produced water yield and quality;</li> <li>• a detailed description of the produced water management system, including details of:</li> </ul>		<p>the surface water monitoring program. These programs include compliance with the relevant performance measures listed in Table 7 and the performance criteria established above (Sections 8 and 12.1 in the SWMP, Sections 9 and 13.1 in the PWMP), controlled and uncontrolled discharges, including upstream and downstream monitoring at discharge sites (Section 8.3.2 in the SWMP), seepage and leachate from ponds and dams containing produced water and/or brine (Table 5.1 and Section 9 in the PWMP), surface water inflows, outflows and storage volumes to inform the Site Water Balance (Section 8 in the SWB, and Table 5.1 and Section 9 in the PWMP), and the effectiveness of the surface water management systems and the measures within the Erosion and Sediment Control Plan (Section 12.1 in the SWMP and Section 7 in the ESCP);</p> <ul style="list-style-type: none"> <li>• [Bullet Point 6] Section 12.1 details the requirement to report the results of the monitoring program in the Annual Review. Section 12.4 states the requirement to make relevant monitoring data and reports available on the Project website. As of August 2023, the Auditors sighted monitoring data reported publicly at: <a href="https://waterportal.santos.com/resources-library/">https://waterportal.santos.com/resources-library/</a></li> </ul> <p>It was stated that a data QA/QC process is implemented to confirm data accuracy and completeness before results are published on the Santos NGP website.</p> <ul style="list-style-type: none"> <li>• [Bullet Point 7] Section 9 and Tables 9.1 – 9.6 detail the specific responses and protocols that are to be implemented to identify, assess and respond to abnormal conditions.</li> </ul>		

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	<ul style="list-style-type: none"> <li>– produced water collection, transfer, storage, treatment, beneficial usage and/or disposal infrastructure;</li> <li>– fail-safe, redundancy and contingency measures;</li> <li>– capacity of water storages, large ponds and dams, including during plant outages and extreme weather events;</li> <li>– provision for continuous logging of produced water and treated water volumes;</li> <li>– leak detection and spill response;</li> <li>– preferential beneficial water use options;</li> <li>• detailed performance criteria, including trigger levels for identifying and investigating any potentially adverse impacts associated with: <ul style="list-style-type: none"> <li>– produced water yield and quality;</li> <li>– treated water yield and quality;</li> <li>– leaks and spills;</li> <li>– treated water irrigation and other beneficial reuse application;</li> <li>– discharge of excess treated water to Bohena Creek;</li> <li>– salt yield and quality;</li> </ul> </li> <li>• a program to monitor, evaluate and report on: <ul style="list-style-type: none"> <li>– compliance with the relevant performance measures listed in</li> </ul> </li> </ul>		<p><b>Observation No. 31</b> – There is an inconsistency between the SWMP Channel Stability Performance measure: “<i>no increase in areas of instability within water courses</i>” and the Table 7 performance measure: “<i>maintain or improve baseline channel stability in affected watercourses</i>”. Santos should revise this aspect of the SWMP to ensure consistency with Table 7 of Development Consent SSD 6456.</p> <p><b>Observation No. 32</b> – For the purpose of complying with relevant performance measures in Table 7 of Development Consent SSD 6456 in relation to riparian and aquatic ecosystems, Santos should conduct a stream/channel stability assessment in accordance with an industry-recognised methodology.</p> <p><b>Observation No. 33</b> – In Section 8.1 and Table 8.1 of the SWMP, the terms “performance criteria” and “performance indicator” are used interchangeably. Santos should update Section 8.1 and Table 8.1 to ensure consistency between the section and table headings and the third column heading in the table.</p> <p><u>Paragraph (d)(iv) – Groundwater Management Plan</u></p> <p>As of August 2023, the current Groundwater Water Management Plan (GMP) is Revision No. 0E, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0015). Within the GMP:</p> <ul style="list-style-type: none"> <li>• [Bullet Point 1] Section 4 and Attachment 2- Groundwater Baseline Report (GBR) (Revision No. 0E, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0013)) provide a summary of the same information presented in the EIS and includes baseline data of hydrogeology and</li> </ul>		

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	<p>Table 7, and the performance criteria established above;</p> <ul style="list-style-type: none"> <li>– produced water yield and quality, including chemicals of potential concern;</li> <li>– treated water yield and quality, including chemicals of potential concern;</li> <li>– leaks and spills;</li> <li>– soil, surface water and groundwater quality in irrigation and other beneficial reuse application areas;</li> <li>– Bohena Creek discharges, flows and water quality;</li> <li>– salt and other waste products yield and quality; and</li> <li>– the effectiveness of the produced water management system;</li> </ul> <p>(vi) <b>Irrigation Management Plan</b> for managing beneficial reuse of treated water for crop irrigation and stock watering, that includes details of:</p> <ul style="list-style-type: none"> <li>• site selection and assessment in accordance with applicable guidelines including the <i>Environmental Guidelines: Use of Effluent by Irrigation</i> (DEC 2004);</li> <li>• irrigation areas and off-site storage capacity, including provisions for ensuring sustainable irrigation before, during and after peak water production;</li> </ul>		<p>groundwater levels, formation parameters (such as hydraulic conductivity, storage and yield) and quality for groundwater resources potentially impacted by the development. The Auditors confirmed that the required information is contained within the following sections of the GMP and GBR (Attachment 2):</p> <ul style="list-style-type: none"> <li>– aquifer and aquitard health (Section 4.4, GBR – Section 3.1);</li> <li>– subsidence and seismicity (Section 4.3, Appendix C);</li> <li>– groundwater supply and quality for other water users (Section 4.5, Attachment 2-section 2);</li> <li>– natural methane leaks and accumulations (Section 4.4.4, Attachment 2-section 4.5);</li> <li>– groundwater dependent ecosystems (Section 4.5.2).</li> </ul> <p>Section 1.1 states that Santos has been monitoring hydrogeological conditions in the project area since 2011. The NGP EIS Part C Chapter 11, section 11.3.1 states that baseline monitoring data has been sourced from multiple groundwater and supporting data sources. Section 4 states that additional information collected since the EIS is reflected in the datasets presented in the GBR. These records provide a data set of greater than 3 years.</p> <ul style="list-style-type: none"> <li>• [Bullet Point 2] Section 6 and Section 9 describe the groundwater management and monitoring system. Table 6.1 details the specific monitoring attributes of the hydro stratigraphic units that are to be installed at 105 monitoring locations prior to the</li> </ul>		

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	<ul style="list-style-type: none"> <li>• agreements with third parties receiving treated water (excluding any commercial in confidence material);</li> <li>• baseline soil and groundwater conditions and quality, based on additional assessment by a suitably qualified agricultural expert/s;</li> <li>• a protocol for operation of the irrigation management system, including any irrigation subject to a RREO;</li> <li>• measures to: <ul style="list-style-type: none"> <li>– maintain soil structure, stability and agricultural productive capacity;</li> <li>– minimise erosion and sedimentation, ponding and waterlogging;</li> <li>– ensure effective surface water and stormwater runoff controls;</li> <li>– maintain groundwater quality and minimise changes to groundwater levels;</li> <li>– coordinate optimal cropping regimes to maintain water balance throughout the year; and</li> <li>– provide contingency measures for irrigation and storage;</li> </ul> </li> </ul> <p>(vii) <b>Dust Suppression Protocol</b> for managing treated water for dust suppression and construction activities (including rehabilitation and drilling), that includes details of:</p>		<p>commencement of Phase 1. These units have the capability to:</p> <ul style="list-style-type: none"> <li>– characterise temporal and spatial variations of all potentially affected water sources;</li> <li>– verify actual direct and indirect water take;</li> <li>– provide an early warning of any impacts to potentially affected water sources, at varying depths in the geological profile;</li> <li>– provide data to improve the confidence level class of the groundwater model as soon as reasonable and feasible; and</li> <li>– integrate with any government monitoring networks in the area.</li> </ul> <p>Table 6.2 summarises the status of these monitoring points as at 11 November 2022 and confirms the system's integration with the government monitoring network.</p> <p>The Auditors observed that there are grammatical inconsistencies in the GMP and GMonP which have the potential for misunderstandings about the required timing of monitoring obligation commencement. As of August 2023, there are still 30 monitoring bores to be constructed, as Phase 1 approval was required to authorise the construction of these bores. Refer to the Independent Hydrogeological Audit Report in Appendix G of this audit report.</p> <p><b>Observation No. 34</b> – Santos should review the Groundwater Management Plan and Groundwater Monitoring Program to address the expert's observations in the Independent Hydrogeological Audit Report (see Appendix G of this audit report) regarding: a) timing of</p>		



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	<ul style="list-style-type: none"> <li>site selection and assessment;</li> <li>baseline soil and groundwater conditions and quality;</li> <li>a protocol for operation of the dust suppression system;</li> <li>measures to: <ul style="list-style-type: none"> <li>maintain soil structure, stability and productive capacity;</li> <li>minimise erosion and sedimentation, ponding and waterlogging;</li> <li>ensure effective surface water and stormwater runoff controls; and</li> <li>maintain groundwater quality and minimise changes to groundwater levels;</li> </ul> </li> </ul> <p>(viii) <b>Managed Release Protocol</b> for managing disposal of treated water to Bohena Creek, that includes:</p> <ul style="list-style-type: none"> <li>details of baseline creek water flows, quality and stream health;</li> <li>details of predicted plume dispersal for all potential pollutants, based on updated mixing zone assessment and modelling;</li> <li>a protocol and detailed procedures for managed release, in accordance with the water management performance measures in Table 6;</li> <li>measures to:</li> </ul>		<p>monitoring network installation; and b) timing of monitoring implementation.</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 3</i>] Section 8 and Section 8.4 provide detailed performance criteria, including trigger levels. Table 8.1 defines trigger levels for: <ul style="list-style-type: none"> <li>regional and local aquifers and aquitards;</li> <li>ground subsidence and seismicity;</li> <li>groundwater supply and quality for other water users including all potentially affected privately-owned licensed groundwater bores, groundwater-dependent ecosystems;</li> <li>aquatic habitat and stygofauna;</li> <li>a program for baseline data acquisition (works and timing) for the required groundwater model updates. Section 8.3.1 and Attachment 3 of the GMP detail the requirements for the groundwater model update. Attachment 3 – Section 4.2 and Table 4.1 detail the scheduled groundwater model review, and section 4.2.3 details the data collection requirement.</li> </ul> </li> <li>[<i>Bullet Point 4</i>] Attachment 1 (Groundwater Monitoring Plan) of the GMP describes a program for baseline data acquisition (works and timing) for the required groundwater model updates.</li> <li>[<i>Bullet Point 5</i>] Section 9 describes the monitoring strategy. Attachment 1 details the Groundwater Monitoring Plan (GMonP) in Revision No. 0E, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0011) and includes:</li> </ul>		

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	<ul style="list-style-type: none"> <li>– upgrade and maintain applicable infrastructure, including a stream flow gauging and monitoring station/s;</li> <li>– maintain water quality and stream and riparian health;</li> <li>– minimise erosion and sedimentation, or changes to channel stability; and</li> <li>– minimise downstream flooding;</li> </ul> <p>(ix) <b>Salt Management Plan</b>, that includes details of:</p> <ul style="list-style-type: none"> <li>• salt and other waste volumes and composition generated by the produced water management system, including chemicals of potential concern;</li> <li>• a program for investigating and implementing beneficial reuse options for the salt product, in accordance with the <i>Produced Salt Beneficial Reuse and Disposal Study</i>;</li> <li>• a protocol and procedures for collection, storage, waste classification, transport and disposal of salt and other waste products;</li> <li>• measures to: <ul style="list-style-type: none"> <li>– ensure all salt and other waste product is stored within a weather-proof structure while on site; and</li> <li>– ensure all salt and other waste product is disposed to an appropriately licenced off-site</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li>– compliance with the relevant performance measures listed in Table 7, and the performance criteria established above (Table 8.1 and Section 9.1);</li> <li>– ground water flows, quality and yield in regional and local aquifers and aquitards (alluvial and hard rock) (Sections 6 and 9.2 of GMP, and GMonP);</li> <li>– ground subsidence and seismicity; (Sections 7 and 9.3);</li> <li>– geological fracturing and heterogeneity (Section 9.4 and GMonP) (note that condition A17 prohibits hydraulic fracturing of coal seams in the project area at any time);</li> <li>– water loss/seepage/leakage from water storages and project related infrastructure into the groundwater system (Section 9.5 and PWMP monitoring program);</li> <li>– potential cross-contamination of aquifers, including migration from lower aquifers to the GAB (Section 9.6, and GMonP Sections 2.4, 3.2 and 5.2);</li> <li>– sub-surface leakage of methane, drilling fluids and saline groundwater (Sections 6 and 9.7, and GMonP Section 3.3);</li> <li>– groundwater inflows, outflows and storage volumes to inform the Site Water Balance (Attachment 3-Ground water Modelling Plan and Section 9.8);</li> <li>– the effectiveness of the groundwater management systems (Sections 12.1 and 12.3).</li> </ul>		



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	<p>waste facility, if not able to be beneficially reused, in accordance with the <i>Produced Salt Beneficial Reuse and Disposal Study</i>; and</p> <p>(x) <b>Pollution Incident Response Management Plan</b>, that has been prepared in accordance with Part 3A of the Protection of the <i>Environment Operations (General) Regulation 2009</i>, and includes:</p> <ul style="list-style-type: none"> <li>detailed procedures for responding to incidents, spills and leaks associated with the produced water management system; and</li> <li>a Dam Safety Emergency Plan for managing potential incidents and emergencies associated with produced water storages; and</li> </ul> <p>(xi) a protocol to report on the measures, monitoring results and performance criteria identified above, in the Annual Review.</p>		<ul style="list-style-type: none"> <li>[<i>Bullet Point 6</i>] Section 12.1 describes reporting procedures for the results of the monitoring program.</li> <li>[<i>Bullet Point 7</i>] Section 11.1 and EMS Section 6 describe a plan to respond to any exceedances of the groundwater performance criteria, and repair, mitigate and/or offset any adverse groundwater impacts of the development.</li> </ul> <p><u>Paragraph (d)(v) – Produced Water Management Plan</u></p> <p>As of August 2023, the current Produced Water Management Plan (PWMP) is Revision No. 0B, issued on 24 October 2022 (Doc ID: 0041-150-PLA-0018). Within the PWMP:</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 1</i>] Sections 4.2 and 4.3 provide baseline data for water yield and quality. It is reported that the yield for existing pilot holes in PEL 238 and PAL 2 is approximately 1.26 ML/day. Table 4.1 provides average water quality results from baseline monitoring over a 16-year period.</li> </ul> <p>The information provided in Section 4 is summarised from detailed baseline assessments documented in the NGP Environmental Impact Assessment (EIS).</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 2</i>] Section 5 describes the produced water management system, and includes: <ul style="list-style-type: none"> <li>produced water collection, transfer, storage, treatment, beneficial usage and/or disposal infrastructure (Sections 5.1 – 5.4). No details are provided on water disposal infrastructure, as it was stated that water discharge is not proposed in Phase 1;</li> </ul> </li> </ul>		

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			<ul style="list-style-type: none"> <li>fail-safe, redundancy and contingency measures are detailed in Table 5.1, Sections 12.2 and 9.3. Section 12.2 provides a protocol for unpredicted impacts. Section 10 and Table 10.1 detail a Trigger Action Response Plan (TARP) for responding to elevated Pond Levels and reference contingencies detailed in Level 2;</li> <li><b>Observation No. 35</b> – The contingency measures described in Section 12.2 and in Level 2 of the TARP (Table 10.1 – Pond level trigger action response plan) are unclear apart from “shut-in PW production/stop the flow of water into the pond/cell”. Santos should review the contingency measures and clearly describe these in Section 12.2.</li> <li>capacity of water storages, large ponds and dams, including during plant outages and extreme weather events are provided in Table 5.1. Section 9.1 defines how storage capacities are defined and Table 9.1 details the Maximum Operating Levels (MOL) based on wet season containment requirements to provide minimum storage capacity at the nominal start of the wet season;</li> <li>provision for continuous logging of produced water and treated water volumes (Section 9.1);</li> <li>leak detection systems are detailed in Table 5.1 and spill response actions are detailed in section 10. Section 10 provides TARPs for pond water levels (Table 10.1) and leakage (Table 10.2) responses;</li> </ul>		

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			<ul style="list-style-type: none"> <li>– preferential beneficial water use options are detailed in section 5.5.</li> <li>• [Bullet Point 3] The following sections describe detailed performance criteria, including trigger levels for identifying and investigating any potentially adverse impacts: <ul style="list-style-type: none"> <li>– produced water yield and quality (Sections 4.1 and 4.2);</li> <li>– treated water yield and quality (Table 9.1, Table C in Appendix C);</li> <li>– leaks and spills (Section 9.6 and Table 9.3). Water storage operating levels (FSL, ERL, MOL) are identified in Tables 9.1 and 9.2;</li> <li>– soil, surface water and groundwater quality in irrigation and other beneficial reuse application areas. The specific water quality requirements are detailed in the Irrigation Management Plan (Doc ID: 0041-150-PLA-0020) and Dust Suppression Protocol (Doc ID: 0041-150-PLA-0022). Section 5.4 of the IMP states that all treated produced water will meet the treated water quality criteria detailed in Appendix D, Table D1 required by condition B37 and SSD 6456 Appendix 6;</li> <li>– discharge of excess treated water to Bohena Creek. Section 6 states that there will be no managed release of treated water to Bohena Creek during Phase 1. The Auditors and Santos consider that this requirement does not apply during Phase 1;</li> <li>– salt yield and quality. Section 7 states that no salt will be produced during Phase 1. It was stated that beneficial</li> </ul> </li> </ul>		

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			<p>reuse of salt will be subject to the outcomes of the Produced Salt Beneficial Reuse and Disposal Study (PSBRDS). The Auditors and Santos consider that this requirement does not apply during Phase 1.</p> <ul style="list-style-type: none"> <li>• <i>[Bullet Point 4]</i> a program to monitor, evaluate and report on: <ul style="list-style-type: none"> <li>– compliance with the relevant performance measures listed in Table 7, and the performance criteria established above. Section 9 details the monitoring program to be implemented including the monitoring measures described in and Table 5.1;</li> <li>– produced water yield and quality, including chemicals of potential concern (Table 5.1);</li> <li>– treated water yield and quality, including chemicals of potential concern (Section 9.5 in this Plan and Section 6 in the IMP (Doc ID: 0041-150-PLA-0020));</li> <li>– leaks and spills (Section 9.1, Section 9.6 and Table 5.1);</li> <li>– soil, surface water and groundwater quality in irrigation and other beneficial reuse application areas (Sections 5.5 and 9.5, and sections 5 and 6 of the IMP (Doc ID: 0041-150-PLA-0020));</li> <li>– Bohena Creek discharges, flows and water quality. Section 6 states that there will be no managed release of treated water to Bohena Creek during Phase 1. The Auditors and Santos consider that the requirement to monitor discharges to Bohena Creek does not apply during</li> </ul> </li> </ul>		

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			<p>Phase 1. The monitoring program for Bohena Creek flows and water quality is detailed in Section 8.3.2 of the Surface Water Management Plan (Doc ID: 0041-150-PLA-0016).</p> <p><b>Observation No. 36</b> – Due to the interaction between the PWMP and SWMP for the discharge activity, Santos should update Section 6 and Section 9 of the PWMP to clarify the monitoring program for the Bohena Creek discharge (treated water) activity and the Bohena Creek surface water monitoring program as described in the SWMP.</p> <ul style="list-style-type: none"> <li>– salt and other waste products yield and quality. Section 7 states that no salt will be produced during Phase 1. It was stated that beneficial reuse of salt will be subject to the outcomes of the PSBRDS. The Auditors and Santos consider that this requirement does not apply during Phase 1;</li> <li>– the effectiveness of the produced water management system. Section 13.1 details the annual effectiveness review process in accordance with condition D8.</li> </ul> <p><u>Paragraph (d)(vi) – Irrigation Management Plan</u></p> <p>As of August 2023, the current Irrigation Management Plan (IMP) is Revision No. 0B, issued on 24 October 2022 (Doc ID: 0041-150-PLA-0020). The IMP includes details of:</p> <ul style="list-style-type: none"> <li>• [Bullet Point 1] site selection and assessment – Section 3.2.1 references the requirement to adhere to the Effluent Irrigation Guidelines (<i>Environmental Guidelines: Use of Effluent by Irrigation</i> (DEC 2004)). Section 4 details site-specific factors used to guide site</li> </ul>		

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			<p>selection and references the Concept Irrigation Design report (NGP EIS – Appendix G2) as providing the detailed irrigable land survey.</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 2</i>] irrigation areas and off-site storage capacity (Section 5.1). It was stated that the irrigation system area is approximately 49 ha and located at the Santos Leewood block as shown in Figure 4.1. The area has the irrigation potential of 6.5ML/day. The SWB (Doc ID: 0041-150-PLA-0017), calculates an average irrigation requirement of 0.6 ML/day or less. There is no water storage facility outside of the Project Boundary during Phase 1. Water storage infrastructure includes a 5ML water balance tank (4ML full supply level as noted in section 5.1 of the PWMP) with additional holding capacity available in the Leewood facility ponds for periods when irrigation cannot occur (section 6 of the SWB). Section 9.1 of the PWMP details the water level monitoring system.</li> <li>[<i>Bullet Point 3</i>] agreements with third parties receiving treated water. It was stated that there are no agreements with other users to share water.</li> <li>[<i>Bullet Point 4</i>] baseline soils characterisation (Sections 4.6 and 4.8) and groundwater baseline studies were completed in the NGP EIS (Appendix G2 (Irrigation General Concept Design)). Section 4.3 provides soil baseline data that has been characterised by a certified soil professional soil scientist, and the NGP EIS – Appendix F provides groundwater baseline data as part of the groundwater impact assessment. Both the IMP and GMP (Doc ID: 0041-150-PLA-0018) summarise this baseline data.</li> </ul>		

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			<p><b>Observation No. 37</b> – Santos should engage a suitably qualified agricultural expert to conduct periodic assessments of 'soil and groundwater conditions and quality' as referred to in condition B41(d)(vi), to support ongoing management of the irrigation area.</p> <ul style="list-style-type: none"> <li>• <i>[Bullet Point 5]</i> a protocol for the operation of the irrigation management system, including any irrigation subject to an RREO – Section 5 includes a description of water volume (Section 5.1), water quality (Section 5.2), suitability for irrigation (Section 5.3), irrigation design (Section 5.4), and an irrigation schedule (Section 5.5). Section 5 is silent on the requirement to obtain an RREO if opportunities to share treated water are identified.</li> </ul> <p><b>Observation No. 38</b> – Santos could revise Section 5 of the IMP to describe required protocols regarding any irrigation subject to an RREO.</p> <ul style="list-style-type: none"> <li>• <i>[Bullet Point 6]</i> Section 7 details the TARPs (Appendix E) that describe the required response measures for specified triggers, including measures to: <ul style="list-style-type: none"> <li>– maintain soil structure, stability and agricultural productive capacity – Sections 6.3 and 6.8 and Table D2 in Appendix D;</li> <li>– minimise erosion and sedimentation, ponding and waterlogging – Section 6.5 and Table D2 in Appendix D and Table E2 TARP;</li> <li>– ensure effective surface water and stormwater runoff controls – Section 6.5</li> </ul> </li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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			<p>and Table D2 in Appendix D and Table E2 TARP;</p> <ul style="list-style-type: none"> <li>– maintain groundwater quality and minimise changes to groundwater levels – Section 6.1 and Section 5 including Table E5 TARP;</li> <li>– coordinate optimal cropping regimes to maintain water balance throughout the year – Section 6.8 and Table D2 in Appendix D;</li> <li>– provide contingency measures for irrigation and storage. Section 9.2 and Table 9.1 describe an “unpredicted impact protocol”. The primary response (Table 9.1, step 1) is to: “Stop the irrigation process and implement immediate corrective actions to minimise the unpredicted impact”. Section 5.1 states that: “There is also additional system buffer capacity in the Leewood ponds in the event that irrigation is precluded, as detailed in section 6 of the Site Water Balance. Water Level monitoring is addressed in Section 9.1 of the PWMP.”</li> </ul> <p><b>Observation No. 39</b> – Santos could revise Table 9.1 in Section 9.2 of the Irrigation Management Plan to describe relevant operational decisions to be made in relation to assessment and management of system capacity in the Leewood ponds, in the event of an unpredicted impact in relation to the irrigation of amended treated water.</p> <p><u>Paragraph (d)(vii) – Dust Suppression Protocol</u></p> <p>As of August 2023, the current Dust Suppression Protocol (DSP) is Revision No. 0B, issued on</p>		



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>24 October 2022 (Doc ID: 0041-150-PLA-0022). The Dust Suppression Protocol includes:</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 1</i>] site selection and assessment. Section 4 identifies both amended and bore water sources and the location of these sources that are available for dust suppression; however, it was stated that only bore water from Bibblewindi 1 and 5 bores will be used for Phase 1.</li> <li>[<i>Bullet Point 2</i>] baseline soil and groundwater conditions and quality. Section 4 states that water quality for produced water is detailed in section 4.3 of the PWMP (Doc ID: 0041-150-PLA-0018) and the water quality for the Bibblewindi Bores 1 and 5 are detailed in Table 4.21 and Table 4.22 of Appendix G4 of the NGP EIS.</li> </ul> <p>There is no information in the IMP relating to baseline soil and groundwater conditions; however, the Auditors consider that this requirement duplicates baseline information detailed in the EIS and the GMP and PWMP and operational dust suppression protocols detailed in the IMP.</p> <ul style="list-style-type: none"> <li>[<i>Bullet Point 3</i>] a protocol for operation of the dust suppression system. Section 5 details the preferential reuse options for the different Water Types and what will be taken into consideration during dust suppression activities.</li> </ul> <p><b>Observation No. 40</b> – To add clarity to the purpose of the Protocols detailed in the DSP (and to reflect the Management Plan purpose documented in Section 1.2), Section 5 should be updated to clearly state that the protocols detailed in this section are for the management of Treated Water used for Dust Suppression.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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			<p>Dust management and mitigation measures will be described in the Air Quality and Greenhouse Gas Management Plan (to be developed prior to the commencement of Phase 2).</p> <p><b>Observation No. 41</b> – The Water Type for Treated Water and Amended Treated Water in Table 5.1 of the Dust Suppression Protocol could create confusion. The Auditors note that Development Consent SSD 6456 defines both types; however, the Amended Treated Water type excludes the words “and/or for managed release to Bohena Creek”. Santos should consider providing additional guidance in Section 5 to clarify or simplify definitions and the source of these water types.</p> <ul style="list-style-type: none"> <li>• [Bullet Point 4] Sections 5, 6 and 7 provide general guidance on the types of actions that will be implemented to achieve some of the measures detailed in this bullet point without being specific, including measures to: <ul style="list-style-type: none"> <li>– maintain soil structure, stability and productive capacity (Section 6);</li> <li>– minimise erosion and sedimentation, ponding and waterlogging (Section 5);</li> <li>– ensure effective surface water and stormwater runoff controls (Section 7);</li> <li>– maintain groundwater quality and minimise changes to groundwater levels. Section 6 states that the key findings of the EIS in relation to the use of treated produced water for dust suppression were that there will be negligible impacts on soil and groundwater at the locations this process is applied.</li> </ul> </li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><u>Paragraph (d)(viii) – Managed Release Protocol</u></p> <p>Section 6 of the Produced Water Management Plan (PWMP) (Doc ID: 0041-150-PLA-0018) states that there will be no managed release of treated water to Bohena Creek during Phase 1.</p> <p>Section 7 of the PWMP states that all produced water will be stored within the Ponds at the existing Leewood Water Management Facility for Phase 1.</p> <p>As of August 2023, the Auditors and Santos consider that the Managed Release Protocol requirements of condition B41 are not applicable to Phase 1 of the Project.</p> <p><u>Paragraph (d)(ix) – Salt Management Plan</u></p> <p>Section 7 of the Produced Water Management Plan (PWMP) (Doc ID: 0041-150-PLA-0018) is the Salt Management Plan.</p> <p>Section 7 states: “As detailed in the PSBRDS, no salt will be produced during Phase 1 and Phase 2 of the Project. It is expected that there will be adequate capacity in the ponds at the existing Leewood Water Management Facility to store produced water and brine during Phase 1 and 2, as detailed in section 7 of the Site Water Balance.”</p> <p>Section 7 of the PWMP also states that the SMP will be reviewed and where relevant, updated prior to the commencement of Phase 2, based on the information obtained through the PSBRDS.</p> <p>As of August 2023, the Auditors and Santos consider that the Salt Management Plan requirements of condition B41 are not applicable to Phase 1 of the Project because all produced water under Phase 1 will be contained in the existing Leewood Water Management Facility.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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			<p><u>Paragraph (d)(x) – Pollution Incident Response Management Plan</u></p> <p>As of August 2023, the current Pollution Incident Response Management Plan (PIRMP) is Revision No. 0A, issued on 31 October 2022 (Doc ID: 0041-150-PLA-0019).</p> <p>The Auditors assessed the PIRMP has having been prepared generally in accordance with section 153A of the <i>Protection of the Environment Operations Act 1997</i> (POEO Act). In relation to the requirements of this sub-paragraph:</p> <ul style="list-style-type: none"> <li>Section 2.4 of the PIRMP details the actions to be taken during and immediately after a pollution incident including: immediate actions at the scene (Section 2.4.1), raising the alarm (Section 2.4.2), relay information (Section 2.4.3), incident response procedures (Section 2.4.4), Incident classification and notification (Section 2.4.5), pollution incident clean-up (Section 2.4.6), spill response review (Section 2.4.7).</li> </ul> <p>The Auditors sighted records of post-event debriefs confirming that a PIRMP desktop training exercise occurred on 2 May 2023, and an emergency training scenario involving the NSW Police was conducted on 2 August 2023.</p> <ul style="list-style-type: none"> <li>Attachment 1 of the PIRMP is the Dam Safety Emergency Plan (DSP) Revision No. 0A, issued on 31 October 2022 (Doc ID: 0041-150-PLA0014). The DSP applies to the produced water storages at the Leewood facility, as shown in Figure 4.1 of the DSP. Specific emergency notifications and actions are detailed in the DSP.</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><u>Paragraph (d)(xi)</u></p> <p>The WMP and each sub-plan and protocol in this condition, includes a protocol to report on the relevant measures, monitoring results and performance criteria in the Annual Review required under condition D8.</p>		
Condition B42	<p><b>Water – Water Management Plan</b></p> <p>The Applicant must implement the Water Management Plan once approved by the Planning Secretary.</p>	<ul style="list-style-type: none"> <li>Erosion and Sediment Control Plan (Doc ID: 0041-150-PLA-0021, Revision No. 0B, issued on 11 November 2022)</li> <li>Groundwater Water Management Plan (Doc ID: 0041-150-PLA-0015, Revision No. 0E, issued on 11 November 2022)</li> <li>Groundwater Monitoring Plan (Doc ID: 0041-150-PLA-0011, Revision No. 0E, issued on 11 November 2022)</li> <li>Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> <li>Dust Suppression Protocol (Doc ID: 0041-150-PLA-0022, Revision No. 0B, issued on 24 October 2022)</li> <li>Pollution Incident Response Management</li> </ul>	<p>During this audit, there was evidence that Santos is implementing the approved Water Management Plan and associated sub-plans and protocols to ensure compliance with the water management performance measures detailed in condition B37 and Table 7. This evidence includes:</p> <ul style="list-style-type: none"> <li>installation of additional groundwater monitoring bores consistent with the Groundwater Management Plan (Doc ID: 0041-150-PLA-0015) and Groundwater Monitoring Plan (Doc ID: 0041-150-PLA-0011) (see Photo 17), and publishing of groundwater monitoring data;</li> <li>management of produced water within the lined water Ponds at the Leewood surface facility in accordance with the Produced Water Management Plan (Doc ID: 0041-150-PLA-0018 (see Photo 15);</li> <li>implementation of the Dust Suppression Protocol by operating a water cart for dust suppression during maintenance activities on the X-Line access track at an active gas well workover site (adjacent to Project boundary) (see Photo 18);</li> <li>implementation of the ESCP (Doc ID: 0041-150-PLA-002) by developing and implementing a site-specific ESCP at Dewhurst 43 Well Pad (see Photo 12);</li> </ul>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<p>Plan (Doc ID: 0041-150-PLA-0019, Revision No. 0A, issued on 31 October 2022)</p> <ul style="list-style-type: none"> <li>Email on 3 May 2023 and Attachment titled “PR-0007954 and EPR-0007953 May 2023 Narrabri Operations Desktop Exercise”</li> <li>EPR-003330 Narrabri Practical Exercise 2 August 2023</li> <li>Surface Water Management Plan (Doc ID: 0041-150-PLA-0016, Revision No. 0B, issued on 11 November 2022)</li> <li>Appendix F – Photo 17 Bibblewindi 6 shallow Groundwater monitoring bore (new)</li> <li>Appendix F – Photo 15 Leewood produced water ponds and monitoring equipment</li> <li>Appendix F – Photo 18 NGP Water Cart</li> <li>Appendix F – Photo 12 Dewhurst 43 Well Pad and ESCP</li> <li>Appendix F – Photo 19 Low Point Drain container Dewhurst 27</li> </ul>	<ul style="list-style-type: none"> <li>sighting training records for the PIRMP (Doc ID: 0041-150-PLA-0019) with local emergency services including an email on 3 May 2023 and Attachment titled “PR-0007954 and EPR-0007953 May 2023 Narrabri Operations Desktop Exercise”, and exercise records titled EPR-003330 Narrabri Practical Exercise 2 August 2023;</li> <li>sighting storage containers located at low point drains along the pipeline network at Dewhurst 27 in accordance with the Surface Water Management Plan (Doc ID: 0041-150-PLA-0016) (see Photo 19);</li> <li>sighting online records for the Water NSW Bohena Creek Gauging Station ID 419905;</li> <li>water meters and telemetry equipment have been installed on LWD and BWD 5 groundwater bores (see Photos 20 and 21).</li> </ul>		

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		<ul style="list-style-type: none"> <li>Appendix F – Photo 20 Leewood groundwater bore and meters</li> <li>Appendix F – Photo 21 Bibblewindi 5 groundwater bore and meters</li> </ul>																																					
Condition B43	<p><b>Biodiversity – Biodiversity Credits Required</b></p> <p>The Applicant must retire the biodiversity credits specified in Tables 8 (above), 9 and 10 below, subject to the staged retirement conditions below, to offset the biodiversity impacts of the development. The retirement of credits must be carried out in consultation with BCD and, apart from the retirement of credits through ecological rehabilitation, in accordance with the Biodiversity Offsets Scheme of the BC Act and to the satisfaction of the BCT.</p> <p><small>Table 8: Biodiversity credit requirements – Ecosystem Credits</small></p> <table> <tr> <th rowspan="2">Plant Community Type (PCT) and PCT Code</th><th colspan="2">Phase 2 Credits</th><th colspan="2">Residual Credits</th><th rowspan="2">Maximum Area directly impacted (ha)</th></tr> <tr> <th>Area (ha)</th><th>Credits Required</th><th>Area (ha)</th><th>Credits Required</th></tr> <tr> <td>Weeping Myall open woodland of the Darling Riverine Plains and Brigalow Belt South Bioregions – Woodland (BCA and EPBC listed EEC) (PCT 27)</td><td>0.1</td><td>5</td><td>N/A</td><td>N/A</td><td>0.1</td></tr> <tr> <td>Weeping Myall open woodland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion – DNG (PCT 27)</td><td>0.5</td><td>20</td><td>N/A</td><td>N/A</td><td>0.5</td></tr> <tr> <td>Brigalow – Balah open forest / woodland on alluvial often gleyed clay from Pilliga Scrub to Goondwindi, Brigalow Belt South Bioregion – Woodland (BCA and EPBC listed EEC) (PCT 35)</td><td>19.3</td><td>1,305.5</td><td>N/A</td><td>N/A</td><td>19.3</td></tr> <tr> <td>Brigalow – Balah open forest / woodland on alluvial often gleyed clay from Pilliga Scrub to Goondwindi, Brigalow Belt South Bioregion – DNG (PCT 35)</td><td>26.0</td><td>910.7</td><td>11.2</td><td>300.3</td><td>37.2</td></tr> </table>	Plant Community Type (PCT) and PCT Code	Phase 2 Credits		Residual Credits		Maximum Area directly impacted (ha)	Area (ha)	Credits Required	Area (ha)	Credits Required	Weeping Myall open woodland of the Darling Riverine Plains and Brigalow Belt South Bioregions – Woodland (BCA and EPBC listed EEC) (PCT 27)	0.1	5	N/A	N/A	0.1	Weeping Myall open woodland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion – DNG (PCT 27)	0.5	20	N/A	N/A	0.5	Brigalow – Balah open forest / woodland on alluvial often gleyed clay from Pilliga Scrub to Goondwindi, Brigalow Belt South Bioregion – Woodland (BCA and EPBC listed EEC) (PCT 35)	19.3	1,305.5	N/A	N/A	19.3	Brigalow – Balah open forest / woodland on alluvial often gleyed clay from Pilliga Scrub to Goondwindi, Brigalow Belt South Bioregion – DNG (PCT 35)	26.0	910.7	11.2	300.3	37.2	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Refer to the audit findings for condition B44 in this audit report, regarding retirement of Phase 1 ecosystem and species credits.	<b>Compliant</b>	
Plant Community Type (PCT) and PCT Code	Phase 2 Credits		Residual Credits		Maximum Area directly impacted (ha)																																		
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Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions						
Condition of Consent	Condition Requirement					Evidence Collected
	Plant Community Type (PCT) and PCT Code	Phase 2 Credits		Residual Credits		Maximum Area directly impacted (ha)
		Area (ha)	Credits Required	Area (ha)	Credits Required	
	Belah woodland on alluvial plains and low rises in the central NSW wheatbelt to Pilliga and Liverpool Plains regions – Woodland (PCT 53)	2.7	153.8	1.2	65.91	3.9
	Belah woodland on alluvial plains and low rises in the central NSW wheatbelt to Pilliga and Liverpool Plains regions – DNG (PCT 55)	1.2	45.5	0.5	19.5	1.7
	Pilliga Box - White Cypress Pine - Buloke shrubby woodland in the Brigalow Belt South Bioregion – Woodland (PCT 88)	28.6	1,991.9	12.2	853.7	40.8
	Pilliga Box - White Cypress Pine - Buloke shrubby woodland in the Brigalow Belt South Bioregion – DNG (PCT 88)	6.2	198.1	2.6	84.9	8.8
	Broombush - wattle very tall shrubland of the Pilliga to Goonoo regions, Brigalow Belt South Bioregion (PCT 141)	13.65	538.3	5.85	223.23	19.5
	Fuzzy Box on loams in the Nandewar Bioregion and northern Brigalow Belt South Bioregion (BCA EEC) (PCT 202)	4.1	502.5	1.77	145.0	5.9
	Green Mallee tall mallee woodland rises in the Pilliga – Goonoo regions, southern BBS Bioregion (PCT 256)	0.2	10.8	0.1	4.62	0.3
	Inland Scribbly Gum - White Bloodwood - Red Stringybark – Black Cypress Pine shrubby sandstone woodland mainly of the Warrumbungle NP - Pilliga region in the BBS Bioregion – Woodland (PCT 379)	1.89	145.3	0.8	62.4	2.7
	Poplar Box - White Cypress Pine shrub grass tall woodland of the Pilliga - Wanaia region, BBS Bioregion – Woodland (PCT 397)	0.7	44.5	0.3	19.1	1
	Poplar Box - White Cypress Pine shrub grass tall woodland of the Pilliga - Wanaia region, BBS Bioregion – DNG (PCT 397)	0.9	23.1	0.4	9.9	1.3
	Narrow-leaved Ironbark - White Cypress Pine - Buloke tall open forest on lower slopes and flats in the Pilliga Scrub and surrounding forests in the central north BBS Bioregion – Woodland (PCT 398)	226.4	17,576	97.0	6,075.3	323.4



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Plant Community Type (PCT) and PCT Code	Phase 2 Credits		Residual Credits		Maximum Area directly impacted (ha)																																																																							
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Red gum - Rough-barked Apple +/- tea tree sandy creek woodland (wetland) in the Pilliga - Goonoo sandstone forests, BBS Bioregion – DNG (PCT 399)	0.14	0	0.06	0	0.2																																																																							
Rough-barked Apple - red gum - cypress pine woodland on sandy flats, mainly in the Pilliga Scrub region – Woodland (PCT 401)	32.5	2,604.1	13.9	1,045.2	46.4																																																																							
Rough-barked Apple - red gum - cypress pine woodland on sandy flats, mainly in the Pilliga Scrub region – DNG (PCT 401)	12.7	452.2	5.43	193.8	18.1																																																																							
Mugga Ironbark - White Cypress Pine - gum tall woodland on flats in the Pilliga forests and surrounding regions, BBS Bioregion – Woodland (PCT 402)	1.1	65.1	0.5	27.9	1.6																																																																							
Mugga Ironbark - White Cypress Pine - gum tall woodland on flats in the Pilliga forests and surrounding regions, BBS Bioregion – DNG (PCT 402)	1.1	0	0.5	0	1.6																																																																							
Red Ironbark - White Bloodwood - +/- Burrows Wattle healthy woodland on sandy soil in the Pilliga forests – Woodland (PCT 404)	60.6	4,407.1	26.0	1,888.7	86.6																																																																							
White Bloodwood - Red Ironbark - cypress pine shrubby sandstone woodland of the Pilliga Scrub and surrounding regions – Woodland (PCT 405)	173.0	12,003.9	74.1	4,795.3	247.1																																																																							
White Bloodwood - Red Ironbark - cypress pine shrubby sandstone woodland of the Pilliga Scrub and surrounding regions – DNG (PCT 405)	1.3	50.4	0.6	21.6	1.9																																																																							

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions																																																																																
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	<p>Table 10: Biodiversity credit requirements – Fauna Species Credits</p> <table><tr><th rowspan="2">Fauna species</th><th colspan="2">Phase 2 Credits</th><th colspan="2">Residual Credits</th><th rowspan="2">Maximum Area of habitat directly impacted (ha)</th><th rowspan="2">Ecological Rehabilitation Credits allowed</th></tr><tr><th>Area (ha)</th><th>Credits Required</th><th>Area (ha)</th><th>Credits Required</th></tr><tr><td>Black-striped Wallaby (Macropus dorsalis)</td><td>692</td><td>22,006</td><td>297</td><td>8,450</td><td>989</td><td>Potential</td></tr><tr><td>Eastern Pygmy-possum (Cercartetus nanus)</td><td>542</td><td>13,026</td><td>232</td><td>4,924</td><td>775</td><td>No</td></tr><tr><td>Pale-headed Snake (Hoplocephalus bitorquatus)</td><td>620</td><td>24,457</td><td>266</td><td>9,283</td><td>685</td><td>No</td></tr><tr><td>Squirrel Glider (Petaurus norfolcensis)</td><td>603</td><td>15,927</td><td>259</td><td>6,026</td><td>862</td><td>No</td></tr><tr><td>Regent Honeyeater (Anthochaera phrygia)</td><td>34</td><td>3,035</td><td>14</td><td>1,220</td><td>48</td><td>No</td></tr><tr><td>Koala (Phascolarctos cinereus)</td><td>692</td><td>22,005</td><td>297</td><td>8,449</td><td>989</td><td>No</td></tr></table> <p>Notes:</p> <ul style="list-style-type: none"><li>The credits in Table 8, 9 and 10 were calculated in accordance with Framework for Biodiversity Assessment of the NSW Biodiversity Offset Policy for Major Projects (OEI, 2014) and will need to be converted to reasonably equivalent 'biodiversity credits', within the meaning of the BC Act, if the credits are to be retired in accordance with the Biodiversity Offsets Scheme of the BC Act.</li><li>Apart from Commonwealth EECs listed under the EPBC Act, the Phase 2 Credits in Tables 8, 9 and 10 include 70% of the total direct and indirect credits and all cumulative impacts calculated for the development, as documented in the Response to Submissions Report for the development.</li><li>The Residual Credits in Tables 8, 9 and 10 include the remaining 30% of total direct and indirect credits calculated for the development.</li></ul>	Fauna species	Phase 2 Credits		Residual Credits		Maximum Area of habitat directly impacted (ha)	Ecological Rehabilitation Credits allowed	Area (ha)	Credits Required	Area (ha)	Credits Required	Black-striped Wallaby (Macropus dorsalis)	692	22,006	297	8,450	989	Potential	Eastern Pygmy-possum (Cercartetus nanus)	542	13,026	232	4,924	775	No	Pale-headed Snake (Hoplocephalus bitorquatus)	620	24,457	266	9,283	685	No	Squirrel Glider (Petaurus norfolcensis)	603	15,927	259	6,026	862	No	Regent Honeyeater (Anthochaera phrygia)	34	3,035	14	1,220	48	No	Koala (Phascolarctos cinereus)	692	22,005	297	8,449	989	No				
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Condition B44	<p><b>Biodiversity – Staged Retirement</b></p> <p>Prior to the commencement of Phase 1, the Applicant must retire any ecosystem and species credit liabilities generated by the works proposed in the applicable Field Development Plan to the satisfaction of the BCT.</p>	<ul style="list-style-type: none"><li>Biodiversity Offset Strategy, Revision 0B, issued 11 November 2022 (Attachment 1 of the Biodiversity Management Plan, Doc ID: 0041-150-PLA-0009)</li><li>Letter dated 20 January 2023 from Santos (██████████), Environmental Approvals Lead – NGP/HGP) to DPE (Stephen O'Donoghue, Director Resource Assessments) providing evidence (in the attachments) of the Biodiversity Credit Retirement and reconciliation table against the BOS</li></ul>	<p>The Auditors confirmed that Santos had retired the required ecosystem and fauna and flora species credits prior to the commencement of Phase 1 on 7 February 2023. The evidence sighted included:</p> <ul style="list-style-type: none"><li>an email dated 1 February 2023 from DPIE-Major Projects, confirming receipt of the Evidence of Biodiversity Credit Requirement for the Narrabri Gas Project; and</li><li>a letter dated 20 January 2023 from Santos (██████████), Environmental Approvals Lead – NGP/HGP) to the DPE (Stephen O'Donoghue, Director Resource Assessments) providing evidence of the Biodiversity Credit Retirement and reconciliation table against the BOS. The attached evidence with the letter included:<ul style="list-style-type: none"><li>BCF Form – Statement confirming payment into Biodiversity Conservation Fund for an offset obligation (for 177 flora credits and 1,273 fauna credits) issued on 1 September 2022 by Emily McCosker,</li></ul></li></ul>	Compliant																																																						

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>Email dated 1 February 2023 from DPIE-Major Projects, confirming receipt of the Evidence of Biodiversity Credit Requirement for Narrabri Gas Project</li> </ul>	<p>Director Strategy &amp; Finance (NSW Biodiversity Conservation Trust);</p> <ul style="list-style-type: none"> <li>BCF Form – Statement confirming payment into Biodiversity Conservation Fund for an offset obligation (for 31 ecosystem credits and 454 fauna credits) issued on 28 November 2022 by Emily McCosker, Director Strategy &amp; Finance (NSW Biodiversity Conservation Trust);</li> <li>Bio Banking Credit Retirement Report dated 17 January 2023 for 1,283 fauna credits;</li> <li>Biodiversity Offset Scheme credit retirement (697 ecosystem credits and 12 flora species credits).</li> </ul>		
Condition B45	<b>Biodiversity – Staged Retirement</b> Prior to the commencement of Phase 2, the Applicant must retire the ecosystem and species credits liability identified as Phase 2 Credits in Tables 7, 8 and 9 to the satisfaction of the BCT. Any credits retired during Phase 1 may be deducted from the Phase 2 credit liability.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition has not been triggered. As of August 2023, Phase 2 of the Project has not commenced.</p> <p>Santos acknowledges that the credits retired during Phase 1 may be deducted from their Phase 2 credit liability.</p>	<b>Not triggered</b>	
Condition B46	<b>Biodiversity – Staged Retirement</b> Prior to exceeding the Phase 2 area or individuals limits in Tables 7, 8 and 9, the Applicant must retire the relevant ecosystem and species credit liabilities to enable any exceedances of the limits to the satisfaction of the BCT and/or by providing ecological rehabilitation credit offsets for the exceedances.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition has not been triggered. As of August 2023, Phase 2 of the Project has not commenced.</p>	<b>Not triggered</b>	
Condition B47	<b>Biodiversity – Staged Retirement</b>	<ul style="list-style-type: none"> <li>Biodiversity Offset Strategy, Revision 0B, issued 11 November 2022</li> </ul>	<p>Section 2 of the Biodiversity Offset Strategy (BOS) (Attachment 1 of the BMP, Doc ID: 0041-150-PLA-0009) states that the credit numbers stated in the</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	The calculation of credits must be based on the <i>Framework for Biodiversity Assessment of the NSW Biodiversity Offset Policy for Major Projects</i> (OEH, 2014) and consistent with the calculation of credits applied during the preparation of the EIS.	<p>(Attachment 1 of the Biodiversity Management Plan, Doc ID: 0041-150-PLA-0009)</p> <ul style="list-style-type: none"> <li>DPIE Narrabri Gas Project DPIE Assessment Report, dated June 2020, Tables 10, 12 and 13 in section 6.4</li> </ul>	<p>three tables (Tables 2.1, 2.2 and 2.3) are in Framework for Biodiversity Assessment (FBA) terms.</p> <p>Tables 2.1, 2.2 and 2.3 of the BOS reproduce the credit requirements in Table 8 of SSD 6456 that was derived from the DPIE Narrabri Gas Project DPIE Assessment Report issued June 2020, Tables 10, 12 and 13 in Section 6.4.</p>		
Condition B48	<p><b>Biodiversity – Staged Retirement</b></p> <p>With the agreement of the Planning Secretary, the Applicant may adjust the staging of credit retirements. Any adjustments must be agreed, and the relevant credits must be retired, prior to the commencement of the associated impact on that ecosystem or species.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that as of August 2023, this condition has not been triggered.</p> <p>Santos acknowledges that, with the agreement of the Planning Secretary, it has the option of adjusting the staging of credit retirements.</p> <p>For the Phase 1 development to date, Santos has not exercised this option.</p> <p>As of August 2023, no adjustments or staging of credit retirements have been incurred for the Phase 1 development. It was stated that this may occur in the future, but will not apply to the Phase 1 development.</p>	<b>Not triggered</b>	
Condition B49	<p><b>Ecological Rehabilitation Credit Offsets</b></p> <p>If the Applicant meets the ecological rehabilitation completion criteria in the Rehabilitation Management Plan to the satisfaction of BCD, then the Applicant may use the rehabilitated land to offset the relevant ecosystem and/or species credit liability for the 'Residual Credits' in Tables 8, 9 and 10. Ecological rehabilitation credits may be offset at a rate of:</p> <p>(a) 12 credits per hectare for plant community types in Table 7;</p>	<ul style="list-style-type: none"> <li>Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision No. 0C, issued on 18 November 2022)</li> </ul>	<p>The Auditors and Santos consider that this condition has not been triggered, as the Project is only in Phase 1. As of August 2023, no rehabilitation domains exist that achieve the rehabilitation completion criteria in Section 9.1, Table 9.1 of the Rehabilitation Management Plan.</p>	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(b) 7.1 credits per individual for relevant flora species in Table 8; and (c) 7.1 credits per hectare of suitable habitat for relevant fauna species in Table 9. Ecological rehabilitation credit offsets may only be sought for: <ul style="list-style-type: none"> <li>plant community types in Table 7;</li> <li>flora and fauna species identified as 'Yes' to ecological rehabilitation in Tables 8 and 9; and</li> <li>flora and fauna species identified as 'Potential' to ecological rehabilitation in Tables 8 and 9, subject to the Applicant demonstrating that the relevant species is suitable for ecological rehabilitation, to the satisfaction of the BCD.</li> </ul>				
Condition B50	<b>Biodiversity – Biodiversity Advisory Group</b> The Applicant must establish and facilitate the operation of a Biodiversity Advisory Group for the development to the satisfaction of the Planning Secretary. The group must: <ul style="list-style-type: none"> <li>(a) comprise of biodiversity expert representatives whose appointments have been approved by the Planning Secretary, including representatives from:               <ul style="list-style-type: none"> <li>(i) BCD;</li> <li>(ii) the scientific community, comprising suitably qualified persons (at least 2 representatives);</li> <li>(iii) relevant community representatives (at least 2 representatives);</li> </ul>               be established prior to the commencement of Phase 1;</li> <li>(b) meet at least twice a year; and</li> </ul>	<ul style="list-style-type: none"> <li>Letter dated 13 November 2020 from DPIE (Stephen O'Donoghue) approving Garry West as the Chair of the CCC and advisory groups</li> <li>Letter dated 25 February 2021 from DPIE to Santos approving the appointment of Ms Samantha Wynn as the key contact for the Biodiversity Conservation and Science Directorate (BCD)</li> <li>Letter dated 25 February 2021 from DPIE (Stephen O'Donoghue) to Santos approving the appointment of Biodiversity Advisory</li> </ul>	The Auditors sighted a letter dated 13 November 2020 from the DPIE (Stephen O'Donoghue) acknowledging Garry West will be engaged as the Chair of the Biodiversity Advisory Group pursuant to this condition.  In relation to the paragraphs of the condition: <ul style="list-style-type: none"> <li>(a) The Auditors sighted the following letters pursuant to the requirements of this paragraph for the establishment of the Biodiversity Advisory Group:               <ul style="list-style-type: none"> <li>(i) Letter dated 25 February 2021 from the DPIE to Santos approving the appointment of Ms Samantha Wynn as the key contact for the Biodiversity Conservation and Science Directorate (BCD) and reaffirmed in the letter dated 24 August 2021 from the DPIE to Santos.</li> <li>(ii) Letter dated 25 February 2021 from the DPIE to Santos approving the appointment of Biodiversity Advisory</li> </ul> </li> </ul>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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	<p>(c) provide advice on project-related biodiversity management issues, including preparation and implementation of the:</p> <p>(i) Biodiversity Management Plan; and</p> <p>(ii) Field Development Plan, including micro-siting investigations.</p> <p><b>Notes:</b> The Biodiversity Advisory Group is an advisory committee only and has no compliance or enforcement functions.</p>	<p>Group experts, including Dr Stephen Phillips, Dr Patrick Tap and Mr Isaac Marmott to represent the scientific community</p> <ul style="list-style-type: none"> <li>Letter dated 31 March 2021 from DPIE (Stephen O'Donoghue) approving the appointment of Ms Trudy Staines, Ms Kathryn Hamilton and Mr Ken Flower as community representatives for the Biodiversity Advisory Group</li> <li>Letter dated 24 August 2021 from DPIE (Stephen O'Donoghue) approving the appointment of Mr Macolm Talbot as an additional community representative for the Biodiversity Advisory Group</li> <li>Biodiversity Advisory Group meeting minutes dated, 15 February 2023, 16 February 2022, 8 September 2022</li> </ul>	<p>Group experts, including Dr Stephen Phillips, Dr Patrick Tap and Mr Isaac Marmott to represent the scientific community.</p> <p>(iii) Letter dated 31 March 2021 from the DPIE approving the appointment of Ms Trudy Staines, Ms Kathryn Hamilton and Mr Ken Flower as community representatives for the Biodiversity Advisor Group.</p> <p>Letter dated 24 August 2021 from the DPIE to Santos approving the appointment of Mr Macolm Talbot as an additional community representative for the Biodiversity Advisory Group.</p> <p>The Auditors verified that the Biodiversity Advisory Group formed before the commencement of Phase 1 (7 February 2023).</p> <p>(b) As of August 2023, the Auditors sighted the Biodiversity Advisory Group meeting minutes published on the Santos NGP website dated 15 February 2023. It was stated that a second meeting will be held during Q4 2023. Prior to the commencement of Phase 1, the auditors sighted meeting minutes for three meetings in 2022 and two meetings in 2021.</p> <p>(c) The Auditors reviewed the meeting minutes for 2022 and 2023 and confirmed the minutes documented discussions about the Field Development Plan (including micro-siting investigations) and Biodiversity Management Plan matters. Specifically, the minutes from the meeting held on 16 February 2022 recorded discussions on the Koala Research Proposal and Biodiversity Offset Strategy, and the minutes from the meeting held on 8 September 2022 recorded an action for Santos to circulate the FDP for consultation</p>		



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			purposes as a result of discussions held during the meeting.		
Condition B51	<p><b>Biodiversity – Biodiversity Management Plan</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <p>(a) be prepared by a suitably qualified and experienced person/s approved by the Planning Secretary;</p> <p>(b) be prepared in consultation with BCD, DAWE, FCNSW Council and the Biodiversity Advisory Group;</p> <p>(c) describe the short, medium, and long-term measures to be undertaken to manage vegetation and fauna habitat in the project area including measures to avoid and/ or minimise impacts on threatened ecological communities;</p> <p>(d) describe how biodiversity management would be integrated with similar measures in the Water Management Plan and Rehabilitation Management Plan;</p> <p>(e) describe the measures to be implemented for undertaking micro-siting investigations for the Field Development Plan, including procedures for:</p> <p>(i) desk top review and ground surveys for all proposed gas field infrastructure; and</p> <p>(ii) managing any threatened species or ecological communities identified during the investigations, including measures to avoid and/ or minimise disturbance of</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Biodiversity Management Plan (Doc ID: 0041-150-PLA-0009, Revision No. 0B, issued on 11 November 2022).</li> <li>Letter dated 11 November 2022 from DPE (Stephen O'Donoghue) to Santos approving the BMP</li> <li>Letter dated 7 April 2021 from DPIE approving the appointment of the experts to prepare the BMP and its sub-plans</li> <li>Biodiversity Offset Strategy (Revision No. 0B, issued on 11 November 2022)</li> <li>Koala Research Program Proposal (dated February 2022)</li> <li>Purchase Order 3318644 issued to Austicon Consulting on 1 June 2023 to commence the Koala Research Program-Phase 1 as per the research proposal</li> <li>Rehabilitation Management Plan (Doc ID: 0041-150-PLA-</li> </ul>	<p>As of August 2023, the current Biodiversity Management Plan (BMP) is Revision No. 0B, issued on 11 November 2022 (Doc ID: 0041-150-PLA-0009). The BMP is available on the Santos NGP website.</p> <p>The Auditors sighted a DPE letter dated 11 November 2022 to Santos approving this version of the BMP and its sub-plans. Approval of this Plan occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) Section 1.3 states that the BMP was prepared by Dan Watts and Matthew Dowle (listed in the document control table that has been redacted from the published online document). The Auditors sighted the DPIE letter of 7 April 2021 in which the Planning Secretary approved the appointment of the experts named above as being suitably qualified and experienced to prepare the BMP.</p> <p>(b) Section 1.5 of the BMP states that consultation occurred with the with the agencies and the advisory group named in this paragraph and MEG and DPE. Appendix A includes records of this consultation.</p> <p>(c) Section 6 and its sub-sections of the BMP describe the measures to minimise and avoid impacts on biodiversity values. Appendix C includes an ecological scouting framework to maximise the avoidance of sensitive biodiversity values. Table 6.1 describes the short, medium, and long-term mitigation measures by impact.</p>	Compliant	



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	<p>threatened species or ecological communities;</p> <p>(f) include a Biodiversity Offset Strategy that:</p> <p>(i) is prepared in consultation with MEG (in addition to the agencies referred to in (b) above), in relation to the potential for resource sterilisation;</p> <p>(ii) is prepared consistent with the NSW Biodiversity Offsets Policy for Major Projects;</p> <p>(iii) describes how the biodiversity credits in Tables 8, 9 and 10 will be identified, secured and retired;</p> <p>(iv) prioritises land-based offsets for retiring 'Phase 2 Credits' identified in Tables 8, 9 and 10;</p> <p>(v) describes the staging of credit retirements and associated surface disturbance areas; and</p> <p>(vi) describes how threatened species and communities listed under the EPBC Act would be suitably offset;</p> <p>(g) include a Koala Research Program that:</p> <p>(i) is designed to determine the location and size of remnant Koala populations in the Pilliga Forest;</p> <p>(ii) investigates why suitable areas of habitat may not be occupied by Koalas; and</p> <p>(iii) guides adaptive management of the Koala population in the project area and any land-based offset areas used to retire species credits for the Koala;</p>	<p>0001, Revision No. 0C, issued on 18 November 2022)</p> <ul style="list-style-type: none"> <li>Fire Management Plan (Doc ID: 0041-150-PLA-0004, Revision No. 0E, issued on 15 November 2022)</li> </ul>	<p>(d) Section 1.7 describes how the BMP is part of the EMS and is linked to the FDPro and FDP. Figure 1.1 provides an overview of the EMS, Management Plans and field development integration. Sections 6.1, 6.5 and 6.7 identify other relevant management plans.</p> <p><b>Observation No. 42</b> – Figure 1.1 in the BMP does not consider the Water Management Plan as referenced in condition B51(d). Santos could update Figure 1 to include the Water Management Plan.</p> <p><b>Observation No. 43</b> – For condition B51(d), Santos could consider updating Table 6.1 in the BMP to identify the relevant Management Plan or protocol for each mitigation measure.</p> <p><b>Observation No. 44</b> – For condition B51(d), Santos could update Table B1 in the BMP to include a reference to section 6.7.</p> <p>(e) Section 6.2 describes the measures to be implemented for undertaking micro-siting investigations for the Field Development Plan, including procedures for: desktop review and ground surveys for all proposed gas field infrastructure (section 6.2.1), managing any threatened species or ecological communities identified during the investigations (sections 6.2.1 and 6.2.2, Appendix C – Ecological Scouting Framework, Appendix D – Clearing Procedure).</p> <p>(f) Attachment 1 of the BMP is the Biodiversity Offset Strategy (BOS), Revision No. 0B, issued on 11 November 2022. The BOS:</p> <p>(i) states (in Section 1.2) that consultation occurred with the agencies and the advisory group named in this paragraph in addition to the agencies referred to in</p>		

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	<p>(h) describe the measures to be implemented within approved disturbance areas in the project area to:</p> <p>(i) minimise the amount of clearing and employ temporary vegetation strategies;</p> <p>(ii) minimise impacts on fauna, including undertaking pre-clearance surveys and targeted clearing windows and protocols to minimise impacts during key breeding seasons for threatened bats and birds;</p> <p>(iii) maximise the salvage, transplanting and/or propagation of any threatened flora found during pre-clearance surveys, in accordance with the <i>Guidelines for the Translocation of Threatened Plants in Australia</i> (Vallee et al., 2004), where reasonable and feasible; and</p> <p>(iv) maximise the salvage of resources, including tree hollows, vegetation and soil resources, for beneficial reuse, including fauna habitat enhancement;</p> <p>(i) describe the measures to be implemented in the project area to:</p> <p>(i) minimise impacts on fauna habitat resources such as hunting and foraging areas, habitat trees, fallen timber and hollow-bearing trees;</p> <p>(ii) enhance the quality of vegetation, vegetation connectivity and wildlife corridors including through the assisted regeneration and/or targeted revegetation of appropriate canopy, sub-canopy, understorey and ground strata;</p> <p>(iii) introduce naturally scarce fauna habitat features such as nest boxes and salvaged tree hollows and promote the use of these</p>		<p>condition B51(b). Appendix A of the BMP includes records of this consultation;</p> <p>(ii) was prepared consistent with the NSW Biodiversity Offsets Policy for Major Projects (Section 8 of the BMP, Section 3 of the BOS);</p> <p>(iii) describes how the biodiversity credits in Tables 8, 9 and 10 will be identified, secured and retired (Sections 3.2, 3.3 and 4 of the BOS);</p> <p>(iv) prioritises land-based offsets for retiring 'Phase 2 Credits' identified in Tables 8, 9 and 10 (Section 4.3 of the BOS);</p> <p>(v) describes the staging of credit retirements and associated surface disturbance areas; (Sections 4, 4.1, 4.2 and 4.3 of the BOS);</p> <p>(vi) describes how threatened species and communities listed under the EPBC Act would be suitably offset (Section 2.4 of the BOS and condition 25 of EPBC Act Approval 2014/7376). This EPBC approval requires NGP to comply with conditions B43-B52 of SSD 6456, therefore requiring the Project to be offset in accordance with the NSW Biodiversity Offset Scheme.</p> <p><b>Observation No. 45</b> – For condition B51(f), Santos could update Table B1 in the BMP to be consistent with Table 1.1 of the BOS.</p> <p>(g) The BMP includes the Koala Research Program (KRP) (Section 7) and the Koala Research Program Proposal (KRPP) dated February 2022 (Attachment 2 of the BMP). The KRP:</p> <p>(i) states (in Section 7) that the KRPP: "is for Phase 1 of the Project only and therefore</p>		

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	<p>introduced habitat features by threatened fauna species;</p> <p>(iv) manage any potential conflicts with Aboriginal heritage values;</p> <p>(v) protect vegetation and fauna habitat outside of the approved disturbance areas;</p> <p>(vi) manage potential indirect impacts on threatened flora and fauna species;</p> <p>(vii) manage the collection and propagation of seed from the local area;</p> <p>(viii) control weeds, including measures to avoid and mitigate the spread of noxious weeds;</p> <p>(ix) control feral pests with consideration of actions identified in relevant threat abatement plans;</p> <p>(x) control erosion;</p> <p>(xi) manage any grazing and agriculture;</p> <p>(xii) control access to vegetated or revegetated areas; and</p> <p>(iv) manage bushfire hazards;</p> <p>(j) include a seasonally-based program to monitor and report on the effectiveness of the above measures, progress against the detailed performance and completion criteria in the Rehabilitation Management Plan, and improvements that could be implemented to improve biodiversity outcomes;</p> <p>(k) identify the potential risks to the successful implementation of the Biodiversity Offset Strategy, and include a description of the</p>		<p>primarily focuses on determining the location and size of extant Koala populations in the Pilliga", in accordance with condition B51(g)(i)). Sections 1 and 2 of the KRPP describe the investigation methodology.</p> <p>(ii) <i>investigates why suitable areas of habitat may not be occupied by Koalas</i> – Section 3 of the KRPP states that: "the basis for 'presence/absence/suitable areas of habitat...' hypotheses construction, as well as an assessment of potential threats to longer-term viability, will be informed from the intersection of presence data with underlying landscape attributes" (as determined by desk-top analyses (section 1) and field survey (section 2)).</p> <p>(iii) <i>guides adaptive management of the Koala population in the project area and any land-based offset areas used to retire species credits for the Koala</i> – Section 3 of the KRPP provides recommendations for adaptive management (i.e. "activity threshold corridors and appropriate buffers") for the purpose of addressing condition B51(g)(iii).</p> <p>The Auditors sighted the Purchase Order issued for the KRPP on 1 June 2023, which authorises the commencement of the scope of works outlined in the KRPP. The estimated timeframe for Stage 1 is 20-24 weeks.</p> <p>(h) describe the measures to be implemented within approved disturbance areas in the project area to:</p>		

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	<p>contingency measures to be implemented to mitigate against these risks; and</p> <p>(l) include details of who would be responsible for monitoring, reviewing, and implementing the plan.</p>		<p>(i) minimise the amount of clearing and employ temporary vegetation strategies (Section 6.2 and Section 6.3 (Table 6.1));</p> <p>(ii) minimise impacts on fauna, including undertaking pre-clearance surveys and targeted clearing windows and protocols to minimise impacts during key breeding seasons for threatened bats and birds (Section 6.2, Section 6.3 (Table 6.1) and Appendix D);</p> <p>(iii) maximise the salvage, transplanting and/or propagation of any threatened flora found during pre-clearance surveys, in accordance with the <i>Guidelines for the Translocation of Threatened Plants in Australia</i> (Vallee et al., 2004), where reasonable and feasible (Section 6.2, Section 6.3 (Table 6.1) and Appendix D);</p> <p>(iv) maximise the salvage of resources, including tree hollows, vegetation and soil resources, for beneficial reuse, including fauna habitat enhancement (Section 6.2, Section 6.3 (Table 6.1) and Appendix D).</p> <p>(i) Section 6.3 and Table 6.1 describe the mitigation measures to be implemented in the project area and include:</p> <p>(i) minimise impacts on fauna habitat resources such as hunting and foraging areas, habitat trees, fallen timber and hollow-bearing trees (Section 2 and Section 6.3 (Table 6.1));</p> <p>(ii) enhance the quality of vegetation, vegetation connectivity and wildlife corridors including through the assisted regeneration and/or targeted revegetation of appropriate canopy, sub-canopy,</p>		

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			<p>understorey and ground strata (Section 6 of the BMP and Section 10 of the RMP);</p> <p>(iii) introduce naturally scarce fauna habitat features such as nest boxes and salvaged tree hollows and promote the use of these introduced habitat features by threatened fauna species (Section 6.3 (Table 6.1) and Section 6.6 of the BMP, and Section 2.5.1 of the BOS);</p> <p>(iv) manage any potential conflicts with Aboriginal heritage values (Section 6.2.1 of the BMP, Section 9 of the FDPPro and Section 5.8 of the ACHMP);</p> <p>(v) protect vegetation and fauna habitat outside of the approved disturbance areas (Section 6.2.2, Section 6.3 (Table 6.1) and Appendix D);</p> <p>(vi) manage potential indirect impacts on threatened flora and fauna species (Table 6.1 in Section 6.3);</p> <p>(vii) manage the collection and propagation of seed from the local area (Table 6.1 in Section 6.3 and Appendix F);</p> <p>(viii) control weeds, including measures to avoid and mitigate the spread of noxious weeds (Section 6.4.2 and Attachment 3);</p> <p>(ix) control feral pests with consideration of actions identified in relevant threat abatement plans (Section 6.4.3 and Attachment 3);</p> <p>(x) control erosion (Section 6.3 (Table 6.1) and Section 7);</p> <p>(xi) manage any grazing and agriculture (Section 6.3 (Table 6.1) and Section 6.5);</p>		

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			<p>(xii) control access to vegetated or revegetated areas (Section 6.3 (Table 6.1) and RMP);</p> <p>(xiii) manage bushfire hazards (Section 6.8 and Fire Management Plan).</p> <p>(j) Section 9 describes a seasonally-based biodiversity monitoring program to monitor and report on the effectiveness of the measures in paragraph (i). Section 9.3.2.1 states that: “BMP monitoring surveys will be conducted in spring which represents the highest activity period for most fauna species, and the highest diversity for native plant communities (including weeds).” Section 13.2 states that: “By the end of March each year, Santos will review the performance of its biodiversity monitoring program for the previous calendar year and report results within the Annual Review”. Section 13.2 also states that: “The Annual Review will be submitted to the DPE via the Major Projects Portal and will also make recommendations for any additions, changes or improvements to the biodiversity management plan and sub-plans.” Sections 6.1 and 6.6 of the BMP refer to the integrated relationship between the BMP and the RMP.</p> <p>(k) Section 3 of the BOS describes the Offset Strategy approach and implementation, and Section 4 of the BOS describes the Phase 1 offset strategy. Section 10 of the BMP details a risk assessment and contingency plan for implementation of the BMP. Sections 2.1 and 2.2 of the BOS detail the Offset requirements. Section 3 details the Offset Strategy and Options to meet these requirements including the BCF. Section 3.3 provided an analysis of the Offset Strategy implementation and identified constraints or</p>		

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			<p>risks for each option. Section 3.4 of the BOS states that: <i>“the option of using the BCF is therefore a last resort from Santos and can be regarded as the contingency measure”</i>. The Auditors noted that the risk to the Phase 1 BOS has been mitigated by the successful retirement of all Phase 1 credits.</p> <p>(l) Section 2 of the BMP references the EMS to set out the roles, responsibilities, authorities, and accountabilities. Table 2.1 of the EMS identifies the Environmental Advisor as being responsible for site inspections, monitoring and surveys for the BMP and maintaining accountability for monitoring compliance with the EMS.</p> <p>It was stated that the Santos Team Leader Onshore Environment is responsible for the preparing Annual Reviews.</p> <p><b>Observation No. 46</b> – The current biodiversity monitoring program occurs annually in spring (Section 9.3.2.1 of the BMP). A reoccurring monitoring program during the same season in every year may restrict the recording of some species which may be present at other times of the year. Santos could conduct additional monitoring during other seasons in each year.</p> <p><b>Observation No. 47</b> – For condition B51(l), Santos could update Table B1 to include the correct section reference, as the current reference of BOS Section 3.4 is not relevant.</p>		
Condition B52	<b>Biodiversity – Biodiversity Management Plan</b> The Applicant must implement the Biodiversity Management Plan once approved by the Planning Secretary.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A,</li> </ul>	During this audit, there was evidence that Santos is implementing the Biodiversity Management Plan (Doc ID: 0041-150-PLA-0009) to avoid, minimise, mitigate, rehabilitate and offset impacts on the biodiversity values. This evidence includes:	<b>Compliant</b>	

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		<p>issued on 11 November 2022)</p> <ul style="list-style-type: none"> <li>Letter dated 30 June 2023 from E2M to Santos titled Baseline Native Vegetation Survey and Vegetation Monitoring Procedure – Phase 1 Irrigation Area for the NGP</li> <li>Fee Estimate dated 16 March 2023 from E2M for NGP Biodiversity Monitoring Program and Rehabilitation Monitoring Program</li> <li>Letter dated 26 April 2023 from Biodiverse Environmental (Mani Walsh) – Pilliga Forest Hollow Retention</li> <li>Appendix F – Photo 22 Nest Box on Whirly Brook Trial (22 August 2023)</li> <li>Appendix F – Photos 23 and 24 Retention of all hollow bearing logs</li> <li>NGP Ice Breaker presentation</li> <li>Biodiversity Offset Strategy (Revision No. 0B, issued on 11 November 2022)</li> </ul>	<ul style="list-style-type: none"> <li>completing baseline vegetation and monitoring surveys in the Phase 1 Irrigation as detailed in the letter dated 30 June 2023 from E2M to Santos titled Baseline Native Vegetation Survey and Vegetation Monitoring Procedure – Phase 1 Irrigation Area for the NGP;</li> <li>implementing a biodiversity monitoring program as detailed in Section 9 of the BMP – see the Fee Estimate dated 16 March 2023 from E2M for NGP Biodiversity Monitoring Program and Rehabilitation Monitoring Program;</li> <li>implementing the ecological scouting framework (micro-siting) as described and demonstrated in the FDP (Doc ID: 0041-150-PLA-0023) for new well pads at Dewhurst 35 and 43, and flowline maintenance in PAL 2;</li> <li>implementing the clearing protocols as per Appendix D of the BMP, including the demarcation of clearance boundaries and involvement of a Spotter Catcher;</li> <li>installation of nesting boxes when habitat trees are unavoidably removed (see letter dated 26 April 2023 from Biodiverse Environmental (Mani Walsh) – Pilliga Forest Hollow Retention, and Photo 22);</li> <li>retention of all hollow bearing trees and logs (see Photos 23 and 24);</li> <li>it was stated that all earthmoving equipment have GPS guidance and tracking devices to confirm that no unauthorised clearing has occurred;</li> <li>training of all contractors and employees through inductions and providing a NGP</li> </ul>		



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		<ul style="list-style-type: none"> <li>Koala Research Program Proposal (dated February 2022)</li> <li>Purchase Order 3318644 issued to Austicon Consulting on 1 June 2023 to commence the Koala Research Program-Phase 1 as per the research proposal</li> <li>Santos NSW Hygiene Inspection Forms for trucks car and a trailer that had travelled from outside the applicable biosecurity area (Multiple completed forms – August 2023)</li> <li>Chemical weed spray records dated 11 September 2023 for Billdebri Property</li> <li>Appendix F – Photo 2 OEC Well Head Inspection Checklist</li> </ul>	<p>Ice Breaker presentation to contractors which includes details on managing biodiversity;</p> <ul style="list-style-type: none"> <li>implementing a Koala Research Program as per the Koala Research Program Proposal (dated February 2022) and Purchase Order 3318644 issued to Austicon Consulting on 1 June 2023;</li> <li>retiring the required ecosystem and species credit liabilities for Phase 1 – see condition B44;</li> <li>implementing a Weed and Pest Management Control program in accordance with the Pest Plants and Animal Control Protocol, as demonstrated by chemical weed spray records dated 11 September 2023 for Billdebri Property;</li> <li>monthly OEC well head inspections include a requirement to assess weed infestation (see Photo 2);</li> <li>implementation of a vehicle hygiene inspection program – Santos NSW Hygiene Inspection Forms for trucks car and a trailer that had travelled from outside the applicable biosecurity area (Multiple completed forms – August 2023).</li> </ul>		
Condition B53	<b>Heritage – Heritage Operating Conditions</b> The Applicant must ensure that the development does not cause any direct or indirect impact on the heritage items identified in Appendix 7.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Appendix F – Photo 25 Completed cultural heritage clearances and exclusion zones within the NGP</li> </ul>	<p>All known and identified heritage sites (i.e. both Aboriginal and European) are listed and defined in relevant layers within the Santos GIS, inclusive of a description for each of these sites. An example is provided in Photo 25 relating to completed cultural heritage clearances and exclusion zones within the NGP.</p> <p>As an example, the Pilliga 1 oil well, listed as a European heritage site was observed to be suitably recorded within the Santos GIS.</p>	<b>Compliant</b>	

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		<ul style="list-style-type: none"> <li>Santos NGP Aboriginal Cultural Heritage Site Register</li> <li>Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</li> <li>Historic Heritage Management Plan (Doc ID: 0041-150-PLA-0007, Revision No. 0B, issued on 18 November 2022)</li> </ul>	<p>It was stated that the surveys used to identify both Aboriginal and European heritage sites were primarily completed between 2016 and 2018.</p> <p>All Aboriginal cultural heritage sites within the NGP are listed within the Santos NGP Aboriginal Cultural Heritage Site Register. This register is amended as additional information becomes available.</p> <p>Information relating to Aboriginal and European heritage sites is listed in:</p> <p>a) Section 4 – Aboriginal Cultural Heritage in the Project Area, within the Santos NGP Aboriginal Cultural Heritage Management Plan; and</p> <p>b) Section 4 – Historic heritage sites and significance, and Figure 4.1 – Identified Historic Heritage Sites, within the Santos NGP Historic Heritage Management Plan.</p>		
Condition B54	<b>Heritage – Heritage Operating Conditions</b>  If suspected human remains are discovered in the project area, then all work surrounding the area must cease, and the area must be secured. The Applicant must immediately notify NSW Police Force and BCD, and work must not recommence in the area until authorised by NSW Police Force and BCD.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</li> </ul>	<p>As of August 2023, as part of the Phase 1 development, no suspected human remains have been discovered in the project area.</p> <p><u>Management of New Finds</u></p> <p>Section 5.9 – Management of New Finds, and Section 5.9.2 – New Finds Measures, within the Aboriginal Cultural Heritage Management Plan (ACHMP), define the process and measures to be adopted if any previously unknown Aboriginal object or Aboriginal place is discovered or is suspected in the Project area during operational or construction activities.</p> <p>Section 5.9.3 – Human Remains Procedure, within the ACHMP describes: a) the required course of action to be taken; and b) reporting obligations, if suspected human remains are discovered in the Project area.</p>	Compliant	

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			Section 5.9.3 of the ACHMP also states that work must not recommence in the Project area until authorised by the Police and Heritage NSW.		
Condition B55	<p><b>Heritage – Heritage Operating Conditions</b></p> <p>If any previously unknown Aboriginal or non-Aboriginal heritage item is identified during micro-siting investigations for a Field Development Plan, then the Applicant must:</p> <p>(a) consult with the Aboriginal Cultural Heritage Advisory Group;</p> <p>(b) avoid all direct and indirect impacts on Aboriginal heritage items assessed as:</p> <p>(i) having high significance (using the procedures established in the Aboriginal Cultural Heritage Management Plan); or</p> <p>(ii) being of the following site types:</p> <ul style="list-style-type: none"> <li>• burials;</li> <li>• stone arrangements and earthen circles;</li> <li>• carved trees;</li> <li>• rock shelters;</li> <li>• quarries;</li> </ul> <p>(c) for other heritage items not identified as having high significance:</p> <p>(i) ensure that the final design of the applicable gas field infrastructure considers all reasonable and feasible measures to avoid direct or indirect impacts on other identified heritage items; and</p> <p>(ii) if avoidance of the heritage item is not reasonable or feasible, include detailed</p>	<ul style="list-style-type: none"> <li>• Santos Cultural Heritage Procedure (Doc ID: SMS-EXA-OS02-PD02, issued June 2021)</li> <li>• Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</li> </ul>	<p><u>Heritage Clearance</u></p> <p>All new sites at the NGP are subject to a formal heritage clearance prior to the commencement of any earthworks or ground disturbance.</p> <p>The workflow required to be followed is described in the Santos Cultural Heritage Procedure (Doc ID: SMS-EXA-OS02-PD02, issued June 2021).</p> <p>As an example, the Auditors sighted the ground disturbance associated with the Dewhurst 43 well pad, which required an upgrade to an existing access road. A cultural heritage clearance request and survey was completed for the proposed disturbance at this location.</p> <p>Cultural heritage processes are formally incorporated into Santos's IDP process. This is a critical hold-point and requires formal approval from the Manager Cultural Heritage, Aboriginal.</p> <p>Once final clearance/alignment is determined, then the area is physically walked pre-disturbance (i.e. micro-siting). During this process, any finds are recorded, and the information is uploaded to the cultural heritage layer within Santos's GIS database.</p> <p>Cultural Heritage clearance surveys are coordinated with the local Aboriginal Lands Council in accordance with processes described in the ACHMP.</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	measures for minimising and/or managing the heritage item in the Field Development Plan.				
Condition B56	<p><b>Heritage – Heritage Operating Conditions</b></p> <p>If any previously unknown Aboriginal object or Aboriginal place is discovered or suspected in the project area during operational or construction activities:</p> <p>(a) all work in the immediate vicinity of the object or place must cease immediately;</p> <p>(b) a 10 metre buffer area around the object or place must be cordoned off; and</p> <p>(c) BCD and the Aboriginal Cultural Heritage Advisory Group must be contacted immediately.</p> <p>Work in the immediate vicinity may only recommence if:</p> <p>(i) the potential Aboriginal object or Aboriginal place is confirmed by the Aboriginal Cultural Heritage Advisory Group not to be an Aboriginal object or Aboriginal Place;</p> <p>(ii) the Aboriginal Cultural Heritage Management Plan is revised to include the Aboriginal object or Aboriginal place and appropriate measures in respect of it; or</p> <p>(iii) the Planning Secretary is satisfied with the measures to be implemented in respect of the Aboriginal object or Aboriginal place and makes a written direction in that regard.</p>	<ul style="list-style-type: none"> <li>Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</li> <li>Appendix F – Photo 26 Example of recent road upgrade to new well sites</li> </ul>	<p>Refer to the audit findings for condition B53 in this audit report.</p> <p>For Phase 1, the use of: a) pre-surveys arranged by Santos; and b) micro-siting (walks that occur within actual areas to be disturbed) have been successful, and no previously unknown Aboriginal object or Aboriginal place has been discovered or suspected in the Project area during any construction or operational activities.</p> <p>As of August 2023, new clearing and ground disturbance associated with the Phase 1 development has included:</p> <ul style="list-style-type: none"> <li>the Dewhurst 35 and 43 well pads, for which ground clearance for Dewhurst 35 occurred on the 13 April 2023 and Dewhurst 43 on the 11 April 2023; and</li> <li>road upgrades of some pre-existing access roads (prior to commencing ground clearance and construction of the Dewhurst 35 and 43 well pads – see Photo 26). These road upgrades primarily occurred along the Whirlybrook Trail and Kurrajong Trail.</li> </ul> <p>It was stated that all other Phase 1 project development work occurred within previously disturbed areas.</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition B57	<b>Heritage – Heritage Operating Conditions</b> The Applicant must ensure that all Aboriginal objects or Aboriginal places identified in the project area are properly recorded, and those records are kept up to date, in the BCD Aboriginal Heritage Information Management System (AHIMS) Register.	<ul style="list-style-type: none"> <li>Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</li> </ul>	<p>The processes adopted by Santos at the NGP relating to the identification of Aboriginal objects or Aboriginal places is well defined in the ACHMP.</p> <p>Prior to and during Phase 1, relevant procedures and field processes exist to ensure that any “new finds” within the project area are suitably identified, recorded and protected. This includes ensuring that project activities cease and the “New Finds” area is secured to prevent impact or harm, inclusive of the use of a 10 m buffer to cordon off the area and the installation of relevant signage/fencing. Relevant personnel are required to be notified.</p> <p>The recording process for new finds in the field comprises: a) confirmation that the item/artefact is genuine; and b) recording the find within a hard copy sheet (i.e. search location, item located, any recommendations from the Cultural Heritage Officer, Technical Advisor review etc.).</p> <p>All handwritten field records are scanned and retained.</p> <p>Completed New Finds forms are collated by the Technical Advisor as part of the work package. Information is recorded in the approved Cultural Heritage Assessment Request (CHAR process).</p> <p>Signed-off forms may define any required on-site action management actions, that conform with requirements defined in the ACHMP (e.g. buffer zone required).</p> <p>Heritage NSW is required to be notified to allow the find to be recorded on the AHIMS database. Santos is required to record any new find within their Aboriginal Cultural Heritage Site Register.</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			An example of implementation of the ACHMP is provided in the Audit Findings for condition B60 in this audit report.		
Condition B58	<p><b>Heritage – Aboriginal Cultural Heritage Advisory Group</b></p> <p>The Applicant must facilitate the operation of an Aboriginal Cultural Heritage Advisory Group for the development to the satisfaction of the Planning Secretary. The group must:</p> <ul style="list-style-type: none"> <li>(a) be established in consultation with BCD, Registered Aboriginal Parties and other local knowledge holder groups;</li> <li>(b) comprise Aboriginal heritage representatives whose appointments have been approved by the Planning Secretary, including representatives from: <ul style="list-style-type: none"> <li>(i) BCD (if available);</li> <li>(ii) the scientific community, comprising suitably qualified archaeologists (at least 1 representative);</li> <li>(iii) the Narrabri LALC (at least 1 representative);</li> <li>(iv) the Wee Waa LALC (at least 1 representative); and</li> <li>(v) the Gomeroi Native Title Applicant (at least 1 representative);</li> </ul> </li> <li>(c) be established prior to the commencement of Phase 1;</li> <li>(d) meet at least twice a year; and</li> <li>(e) provide advice on project-related cultural heritage management issues, including preparation and implementation of the:</li> </ul>	<ul style="list-style-type: none"> <li>• Letter of approval for the NGP Aboriginal Cultural Heritage Advisory Group was received from the Director, Resource Assessments, DPIE on 9 February 2021</li> <li>• Narrabri Gas Project (NGP) Aboriginal Cultural Heritage Advisory Group (ACHAG) Minutes of meeting dated 11 November 2022</li> <li>• Narrabri Gas Project (NGP) Aboriginal Cultural Heritage Advisory Group (ACHAG) Minutes of meeting dated 15 February 2023</li> </ul>	<p>Santos was able to demonstrate that it facilitates the operation of an Aboriginal Cultural Heritage Advisory Group (ACHAG).</p> <p>The letter of approval for the NGP Aboriginal Cultural Heritage Advisory Group was received from the Director, Resource Assessments, DPIE on 9 February 2021.</p> <p>Based on the approval letter above and the minutes of the sighted ACHAG meetings, the ACHAG was:</p> <ul style="list-style-type: none"> <li>(a) established in consultation with BCD Registered Aboriginal Parties and other local knowledge holder groups;</li> <li>(b) comprises Aboriginal heritage representatives whose appointments have been approved by the Planning Secretary, including representatives from: <ul style="list-style-type: none"> <li>(i) BCD (Biodiversity Conservation Division, within the DPE (if available);</li> <li>(ii) the scientific community, comprising suitably qualified archaeologists (at least 1 representative), that was represented by Dr Jodie Benton from OzArk Environment and Heritage;</li> <li>(iii) the Narrabri LALC (at least 1 representative), that was represented by Mr Edward Trindell and Ms Lynn Trindell;</li> <li>(iv) the Wee Waa LALC (at least 1 representative), that was represented by Mr Clifford Toomey; and</li> </ul> </li> </ul>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(i) Aboriginal Cultural Heritage Management Plan; and</p> <p>(ii) Field Development Plan, including micro-siting investigations.</p> <p><b>Notes:</b> The Aboriginal Cultural Heritage Advisory Group is an advisory committee only and has no compliance or enforcement functions.</p>		<p>(v) the Gomeroi Native Title Applicant (at least 1 representative) that was represented by Ms Natasha Talbott, Mr Don Craigie and Ms Poly Cutmore as an alternative, but most recently by Ian Brown and Dorothy Tighe;</p> <p>In addition, ACHAG meetings are attended by Heritage NSW, that was represented by Mr Phil Purcell, and most recently by Ms Nicole Davis.</p> <p>(c) be established prior to the commencement of Phase 1 (the first meeting was held on 16 February 2021, approximately two years prior to the commencement of Phase 1);</p> <p>(d) meet at least twice a year (as defined below, most recently in November 2022 and February 2023); and</p> <p>(e) provide advice on project-related cultural heritage management issues, including preparation and implementation of the:</p> <p>(i) Aboriginal Cultural Heritage Management Plan (which occurs as and when required, e.g. at the 16 February 2021 meeting); and</p> <p>(ii) Field Development Plan, including micro-siting investigations (which occurs as and when required, e.g. at the 11 November 2022 meeting).</p> <p>As of August 2023, a total of six ACHAG meetings have been held. These meetings were held on:</p> <p>a) 16 February 2021; b) 24 March 2021; c) 31 August 2021; d) 8 September 2022; e) 11 November 2022; and f) 15 February 2023. The Minutes of these meetings are publicly available on the NGP website.</p>		



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>The Auditors sighted the Minutes for meetings of the ACHAG held on 11 November 2022 and 15 February 2023.</p> <p>The Minutes of the above ACHAG meetings are publicly available on the Santos NGP website.</p>		
Condition B59	<p><b>Heritage – Aboriginal Cultural Heritage Management Plan</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare an Aboriginal Cultural Heritage Management Plan for the development to the satisfaction of the Planning Secretary. The plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by suitably qualified and experienced persons;</li> <li>(b) be prepared in consultation with BCD, the Aboriginal Cultural Heritage Advisory Group, Registered Aboriginal Parties and other local knowledge holder groups;</li> <li>(c) identify all known Aboriginal objects and Aboriginal places in the project area and include a statement of significance for each item;</li> <li>(d) describe the measures to be implemented for: <ul style="list-style-type: none"> <li>(i) undertaking micro-siting investigations for the Field Development Plan, in consultation with the Aboriginal Cultural Heritage Advisory Group, including procedures for: <ul style="list-style-type: none"> <li>• desk top review and ground surveys for all proposed gas field infrastructure;</li> <li>• test excavations and subsurface testing where warranted, in accordance with a detailed</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Aboriginal Cultural Heritage Management Plan (ACHMP) (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</li> <li>• Letter dated 9 December 2022 from DPE (Director – Resource Assessments) approving this version of the ACHMP</li> </ul>	<p>As of August 2023, the current Aboriginal Cultural Heritage Management Plan (ACHMP) is Revision No. 0, issued on 21 February 2022 (Doc ID: 0041-150-PLA-0024). The ACHMP is available on the Santos NGP website.</p> <p>The Auditors sighted a letter dated 15 March 2022 from the DPE (Director – Resource Assessments) approving this version of the ACHMP. Approval of the ACHMP occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>The Auditors noted that Heritage NSW (in its emailed letter of 25 August 2023) referred to the requirements under Section 5.8 (Disturbance activities and pre-clearance surveys) and Section 5.9 (Management of New Finds) of the ACHMP. Sections 5.8 and 5.9 are referred to in the Audit Findings below.</p> <p>In relation to the paragraphs of this condition:</p> <ul style="list-style-type: none"> <li>(a) Section 1.5 of the ACHMP states that: "This ACHMP has been prepared by a 'suitably qualified and experienced person' in accordance with CoC B59(a)."</li> </ul> <p><b>Observation No. 48</b> – For improved compliance with condition B59(a) and consistent with other management plans, Santos should include the name(s) and qualification(s) of the person(s) who prepared the ACHMP in the body of the Plan. The Auditors noted that the Santos-redacted Plan cover page has blanked out the 'Author' detail.</p>	<b>Compliant</b>	



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>archaeological research design and in accordance with the <i>NSW Code of Archaeological Practice</i> (2010) [note: in the ACHMP, Santos states that this reference is incorrect and should instead be the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i> (2010)];</p> <ul style="list-style-type: none"> <li>review and updating of Aboriginal cultural heritage sensitivity mapping;</li> <li>managing any Aboriginal objects or Aboriginal places identified during the investigations, including: <ul style="list-style-type: none"> <li>significance assessment;</li> <li>avoidance of all objects or places of high significance;</li> <li>avoidance of other objects or places, where reasonable and feasible; and</li> <li>if avoidance is not reasonable or feasible, procedures for: <ul style="list-style-type: none"> <li>incremental and cumulative impact assessment, in consultation with Aboriginal stakeholders including Registered Aboriginal Parties; and</li> <li>minimising and/or managing the direct and indirect impacts;</li> </ul> </li> </ul> </li> <li>dispute resolution between the Applicant and Registered Aboriginal Parties;</li> </ul>		<p>(b) Section 1.5 of the ACHMP states that the Plan was prepared in consultation with the agencies as required in this paragraph.</p> <p><b>Observation No. 49</b> – For improved compliance with condition B59(b) and consistent with other management plans, Santos should include a “Consultation Records” Appendix in the ACHMP which includes a summary of issues raised during consultation and how those issues were addressed.</p> <p>(c) Section 5.2 of the ACHMP states that: “The 90 currently known sites and proposed buffer areas for each site are identified in Schedule 7.” The Santos NGP website version of Schedule 7 (which presumably would include a statement of significance for each item) currently states: “Removed following request made during consultation process with Registered Aboriginal Parties.”</p> <p>(d) The ACHMP describes the measures to be implemented for:</p> <p>(i) (Section 5.8) undertaking micro-siting investigations for the Field Development Plan, in consultation with the Aboriginal Cultural Heritage Advisory Group, including procedures for:</p> <ul style="list-style-type: none"> <li>(Section 5.8) desk top review and ground surveys for all proposed gas field infrastructure;</li> <li>(Section 5.8.5 and Schedule 4) test excavations and subsurface testing where warranted, in accordance with a detailed archaeological research design and in accordance with the</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(ii) ensuring all workers receive suitable Aboriginal cultural heritage inductions prior to carrying out any activities which may cause impacts to Aboriginal objects or Aboriginal places, and that suitable records are kept of these inductions;</p> <p>(iii) protecting Aboriginal objects and Aboriginal places located outside the approved disturbance area from impacts of the development, including identification and management of buffers;</p> <p>(iv) managing the discovery of human remains and any new Aboriginal objects or Aboriginal places, including detailed provisions for burials, over the life of the development;</p> <p>(v) maintaining and managing reasonable access for relevant Aboriginal stakeholders to Aboriginal objects and Aboriginal places in any biodiversity offset areas managed by the Applicant; and</p> <p>(vi) facilitating ongoing consultation and involvement of Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage in any biodiversity offset areas managed by the Applicant;</p> <p>(e) include a strategy for the care, control, storage and/or relocation of any Aboriginal objects salvaged in the project area, both during the life of the development and in the long term; and</p> <p>(f) include a program to fund and undertake projects in accordance with <i>Strengthening Aboriginal Community Wellbeing Toolkit</i> (OEH, 2012) to promote caring for land, bringing</p>		<p><i>NSW Code of Archaeological Practice</i> (2010);</p> <ul style="list-style-type: none"> <li>• (Section 10.3) review and updating of Aboriginal cultural heritage sensitivity mapping;</li> <li>• (Section 5.10) managing any Aboriginal objects or Aboriginal places identified during the investigations, including: <ul style="list-style-type: none"> <li>– (Section 5.9.2) significance assessment;</li> <li>– (Section 5.1) avoidance of all objects or places of high significance;</li> <li>– (Section 5.1) avoidance of other objects or places, where reasonable and feasible; and</li> <li>– (Sections 5.2 and 6.2, and Schedule 4) if avoidance is not reasonable or feasible, procedures for: <ul style="list-style-type: none"> <li>○ incremental and cumulative impact assessment, in consultation with Aboriginal stakeholders including Registered Aboriginal Parties; and</li> <li>○ minimising and/or managing the direct and indirect impacts;</li> </ul> </li> </ul> </li> <li>(ii) (Section 5.9.4) ensuring all workers receive suitable Aboriginal cultural heritage inductions prior to carrying out any activities which may cause impacts to Aboriginal objects or Aboriginal places,</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	people together and cultural awareness/education.		<p>and that suitable records are kept of these inductions;</p> <p>(iii) (Section 5.2) protecting Aboriginal objects and Aboriginal places located outside the approved disturbance area from impacts of the development, including identification and management of buffers;</p> <p>(iv) (Sections 5.9.1, 5.9.2 and 5.9.3) managing the discovery of human remains and any new Aboriginal objects or Aboriginal places, including detailed provisions for burials, over the life of the development;</p> <p>(v) (Section 5.12) maintaining and managing reasonable access for relevant Aboriginal stakeholders to Aboriginal objects and Aboriginal places in any biodiversity offset areas managed by the Applicant; and</p> <p>(vi) (Section 5.12) facilitating ongoing consultation and involvement of Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage in any biodiversity offset areas managed by the Applicant;</p> <p>(e) Section 5.10 of the ACHMP includes a strategy for the care, control, storage and/or relocation of any Aboriginal objects salvaged in the project area, both during the life of the development and in the long term; and</p> <p>(f) Section 5.11 of the ACHMP refers to the development of a program to fund and undertake projects in accordance with <i>Strengthening Aboriginal Community Wellbeing Toolkit</i> (OEH, 2012) to promote</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			caring for land, bringing people together and cultural awareness/education.		
Condition B60	<b>Heritage – Aboriginal Cultural Heritage Management Plan</b> The Applicant must implement the Aboriginal Cultural Heritage Management Plan once approved by the Planning Secretary.	<ul style="list-style-type: none"> <li>Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</li> <li>Field Inspection – NGP Cultural Heritage Site CHAR-22-148 – NGP-Site-003 (within the Pilliga Forest)</li> <li>Appendix F – Photo 27 Example of the marking of a cultural heritage site in the field (CHAR-22-148 – NGP-Site-003)</li> </ul>	<p>Santos was able to demonstrate implementation of relevant commitments and requirements defined in the Aboriginal Cultural Heritage Management Plan (ACHMP) (Doc ID: 0041-150-PLA-0024).</p> <p>The Auditors noted that Heritage NSW (in its emailed letter of 25 August 2023) referred to the requirements under Section 5.8 (Disturbance activities and pre-clearance surveys) and Section 5.9 (Management of New Finds) of the ACHMP.</p> <p>As an example of implementation of a specific requirement defined in ACHMP, the Auditors sighted CHAR-22-148 – NGP-Site-003 in the field (see Photo 27), which was a pre-existing “known” site within the Project area, and which was correctly recorded within the AHIMS. It was stated that this Aboriginal Cultural Heritage (ACH) exclusion marking is located within the Cowallah Creek bed on Whirlybrook Trail, between Dewhurst 9 and Dewhurst 43 well pads.</p> <p>This site was observed to be suitably protected, inclusive of establishing the required 10 m buffer zone as required under section 5.9.2 of the ACHMP.</p> <p><u>Preventing Unauthorised Ground Disturbance</u></p> <p>As additional assurance, the boundaries of nominated areas of ground disturbance are pegged to clearly define these areas for earthmoving equipment (i.e. to prevent any unauthorised clearing). These clearly define the authorised limit of disturbance and are removed after the completion of earthworks.</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			In addition, for identified ACH sites, these areas are also pegged at the edge of the buffer zone (typically at a distance of approximately 25 m). It was stated that no ACH sites are physically fenced by Santos at the NGP.		
Condition B61	<p><b>Heritage – Historic Heritage Management Plan</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare a Historic Heritage Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s;</li> <li>(b) be prepared in consultation with the Heritage Division, Council and relevant landowners and in accordance with the relevant Heritage Division guidelines;</li> <li>(c) identify all heritage items in the project area and include a statement of significance for each item;</li> <li>(d) describe the measures to be implemented for: <ul style="list-style-type: none"> <li>(i) managing any heritage items identified or suspected during micro-siting investigations for the Field Development Plan;</li> <li>(ii) ensuring all workers receive suitable heritage inductions prior to carrying out any activities which may cause impacts to historic heritage, and that suitable records are kept of these inductions;</li> <li>(iii) undertaking photographic/archival recording of any items of heritage significance potentially impacted by the development, prior to disturbance;</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Historic Heritage Management Plan (HHMP) (Doc ID: 0041-150-PLA-0007, Revision No. 0B, issued on 18 November 2022)</li> <li>• Letter dated 9 December 2022 from DPE (Stephen O'Donoghue, Director Resource Assessments) approving this version of the HHMP</li> </ul>	<p>As of August 2023, the current Historic Heritage Management Plan (HHMP) is Revision No. 0B, issued on 18 November 2022 (Doc ID: 0041-150-PLA-0007). The HHMP is available on the Santos NGP website.</p> <p>The Auditors sighted a letter dated 9 December 2022 from the DPE (Stephen O'Donoghue, Director Resource Assessments) approving this version of the HHMP. Approval of the HHMP occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>In relation to the paragraphs of this condition:</p> <ul style="list-style-type: none"> <li>(a) Section 1.3 of the HHMP states that the Plan was prepared by Servaes van der Meulen and Mark Vile of Onward Consulting Pty Ltd, and that both of these personnel are deemed to be suitably qualified and experienced.</li> <li>(b) Section 1.4 of the HHMP states that the Plan was prepared in consultation with the agencies as required in this paragraph. Appendix A includes records of this consultation.</li> <li>(c) Section 4 and Appendix C of the HHMP identify all heritage items in the project area and include a statement of significance for each item. For example, section 4.2.2 identifies the Cowallah parish map sawmill site as: "of local historical and technical significance" and Schedule C provides a detailed description of this site.</li> </ul>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(iv) protecting heritage items located outside the approved disturbance area; and  (e) include a strategy for the care, control and storage of any relics salvaged in the project area, both during the life of the development and in the long term.		(d) The HHMP describes the measures to be implemented for:  (i) (Section 5.1.2) managing any heritage items identified or suspected during micro-siting investigations for the Field Development Plan;  (ii) (Section 5.4) ensuring all workers receive suitable heritage inductions prior to carrying out any activities which may cause impacts to historic heritage, and that suitable records are kept of these inductions;  (iii) (Sections 5.12, 5.5 and 5.6) undertaking photographic/archival recording of any items of heritage significance potentially impacted by the development, prior to disturbance;  (iv) (Section 5.3) protecting heritage items located outside the approved disturbance area.  (e) Section 5.6 of the HHMP includes a strategy for the care, control and storage of any relics salvaged in the project area, both during the life of the development and in the long term.		
Condition B62	<b>Heritage – Historic Heritage Management Plan</b>  The Applicant must implement the Historic Heritage Management Plan once approved by the Planning Secretary	<ul style="list-style-type: none"> <li>Historic Heritage Management Plan (Doc ID: 0041-150-PLA-0007, Revision No. 0B, issued on 18 November 2022)</li> <li>Aboriginal Cultural Heritage Management Plan (Doc ID: 0041-150-PLA-0024, Revision</li> </ul>	During this audit and field inspection, there was no evidence that Santos at the NGP during Phase 1 has adversely impacted any of the known 21 historical heritage sites that are listed in the Historic Heritage Management Plan (Doc ID: 0041-150-PLA-0007). These sites were identified during field surveys required for the development of the NGP 2017 EIS.  Implementation of the commitments and requirements defined in this Plan has included, but not been limited to:	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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		<p>No. 0, issued on 21 February 2022)</p> <ul style="list-style-type: none"> <li>NGP Environmental Impact Statement (EIS) (2017)</li> </ul>	<ul style="list-style-type: none"> <li>avoiding any pre-existing and known heritage items; and</li> <li>maintaining suitable processes to appropriately manage any additional heritage items discovered during Project activities.</li> </ul> <p>No incidents, or any unpredicted or unforeseen impacts, occurred during the audit period to any of the known 21 historical heritage sites that are listed in the Historic Heritage Management Plan.</p>		
Condition B63	<p><b>Transport – Road upgrades</b></p> <p>Prior to the commencement of Phase 2, the Applicant must upgrade the following intersections to the satisfaction of TfNSW:</p> <p>(a) Old Mill Road and the Newell Highway, to provide a Channelised Right (CHR) turn treatment on the highway, including sealing of Old Mill Road for at least 30 metres from the edge of the highway; and</p> <p>(b) X-Line Road and the Newell Highway, to provide Auxiliary Left Short [AUL(S)] and Basic Right (BAR) turn treatments on the highway, including sealing of X-Line Road for at least 30 metres from the edge of the highway.</p> <p><b>Note:</b> All works within the road reserve, including the pipeline crossing of the Newell Highway, require separate approval from the roads authority under the Roads Act 1993.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition is a requirement for the commencement of Phase 2 and therefore has not been triggered for this audit.</p>	<b>Not triggered</b>	
Condition B64	<p><b>Transport – Road upgrades</b></p> <p>Prior to the commencement of Phase 2, the Applicant must enter into an agreement with TfNSW for the ongoing maintenance of the intersection upgrades required under B63.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition is a requirement for the commencement of Phase 2 and therefore has not been triggered for this audit.</p>	<b>Not triggered</b>	



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition B65	<p><b>Visual – Operating Conditions</b></p> <p>The Applicant must:</p> <p>(a) implement all reasonable and feasible measures to minimise the visual and lighting impacts of the development;</p> <p>(b) minimise the lighting and skyglow impacts of the development on Siding Springs Observatory, including:</p> <p>(i) monitoring lighting levels in consultation with AAO, if requested by AAO; and</p> <p>(ii) undertaking scheduled maintenance-related flaring activities when the moon is at least 50% illuminated (i.e. gibbous moon), unless otherwise agreed with AAO and/or for emergency purposes;</p> <p>(c) ensure no fixed outdoor lights shine directly above the horizontal or above the building line or any illuminated structure;</p> <p>(d) ensure that all external lighting associated with the development complies with relevant guidelines and Australian Standards, including the latest version of:</p> <ul style="list-style-type: none"> <li>AS 4282-1997 – <i>Control of obtrusive effects of outdoor lighting</i>;</li> <li>AS 1158-2010 – <i>Lighting for roads and public spaces for roadways and plant</i>; and</li> <li>Dark Sky Planning Guideline (2016) – <i>Protecting the observing conditions at Siding Spring</i>;</li> </ul> <p>(e) ensure that the visual appearance of all new buildings, structures, facilities or works is aimed at blending as far as reasonable and feasible with the surrounding landscape; and</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Appendices B and C in this audit report regarding audit consultation with the Siding Spring Observatory</li> </ul>	<p><u>Phase 1 Lighting and Visual Impacts</u></p> <p>As of August 2023, the Phase 1 development has not involved the installation of any extensive fixed or mobile lighting at any existing NGP facilities.</p> <p>It was stated that NGP operators are limited to working day shift only between 6 am to 6 pm, inclusive of being on call for any emergencies.</p> <p>External lighting at the NGP is used as follows:</p> <ul style="list-style-type: none"> <li>the operation of the NGP Leewood facility required the installation and use of some operational and safety lighting;</li> <li>safety lighting exists as needed at relevant infrastructure completed for the Phase 1 development;</li> <li>no permanent lights exist at any of the completed Phase 1 wells associated with the development;</li> <li>it was stated that lighting is required to be used by operating drill rigs on drill pads. During the current Phase 1 development, drilling completed by Impax Drilling Services has not been required during night shift.</li> </ul> <p>By letter of 21 August 2023 to the Lead Auditor, the Director of the Siding Spring Observatory (Australian National University) requested confirmation that the points in condition B65(a) to (d) are being met.</p> <p>In relation to paragraphs (a) to (d) of this condition:</p> <p>(a) The NGP is located on land less than 200 kilometres from the Siding Springs Observatory. Santos was able to demonstrate that it has implemented reasonable and feasible measures to minimise the visual and lighting impacts of the Phase 1 development to</p>	Compliant	



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(f) implement all reasonable and feasible measures to shield views of petroleum mining operations and associated equipment from users of public roads and privately-owned residences.		<p>date. Santos was able to demonstrate that it considered: a) the <i>Australian Standard 4282-1997 Control of obtrusive effects of outdoor lighting</i>; and b) good lighting design principles defined in the original Dark Sky Planning Guideline (2016) – Protecting the observing conditions at Siding Spring guideline, when preparing its EIS (Chapter 23 – Landscape and Visual). During the audit period, negligible impact from the Phase 1 development occurred from obtrusive lighting.</p> <p>(b) During the audit period, the Siding Spring Observatory has not requested the monitoring of lighting levels. It was stated that Santos is aware of the requirement to only undertake scheduled maintenance-related flaring activities when the moon is at least 50% illuminated unless otherwise agreed with the Siding Spring Observatory and/or for emergency purposes.</p> <p>(c) Santos acknowledges this requirement.</p> <p>(d) The DPE reissued the Dark Sky Planning Guideline in June 2023. Santos acknowledges the 10 design principles in section 4.2 of this Guideline, which will be considered and incorporated into any additional development work associated with the NGP Phase 1 development. As of August 2023, Santos has not received any lighting-related complaints from any stakeholders.</p> <p><b>Observation No. 50</b> – As part of the next external lighting installation/maintenance works at the NGP site, Santos could engage the contractor to assess and provide a written report regarding compliance of the Project against relevant requirements in:</p> <ul style="list-style-type: none"> <li>AS 4282-1997 – <i>Control of obtrusive effects of outdoor lighting</i>;</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<ul style="list-style-type: none"> <li>AS 1158-2010 – <i>Lighting for roads and public spaces for roadways and plant</i>, and</li> <li><i>Dark Sky Planning Guideline</i> (2016) – <i>Protecting the observing conditions at Siding Spring</i>.</li> </ul> <p>In relation to paragraphs (e) and (f) of this condition:</p> <p>(e) No new buildings have been constructed during Phase 1 (i.e. infrastructure has been limited to the construction of new well pads and fences, for which the same standard of fencing is used around well pads as typically used for landowner fencing). Access roads for the development have been constructed to the same gravel surface and standard as other existing roads in the Pilliga State Forest.</p> <p>(f) As much as practicable, new well pads are screened, utilising existing vegetation screens when these are present. It was stated that after new well pads are cleared and constructed, surface vegetation will be allowed to grow to stabilise the site and reduce visual impact.</p>		
Condition B66	<b>Visual – Additional Visual Mitigation</b> Prior to the commencement of Phase 2, the Applicant must implement tree screening along the Newell Highway in the vicinity of the development (including the Leewood facility), to screen views to the development from residences and road users. The screening shall be undertaken in accordance with a tree screening plan that has been prepared in consultation with Council and TfNSW and to the satisfaction of the Planning Secretary.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition is a requirement for the commencement of Phase 2 and therefore has not been triggered for this audit.	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition B67	<p><b>Waste – Operating Conditions</b></p> <p>The Applicant must:</p> <p>(a) implement all reasonable and feasible measures to:</p> <p>(i) maximise beneficial reuse of waste generated by the development;</p> <p>(ii) minimise the residual waste generated by the development;</p> <p>(iii) minimise the on-site storage of waste generated by the development;</p> <p>(b) classify all waste in accordance with the EPA's <i>Waste Classification Guidelines</i> (2014, as may be updated or replaced);</p> <p>(c) dispose of all waste at appropriately licensed waste facilities, or as otherwise approved in an EPL or RREO in the case of treated water or drilling-related waste;</p> <p>(d) manage sewage treatment and disposal in accordance with the requirements of Council;</p> <p>(e) keep accurate records of the amount of waste transported from the project area (on a monthly basis), and report on this in the Annual Review; and</p> <p>(f) monitor and report on the effectiveness of waste avoidance, minimisation and management measures in the Annual Review.</p>	<ul style="list-style-type: none"> <li>Waste Management Plan (Doc ID: 0041-150-PLA-0005, Revision No. 0D, issued on 18 November 2022)</li> <li>Written correspondence from Santos to the Namoi Waste Corporation dated 25 May 2023 relating to the quality and disposal of RDM samples collected from Bibblewindi 6 during March/April/May 2023</li> <li>Namoi Waste Corporation (trading as Naracor Pty Ltd) EPL No. 20367</li> <li>Namoi WasteCorp Docket No. 32468, dated 19 July 2023, for the transport of water to Leewood (WO No. 40315105)</li> <li>Letter from Santos to the DPE, dated 13th March 2023, relating to the 2022 Annual Review for the NGP</li> </ul>	<p>Santos manages waste across the development in accordance with requirements and commitments defined within the Waste Management Plan (Doc ID: 0041-150-PLA-0005, Revision No. 0D, issued on 18 November 2022).</p> <p>The main waste streams generated by the development are defined in Section 6.2 and Table 6.2 of the Waste Management Plan.</p> <p>The waste hierarchy adopted by Santos NGP is defined within Section 5 of the Waste Management Plan.</p> <p><u>Trackable waste</u></p> <p>Trackable waste from the development is removed and transported as required by Namoi Waste Corporation, under individual purchase orders issued by Santos. This waste service provider is fully licenced to transport trackable waste (Category 1 and 2) and holds EPL No. 20367, valid to 19 November 2023 (i.e. anniversary date).</p> <p>The transport of trackable waste from NGP is completed in accordance with the requirements of the NSW EPA waste tracking process, that is completed on-line. Scanned job dockets are issued and retained.</p> <p><u>Narrabri Shire Landfill</u></p> <p>Solid waste across the development is segregated and temporarily stored on site as collected.</p> <p>All inert solid waste, that is not regulated or able to be recycled, is transported by the Namoi Waste Corporation to the Narrabri Shire Landfill as general waste.</p> <p><u>Residual Drilling Material (RDM)</u></p> <p>As and when generated, RDM samples are taken and collected for submission to ALS for analysis.</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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			<p>Analytical results within ALS reports are compared against guideline values to confirm that the material can be classified as general waste, allowing it to be collected and transported by Namoi Waste Corporation, Narrabri, for authorised disposal at the Narrabri Shire Landfill as general waste.</p> <p>As an example of the above, the Auditors sighted written correspondence from Santos to the Namoi Waste Corporation dated 25 May 2023 confirming that the RDM samples collected from Bibblewindi 6 during March/April/May 2023 were analysed by ALS and assessed and classified as General Solid Waste, as per the waste classification guidelines. The laboratory analyses for these samples were provided by ALS over 103 pages of analysis reports.</p> <p>Trackable waste, inclusive of RDM that does not meet guideline values, is authorised to be transported and disposed at one of two facilities authorised to accept this waste, inclusive of: a) a location near Newcastle; and b) a second site near Roma.</p> <p><u>Sewage waste</u></p> <p>Sewage waste generated at Leewood and Bibblewindi is collected in septic tanks and removed as and when needed by Namoi Waste Corporation to the licensed Namoi Shire STP.</p> <p><u>Transport of Production Water within NGP</u></p> <p>Job dockets are issued by Namoi Waste Corporation to and retained by Santos whenever produced water is transported within the NGP project area to the Leewood Ponds by bulk tanker.</p> <p>As an example, the auditor sighted the Namoi WasteCorp Docket No. 32468, dated 19 July 2023, for the transport of water to Leewood (WO No. 40315105).</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
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			<p>Waste reports are available in spreadsheet format and provided to the waste contractor for their completion. Once the report is completed, it is returned to Santos Brisbane on a monthly frequency.</p> <p><u>2022 Annual Review</u></p> <p>Santos did not undertake any physical works under Development Consent SSD 6456 during the most recent annual review period (i.e. calendar year 2022), therefore no Annual Review was collated and issued. This was communicated by Santos in writing to the DPE on 13 March 2023.</p>		
Condition B68	<p><b>Waste – Operating Conditions</b></p> <p>Except as expressly permitted in an applicable EPL, specific resource recovery order or exemption under the <i>Protection of the Environment Operations (Waste) Regulation 2014</i>, the Applicant must not receive waste in the project area for storage, treatment, processing, reprocessing or disposal.</p>	<ul style="list-style-type: none"> <li>Santos NSW (Eastern) Pty Ltd – Environmental Protection Licence No. 20350 (version date: 19 June 2023)</li> </ul>	<p>The Santos Narrabri petroleum leases are not authorised or licensed to receive or dispose of any type or category of waste, as defined in the <i>EPA's Waste Classification Guidelines</i>.</p> <p>Santos is authorised to receive production water at the Leewood facility from locations within the NGP.</p> <p>The above is inclusive of the receipt of produced water from the Kahlua Pilot near Gunnedah (EPL No. 20351). Condition L3.5 of EPL No. 20350 (version date: 19 June 2023) states that: "The licensee may accept waste generated by the Kahlua Pilot (EPL 20351) for storage and treatment at the Leewood facility".</p>	<b>Compliant</b>	
Condition B69	<p><b>Waste – Produced Salt Beneficial Reuse and Disposal Study</b></p> <p>Prior to the commencement of Phase 1, the Applicant must undertake a Produced Salt Beneficial Reuse and Disposal Study, to the satisfaction of the Planning Secretary. The study must:</p> <p>(a) be prepared by a suitably qualified and experienced person/s;</p>	<ul style="list-style-type: none"> <li>Produced Salt Beneficial Reuse and Disposal Study (Doc ID: 0041-150-PLA-0006, Revision No. 0B, issued on 24 October 2022)</li> <li>Letter dated 9 December 2022 from DPE (Stephen O'Donoghue, Director Resource Assessments)</li> </ul>	<p>As of August 2023, the current Produced Salt Beneficial Reuse and Disposal Study (PSBRDS) is Revision No. 0B, issued on 24 October 2022 (Doc ID: 0041-150-PLA-0006). The PSBRDS is available on the Santos NGP website.</p> <p>The Auditors sighted a letter dated 9 December 2022 from the DPE (Stephen O'Donoghue, Director Resource Assessments) approving this version of the PSBRDS. Approval of the PSBRDS occurred</p>	<b>Compliant</b>	

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Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(b) be prepared in consultation with the EPA, Council and the owner of any waste facilities identified under (c)(iv) below;</p> <p>(c) include:</p> <p>(i) detailed assessment of salt volumes and composition, including chemicals of potential concern;</p> <p>(ii) an assessment of reasonable and feasible beneficial reuse options;</p> <p>(iii) a strategy for maximising beneficial reuse for identified reasonable and feasible reuse options; and</p> <p>(iv) a strategy for disposal of any produced salt that is not able to be beneficially reused, including demonstration that occupiers of waste facilities can lawfully accept, and will permit, the volume and composition of salt waste produced by the development for disposal at their premises.</p>	<p>approving this version of the PSBRDS</p> <ul style="list-style-type: none"> <li>Mark Vile, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> <li>Servaes van der Meulen, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> </ul>	<p>prior to the commencement of Phase 1 (7 February 2023).</p> <p>For the purposes of this paragraph, the Auditors noted that Section 1.2 of the PSBRDS states that no solid salt will be produced during Phases 1 and 2 of the Project and all brine will be stored in the ponds at the Leewood facility.</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) Section 1.3 of the PSBRDS states that the PSBRDS was prepared by Mark Vile of Onward Consulting Pty Ltd. Servaes van der Meulen of Onward Consulting Pty Ltd assisted in the preparation of the PSBRDS with both assessed as suitably qualified and experienced.</p> <p>(b) Section 1.4 of the PSBRDS states that the PSBRDS was prepared in consultation with the agencies as required in this paragraph. Appendix A includes detailed records of this consultation.</p> <p>(c) The PSBRDS includes:</p> <p>(i) <i>assessment of salt volumes</i> (Produced water (Table 3.2), Phase 3 Brine (Section 3.2.3)) <i>and composition, including chemicals of potential concern</i> (Phase 1 (Table 3.1) and Phase 3 (Table 3.5);</p> <p>(ii) <i>an assessment of reasonable and feasible beneficial reuse options</i> (sections 4, 5 and 6). Section 4 states that a multi-criteria analysis evaluation process will not be applied until the options have further been trailed. Table 5.1 indicates that this evaluation is scheduled for Q3-Q4 2023.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>It was stated that there have been delays in trialling the options which will defer the evaluation to 2024.</p> <p>(iii) <i>a strategy for maximising beneficial reuse for identified reasonable and feasible reuse options</i> (Section 5);</p> <p>(iv) <i>a strategy for disposal of any produced salt that is not able to be beneficially reused, including demonstration that occupiers of waste facilities can lawfully accept, and will permit, the volume and composition of salt waste produced by the development for disposal at their premises</i> (Section 6).</p>		
Condition B70	<p><b>Waste – Waste Management Plan</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare a Waste Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(i) be prepared by a suitably qualified and experienced person/s;</li> <li>(j) be prepared in consultation with the EPA, Council, and the owner of any waste facilities or land on which waste is proposed to be disposed;</li> <li>(k) describe the measures to be implemented to ensure: <ul style="list-style-type: none"> <li>(iv) Compliance with the waste operating conditions in this consent;</li> <li>(v) Compliance with the <i>Protections of the Environment Operations (Waste) Regulation 2014</i>; and</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Waste Management Plan (Doc ID: 0041-150-PLA-0005, Revision No. 0D, issued on 18 November 2022)</li> <li>• Mark Vile, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> <li>• Servaes van der Meulen, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> </ul>	<p>The Auditors assessed Santos's compliance against condition B70 as a whole; i.e. paragraphs (a) to (h) and all sub-paragraphs form part of condition B51 for the purpose of assessing compliance status.</p> <p>The Auditors noted that by letter of 9 December 2022, the Planning Secretary approved the Waste Management Plan. In identifying the following non-compliance, the Auditors relied on their own assessment of the Waste Management Plan.</p> <p><b>Non-compliance No. 1</b> – The Waste Management Plan does not satisfy paragraphs (g) and (h)(ii) of condition B70 in that the Plan:</p> <ul style="list-style-type: none"> <li>• does not describe the waste management system in detail, including a contingency strategy if beneficial reuse and/or disposal options become unavailable (paragraph (g)); and</li> <li>• does not define what constitutes a waste-related incident or non-compliance and does not include a protocol for identifying and notifying the Department and relevant</li> </ul>	<b>Non-compliant</b>	<b>NC1</b>



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(vi) Reasonable and feasible waste minimisation and management measures are being deployed.</p> <p>(l) be consistent with the outcomes of the Produced Salt Beneficial Re-Use and Disposal Study;</p> <p>(m) identify all waste streams generated by the development (including produced water, salt and drill mud/cuttings);</p> <p>(n) identify the fate of those streams (including identification of the specific receiving facilities which have agreed to accept those wastes);</p> <p>(o) describe the waste management system in detail, including a contingency strategy if beneficial reuse and/or disposal options become unavailable; and</p> <p>(p) include a monitoring program that:</p> <p>(iii) evaluates and reports on:</p> <ul style="list-style-type: none"> <li>the effectiveness of the waste management system;</li> <li>ongoing classification of waste (including salt); and</li> <li>compliance against the waste operating conditions and the EPL; and</li> </ul> <p>(iv) defines what constitutes a waste-related incident or non-compliance and includes a protocol for identifying and notifying the Department and relevant stakeholders of these events.</p>		<p>stakeholders of these events (paragraph (h)(ii)).</p> <p><b>Recommendation No. 1</b> – Santos should review and update the Waste Management Plan to satisfy the requirements in paragraphs (g) and (h)(ii) of condition B70.</p> <p><u>Waste Management Plan</u></p> <p>As of August 2023, the current Waste Management Plan is Revision No. 0D, issued on 18 November 2022 (Doc ID: 0041-150-PLA-0005). This Plan is available on the Santos NGP website.</p> <p>The Auditors sighted a DPE letter of 9 December 2022 approving this version of the Waste Management Plan. Approval of this Plan occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>In relation to the paragraphs (a) to (f) of this condition:</p> <p>(a) Section 1.4 of the Waste Management Plan states that the Plan was prepared by Servaes van der Meulen and Mark Vile of Onward Consulting Pty Ltd as suitably qualified and experienced. The Auditors sighted Servaes van der Meulen and Mark Vile's CVs, defining their experience and qualifications.</p> <p>(b) Section 1.4 states that the Plan was prepared in consultation with the agencies as required in this paragraph, including Council (the owner of the waste facilities proposed to be used by the NGP). Appendix A includes detailed records of this consultation.</p> <p>(c) Section 1.2 states that the Plan has been developed in accordance with the requirements of the Petroleum Leases, EPL and conditions of consent. Table 3.1 in Section 3 details the specific SSD 6456,</p>		



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			<p>EPL 20350, PPL 3, PAL 2 and PEL 238 conditions to ensure the Plan meets the compliance requirements. Section 5 details how the waste management hierarchy will be implemented in the NGP waste management strategy. Section 6 provides an overview of the waste management system and the practices implemented for each waste type identified using the POEO Act, Waste Regulation and Waste Classification Guidelines, and the reasonable and feasible waste minimisation and management measures to be used.</p> <p>The Auditors consider that the management measures described in Sections 5, 6 and 7 sufficiently meet the requirements of paragraph (c).</p> <p>(d) Section 6.5.2 states that no salt is proposed to be produced for Phase 1 of the project, consistent with the PSBRDS.</p> <p>(e) Table 6.2 in Section 6.2 provides a waste inventory for Phase 1, with waste streams classified in accordance with POEO Act, Waste Regulation and Waste Classification Guidelines. The waste inventory includes produced water, brine (note: not salt), rock-based drill cuttings and coal-based drill cuttings.</p> <p>(f) Section 5.1.6 identifies the local waste facilities that may be used by the project and Table 7.1 in Section 7 details the waste-receiving facilities to be used based on waste type. Section 7 states that additional appropriately licenced facilities not specified in this plan may be used if required.</p> <p>In relation to paragraph (g) of this condition:</p>		

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			<p>(g) Section 4 describes the waste management system that is represented in Figure 4.1. Table 9.1 in Section 9 provides the contingency strategy for managing unforeseen impacts to the beneficial reuse and/or disposal options but does not provide detail on what measures would be implemented if the beneficial reuse and/or disposal options become unavailable. Refer to the non-compliance audit finding against this condition B70.</p> <p>In relation to paragraph (h)(i) and (ii) of this condition:</p> <p>(i) Section 8 states that a monitoring program will be implemented across the Project to evaluate and report on the requirements of the Paragraph however limited additional information is provided. Section 6 details the testing requirements for various waste materials to ensure compliance with the waste operating conditions and the EPL.</p> <p><b>Observation No. 51</b> – Santos should consider updating Section 8 of the Waste Management Plan by including a table to consolidate all monitoring and testing requirements of the various waste streams that have been identified in Section 6.</p> <p>(ii) The Waste Management Plan does not define what constitutes a waste-related incident or non-compliance. Section 9.1 states that notification of an incident to the Department and any other relevant agencies will be provided via the Major Projects Portal. This protocol does not consider other relevant stakeholders; e.g. Council. Refer to the non-compliance audit finding against this condition B70.</p>		

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Condition B71	<b>Waste – Waste Management Plan</b> The Applicant must implement the approved Waste Management Plan once approved by the Planning Secretary.	<ul style="list-style-type: none"> <li>Procedure (Doc ID: SMS-EXA-OS01-PD01) Waste Monitoring and Reporting Revision 1.0, issued 7 September 2021</li> <li>Job Dockets (numbers 32468 – 32474 dated between 19 July 2023 to 27 July 2023) from Namoi WasteCorp (a licensed contractor)</li> <li>Letter dated 25 May 2023 from Santos (██████████ – Environmental Advisor) to Namoi Waste Corporation to confirm the waste has been classified as General Solid Waste including ALS Laboratory analysis of Residual Drilling Material (RDM) for BWD6 dated 11 April 2023 to enable classification of material in accordance with the NSW EPA Waste Classification Guidelines.</li> <li>Appendix F – Photo 28 RDM and Drilling fluid containment (Dewhurst 43)</li> </ul>	<p>Based on their field inspection and evidence provided during this audit, the Auditors consider that Santos has implemented waste management practices generally in accordance with the Waste Management Plan, including:</p> <ul style="list-style-type: none"> <li>Procedure (Doc ID: SMS-EXA-OS01-PD01) Waste Monitoring and Reporting Revision 1.0 to ensure accurate and consistent reporting of waste streams.</li> <li>Job Dockets (numbers 32468 – 32474 dated between 19 July 2023 to 27 July 2023) from Namoi WasteCorp (a licensed contractor) for collection of production water and its transport to the Leewood facility for disposal in the produced water ponds.</li> <li>Containment of Residual Drilling Material and fluids to enable batch testing to confirm its waste classification (see Photo 28).</li> <li>ALS Laboratory analysis of Residual Drilling Material (RDM) for BWD6 dated 11 April 2023 to enable classification of material in accordance with the NSW EPA Waste Classification Guidelines, and a subsequent letter dated 25 May 2023 from Santos (██████████ – Environmental Advisor) to Namoi Waste Corporation to confirm the waste has been classified as General Solid Waste.</li> </ul> <p>It was stated that the Waste Register required in Section 8 of the Waste Management Plan will form part of the Annual Review. However, a formal monthly monitoring process has not commenced due to the low levels of waste being produced.</p> <p><b>Observation No. 52</b> – During the field inspection at Dewhurst 43 in August 2023, the Auditors observed poor waste segregation and management practices by a drilling contractor who</p>	<b>Compliant</b>	

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			<p>was using a dedicated spill kit bin as a general waste bin and discarding empty drink bottles on the ground. Santos should implement refresher training; e.g. toolbox talks, with all NGP employees and contractors to reinforce the required waste management practices and workplace behaviours.</p> <p>The Auditors noted that upon identification of inadequate waste management practices by the contractor at Dewhurst 43, Santos immediately (and prior to the completion of the Auditors' field inspection) implemented the required corrective actions to ensure compliance with the Waste Management Plan and Santos standards. The Auditors also observed that this incident was not reflective of other operational areas where a high housekeeping standard with appropriate waste management practices was maintained.</p> <p><b>Observation No. 53</b> – The Narrabri Shire Council requested ongoing and routine liaison by Santos with the Council's Waste and Water Divisions to ensure the Council's water treatment and waste facilities can appropriately manage the volume and product type. Despite the Project's low volumes of waste at the current stage, Santos should ensure that this engagement is formalised.</p> <p><b>Observation No. 54</b> – The Waste Management Plan requires monthly monitoring of waste volumes. Despite the low waste volumes during Phase 1 of the Project, Santos should review its current processes to confirm that this monitoring occurs.</p>		
Condition B72	<p><b>Hazards and risk – Final Hazard Studies</b></p> <p>Prior to the commencement of Phase 2, the Applicant must prepare the following to the satisfaction of the Planning Secretary a:</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors noted that Fire and Rescue NSW (in its audit consultation response email of 9 August 2023) supports this condition and requests input into proposed fire and life safety systems at Phase 2 of the Project.</p>	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(a) Fire Safety Study for the development covering all relevant aspects of the Department's <i>Hazardous Industry Planning Advisory Paper No. 2, 'Fire Safety Study Guidelines'</i> and the NSW Government's <i>Best Practice Guidelines for Contaminated Water Retention and Treatment Systems</i>. The Fire Safety Study must be developed in consultation with Fire and Rescue NSW and must include:</p> <ul style="list-style-type: none"> <li>(i) consequence analysis (including appropriate consequence diagrams) for all potential fire and explosion scenarios in the project area throughout the development;</li> <li>(ii) details of all fire engineering controls and measures; and</li> <li>(iii) details of the roles and duties of various parties if a fire, explosion or spillage occur;</li> </ul> <p>(b) Hazard and Operability Study (HAZOP) for all potentially hazardous facilities associated with the development (including conversion or upgrade of existing wells using appropriate risk management). The study must:</p> <ul style="list-style-type: none"> <li>(i) be prepared by a suitably qualified and experienced person/s who is independent of the development and has been approved by the Planning Secretary;</li> <li>(ii) be consistent with the Department's <i>Hazardous Industry Planning Advisory Paper No. 8, 'HAZOP Guidelines'</i>;</li> <li>(iii) be accompanied by a program for the implementation of all recommendations made in the report;</li> </ul>		<p>The Auditors and Santos consider that this condition is a requirement for the commencement of Phase 2 and therefore has not been triggered for this audit.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<ul style="list-style-type: none"> <li>(iv) include safety related recommendations for the final design of the development. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented and justified; and</li> <li>(v) where the detailed design of certain components of the development is not available, a Package Unit HAZOP must be conducted. This must also consider the tie-in and the flow-on effect for the remainder of the development;</li> <li>(c) Final Hazard Analysis of the development based on its final design, consistent with the Department's <i>Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'</i>. The Final Hazard Analysis must be prepared in consultation with SafeWork NSW and must: <ul style="list-style-type: none"> <li>(i) re-evaluate and confirm all relevant data and assumptions of the Preliminary Hazard Analysis, and provide details on any differences between the Preliminary Hazard Analysis and Final Hazard Analysis;</li> <li>(ii) address all materials that may present a hazard to people, property or the biophysical environment at all potentially hazardous facilities associated with the final design;</li> <li>(iii) re-evaluate and confirm all control measures proposed for the prevention and mitigation of incidents;</li> <li>(iv) include Safety Integrity Level (SIL) allocation and verification studies;</li> <li>(v) demonstrate the adequacy of the safety systems included in the final design;</li> </ul> </li> </ul>				

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(vi) re-evaluate the risk from the development based on the outcomes of the SIL allocation and verification report for the development;</p> <p>(iv) include off-site impacts from wellhead scenarios and hazards and risks associated with the conversion and/or upgrade of existing wells;</p> <p>(v) include the outcome of well pad design verification assessments to minimise off-site impact;</p> <p>(vi) demonstrate that the cumulative risk complies with all the Department's risk criteria for the protection of people, property and the biophysical environment, including:</p> <ul style="list-style-type: none"> <li>• bushfire risk from wells and associated gathering lines;</li> <li>• major facilities; and</li> <li>• transport between potentially hazardous facilities;</li> </ul> <p>(vii) provide details of measures that would be implemented to minimise the risk to the surrounding land, including negotiated arrangements with other stakeholders to implement appropriate risk reduction measures;</p> <p>(d) Construction Safety Study, consistent with the Department's <i>Hazardous Industry Planning Advisory Paper No. 7, 'Construction Safety'</i> and the most recent Australian Standard AS 2885.1, <i>Pipelines – Gas and liquid petroleum (Part 1: Design and construction)</i>. The plan must specifically address all safety measures</p>				

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>related to construction, testing and commissioning; and</p> <p>(e) Pipeline Safety Management Study, prepared in accordance with the Australian Standard AS 2885 – 2007, <i>Pipelines – Gas and liquid petroleum</i>. The study must be prepared in consultation with all relevant stakeholders including, but not limited to, the pipeline operator.</p>				
Condition B73	<p><b>Hazards and risk – Final Hazard Studies</b></p> <p>The Applicant must design and operate the development in accordance with the approved Final Hazard Analysis.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors noted that Fire and Rescue NSW (in its audit consultation response email of 9 August 2023) supports this condition and requests input into proposed fire and life safety systems at Phase 2 of the Project.</p> <p>The Auditors and Santos consider that this condition is a requirement for the commencement of Phase 2 and therefore has not been triggered for this audit.</p>	<b>Not triggered</b>	
Condition B74	<p><b>Hazards and risk – Safety Plans</b></p> <p>Prior to the commencement of Phase 2, the Applicant must prepare the following to the satisfaction of the Planning Secretary:</p> <p>(a) an Emergency Plan and detailed emergency procedures for the development prepared in consultation with Safework NSW and Fire and Rescue NSW. This plan must:</p> <p>(i) be consistent with the Department's <i>Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'</i> and the <i>Code of Practice for Coal Seam Gas Well Integrity</i> (2012, as may be updated or amended);</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition is a requirement for the commencement of Phase 2 and therefore has not been triggered for this audit.</p>	<b>Not triggered</b>	



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	<ul style="list-style-type: none"> <li>(ii) include consideration of the safety of all people outside of the site that may be at risk from the development; and</li> <li>(iii) include details of the roles and responsibilities of key personnel and relevant agencies if an incident occurs; and</li> <li>(b) a Safety Management System that must be prepared in consultation with SafeWork NSW and must: <ul style="list-style-type: none"> <li>(i) be prepared in accordance with the Department's <i>Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'</i>;</li> <li>(ii) cover all development operations and potentially hazardous facilities, and must clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to the procedures;</li> <li>(iii) include an inspection, testing and preventive maintenance program that would be implemented and maintained to ensure the reliability and availability of the key safety critical equipment is, at a minimum, consistent with the data estimated in the Final Hazard Analysis; and</li> <li>(iv) include arrangements for transport of hazardous materials including details of routes to be used for hazardous materials transport which have been selected in accordance with the Department's <i>Hazardous Industry Planning Advisory Paper No. 11, 'Route Selection'</i>.</li> </ul> </li> </ul>				

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition B75	<b>Hazards and risk – Safety Plans</b> The Applicant must implement the approved Emergency Plan and Safety Management System.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition is a requirement for the commencement of Phase 2 and therefore has not been triggered for this audit.	<b>Not triggered</b>	
Condition B76	<b>Hazards and risk – Post-Startup Compliance Report</b> Three months after the commencement of Phase 3, the Applicant must submit to the Planning Secretary, a report demonstrating that: <ul style="list-style-type: none"> <li>(a) actions have been taken to implement the recommendations and safety-related control measures in the approved studies/plans/systems;</li> <li>(b) the Emergency Plan is in place and that at least one emergency exercise has been conducted; and</li> <li>(c) the Safety Management System has been fully implemented and that records required by the system are being kept.</li> </ul>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition has not been triggered, as it is a requirement for Phase 3 which has not commenced.	<b>Not triggered</b>	
Condition B77	<b>Hazards and risk – Dangerous Goods</b> The Applicant must ensure that the storage, handling, and transport of: <ul style="list-style-type: none"> <li>(a) dangerous goods is done in accordance with the relevant Australian Standards and guidelines, particularly AS1940 and AS1596, the <i>Dangerous Goods Code</i>, and the EPA's <i>Storing and Handling of Liquids: Environmental Protection – Participants Manual</i>; and</li> <li>(b) any explosives are managed in accordance with the requirements of the Resources Regulator.</li> </ul>	<ul style="list-style-type: none"> <li>Appendix F – Photo 5 Drilling of a groundwater monitoring bore at Dewhurst 43</li> <li>Inspection at Santos NGP Operations Centre warehouse at 300 Yarrie Lake Road, Narrabri</li> <li>Inspection of a selection of NGP operational well pads, as defined in this audit report</li> <li>Appendix F – Photo 29 Self-bunded fuel storage</li> </ul>	<u>Storage and Management of Dangerous Goods</u> Hydrocarbon storage across NGP primarily exists at: a) the Santos NGP Operations Centre warehouse at 300 Yarrie Lake Road, Narrabri; b) on active drill pads; c) on well pads; and d) at the Leewood and Bibblewindi pond facilities. The Santos NGP Operations Centre in Narrabri utilises a chemical storage area at the warehouse on Yarrie Lake Road. All stored fuels and chemicals stored at this location were observed to have suitable secondary containment and spill equipment available. Fuel and required chemicals are temporarily stored on active drill pads for use during drilling as	<b>Compliant</b>	

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		facility at the Leewood Facility RO Plant	<p>required. For drilling and completions, this primarily consists of the storage and use of bulk fuel, lubricants, drilling muds etc. Bulk fuel and drilling muds are stored in self-bunded containers on site.</p> <p>The Auditors inspected the construction and installation of the groundwater monitoring bore at Dewhurst 43 during the field inspections conducted at NGP in August 2023 (see Photo 5).</p> <p>The Auditors inspected bulk fuel, lubricant and chemical storage facilities at the Leewood Facility (see Photo 29) and bulk fuel and lubricant storage facilities at the Bibblewindi Facility.</p> <p>Generally, storage of dangerous goods at the NGP was observed to be in compliance with the requirements of AS1940 and AS1596, the Dangerous Goods Code, and the EPA's <i>Storing and Handling of Liquids: Environmental Protection – Participants Manual</i>.</p> <p>It was stated that Plugging and Abandonment (P&amp;A) activities are scheduled to occur in the near future at Bohena 3 and Bohena 7. Relevant fuels and chemicals will be temporarily stored and utilised during these activities.</p> <p><u>Explosives</u></p> <p>As of August 2023 and for the audit period, no explosives are stored or used at the NGP.</p>		
Condition B78	<p><b>Hazards and risk – Bushfire Management</b></p> <p>The Applicant must:</p> <p>(a) ensure that the development:</p> <p>(i) provides for asset protection in accordance with the relevant requirements in the <i>Planning for Bushfire Protection</i> (RFS, 2019) guideline; and</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Fire Management Plan (Doc ID: 0041-150-PLA-0004, Revision 0E, issued on 15 November 2022)</li> <li>Forestry Corporation of NSW – Forestry Permit</li> </ul>	<p><u>Management and Control of NGP Fire Risks</u></p> <p>As of August 2023, the following fire protection measures and operational controls were in place during Phase 1, to minimise bushfire risks from the NGP development:</p> <ul style="list-style-type: none"> <li>As defined in condition B79, preparation and implementation of the Fire Management Plan (Doc ID: 0041-150-PLA-0004) for the NGP,</li> </ul>	Compliant	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(ii) ensure that there is suitable equipment to respond to any fires in the project area; and</p> <p>(iii) provides for safety flare stack heights of 50 metres above ground level; and</p> <p>(b) assist the RFS and emergency services to the extent practicable if there is a fire in the vicinity of the project area.</p>	<p>for Land Use for Access and Activities Associated with Petroleum Titles Petroleum (Onshore) Act 1991, dated 20 December 2012</p> <ul style="list-style-type: none"> <li>Appendix F – Photo 30 Trailer-mounted firefighting unit located at Bibblewindi 27</li> </ul>	<p>which was stated to have occurred in consultation with NSW RFS, Forestry Corporation of NSW and relevant landowners. This Plan was formally approved by the Planning Secretary on 9 December 2022;</p> <ul style="list-style-type: none"> <li>Existing formal agreements with external authorities/Fire Services (as defined below);</li> <li>Forestry Corporation of NSW Occupation Permit and Agreement in place (as defined below);</li> <li>Daily fire danger ratings for the Narrabri region will be received by Santos during the summer months. This information will: a) be communicated at morning toolbox meetings; and b) determine if any adjustments to daily work programs are required when a high fire danger risk exists during these months;</li> <li>Numerous portable water carts have been purchased and are available for use in the field (see Photo 30). These have a 4000 L capacity, pump and are fitted to a trailer for towage by light vehicles to any small fires that may arise;</li> <li>Availability of fire extinguishers within relevant Santos NGP vehicles;</li> <li>It was stated that prior to and during Phase 2, Santos's civil contractors will have earthmoving equipment/mobile plant available to construct any additional fire breaks as and when needed;</li> <li>As defined in the Fire Management Plan, relevant limitations to work programs will occur on days that present a high-risk fire danger rating (i.e. cessation of any hot work, during periods of Total Fire Bans only essential field operations will be permitted etc.);</li> </ul>		

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			<ul style="list-style-type: none"> <li>Relevant content included within employee and contractor induction and awareness training, inclusive of the provision and completion of Level 1 - Fire Management training;</li> <li>Preparation of Santos NGP and contractor vehicles and equipment to minimise the risk of starting bushfires; and</li> <li>The requirement for any new safety flare stacks to have a minimum height of 50 metres above ground level. No new flare stacks have been constructed since Development Consent SSD 6456 was issued.</li> </ul> <p><b>Observation No. 55</b> – Section 7.6.1 of the Fire Management Plan states that the RFS Bushfire Awareness Training package is required to be completed by relevant NGP personnel, whilst these personnel are potentially required to also complete Level 1 - Fire Management training. It is unclear if these training packages differ or if one or both are required to be completed.</p> <p><u>Agreements with External Authorities</u></p> <p>Since 3 April 2020, relevant formal Agreements exist between Santos and external authorities. This is inclusive of the Cooperation Agreement/Forestry Permit, which defines bushfire, timber recovery, road maintenance responsibilities (i.e. these agreements are similar to the agreements held with Santos NGP landholders).</p>		
Condition B79	<b>Hazards and risk – Bushfire Management</b>  Prior to the commencement of Phase 1, the Applicant must prepare a Fire Management Plan for the development in consultation with RFS, FCNSW and landowners upon which gas field infrastructure is proposed to be located to the	<ul style="list-style-type: none"> <li>Fire Management Plan (Doc ID: 0041-150-PLA-0004, Revision 0E, issued on 15 November 2022)</li> <li>Letter of 9 December 2022 from DPE (Director – Resource Assessments)</li> </ul>	<p>As of August 2023, the current Fire Management Plan (FMP) is Revision No. 0C, issued on 15 November 2022 (Doc ID: 0041-150-PLA-0004). The FMP is available on the Santos NGP website.</p> <p>The Auditors sighted a DPE letter of 9 December 2022 approving this version of the FMP. Approval</p>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>satisfaction of the Planning Secretary. This plan must include a:</p> <ul style="list-style-type: none"> <li>(a) contact person and 24 hour contact phone number;</li> <li>(b) schedule and description of proposed bushfire mitigation works, including: <ul style="list-style-type: none"> <li>(i) location of managed and unmanaged vegetation within the project area;</li> <li>(ii) asset protection zones for project related infrastructure, based on detailed risk assessment;</li> <li>(iii) design of applicable buildings in accordance with the requirements in the <i>Planning for Bushfire Protection</i> (RFS, 2019) guideline;</li> <li>(iv) location of water supply;</li> <li>(v) internal access roads;</li> </ul> </li> <li>(c) protocol for certification of project related infrastructure in relation to radiant heat exposure;</li> <li>(d) plan identifying the location and storage of bulk flammable liquids and materials;</li> <li>(e) plan and procedures for minimising bushfire risks associated with safety flaring activities;</li> <li>(f) plan and procedures for shutting-in wells in the event of bushfire risk;</li> <li>(g) 'hot works' management plan, including: <ul style="list-style-type: none"> <li>(i) restrictions on when 'hot works' are limited and prohibited; and</li> <li>(ii) safety measures to be implemented when 'hot works' are being conducted; and</li> </ul> </li> </ul>	<p>to Santos with approval of the Fire Management Plan</p>	<p>of the FMP occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>The Auditors consider that the FMP effectively considers and incorporates relevant aspects of: a) Prevention; b) Preparedness; c) Response; and d) Recovery, relating to fire management at the NGP.</p> <p>In relation to the paragraphs of this condition:</p> <ul style="list-style-type: none"> <li>(a) contact person and 24 hour contact phone number, inclusive of the NGP Hotline numbers, Emergency Services numbers, and internal emergency contacts in case of bushfire (Section 8.2 – Contacts and Communication);</li> <li>(b) schedule and description of proposed bushfire mitigation works, including (Section 7.8 – Preparedness works summary and timetable): <ul style="list-style-type: none"> <li>(i) location of managed and unmanaged vegetation within the project area (Section 4.3 – Vegetation and fuel);</li> <li>(ii) asset protection zones for project related infrastructure, based on detailed risk assessment (Section 6.5 – Asset protection zones);</li> <li>(iii) design of applicable buildings in accordance with the requirements in the <i>Planning for Bushfire Protection</i> (RFS, 2019) guideline (Sections 3.2 – Relevant codes, standards, policies and guidelines and 6.1 – Management of ignition risks);</li> <li>(iv) location of water supply (Section 6.6 – Water points and Appendix F – Project Field Emergency Response Map);</li> </ul> </li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(h) emergency/evacuation plan in accordance with the <i>Guidelines for the Preparation of Emergency/Evacuation Plans (RFS)</i> and Australian Standard <i>AS3745 Planning for emergencies in facilities</i> .		<ul style="list-style-type: none"> <li>(v) internal access roads (Section 6.3 – Roads and Fire Trails and Appendix F – Project Field Emergency Response Map);</li> <li>(c) protocol for certification of project related infrastructure in relation to radiant heat exposure (Section 3.2 – Relevant codes, standards, policies and guidelines);</li> <li>(d) plan identifying the location and storage of bulk flammable liquids and materials (Section 4.7 – Life, property and environment and Table 4.2);</li> <li>(e) plan and procedures for minimising bushfire risks associated with safety flaring activities (Section 1.1.2 – Current project and Section 4.1 – Risk analysis background);</li> <li>(f) plan and procedures for shutting-in wells in the event of bushfire risk (Section 4.1 – Risk analysis background);</li> <li>(g) 'hot works' management plan (Section 6.1 – Management of ignition risks, including:               <ul style="list-style-type: none"> <li>(i) restrictions on when 'hot works' are limited and prohibited (Section 7.3 – Work practices on days of elevated fire risk and Table 6.1 – Ignition risk management; and</li> <li>(ii) safety measures to be implemented when 'hot works' are being conducted (Section 7.3 – Work practices on days of elevated fire risk and Table 6.1 – Ignition risk management; and</li> </ul> </li> <li>(h) emergency/evacuation plan in accordance with the <i>Guidelines for the Preparation of Emergency/Evacuation Plans (RFS)</i> and Australian Standard <i>AS3745 Planning for emergencies in facilities</i> (Section 8.8 – Santos emergency response to bushfire).</li> </ul>		

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Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition B80	<b>Hazards and risk – Bushfire Management</b> The Applicant must implement the Fire Management Plan in consultation with RFS and FCNSW once approved by the Planning Secretary.	<ul style="list-style-type: none"> <li>Appendix F – Photo 30 Trailer-mounted firefighting unit located at Bibblewindi 27</li> <li>Email dated 21 September 2023 from [REDACTED] (Santos Senior Incident, Emergency Response and Compliance Advisor) advising NGP operational staff that a meeting with the Narrabri Rural Fire Service had occurred</li> </ul>	During this August 2023 audit, there was evidence that Santos is implementing the approved Fire Management Plan. This evidence includes the sighting of: <ul style="list-style-type: none"> <li>a firefighting water trailer at Bibblewindi 27 to enable a rapid response to a bushfire event (see Photo 30); and</li> <li>an email dated 21 September 2023 from [REDACTED] (Santos Senior Incident, Emergency Response and Compliance Advisor) advising NGP operational staff that a meeting with the Narrabri Rural Fire Service had been held on this day to complete a gap analysis against the NGP Bushfire Management Plan. The email stated the findings from the gap analysis were being compiled, and a key finding was to ensure a fire tanker with capacity of not less than 4000 litres and the capacity to deliver water up to 30 m from the vehicle is available.</li> </ul>	<b>Compliant</b>	
Condition B81	<b>Rehabilitation – Rehabilitation Objectives</b> The Applicant must rehabilitate all areas of the project area affected by the development to the satisfaction of the Resources Regulator and EPA. This rehabilitation must be generally consistent with the proposed rehabilitation activities described in the document/s listed in condition A2(c) and comply with the objectives in Table 11.	<ul style="list-style-type: none"> <li>Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision No. 0C, issued on 18 November 2022)</li> </ul>	As of August 2023 and for the audit period, it was stated that there have been no rehabilitation activities completed or ESF2 applications made seeking rehabilitation completion certification.  It was stated that temporary partial rehabilitation continues to occur on existing well pads, however this partial rehabilitation may be disturbed in the future as part of ongoing well maintenance and abandonment activities e.g. workovers and P&A.  The Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001) required by condition B83 details the activities to be implemented to comply with the objectives in Table 11.	<b>Compliant</b>	



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions																											
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance																						
	<p>Table 11: Rehabilitation objectives</p> <table><tr><th>Feature</th><th>Objective</th></tr><tr><td>All areas of the project area affected by the development</td><td><ul style="list-style-type: none"><li>Safe, stable and non-polluting</li><li>Fit for the intended post-mining land use/s</li></ul></td></tr><tr><td>Areas proposed for Ecological Rehabilitation</td><td><ul style="list-style-type: none"><li>For each plant community type, establish self-sustaining native woodland ecosystems that meet the performance and completion criteria approved under the Rehabilitation Management Plan</li><li>For each threatened flora species, establish a self-sustaining population that meets the performance and completion criteria approved under the Rehabilitation Management Plan</li><li>For each threatened fauna species, establish self-sustaining habitat that meets the performance and completion criteria approved under the Rehabilitation Management Plan</li></ul></td></tr><tr><td>Areas proposed for native woodland</td><td><ul style="list-style-type: none"><li>Restore self-sustaining native woodland ecosystems using species found in the local area and complement the areas proposed for Ecological Rehabilitation</li><li>Establish areas of self-sustaining:<ul style="list-style-type: none"><li>riparian vegetation, within any diverted and/or re-established creek lines and retained water features;</li><li>habitat resources for threatened flora and fauna species; and</li><li>vegetation connectivity and wildlife corridors, as far as is reasonable and feasible</li></ul></li></ul></td></tr><tr><td>Areas proposed for agricultural land</td><td><ul style="list-style-type: none"><li>Establish/restore agricultural areas to support sustainable agricultural activities</li><li>No reduction in land and soil capability class</li></ul></td></tr><tr><td>Surface infrastructure</td><td><ul style="list-style-type: none"><li>To be decommissioned and removed, unless the Resources Regulator agrees otherwise</li></ul></td></tr></table> <table><tr><th>Feature</th><th>Objective</th></tr><tr><td>Wells and gas field infrastructure</td><td><ul style="list-style-type: none"><li>Wells to be progressively decommissioned and rehabilitated in accordance with the Code of Practice for Coal Seam Gas Well Integrity (2012, as may be updated or amended)</li><li>Well cementing to include sub-vertical and horizontal well sections, where reasonable and feasible</li><li>Gas field infrastructure to be progressively decommissioned and rehabilitated in accordance with the Exploration Code of Practice: Rehabilitation (2017, as may be updated or amended)</li></ul></td></tr><tr><td>Rehabilitation materials</td><td><ul style="list-style-type: none"><li>Materials from areas disturbed under this consent (including topsoils, substrates and seeds) are to be recovered, managed and used as rehabilitation resources, to the greatest extent practicable</li></ul></td></tr><tr><td>Water quality</td><td><ul style="list-style-type: none"><li>Water retained in the project area is fit for the intended post-mining land use/s</li><li>Water discharged from the development is suitable for receiving waters and fit for aquatic ecology and riparian vegetation</li></ul></td></tr><tr><td>Community</td><td><ul style="list-style-type: none"><li>Ensure public safety</li><li>Minimise adverse socio-economic effects associated with petroleum development closure</li></ul></td></tr></table> <p>Note: The rehabilitation objectives detailed in Table 11 apply to the entire project area, including all landforms constructed under either this consent or previous consents.</p>	Feature	Objective	All areas of the project area affected by the development	<ul style="list-style-type: none"><li>Safe, stable and non-polluting</li><li>Fit for the intended post-mining land use/s</li></ul>	Areas proposed for Ecological Rehabilitation	<ul style="list-style-type: none"><li>For each plant community type, establish self-sustaining native woodland ecosystems that meet the performance and completion criteria approved under the Rehabilitation Management Plan</li><li>For each threatened flora species, establish a self-sustaining population that meets the performance and completion criteria approved under the Rehabilitation Management Plan</li><li>For each threatened fauna species, establish self-sustaining habitat that meets the performance and completion criteria approved under the Rehabilitation Management Plan</li></ul>	Areas proposed for native woodland	<ul style="list-style-type: none"><li>Restore self-sustaining native woodland ecosystems using species found in the local area and complement the areas proposed for Ecological Rehabilitation</li><li>Establish areas of self-sustaining:<ul style="list-style-type: none"><li>riparian vegetation, within any diverted and/or re-established creek lines and retained water features;</li><li>habitat resources for threatened flora and fauna species; 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Condition B82	<p><b>Rehabilitation – Progressive Rehabilitation</b></p> <p>The Applicant must rehabilitate the development progressively, that is, as soon as reasonably practicable following disturbance. All reasonable</p>	<ul style="list-style-type: none"><li>Biblewindi and Bohena Restoration Monitoring Report 2022 (Eco Logical Australia) Version: Draft</li></ul>	The extent of progressive rehabilitation across the field during the audit period, up until 17 August 2023 comprised the following:	<b>Compliant</b>																							

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	steps must be taken to minimise the total unrehabilitated disturbed area. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.	<p>V0b, issued 24 February 2023</p> <ul style="list-style-type: none"> <li>Narrabri Gas Project Partial Rehabilitation Monitoring Report 2022 (Eco Logical Australia) Version: Draft V1, issued 4 April 2023</li> </ul>	<ul style="list-style-type: none"> <li>Santos's IDP process is utilised as the primary control to minimise the total area required to be disturbed and therefore rehabilitated.</li> <li>Scopes of works are issued to NGP's civil contractors, including erosion and sediment control applicable to ongoing road maintenance programs within the NGP.</li> <li>No rehabilitation has commenced to date at either Dewhurst well pads 35 or 43, as these two well pads remained under construction as of August 2023.</li> <li>Rights of Way (access roads) within the Project areas are mostly partially rehabilitated with vegetation from natural germination. As much as practicable, Santos excludes access to these areas to allow natural regeneration to continue (e.g. these areas are left alone after completion of required works by the drill rig). Occasionally, if a workover rig is required to return to a drill pad, mulching of any immature regrowth/ vegetation is scheduled and completed.</li> <li>Eco Logical Australia (ELA) is engaged by Santos to conduct monitoring of vegetation rehabilitation following exploration activities in the Pilliga Forest. A total of 28 sites were sampled in September 2022, with monitoring comprised of 14 rehabilitation sites and 14 reference sites. In their "Narrabri Gas Project Partial Rehabilitation Monitoring Report 2022" (Draft V1, issued 4 April 2023), the consultants concluded that: "The rehabilitation sites continue to indicate that the vegetation is on a natural trajectory towards self-sustaining plant communities".</li> <li>Santos is progressing the rehabilitation of sites located at Bibblewindi and Bohena, which are</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>ex-legacy sites acquired from Eastern Star. Former water production ponds within the Project area (i.e. not required by Santos) are being remediated, with some rehabilitation works completed and ready for sign-off by consulting ecologists. This rehabilitation campaign has been progressed since 2015, inclusive of soil remediation and rehabilitation.</p> <p>In relation to the above, ELA is engaged by Santos to undertake the annual monitoring of native vegetation restoration activities in the Pilliga Forest.</p> <p>Six locations have been monitored by ELA since 2018: Bibblewindi Water Treatment Facility site (BBW) located in the Bibblewindi State Forest; and Bohena 2, 3, 4, 7 and Bohena South 1c located in the Pilliga East State Forest.</p>		
Condition B83	<p><b>Rehabilitation – Rehabilitation Management Plan</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare a Rehabilitation Management Plan for the development to the satisfaction of the Resources Regulator. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s;</li> <li>(b) be prepared in consultation with the Department, EPA, DPIE Water, FCNSW, BCD, MEG and Council;</li> <li>(c) be prepared in accordance with any relevant MEG code of practice and/or guideline;</li> <li>(d) describe how the rehabilitation of the project area would achieve the objectives identified in Table 10 [note: this reference should be to Table 11] and be integrated with the measures in the Biodiversity Management Plan;</li> </ul>	<ul style="list-style-type: none"> <li>• Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision No. 0C, issued on 18 November 2022)</li> <li>• Letter of 4 November 2022 from DPE (Director – Resource Assessments) to Santos with approval of the Rehabilitation Management Plan (Revision 0B)</li> <li>• Letter of 9 December 2022 from DPE (Director – Resource Assessments) to Santos with approval of the Rehabilitation Management Plan (Revision 0C)</li> </ul>	<p>As of August 2023, the current Rehabilitation Management Plan (RMP) is Revision No. 0C, issued on 18 November 2022 (Doc ID: 0041-150-PLA-0001). The RMP is available on the Santos NGP website.</p> <p>The Auditors sighted a DPE letter of 11 November 2022 approving Revision 0B of the RMP and confirming that the Resources Regulator is satisfied with Revision 0B of the RMP. An additional DPE letter dated 9 December 2022 was sighted approving Revision 0C (i.e. this Revision) of the RMP as a result of including an additional deep reservoir monitoring bore and making minor administrative changes to the document. Approval of the RMP occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>In relation to the paragraphs of this condition:</p> <ul style="list-style-type: none"> <li>(a) Section 1.3 of the RMP states that the Plan was prepared by Servaes van der Meulen and Mark Vile of Onward Consulting Pty Ltd. The</li> </ul>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(e) include detailed petroleum mining plan closure and final landform designs; (f) include a detailed plan for the reinstatement and review of the proposed: (i) ecological rehabilitation and native woodland areas, including a protocol for progressive reviews to demonstrate that the target vegetation communities are being achieved; and (ii) agricultural land rehabilitation; (g) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the project area, and for triggering remedial action; (h) include protocols and procedures for testing and management of drill cuttings used for rehabilitation of well pads to ensure the materials are fit for purpose to achieve rehabilitation objectives; (i) describe the measures to be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including closure and final land use/s; (j) include a program to monitor, independently audit and report on the effectiveness of the measures in paragraph (i), and progress against the detailed performance and completion criteria in paragraph (g); (k) to the greatest extent practicable build on and integrate with the other management plans required under this consent; and (l) include detailed scheduling for progressive rehabilitation to be initiated, undertaken and/or completed over the next 3 year.	<ul style="list-style-type: none"> <li>Mark Vile, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> <li>Servaes van der Meulen, Curriculum Vitae (CV) (2021) that demonstrates that he is suitably qualified and experienced</li> </ul>	Auditors sighted Servaes van der Meulen and Mark Vile's CVs, defining their experience and qualifications. (b) Section 1.4 of the RMP states that the EMS was prepared in consultation with the agencies as required in this paragraph. Appendix A includes detailed records of this consultation. (c) Section 3.2.1 details how the RMP has been developed in accordance with the <i>Exploration Code of Practice: Rehabilitation</i> (NSW Resources Regulator, 2022). (d) Section 6 details the controls Santos implements to mitigate the identified rehabilitation risks, Section 6 describes each rehabilitation domain and the proposed final land use. Section 9 and Table 9.1 detail the rehabilitation criteria required to be achieved to meet the Rehabilitation Objectives including the validation methods that are generally aligned with the Biodiversity Management Plan. Section 10 describes how rehabilitation related activities will be undertaken in accordance with procedures in the BMP. <b>Observation No. 56</b> – Due to the drafting of the Rehabilitation Objectives in the third column of Table 9.1 – Rehabilitation Completion Criteria in the Rehabilitation Management Plan, it is difficult to confirm alignment with the approved rehabilitation objectives detailed in Condition B81 of SSD 6456 and reproduced in Table 1.1 of the RMP. Santos should consider updating Table 9.1 in the Rehabilitation Objectives column of the RMP to demonstrate alignment with the Project Rehabilitation Objectives (Table 1.1). (e) Section 6.5 provides conceptual details of landform reconstruction only.		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>The Auditors noted that Santos is unable to provide detailed closure and landform plans for reinstatement until the final location of each infrastructure component is confirmed in accordance with the siting protocols outlined in the FDP.</p> <p>(f) Section 9 and Table 9.1 detail the rehabilitation criteria required to achieve ecological rehabilitation, native woodland areas and agricultural land. The methodology for reinstating the final land use is described in Appendix D which provides procedures for natural regeneration, direct seeding and tube stock planting. Section 10.5 provides a methodology for reinstating agricultural land.</p> <p>Table 9.1 describes the validation method for each land use goal, and specific TARPs if rehabilitation outcomes are not being achieved. Section 12 states that rehabilitation monitoring will be undertaken in accordance with regular annual monitoring program (described in the BMP).</p> <p><b>Observation No. 57</b> – Santos should consider updating the RMP (Table 9.1) and provide specific references to the monitoring program in the BMP. This would support demonstrating how the BMP integrates with the RMP.</p> <p>(g) Table 9.1 details the Rehabilitation Objectives and Completion Criteria for each domain and refers to specific activity TARPs (Table 10.2) that identifies the required remedial actions.</p> <p>(h) Section 10.1.3 describes the actions to be taken for Residual drilling materials (RDM). Appendix F details the RDM Management Protocol.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>(i) Section 10 describes the measures to be implemented to ensure compliance with the relevant conditions of this consent.</p> <p>(j) The monitoring program includes: rehabilitation monitoring (Section 12 and BMP) and annual review (section 16.1). It was stated that monitoring and inspections are conducted by independent, suitably skilled and qualified persons (Section 12).</p> <p>(k) The Auditors sighted multiple references to the measures required by ESCP, Waste Management Plan and BMP as demonstration of the integration of other management plans in this RMP.</p> <p>(l) Section 11 provides an estimated schedule for progressive rehabilitation to be initiated, undertaken and/or completed over the next 3 years.</p> <p>The Auditors noted that the schedule is influenced by the actual timing of the initial disturbance activity and duration of the well life.</p> <p><b>Observation No. 58</b> – A Completion Criterion in Table 9.1 of the Rehabilitation Management Plan includes: "Seed has been collected from the local area for a diversity of species. Seed has been dried, sorted and refrigerated in accordance with Appendix D of this RMP." However, Appendix D does not include this information. Santos should resolve this inconsistency and update Appendix D accordingly.</p>		

Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition B84	<b>Rehabilitation – Rehabilitation Management Plan</b>  The Applicant must implement the approved Rehabilitation Management Plan once approved by the Planning Secretary	<ul style="list-style-type: none"> <li>Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision No. 0C, issued on 18 November 2022)</li> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> <li>Fee Estimated: NGP Biodiversity Monitoring Program and Rehabilitation Monitoring Program 16 March 2023</li> <li>Bibblewindi and Bohena Restoration Monitoring Report 2022 (Eco Logical Australia) Version: Draft V0b, issued 24 February 2023</li> <li>Appendix F – Photo 31 Coonarah 4 Well Pad Partial Rehabilitation (GIS image screenshot)</li> <li>Appendix F – Photo 32 Bibblewindi 10 Well Pad partial rehabilitation</li> <li>Screen shots of High Risk Activity (HRA) notifications to the NSW Resources Regulator Portal Coonarah 4 and Bohena 7</li> </ul>	<p>As of August 2023 and for the audit period, it was stated that there has been no final rehabilitation completed in accordance with the completion criteria specified in section 9 of the Rehabilitation Management Plan (Doc ID: 0041-150-PLA-001).</p> <p>As of August 2023, there was evidence to demonstrate that Santos is implementing the Rehabilitation Management Plan (Doc ID: 0041-150-PLA-001) to rehabilitate project disturbance. This evidence includes but is not limited to:</p> <ul style="list-style-type: none"> <li>Determining the location of non-linear infrastructure through the implementation of the micro siting framework in accordance with the Field Development Plan (Doc ID: 0041-150-PLA-0023 as sighted for Dewhurst 43 and 35.</li> <li>Allowing for temporary partial rehabilitation of well pads at Coonarah 4 (see Photo 31) and Bibblewindi 10 (see Photo 32).</li> <li>Undertaking existing rehabilitation monitoring as reported in the Bibblewindi and Bohena Restoration Monitoring Report 2022 (Eco Logical Australia) that provides results for the annual monitoring of native vegetation restoration activities. The report states that all sites appear to be progressing toward stability and self -self-sustainability; however, some sites would benefit from active restoration actions. Santos stated that recommendations from these monitoring reports are implemented in future years work programs.</li> <li>Implementation of the Rehabilitation Monitoring program as described in Section 12 of the RMP - Fee Estimated: NGP Biodiversity Monitoring Program and Rehabilitation Monitoring Program 16 March 2023.</li> </ul>	<b>Compliant</b>	



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>Appendix F – Photo 2 OEC Well Head inspection checklist</li> </ul>	<ul style="list-style-type: none"> <li>Planning for Well Abandonment for Coonarah 4 and Bohena 7 through submission of High Risk Activity (HRA) notifications to the NSW Resources Regulator Portal.</li> <li>Monthly OEC inspections for pipeline and Well Pads (see Photo 2) where weed and pests are considered in the inspection checklist for ongoing maintenance.</li> <li>Annual ESCP inspections for ongoing maintenance of rehabilitation areas.</li> </ul>		
Condition B85	<p><b>Social – Social Impact Management Plan</b></p> <p>Prior to the commencement of Phase 2, the Applicant must prepare a Social Impact Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by a suitably qualified and experienced person/s;</li> <li>(b) be prepared in consultation with Council, the CCC, and the local community in the Narrabri LGA;</li> <li>(c) identify potential negative social impacts resulting from the development both locally and regionally, including how vulnerable groups and individuals may be negatively impacted;</li> <li>(d) specify adaptive management and mitigation measures to avoid, minimise, and/or mitigate any potential negative social impacts and the source of funding to implement those measures;</li> <li>(e) identify opportunities to secure and enhance positive social impacts of the development, including opportunities to:</li> </ul>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition has not been triggered as of August 2023. The Social Impact Management Plan (SIMP) is required prior to commencement of Phase 2.	<b>Not triggered</b>	



Development Consent SSD 6456, Schedule 2 Part B – Specific Environmental Conditions					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(i) assist in maintaining community services and facilities; and (ii) improve the way of life, wellbeing, and social cohesion within the local community; (f) include a program to monitor, review, and report on the effectiveness of these measures, including: (i) identifying representative parameters or indicators to be monitored, how and when data is to be collected, and who is responsible for collecting it; (ii) ongoing analysis of social risks; and (iii) undertaking additional research, if necessary, to reduce uncertainties; and (g) include a Stakeholder Engagement Plan to guide the evaluation and implementation of social impact management and mitigation measures.				
Condition B86	<b>Social – Social Impact Management Plan</b> The Applicant must implement the Social Impact Management Plan once approved by the Planning Secretary.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition has not been triggered as of August 2023. The Social Impact Management Plan (SIMP) is required prior to commencement of Phase 2.	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part C – Additional Procedures									
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance				
Condition C1	<p><b>Additional Mitigation Upon Request</b></p> <p>Upon receiving a written request from the owner of any residence on the privately-owned land listed in Table 12, the Applicant must implement additional noise mitigation measures in consultation with the landowner, to mitigate noise impacts on the residence associated with non-routine safety flaring operations at the Leewood Facility. These measures may include provision of alternative accommodation during non-routine safety flaring operations, or provision of acoustic treatments to the residence, and must be consistent with the measures outlined in the <i>Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments</i> (NSW Government, 2018). They must also be reasonable and feasible, proportionate to the level of predicted impact and directed towards reducing the relevant noise impacts of the development during non-routine safety flaring operations.</p> <p><small>Table 12: Land subject to additional mitigation upon request</small></p> <table><tr><th>Mitigation Basis</th><th>Land</th></tr><tr><td>Noise (during non-routine safety flaring operations)</td><td>179, 182, 189, 191, 216, 217</td></tr></table> <p><small>Note: The location of the land referred to in Table 12 is shown on the applicable figure in Appendix 3.</small></p>	Mitigation Basis	Land	Noise (during non-routine safety flaring operations)	179, 182, 189, 191, 216, 217	<ul style="list-style-type: none"><li>Audit interview (Environmental Advisor)</li></ul>	<p>As of August 2023, no infrastructure for the flaring of gas existed at the NGP Leewood Facility.</p> <p>During the audit period, no verbal or written noise complaints were received by Santos at NGP from any privately owned landowners or other external stakeholders.</p> <p>As a result of the above, no alternate measures were needed during the audit period, in relation to: a) alternative accommodation; b) additional noise mitigation measures; or c) provision of acoustic treatments to any residences.</p> <p>Noise monitoring data collected to date during Phase 1 did not identify any noise exceedances against limits defined in Tables 2 and 3 of Development Consent SSD 6456 or the NGP EPL 20350.</p>	Not triggered	
Mitigation Basis	Land								
Noise (during non-routine safety flaring operations)	179, 182, 189, 191, 216, 217								
Condition C2	<p><b>Additional Mitigation Upon Request</b></p> <p>If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution.</p>	<ul style="list-style-type: none"><li>Audit interview (Environmental Advisor)</li></ul>	Refer to the audit findings for condition C1 in this audit report.	Not triggered					

Development Consent SSD 6456, Schedule 2 Part C – Additional Procedures					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition C3	<b>Additional Mitigation Upon Request</b> At least 3 months prior to the commencement of Phase 3, the Applicant must notify in writing the owners of the residences on the land listed in Table 12 that they are entitled to ask the Applicant to undertake additional mitigation measures upon request.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition has not been triggered, as the NGP is currently in Phase 1.	<b>Not triggered</b>	
Condition C4	<b>Notification of Exceedances</b> As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise, air quality, water or blasting criterion or performance measure in this consent, or in any management plan required under this consent, the Applicant must provide the details of the exceedance to any affected landowners and tenants.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	This condition was not triggered during the audit period, as no exceedances occurred against any noise, air quality, water or blasting criterion or performance measure, as defined in Development Consent SSD 6456 or applicable to relevant commitments defined in relevant Environmental Management Plans.  As a result of the above, during the audit period, Santos was not obliged to provide the details of any exceedance to any affected landowners.	<b>Not triggered</b>	
Condition C5	<b>Independent review</b> If a landowner considers the development to be exceeding any relevant noise, air quality, water or blasting criterion or performance measure in this consent, or in any management plan required under this consent, on their residence or land, they may ask the Planning Secretary in writing for an independent review of the impacts of the development on their residence or land.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	This condition was not triggered during the audit period, as no correspondence was submitted by any landowner to the Planning Secretary, requesting an independent review of the impacts of the development on their residence or land.	<b>Not triggered</b>	
Condition C6	<b>Independent review</b> If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Refer to the audit findings for condition C5 in this audit report.	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part C – Additional Procedures					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition C7	<p><b>Independent review</b></p> <p>If the Planning Secretary is satisfied that an independent review is warranted, within 3 months, or other timeframe agreed by the Planning Secretary and the landowner, of the Planning Secretary's decision, the Applicant must:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to:</p> <p>(i) consult with the landowner to determine their concerns;</p> <p>(ii) conduct monitoring to determine whether the development is complying with the relevant criterion or performance measure on their residence or land; and</p> <p>(iii) if the development is not complying with the relevant criterion or performance measure, identify measures that could be implemented to ensure compliance with the relevant criterion or performance measure;</p> <p>(b) give the Planning Secretary and landowner a copy of the independent review; and</p> <p>(c) comply with any written requests made by the Planning Secretary to implement any findings of the review.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Refer to the audit findings for condition C5 in this audit report.	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition D1	<p><b>Environmental Management – Environmental Management Strategy</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Planning Secretary. This strategy must:</p> <ul style="list-style-type: none"> <li>(a) be prepared in consultation with the EPA;</li> <li>(b) provide the strategic framework for environmental management of the development;</li> <li>(c) identify the statutory approvals that apply to the development;</li> <li>(d) set out the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;</li> <li>(e) set out the procedures to be implemented to: <ul style="list-style-type: none"> <li>(i) keep the local community and relevant agencies informed about the progress and performance of the development;</li> <li>(ii) receive, handle, respond to and record complaints;</li> <li>(iii) resolve any disputes that may arise during the development;</li> <li>(iv) respond to incidents and non-compliance; and</li> <li>(v) respond to any emergency.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Environment Management Strategy (Doc ID: 0041-150-PLA-0003, Revision No. 0A, issued on 10 November 2022)</li> <li>• Undated DPE letter received by email (Ref: SSD-6456-PA20) on 11 November 2022 from the DPE, approving this version of the EMS</li> </ul>	<p>As of August 2023, the current Environment Management Strategy (EMS) is Revision No. 0A, issued on 10 November 2022 (Doc ID: 0041-150-PLA-0003). The EMS is available on the Santos NGP website.</p> <p>The Auditors sighted an undated DPE letter received by email (Ref: SSD-6456-PA20) on 11 November 2022 from the DPE, approving this version of the EMS. Approval of the EMS occurred prior to the commencement of Phase 1 (7 February 2023).</p> <p>In relation to the paragraphs of this condition:</p> <ul style="list-style-type: none"> <li>(a) Section 1.4 of the EMS states that the EMS was prepared in consultation with the Agency as required in this paragraph. Appendix A of the EMS includes detailed records of this consultation.</li> <li>(b) Section 1.2 of the EMS describes the purpose of the EMS as providing the strategic framework for environmental management at the NGP. The Auditors consider that the EMS provides a strategic framework for the Project's environmental management.</li> <li>(c) Sections 1.2 and 3.2 (including Section 3.2.1) of the EMS identifies the statutory approvals that apply to the Project.</li> <li>(d) Section 2.1 of the EMS describes the environmental management responsibility, authority and accountability for the roles of Area Manager (Arcadia, Scotia and Narrabri Operations), HSER Manager (Onshore), D&amp;C Project Lead or D&amp;C Manager, Team Leader Narrabri Operations, Team Leader Onshore Environment, Agricultural Supervisor, Environmental Advisor, Construction Field Supervisor, Drillings and Completions</li> </ul>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>Operating Company Representative, Operator Maintainer (Operations), Santos Personnel and contractors.</p> <p>Section 2 of the EMS states that all Santos employees and contractors involved in the Project are responsible for the environmental performance of their activities and for complying with all legal requirements and obligations.</p> <p>(e) The EMS describes procedures that would be implemented to:</p> <ul style="list-style-type: none"> <li>(i) keep the local community and relevant agencies informed about the operation and environmental performance of the development (Sections 5.0 and 8.1);</li> <li>(ii) receive, handle, respond to, and record complaints (Section 7);</li> <li>(iii) resolve any disputes that may arise during the development (final paragraph in Section 7);</li> <li>(iv) respond to incidents and non-compliances (Section 6); and</li> <li>(v) respond to emergencies (Section 6).</li> </ul> <p><b>Observation No. 59</b> – The EMS does not describe Santos's internal Environmental Incident reporting requirements. Santos should consider updating the EMS to reference internal reporting procedures and provide operational staff and contractors with the required awareness training.</p> <p><b>Observation No. 60</b> – The EMS should describe how Project obligations and communication records are managed e.g. Landfolio and SRM, to ensure all obligations are met and relevant records maintained.</p>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition D2	<b>Environmental Management – Environmental Management Strategy</b> The Applicant must implement the approved Environmental Management Strategy.	<ul style="list-style-type: none"> <li>Email dated 25 August 2023 from Landfolio to [REDACTED] (titled Landfolio: Notification) providing an action schedule table for reviewing system documents</li> <li>Email dated 25 August 2023 from Landfolio to [REDACTED] (titled Landfolio: Report Distribution) providing a spreadsheet of obligation actions that are either completed, due or overdue</li> <li>Screen Shot of the Landfolio system detailing a sample of obligation actions</li> <li>Onshore Tenure Compliance Manual (Doc ID: SMS-EXA-PD01-MN01) that details all statutory requirements and mandatory standards and codes associated with certain activities</li> <li>NGP “Ice Breaker” environmental awareness training presentation</li> <li>Field Development Protocol (Doc ID: 0041-150-PLA-0002, Revision No. 0C, issued on 18 November 2022</li> </ul>	<p>The Environmental Management Strategy (EMS) and the supporting management plans and protocols were approved in November/December 2022. Phase 1 of the Project commenced on 7 February 2023.</p> <p>As of August 2023 and for the audit period, the Auditors have assessed the systems and processes being implemented by Santos generally consistent with the EMS. The Auditors verified the implementation of the EMS by evidence which included:</p> <ul style="list-style-type: none"> <li>Demonstration of the Santos SharePoint system to easily access documents.</li> <li>Visual display of the Santos Environment, Health and Safety Policy at the Narrabri Operations and Logistics Centre.</li> <li>Onshore Tenure Compliance Manual (Doc ID: SMS-EXA-PD01-MN01) that documents all statutory requirements and mandatory standards and codes.</li> <li>Use of the “Landfolio” compliance management system to track time-based obligation actions.</li> <li>Implementation of the Integrated Disturbance Permitting (IDP) process and GIS spatial mapping system (see Photo 8) that supports the implementation of the Field Development Protocol (Doc ID: 0041-150-PLA-0002).</li> <li>Contractor NGP “Ice Breaker” environmental awareness training presentation.</li> <li>HSE Risk Reviews (Ventia 24 workover rig).</li> <li>Site-specific ESCP for Dewhurst 43.</li> <li>Water Management Infrastructure at the Leewood Surface Facility (see Photo 15).</li> </ul>	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>IDP Presentation_2022.pptx provides an overview of the IDP process</li> <li>HSE Risk Reviews (Ventia 24 workover rig)</li> <li>Site-specific ESCP for Dewhurst 43</li> <li>Appendix F – Photo 8 GIS mapping Well Pad constraints</li> <li>Appendix F – Photo 15 Leewood water ponds and monitoring infrastructure</li> <li>Appendix F – Photo 16 Bibblewindi 27 Groundwater monitoring bore</li> </ul>	<ul style="list-style-type: none"> <li>Installation of groundwater monitoring programs (see Photo 16).</li> <li>Accessibility of the NGP PIRMP in the Narrabri Operations and Logistics Centre Emergency Response documentation, and engagement of public authorities in testing the Plan.</li> </ul> <p><b>Observation No. 61</b> – There is no consolidated Environmental Risk Register for the NGP. Each Management Plan includes a table of relevant environmental risks; however, inherent and residual risks have not been documented. Santos should consider developing a consolidated Environmental Risk Register and assess the inherent and residual risks on an annual basis.</p>		
Condition D3	<p><b>Environmental Management – Management Plan Requirements</b></p> <p>The Applicant must ensure that (where relevant) the management plans required under this consent include:</p> <p>(a) a summary of relevant background or baseline data;</p> <p>(b) details of:</p> <p>(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);</p> <p>(ii) any relevant limits or performance measures and criteria; and</p>	<ul style="list-style-type: none"> <li>Environment Management Strategy (Doc ID: 0041-150-PLA-0003, Revision No. 0A, issued on 10 November 2022)</li> </ul>	<p>The Environmental Management Plans (EMPs) required under Development Consent SSD 6456 are as follows:</p> <ul style="list-style-type: none"> <li>Field Development Protocol (Condition B2)</li> <li>Field Development Plan (Condition B4)</li> <li>Noise Management Plan (Condition B13)</li> <li>Water Management Plan (Condition B41(d))</li> <li>Erosion and Sediment Control Plan (Condition B41(d)(i))</li> <li>Site Water Balance (Condition B41(d)(ii))</li> </ul>	<b>Compliant</b>	



Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;</p> <p>(c) any relevant commitments or recommendations identified in the document/s listed in condition A2(c);</p> <p>(d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;</p> <p>(e) a program to monitor and report on the:</p> <p>(i) impacts and environmental performance of the development; and</p> <p>(ii) effectiveness of the management measures set out pursuant to paragraph (d);</p> <p>(f) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;</p> <p>(g) a program to investigate and implement ways to improve the environmental performance of the development over time;</p> <p>(h) a protocol for managing and reporting any:</p> <p>(i) incident, non-compliance or exceedance of any impact assessment criterion and performance criterion;</p> <p>(ii) complaint; or</p> <p>(iii) failure to comply with other statutory requirements; and</p>		<ul style="list-style-type: none"> <li>• Surface Water Management Plan (Condition B41(d)(iii))</li> <li>• Groundwater Management Plan (Condition B41(d)(iv))</li> <li>• Produced Water Management Plan (Condition B41(d)(v))</li> <li>• Irrigation Management Plan (Condition B41(d)(vi))</li> <li>• Dust Suppression Protocol (Condition B41(d)(vii))</li> <li>• Managed Release Protocol (Condition B41(d)(viii))</li> <li>• Salt Management Plan (Condition B41(d)(ix))</li> <li>• Pollution Incident Response Management Plan (Condition B41(d)(x))</li> <li>• Biodiversity Management Plan (including a Biodiversity Offset Strategy, and a Koala Research Program) (Condition B51)</li> <li>• Aboriginal Cultural Heritage Management Plan (Condition B59)</li> <li>• Historic Heritage Management Plan (Condition B61)</li> <li>• Produced Salt Beneficial Reuse and Disposal Study (Condition B69)</li> <li>• Waste Management Plan (Condition B70)</li> <li>• Fire Management Plan (Condition B79)</li> <li>• Rehabilitation Management Plan (Condition B83)</li> <li>• Environmental Management Strategy (Condition D1)</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(i) a protocol for periodic review of the plan.		<p>As of August 2023, the Air Quality and Greenhouse Gas Management Plan (under condition B23) is not required until Phase 2 and has not been developed by Santos.</p> <p>In relation to the paragraph (a) of this condition:</p> <p>(a) It is acknowledged that baseline data may not be applicable to all EMPs. The Auditors consider that baseline data is applicable and has been sufficiently addressed in the following EMPs ('relevant EMPs'): Noise Management Plan, Surface Water Management Plan, Groundwater Management Plan, Irrigation Management Plan, Biodiversity Management Plan, Aboriginal Cultural Heritage Management Plan, Historic Heritage Management Plan, Fire Management Plan, Rehabilitation Management Plan.</p> <p>The Auditors consider that the EMPs in the above bullet point list generally satisfy the requirements in paragraphs (b) to (i) of this condition.</p> <p><b>Observation No. 62</b> – Table B4 in the EMS should be amended to refer to condition D3. The EMS does not have to have a contingency plan under this condition.</p>		
Condition D4	<p><b>Revision of Strategies, Plans and Programs</b></p> <p>Within 2 months of</p> <p>(a) the submission of an incident report;</p> <p>(b) the submission of an Annual Review;</p> <p>(c) the submission of an Independent Environmental Audit;</p> <p>(d) the submission of a Field Development Plan;</p> <p>(e) the submission of a Groundwater Model Update; or</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition has not been triggered as of August 2023 due to:</p> <p>(a) It was stated no incident reports have been required to be submitted.</p> <p>(b) Phase 1 only commenced on 7 February 2023, therefore NGP has not submitted its first Annual Review</p> <p>(c) This Independent Environmental Audit Report is the first audit report for the project. Santos</p>	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(f) the approval of any modification of the conditions of this consent,  the Applicant must review the suitability of existing strategies, plans and programs required under this consent.		acknowledges that the submission of this report will trigger this condition.  (d) The current FDP is the inaugural plan and has not been reviewed.  (e) The current Groundwater Model is the inaugural Model and has not been updated.  (f) The conditions of consent of SSD 6456 have not been modified since 30 September 2020.		
Condition D5	<b>Revision of Strategies, Plans and Programs</b> If the review determines that the strategies, plans and programs required under this consent require revision - to either improve the environmental performance of the development, cater for a modification or comply with a direction, then the applicant must submit the revised document to the Secretary within 6 weeks of the review.  <b>Note:</b> This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	Phase 1 of the development commenced on 7 February 2023.  The Auditors and Santos consider that this condition has not been triggered.  Santos acknowledges that upon submission of this independent environmental audit report, all strategies, plans and programs required under this consent require revision within 2 months in accordance with condition D4.	<b>Not triggered</b>	
Condition D6	<b>Reporting and Auditing – Incident Notification</b> The Applicant must notify the Department and any other relevant agencies via the Major Projects Portal immediately after it becomes aware of the incident. This notice must describe the location and nature of the incident	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023 and for the audit period, it was stated that there have been no incidents (as per the SSD 6456 definition) that have required immediate notification to the Department or any other relevant agencies via the Major Projects Portal.  The Auditors and Santos consider that this condition has not been triggered.	<b>Not triggered</b>	
Condition D7	<b>Reporting and Auditing – Non-Compliance Notification</b> Within 7 days of becoming aware of a non-compliance with the conditions of this consent, the Applicant must notify the Department of the non-compliance via the Major Projects Portal. This	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023 and for the audit period, it was stated that there were no non-compliances (as per the SSD 6456 definition) that required notification.  The Auditors and Santos consider that this condition has not been triggered.	<b>Not triggered</b>	

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>notice must set out the non-compliance, the reasons for the non-compliance (if known) and what actions have been taken, or will be taken, to address the non-compliance.</p> <p><b>Note:</b> A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.</p>				
Condition D8	<p><b>Reporting and Auditing – Annual Review</b></p> <p>By the end of March each year, unless the Planning Secretary agrees otherwise, the Applicant must submit an Annual review of the environmental performance of the development to the Department via the Major Projects Portal. This review must:</p> <p>(a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;</p> <p>(b) report on the progress of biodiversity credits retirements and the associated actual versus proposed surface disturbance for each stage;</p> <p>(c) report on greenhouse gas emissions and the status of any associated offset obligations;</p> <p>(d) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the:</p> <p>(i) relevant statutory requirements, limits or performance measures/criteria;</p> <p>(ii) requirements of any plan or program required under this consent;</p> <p>(iii) monitoring results of previous years; and</p>	<ul style="list-style-type: none"> <li>Letter dated 26 March 2021 from Santos to Stephen O'Donoghue (Director Resource Assessments, DPE) providing an update on the Project in accordance with condition D8 for the reporting period 2020</li> <li>Letter dated 28 March 2022 from Santos to Stephen O'Donoghue (Director Resource Assessments, DPE) providing an update on the Project in accordance with condition D8 for the reporting period 2021</li> <li>Letter dated 13 March 2023 from Santos to Stephen O'Donoghue (Director Resource Assessments, DPE) providing an update on the Project in accordance with condition D8 for the reporting period 2022</li> </ul>	<p>Phase 1 of the development commenced on 7 February 2023.</p> <p>The Auditors sighted a letter dated 13 March 2023 from Santos to Stephen O'Donoghue (Director Resource Assessments, DPE) stating that the requirements of condition D8 would be addressed in the Annual Review to be submitted at the end of March 2024 (for the 2023 calendar year), as no physical works occurred during the 2022 Annual Review reporting period, and the Management Plans were only approved in November and December 2022.</p> <p>The Auditors also sighted letters dated 26 March 2021 and 28 March 2022 from Santos to Stephen O'Donoghue (Director Resource Assessments, DPE) which referred to condition D8.</p> <p>The Auditors consider that essentially, each of the Santos letters of 26 March 2021, 28 March 2022 and 13 March 2023 to the DPE is an Annual Review, because each letter refers to condition D8 and satisfies paragraph (a) of condition D8, which was the only relevant paragraph during 2020, 2021 and 2022 (i.e. before Phase 1 commencement on 7 February 2023).</p> <p>It was stated that Santos did not receive any correspondence from the DPE in relation to these letters.</p> <p>In relation to paragraph (b) of this condition, the Auditors noted that retirement of the required Biodiversity Credits prior to Phase 1 was not</p>	Compliant	

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(iv) relevant predictions in the document/s listed in condition A2(c); (e) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence; (f) evaluate and report on compliance with the performance measures, criteria and operating conditions in this consent; (g) identify any trends in the monitoring data over the life of the development; (h) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (i) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.		completed until 20 January 2023 (i.e. after the end of 2022 and not applicable to the Annual Review submitted on 13 March 2023).		
Condition D9	<b>Reporting and Auditing – Independent Environmental Audit</b> Within one year of commencement of Phase 1 and every 3 years thereafter, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; (b) be carried out in consultation with the relevant agencies and the CCC and Advisory Groups;	<ul style="list-style-type: none"> <li>Letter dated 3 August 2023 from DPE (Heidi Watters- Team Leader Norther Compliance) as nominee for the Planning Secretary endorsing the Independent Environmental Audit Team.</li> <li>Letter dated 11 August 2023 from DPE (Heidi Watters- Team Leader Norther Compliance) as nominee for the Planning Secretary endorsing</li> </ul>	This independent audit report is intended to satisfy the requirements of this condition. This audit commenced on 14 August 2023, within the one-year requirement from the commencement of Phase 1 on 7 February 2023. In relation to the paragraphs of this condition: (a) The Auditors sighted a letter dated 3 August 2023 from the DPE (Heidi Watters- Team Leader Norther Compliance) as nominee for the Planning Secretary endorsing the Independent Environmental Audit Team including, Kurt Hammerschmid (Lead Auditor), Jamie Lees (Audit Facilitator), Adam Jones (Consultation and Legal Review) and Adam Moser (Groundwater expert). The letter	<b>Compliant</b>	

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent, water licences and petroleum mining leases for the development (including any assessment, strategy, plan or program required under these approvals);</p> <p>(d) include a hazard audit undertaken in accordance with the Department's <i>Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines'</i>, including verification of implementation of engineering or non-engineering control measures in the hazards studies/plans required under this consent;</p> <p>(e) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals and this consent;</p> <p>(f) recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under the abovementioned approvals and this consent; and</p> <p>(g) be conducted and reported to the satisfaction of the Planning Secretary.</p> <p><b>Note:</b> The audit team must be led by a suitably qualified auditor and include experts in groundwater, well integrity, hazards, and any other fields specified by the Planning Secretary.</p>	<p>Gordon Duncan as the Well Integrity expert</p> <ul style="list-style-type: none"> <li>Email dated 6 August 2023 from DPE (Joel Curran – Senior compliance officer) confirming satisfaction with the audit consultation letter and the adequacy of the proposed consultees</li> <li>Letter dated 7 August 2023 from Kurt Hammerschmid (Lead Auditor – Integrated Environmental Systems Pty Ltd), all consultees were formally invited to have input into the Independent Environmental Audit</li> </ul>	<p>confirmed that a hazard expert is not required for this audit.</p> <p>The Auditors sighted a supplementary letter dated 11 August 2023 from the DPE (Heidi Watters- Team Leader Northern Compliance) as nominee for the Planning Secretary endorsing Gordon Duncan as the Well Integrity expert.</p> <p>(b) Consultation occurred with relevant government agencies identified in Development Consent SSD 6456 and who provided submissions during the EIS exhibition process in 2017.</p> <p>The Auditors received an email dated 6 August 2023 from the DPE (Joel Curran – Senior compliance officer) confirming satisfaction with the audit consultation letter and the adequacy of the proposed consultees.</p> <p>In a letter dated 7 August 2023 from Kurt Hammerschmid (Lead Auditor – Integrated Environmental Systems Pty Ltd), all consultees were formally invited to have input into the independent environmental audit.</p> <p>(c) The Auditors noted this requirement.</p> <p>(d) The Hazard Studies and Plans are not required for Phase 1 works and this independent environmental audit. The Auditors sighted a letter dated 3 August 2023 from the DPE (Heidi Watters- Team Leader Northern Compliance) as nominee for the Planning Secretary, which confirmed the Hazard Audit is not required for the 2023 independent environmental audit.</p> <p>(e) The Auditors noted this requirement.</p> <p>(f) The Auditors noted this requirement.</p> <p>(g) The Auditors noted this requirement.</p>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Condition D10	<b>Reporting and Auditing – Independent Environmental Audit</b>  Within 3 months of commencing an Independent Environmental Audit, unless the Planning Secretary agrees otherwise, the Applicant must submit a copy of the audit report to the Department (and any other NSW agency that requests it) via the Major Projects Portal together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	This audit report and Santos's response to recommendations contained in this audit report with Santos's timetable for the implementation of those recommendations, are anticipated to be submitted on 13 November 2023 to the DPE (and any other NSW agency that requests it) via the Major Projects Portal.	Not triggered	
Condition D11	<b>Reporting and Auditing – Monitoring and Environmental Audits</b>  Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.  <b>Note:</b> For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<u>Monitoring and Audit Definitions</u>  As defined in Development Consent SSD 6456, the definitions and differences between environmental: a) monitoring; and b) audit, is acknowledged and understood by relevant Santos personnel at the NGP.  <u>NGP Consolidated Monitoring Plan</u>  It was stated that Santos NGP will potentially draft a Consolidated Monitoring Plan for the Project in the near future.  It was stated that this plan may be completed and available for Phase 1 in Q1 2024. Santos acknowledges the benefits of completing this plan for Phase 1, given the significant work required to establish this for Phase 2 (i.e. Santos understands the advantage of developing this monitoring plan in accordance with each Phase of the Project).  The above will formally consider and incorporate all relevant monitoring obligations defined within the latest issue of the Santos NGP EPL 20350.  <u>NGP Phase 1 Environmental Monitoring Programs</u>  As described in condition D12 and other relevant conditions within this audit report.	Compliant	



Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>Santos utilises and maintains extensive environmental monitoring procedures for Santos CSG facilities and activities in both SE Queensland and for the NGP. These procedures were originally developed internally by Santos personnel.</p> <p>Under a recurring scheduled work order, for scheduled NGP groundwater monitoring, Santos utilise a third-party contractor from Environment and Agricultural Management Solutions (EAMS). The contractor conducting this work was previously employed by Santos and is competent on the basis of qualifications and experience.</p>		
Condition D12	<p><b>Reporting and Auditing – Monitoring and Environmental Audits</b></p> <p>Noise, blast and air quality monitoring under this consent is not required at all privately-owned residences and the use of representative monitoring locations can be used to demonstrate compliance with criteria</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Appendix F – Photo 33 of seepage detection bore (LWDSDB03) at the Leewood Produced Water ponds</li> <li>Santos GLNG Coal Seam Water Monitoring and Management Plan (CWMMP) Annual Report 2022</li> </ul>	<p>This condition is acknowledged by relevant Santos personnel at the NGP.</p> <p>Prior to and during Phase 1 of the NGP, Santos commenced and continues to implement and maintain suitable environmental monitoring programs to demonstrate compliance with relevant criteria and limits defined in Development Consent SSD 6456.</p> <p><u>Representative Monitoring Locations</u></p> <p>As required by condition D12 and other relevant conditions in SSD 6456, prior to and including Phase 1, Santos NGP has implemented “representative” environmental monitoring programs based on: a) the proximity of a sensitive receptor to a NGP activity; and b) the actual and type of NGP activity that is occurring at a specific location.</p> <p>For NGP Phase 2, it was stated that monitoring compliance will increasingly be assessed utilising: a) completed and scheduled modelling; and b) environmental monitoring programs and data generated prior to and during Phase 1 of the development.</p>	<b>Compliant</b>	



Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><u>Noise Monitoring</u></p> <p>As defined under conditions B7 to B12 within this audit report.</p> <p>For the noise surveys completed by external consultants during Phase 1, this data is retained within the submitted consultant reports.</p> <p><u>Air Quality Monitoring</u></p> <p>As defined under conditions B16 to B18 within this audit report.</p> <p><u>Blast Monitoring</u></p> <p>No blasting has been completed prior to or during Phase 1 of the Project. As a result, no blast monitoring has been completed to date.</p> <p><u>Meteorological Data</u></p> <p>As defined under condition B25 within this audit report.</p> <p>Weather data (time-series data) is recorded and available via external service providers, Ontoto. This NGP data is available to relevant project personnel via Ontoto's cloud-based database.</p> <p><u>Surface and Groundwater Quality Monitoring</u></p> <p>Groundwater Standing Water Level (SWL) data for EPA ID groundwater wells No. 44 to 49 is recorded continuously (as time-series data). This data is available to relevant Santos project personnel via Ontoto's cloud-based database. This SWL and groundwater quality data is also retained within the Santos EQulS database.</p> <p>Santos NGP groundwater bore extraction data is also available via Ontoto's cloud-based database.</p> <p>Seepage detection bore levels from produced water ponds utilised at Leewood (see Photo 33) and Bibblewindi are monitored by a third party</p>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>contractor Rodney Dunlop (EAMS) as part of the EPL monitoring requirements. Monitoring frequency is quarterly, and results are published on the Santos Water Portal (website).</p> <p><u>Santos NGP Water Portal Resources Library</u></p> <p>Access to the Santos NGP Water Portal Resources Library is available to the public on the Santos NGP website. This data is collated and published quarterly against requirements and limits defined in the NGP EPL 20350.</p> <p><b>Observation No. 63</b> – Recently published NGP Quarterly Monitoring Reports (completed and reported against Santos’s EPL 20350) reference an obsolete version of the EPL (issued 17 November 2022). The current issue date of the EPL (as of the issue date of the draft version of this independent environmental audit report) is 28 September 2023.</p> <p><b>Observation No. 64</b> – Table 6 – Groundwater Level Monitoring in the Santos NGP Quarterly Monitoring Reports (completed and reported against Santos’s EPL 20350) defines (in column 1) that “samples” are taken. This is potentially incorrect, as no actual groundwater samples are collected, only a record of continuous Standing Water Level (SWL) for the six locations defined in this table. Santos should consider replacing the word “sample” with “record” to better define the information and data being collected and presented within this Table 6.</p> <p><b>Observation No. 65</b> – For ease of interpretation by the public, a legend should be provided underneath Table 1 in the Santos NGP Quarterly Monitoring Reports (completed and reported against Santos’s EPL 20350) to define the locations for the abbreviations listed in these reports (i.e. BWD, LWD, TFD, WPK, DWH, NYO, TUL, BHN, LWW etc.).</p>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><b>Observation No. 66</b> – The Santos NGP Quarterly Monitoring Reports (completed and reported against Santos's EPL 20350) do not provide any indication if the tabulated results are compliant with the limits/criteria defined in the EPL. For example, the data is not colour coded (red or green) demonstrating compliance or non-compliance, nor are the EPL limits defined within the individual tables provided in these quarterly reports.</p> <p><b>Observation No. 67</b> – A total of 116 Water monitoring locations are listed in Table 1 of the Santos NGP Quarterly Monitoring Reports (completed and reported against Santos's EPL 20350). It is difficult for the reader to determine which locations were: a) sampled for water quality; and b) measured for SWL. Two additional columns could be added to Table 1 defining yes/no if: a) a water quality sample was taken; and b) if a SWL was recorded.</p> <p><b>Observation No. 68</b> – As of September 2023, the Santos GLNG Coal Seam Water Monitoring and Management Plan (CWMMP) Annual Report 2022 had not been published on the Santos NGP website (i.e. the previous 2021 annual report was issued and published on 31 March 2022). This is potentially a non-compliance against Conditions 49 and/or 53 of Santos's EPBC Approval (i.e. publishing of the 2022 report is required by the 31<sup>st</sup> March 2023). The Auditors noted that the CWMMP Annual Reports published on the Santos NGP website do not include any content or reference to the Narrabri Gas Project.</p> <p><u>Produced Water</u></p> <p>Production water ponds are available at Leewood and Bibblewindi. Data associated with produced water volumes, storage volumes within ponds etc., is available and held within a separate database.</p>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><u>CSG Well Data</u></p> <p>Individual well data is collected and available via telemetry for viewing by Santos NGP Operators via “Apollo” (<a href="http://www.apollo.santos.com">www.apollo.santos.com</a>). It was stated that Apollo is able to draw and extract data from the Ontoto cloud-based database.</p>		
Condition D13	<p><b>Access to Information</b></p> <p>From the commencement of Phase 1, until the completion of all rehabilitation required under this consent, the Applicant must:</p> <p>(a) make copies of the following information publicly available on its website:</p> <p>(i) the document/s listed in condition A2(c);</p> <p>(ii) current statutory approvals for the development;</p> <p>(iii) approved strategies, plans and programs;</p> <p>(iv) detailed plans for the Phases of the development;</p> <p>(v) minutes of CCC and Advisory Group meetings;</p> <p>(vi) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;</p> <p>(vii) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;</p>	<ul style="list-style-type: none"> <li>Santos NGP website. <a href="https://narrabrigasproject.com.au/about/narrabri-gas-project/">https://narrabrigasproject.com.au/about/narrabri-gas-project/</a></li> <li>NSW Government Major Project Portal, providing access to the EIS and Appendices (71 documents): <a href="https://www.planningportal.nsw.gov.au/major-projects/projects/narrabri-gas">https://www.planningportal.nsw.gov.au/major-projects/projects/narrabri-gas</a></li> <li>Email dated 11 August 2023 from ██████████ requesting an update to the Santos Complaints Register table to enable differentiation of stakeholder complaints between approvals (Projects)</li> <li>Letter dated 13 March 2023 from Santos to Stephen O’Donoghue (Director Resource Assessments, DPE)</li> </ul>	<p>As of August 2023, in relation to the paragraphs of this condition:</p> <p>(a) Access to all documents listed in this paragraph since commencement of Phase 1 (and historical records) can be accessed via the relevant links located on the Santos NGP website.</p> <p><a href="https://narrabrigasproject.com.au/about/narrabri-gas-project/">https://narrabrigasproject.com.au/about/narrabri-gas-project/</a></p> <p>(i) <i>the document/s listed in condition A2(c)</i>; The Auditors sighted and successfully tested a website link to the NSW Government Major Project Portal, that provided access to the EIS and Appendices (71 documents):</p> <p><a href="https://www.planningportal.nsw.gov.au/major-projects/projects/narrabri-gas">https://www.planningportal.nsw.gov.au/major-projects/projects/narrabri-gas</a></p> <p>(ii) <i>current statutory approvals for the development</i>; The Auditors sighted the documents and successfully tested the website link to:</p> <ul style="list-style-type: none"> <li>NSW Government Major Project Portal, for the Development Consent SSD 6456</li> <li><a href="https://www.planningportal.nsw.gov.au/major-projects/projects/narrabri-gas">https://www.planningportal.nsw.gov.au/major-projects/projects/narrabri-gas</a>,</li> <li>Internal website links for: <ul style="list-style-type: none"> <li>EPBC Approval 2014/7376,</li> </ul> </li> </ul>	Non-compliant	NC2

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(viii) a summary of the current phase/s and progress of the development; (ix) contact details to enquire about the development or to make a complaint; (x) a complaint register, updated monthly; (xi) a record of all incidents and non-compliances; (xii) the Annual Reviews of the development; (xiii) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant's response to the recommendations in any audit report; and (xiv) any other matter required by the Planning Secretary; and (b) keep such information up to date.		<ul style="list-style-type: none"> <li>○ Environment Protection Licence 20350</li> <li>○ Petroleum Exploration Licence 238</li> <li>○ Petroleum Assessment Lease 2</li> <li>○ Petroleum Production Lease 3</li> </ul> <p>Refer to the non-compliance audit finding below.</p> <p>(iii) <i>approved strategies, plans and programs</i>; The Auditors sighted and successfully tested all the website links via the "Environmental Approvals" link located on the Santos NGP website including:</p> <ul style="list-style-type: none"> <li>• Field Development Protocol (Condition B2)</li> <li>• Field Development Plan (Condition B4)</li> <li>• Noise Management Plan (Condition B13)</li> <li>• Water Management Plan and sub-plans (Condition B41(d))</li> <li>• Erosion and Sediment Control Plan (Condition B41(d)(i))</li> <li>• Site Water Balance (Condition B41(d)(ii))</li> <li>• Surface Water Management Plan (Condition B41(d)(iii))</li> <li>• Groundwater Management Plan (Condition B41(d)(iv))</li> <li>• Produced water Management Plan (Condition B41(d)(v))</li> <li>• Irrigation Management Plan (Condition B41(d)(vi))</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<ul style="list-style-type: none"> <li>Dust Suppression Protocol (Condition B41(d)(vii))</li> <li>Pollution Incident Response Management Plan (Condition B41(d)(x))</li> <li>Biodiversity Management Plan (including Offset Strategy &amp; Koala Research Program) (Condition B51)</li> <li>Aboriginal Cultural Heritage Management Plan (Condition B59)</li> <li>Historic Heritage Management Plan (Condition B61)</li> <li>Produced Salt Beneficial Reuse and Disposal Study (Condition B69)</li> <li>Waste Management Plan (Condition B70)</li> <li>Fire Management Plan (Condition B79)</li> <li>Rehabilitation Management Plan (Condition B83)</li> <li>Environmental Management Strategy (Condition D1)</li> </ul> <p>(iv) <i>detailed plans for the Phases of the development</i>; Santos and the Auditors agree that this condition duplicates sub-condition (iii), as detailed plans for the Phases of the development are included in the FDP and supporting Management Plans.</p> <p>(v) <i>minutes of CCC and Advisory Group meetings</i>;</p> <ul style="list-style-type: none"> <li>CCC: As of August 2023, the Auditors sighted and successfully tested the Community – Community Consultative Committee web page links (located on the Santos NGP website) to the six CCC meeting minutes (February 2022, May 2022, September 2022, November 2022,</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>February 2023, May 2023). Previous CCC meeting minutes between November 2011 to October 2021 are also available on the website.</p> <ul style="list-style-type: none"> <li>• <i>The Aboriginal Cultural Heritage Advisory Group.</i> As of August 2023, the Auditors sighted and successfully tested the link (located on the Santos NGP website) for Community – Advisory Groups – <i>Aboriginal Cultural Heritage Advisory Group</i> that provides access to the three advisory group meetings (September 2022, November 2022, and February 2023). Previous minutes between August 2021 to February 2021 are also available on the website.</li> <li>• <i>Biodiversity Advisory Group;</i> As of August 2023, the Auditors sighted and successfully tested the link (located on the Santos NGP website) for Community – Advisory Groups – <i>Biodiversity Advisory Group</i> that connects to the four advisory group meetings (February 2022, September 2022, November 2022, and February 2023). Previous minutes between May 2021 to November 2021 are also available on the website.</li> <li>• <i>Greenhouse Gas Emissions Advisory Group:</i> As of August 2023, the Auditors sighted and successfully tested the link (located on the Santos NGP website) for Community – Advisory Groups – <i>Greenhouse Gas Emissions Advisory Group</i> that connects to the four advisory group meetings (February 2022, September 2022, and November 2022. Previous minutes of August 2021 are also available on the website.</li> </ul>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<ul style="list-style-type: none"> <li><i>Water Technical Advisory Group:</i> As of August 2023, the Auditors sighted and successfully tested the link (located on the Santos NGP website) for the Community – Advisory Groups – <i>Water Technical Advisory Group</i> web page that connects to the four advisory group meetings (February 2022, September 2022, November 2022, and February 2023). Previous minutes between May 2021 and December 2021 are also available on the website.</li> </ul> <p>(vi) <i>regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;</i> It was stated that reporting of environmental performance will be included in the 2023 Annual Review. The first Annual Review will be published in March 2024.</p> <p>(vii) <i>monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;</i></p> <p>Santos and the Auditors agree that this condition duplicates sub-condition (vi). It was stated that reporting of monitoring results will be included in the Annual Review. The first Annual Review will be published in March 2024.</p> <p>(viii) <i>a summary of the current phase/s and progress of the development;</i></p> <p>The Auditors sighted and successfully tested the “About” link (located on the Santos NGP website) for access to the monthly NGP updates from February 2023 to July 2023. Previous monthly updates between September</p>		



Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>2013 to January 2023 are also available on the website.</p> <p>(ix) <i>contact details to enquire about the development or to make a complaint;</i></p> <p>The Auditors sighted the NGP contact details on the Santos NGP website:  <a href="https://narrabrigasproject.com.au/contact/narrabri/">https://narrabrigasproject.com.au/contact/narrabri/</a></p> <p>The NGP provides multiple contact options including the Narrabri Shop Front for face-to-face, a dedicated Project and Complaints Hotline (Phone Number (landline and mobile), email and postal address).</p> <p>Telephone (business hours): 02 6792 9000  Operations On-Call/Emergency: 0427 923 401  Freecall number: 1800 071 278  Email: energy.nsw@santos.com</p> <p><b>Postal Address:</b>  Santos Ltd  PO Box 859  NARRABRI NSW 2390</p> <p><b>Street Address:</b>  Santos Ltd  Narrabri Operations Centre  300 Yarrie Lake Road  NARRABRI NSW 2390</p> <p>(x) <i>a complaint register, updated monthly;</i></p> <p>As at August 2023, it was stated that there have been no complaints applicable to the NGP since Phase 1 commencement. The one complaint in the register (dated 26 April 2021) is not applicable to Development Consent SSD 6456.</p> <p>The Auditors sighted the register and successfully tested the website link which is</p>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>accessed via the “Environmental Approval” link located on the Santos NGP website.</p> <p>It was stated that this table will be updated when new complaints are received and if required at a monthly frequency no greater than one month.</p> <p>The Auditors sighted an email dated 11 August 2023 from [REDACTED] requesting an update to the Santos Complaints Register table to enable differentiation of stakeholder complaints between approvals (Projects).</p> <p>(xi) <i>a record of all incidents and non-compliances;</i></p> <p>As at August 2023, it was reported on the Santos NGP website that there are Nil incidents and non-compliances registered for January 2015 to 15 January 2023.</p> <p>The Auditors sighted the web page for recording incidents and non-compliances and successfully tested the website link which is accessed via the “Environmental Approval” link located on the Santos NGP website.</p> <p>(xii) <i>the Annual Reviews of the development;</i></p> <p>The Auditors consider that essentially, each of the Santos letters of 26 March 2021, 28 March 2022 and 13 March 2023 to the DPE is an Annual Review, because each letter refers to condition D8 and satisfies paragraph (a) of condition D8, which was the only relevant paragraph during 2020, 2021 and 2022 (i.e. before Phase 1 commencement on 7 February 2023). Refer to the non-compliance audit finding below.</p> <p>(xiii) <i>audit reports prepared as part of any Independent Environmental Audit of the</i></p>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><i>development and the Applicant's response to the recommendations in any audit report;</i></p> <p>This independent environmental audit report is the first audit conducted in accordance with condition D9.</p> <p><i>(xiv) any other matter required by the Planning Secretary;</i></p> <p>It was stated that the Planning Secretary has not required Santos to make any additional information publicly available other than the information specified in the paragraphs of this condition.</p> <p><i>(b) keep such information up to date.</i></p> <p>The Auditors identified that as of August 2023, a copy of an obsolete version (dated 14 November 2003) PPL 3 was posted on the Santos NGP website. The current version of PPL 3 as of August 2023, is dated 18 February 2010. Refer to the non-compliance audit finding below.</p> <p><b>Observation No. 69</b> – The Santos NGP website contains comprehensive information including the current Phase 1 of the Project; however, Santos should consider creating a simple infographic on the home page of the website to provide a simple timeline of the Project and create a link to an information page for each Project Phase.</p> <p><b>Observation No. 70</b> – The Environmental Approvals web page includes links to the <i>Bibblewindi and Dewhurst Pilot project consents</i> which have now been surrendered. Santos should consider removing these redundant consents from the Santos NGP website.</p>		

Development Consent SSD 6456, Schedule 2 Part D – Environmental Management, Reporting and Auditing					
Condition of Consent	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p><b>Non-compliance No. 2</b> – As of August 2023, Santos had not satisfied paragraphs (a)(ii), (a)(xii) and (b) of condition D13 in that:</p> <ul style="list-style-type: none"> <li>the Santos NGP Water Access Licences (WAL Nos. 36546, 43458, 43533, 15819 and 15847) were not publicly available on the Santos NGP website or Santos Water Portal (website) (paragraph (a)(ii)); and</li> <li>the Santos NGP Annual Reviews for 2021, 2022 and 2023 (i.e. the Santos letters dated 26 March 2021, 28 March 2022 and 13 March 2023 to the DPE) were not publicly available on the Santos NGP website (paragraph (a)(xii)); and</li> <li>the version of PPL 3 which was publicly available on the Santos NGP website was not up-to-date (i.e. the Santos NGP website as of August 2023 included an obsolete version of PPL 3) (paragraph (b)).</li> </ul> <p><b>Recommendation No. 2</b> – Santos should make copies of:</p> <ul style="list-style-type: none"> <li>the Santos NGP Water Access Licences (WAL Nos. 36546, 43458, 43533, 15819 and 15847) publicly available on the Santos NGP website or Santos Water Portal (website); and</li> <li>the Santos NGP Annual Reviews for 2021, 2022 and 2023 publicly available on the Santos NGP website.</li> </ul> <p>No action is required in relation to the public availability of PPL 3 on the Santos NGP website, which Santos had updated as of 31 October 2023.</p> <p><b>Observation No. 71</b> – Santos should include the Instruments of Variation dated 29 August 2023 for PEL 238, PAL 2 and PPL 3 on the Santos NGP website.</p>		

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
1	<b>Condition deleted.</b> (Condition wording ruled through with accompanying comment: “ <i>This condition does not apply to this authority</i> ”.)	<ul style="list-style-type: none"> <li>Not applicable – condition deleted.</li> </ul>	Not applicable. For the purpose of this audit report, this deleted condition is not counted in the total of 18 conditions in PEL 238.	—	—
2	<b>Standard conditions – Community Consultation</b> The licence holder must carry out community consultation in relation to the planning and conduct of activities under this licence in accordance with the <i>Exploration Code of Practice: Community Consultation</i> (Department of Industry, March 2016), as amended or replaced from time to time.	<ul style="list-style-type: none"> <li>Audit interviews (Environmental Advisor, Land Access Manager)</li> <li>Exploration Code of Practice: Community Consultation (May 2023)</li> <li>Stakeholder Risk Register reviewed on 17 March 2021</li> <li>Narrabri Community Engagement Plan 2023</li> <li>CCC and Advisory Group meeting minutes</li> <li>Annual Community Consultation Report (PEL 238) for the period 1 September 2021 to 31 August 2022</li> <li>Email dated 18 August 2023 from Santos ( ) detailing consultation records and screenshot from the Santos Relationship Management (SRM) database with a private landholder between 14 October 2020 and 21 October 2022</li> </ul>	<p>The Auditors sighted the 2023 Narrabri Community Engagement Plan. This plan references the requirement to adhere to the <i>Exploration Code of Practice: Community Consultation</i> (May 2023) which has been amended twice during the audit period (7 October 2022 and May 2023).</p> <p>Santos was able to demonstrate community consultation in relation to the planning and conduct of activities under this licence including:</p> <ul style="list-style-type: none"> <li>CCC and Advisory Group meeting minutes;</li> <li>stakeholder consultation records during the development of the Field Development Plan (email dated 18 August 2023 from Santos);</li> <li>the Santos Narrabri office allowing stakeholders to walk in and obtain information about the activities in PEL 238 or the NGP;</li> <li>stakeholder engagement records in the SRM database – example as of 8 September 2023 – SRM consultation record;</li> <li>the Auditors sighted monthly community updates available on the Santos NGP website as a demonstration of regular project updates;</li> <li>quarterly meeting records with the Forestry Corporation of NSW;</li> <li>monthly Community updates (Santos NGP website);</li> <li>Annual Community Consultation Report (PEL 238) for the period 1 September 2021 to 31 August 2022.</li> </ul>	<b>Compliant</b>	

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>Report on SRM database – example as of 8 September 2023 – SRM consultation record</li> <li>Monthly Community updates (Santos NGP website)</li> <li>Forestry Corporation of NSW and Santos NGP Annual and Quarterly Work Program Meeting minutes dated 6 June 2023</li> </ul>	<p>The Auditors sighted a reviewed Stakeholder Risk Register for the NGP dated 17 March 2021.</p> <p><b>Observation No. 72</b> – Santos could review and update the Stakeholder Risk Register to include up-to-date agency and stakeholder information (i.e. agency name, contact person and email address) in the consultation register which was developed in preparation for this audit.</p> <p>The 2023 Narrabri Community Engagement Plan details community needs and business risks in a table on page 13.</p> <p><b>Observation No. 73</b> – Santos should update the Narrabri Community Engagement Plan to ensure it complies with all requirements of the <i>Exploration Code of Practice: Community Consultation</i> (May 2023) including:</p> <ul style="list-style-type: none"> <li>consideration of the CCC and Advisory groups as stakeholders;</li> <li>identification of planning processes to assist in informing the schedule of the proposed works; e.g. Field Development Plan (see mandatory requirement 3(c) iii) of the Code);</li> <li>detail of the mechanism for revising the community consultation strategy to ensure it continues to meet the requirements of the Code.</li> </ul>		
3	<p><b>Standard conditions – Protection of the environment</b></p> <p>The licence holder must prevent, or if that is not reasonably practicable, minimise so far as is reasonably practicable, any harm to the environment arising from activities carried out under this licence. The licence holder must</p>	<ul style="list-style-type: none"> <li>Narrabri Gas Project EIS Risk Assessment – Chapter 25 (Table 25-2)</li> <li>Environment Management Strategy (Doc ID: 0041-150-PLA-0003, Revision No. 0A,</li> </ul>	<p>As of August 2023 and for the audit period, it was stated that there have been no environmental incidents which resulted in unauthorised environmental harm on PEL 238.</p> <p>It was stated that Santos implements the NGP Environmental Management Plans that detail the measures to manage and mitigate the impacts</p>	Compliant	

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	demonstrate why they can only minimise rather than prevent harm to the environment.	<p>issued on 10 November 2022)</p> <ul style="list-style-type: none"> <li>IDP Presentation_2022.pptx provides an overview of the IDP process</li> <li>Contractor packs and specific ground clearance conditions</li> <li>NGP Ice Breaker presentation – Environmental awareness Training</li> <li>Appendix F – Photo 2 OEC Well Head inspection checklist</li> <li>Appendix F – Photo 12 Dewhurst 35 new well pad and ESCP (under construction)</li> </ul>	<p>detailed in the Narrabri Gas Project EIS – Chapter 25 (Table 25-2).</p> <p>In audit interviews and field inspections as of August 2023, the Auditors sighted processes and physical controls being implemented to minimise and prevent environmental harm, including:</p> <ul style="list-style-type: none"> <li>the IDP process;</li> <li>Environmental Awareness training for contractors – Ice Breaker presentation;</li> <li>issuing contractor packs and specific ground clearance conditions;</li> <li>erosion and sediment controls (see Photo 12); and</li> <li>monitoring and inspection programs, e.g. OEC (Photo 2).</li> </ul>		
4	<p><b>Standard conditions – Security</b></p> <p>The licence holder must provide and maintain a security deposit to secure funding for the fulfilment of obligations under this licence (including obligations that may arise in the future) as follows:</p> <p>(a) Amount: \$6,748,000</p> <p>(b) Licence holder's entitlement to interest: none.</p>	<ul style="list-style-type: none"> <li>Email dated 18 January 2023 from NSW Mining, Exploration &amp; Geoscience (Ref MEG/MT84/0491-01#1) providing a notice of variation of security deposit condition</li> <li>PEL238 (1955) TAS Full Details Report – Surety Details dated 31 August 2023</li> <li>Email dated 31 August 2023 from MEG confirming that there is no</li> </ul>	<p>The Auditors sighted an email dated 18 January 2023 from NSW Mining, Exploration &amp; Geoscience (Ref MEG/MT84/0491-01#1) providing a notice of variation of security deposit condition to vary the security deposit condition to change the required amount of the deposit from \$6,748,000 to \$7,997,437.</p> <p>The Auditors sighted <i>PEL238 (1955) TAS Full Details Report – Surety Details</i> dated 31 August 2023, confirming that 3 different securities totalling \$7,997,437 are currently held by Trade &amp; Investment – Resources &amp; Energy Division.</p> <p>Santos updated the PEL 238 Rehabilitation Cost Estimate (RCE) during the audit period. The</p>	Compliant	

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<p>outstanding security amount for PEL 238</p> <ul style="list-style-type: none"> <li>• PEL 238 Rehabilitation Cost Estimate (RCE) dated 16 June 2023 calculating the maximum rehabilitation cost at \$8,033,097</li> </ul>	<p>Auditors sighted this revised RCE dated 16 June 2023 calculating the maximum rehabilitation cost at \$8,033,097. Submission of this updated RCE is pending the finalisation of the 2023 Annual Report.</p> <p>The Auditors sighted an email dated 31 August 2023 from MEG confirming that there is no outstanding security amount for PEL 238.</p> <p>The Auditors confirmed that the correct security amount has been lodged as per paragraph (a) of this condition.</p>		
5	<p><b>Standard conditions – Rehabilitation</b></p> <p>The licence holder must carry out rehabilitation of all disturbance caused by activities carried out under this licence in accordance with the requirements of the Exploration Code of Practice: Rehabilitation (Department of Regional NSW, June 2021), as amended or replaced from time to time, to the satisfaction of the Minister.</p>	<ul style="list-style-type: none"> <li>• Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision No. 0C, issued on 18 November 2022)</li> <li>• Annual Environmental and Rehabilitation Compliance Report (ESG4).</li> <li>• Appendix F – Photo 32 Bibblewindi 10 Well Pad partial rehabilitation</li> </ul>	<p>As of August 2023 and for the audit period, no active rehabilitation has been completed during the audit period. Santos stated that it has not sought to relinquish any rehabilitated areas within PEL 238.</p> <p>Future and ongoing rehabilitation will be undertaken in accordance with the approved Rehabilitation Management Plan (Doc ID: 041-150-PLA-0001). Appendix B Table 2 considers the Exploration Code Requirements – Appendix B Table 2.</p> <p>Notwithstanding the above, during field inspections in August 2023, rehabilitation within the Project area was demonstrated by temporary partial rehabilitation on an existing Well Pad at Bibblewindi 10 (see Photo 32). The Auditors noted this Well Pad is located in PAL 2 and is referred to as a typical example of Santos's rehabilitation management in the NGP.)</p> <p><b>Observation No. 74</b> – The Auditors understand that all Well Pads that have been partially rehabilitated will be disturbed by either ongoing well workovers or future well abandonment activities. Santos should ensure the temporary nature of partial rehabilitation areas are noted in future ESG4 reporting and Annual Reviews (as</p>	Compliant	



Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>referred to in condition D8 of Development Consent SSD 6456).</p> <p>It was stated that the life of asset facilities, e.g. Leewood and Bibblewindi infrastructure, will continue to be maintained for operational purposes and cannot be rehabilitated.</p> <p>The Auditors sighted the Annual Environmental and Rehabilitation Compliance Report (ESG4) for the period 1 September 2021 to 31 August 2022 providing a rehabilitation status of existing infrastructure areas.</p>		
6	<p><b>Standard conditions – Annual Activity Reporting</b></p> <p>Unless otherwise approved by the Secretary, the licence holder must submit annual activity reports prepared in accordance with the Exploration Guideline: Annual Activity Reporting for Prospecting Titles (Department of Regional NSW, December 2020), as amended or replaced from time to time, at the following times:</p> <p>(a) Annually, within one calendar month following the grant anniversary date of this licence;</p> <p>(b) On any other date or dates directed by the Secretary in writing; and</p> <p>(c) Within one calendar month of cancellation or expiry of this licence.</p>	<ul style="list-style-type: none"> <li>• PEL 2021 Annual Report for the reporting period 1 September 2020 to 20 October 2021</li> <li>• PEL 2022 Annual Report for the reporting period 1 September 2021 to 20 October 2022</li> <li>• email dated 30 September 2022 from the NSW Titles Management System acknowledging lodgement of the Annual Report (Case ID REP-2022-1668)</li> <li>• Email dated 23 January 2023 from the NSW Titles Management System acknowledging the Annual Report (Case ID REP-2022-1668) had been satisfactorily prepared in accordance with the Exploration Reporting: A</li> </ul>	<p>The original grant date of PEL 238 was 1 September 1990, which triggers the reporting date for the Annual Activity Report. Therefore, the annual reporting period is from 1 September to 20 October. The Auditors noted that PEL 238 was renewed on 12 April 2022 for 5 years.</p> <p>In relation to the paragraphs of this condition:</p> <p>(a) The Auditors sighted the PEL 238 Annual Report 2021 for the reporting period 1 September 2021 to 20 October 2022 and an email from the NSW Titles Management System (TMS) dated 30 September 2022 acknowledging lodgement of the report (Case ID REP-2022-1668). The Auditors also sighted an email dated 23 January 2023 from the TMS confirming that the Annual Report (Case ID REP-2022-1668) had been satisfactorily prepared per the Exploration Reporting: A guide for reporting on exploration and prospecting in New Wales.</p> <p>The Auditors also sighted the prior year's PEL 238 Annual Report 2021 for the reporting period 1 September 2020 to 20 October 2021.</p>	Compliant	

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		Guide for Reporting on Exploration and Prospecting in New South Wales	<p>(b) Santos stated that the Secretary has not directed any other reporting date in writing.</p> <p>(c) This paragraph has not been triggered as PEL 238 has not been cancelled.</p> <p>As of August 2023 and for the audit period, the Auditors confirmed that Santos continues to meet its report obligations under this condition.</p>		
7	<p><b>Standard conditions – Change in Control</b></p> <p>If the licence holder is a corporation, the Secretary must be notified within 30 days of any:</p> <p>(a) Change in effective control of the licence holder; or</p> <p>(b) Foreign acquisition of substantial control in the licence holder.</p> <p>Notification is not required where a change in effective control of the licence holder, or a foreign acquisition of substantial control of the licence holder, occurs as a result of the acquisition of shares or other securities on a registered stock exchange.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>During the audit period, there has been no change to the Licence Holder. It was stated that Santos NSW (Eastern) Pty Ltd continues to have legal control over the Project.</p> <p>There has been no requirement to notify the Secretary in relation to the paragraphs of this condition.</p>	<b>Compliant</b>	
8	<p><b>Standard conditions – Co-operation Agreement</b></p> <p>The licence holder must make every reasonable attempt and be able to demonstrate their attempts, to enter into a cooperation agreement with the holder(s) of any overlapping authorisations under the <i>Mining Act 1992</i> or petroleum titles under the <i>Petroleum (Onshore) Act 1991</i>. The cooperation agreement should address, but not be limited to:</p> <p>(a) Access arrangements</p> <p>(b) Operational interaction arrangements</p> <p>(c) Dispute resolution</p>	<ul style="list-style-type: none"> <li>MinView – <a href="https://minview.geoscience.nsw.gov.au">https://minview.geoscience.nsw.gov.au</a></li> <li>Appendix F – Photo 34 MinView Screenshot of overlapping tenure</li> <li>Field Development Plan (Doc ID: 0041-150-PLA-0023, Revision No. 0A, issued on 11 November 2022)</li> </ul>	<p>The Auditors sighted a search on the NSW MinView online tool to identify overlapping tenure. The search identified that PEL 238 overlaps Narrabri Coal (Whitehaven Coal) tenements ML 1839, EL6243, ML1609, EL9456, EL 9455 (see Photo 34).</p> <p>As of August 2023, it was stated that no petroleum exploration activities are located within these overlapping tenure areas. All current activities are located within the SSD 6456 Project boundary and are described in the approved Phase 1 Field Development Plan.</p>	<b>Compliant</b>	

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	(d) Information sharing (e) Location and timing of prospecting operations (f) Potential resource extraction conflicts (g) Integrated rehabilitation activities.	<ul style="list-style-type: none"> <li>Meeting Minutes dated 4 August 2023 titled, WHC – Santos Overlapping Tenements Cooperations Agreement</li> <li>Email dated 10 June 2020 (various Santos employees) identifying the requirement for the Cooperation Agreement</li> </ul>	<p>It was stated that Santos is in active consultation with Whitehaven Coal to develop a Cooperation Agreement for these overlapping tenure areas. The Auditors sighted Meeting Minutes dated 4 August 2023 titled, WHC – Santos Overlapping Tenements Cooperations Agreement, recording attendance by both Santos and Whitehaven Coal representatives. The Meeting Minutes recorded that a draft Cooperation Agreement was circulated prior to the meeting.</p> <p>The Auditors sighted emails dated June 2020 where Santos identified the requirement for the Cooperation Agreement was identified.</p> <p><b>Observation No. 75</b> – The Auditors note that this condition is not time-bound, and Santos has not conducted petroleum exploration activities within these overlapping tenure areas. Current evidence as of August 2023 demonstrates Santos's efforts to enter into a Cooperation Agreement with Whitehaven Coal.</p>		
9	<b>Standard conditions – Accuracy of well location and geophysical logging</b>  The location and height (Australian Height Datum) of each collar of all wells or bores drilled within the licence must be determined to an accuracy of 1 metre.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PEL 238 Instrument of Variation dated 29 August 2023</li> </ul>	<p>On 5 September 2023, PEL 238 conditions were varied to align with the Department of Regional NSW <i>Code of Practice for Construction, operation and decommissioning of petroleum wells</i> (first issued in February 2023). In accordance with the PEL 238 Instrument of Variation dated 29 August 2023, this condition has been omitted and is considered as not triggered for the purpose of this independent environmental audit.</p> <p>Notwithstanding the above, no petroleum wells have been constructed during the audit period.</p>	Not triggered	
10	<b>Standard conditions – Accuracy of well location and geophysical logging</b>  For any well or bore that intersects a coal seam more than 1 metre in thickness, the downhole	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	See comments for PEL 238 condition 9 in this audit report.	Not triggered	

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	survey must achieve a level of accuracy that is within $\pm 0.5^\circ$ for inclination and $\pm 0.2^\circ$ azimuth for a well or bore with an inclination less than $6.0^\circ$ . For a well or bore with an inclination greater-than-or-equal-to $6.0^\circ$ the downhole survey must achieve a level of accuracy that is within $\pm 0.5^\circ$ for inclination and $\pm 1.0^\circ$ azimuth.	<ul style="list-style-type: none"> <li>• PEL 238 Instrument of Variation dated 29 August 2023</li> </ul>			
11	<b>Standard conditions – Accuracy of well location and geophysical logging</b>  All newly drilled wells must be downhole geophysically logged for the entire length of the well prior to the installation of production casing with a logging suite which can accurately determine the location and properties of all hydrocarbon bearing formations.	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> <li>• PEL 238 Instrument of Variation dated 29 August 2023</li> </ul>	See comments for PEL 238 condition 9 in this audit report.	<b>Not triggered</b>	
12	<b>Standard conditions – Accuracy of well location and geophysical logging</b>  For all lateral wells or bores the downhole survey must achieve a level of accuracy that is within $\pm 0.5^\circ$ for inclination and $\pm 1.0^\circ$ azimuth, or for each 1000 metres of the drilled well or bore, $\pm 6$ metres vertically and $\pm 20$ metres laterally.	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> </ul>	See comments for PEL 238 condition 9 in this audit report.	<b>Not triggered</b>	
13	<b>Standard conditions – Accuracy of well location and geophysical logging</b>  The licence holder must provide all geophysical and surveying logs to the Secretary, with the well completion report or within three months of the completion of any well that is decommissioned.	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> <li>• PEL 238 Instrument of Variation dated 29 August 2023</li> </ul>	See comments for PEL 238 condition 9 in this audit report.	<b>Not triggered</b>	
14	<b>Standard conditions – Operations to not affect mineability of coal seams</b>  The lease holder must undertake all operations with regard to identifying, managing and minimising	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition is not a “relevant requirement” to be considered in accordance with the Independent Environmental Audit scope pursuant to SSD 6456 condition D9(c).	<b>Not triggered</b>	

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	the impact of activities on the potential mineability of coal seams.				
15	<b>Standard conditions – Removal of steel casing</b> At the completion of production testing and prior to plug and abandonment of the hole, steel casing must be removed from any potentially mineable coal seam. Alternatively, glass reinforced epoxy casing meeting good industry design practice may be used across mineable coal seams, subject to approval of the Chief Inspector of Coal Mines.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PEL 238 Instrument of Variation dated 29 August 2023</li> </ul>	<p>See comments for PEL 238 condition 9 in this audit report.</p> <p>Notwithstanding the above, it was stated that no P&amp;A activities have occurred during the audit period.</p>	<b>Not triggered</b>	
16	<b>Standard conditions – Removal of steel casing</b> Downhole geophysical tools and/or cameras must be used to confirm the removal or absence of steel casing throughout the prescribed interval. All logs and information pertinent to the steel casing must be provided to the Secretary.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PEL 238 Instrument of Variation dated 29 August 2023</li> </ul>	<p>See comments for PEL 238 condition 9 in this audit report.</p> <p>Notwithstanding the above, it was stated that no P&amp;A activities have occurred during the audit period.</p>	<b>Not triggered</b>	
17	<b>Special conditions – Local Aboriginal Land Council notification</b> Within 30 days of the renewal of this licence, the licence holder must provide written notification to the relevant Local Aboriginal Land Council(s) to which this licence relates, that the licence has been renewed and include a map of the exploration area.	<ul style="list-style-type: none"> <li>PEL 238 instrument</li> <li>Letter dated 16 April 2022 and Attach 1_Coonabarabran LALC_Map_PEL 238_12_1_April22 to Coonabarabran LALC from [REDACTED] (Santos Manager Cultural Heritage, Aboriginal Engagement &amp; Land)</li> <li>Letter dated 16 April 2022 and Attach 1_Gilgandra LALC_Map_PEL 238_12_1_April22 to Gilgandra LALC from [REDACTED] (Santos Manager Cultural</li> </ul>	<p>The Auditors sighted written notifications dated 16 April 2022 and Attachment 1 providing a map of the PEL 238 renewal area and the corresponding Local Aboriginal Land Council boundary to the Local Aboriginal Land Councils listed below:</p> <ul style="list-style-type: none"> <li>Coonabarabran LALC</li> <li>Gilgandra LALC</li> <li>Narrabri LALC</li> <li>Nungaroo LALC</li> <li>Pilliga LALC</li> <li>Red Chief LALC</li> <li>Walhallow LALC</li> <li>Wee Waa LALC</li> </ul>	<b>Compliant</b>	

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<p>Heritage, Aboriginal Engagement &amp; Land)</p> <ul style="list-style-type: none"> <li>Letter dated 16 April 2022 and Attach 1_Narrabri LALC_Map_PEL 238_12_1_April22 to Narrabri LALC from [REDACTED] (Santos Manager Cultural Heritage, Aboriginal Engagement &amp; Land)</li> <li>Letter dated 16 April 2022 and Attach 1_Nungaroo LALC_Map_PEL 238_12_1_April22 to Nungaroo LALC from [REDACTED] (Santos Manager Cultural Heritage, Aboriginal Engagement &amp; Land)</li> <li>Letter dated 16 April 2022 and Attach 1_Pilliga LALC_Map_PEL 238_12_1_April22 to Pilliga LALC from [REDACTED] (Santos Manager Cultural Heritage, Aboriginal Engagement &amp; Land)</li> <li>Letter dated 16 April 2022 and Attach 1_Red Chief LALC_Map_PEL 238_12_1_April22 to Red Chief LALC from [REDACTED] (Santos Manager Cultural</li> </ul>	The notification letters were provided within 30 days of the PEL 238 renewal date of 12 April 2022.		

Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		Heritage, Aboriginal Engagement & Land) <ul style="list-style-type: none"> <li>Letter dated 16 April 2022 and Attach 1_Walhallow LALC_Map_PEL 238_12_1_April22 to Walhallow LALC from [REDACTED] (Santos Manager Cultural Heritage, Aboriginal Engagement &amp; Land)</li> <li>Letter dated 16 April 2022 and Attach 1_Wee Waa LALC_Map_PEL 238_12_1_April22 to Wee Waa LALC from [REDACTED] Santos Manager Cultural Heritage, Aboriginal Engagement &amp; Land)</li> </ul>			
18	<b>Special conditions – Activity approvals issued prior to 1 March 2016</b>  Any activity or operation the subject of an activity approval under section 36A of the <i>Petroleum (Onshore) Act 1991</i> and in force on 1 March 2016 must, in addition to any terms of that activity approval, be carried out in accordance with the following Codes of Practice (as amended or replaced from time to time): <ul style="list-style-type: none"> <li>(a) <i>Exploration Code of Practice: Environmental Management</i> (Department of Regional NSW, June 2021),</li> <li>(b) <i>Exploration Code of Practice: Produced Water Management, Storage and Transfer</i> (Department of Regional NSW, June 2021),</li> </ul>	<ul style="list-style-type: none"> <li>Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> <li>Appendix H – Independent Well Integrity Audit Report</li> </ul>	In relation to the paragraphs of this condition: <ul style="list-style-type: none"> <li>(a) <i>Exploration Code of Practice: Environmental Management (Department of Regional NSW, June 2021)</i>. It was stated that prior to the commencement of Phase 1 (7 February 2023) all activities approved prior to 1 March 2016 were carried out in accordance with this code. However, since 7 February 2023, all activities are undertaken in accordance with SSD 6456 and the approved Environmental Management Plans for the Project.</li> <li>(b) <i>Exploration Code of Practice: Produced Water Management, Storage and Transfer</i> (Department of Regional NSW, June 2021). It was stated that Santos continues to operate in accordance with this Code, and the</li> </ul>	Compliant	



Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(c) <i>Code of Practice for Coal Seam Gas Well Integrity</i> (Department of Trade and Investment, 2012),</p> <p>(d) <i>Code of Practice for Coal Seam Gas Fracture Stimulation Activities</i> (Department of Trade and Investment, 2012),</p> <p>and these Codes of Practice prevail to the extent of any inconsistency with the terms of such an activity approval, except as provided in condition 20 below.</p>		<p>requirements of the Code have been incorporated into the Produced Water Management Plan (Doc ID: 0041-150-0018).</p> <p>(c) <i>Code of Practice for Coal Seam Gas Well Integrity</i> (Department of Trade and Investment, 2012). It was stated that during the audit period, the <i>Code of Practice for Construction, Operation and Decommissioning of Petroleum Wells</i> (May 2023) superseded the 2012 Code of Practice. As of August 2023, an independent Well Integrity Expert has assessed Santos activities to comply with this Code, as provided in Appendix H in this audit report.</p> <p>(d) <i>Code of Practice for Coal Seam Gas Fracture Stimulation Activities</i> (Department of Trade and Investment, 2012). It was stated that this Code is not relevant as Santos has committed to not hydraulically fracture coal seams, and that this activity is prohibited by condition A17 of Development Consent SSD 6456.</p> <p><b>Observation No. 76</b> – EMS Table B1 (page 69) incorrectly references Section 3.4 of the PWMP to address the requirements of the <i>Exploration Code of Practice: Environmental Management</i> (Department of Regional NSW, June 2021).</p>		
19	<p><b>Special conditions – Activity approvals issued prior to 1 March 2016</b></p> <p>Where the terms of an activity approval granted prior to 1 July 2015 and the requirements of Part B of the <i>Exploration Code of Practice: Produced Water Managements, Storage and Transfer</i> (Department of Regional NSW, June 2021) relate to the same activity, the terms of the activity approval will prevail over the requirements of the Code of Practice in respect of that activity.</p>	<ul style="list-style-type: none"> <li>Produced Water Management Plan (Doc ID: 0041-150-PLA-0018, Revision No. 0B, issued on 24 October 2022)</li> </ul>	<p>The Auditors sighted the approved Produced Water Management Plan (Doc ID: 0041-150-0018) that has been developed in consideration of Part B of the <i>Exploration Code of Practice: Produced Water Management, Storage and Transfer</i> (Department of Regional NSW, June 2021 (see Section 3.2 of the PWMP).</p>	Compliant	



Petroleum Exploration Licence 238 (PEL 238), Schedule 2 – Petroleum Exploration Licence Conditions (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	Note: Reports required under section 97C of the <i>Petroleum (Onshore) Act 1991</i> and Part 4 of the <i>Petroleum (Onshore) Regulation 2016</i> must be prepared in accordance with the <i>Onshore petroleum reporting and data submission: A guide to geoscientific reporting and data submission of onshore petroleum exploration and production in New South Wales</i> (Department of Industry, 2016), as amended or replaced from time to time.				

**Petroleum Exploration Licence 238 (PEL 238), Schedule 3 – Work Program**

In accordance with clause 9 of the Petroleum (Onshore) Regulation 2016 the approved Work Program is the document identified by the following identification number: **WP-PEL238-2022-2027**

**Work Program Summary**

In accordance with section 113G of the *Petroleum (Onshore) Act 1991* a summary of the approved Work Program is set out below.

Work Program Year (i.e. Condition)	Proposed Activities (i.e. Condition Requirement)	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
Year 1 (2022-2023)	<ul style="list-style-type: none"> <li>Core hole planning and approvals</li> <li>Ongoing care and maintenance of pilots, and associated infrastructure</li> <li>Ongoing water management at Leewood Water Treatment facility</li> <li>Technical studies</li> </ul>	<ul style="list-style-type: none"> <li>Field Development Plan Revision 0A, issued on 11 November 2022, Doc ID: 0041-150-PLA-0023</li> <li>Produced Salt Beneficial Reuse and Disposal Study (Doc ID: 0041-150-PLA-0006, Revision No. 0B, issued on 24 October 2022)</li> <li>Koala Research Program Proposal (dated February 2022)</li> <li>Groundwater Monitoring Plan (Revision No. 0E, issued on 11 November 2022, Doc ID: 0041-150-PLA-0011)</li> <li>NGP Groundwater model</li> <li>Email dated 30 August 2023 from [REDACTED] (Team Leader Narrabri, Mahalo &amp; EQ Subsurface) providing details of technical studies</li> <li>Appendix F – Photo 15 Leewood produced water</li> </ul>	<p>In relation to the proposed activities in this work plan:</p> <ul style="list-style-type: none"> <li><i>Core hole planning and approvals</i> – The Auditors sighted the Field Development Plan for Phase 1 that details the 1 core hole to be drilled in PEL 238 (referenced as PPLA16) including the required siting protocols to be implemented.</li> <li><i>Ongoing care and maintenance of pilots, and associated infrastructure</i> – The Auditors sighted examples of access track and flowline maintenance and Operator Essential Care (OEC) weed management and ESC inspection programs as demonstration of ongoing care and maintenance.</li> <li><i>Ongoing water management at Leewood Water Treatment facility</i> – During their August 2023 field inspection the Auditors sighted the Leewood Water Treatment Facility (see Photo 15) and confirmed that the facility is being maintained in good operational condition with all produced water contained within lined ponds. The Auditors observed elements of the surface and groundwater monitoring programs being implemented. The facility is operated in accordance with the approved Produced Water Management Plan (Doc ID: 0041-150-PLA-0018).</li> <li><i>Technical studies</i> – The Auditors sighted evidence of various technical studies being implemented to support SSD 6456 which incorporates PAL 238 including, Produced</li> </ul>	<b>Compliant</b>	

<p align="center"><b>Petroleum Exploration Licence 238 (PEL 238), Schedule 3 – Work Program</b></p> <p align="center">In accordance with clause 9 of the Petroleum (Onshore) Regulation 2016 the approved Work Program is the document identified by the following identification number: <b>WP-PEL238-2022-2027</b></p> <p align="center"><b>Work Program Summary</b></p> <p align="center">In accordance with section 113G of the <i>Petroleum (Onshore) Act 1991</i> a summary of the approved Work Program is set out below.</p>					
Work Program Year (i.e. Condition)	Proposed Activities (i.e. Condition Requirement)	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		ponds and monitoring equipment	<p>Salt Beneficial Reuse and Disposal Study (PSBRDS), Koala Research Program proposal, groundwater monitoring plan and groundwater model (as sub plans of the Water Management Plan). The Auditors also sighted an email dated 30 August 2023 from [REDACTED] (Team Leader Narrabri, Mahalo &amp; EQ Subsurface) stating:</p> <ul style="list-style-type: none"> <li>- A consultant has been engaged to update and refine the geological model for the Narrabri Gas Project; and</li> <li>- Reservoir engineering work has occurred in the last 12 months to support future detailed reservoir simulation modelling.</li> </ul>		
Year 2 (2023-2024)	<ul style="list-style-type: none"> <li>• Core hole planning and approvals</li> <li>• Ongoing care and maintenance of pilots, and associated infrastructure</li> <li>• Ongoing water management at Leewood Water Treatment facility</li> <li>• Technical studies</li> </ul>	<ul style="list-style-type: none"> <li>• Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, these activities have not commenced.	<b>Not triggered</b>	

Note: The approved Work Program and Work Program Summary set out above are as at the time this licence instrument was signed. Therefore, any approved variations to the Work Program or progressive agendas (if required in accordance with clause 6 of the Petroleum (Onshore) Regulation 2016), will not be reflected in this licence instrument, rather in separate instruments.

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
<b>Environmental Management Conditions</b>					
1	<p><b>Environmental Harm</b></p> <p>The Lease Holder must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of any exploration activities.</p> <p><i>For the purposes of this condition:</i></p> <p><b>environment</b> means components of the earth, including:</p> <p>(a) land, air and water, and</p> <p>(b) any layer of the atmosphere, and</p> <p>(c) any organic or inorganic matter and any living organism, and</p> <p>(d) human-made or modified structures and areas,</p> <p>and includes interacting natural ecosystems that include components referred to in paragraphs (a)-(c).</p> <p><b>harm to the environment</b> includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution, contributes to the extinction or degradation of any threatened species, populations or ecological communities and their habitats and causes impacts to places, objects and features of significance to aboriginal people.</p>	<ul style="list-style-type: none"> <li>Narrabri Gas Project EIS Risk Assessment – Chapter 25 (Table 25-2)</li> <li>Environment Management Strategy (Doc ID: 0041-150-PLA-0003, Revision No. 0A, issued on 10 November 2022)</li> <li>IDP Presentation_2022.pptx provides an overview of the IDP process</li> <li>Contractor packs and specific ground clearance conditions</li> <li>NGP Ice Breaker presentation – Environmental awareness Training</li> <li>Appendix F – Photo 2 OEC Well Head inspection checklist</li> <li>Appendix F – Photo 14 Dewhurst 43 Well Pad ESCP additional controls</li> <li>Appendix F – Photo 15 Leewood produced water ponds and monitoring equipment</li> </ul>	<p>As of August 2023 and for the audit period, Santos stated that there have been no environmental incidents which resulted in unauthorised environmental harm on PAL 2.</p> <p>It was stated that Santos implements the NGP Environmental Management Plans that detail the measures to manage and mitigate the impacts detailed in the Narrabri Gas Project EIS – Chapter 25 (Table 25-2).</p> <p>In audit interviews and field inspections as of August 2023, the Auditors sighted processes and physical controls being implemented to minimise and prevent environmental harm, including:</p> <ul style="list-style-type: none"> <li>the IDP process;</li> <li>Environmental Awareness training for contractors – Ice Breaker presentation;</li> <li>issuing contractor packs and specific ground clearance conditions;</li> <li>erosion and sediment controls (see Photo 14);</li> <li>lined water collection ponds (see Photo 15); and</li> <li>monitoring and inspection programs, e.g. OEC (Photo 2) and groundwater monitoring (see Photos 20 and 21).</li> </ul>	<b>Compliant</b>	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<ul style="list-style-type: none"> <li>Appendix F – Photo 20 Leewood groundwater bore and meters</li> <li>Appendix F – Photo 21 Bibblewindi 27 groundwater bore and meters</li> </ul>			
2	<b>Petroleum Operations Plan</b> a) Activities must only be carried out in accordance with a Petroleum Operations Plan (POP) which has been approved by the Director-General of the Department of Primary Industries. b) The POP must: <ol style="list-style-type: none"> <li>identify areas that will be disturbed by operations;</li> <li>detail the staging of specific operations;</li> <li>identify how operations will be managed to allow closure of the site;</li> <li>identify how operations will be carried out on site in order to prevent and or minimise harm to the-environment, including groundwater;</li> <li>reflect conditions of approval under:               <ol style="list-style-type: none"> <li>the <i>Environmental Planning and Assessment Act 1979</i>;</li> <li>the <i>Protection of the Environment Operations Act 1997</i>; and</li> <li>any other approvals relevant to the development including the conditions of this lease; and</li> </ol> </li> </ol>	<ul style="list-style-type: none"> <li>PAL 2 Petroleum Operations Plan (POP) for the Period 1 October 2022 to 30 September 2023.</li> <li>Email dated 30 August 2022 from [REDACTED] (Santos Senior Environmental Advisor) to the Resources Regulator confirming the submission of the POP</li> <li>Letter dated 8 December 2022 from the NSW Resources Regulator (Peter Ainsworth – Manager Environmental Operations) Ref MAAG0014764, approving the POP for the Period 1 October 2022 to 30 September 2023</li> </ul>	<p>The Auditors sighted the PAL 2 Petroleum Operations Plan (POP) for the Period 1 October 2022 to 30 September 2023 and an email dated 30 August 2022 from [REDACTED] (Santos Senior Environmental Advisor) to the Resources Regulator confirming the submission of the POP.</p> <p>The Auditors sighted a letter dated 8 December 2022 from the NSW Resources Regulator (Peter Ainsworth – Manager Environmental Operations) Ref MAAG0014764, approving the POP for this period. This approval confirms that Department satisfied the POP meet the requirements in the paragraphs of this condition.</p> <p><b>Observation No. 77</b> – The submission of the POP (30 August 2022) was prior to the approval of the Environmental Management Plans required by Development Consent SSD 6456. Santos should ensure that future POP revisions refer to the approved strategy, management plans and programs.</p>	Compliant	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>vi) have regard to any relevant guidelines adopted by the Director-General.</p> <p>c) The Lease Holder may apply to the Director-General to amend an approved POP at any time.</p> <p>d) It is not a breach of this condition if:</p> <p>i) the operations constituting the breach were necessary to comply with a lawful order or direction given under the <i>Petroleum (Onshore) Act 1991</i>, the <i>Environmental Planning and Assessment Act 1979</i>, Protection of the <i>Environment Operations Act 1997</i> or the <i>Occupational Health and Safety Act 2000</i>; and</p> <p>ii) the Director-General had been notified of the terms of the order or direction prior to the operations constituting the breach being carried out.</p> <p><i>Note: The Director-General is deemed to be notified of the terms of an order or direction if the order or direction was issued by the Department.</i></p> <p>(e) A POP ceases to have affect 7 years after the date of approval or other such period as specified by the Director-General. An approved amendment to the POP under part c) of this condition, does not constitute an approval for the purpose of this paragraph unless otherwise specified by the Director-General.</p> <p><i>Note: Where the approval of activities covered by the POP require assessment under Part 5 of the <i>Environmental Planning and Assessment Act 1979</i>, a Review of Environmental Factors or Environmental Impact Statement must be submitted with the POP for assessment by the Director-General of the Department of Primary Industries.</i></p>				

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
3	<b>Environment Management Reporting</b> a) The Lease Holder must lodge Environmental Management Reports (EMR) with the Director-General annually or at dates otherwise specified by the Director-General. b) The EMR must: <ol style="list-style-type: none"> <li>report against compliance with the POP;</li> <li>report on progress in respect of rehabilitation completion criteria;</li> <li>report on the extent of compliance with regulatory requirements; and</li> <li>have regard to any relevant guidelines adopted by the Director-General.</li> </ol> c) Additional environmental reports may be required on specific surface disturbing operations or environmental incidents from time to time as directed in writing by the Director-General and must be lodged as instructed.	<ul style="list-style-type: none"> <li>Annual Environmental Management Report for the period 1 January 2022 to 30 December 2022</li> <li>Annual Environmental Management Report for the period 1 January 2021 to 30 December 2021</li> <li>Email dated 28 February 2023 from [REDACTED] (Santos Senior Environmental Advisor) to the Resources Regulator confirming the submission of the 2022 AEMR</li> <li>Email dated 23 February 2022 from [REDACTED] (Santos Senior Environmental Advisor) to the Resources Regulator confirming the submission of the 2021 AEMR</li> </ul>	<p>As of August 2023 and for the audit period, Santos has submitted the EMR as required by the paragraphs of this condition. (Auditors' Note: In this audit report, an annual EMR is also regarded as an AEMR.)</p> <p>In relation to paragraph a) of this condition:</p> <p>a) The Auditors sighted the Annual Environmental Management Reports for the period 1 January 2021 to 30 December 2021 and 1 January 2022 to 30 December 2022 including an email dated 28 February 2023 from [REDACTED] (Santos Senior Environmental Advisor) to the Resources Regulator confirming the submission of the 2022 AEMR and an email dated 23 February 2022 from [REDACTED] (Santos Senior Environmental Advisor) to the Resources Regulator confirming the submission of the 2021 AEMR.</p> <p>It was stated that Santos did not receive any correspondence from the NSW Resources Regulator, regarding concerns or satisfaction with both AEMRs.</p> <p>In relation to paragraphs b) and c) of this condition relevant to the 2022 AEMR, the Auditors confirmed the required information has been provided, including:</p> <p>b) In the AEMR:</p> <ol style="list-style-type: none"> <li>page 14 documented that in 2022 no non-compliances with the commitments in the POP were observed;</li> <li>page 14 provided details reporting on progress in respect of rehabilitation completion criteria;</li> </ol>	Compliant	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			iv) page 15 provided details reporting on the extent of compliance with regulatory requirements;  v) page 17 provided an assessment giving regard to any relevant guidelines adopted by the Director-General.  c) It was stated that Santos had not received any directions from the Director-General requiring additional environmental reports on specific surface disturbing operations or environmental incidents during the reporting period.  <b>Observation No. 78</b> – The AEMR duplicates the Annual Review required by Development Consent SSD 6456. Santos should consider consulting with the Resources Regulator to discuss the opportunity to align reporting with the Annual Review.  <b>Observation No. 79</b> – The AEMR includes historical information not relevant to the reporting period. Santos may wish to reduce this to information only applicable to the reporting period subject to additional requirements requested by the Director-General.  <b>Observation No. 80</b> – The AEMR and ESG 4 reporting dates are inconsistent. Santos may wish to consult with the Resources Regulator about aligning reporting periods.		
4	<b>Incident reporting</b>  The Lease Holder must, in accordance with Departmental guidelines (if any), report any incidents causing or threatening material harm to the environment.  <i>For the purposes of this condition, harm to the environment is material if:</i>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Annual Environmental Management Report for the period 1 January 2021 to 30 December 2021</li> <li>Annual Environmental Management Report for</li> </ul>	As of August 2023 and for the audit period, it was stated that no environmental incidents causing or threatening material harm to the environment have occurred.  The Auditors sighted the 2021 AEMR and 2022 AEMR which reported that there were no environmental incidents requiring government reporting during the reporting periods.	<b>Compliant</b>	



<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>(i) <i>it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or</i></p> <p>(ii) <i>it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000.</i></p> <p><i>Loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.</i></p>	the period 1 January 2022 to 30 December 2022			
5	<p><b>Rehabilitation</b></p> <p>The Licence Holder must rehabilitate all disturbed land to the satisfaction of the Director-General.</p>	<ul style="list-style-type: none"> <li>Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision No. 0C, issued on 18 November 2022)</li> <li>Appendix F – Photo 32 Bibblewindi 10 Well Pad partial rehabilitation</li> <li>Narrabri Gas Project Partial Rehabilitation Monitoring Report 2022 (Eco Logical Australia) Version: Draft V1, issued 4 April 2023Bibblewindi and Bohena Restoration Monitoring Report 2022 (Eco Logical Australia) Version: Draft V0b, issued 24 February 2023</li> <li>Annual Environmental and Rehabilitation Compliance Report (ESG4) for the period</li> </ul>	<p>As of August 2023 and for the audit period, no active rehabilitation has been completed during the audit period. As of August 2023, Santos has not sought to relinquish any rehabilitated areas within PAL 2.</p> <p>Future and ongoing rehabilitation will be undertaken in accordance with the approved Rehabilitation Management Plan (Doc ID: 041-150-PLA-0001).</p> <p>Notwithstanding the above, during the site inspection as of August 2023, it was observed that partial rehabilitation had occurred on Bibblewindi 10 (see Photo 32).</p> <p>The Auditors sighted the Narrabri Gas Project Partial Rehabilitation Monitoring Report 2022 (Eco Logical Australia) which includes monitoring of PAL 2. These sites (including Bibblewindi 10) were partially rehabilitated prior to the approval of Development Consent SSD 6456.</p> <p>The Auditors sighted the Bibblewindi and Bohena Restoration Monitoring Report 2022 (Eco Logical Australia) providing results for the annual monitoring of native vegetation restoration activities (monitoring sites are detailed in Table 1 of the report). The report states that all sites appear to be</p>	<b>Compliant</b>	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<p>1 September 2021 to 31 August 2022</p> <ul style="list-style-type: none"> <li>Fee Estimate dated 16 March 2023 from E2M for NGP Biodiversity Monitoring Program and Rehabilitation Monitoring Program</li> </ul>	<p>progressing toward stability and self-sustainability; however, some sites would benefit from active restoration actions. Santos stated that recommendations from these monitoring reports are implemented in future years work programs.</p> <p>The Auditors sighted the Annual Environmental and Rehabilitation Compliance Report (ESG4) for the period 1 September 2021 to 31 August 2022 providing a rehabilitation status of existing infrastructure areas.</p> <p>Rehabilitation Monitoring in accordance with the approved Rehabilitation Plan will commence in Spring 2023 as per Fee Estimate dated 16 March 2023 from E2M for NGP Biodiversity Monitoring Program and Rehabilitation Monitoring Program.</p> <p>It was stated that Bibblewindi infrastructure facilities will continue to be maintained for operational purposes and cannot be rehabilitated.</p> <p>It was stated that Santos is proposing to P&amp;A Bohena 3 and 7 wells commencing in 2023.</p> <p><b>Observation No. 81</b> – The Auditors understand that all wells that have been partially rehabilitated will be disturbed during either ongoing well workovers or future well abandonment activities. Santos should ensure the temporary nature of partial rehabilitation areas is reported in Annual Reviews (as per condition D8 of Development Consent SSD 6456) and not reported as completed rehabilitation (as per ESF2 certification).</p>		
<b>Safety</b>					
6	<b>Industry Codes and Standards</b> a) All operations must be carried out in conformity with the <b><i>"Schedule of Onshore Petroleum Exploration and Production"</i></b>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	On 5 September 2023, PAL 2 conditions were varied to align with the Department of Regional NSW <i>Code of Practice for Construction, operation and decommissioning of petroleum wells</i> (first	<b>Not triggered</b>	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p><b>Safety Requirements</b>” published by the industries, as amended from time to time. The Lease Holder must prepare a Safety Management Plan in accordance with the Schedule.</p> <p>b) The design, fabrication, installation, inspection, testing, operation and maintenance of all gas gathering pipelines must conform to the appropriate Australian Standards. Technical records, inspection reports and the results of any tests must be made available to an inspector on request.</p>	<ul style="list-style-type: none"> <li>PAL 2 Instrument of Variation dated 29 August 2023</li> </ul>	<p>issued in February 2023). In accordance with the PAL 2 Instrument of Variation dated 29 August 2023, this condition has been omitted and is considered as not triggered for the purpose of this independent environmental audit.</p>		
7	<p><b>Gathering Pipelines</b></p> <p>a) The gas gathering pipelines shall conform to Australian Standards and International Standards, “including as relevant:</p> <ul style="list-style-type: none"> <li>AS 2885 Pipelines – Gas and liquid petroleum</li> <li>AS 3723 Installation and maintenance of plastic pipe systems for gas Polyethylene (PE) pipe for pressure applications</li> <li>AS 4130 Petroleum and natural gas industries – Glass reinforced plastics (GRP) piping IS 14692”</li> </ul> <p>b) For the purposes of AS 2885 the title holder is deemed to be the licensee. The licensee is required to comply with all requirements in AS 2885 relevant to fibreglass pipeline.</p> <p>c) A copy of the construction program must be given to the Director Mine Safety (or nominated representative) at least 14 days before commencement of works unless approved otherwise by the Director Mine Safety (or nominated representative).</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Procedure 1541-286-WPR-001 Santos Non-Steel Pipeline Production System IMP Methodology</li> <li>Appendix F – Photo 2 OEC Well Head inspection checklist</li> </ul>	<p>It was stated that all gas and gathering lines at the NGP existed prior to the approval of Development Consent SSD 6456.</p> <p>The Auditors and Santos consider that paragraphs b) to e) of this condition are not within the Independent Environmental Audit scope as each of these paragraphs is not a “relevant requirement” pursuant to SSD 6456 condition D9(c).</p> <p>In relation to paragraphs a), f), g), h) and i) of this condition:</p> <p>a) For installation of new gas and water gathering lines, the Auditors sighted the procedure 1541-286-WPR-001 Santos Non-Steel Pipeline Production System IMP Methodology, which describes the steps required to be taken at the NGP to meet the requirements of the APGA Code of Practice (CoP) for Upstream Polyethylene Lines in the CSG Industry, and statutory requirements.</p> <p>This procedure states that some pipelines installed by Eastern Star Gas deviate from the required Santos Standard Dimension Ratio (SDR) pipe and use SDR 21 pipe for some</p>	Compliant	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	d) A minimum of 14 days notice must be given to the Director Mine Safety (or nominated representative) prior to commencement of the gas gathering pipeline installation program and while trenches are open to allow inspection prior to backfilling. e) Safety management plans, technical records, inspection reports and the results of all test reports must be made available to an inspector on request. f) Gas gathering pipelines must not be abandoned except in a manner approved by the Director General. g) All gas gathering pipelines must be buried with a detectable marker tape or wire or other approved means provided for locating the pipe. h) All gas gathering pipelines must be surveyed and prominent markers must be installed at appropriate intervals to show the location of these pipelines. i) The gas gathering system must be maintained free of leaks while in operation and a program implemented to confirm this. Records to be maintained and made available to an inspector on request.		sections within their water and gas systems, lower nominated soil temperatures and the application of higher design/derating factors than those nominated by the APGA CoP. f) No wells have been abandoned during the audit period. g) It was stated that the gas gathering pipelines are buried with a detectable marker tape, however the Auditors could not verify the existence of this marker. h) It was stated that all gas gathering pipelines are surveyed, and the Auditors sighted prominent markers at regular intervals at sections of the pipeline during the field inspection in August 2023. i) The Auditors sighted monthly pipeline inspection records from the Operator Essential Care (OEC) system for the period 1 January 2023 to 1 May 2023. The inspection checklist included general observations and specific HPV and LDP riser checks. It was stated that during these inspections a mobile gas leak detector is used (see Photo 2). Santos conducts annual leak-detection surveys (first completed in May 2023) to address these concerns. Detection of any leaks would result in a work order being raised for corrective actions.		
<b>Wells</b>					
8	<b>Notification of Activities</b> The Lease Holder must provide reasonable notice of disturbing activities to potentially affected parties prior to the commencement of activities on each site.	<ul style="list-style-type: none"> <li>Forestry Corporation of NSW and Santos NSW Pty Ltd – Forestry Permit for Land Access and activities associated with Petroleum Titles</li> </ul>	Land tenure within PAL 2 comprises Forestry Corporation of NSW land and freehold land. The Auditors sighted an existing infrastructure map for PAL 2, PPL 3 and PEL 238 dated March 2015 that showed infrastructure location and land ownership.	<b>Compliant</b>	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<p>Petroleum (Onshore) Act) Act 1991, dated 20 December 2012</p> <ul style="list-style-type: none"> <li>Santos existing infrastructure map for PAL 2, PPL 3 and PEL 238 dated March 2015</li> <li><i>Narrabri Operations Notification of Intention to Visit</i> form – E2M Biodiversity and Ecological Monitoring Surveys</li> <li>Letter dated 12 July 2023 from Santos to Landholders where workover activities were proposed to demonstrate the notification process (not on PAL 2)</li> <li>NSW Forestry Corporation and Santos NGP Annual and Quarterly Work Program Meeting minutes dated 6 June 2023</li> </ul>	<p>Current infrastructure locations are consistent with the existing infrastructure map dated March 2015.</p> <p>As of August 2023 and for the audit period, it was stated that there has not been any new disturbance within PAL 2. Only maintenance mulching was undertaken along the Flow Lines during the audit period. The flowline infrastructure from Leewood surface facilities to Wilga Park Power Station is located on private land along a registered easement. Access to the flowline is along the easement.</p> <p>Santos stated that private property owners are provided with a minimum of 14 days prior to any inspection, monitoring or maintenance activities notwithstanding emergency access requirements.</p> <p>The Auditors sighted evidence where contractors are required to notify Santos to allow the land access team to issue the required notification through the <i>Narrabri Operations Notification of Intention to Visit</i> form for the proposed Biodiversity and Ecological Surveys to be conducted by E2M in September 2023.</p> <p>The Auditors sighted a letter dated 12 July 2023 from Santos to Landholders (outside PAL 2) where workover activities were proposed, as an example to demonstrate the notification process that would be implemented within PAL 2.</p> <p>The flowline infrastructure from Leewood surface facilities to Bibblewindi surface facilities and pilot wells are located on Forestry Corporation of NSW land. Access is via the Forestry Corporation of NSW and Santos NSW Pty Ltd Access Agreement dated 20 December 2012. This Agreement authorises the use of Forestry roads (Section 3.1) and ongoing activities subject to a Works schedule being submitted in June annually and a quarterly meeting to disclose information about the planned</p>		

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>activities (Condition 3.16 and Schedule 8). The Auditors sighted the NGP Annual and Quarterly Work Program Meeting minutes dated 6 June 2023.</p> <p>Disturbance within the Narrabri Shire Council Road easements is subject to a section 138 application to the Council and subsequent approval.</p>		
9	<b>Well Surveying and logging</b> <p>a) The location and height (AHO) of the collar of all wells drilled by the Lease Holder within the lease area must be determined to an accuracy of 1 metre, and the position of the hole within any potentially mineable coal seam must also be determined to an accuracy of 1 metre. This information must be supplied to the Director-General.</p> <p>b) All vertical wells must be downhole geophysically logged prior to the installation of production casing with a logging suite which can accurately determine the location and properties of all production zones, and conventional gas reservoirs. In addition a cement bond log must be run to confirm the integrity of the cement annulus between the wall of the well and the entire length of the casing. All other suites must be run for the entire length of the hole.</p> <p>c) In the event of horizontal wells being drilled, the Lease Holder must supply 3 dimensional co-ordinates determining the path and track of the hole, to the satisfaction of the Director-General.</p> <p>d) The Lease Holder must provide a copy of all geophysical logs to the Director-General within 14 days of completion.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PAL 2 Instrument of Variation dated 29 August 2023</li> </ul>	<p>See comments for PAL 2 condition 6 in this audit report.</p>	<b>Not triggered</b>	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
10	<b>Well Abandonment</b> <p>a) At the completion of production, steel casing must be removed from the vertical interval of any potentially mineable coal seam as determined by the Director Coal &amp; Petroleum Development. Downhole geophysical surveys and/or cameras must be used to confirm the removal of all casing throughout the prescribed interval.</p> <p>b) A well must not be plugged and abandoned except in accordance with the Schedule of Onshore Exploration and Production Safety Requirements, and any other guidelines in force from time to time.</p> <p>c) All wells must be fully sealed in accordance with the Department's guidelines.</p> <p>d) The Lease Holder must, within 2 weeks of the abandonment of any well, submit to the Director- General a report providing details on the following items:</p> <p>i) Location of abandoned well.</p> <p>ii) Termination depth of drillhole and depth to worked seam.</p> <p>iii) Details of drillhole diameter and casing used.</p> <p>iv) Gas and water makes and composition during the drilling and production test phases. The commencement and completion dates of each phase of the operation and the dates of any other significant events.</p> <p>v) The estimated and actual quantities of grout used to seal the drillhole.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PAL 2 Instrument of Variation dated 29 August 2023</li> <li>Letter dated 19 December 2022 from NSW Mining, Exploration and Geosciences (Grant McLatchie - Executive Director Geological Survey of NSW) providing a determination that wells Bohena 3 &amp; Bohena 7 and BBD3, BBD4, BBD7, BBD8 and BBD9 do not intersect with any potential mineable coal seams</li> <li>Memorandum dated 19 July 2023 from Santos [REDACTED] - Senior Completions Engineer) to the NSW Resources Regulator - HRA Notification: Bohena 7 Well Decommissioning</li> <li>Upstream Onshore Emergency Response Plan, Revisions 7 (Doc ID: 0007-210-ERP-0008)</li> <li>Bohena 7 – Plug &amp; Abandonment Cement Program (draft v5)</li> </ul>	<p>See comments for PAL 2 condition 6 in this audit report.</p> <p>As of August 2023 and for the audit period, Santos has not completed any well abandonment activities.</p> <p>It was stated that Santos is proposing to commence abandonment activities on historical wells previously developed by Eastern Star Gas including Bohena 3 &amp; Bohena 7 and BBD3, BBD4, BBD7, BBD8 and BBD9 within PAL 2 and that the steel casing will not be removed from the well prior to P&amp;A as the coal seam has been determined as not mineable.</p> <p>The Auditors noted that prior to the omission of this condition from PAL 2 on 5 September 2023 (refer to Section 2.1 of this audit report):</p> <ul style="list-style-type: none"> <li>The NSW Mining, Exploration and Geosciences has determined that coal seams around the said wells do not intersect with any potential mineable coal seams. The Auditors sighted a letter dated 19 December 2022 from NSW Mining, Exploration and Geosciences (Grant McLatchie - Executive Director Geological Survey of NSW) providing a determination that wells Bohena 3 &amp; Bohena 7 and BBD3, BBD4, BBD7, BBD8 and BBD9 do not intersect with any potential mineable coal seams.</li> <li>The Auditors sighted a High-Risk Activity (HRA) to the NSW Regulator in the form of a Memorandum dated 19 July 2023 from Santos [REDACTED] -Senior Completions Engineer) and supporting documentation including the Upstream Onshore Emergency Response Plan, Revisions 7 (Doc ID: 0007-210-ERP-</li> </ul>	<b>Not triggered</b>	



<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	vi) Evidence of removal of steel casing from the interval encompassing any potentially mineable coal seam.	<ul style="list-style-type: none"> <li>Email dated 31 August 2023 from [REDACTED] (Santos Snr Incident, Emergency Response and Compliance Adviser) confirming that the Bohena 7 HRA was deemed adequate on 23 August 2023</li> </ul>	<p>0008) and Bohena 7 - Plug &amp; Abandonment Cement Program (draft v5).</p> <ul style="list-style-type: none"> <li>This application is to demonstrate to the NSW Resources Regulator that the well will be plugged and abandoned and sealed safely in accordance with Department Guidelines.</li> <li>The Auditors sighted a screenshot from the NSW Resources Regulator Portal (included in an email dated 31 August 2023 from [REDACTED] (Santos Snr Incident, Emergency Response and Compliance Adviser)) confirming that the Bohena 7 HRA was deemed adequate on 23 August 2023.</li> <li>It was stated that there have not been any wells abandoned in PAL 2 for over 10 years. Bohena 7 will be the first well P&amp;A since the approval of Development Consent SSD 6456.</li> </ul>		
<b>Impact on Coal Seams</b>					
11	<b>Impact on coal seams</b> <p>a) The Lease Holder must undertake all activities with due regard to identifying, managing and minimising the impact of the activities on the potential mineability of coal seams at the expiration of the lease.</p> <p>b) The Director-General may request the Lease Holder to provide to the Department all geological information pertinent to the drilling of any well in the lease area. The Director-General may request additional tests and data if required. The Lease Holder must comply with any such requests.</p>	<ul style="list-style-type: none"> <li>Letter dated 19 December 2022 from NSW Mining, Exploration and Geosciences (Grant McLatchie - Executive Director Geological Survey of NSW) providing a determination that wells Bohena 3 &amp; Bohena 7 and BBD3, BBD4, BBD7, BBD8 and BBD9 do not intersect with any potential mineable coal seams</li> </ul>	<p>The Auditors and Santos consider that this condition has not been triggered as the NSW Mining, Exploration and Geosciences has determined in a letter dated 19 December 2022 from Grant McLatchie - Executive Director Geological Survey of NSW, that coal seams around wells Bohena 3 &amp; Bohena 7 and BBD3, BBD4, BBD7, BBD8 and BBD9 do not intersect with any potential mineable coal seams. These wells are located throughout PAL 2.</p> <p><b>Observation No. 82</b> – The current letter dated 19 December 2022 from NSW Mining, Exploration and Geosciences is relevant to specific wells for determining the mineability of coal seams. Using current geological data and other relevant information, Santos should consult MEG to seek a</p>	<b>Not triggered</b>	



<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			determination on the mineability of coal seams for all of PAL 2.		
12	<b>Well Casing</b> No steel casing is to remain in any coal seam identified by the Department of Primary Industries as a mineable coal seam. As an alternative to steel casing, glass reinforced epoxy liners may be used subject to separate approval of the Director-General.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PAL 2 Instrument of Variation dated 29 August 2023</li> </ul>	See PAL 2 condition 6 comments in this audit report.	<b>Not triggered</b>	
<b>Operations Generally</b>					
13	<b>Disruption to Utilities</b> a) If the activities carried out pursuant to this Lease will in any way impact on any utility, the Lease Holder must inform the authority in control of the utility and provide sufficient information for the authority to assess the proposal or its impacts. b) The Lease Holder must pay costs for remediation or repair of damage to utilities caused by the Lease Holder's operations and associated activities.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, the Auditors and Santos consider that this condition has not been triggered, as it was stated that NGP activities have not impacted or relocated any public infrastructure since the approval of Development Consent SSD 6456 and for the duration of the audit period.  During the field inspection in August 2023, the Auditors observed for the well pads inspected, that there were no electrical or water utilities connected to Leewood or Bibblewindi.	<b>Not triggered</b>	
<b>Geological &amp; Production Reporting</b>					
14	<b>Well drilling</b> a) While a drilling activity is taking place, the Lease Holder must submit a daily drilling report to the Director-General. b) The Lease Holder must submit a weekly progress report containing a summary of any test results and problems encountered. The	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition is not within the Independent Environmental Audit scope as it is not a "relevant requirement" pursuant to SSD 6456 condition D9(c).  As of August 2023, the Auditors have determined that this condition is not triggered.	<b>Not triggered</b>	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>weekly progress report must be submitted to the Director-General.</p> <p><i>Note: These reports are in addition to the reporting requirements under s.131 of the Petroleum (Onshore) Act and the Petroleum (Onshore) Regulation, 2007.</i></p>				
15	<p><b>Well Assessment</b></p> <p>The lease holder must submit the following reports to the Director-General within seven (7) days of the completion of each month's activity:</p> <p>i) Gas flow rates and compositions for each well connected to the gas gathering system; and</p> <p>ii) Total gas flow into the treatment facility.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition is not within the Independent Environmental Audit scope as it is not a "relevant requirement" pursuant to SSD 6456 condition D9(c).</p> <p>As of August 2023, the Auditors have determined that this condition is not triggered.</p>	<b>Not triggered</b>	
16	<p><b>General</b></p> <p>The lease holder must submit to the Director-General, a copy of all reports undertaken relating to the interpretation of the results of work carried out in the area, including geological and geophysical reports as well as engineering reports. These reports must be submitted within six (6) months of the completion of the assessment.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>The Auditors and Santos consider that this condition is not within the Independent Environmental Audit scope as it is not a "relevant requirement" pursuant to SSD 6456 condition D9(c).</p> <p>As of August 2023, the Auditors have determined that this condition is not triggered.</p>	<b>Not triggered</b>	
<b>Security</b>					
17	<p><b>Security</b></p> <p>a) The Lease Holder must lodge a security with the Minister in the sum set out in Appendix 2 for the purpose of ensuring the fulfilment of the Lease Holder's obligations under this licence.</p> <p>b) The security may be lodged in one of the following forms:</p> <p>i) cash;</p>	<ul style="list-style-type: none"> <li>PAL 2 Rehabilitation Cost Estimate (RCE) dated 26 October 2022 calculating the maximum rehabilitation cost at \$39,033,364</li> <li>Email dated 15 December 2022 from NSW Mining, Exploration &amp; Geoscience (Ref MEG/M2005/2632#4)</li> </ul>	<p>The Auditors confirmed that Santos has lodged the required security by sighting:</p> <ul style="list-style-type: none"> <li>the PAL 2 Rehabilitation Cost Estimate (RCE). The Auditors sighted this revised RCE dated 26 October 2022 calculating the maximum rehabilitation cost at \$39,033,364;</li> <li>an email dated 15 December 2022 from NSW Mining, Exploration &amp; Geoscience (Ref MEG/M2005/2632#4) providing a notice of variation of security deposit condition to vary</li> </ul>	<b>Compliant</b>	

<b>Petroleum Assessment Lease 2 (PAL 2)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	ii) a security certificate in a form approved by the Minister and issued by an authorised deposit- taking institution.  c) The Lease Holder must not carry out any activities under the authority conferred by this Lease unless the Security required by this condition has been lodged with the Director-General and the Lease Holder has received receipt of the lodgement.  <i>Note: This condition is imposed pursuant to section 16 of the Petroleum (Onshore) Act 1991. The amount of the security required by this condition can be varied by written notice served on the Lease Holder.</i>	providing a notice of variation of security deposit condition  <ul style="list-style-type: none"> <li>Email dated 31 August 2023 from MEG confirming that there is no outstanding security amount for PAL 2</li> <li>PEL238 (1955) TAS Full Details Report – Surety Details dated 31 August 2023</li> </ul>	the security deposit condition to change the required amount of the deposit from \$34,0027,931 to \$39,033,364;  <ul style="list-style-type: none"> <li>PEL238 (1955) TAS Full Details Report – Surety Details dated 31 August 2023, confirming that 4 different securities totalling \$39,033,364 are currently held by Trade &amp; Investment – Resources &amp; Energy Division;</li> <li>an email dated 31 August 2023 from MEG confirming that there is no outstanding security amount for PAL 2.</li> </ul>		

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
<b>Environmental Management Conditions</b>					
1	<b>Environmental Harm</b> The Lease Holder must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of any exploration activities. <b>Auditors' Note:</b> "environment" and "harm to the environment" are defined in condition 1 of PAL 2, and not defined in this condition.	<ul style="list-style-type: none"> <li>Narrabri Gas Project EIS Risk Assessment – Chapter 25 (Table 25-2)</li> <li>Environmental Management Report 2021 (EMR) (also known as "AEMR") for the period 15 December 2020 to 14 December 2021</li> <li>Environment Management Strategy (Doc ID: 0041-150-PLA-0003, Revision No. 0A, issued on 10 November 2022)</li> <li>IDP Presentation_2022.pptx provides an overview of the IDP process</li> <li>Contractor packs and specific ground clearance conditions</li> <li>NGP Ice Breaker presentation – Environmental awareness Training</li> <li>Appendix F – Photo 2 OEC Well Head inspection checklist</li> </ul>	<p>As of August 2023 and for the audit period, Santos stated that there have been no environmental incidents which resulted in unauthorised environmental harm on PPL 3.</p> <p>The existing gas field infrastructure within PPL 3 was developed by Eastern Star Gas in the 1990s. Production operations within PPL 3 ceased in March 2010 (as noted in Section 2 of the 2021 EMR). There has been no development of new infrastructure since this time.</p> <p>It was stated that Santos continues to maintain all PPL 3 infrastructure in accordance with ongoing monitoring programs and maintenance practices.</p> <p>It was stated that Santos implements the NGP Environmental Management Plans that detail the measures to manage and mitigate the impacts detailed in the Narrabri Gas Project EIS – Chapter 25 (Table 25-2).</p> <p>In audit interviews and field inspections as of August 2023, the Auditors sighted processes and physical controls being implemented to minimise and prevent environmental harm, including:</p> <ul style="list-style-type: none"> <li>minimising the size of well pad areas;</li> <li>the IDP process;</li> <li>Environmental Awareness training for contractors – Ice Breaker presentation;</li> <li>issuing contractor packs and specific ground clearance conditions;</li> <li>site-specific ESCPs, where required;</li> </ul>	<b>Compliant</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<ul style="list-style-type: none"> <li>monitoring and inspection programs, e.g. OEC (Photo 2).</li> </ul>		
2	<b>Petroleum Operations Plan</b> a) Activities must only be carried out in accordance with a Petroleum Operations Plan (POP) which has been approved by the Director-General of the Department of Primary Industries. b) The POP must: <ol style="list-style-type: none"> <li>identify areas that will be disturbed by operations;</li> <li>detail the staging of specific operations;</li> <li>identify how operations will be managed to allow closure of the site;</li> <li>identify how operations will be carried out on site in order to prevent and or minimise harm to the-environment, including groundwater;</li> <li>reflect conditions of approval under:               <ol style="list-style-type: none"> <li>the <i>Environmental Planning and Assessment Act 1979</i>;</li> <li>the <i>Protection of the Environment Operations Act 1997</i>; and</li> <li>any other approvals relevant to the development including the conditions of this lease; and</li> </ol> </li> <li>have regard to any relevant guidelines adopted by the Director-General.</li> </ol> c) The Lease Holder may apply to the Director-General to amend an approved POP at any time.	<ul style="list-style-type: none"> <li>Petroleum Operations Plan (POP) for the period 23 May 2022 – 15 Dec 2024</li> <li>Letter dated 8 Dec 2022 from Resources Regulator approving POP for the period until 15 December 2024</li> <li>Letter dated 15 August 2019 from NSW Resources Regulator approving the previous POP (that was submitted to the Resources Regulator on 20 June 2019, Dept Ref: DOC19/573209) for the period 20 June 2019 to 22 May 2022</li> </ul>	<p>The Auditors sighted the Petroleum Operations Plan (POP) for the period 23 May 2022 to 15 December 2024 and an email dated 18 May 2022 from [REDACTED] (Santos Senior Environmental Advisor) to the Resources Regulator confirming the submission of the POP.</p> <p>The Auditors sighted a letter dated 8 December 2022 from the NSW Resources Regulator approving this POP (Ref: MAAG0014186) until 15 December 2024.</p> <p>The Auditors also sighted a letter dated 15 August 2019 from the NSW Resources Regulator to Santos approving the previous POP (that was submitted to the Resources Regulator on 20 June 2019, Dept Ref: DOC19/573209) for the period 20 June 2019 to 22 May 2022.</p> <p><b>Observation No. 83</b> – The submission of the POP (18 May 2022) was prior to the approval of the Environmental Management Plans required by Development Consent SSD 6456. Santos should ensure that future POP revisions refer to the approved strategy, management plans and programs.</p>	<b>Compliant</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>d) It is not a breach of this condition if:</p> <ul style="list-style-type: none"> <li>i) the operations constituting the breach were necessary to comply with a lawful order or direction given under the <i>Petroleum (Onshore) Act 1991</i>, the <i>Environmental Planning and Assessment Act 1979</i>, Protection of the <i>Environment Operations Act 1997</i> or the <i>Occupational Health and Safety Act 2000</i>; and</li> <li>ii) the Director-General had been notified of the terms of the order or direction prior to the operations constituting the breach being carried out.</li> </ul> <p><i>Note: The Director-General is deemed to be notified of the terms of an order or direction if the order or direction was issued by the Department.</i></p> <p>e) A POP ceases to have affect 7 years after the date of approval or other such period as specified by the Director-General. An approved amendment to the POP under part c) of this condition, does not constitute an approval for the purpose of this paragraph unless otherwise specified by the Director-General.</p>				
3	<b>Environment Management Reporting</b> <p>a) The Lease Holder must lodge Environmental Management Reports (EMR) with the Director-General annually or at dates otherwise specified by the Director-General.</p> <p>b) The EMR must:</p> <ul style="list-style-type: none"> <li>i) report against compliance with the POP;</li> <li>ii) report on progress in respect of rehabilitation completion criteria;</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental Management Report (EMR) for the period 15 December 2021 to 14 December 2022</li> <li>• Email dated 15 December 2022 from [REDACTED] (Santos Senior Environmental Advisor) to The Resources Regulator confirming the submission of the EMR for PPL 3</li> </ul>	<p>As of August 2023 and for the audit period, Santos has submitted the EMR as required by the paragraphs of this condition. (Auditors' Note: In this audit report, an annual EMR is also regarded as an AEMR.)</p> <p>In relation to paragraph a) of this condition:</p> <p>a) The Auditors sighted the Environmental Management Report (EMR) for the periods 15 December 2021 to 14 December 2022 and 15 December 2020 to 14 December 2021, including emails dated 17 December 2022 and 17 December 2021 from [REDACTED] (Santos</p>	Compliant	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	iii) report on the extent of compliance with regulatory requirements; and iv) have regard to any relevant guidelines adopted by the Director-General. c) Additional environmental reports may be required on specific surface disturbing operations or environmental incidents from time to time as directed in writing by the Director-General and must be lodged as instructed.	<ul style="list-style-type: none"> <li>Email dated 17 December 2022 from [REDACTED] (Santos Environmental Advisor) to the Resources Regulator, and EPA confirming the submission of the EMR</li> <li>Environmental Management Report (EMR) for the period 15 December 2020 to 14 December 2021</li> <li>Email dated 17 December 2021 from [REDACTED] (Santos Environmental Advisor) to the Resources Regulator, and EPA confirming the submission of the EMR</li> </ul>	<p>Environmental Advisor) to the Resources Regulator and EPA, formally submitting the PPL 3 AEMR.</p> <p>It was stated that Santos did not receive any correspondence from the NSW Resources Regulator, MEG or the EPA regarding concerns or satisfaction with both AEMRs.</p> <p>In relation to paragraphs b) and c) of this condition relevant to the 2022 AEMR, the Auditors confirmed the required information has been provided, including:</p> <p>b) In the AEMR:</p> <ul style="list-style-type: none"> <li>i) Section 4 stated that in 2022 Santos continued to manage PPL 3 assets in accordance with the approved POP and that no complaints were received during the reporting period;</li> <li>ii) Section 4.2 discloses that there were no P&amp;A activities during the reporting period and that the farmer continues to enjoy full access to the sites that have been P&amp;A and rehabilitated; however, progress against the required rehabilitation performance criteria was not provided;</li> <li>iii) Section 7 reports on the extent of compliance against the relevant statutory approvals and confirms that there have been no non-compliances with the EPL and Development Consent conditions;</li> <li>iv) Table 4 provides a statement of Santos's activities against the relevant Industry codes and standards.</li> </ul> <p>c) It was stated that Santos had not received any directions from the Director-General requiring additional environmental reports on specific</p>		

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>surface disturbing operations or environmental incidents during the reporting period.</p> <p><b>Observation No. 84</b> – Section 2.2 in the PPL 3 AEMR does not acknowledge the 2008 and 2010 amendments to the PPL 3 instrument. This history should be documented.</p> <p><b>Observation No. 85</b> – The AEMR duplicates the Annual Review required by Development Consent SSD 6456. Santos should consider consulting with the Resources Regulator to discuss the opportunity to align reporting with the Annual Review.</p> <p><b>Observation No. 86</b> – The AEMR and ESG 4 reporting dates are inconsistent. Santos may wish to consult with the Resources Regulator about aligning reporting periods.</p>		
4	<p><b>Incident reporting</b></p> <p>The Licence Holder must report any incidents causing or threatening material harm to the environment in accordance with Departmental guidelines.</p> <p>For the purposes of this condition, harm to the environment is material if:</p> <p>(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or</p> <p>(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000.</p> <p>Loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Annual Environmental Management Report 2021 for the period 15 December 2020 to 14 December 2021</li> <li>Annual Environmental Management Report 2022 for the period 15 December 2021 to 14 December 2022</li> </ul>	<p>As of August 2023 and for the audit period, it was stated that no environmental incidents causing or threatening material harm to the environment have occurred.</p> <p>The Auditors sighted the 2021 AEMR and 2022 AEMR which reported that there were no environmental incidents requiring government reporting during the reporting periods.</p>	<b>Compliant</b>	



<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
5	<b>Rehabilitation</b> Disturbed land must be rehabilitated to a sustainable/agreed end land use to the satisfaction of the Director-General.	<ul style="list-style-type: none"> <li>Rehabilitation Management Plan (Doc ID: 0041-150-PLA-0001, Revision No. 0C, issued on 18 November 2022)</li> <li>Appendix F – Photo 35 Coonarah Well Pad 4 – Suspended Well</li> <li>Annual Environmental and Rehabilitation Compliance Report (ESG4) for the period 1 September 2021 to 31 August 2022</li> </ul>	<p>As of August 2023 and for the audit period, no active rehabilitation has been completed during the audit period. As of August 2023, Santos has not sought to relinquish any rehabilitated areas within PPL 3.</p> <p>Future and ongoing rehabilitation will be undertaken to meet the agreed rehabilitation criteria detailed in SSD 6456 and in accordance with the approved Rehabilitation Management Plan (Doc ID: 041-150-PLA-0001).</p> <p>Notwithstanding the above, during the site inspection as of August 2023, it was observed that partial rehabilitation had occurred on Coonarah 4 (see Photo 35). This site was partially rehabilitated prior to the approval of Development Consent SSD 6456.</p> <p>The Auditors sighted the Annual Environmental and Rehabilitation Compliance Report (ESG4) for the period 1 September 2021 to 31 August 2022 providing a rehabilitation status of existing infrastructure areas.</p> <p>It was stated that Santos is proposing to P&amp;A Coonarah 4 commencing in 2024.</p> <p><b>Observation No. 87</b> – The Auditors understand that all wells that have been partially rehabilitated will be disturbed during either ongoing well workovers or future well abandonment activities. Santos should ensure the temporary nature of partial rehabilitation areas is reported in Annual Reviews (as per condition D8 of Development Consent SSD 6456) and not reported as completed rehabilitation (as per ESF2 certification).</p>	<b>Compliant</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
<b>Safety</b>					
6	<b>Industry Codes and Standards</b> a) All operations must be carried out in conformity with the <b><i>“Schedule of Onshore Petroleum Exploration and Production Safety Requirements”</i></b> published by the industries, as amended from time to time. The Lease Holder must prepare a Safety Management Plan in accordance with the Schedule. b) The design, fabrication, installation, inspection, testing, operation and maintenance of all gas gathering pipelines must conform to the appropriate Australian Standards. Technical records, inspection reports and the results of any tests must be made available to an inspector on request.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PPL 3 Instrument of Variation dated 29 August 2023</li> </ul>	On 5 September 2023, PPL 3 conditions were varied to align with the Department of Regional NSW <i>Code of Practice for Construction, operation and decommissioning of petroleum wells</i> (first issued in February 2023). In accordance with the PPL 3 Instrument of Variation dated 29 August 2023, this condition has been omitted and is considered as not triggered for the purpose of this independent environmental audit.	<b>Not triggered</b>	
7	<b>Gathering Pipelines</b> a) Notice must be given to the Director-General prior to the commencement of the gas gathering pipeline installation program while trenches are open to allow inspection prior to backfilling. b) All gas gathering pipelines must be buried with an electronically conductive wire or other approved means provided for locating the pipe. c) All gas gathering pipelines must be surveyed and prominent markers must be installed at appropriate intervals to show the location of these pipelines. d) A progress report must be submitted to the Director General on or before the 15 <sup>th</sup> day of	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Environmental Management Report (EMR) 2021 (also known as “AEMR”) for the period 15 December 2020 to 14 December 2021</li> <li>Procedure 1541-286-WPR-001 Santos Non-Steel Pipeline Production System IMP Methodology</li> <li>Appendix F – Photo 2 OEC Well Head inspection checklist</li> </ul>	It was stated that all gas and gathering lines at the NGP existed prior to the approval of Development Consent SSD 6456.  The existing gas field infrastructure within PPL 3 was developed by Eastern Star Gas in the 1990s. Production operations within PPL 3 ceased in March 2010 (as noted in Section 2 of the 2021 EMR). There has been no development of new infrastructure since this time.  It was stated that Santos continues to maintain all PPL 3 infrastructure in accordance with ongoing monitoring programs and maintenance practices.  In relation to paragraphs a) to f) of this condition: a) Construction of the Pipeline occurred prior to the approval of Development Consent	<b>Compliant</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>each month during construction and installation of gas gathering pipeline.</p> <p>e) The gas gathering system must be maintained free of leaks while in operation and a program implemented to confirm this. Records to be maintained and made available to an inspector on request.</p> <p>f) Gas gathering pipelines must not be abandoned except in a manner approved by the Director General.</p>		<p>SSD 6456 and Santos's ownership of the Project.</p> <p>b) It was stated that the gas gathering pipelines are buried with a detectable marker tape; however, the Auditors could not verify the existence of this marker.</p> <p>c) It was stated that all gas gathering pipelines are surveyed. The Auditors sighted prominent markers at regular intervals at sections of the pipeline during the field inspection in August 2023.</p> <p>d) Construction of the pipeline occurred prior to the approval of Development Consent SSD 4656 and Santos's ownership of the Project.</p> <p>e) The Auditors sighted monthly pipeline inspection records from the Operator Essential Care (OEC) system for the period 1 January 2023 to 1 May 2023. The inspection checklist included general observations and specific HPV and LDP riser checks. It was stated that during these inspections a mobile gas leak detector is used (see Photo 2).</p> <p>f) No gathering pipelines have been abandoned during the audit period.</p>		
<b>Wells</b>					
8	<p><b>Notification of Activities</b></p> <p>The Lease Holder must provide reasonable notice of disturbing activities to potentially affected parties prior to the commencement of activities on each site. The Lease Holder must accommodate reasonable requests for limited rescheduling of activities.</p>	<ul style="list-style-type: none"> <li>Santos existing infrastructure map for PAL 2, PPL 3 and PEL 238 dated March 2015</li> <li><i>Narrabri Operations Notification of Intention to Visit</i> form – E2M</li> </ul>	<p>Land tenure within PPL 3 is predominantly freehold land. The Auditors sighted an existing infrastructure map for PAL 2, PPL 3 and PEL 238 dated March 2015 that showed infrastructure location and land ownership. Current infrastructure locations are consistent with the existing infrastructure map dated March 2015.</p>	<b>Compliant</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
		<p>Biodiversity and Ecological Monitoring Surveys</p> <ul style="list-style-type: none"> <li>Letter dated 12 July 2023 from Santos to Landholders where workover activities were proposed to demonstrate the notification process (not on PPL 3)</li> <li>Letter dated 24 July 2023 from Narrabri Shire Council authorising maintenance work within a road easement under Section 138 of the Roads Act 1993</li> </ul>	<p>As of August 2023 and for the audit period, it was stated that there has not been any new disturbance within PPL 3. Only maintenance mulching was undertaken along the Flow Lines during the audit period. The flowline infrastructure from Coonarah Gas Wells to Wilga Park Power Station is located on private land along a registered easement. Access to the flowline is along the easement and through private property.</p> <p>Santos stated that private property owners are provided with a minimum of 14 days prior to any inspection, monitoring or maintenance activities notwithstanding emergency access requirements.</p> <p>It was stated that during the audit period, there have been no requests to reschedule activities.</p> <p>The Auditors sighted evidence where contractors are required to notify Santos to allow the land access team to issue the required notification through the <i>Narrabri Operations Notification of Intention to Visit</i> form for the proposed Biodiversity and Ecological Surveys to be conducted by E2M in September 2023.</p> <p>The Auditors sighted a letter dated 12 July 2023 from Santos to Landholders (outside PPL 3) where workover activities were proposed, as an example to demonstrate the notification process that would be implemented within PPL 3.</p> <p>Disturbance within the Narrabri Shire Council Road easements is subject to a section 138 application to the Council and subsequent approval.</p>		
9	<b>Well Surveying and logging</b> a) The location and height (AHD) of the collar of all wells drilled by the Lease Holder within the lease area must be determined to an accuracy of 1 metre, and the position of the hole within	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	See comments for PPL 3 condition 6 in this audit report.	<b>Not triggered</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>any potentially mineable coal seam must also be determined to an accuracy of 1 metre. This information must be supplied to the Director-General.</p> <p>b) All vertical wells must be downhole geophysically logged prior to the installation of production casing with a logging suite which can accurately determine the location and properties of all production zones, and conventional gas reservoirs. In addition a cement bond log must be run to confirm the integrity of the cement annulus between the wall of the well and the entire length of the casing. All other suites must be run for the entire length of the hole.</p> <p>c) In the event of horizontal wells being drilled, the Lease Holder must supply 3 dimensional co-ordinates determining the path and track of the hole, to the satisfaction of the Director-General.</p> <p>d) The Lease Holder must provide a copy of all geophysical logs to the Director-General within 14 days of completion.</p>	<ul style="list-style-type: none"> <li>PPL 3 Instrument of Variation dated 29 August 2023</li> </ul>			
10	<p><b>Well Abandonment</b></p> <p>a) At the completion of production, steel casing must be removed from the vertical interval of any potentially mineable coal seam as determined by the Director Coal &amp; Petroleum Development. Downhole geophysical surveys and/or cameras must be used to confirm the removal of all casing throughout the prescribed interval.</p> <p>b) A well must not be plugged and abandoned except in accordance with the <i>Schedule of Onshore Exploration and Production Safety</i></p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PPL 3 Instrument of Variation dated 29 August 2023</li> <li>Letter dated 19 December 2022 from NSW Mining, Exploration and Geosciences (Grant McLatchie - Executive Director Geological Survey of NSW) providing</li> </ul>	<p>See comments for PPL 3 condition 6 in this audit report.</p> <p>As of August 2023 and for the audit period, Santos has not completed any well abandonment activities.</p> <p>It was stated that Santos is proposing to commence abandonment activities on historical wells previously developed by Eastern Star Gas including Coonarah 4 and that the steel casing will not be removed from the well prior to P&amp;A as the coal seam has been determined as not mineable.</p>	<b>Not triggered</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p><i>Requirements</i>, and any other guidelines in force from time to time.</p> <p>c) All wells must be fully sealed in accordance with the Department's guidelines.</p> <p>d) The Lease Holder must, within 2 weeks of the abandonment of any well, submit to the Director-General a report providing details on the following items:</p> <p>i) Location of abandoned well.</p> <p>ii) Termination depth of drillhole and depth to worked seam.</p> <p>iii) Details of drillhole diameter and casing used.</p> <p>iv) Gas and water makes and composition during the drilling and production test phases. The commencement and completion dates of each phase of the operation and the dates of any other significant events.</p> <p>v) The estimated and actual quantities of grout used to seal the drillhole.</p> <p>vi) Evidence of removal of steel casing from the interval encompassing any potentially mineable coal seam.</p>	<p>a determination that Coonarah 4 does not intersect with any potential mineable coal seams</p> <ul style="list-style-type: none"> <li>Upstream Onshore Emergency Response Plan, Revisions 7 (Doc ID: 0007-210-ERP-0008)</li> <li>Email dated 18 September 2023 from [REDACTED] (Santos Snr Incident, Emergency Response and Compliance Adviser) confirming that the Coonarah 4 HRA was deemed adequate on 12 September 2023</li> </ul>	<p>The Auditors noted that prior to the omission of this condition from PPL 3 on 5 September 2023 (refer to Section 2.1 of this audit report):</p> <ul style="list-style-type: none"> <li>The NSW Mining, Exploration and Geosciences has determined that coal seams around the said wells do not intersect with any potential mineable coal seams. The Auditors sighted a letter dated 19 December 2022 from NSW Mining, Exploration and Geosciences (Grant McLatchie - Executive Director Geological Survey of NSW) providing a determination that Coonarah 4 does not intersect with any potential mineable coal seams.</li> <li>The Auditors sighted a screenshot from the NSW Resources Regulator Portal (included in an email dated 18 September 2023 from [REDACTED] (Santos Snr Incident, Emergency Response and Compliance Adviser)) confirming that the Coonarah 4 HRA was deemed adequate on 12 September 2023.</li> </ul>		
<b>Impact on Coal Seams</b>					
11	<p><b>Impact on coal seams</b></p> <p>a) The Lease Holder must undertake all activities with due regard to identifying, managing and minimising the impact of the activities on the potential mineability of coal seams at the expiration of the lease.</p>	<ul style="list-style-type: none"> <li>Letter dated 19 December 2022 from NSW Mining, Exploration and Geosciences (Grant McLatchie - Executive Director Geological Survey of NSW) providing a determination that</li> </ul>	<p>The Auditors and Santos consider that this condition has not been triggered as the NSW Mining, Exploration and Geosciences has determined in a letter dated 19 December 2022 from Grant McLatchie - Executive Director Geological Survey of NSW, that coal seams around Coonarah 4 well does not intersect with any</p>	<b>Not triggered</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	b) The Director-General may request the Lease Holder to provide to the Department all geological information pertinent to the drilling of any well in the lease area. The Director-General may request additional tests and data if required. The Lease Holder must comply with any such requests.	Coonarah 4 well does not intersect with any potential mineable coal seams	potential mineable coal seams. These wells are located throughout PPL 3.		
12	<b>Well Casing</b> As an alternative to steel casing, glass reinforced epoxy liners may be used across the Bulli coal seam subject to separate approval of the Director-General.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>PPL 3 Instrument of Variation dated 29 August 2023</li> </ul>	See PPL 3 condition 6 comments in this audit report.	<b>Not triggered</b>	
<b>Operations Generally</b>					
13	<b>Commercial Production</b> The Lease Holder must notify the Director-General when commercial production commences. The notification must be in writing and must be provided to the Director General within 7 days of the commencement of commercial production. <b>Commercial production</b> in this condition means the use by or supply to any person (including the Lease Holder) of any petroleum extracted from the Lease area for any purpose other than well assessment, flaring or equipment testing (not resulting in the generation of energy or supply of petroleum for commercial purposes).	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>Environmental Management Report 2021 (EMR) (also known as "AEMR") for the period 15 December 2020 to 14 December 2021</li> </ul>	The Auditors and Santos consider that this condition has not been triggered during the audit period. The existing gas field infrastructure within PPL 3 was developed by Eastern Star Gas in the 1990s. Production operations within PPL 3 ceased in March 2010 (as noted in Section 2 of the 2021 EMR). There has been no development of new infrastructure since this time.	<b>Not triggered</b>	
14	<b>Disruption to Utilities</b> a) If the activities carried out pursuant to this Lease will in any way impact on any utility, the Lease Holder must inform the authority in control of the utility and provide sufficient	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, the Auditors and Santos consider that this condition has not been triggered, as it was stated that NGP activities have not impacted or relocated any public infrastructure since the approval of Development Consent SSD 6456 and for the duration of the audit period.	<b>Not triggered</b>	



<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	information for the authority to assess the proposal or its impacts.  b) The Lease Holder must pay costs for remediation or repair of damage to utilities caused by the Lease Holder's operations and associated activities.				
<b>Geological &amp; Production Reporting</b>					
15	<b>Well drilling</b>  a) While a drilling activity is taking place, the Lease Holder must submit a daily drilling report to the Director-General.  b) The Lease Holder must submit a weekly progress report containing a summary of any test results and problems encountered. The weekly progress report must be submitted to the Director-General.  <i>Note: These reports are in addition to the reporting requirements under s.131 of the Petroleum (Onshore) Act and the Petroleum (Onshore) Regulation, 2007.</i>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition is not within the Independent Environmental Audit scope as it is not a "relevant requirement" pursuant to SSD 6456 condition D9(c).  As of August 2023, the Auditors have determined that this condition is not triggered.	<b>Not triggered</b>	
16	<b>Well Assessment</b>  The lease holder must submit the following reports to the Director-General within seven (7) days of the completion of each month's activity:  i) Gas flow rates and compositions for each well connected to the gas gathering system; and  ii) Total gas flow into the treatment facility.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition is not within the Independent Environmental Audit scope as it is not a "relevant requirement" pursuant to SSD 6456 condition D9(c).  As of August 2023, the Auditors have determined that this condition is not triggered.	<b>Not triggered</b>	
17	<b>General</b>  The lease holder must submit to the Director-General, a copy of all reports undertaken relating to the interpretation of the results of work carried out in the area, including geological and	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Auditors and Santos consider that this condition is not within the Independent Environmental Audit scope as it is not a "relevant requirement" pursuant to SSD 6456 condition D9(c).	<b>Not triggered</b>	



Petroleum Production Lease 3 (PPL 3) (excluding Instrument of Variation dated 29 August 2023)					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	geophysical reports as well as engineering reports. These reports must be submitted within six (6) months of the completion of the assessment.		As of August 2023, the Auditors have determined that this condition is not triggered.		
<b>Security</b>					
18	<b>Security</b> <ol style="list-style-type: none"> <li>The Lease Holder must lodge a security with the Minister in the sum set out in Appendix 2 for the purpose of ensuring the fulfilment of the Lease Holder's obligations under this licence.</li> <li>The security may be lodged in one of the following forms: <ol style="list-style-type: none"> <li>cash;</li> <li>a security certificate in a form approved by the Minister and issued by an authorised deposit- taking institution.</li> </ol> </li> <li>The Lease Holder must not carry out any activities under the authority conferred by this Lease unless the Security required by this condition has been lodged with the Director-General and the Lease Holder has received receipt of the lodgement.</li> </ol> <p><i>Note: This condition is imposed pursuant to section 16 of the Petroleum (Onshore) Act 1991. The amount of the security required by this condition can be varied by written notice served on the Lease Holder.</i></p>	<ul style="list-style-type: none"> <li>Letter dated 8 December 2022 from NSW Mining, Exploration &amp; Geoscience (Ref MAAG0014186/LETT0007781) confirming the current \$1,444,000 is adequate and will be retained by the Department</li> <li>PEL238 (1955) TAS Full Details Report – Surety Details dated 31 August 2023, confirming that one security of \$1,444,000 is currently held by Trade &amp; Investment – Resources &amp; Energy Division</li> <li>Email dated 31 August 2023 from MEG confirming that there is no outstanding security amount for PPL 3</li> </ul>	<p>The Auditors confirmed that Santos has lodged the required security by sighting:</p> <ul style="list-style-type: none"> <li>a letter dated 8 December 2022 from NSW Mining, Exploration &amp; Geoscience (Ref MAAG0014186/LETT0007781) determining that the security deposit is to be reduced to \$1,419,626; however, Santos has not requested a reduction, therefore the current \$1,444,000 will be retained by the Department;</li> <li>PEL238 (1955) TAS Full Details Report – Surety Details dated 31 August 2023, confirming that one security totalling \$1,444,000 is currently held by Trade &amp; Investment – Resources &amp; Energy Division;</li> <li>an email dated 31 August 2023 from MEG confirming that there is no outstanding security amount for PPL 3.</li> </ul>	<b>Compliant</b>	
<b>Cooperation</b>					
19	<b>Cooperation Agreement</b> <p>The lease holder must make every reasonable attempt, and be able to demonstrate their attempts, to enter into a cooperation agreement with the holder(s) of any overlapping coal title(s). The</p>	<ul style="list-style-type: none"> <li>Screenshot of a MinView search for overlapping Coal Titles over PPL 3</li> </ul>	As of August 2023, Santos stated that there are no overlapping coal titles over PPL 3, and therefore this condition has not been triggered.	<b>Not triggered</b>	

<b>Petroleum Production Lease 3 (PPL 3)</b> <b>(excluding Instrument of Variation dated 29 August 2023)</b>					
<b>Condition</b>	<b>Condition Requirement</b>	<b>Evidence Collected</b>	<b>Independent Audit Findings and Recommendations</b>	<b>Compliance Status</b>	<b>Unique ID for non-compliance</b>
	cooperation agreement should address but not be limited to issues such as: <ul style="list-style-type: none"> <li>• access arrangements</li> <li>• operational interaction procedures</li> <li>• dispute resolution</li> <li>• information exchange</li> <li>• well location</li> <li>• timing of drilling</li> <li>• potential resource extraction conflicts and</li> <li>• rehabilitation issues.</li> </ul>		The Auditors confirmed this statement by completing a titles search on the NSW Mining, Exploration and Geoscience database "MinView".		

Water Access Licence No. 36546 – CSG Pilot and Production Wells					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
<b>Description – Gunnedah-Oxley Basin Mdb Groundwater Source</b>					
<b>Management Zone – Gunnedah-Oxley Basin Mdb (Other) Management Zone</b>					
<b>Share Components – 600.00 (units or ML)</b>					
<b>Extraction Times or Rates – Subject to conditions water may be taken at any time or rate</b>					
<b>Nominated Work Approval(s)^ – 90WA832266</b>					
<b>Water sharing plan – NSW Murray Darling Basin Porous Rock Groundwater Sources 2020</b>					
1	<b>Take of water – MW7035-00006</b> The maximum water allocation that may be carried over in the water allocation account from one water year to the next water year is 0.25 ML/unit share of the access licence share component.	<ul style="list-style-type: none"> <li>Santos 'Historian' database records of water extraction volumes</li> </ul>	The Auditors sighted water data from the Santos Historian database and confirmed the water extraction volumes for the following water years: <ul style="list-style-type: none"> <li>1 July 2021 – 30 June 2022 = 37.64 ML</li> <li>1 July 2022 – 30 June 2023 = 59.31 ML</li> <li>1 July 2023 – 31 August 2023 = 14.95 ML (part water year)</li> </ul> It was stated that Santos has not sought to carry over any unused water allocation into the current water year as water take volumes are less than the maximum licensed share and the water share allocation is adequate for operational requirements.  The water access licence also authorises extraction from activities outside the project area, however, Santos stated that the bores located outside the Project boundary were not active over the period 1 – July 2022 to 31 August 2023.	Compliant	
2	<b>Take of water – MW7032-00008</b> The maximum water account debit in a water year must not exceed the following:	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023 and for the water take for the prior two water years, see condition 1 of this water licence.  Santos has not exceeded the maximum allowable water share for the last two prior water years. As	Compliant	

Water Access Licence No. 36546 – CSG Pilot and Production Wells					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>A. 1.25 ML/unit share of the access licence share component or, if applicable, a lower amount determined by the Minister, plus</p> <p>B. the net amount of water allocations assigned to or from the water allocation account under a water allocation assignment in the that water year, plus</p> <p>C. any water allocations re-credited by the Minister to the water allocation account in that water year.</p>		<p>of August 2023, Santos stated that based on current water taken volumes the current water year allocation will also not be exceeded.</p> <p>The reported water take confirms there has not been any exceedance of the maximum water take in accordance with Sections, A, B and C of this condition over the last two reporting water years.</p>		
3	<p><b>Monitoring and recording – MW6612-00001</b></p> <p>A logbook used to record water take information must be retained for five (5) years from the last date recorded in the logbook.</p>	<ul style="list-style-type: none"> <li>NSW Non-Urban Water Metering Policy (November 2020)</li> <li>Appendix F – Photo 41 Dewhurst 16 gas gathering equipment and meters</li> </ul>	<p>As of August 2023, the Auditors sighted operational pilot wells at Dewhurst 16 and verified that water flow meters are installed (see Photo 41). It was stated that the data from the flow meters was transmitted to the Santos Scada system and the Historian database via telemetry.</p> <p>The water meters required by the NSW Non-Urban Water Metering Policy (November 2020) will be installed progressively as the CSG wells are constructed.</p> <p>Electronic Logbooks are maintained for the flow data through the Santos Historian database. The Auditors sighted data from 1 July 2022 to 31 August 2023; however, it was noted that during the audit period not all wells produced water. The system allows for data storage for greater than 5 years.</p>	Compliant	
4	<p><b>Reporting – MW6983-00003</b></p> <p>A. Once the water access licence holder becomes aware of a breach of any condition on this water access licence, the water access licence holder must notify the Minister as soon as practicable.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>Santos stated that since the approval of Development Consent SSD 6456, there have been no breaches of the conditions in this water access licence.</p> <p>As of August 2023 and for the audit period, based on their enquiries the Auditors have determined</p>	Compliant	

Water Access Licence No. 36546 – CSG Pilot and Production Wells					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	B. If the initial notification was not in writing, written notice must be provided within seven days of becoming aware of the breach by emailing: <a href="mailto:nrar.enquiries@nrar.nsw.gov.au">nrar.enquiries@nrar.nsw.gov.au</a>		that Santos continues to comply with the conditions of this water access licence.		

Note^: This Independent Environmental Audit has not assessed conditions pertaining to the relevant Water Supply Works (WSW) for each Water Access Licence (WAL) as these approvals are not required for State Significant Developments authorised by a development consent in accordance with section 4.4(1) of the Environmental Planning and Assessment Act 1979.

Water Access Licence No. 43548 – CSG Pilot and Production Wells					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
<b>Description – Gunnedah-Oxley Basin Mdb Groundwater Source</b>					
<b>Management Zone – Gunnedah-Oxley Basin Mdb (Other) Management Zone</b>					
<b>Share Components – 400.00 (units or ML)</b>					
<b>Extraction Times or Rates – Subject to conditions water may be taken at any time or rate</b>					
<b>Nominated Work Approval(s)^ – Not defined</b>					
<b>Water sharing plan – NSW Murray Darling Basin Porous Rock Groundwater Sources 2020</b>					
1	<b>Take of water – MW7035-00006</b> The maximum water allocation that may be carried over in the water allocation account from one water year to the next water year is 0.25 ML/unit share of the access licence share component.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, Santos stated that there has been no water take from this groundwater source since the approval of Development Consent SSD 6456.	<b>Compliant</b>	
2	<b>Take of water – MW7032- 00008</b> The maximum water account debit in a water year must not exceed the following: A. 1.25 ML/unit share of the access licence share component or, if applicable, a lower amount determined by the Minister, plus B. the net amount of water allocations assigned to or from the water allocation account under a water allocation assignment in the that water year, plus C. any water allocations re-credited by the Minister to the water allocation account in that water year.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, Santos stated that there has been no water take from this groundwater source since the approval of Development Consent SSD 6456.	<b>Compliant</b>	

Water Access Licence No. 43548 – CSG Pilot and Production Wells					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
3	<b>Monitoring and recording – MW6612-00001</b> A logbook used to record water take information must be retained for five (5) years from the last date recorded in the logbook.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>NSW Non-Urban Water Metering Policy (November 2020)</li> </ul>	<p>As of August 2023, Santos stated that there has been no water take from this groundwater source since the approval of Development Consent SSD 6456.</p> <p>The Auditors and Santos consider that this condition is not triggered due to no water take occurring – see condition 1.</p> <p>It was stated that if future water take is to occur from this water source, all pilot wells or production wells will have flow meters installed as required by the NSW Non-Urban Water Metering Policy (November 2020).</p>	<b>Not triggered</b>	
4	<b>Reporting – MW6983-00003</b> A. Once the water access licence holder becomes aware of a breach of any condition on this water access licence, the water access licence holder must notify the Minister as soon as practicable. B. If the initial notification was not in writing, written notice must be provided within seven days of becoming aware of the breach by emailing: <a href="mailto:nrar.enquiries@nrar.nsw.gov.au">nrar.enquiries@nrar.nsw.gov.au</a>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>Santos stated that since the approval of Development Consent SSD 6456, there have been no breaches of the conditions in this water access licence.</p> <p>As of August 2023 and for the audit period, based on their enquiries the Auditors have determined that Santos continues to comply with the conditions of this water access licence.</p>	<b>Compliant</b>	

Note^: This Independent Environmental Audit has not assessed conditions pertaining to the relevant Water Supply Works (WSW) for each Water Access Licence (WAL) as these approvals are not required for State Significant Developments authorised by a development consent in accordance with section 4.4(1) of the Environmental Planning and Assessment Act 1979.

Water Access Licence No. 43553 – CSG Pilot and Production Wells					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
<b>Description – Gunnedah-Oxley Basin Mdb Groundwater Source</b>					
<b>Management Zone – Gunnedah-Oxley Basin Mdb (Other) Management Zone</b>					
<b>Share Components – 2650.00 (units or ML)</b>					
<b>Extraction Times or Rates – Subject to conditions water may be taken at any time or rate</b>					
<b>Nominated Work Approval(s)^ – Not defined</b>					
<b>Water sharing plan – NSW Murray Darling Basin Porous Rock Groundwater Sources 2020</b>					
1	<b>Take of water – MW7035-00006</b> The maximum water allocation that may be carried over in the water allocation account from one water year to the next water year is 0.25 ML/unit share of the access licence share component.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, Santos stated that there has been no water take from this groundwater source since the approval of Development Consent SSD 6456.	<b>Compliant</b>	
2	<b>Take of water – MW7032- 00008</b> The maximum water account debit in a water year must not exceed the following: A. 1.25 ML/unit share of the access licence share component or, if applicable, a lower amount determined by the Minister, plus B. the net amount of water allocations assigned to or from the water allocation account under a water allocation assignment in the that water year, plus C. any water allocations re-credited by the Minister to the water allocation account in that water year.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, Santos stated that there has been no water take from this groundwater source since the approval of Development Consent SSD 6456.	<b>Compliant</b>	



Water Access Licence No. 43553 – CSG Pilot and Production Wells					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
3	<b>Monitoring and recording – MW6612-00001</b> A logbook used to record water take information must be retained for five (5) years from the last date recorded in the logbook.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> <li>NSW Non-Urban Water Metering Policy (November 2020)</li> </ul>	<p>As of August 2023, Santos stated that there has been no water take from this groundwater source since the approval of Development Consent SSD 6456.</p> <p>The Auditors and Santos consider that this condition is not triggered due to no water take occurring – see condition 1.</p> <p>It was stated that if future water take is to occur from this water source, all pilot wells or production wells will have flow meters installed as required by the NSW Non-Urban Water Metering Policy (November 2020).</p>	<b>Not triggered</b>	
4	<b>Reporting – MW6983-00003</b> A. Once the water access licence holder becomes aware of a breach of any condition on this water access licence, the water access licence holder must notify the Minister as soon as practicable. B. If the initial notification was not in writing, written notice must be provided within seven days of becoming aware of the breach by emailing: <a href="mailto:nrar.enquiries@nrar.nsw.gov.au">nrar.enquiries@nrar.nsw.gov.au</a>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>Santos stated that since the approval of Development Consent SSD 6456, there have been no breaches of the conditions in this water access licence.</p> <p>As of August 2023 and for the audit period, based on their enquiries the Auditors have determined that Santos continues to comply with the conditions of this water access licence.</p>	<b>Compliant</b>	

Note^: This Independent Environmental Audit has not assessed conditions pertaining to the relevant Water Supply Works (WSW) for each Water Access Licence (WAL) as these approvals are not required for State Significant Developments authorised by a development consent in accordance with section 4.4(1) of the Environmental Planning and Assessment Act 1979.

Water Access Licence No. 15819 – BWD1					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
<b>Description – Southern Recharge Groundwater Source</b>					
<b>Management Zone – Not defined</b>					
<b>Share Components – 5.00 (units or ML)</b>					
<b>Extraction Times or Rates – Subject to conditions water may be taken at any time or rate</b>					
<b>Nominated Work Approval(s)^ – 90WA811395</b>					
<b>Water sharing plan – NSW Great Artesian Basin Groundwater Sources 2020</b>					
1	<b>Take of water – MW7035-00005</b> The maximum water allocation that may be carried over in the water allocation account from one water year to the next water year is 0.6 ML/unit share of the access licence share component.	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	The Bibblewindi 1 water bore is located at the Bibblewindi Surface Facilities.  Santos stated that groundwater extraction from the bore has not occurred since January 2020.  The Auditors sighted the bore during the audit field inspection and verified that it is not operational; e.g. not connected to a power supply.  <b>Observation No. 88</b> – This WAL 15819 references the same Water Supply Works number (90WA811395) as WAL 15847. Santos should seek to clarify this anomaly to prevent administrative confusion.  It was stated that Santos has not sought to carry over any unused water allocation into the current water year.	Compliant	
2	<b>Take of water – MW7032-00007</b> The maximum water account debit in a water year must not exceed the following:  A. 1.3 ML/unit share of the access licence share component or, if applicable, a lower amount determined by the Minister, plus	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	As of August 2023, Santos stated that there has been no water take from the groundwater bore associated with this water access licence.	Compliant	

Water Access Licence No. 15819 – BWD1					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
	<p>B. the net amount of water allocations assigned to or from the water allocation account under a water allocation assignment in the that water year, plus</p> <p>C. any water allocations re-credited by the Minister to the water allocation account in that water year</p>				
3	<p><b>Monitoring and recording – MW6612-00001</b></p> <p>A logbook used to record water take information must be retained for five (5) years from the last date recorded in the logbook.</p>	<ul style="list-style-type: none"> <li>NSW Non-Urban Water Metering Policy (November 2020)</li> <li>Appendix F – Photo 42 Bibblewindi 1 groundwater bore and meters</li> </ul>	<p>During field inspections as of August 2023 (see Photo 42), it was sighted that two separate water flow meters have been installed in line with each other. It was stated that these meters were installed by specialist technicians from Ontoto and include:</p> <ul style="list-style-type: none"> <li>A pattern-approved flow meter incorporating a Local Intelligence Device and tamper-evident seals in accordance with metering-related provisions of the Water Management (General) Regulation 2018 (the Regulation) and the metering-related provisions of the Water Management Act 2000 (the Act). The flow meter is connected via telemetry to the NSW Government's data acquisition service (DAS).</li> <li>Santos Operational Meter providing flow data to the Santos Scada system via telemetry.</li> </ul> <p>The water meter required by the NSW Non-Urban Water Metering Policy (November 2020) was installed on 23 December 2022 after the policy rollout date of 1 December 2021 for the inland northern region. It was stated third party contractors were engaged in January 2022; however, the installation was delayed due to supply chain issues. The Water NSW registration (DAS) occurred on 20 May 2022.</p> <p>When water extraction occurs, the electronic logbooks are maintained for flow data via the</p>	Compliant	

Water Access Licence No. 15819 – BWD1					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>WaterNSW Data Acquisition Service (DAS) and internally in the Santos Historian database. The system allows for data storage for greater than 5 years.</p> <p>It was stated that records for water take volumes prior to January 2020 are stored in the EQUIS environmental database. Quarterly physical meter reading records taken by a third-party contractor are also available..</p>		
4	<p><b>Reporting – MW6983-00003</b></p> <p>A. Once the water access licence holder becomes aware of a breach of any condition on this water access licence, the water access licence holder must notify the Minister as soon as practicable.</p> <p>B. If the initial notification was not in writing, written notice must be provided within seven days of becoming aware of the breach by emailing: <a href="mailto:nrar.enquiries@nrar.nsw.gov.au">nrar.enquiries@nrar.nsw.gov.au</a></p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>Santos stated that since the approval of Development Consent SSD 6456, there have been no breaches of the conditions of this water access licence.</p> <p>As of August 2023 and for the audit period, based in their enquiries the Auditors have determined that Santos continues to comply with the conditions of this water access licence.</p>	<b>Compliant</b>	

Note^: This Independent Environmental Audit has not assessed conditions pertaining to the relevant Water Supply Works (WSW) for each Water Access Licence (WAL) as these approvals are not required for State Significant Developments authorised by a development consent in accordance with section 4.4(1) of the Environmental Planning and Assessment Act 1979.

Water Access Licence No. 15847 – BWD5, BWD1, Leewood WB					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
<b>Description – Southern Recharge Groundwater Source</b>					
<b>Share Components – 5.00 (units or ML)</b>					
<b>Extraction Times or Rates – Subject to conditions water may be taken at any time or rate</b>					
<b>Nominated Work Approval(s)^ – 90WA811395, 90WA811397, 90WA832041</b>					
<b>Water sharing plan – NSW Great Artesian Basin Groundwater Sources 2020</b>					
1	<b>Take of water – MW7035-00005</b> The maximum water allocation that may be carried over in the water allocation account from one water year to the next water year is 0.6 ML/unit share of the access licence share component.	<ul style="list-style-type: none"> <li>BWD 5 - derived_pid_2106_16947 48656</li> <li>BWD 1 normal_pid_3466_t16947 48692</li> </ul>	This water access licence applies to Water Bores located at Bibblewindi 5 well pad and Bibblewindi 1 at the Leewood Facility.  The Auditors sighted water data from the Santos Historian database and confirmed the water extraction volumes for all three licensed bores are less than the total allocation for 5 ML.  For LWDWB – No water volumes recorded.  For BWD 1 – No water volumes recorded.  For BWD 5: <ul style="list-style-type: none"> <li>1 July 2021 – 30 June 2022 = 0.02 ML</li> <li>1 July 2022 – 30 June 2023 = 0.77 ML</li> <li>1 July 2023 – 30 August 2023 = 0.81 ML (part water year).</li> </ul> It was stated that Santos has not sought to carry over any unused water allocation into the current water year as water take volumes are less than the maximum licensed share.  <b>Observation No. 89</b> – This WAL 15847 references the same Water Supply Works number (90WA811395) as WAL 15819. Santos should seek to clarify this anomaly to prevent administrative confusion.	Compliant	

Water Access Licence No. 15847 – BWD5, BWD1, Leewood WB					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
2	<p><b>Take of water – MW7032-00007</b></p> <p>The maximum water account debit in a water year must not exceed the following:</p> <p>A. 1.3 ML/unit share of the access licence share component or, if applicable, a lower amount determined by the Minister, plus</p> <p>B. the net amount of water allocations assigned to or from the water allocation account under a water allocation assignment in the that water year, plus</p> <p>C. any water allocations re-credited by the Minister to the water allocation account in that water year.</p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>As of August 2023, Santos has not exceeded the maximum allowable water share for the last two prior water years – see condition 1 for water volumes.</p> <p>As of August 2023, Santos stated that based on current water taken volumes the current water year allocation will also not be exceeded.</p> <p>The reported water take confirms there has not been any exceedance of the maximum water take in accordance with Sections, A, B and C of this condition over the last two reporting water years.</p>	Compliant	
3	<p><b>Monitoring and recording – MW6612-00001</b></p> <p>A logbook used to record water take information must be retained for five (5) years from the last date recorded in the logbook.</p>	<ul style="list-style-type: none"> <li>NSW Non-Urban Water Metering Policy (November 2020)</li> <li>Appendix F – Photo 20 Leewood groundwater bore and meters</li> <li>Appendix F – Photo 21 Bibblewindi 5 groundwater bore and meters</li> </ul>	<p>During field inspections as of August, the Auditors sighted two separate water flow meters are installed in line with each other for LWDWB, BWD 52023 (see Photos 20 and 21) and BWD 1 groundwater bores. It was stated that these meters were installed by specialist technicians from Ontoto and include:</p> <ul style="list-style-type: none"> <li>A pattern-approved flow meter incorporating a Local Intelligence Device and tamper-evident seals in accordance with metering-related provisions of the Water Management (General) Regulation 2018 (the Regulation) and the metering-related provisions of the Water Management Act 2000 (the Act). The flow meter is connected via telemetry to the NSW Government's data acquisition service (DAS).</li> <li>Santos Operational Meter providing flow data to the Santos Scada system via telemetry.</li> </ul> <p>The water meter required by the NSW Non-Urban Water Metering Policy (November 2020) was installed on 23 December 2022 after the policy</p>	Compliant	

Water Access Licence No. 15847 – BWD5, BWD1, Leewood WB					
Condition	Condition Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status	Unique ID for non-compliance
			<p>rollout date of 1 December 2021 for the inland northern region. It was stated third party contractors were engaged in January 2022; however, the installation was delayed due to supply chain issues. The Water NSW registration (DAS) occurred on 20 May 2022.</p> <p>Electronic Logbooks are maintained for flow data via the WaterNSW Data Acquisition Service (DAS) and internally in the Santos Historian database. The Auditors sighted data from 2 March 2021 to 31 August 2023. The system allows for data storage for a period greater than 5 years.</p> <p>It was stated that records for water take volumes prior to January 2020 are stored in the EQUIS environmental database. Quarterly physical meter reading records taken by a third-party contractor are also available.</p>		
4	<p><b>Reporting – MW6983-00003</b></p> <p>A. Once the water access licence holder becomes aware of a breach of any condition on this water access licence, the water access licence holder must notify the Minister as soon as practicable.</p> <p>B. If the initial notification was not in writing, written notice must be provided within seven days of becoming aware of the breach by emailing: <a href="mailto:nrar.enquiries@nrar.nsw.gov.au">nrar.enquiries@nrar.nsw.gov.au</a></p>	<ul style="list-style-type: none"> <li>Audit interview (Environmental Advisor)</li> </ul>	<p>Santos stated that since the approval of Development Consent SSD 6456, there have been no breaches of the conditions in this water access licence.</p> <p>As of August 2023 and for the audit period, based on their enquiries the Auditors have determined that Santos continues to comply with the conditions of this water access licence.</p>	Compliant	

Note^: This Independent Environmental Audit has not assessed conditions pertaining to the relevant Water Supply Works (WSW) for each Water Access Licence (WAL) as these approvals are not required for State Significant Developments authorised by a development consent in accordance with section 4.4(1) of the Environmental Planning and Assessment Act 1979.

## Appendix B:

### Agency/Stakeholder Consultation Comments and Auditors' Response

The following Agency/Stakeholder Consultation Comments and Auditors' Response table includes the Auditors' responses to the environmental issues raised by the agencies and stakeholders which responded to the Lead Auditor's consultation letters. The respondents' correspondence is reproduced in Appendix C of this audit report.

The Auditors' responses are also cross-referenced to the relevant Audit Findings and Recommendations in the Independent Audit Table within Appendix A of this audit report.

#### Agency/Stakeholder Consultation Comments and Auditors' Response

Agency/Stakeholder	Agency/Stakeholder Comments	Auditors' Response
Department of Planning and Environment Respondent: Joel Curran – Senior Compliance Officer	<p><u>Email of 7 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>Hi Jamie</p> <p>Thank you for getting in touch with the department. Please see my below comments in red.</p> <p><i>It would be appreciated if the Department can review the attached consultation letter and list of consultees and reply to confirm:</i></p> <ol style="list-style-type: none"> <li>1. <i>that the attached consultation letter is satisfactory from the Department's perspective; YES</i></li> <li>2. <i>whether the Department has any comments / input in relation to points 1, 2 and 3 in the attached letter; The audit must be carried out in accordance with the conditions of SSD-6456 as modified, and the Independent Audit Post Approval Requirements 2020. The department does not have any specific focus areas for the audit at this time. No feedback on the environmental performance of the project at this time</i></li> <li>3. <i>that the attached consultation letter is suitable for use as a template for us to send to the proposed consultees in the attached list; YES</i></li> <li>4. <i>whether the Department agrees with the attached list of proposed consultees, or requires any additional consultees; AGREED (no additional consultees required)</i></li> <li>5. <i>whether the Department can add any specific Officer contact details in the list of proposed consultees, to help ensure all correspondence is directed to the relevant Officer. Apologies, I don't have specific officer contact details for other government agencies.</i></li> </ol>	<p>Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Condition A1 in the Independent Audit Table within Appendix A of this audit report.</p>
Heritage NSW – Department of Planning and Environment Respondent: Nicole Davis – Manager Assessments	<p><u>Letter of 25 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>Thank you for your referral seeking comment from Heritage NSW on the scope for the Independent Environmental Audit for the above State Significance Development (SSD). Thank you for the continued opportunity to comment on the project.</p> <p>In respect to the scope of audit for Aboriginal cultural heritage, Heritage NSW notes the requirements under Section 5.8 (Disturbance activities and preclearance surveys) and Section 5.9 (Management of new finds) within the Narrabri Gas Project Aboriginal Cultural Heritage Management Plan (Santos 2022).</p> <p>It is recommended that the Department of Planning and Environment's Compliance Team be contacted (<a href="mailto:info@environment.nsw.gov.au">info@environment.nsw.gov.au</a>) to determine if there is any non-compliance with Conditions of Consent for the project.</p> <p>Please note that the above comments relate only to Aboriginal cultural heritage regulation matters. If you have any questions regarding these comments, please contact</p>	<p>Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Conditions A1, B59 and B60 in the Independent Audit Table within Appendix A of this audit report.</p> <p><u>Narrabri Gas Project Aboriginal Cultural Heritage Management Plan (ACHMP) (Doc ID: 0041-150-PLA-0024, Revision No. 0, issued on 21 February 2022)</u></p> <p>The Auditors noted that sections 5.8 and 5.9 of the ACHMP respectively relate to Disturbance activities and pre-clearance surveys, and Management of New Finds.</p> <p>The Auditors identified that Santos was compliant with conditions B59 and B60 during the audit period (30 September 2020 to 15 September 2023).</p>



Agency/Stakeholder	Agency/Stakeholder Comments	Auditors' Response
	<p>Alison Lamond, Senior Assessments Officer, at Heritage NSW on 0419 762 918 and <a href="mailto:alison.lamond@environment.nsw.gov.au">alison.lamond@environment.nsw.gov.au</a></p>	
<p>Department of Regional NSW – Resources Regulator Respondent: Jenny Ehmsen – Principal Compliance Auditor</p>	<p><u>Letter of 9 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>Thank you for your email and letter dated 7 August 2023 requesting consultation on the independent environmental audit to be undertaken of the Narrabri Gas Project which is covered by the following petroleum titles:</p> <ul style="list-style-type: none"> <li>Petroleum Exploration Licence 238 (1955) – PEL238</li> <li>Petroleum Assessment Lease 2 (1991) – PAL2</li> <li>Petroleum Production Lease 3 (1991) – PPL3</li> </ul> <p>The independent environmental audit is required to assess compliance against the relevant environmental management conditions of the petroleum licence and leases, including, where relevant, implementation of the petroleum operations plan for the site.</p> <p>The audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice. It would be appreciated if a copy of the final audit report could be sent to the Regulator at <a href="mailto:nswresourcesregulator@service-now.com">nswresourcesregulator@service-now.com</a> upon completion of the audit.</p>	<p>Refer to Sections 2.1, 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for the relevant environmental management conditions of PEL 238, PAL 2 and PPL 3 within Appendix A of this audit report.</p> <p>As identified in the Section 4.2 of this audit report and Independent Audit Table within Appendix A of this audit report, in relation to the relevant environmental management conditions of PEL 238, PAL 2 and PPL 3:</p> <ul style="list-style-type: none"> <li>PEL 238 (Schedules 2 and 3) – out of a total of 20 relevant conditions, Santos was compliant with 11 conditions, non-compliant with nil conditions, and 9 conditions were not triggered;</li> <li>PAL 2 – out of a total of 17 relevant conditions, Santos was compliant with 8 conditions, non-compliant with nil conditions, and 9 conditions were not triggered;</li> <li>PPL 3 – out of a total of 19 relevant conditions, Santos was compliant with 8 conditions, non-compliant with nil conditions, and 11 conditions were not triggered.</li> </ul> <p><u>Best industry practice</u></p> <p>Due to the Narrabri Gas Project being in Phase 1 as defined in Development Consent SSD 6456 (i.e. exploration and appraisal), there was insufficient information or evidence in the field for the Auditors to make observations regarding whether rehabilitation procedures, practices and outcomes at the Project represent best industry practice.</p>
<p>Department of Planning and Environment – Crown Lands Respondent: Vicky Lyons – A/Group Leader Property Management, Tamworth</p>	<p><u>Letter of 11 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>Reference is made to your email and correspondence addressed to Danny Young of the Department of Planning and Environment – Crown Lands (the Department), dated 7 August 2023 with regards to the Narrabri Gas Project (SSD 6456).</p> <p>The Department has had the opportunity to review and comment in relation to the upcoming environmental audit of the Narrabri Gas Project. The Department has no further comment to add to the scope of the audit and information presented; however, a copy of the outcomes of the auditing process are requested to be provided to the Department.</p> <p>Please don't hesitate to contact me should you wish to further discuss this matter.</p>	<p>Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Condition A1 in the Independent Audit Table within Appendix A of this audit report.</p>
<p>Gilgandra Shire Council Respondent: David Neeves – General Manager</p>	<p><u>Letter of 9 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>We refer to your letter dated 7 August 2023.</p> <p>Council wishes to advise that it has no:</p> <ul style="list-style-type: none"> <li>input to contribute in relation to the audit scope as proposed in your correspondence</li> <li>specific environmental issues of concern regarding the project and</li> <li>feedback to provide in relation to the environmental management and/or environmental performance of the Project to date.</li> </ul> <p>Thank you for providing the opportunity for Council to provide input into the Project.</p>	<p>Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Condition A1 in the Independent Audit Table within Appendix A of this audit report.</p>
<p>NSW Health – Hunter New England Local Health District Respondent: Dr David Durrheim – Director of Health Protection</p>	<p><u>Email of 8 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>Thank you for this invitation.</p> <p>We note that the Audit of SSD 6456 Narrabri Gas Project is for the period 30 September 2020 to 24 August 2023 and covers Phase 1 of this four Phase Project. Excluded</p>	<p>Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Condition A1 in the Independent Audit Table within Appendix A of this audit report.</p>

Agency/Stakeholder	Agency/Stakeholder Comments	Auditors' Response
	<p>from the audit is the hazard audit as it was not part of Phase 1 of the Project.</p> <p>We understand that the scope of the audit as it relates to Phase 1 of the Project focuses on environmental management and environmental performance of the Project.</p> <p>We would have interest in providing comment on the scope for future audits of the continuing Phases of the Project to ensure that potential public health impacts are being adequately managed, addressed and controlled.</p>	
<p>Fire and Rescue NSW</p> <p>Respondent: Station Officer, Luke Loseby – Team Leader Fire Safety, Operation Liaison and Special Hazards Unit</p>	<p><u>Email of 9 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>Fire and Rescue NSW acknowledge correspondence received on the 7 August 2023, requesting input into the Independent Environmental Audit 2023. FRNSW have reviewed the letter and linked development consent and make the following comments:</p> <p>There is currently insufficient information available regarding the fire safety and emergency response management aspects of the project. FRNSW support Part B72 and B73 of the Development Consent and requests to be consulted and given the opportunity to review and provide comment regarding the proposed fire and life safety systems at phase 2 of the project.</p> <p>Proponents of projects that require engagement with FRNSW are required to engage directly with FRNSW. Requests for a meeting with FRNSW can be submitted via the <a href="#">FRNSW meeting</a> process. If a written response from FRNSW regarding this matter is required, this can be done by completing the <a href="#">FRNSW written report application</a> form and sending to <a href="mailto:FireSafety@fire.nsw.gov.au">FireSafety@fire.nsw.gov.au</a>.</p> <p>FRNSW publish guidelines and general information that may assist in the preparation of development applications. These include <a href="#">fire safety guidelines</a>, <a href="#">technical information sheets</a>, <a href="#">FRNSW position statements</a> and <a href="#">public consultation documents</a>. You may wish to refer to these in the first instance as any advice provided by FRNSW will be consistent with these publications.</p>	<p>Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Conditions A1, B72 and B73 in the Independent Audit Table within Appendix A of this audit report.</p>
<p>Siding Spring Observatory – The Australian National University</p> <p>Respondent: Associate Professor Chris Lidman – Director</p>	<p><u>Letter of 21 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>Thank you for giving me an opportunity to provide input into the environmental audit that was outlined in your letter dated August 7th, 2023.</p> <p>Siding Spring Observatory (SSO) is Australia's largest astronomical optical observatory and is part of Australia's first internationally recognized dark sky park. The Observatory is home to over a dozen facilities run by national and international organizations.</p> <p>A night sky free of light pollution is critical to the operations of the Observatory.</p> <p>Part B of the Development Consent lists several specific environmental conditions that are aimed at reducing the impact of light pollution from the development. The conditions most relevant are points (a) to (d) in B65. The Observatory wishes to understand if these conditions are being met.</p> <p>An assessment of the impact of gas flaring on the night sky above the Observatory was published in Appendix K of the Response to Submissions. At that time, it was concluded that the flares would have a negligible impact on Observatory operations.</p> <p>The Observatory would like to understand if there have been any changes to SANTOS operations that would change that conclusion.</p> <p>Please do not hesitate to contact me if you have any questions.</p>	<p>Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Conditions A1 and B65(a)-(d) in the Independent Audit Table within Appendix A of this audit report.</p> <p><u>Appendix K of Response to Submissions</u></p> <p>The Auditors reviewed Appendix K (Gas flare light assessment) (prepared for Santos by Imbricata Pty Ltd, October 2017) of Santos's Response to Submissions (<a href="https://www.planningportal.nsw.gov.au/major-projects/projects/narrabri-gas">https://www.planningportal.nsw.gov.au/major-projects/projects/narrabri-gas</a>). In Section 5.0 (Discussion and Conclusion) of Appendix K, the consultant concluded: "Thus, the project would not make any contribution to sky glow conditions at the 30° reference location used in the guidelines [i.e. the Dark Sky Planning Guidelines] and would have negligible impact on the Observatory's operations."</p> <p>Current and proposed operations for Phase 1 of the NGP are detailed in the approved Field Development Plan – Phase 1. During Phase 1, the existing flares identified in Appendix K – Figure 1 of the Response to Submissions continue to be operated and no new flares are proposed to be installed.</p> <p>From audit interviews, field observations of existing operations and reviews of relevant evidence during this audit, the Auditors consider that the NGP is operating in accordance with the approved activities and consistent with the existing flare locations identified in Appendix K – Figure 1. As of August/September 2023, there is no evidence to suggest that the conclusions in Appendix K – Section 5.0 have changed.</p>
<p>Santos NGP Community</p>	<p><u>Email of 9 August 2023 (see Appendix C of this audit report) which reads:</u></p>	<p>Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Condition A1 in the</p>

Agency/Stakeholder	Agency/Stakeholder Comments	Auditors' Response
Consultative Committee (CCC) Respondent: Garry West, Independent Chair	<p>I wish to acknowledge receipt of your correspondence in regard to the Narrabri Gas Project (SSD 6456) Independent Environmental Audit 2023.</p> <p>I will forward your correspondence to members of the Community Consultative Committee to ascertain if anyone wishes to respond to your invitation. Thank you for providing the details that the audit will cover.</p>	Independent Audit Table within Appendix A of this audit report.
People for the Plains Respondent: Stuart Murray – Delegate of People for the Plains on the Santos NGP CCC	<p><u>Email of 19 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>Garry West the Chair of the Narrabri Gas Project Community Consultation Committee (CCC) has forwarded an invitation to participate in the Audit described in your PDF attachment to his email.</p> <p>As a delegate for People for the Plains to the Santos Narrabri Gas Project Community Consultation Committee I would like to advise that we would like to accept the invitation to provide input into this Audit .</p> <p>I would appreciate some details of how and when this could be achieved.</p> <p><u>Email of 22 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>To follow up on our phone conversation on Monday afternoon 21/8/2023.</p> <p>I wish to advise that it is not possible in the time available (until Wednesday afternoon 23/8/2023) to come to grips with what is required under Consent Condition D9 and engage in the consultation required to provide meaningful input into this environmental survey.</p> <p>To state the obvious, if you want consultation and input from the CCC then we (People for the Plains at least) would require much earlier notification.</p> <p>We would appreciate being sent a copy of the final survey findings, as we may consider providing feedback if we thought it would be worth our while.</p> <p>In an email to you one of our members has expressed his personal frustrations about the process of dealing with Santos.</p> <p>This is something we understand.</p>	Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Condition A1 in the Independent Audit Table within Appendix A of this audit report.
People for the Plains Respondent: Anthony Pickard – Alternate Delegate of People for the Plains on the Santos NGP CCC	<p><u>Email of 22 August 2023 (see Appendix C of this audit report) which reads:</u></p> <p>As a former delegate and now an alternate delegate for People For The Plains to the Narrabri CCC and After much thought I have come to the decision NOT to participate in this Audit as its current format stands.</p> <p>In the past there have been many requests to the NGPCCC to participate in various Studies as well as requesting CCC member input into various matters concerning the NGP both Environmental and Operational and this includes the Project EIS and Modifications to the Exploration, Wilga Park,</p> <p>Social Impacts of the Development as well as the Projects effect on ALL aspects of the Environment, this include Air, Water (all levels) and soil as well as the Fauna/Flora.</p> <p>Only one body listened too and eventually accepted my requested input, this was despite a really concerted opposing effort by Santos.</p> <p>Santos retaliated by modifying the required and publically available, water level/time graphs to such an extent that they are now meaningless.</p> <p>They comply with the Guidelines but are meaningless compared with the original versions and Santos committed too, monitoring requirement.</p> <p>With the exception of one, all my input has been ignored despite me having SANTOS provided documentation to back-up my statements, much of which has been provided with any "input" or "submission".</p> <p>All this Audit will do is to allow Santos and others to know a small piece of what I know about Santos's Environmental Record and indeed the Environmental</p>	Refer to Sections 3.7 and 4.8 of this audit report, and the 'Independent Audit Findings and Recommendations' for Project Approval Schedule 2, Condition A1 in the Independent Audit Table within Appendix A of this audit report. <p>In his submission, the respondent noted: "To provide some validity I have included a Gas Analysis from over 20 years ago" and asked: "Where is the current gas Analysis of these wells and how does it compare?"</p> <p>As of August 2023 and for the audit period, there were no new gas wells constructed within the Project boundary.</p> <p>From the Gas Analysis records provided in the attachment to the email dated 22 June 2023, it included results for BH002, BH002D, BH003, BH004, BH005, BH006 BH006H, BH007, WP001, WP003, and WP005.</p> <p>The Auditors noted that the Wilga Park Wells (WP001, WP003, and WP005) are authorised under a separate approval and are not approved under Development Consent SSD 6456. The Wilga Park Wells are therefore outside the scope of this independent environmental audit.</p> <p>The Auditors sighted a Register of gas wells which included the wells referenced above, confirming that all these wells are either Plugged and Abandoned or have been Shut-in waiting abandonment. Therefore, during the audit period, there were no current gas analysis results for these wells.</p>

Agency/Stakeholder	Agency/Stakeholder Comments	Auditors' Response
	<p>record history of the Gas Development in the Pilliga Forest and surrounds.</p> <p>I will be honest and blunt with you, <u>"Unless, I and Santos are required to give input into your Audit under oath, I will not participate", and that will never happen the various levels of Departments overseeing and the "Powers" in charge will never allow that to occur.</u></p> <p>I am sure you already know all the modifications to the 'Conditions of Consent' that Santos has already been granted, with regards to the NGP.</p> <p>One final point before I send this email. I suggest that your Staff's time would be better spend going back over ALL the documentation, REF's, all the DIGs (old and new) documentation, All the Reports either by Santos or Commissioned and Reports by previous operators and Reports by non Project connected by never-the-less highly qualified people, concerning Environmental Matters around this project since the mid 1990's, and seeing that this Audit will pick up on ongoing, existing and future problems, making the correct, for the Environment, recommendations.</p> <p>This Audit will find some reason not to look at ALL the records to see how Santos is truly complying, I will even go as far as to say that this Audit will miss at-least one, amongst many, both current and potential, very obvious Environmental matters, both preventative and existing, hidden in plain sight and there are many "Legacy" matters which will be glossed over by your Audit.</p> <p>Sir, I lived in the Project area, I reported the Bibblewindi Forest Kill to DII well before Santos did, They tried to say it was "Eucalyptus water" that I saw. I even took two members of Santos Staff around the entire Project Area on 4th Jan 2012, showing them the Environmental damage that the project had brought to the Pilliga Forest. All this is recorded, despite what Santos claims.</p> <p>Conclusion:</p> <p>Unless a proper under oath Audit is done, then this Audit will just be like all the rest and make no real change to the existing Status-quo.</p> <p>To provide some validity I have included a Gas Analysis from over 20 years ago. Where is the current gas Analysis of these wells and how does it compare?</p> <p>I have included the President and Secretary of People For The Plains in this email.</p> <p><b>Auditors' Note:</b> The 'Gas Analysis' referred to above is reproduced in full below. The respondent's email did not disclose the source of the Gas Composition Analysis.</p>	



## GAS COMPOSITION ANALYSIS

Well	Sample Details						Air Corrected Gas Composition										Calculated Gas Density (Air = 1)	Calorific Value		Average Molecular Weight	Air Content of Sample %
	Date	Time	Sample #	Source	Well Status	Sample Point	N <sub>2</sub> MOL%	He MOL%	H <sub>2</sub> MOL%	CO MOL%	CO <sub>2</sub> MOL%	CH <sub>4</sub> MOL%	C <sub>2</sub> H <sub>6</sub> MOL%	C <sub>3</sub> H <sub>8</sub> MOL%	Total MOL%	Gross BTU/l		Net BTU/l			
BH002	29-Apr-98	0:00	-	Hoskisson	Drilling	Coal core @ 640m	5.85				15.63	78.21	0.16	0.15	100.00	0.732	799	719	21.192	45.43	
BH002	30-Apr-98	0:00	-	Hoskisson	Drilling	Coal core @ 679m	2.74				14.37	82.60	0.09	0.00	100.00	0.704	840	756	20.402	16.39	
BH002	08-May-98	14:20	-	Digby Sdst	Drilling	DST #6	10.73	0.28			1.76	87.16	0.07	0.00	100.00	0.614	863	795	17.795	0.27	
BH002	17-May-98	0:00	-	Mauls Ck	Drilling	Coal core @ 677m	2.79				7.77	89.25	0.19	0.00	100.00	0.641	907	818	18.597	27.67	
BH002	18-May-98	0:00	-	Mauls Ck	Drilling	Coal core @ 690m	1.75				6.26	91.83	0.16	0.00	100.00	0.622	932	839	18.027	16.85	
BH002	05-Jun-98	13:00	-	Mauls Ck	Cavitating	Cav choke man	60.58	0.11			1.49	37.77	0.05	0.00	100.00	0.818	383	345	23.705	15.34	
BH002	17-Jul-98	8:45	-	Mauls Ck	Producing	Separator	25.77	0.20			1.84	72.11	0.05	0.00	100.00	0.678	731	658	19.268	1.19	
BH002	24-Jul-98	13:00	-	Mauls Ck	Producing	Csg	19.19	0.23			2.13	78.37	0.08	0.00	100.00	0.653	794	715	18.919	1.28	
BH002	28-Jul-98	13:50	-	Mauls Ck	Producing	Csg	20.44	0.24			2.05	77.19	0.08	0.00	100.00	0.658	782	704	19.047	0.73	
BH002	31-Jul-98	9:00	-	Mauls Ck	Producing	Csg	20.59	0.24			2.12	76.96	0.06	0.00	100.00	0.659	780	703	19.095	0.73	
BH002	05-Aug-98	8:30	-	Mauls Ck	Producing	Csg	19.03	0.23			8.33	72.34	0.07	0.00	100.00	0.712	733	660	20.532	0.50	
BH002	09-Aug-98	9:10	-	Mauls Ck	Producing	Csg	19.22	0.24			2.78	77.68	0.08	0.00	100.00	0.680	787	707	19.102	0.78	
BH002	16-Aug-98	18:00	-	Mauls Ck	Cavitating	Csg	19.41	0.24			1.93	78.34	0.08	0.00	100.00	0.652	794	715	18.888	1.10	
BH002	20-Aug-98	10:00	-	Mauls Ck	Cavitating	Csg	0.00	0.26			8.37	83.22	0.15	0.00	100.00	0.615	945	852	17.830	87.17	
BH002	23-Aug-98	0:00	-	Mauls Ck	Cavitating	Csg	33.37	0.18		0.07	3.59	62.70	0.09	0.00	100.00	0.726	635	573	21.040	72.60	
BH002	30-Oct-98	13:36	1009	Mauls Ck	Producing	Csg	25.93	0.25			0.90	72.75	0.08	0.01	100.00	0.670	738	665	19.410	1.14	
BH002	07-Nov-98	15:00	1020	Mauls Ck	Producing	Csg	24.48	0.19			0.98	74.27	0.08	0.00	100.00	0.664	753	678	19.237	1.20	
BH002	30-Nov-98	10:00	-	Mauls Ck	Producing	Csg	21.89	0.13			0.15	77.76	0.07	0.00	100.00	0.648	788	709	18.701	1.46	
BH002	23-Feb-99	16:10	1058	Mauls Ck	Producing	Csg	10.86	0.09			16.57	72.39	0.07	0.00	100.00	0.759	734	661	21.990	1.14	
BH002D	09-Sep-98	12:05	-	Digby Sdst	Shut in	Csg	11.06	0.25			1.67	86.94	0.08	0.00	100.00	0.615	881	793	17.815	0.46	
BH002D	10-Sep-98	19:20	-	Digby Sdst	Shut in	Csg	11.30	0.27			1.86	86.69	0.08	0.00	100.00	0.616	879	791	17.839	0.45	
BH002D	14-Sep-98	11:35	-	Digby Sdst	Shut in	Csg	30.78	0.19			2.06	66.91	0.06	0.00	100.00	0.701	678	611	20.290	1.92	
BH003	29-Sep-98	14:00	-	Mauls Ck	Producing	Csg	3.99	0.25			5.59	90.04	0.11	0.02	100.00	0.624	913	822	19.057	0.27	
BH003	30-Oct-98	15:15	1012	Mauls Ck	Producing	Csg	2.98	0.18			19.79	76.92	0.10	0.03	100.00	0.758	782	704	21.598	0.09	
BH003	30-Nov-98	9:20	-	Mauls Ck	Producing	Csg	3.63	0.16			6.71	89.40	0.10	0.00	100.00	0.633	907	818	18.348	0.09	
BH003	23-Feb-99	16:50	1059	Mauls Ck	Producing	Csg	35.39	0.18			4.05	60.31	0.07	0.00	100.00	0.739	612	561	21.396	0.00	
BH004	05-Jul-98	0:00	-	Mauls Ck	Drilling	Coal core @ 647m	0.51				5.10	85.22	8.11	0.00	100.00	0.646	915	834	18.676	25.84	
BH004	07-Jul-98	0:00	-	Mauls Ck	Drilling	Coal core @ 653m	73.79				3.16	22.98	0.07	0.00	100.00	0.890	234	211	25.770	17.40	
BH004	24-Aug-98	11:30	-	Mauls Ck	Producing	Csg	47.16	0.13			2.11	50.53	0.07	0.00	100.00	0.769	513	461	22.273	3.20	
BH004	08-Sep-98	13:30	-	Mauls Ck	Producing	Csg	28.12	0.11			4.85	65.83	0.09	0.00	100.00	0.721	608	601	20.885	2.19	
BH004	30-Oct-98	14:45	1011	Mauls Ck	Producing	Csg	30.03	0.14			2.26	67.43	0.10	0.04	100.00	0.701	697	619	20.311	1.92	
BH004	07-Nov-98	14:40	1019	Mauls Ck	Producing	Csg	24.67	0.09			4.23	70.87	0.10	0.04	100.00	0.698	721	649	20.219	1.69	
BH004	23-Feb-99	16:30	1060	Mauls Ck	Producing	Csg	24.10	0.15			2.12	73.53	0.09	0.00	100.00	0.674	746	671	19.514	1.37	
BH005	29-Sep-98	17:00	-	Mauls Ck	Flowing	Csg	13.70	0.17	1.11		37.75	47.16	0.11	0.00	100.00	0.970	483	435	28.080	7.81	
BH005	07-Oct-98	15:20	-	Mauls Ck	Flowing	Csg	5.77	0.35	1.99		29.07	62.86	0.16	0.00	100.00	0.846	643	579	24.564	3.42	
BH005	07-Oct-98	15:30	-	Mauls Ck	Flowing	Csg	4.80	0.36	1.38		24.66	68.84	0.16	0.00	100.00	0.804	704	634	23.278	3.88	
BH005	30-Nov-98	11:00	-	Mauls Ck	Producing	Csg	16.08	0.21			6.44	77.10	0.17	0.00	100.00	0.692	783	705	19.766	8.81	
BH006	10-Feb-99	19:55	1042	Mauls Ck	Producing	Csg	53.35	0.10			2.62	43.87	0.05	0.01	100.00	0.800	445	401	23.162	-	
BH006H	30-Oct-98	15:30	1013	Hoskisson	Producing	Csg	14.44	0.16			13.65	71.68	0.04	0.03	100.00	0.746	728	655	21.503	4.84	
BH006H	30-Nov-98	11:45	-	Hoskisson	Producing	Csg	6.78	0.11			15.69	77.40	0.02	0.00	100.00	0.739	704	702	21.233	6.97	
BH007																					
WP001	03-Apr-98	17:50	-	Porcupine	Flowing	Csg	22.39	0.44			1.95	74.90	0.25	0.06	100.00	0.695	765	689	19.288	0.46	
WP001	04-Apr-98	13:45	-	Porcupine	Flowing	Csg	22.50	0.43			2.01	74.75	0.27	0.04	100.00	0.695	763	687	19.302	0.46	
WP001	05-Apr-98	14:15	-	Mauls Ck	Flowing	Tbg	22.47	0.42			4.08	72.68	0.26	0.06	100.00	0.688	745	670	19.925	0.50	
WP001	24-Oct-98	18:40	-	Porcupine	Flowing	Tbg	21.19	0.45			2.23	75.78	0.29	0.06	100.00	0.694	774	697	19.218	0.55	
WP001	24-Oct-98	18:45	-	Porcupine	Flowing	Tbg	21.21	0.44			2.23	75.76	0.29	0.07	100.00	0.694	775	698	19.235	0.55	
WP001	30-Oct-98	16:35	1014	Combined	Producing	Csg	21.97	0.45			2.31	74.29	0.28	0.07	100.00	0.698	765	690	19.341	0.55	
WP001	07-Nov-98	13:50	1018	Combined	Producing	Csg	21.99	0.45			2.28	74.92	0.29	0.07	100.00	0.698	765	690	19.335	0.55	
WP001	13-Nov-98	11:00	1022	Combined	Producing	Csg	21.93	0.45			2.24	75.03	0.28	0.06	100.00	0.687	766	690	19.310	0.55	
WP001	30-Nov-98	8:30	-	Combined	Producing	Csg	21.28	0.32			2.10	75.96	0.29	0.05	100.00	0.683	775	698	19.194	0.55	
WP001	11-Feb-99	7:30	1043	Combined	Producing	Csg	21.50	0.47			2.11	75.60	0.27	0.05	100.00	0.683	771	694	19.020	0.55	
WP001	23-Feb-99	15:30	1061	Combined	Producing	Csg	21.32	0.45			2.44	75.47	0.27	0.05	100.00	0.688	770	693	19.262	0.59	
WP003	11-Feb-99	8:20	1044	Mauls Ck	Flowing	Csg	91.63	0.05			0.35	7.95	0.01	0.00	100.00	0.936	81	73	27.104	0.00	
WP003	17-Feb-99	15:00	1052	Mauls Ck	Producing	Csg	22.17	0.05			47.40	30.95	0.03	0.00	100.00	1.103	308	277	31.951	0.37	
WP003	23-Feb-99	15:10	1063	Mauls Ck	Producing	Csg	15.99	0.07			53.23	30.65	0.05	0.01	100.00	1.134	311	280	32.844	0.27	
WP004																					
WP005																					

## Appendix C:

### Agency/Stakeholder Consultation Correspondence

In accordance with Section 3.2 of the NSW Government's *Independent Audit Post Approval Requirements* (May 2020), consultation letters were sent by email to the relevant agencies/stakeholders. Consultation letters and agency/stakeholder comments received in response to the consultation letters are reproduced in this Appendix, and form the issues which are recorded with investigation outcomes in Appendix B.

#### INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD

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2<sup>nd</sup> August 2023

Joel Curran  
Senior Compliance Officer  
NSW Department of Planning and Environment  
Level 4, 6 Stewart Avenue  
Newcastle West NSW 2302

By email: [joel.curran@planning.nsw.gov.au](mailto:joel.curran@planning.nsw.gov.au)  
[information@planning.nsw.gov.au](mailto:information@planning.nsw.gov.au)

Dear Joel Curran

#### Narrabri Gas Project (SSD 6456) – Independent Environmental Audit 2023

Integrated Environmental Systems Pty Ltd has been engaged by the Applicant, Santos NSW (Eastern) Pty Ltd, to undertake an Independent Environmental Audit (audit) of the Narrabri Gas Project (Project) in August 2023. This audit is required by Condition D9 in the Conditions of Consent for State Significant Development No. 6456 (SSD 6456), issued by the Independent Planning Commission of NSW on 30<sup>th</sup> September 2020. I am the Lead Auditor for this audit.

SSD 6456, including Condition D9, is linked here: <https://narrabrigasproject.com.au/wp-content/uploads/2023/02/SSD-6456-Development-Consent.pdf>

This audit will be prepared and conducted in accordance with the NSW Government's *Independent Audit Post Approval Requirements* (IPAR) (May 2020), linked here: <https://www.planning.nsw.gov.au/sites/default/files/2023-02/independent-audit-par-202005.pdf>

The proposed audit scope will include the matters set out in Condition D9 of SSD 6456 and an assessment of other relevant matters as described in Section 3.3 of the IPAR. We developed this proposed audit scope according to the requirements in Condition D9 of SSD 6456 and Sections 3.2 and 3.3 of the IPAR.

The Project is currently in "Phase 1" status. Phase 1 (the first of four Phases) is defined in SSD 6456 as:

*"The phase of the development comprising ongoing exploration and appraisal activities in the project area, including:*

- seismic surveys;
- core and chip holes;
- construction and operation of pilot wells (up to 25 wells on up to 25 well pages across the project area); and
- pilot well ancillary infrastructure, including access tracks, gas and water gathering lines, water balance tanks, safety flaring infrastructure, utilities and services, and environmental monitoring equipment including groundwater monitoring bores.

*When/if operations move to a PPL [i.e. Petroleum Production Lease under the Petroleum (Onshore) Act 1991], activities allowed under the beneficial use of gas provisions are no longer permissible".*

The audit period for this audit will be from 30<sup>th</sup> September 2020 (the date of approval of SSD 6456) to 24<sup>th</sup> August 2023 (the scheduled last day of the auditors' on-site attendance for this audit).

In accordance with Sections 3.2 and 3.3 of the IPAR, we invite your agency to:

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If your agency wishes to respond to this request/invitation, please email your response to me at: [rubak1512@gmail.com](mailto:rubak1512@gmail.com), on or before close of business on Monday 21<sup>st</sup> August 2023. We will appreciate your early response.

This letter and your written response (if any) will be included in the final issued version of the audit report as referred to in Condition D10 of SSD 6456.

Yours sincerely,

INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD



Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEIANZ  
Director and Principal Environmental Auditor



**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

A.B.N. 44 079 213 988  
PO Box 98, Battery Point, Hobart, Tasmania 7004 Australia  
Telephone: 0411 724 476 Email: [nubak1512@gmail.com](mailto:nubak1512@gmail.com)

7<sup>th</sup> August 2023

Samantha Wynn  
Senior Team Leader – Planning, North West, Biodiversity and Conservation  
Department of Planning and Environment – Biodiversity and Conservation Division  
48-52 Wingewarra Street  
Dubbo NSW 2830

By email: [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)  
[rog.nw@environment.nsw.gov.au](mailto:rog.nw@environment.nsw.gov.au)

Dear Samantha Wynn

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

Integrated Environmental Systems Pty Ltd has been engaged by the Applicant, Santos NSW (Eastern) Pty Ltd, to undertake an Independent Environmental Audit (audit) of the Narrabri Gas Project (Project) in August 2023. This audit is required by Condition D9 in the Conditions of Consent for State Significant Development No. 6456 (SSD 6456), issued by the Independent Planning Commission of NSW on 30<sup>th</sup> September 2020. I am the Lead Auditor for this audit.

SSD 6456, including Condition D9, is linked here: <https://narrabrigasproject.com.au/wp-content/uploads/2023/02/SSD-6456-Development-Consent.pdf>

This audit will be prepared and conducted in accordance with the NSW Government's Independent Audit Post Approval Requirements (IPAR) (May 2020), linked here: <https://www.planning.nsw.gov.au/sites/default/files/2023-02/independent-audit-par-202005.pdf>

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7<sup>th</sup> August 2023

Robert Smith  
Executive Director, Park Operations (Inland), National Parks and Wildlife Service  
Department of Planning and Environment – Environment and Heritage Group  
4 Parramatta Square, 12 Darcy Street  
Parramatta NSW 2150

By email: [nwps.northerninlandbranch@environment.nsw.gov.au](mailto:nwps.northerninlandbranch@environment.nsw.gov.au)  
[rog.nw@environment.nsw.gov.au](mailto:rog.nw@environment.nsw.gov.au)

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7<sup>th</sup> August 2023

Tim Baker  
Senior Water Regulation Officer  
NSW Natural Resources Access Regulator  
4 Parramatta Square, 12 Darcy Street  
Parramatta NSW 2150

By email: [tim.baker@dpse.nsw.gov.au](mailto:tim.baker@dpse.nsw.gov.au)  
[nra.enquiries@nra.nsw.gov.au](mailto:nrar.enquiries@nra.nsw.gov.au)

Dear Tim Baker

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7<sup>th</sup> August 2023

Sam Kidman  
Executive Director  
Heritage NSW  
4 Parramatta Square, 12 Darcy Street  
Parramatta NSW 2150

By email: [heritagemailbox@environment.nsw.gov.au](mailto:heritagemailbox@environment.nsw.gov.au)

Dear Sam Kidman

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

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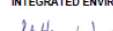
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7<sup>th</sup> August 2023

Matthew Newton  
Director Compliance  
NSW Resources Regulator  
516 High Street  
Maitland NSW 2320

By email: [nswresourcesregulator@service-now.com](mailto:nswresourcesregulator@service-now.com)

Dear Matthew Newton

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7<sup>th</sup> August 2023

Jarrod Dashwood  
Forest Occupancy Supervisor – Western Region  
Forestry Corporation of NSW  
Suite 2, 1<sup>st</sup> Floor, 168-172 Brisbane Street  
Dubbo NSW 2830

By email: [dubboadmin@fonsw.com.au](mailto:dubboadmin@fonsw.com.au)  
[info@fonsw.com.au](mailto:info@fonsw.com.au)

Dear Jarrod Dashwood

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7<sup>th</sup> August 2023

Anntia Devine  
Water Regulation Officer  
WaterNSW  
3 Caroline Way  
Narrabri NSW 2390

By email: [enquiries@water.nsw.gov.au](mailto:enquiries@water.nsw.gov.au)

Dear Anntia Devine

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SSD 6456, including Condition D9, is linked here: <https://narrabrigasproject.com.au/wp-content/uploads/2023/02/SSD-6456-Development-Consent.pdf>

This audit will be prepared and conducted in accordance with the NSW Government's *Independent Audit Post Approval Requirements* (IPAR) (May 2020), linked here: <https://www.planning.nsw.gov.au/sites/default/files/2023-02/independent-audit-par-202005.pdf>

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The Project is currently in "Phase 1" status. Phase 1 (the first of four Phases) is defined in SSD 6456 as:

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- seismic surveys;
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- pilot well ancillary infrastructure, including access tracks, gas and water gathering lines, water balance tanks, safety flaring infrastructure, utilities and services, and environmental monitoring equipment including groundwater monitoring bores.

When/if operations move to a PPL [i.e. Petroleum Production Lease under the Petroleum (Onshore) Act 1991], activities allowed under the beneficial use of gas provisions are no longer permissible."

The audit period for this audit will be from 30<sup>th</sup> September 2020 (the date of approval of SSD 6456) to 24<sup>th</sup> August 2023 (the scheduled last day of the auditors' on-site attendance for this audit).

In accordance with Sections 3.2 and 3.3 of the IPAR, we invite your agency to:

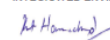
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This letter and your written response (if any) will be included in the final issued version of the audit report as referred to in Condition D10 of SSD 6456.

Yours sincerely,  
**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

  
Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
Director and Principal Environmental Auditor

**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

A.B.N. 44 079 213 988  
PO Box 98, Battery Point, Hobart, Tasmania 7004 Australia  
Telephone: 0411 724 476 Email: [nubak1512@gmail.com](mailto:nubak1512@gmail.com)

7<sup>th</sup> August 2023

Christine Fawcett  
Manager Environmental Operations  
Department of Regional NSW – Mining, Exploration and Geoscience  
516 High Street  
Maitland NSW 2320

By email: [files@regional.nsw.gov.au](mailto:files@regional.nsw.gov.au)  
[christine.fawcett@planning.nsw.gov.au](mailto:christine.fawcett@planning.nsw.gov.au)

Dear Christine Fawcett

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PO Box 98, Battery Point, Hobart, Tasmania 7004 Australia  
Telephone: 0411 724 476 Email: rubak1512@gmail.com

7<sup>th</sup> August 2023

Mark Ozinga  
Principal Manager, Land Use Planning & Development – Freight, Strategy & Planning Division  
Transport for NSW  
18 Lee Street  
Chippendale NSW 2008

By email: [mark.ozinga@transport.nsw.gov.au](mailto:mark.ozinga@transport.nsw.gov.au)  
[development.west@transport.nsw.gov.au](mailto:development.west@transport.nsw.gov.au)

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7<sup>th</sup> August 2023

Eric Groth  
General Manager  
Gunnedah Shire Council  
63 Elgin Street  
Gunnedah NSW 2380

By email: [council@infogunnedah.com.au](mailto:council@infogunnedah.com.au)  
[ericgroth@infogunnedah.com.au](mailto:ericgroth@infogunnedah.com.au)

Dear Eric Groth

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7<sup>th</sup> August 2023

Robert Williams  
General Manager  
Narrabri Shire Council  
46-48 Maitland Street  
Narrabri NSW 2390

By email: [council@narrabri.nsw.gov.au](mailto:council@narrabri.nsw.gov.au)

Dear Robert Williams

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

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7<sup>th</sup> August 2023

Roger Bailey  
General Manager  
Warrumbungle Shire Council  
14-22 John Street  
Coonabarabran NSW 2357

By email: [info@warrumbungle.nsw.gov.au](mailto:info@warrumbungle.nsw.gov.au)  
[roger.bailey@warrumbungle.nsw.gov.au](mailto:roger.bailey@warrumbungle.nsw.gov.au)

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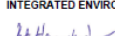
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7<sup>th</sup> August 2023

David Neeves  
General Manager  
Gillandra Shire Council  
15 Warren Road  
Gillandra NSW 2827

By email: [council@gillandra.nsw.gov.au](mailto:council@gillandra.nsw.gov.au)

Dear David Neeves

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Yours sincerely,  
**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**



Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
Director and Principal Environmental Auditor

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A.B.N. 44 079 213 988  
PO Box 98, Battery Point, Hobart, Tasmania 7004 Australia  
Telephone: 0411 724 476 Email: [nubak1512@gmail.com](mailto:nubak1512@gmail.com)

7<sup>th</sup> August 2023

David Boverman  
Manager Development Planning and Policy  
NSW Rural Fire Service  
4 Murray Rose Avenue  
Sydney Olympic Park NSW 2127

By email: [info@rfs.nsw.gov.au](mailto:info@rfs.nsw.gov.au)

Dear David Boverman

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

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• pilot well ancillary infrastructure, including access tracks, gas and water gathering lines, water balance tanks, safety flaring infrastructure, utilities and services, and environmental monitoring equipment including groundwater monitoring bores.  
When operations move to a PPL [i.e. Petroleum Production Lease under the Petroleum (Onshore) Act 1991], activities allowed under the beneficial use of gas provisions are no longer permissible.'

The audit period for this audit will be from 30<sup>th</sup> September 2020 (the date of approval of SSD 6456) to 24<sup>th</sup> August 2023 (the scheduled last day of the auditors' on-site attendance for this audit).

In accordance with Sections 3.2 and 3.3 of the IPAR, we invite your agency to:

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7<sup>th</sup> August 2023

Heather Middleton  
Manager Mining Impacts  
Dams Safety NSW  
4 Parramatta Square, 12 Darcy Street  
Parramatta NSW 2150

By email: [info@damsafety.nsw.gov.au](mailto:info@damsafety.nsw.gov.au)

Dear Heather Middleton

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

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7<sup>th</sup> August 2023

Kane Scott  
Acting Director WHS Regional  
SafeWork NSW  
92-100 Dominion Street  
Gosford NSW 2250

By email: [contact@safe-work.nsw.gov.au](mailto:contact@safe-work.nsw.gov.au)

Dear Kane Scott

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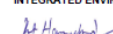
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7<sup>th</sup> August 2023

Daire Fleming  
Manager – Fire Safety Advisory Unit, Community Safety Directorate  
Fire & Rescue NSW  
1 Amana Avenue  
Greenacre NSW 2190

By email: [daire.fleming@fire.nsw.gov.au](mailto:daire.fleming@fire.nsw.gov.au)  
[firesafety@fire.nsw.gov.au](mailto:firesafety@fire.nsw.gov.au)

Dear Daire Fleming

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7<sup>th</sup> August 2023

James Hutchinson-Smith  
General Manager  
North West Local Land Services  
101 Barwan Street  
Narrabri NSW 2390

By email: [admin.northwest@lls.nsw.gov.au](mailto:admin.northwest@lls.nsw.gov.au)  
[james.hutchinsonsmith@lls.nsw.gov.au](mailto:james.hutchinsonsmith@lls.nsw.gov.au)

Dear James Hutchinson-Smith

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Danny Young  
Crown Lands North West Area Manager  
Department of Planning and Environment – Crown Lands  
Level 2, 155-157 Marius Street  
Tamworth NSW 2340

By email: [enquiries@crowland.nsw.gov.au](mailto:enquiries@crowland.nsw.gov.au)  
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Dear Danny Young

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7<sup>th</sup> August 2023

Dr Chris Lidman  
SSO Director, Astronomer  
Siding Spring Observatory  
Observatory Road  
Coombarabarra NSW 2357

By email: [christopher.lidman@anu.edu.au](mailto:christopher.lidman@anu.edu.au)  
[sso.admin@anu.edu.au](mailto:sso.admin@anu.edu.au)

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We developed this proposed audit scope according to the requirements in Condition D9 of SSD 6456 and Sections 3.2 and 3.3 of the IPAR, and taking into account written advice from the Planning Secretary to the Applicant that the "hazard audit" referred to in paragraph (d) of Condition D9 of SSD 6456 is not required for this audit. That advice reads: "Further, as the hazard studies and plans referenced in condition D9(d) of the consent are not required by Phase 1 works, the hazard audit (and therefore the requirement for a hazard expert) is not required for the 2023 IEA."

The Project is currently in "Phase 1" status. Phase 1 (the first of four Phases) is defined in SSD 6456 as:

"The phase of the development comprising ongoing exploration and appraisal activities in the project area, including:

- seismic surveys;
- core and chip holes;
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- pilot well ancillary infrastructure, including access tracks, gas and water gathering lines, water balance tanks, safety flaring infrastructure, utilities and services, and environmental monitoring equipment including groundwater monitoring bores.

When operations move to a PPL (i.e. Petroleum Production Lease under the Petroleum (Onshore) Act 1991), activities allowed under the beneficial use of gas provisions are no longer permissible."

The audit period for this audit will be from 30<sup>th</sup> September 2020 (the date of approval of SSD 6456) to 24<sup>th</sup> August 2023 (the scheduled last day of the auditors' on-site attendance for this audit).

In accordance with Sections 3.2 and 3.3 of the IPAR, we invite the Siding Spring Observatory (SSO) to:

1. provide input into the audit scope as proposed above, to enable us to refine the audit scope if needed;
2. raise any specific environmental issues of concern regarding the Project; and
3. provide feedback on the environmental management and/or environmental performance of the Project to date.

Members of the audit team will attend the Project site from **Tuesday 22<sup>nd</sup> August to Thursday 24<sup>th</sup> August 2023**. The auditors will undertake a site inspection during this attendance.

If the SSO wishes to respond to this invitation, please email your response to me at [nubak1512@gmail.com](mailto:nubak1512@gmail.com), on or before close of business on **Monday 21<sup>st</sup> August 2023**. We will appreciate your early response.

This letter and your written response (if any) will be included in the final issued version of the audit report as referred to in Condition D10 of SSD 6456.

Yours sincerely,  
**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**



Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
Director and Principal Environmental Auditor

**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

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Telephone: 0411 724 476 Email: [nbak1512@gmail.com](mailto:nbak1512@gmail.com)

7<sup>th</sup> August 2023

Alan Goodwin  
Director, Regional Delivery  
Biodiversity Conservation Trust  
4 Parramatta Square, 12 Darby Street  
Parramatta NSW 2150

By email: [info@bct.nsw.gov.au](mailto:info@bct.nsw.gov.au)  
[bct@environment.nsw.gov.au](mailto:bct@environment.nsw.gov.au)

Dear Alan Goodwin

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

Integrated Environmental Systems Pty Ltd has been engaged by the Applicant, Santos NSW (Eastern) Pty Ltd, to undertake an Independent Environmental Audit (audit) of the Narrabri Gas Project (Project) in August 2023. This audit is required by Condition D9 in the Conditions of Consent for State Significant Development No. 6456 (SSD 6456), issued by the Independent Planning Commission of NSW on 30<sup>th</sup> September 2020. I am the Lead Auditor for this audit.

SSD 6456, including Condition D9, is linked here: <https://narrabrigasproject.com.au/wp-content/uploads/2023/02/SSD-6456-Development-Consent.pdf>

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In accordance with Sections 3.2 and 3.3 of the IPAR, we invite your agency to:

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**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

  
Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
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7<sup>th</sup> August 2023

Garry West  
Independent Chair  
Narrabri Gas Project Water Technical Advisory Group

By email: [garry.west@qbwoconsulting.com.au](mailto:garry.west@qbwoconsulting.com.au)

Dear Garry West

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

Integrated Environmental Systems Pty Ltd has been engaged by the Applicant, Santos NSW (Eastern) Pty Ltd, to undertake an Independent Environmental Audit (audit) of the Narrabri Gas Project (Project) in August 2023. This audit is required by Condition D9 in the Conditions of Consent for State Significant Development No. 6456 (SSD 6456), issued by the Independent Planning Commission of NSW on 30<sup>th</sup> September 2020. I am the Lead Auditor for this audit.

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Yours sincerely,  
**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

  
Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
Director and Principal Environmental Auditor

**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

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Telephone: 0411 724 476 Email: [nbak1512@gmail.com](mailto:nbak1512@gmail.com)

7<sup>th</sup> August 2023

Garry West  
Independent Chair  
Narrabri Gas Project Community Consultative Committee

By email: [garry.west@qbwoconsulting.com.au](mailto:garry.west@qbwoconsulting.com.au)

Dear Garry West

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

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In accordance with Sections 3.2 and 3.3 of the IPAR, we invite the Community Consultative Committee (CCC) to:

1. provide input into the audit scope as proposed above, to enable us to refine the audit scope if needed;
2. raise any specific environmental issues of concern regarding the Project; and
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If the CCC wishes to respond to this invitation, please email your response to me at: [nbak1512@gmail.com](mailto:nbak1512@gmail.com), on or before close of business on **Monday 21<sup>st</sup> August 2023**. We will appreciate your early response.

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Yours sincerely,  
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Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
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7<sup>th</sup> August 2023

Garry West  
Independent Chair  
Narrabri Gas Project Aboriginal Cultural Heritage Advisory Group

By email: [garry.west@qbwoconsulting.com.au](mailto:garry.west@qbwoconsulting.com.au)

Dear Garry West

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

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Yours sincerely,  
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Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
Director and Principal Environmental Auditor



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7<sup>th</sup> August 2023

Garry West  
Independent Chair  
Narrabri Gas Project Biodiversity Advisory Group

By email: [garry.west@kobwoonsulting.com.au](mailto:garry.west@kobwoonsulting.com.au)

Dear Garry West

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

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Yours sincerely,  
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Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
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PO Box 98, Battery Point, Hobart, Tasmania 7004 Australia  
Telephone: 0411 724 476 Email: rubak1512@gmail.com

7<sup>th</sup> August 2023

Carmen Dwyer  
Executive Director, Regulatory Operations Regional  
NSW Environment Protection Authority  
6 Parramatta Square, 10 Darcy Street  
Parramatta NSW 2150

By email: [info@epa.nsw.gov.au](mailto:info@epa.nsw.gov.au)

Dear Carmen Dwyer

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

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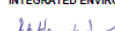
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7<sup>th</sup> August 2023

Garry West  
Independent Chair  
Narrabri Gas Project Greenhouse Gas Emissions Advisory Group

By email: [garry.west@kobwoonsulting.com.au](mailto:garry.west@kobwoonsulting.com.au)

Dear Garry West

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

Integrated Environmental Systems Pty Ltd has been engaged by the Applicant, Santos NSW (Eastern) Pty Ltd, to undertake an Independent Environmental Audit (audit) of the Narrabri Gas Project (Project) in August 2023. This audit is required by Condition D9 in the Conditions of Consent for State Significant Development No. 6456 (SSD 6456), issued by the Independent Planning Commission of NSW on 30<sup>th</sup> September 2020. I am the Lead Auditor for this audit.

SSD 6456, including Condition D9, is linked here: <https://narrabrigasproject.com.au/wp-content/uploads/2023/02/SSD-6456-Development-Consent.pdf>

This audit will be prepared and conducted in accordance with the NSW Government's Independent Audit Post Approval Requirements (IPAR) (May 2020), linked here: <https://www.planning.nsw.gov.au/sites/default/files/2023-02/independent-audit-par-202005.pdf>

The proposed audit scope will include the matters set out in Condition D9 of SSD 6456 other than a "hazard audit", and an assessment of other relevant matters as described in Section 3.3 of the IPAR.

We developed this proposed audit scope according to the requirements in Condition D9 of SSD 6456 and Sections 3.2 and 3.3 of the IPAR, and taking into account written advice from the Planning Secretary to the Applicant that the "hazard audit" referred to in paragraph (d) of Condition D9 of SSD 6456 is not required for this audit. That advice reads: "Further, as the hazard studies and plans referenced in condition D9(d) of the consent are not required by Phase 1 works, the hazard audit (and therefore the requirement for a hazard expert) is not required for the 2023 IEA."

The Project is currently in "Phase 1" status. Phase 1 (the first of four Phases) is defined in SSD 6456 as:

"The phase of the development comprising ongoing exploration and appraisal activities in the project area, including:

- seismic surveys;
- core and chip holes;
- construction and operation of pilot wells (up to 25 wells on up to 25 well pages across the project area); and
- pilot well ancillary infrastructure, including access tracks, gas and water gathering lines, water balance tanks, safety flaring infrastructure, utilities and services, and environmental monitoring equipment including groundwater monitoring bores.

When/if operations move to a PPL (i.e. Petroleum Production Lease under the Petroleum (Onshore) Act 1991), activities allowed under the beneficial use of gas provisions are no longer permissible."

The audit period for this audit will be from 30<sup>th</sup> September 2020 (the date of approval of SSD 6456) to 24<sup>th</sup> August 2023 (the scheduled last day of the auditors' on-site attendance for this audit).

In accordance with Sections 3.2 and 3.3 of the IPAR, we invite the Group to:


1. provide input into the audit scope as proposed above, to enable us to refine the audit scope if needed;
2. raise any specific environmental issues of concern regarding the Project; and
3. provide feedback on the environmental management and/or environmental performance of the Project to date.

Members of the audit team will attend the Project site from **Tuesday 22<sup>nd</sup> August to Thursday 24<sup>th</sup> August 2023**. The auditors will undertake a site inspection during this attendance.

If the Group wishes to respond to this invitation, please email your response to me at: [rubak1512@gmail.com](mailto:rubak1512@gmail.com), on or before close of business on **Monday 21<sup>st</sup> August 2023**. We will appreciate your early response.

This letter and your written response (if any) will be included in the final issued version of the audit report as referred to in Condition D10 of SSD 6456.

Yours sincerely,  
**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

  
Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
Director and Principal Environmental Auditor

**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

A.B.N. 44 079 213 988  
PO Box 98, Battery Point, Hobart, Tasmania 7004 Australia  
Telephone: 0411 724 476 Email: rubak1512@gmail.com

7<sup>th</sup> August 2023

Professor David Durheim  
Manager Development Planning and Policy  
NSW Health – Hunter New England Health District  
7 Bligh Street  
Tamworth NSW 2340

By email: [HNELHO-SRC@health.nsw.gov.au](mailto:HNELHO-SRC@health.nsw.gov.au)  
[d.durheim@nswcastle.edu.au](mailto:d.durheim@nswcastle.edu.au)

Dear Professor Durheim

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

Integrated Environmental Systems Pty Ltd has been engaged by the Applicant, Santos NSW (Eastern) Pty Ltd, to undertake an Independent Environmental Audit (audit) of the Narrabri Gas Project (Project) in August 2023. This audit is required by Condition D9 in the Conditions of Consent for State Significant Development No. 6456 (SSD 6456), issued by the Independent Planning Commission of NSW on 30<sup>th</sup> September 2020. I am the Lead Auditor for this audit.

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In accordance with Sections 3.2 and 3.3 of the IPAR, we invite your agency to:


1. provide input into the audit scope as proposed above, to enable us to refine the audit scope if needed;
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Yours sincerely,  
**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

  
Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEI/ANZ  
Director and Principal Environmental Auditor

**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**

A.B.N. 44 079 213 988  
PO Box 98, Battery Point, Hobart, Tasmania 7004 Australia  
Telephone: 0411 724 476 Email: [rubak1512@gmail.com](mailto:rubak1512@gmail.com)

7<sup>th</sup> August 2023

Giselle Howard  
Executive Director Water Planning  
Department of Planning and Environment – Water  
4 Parramatta Square, 12 Darcy Street  
Parramatta NSW 2150

By email: [water\\_assessments@dpie.nsw.gov.au](mailto:water_assessments@dpie.nsw.gov.au)  
[info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)

Dear Giselle Howard

**Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

Integrated Environmental Systems Pty Ltd has been engaged by the Applicant, Santos NSW (Eastern) Pty Ltd, to undertake an Independent Environmental Audit (audit) of the Narrabri Gas Project (Project) in August 2023. This audit is required by Condition D9 in the Conditions of Consent for State Significant Development No. 6456 (SSD 6456), issued by the Independent Planning Commission of NSW on 30<sup>th</sup> September 2020. I am the Lead Auditor for this audit.

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  - pilot well ancillary infrastructure, including access tracks, gas and water gathering lines, water balance tanks, safety flaring infrastructure, utilities and services, and environmental monitoring equipment including groundwater monitoring bores.
- When/if operations move to a PPL [i.e. Petroleum Production Lease under the Petroleum (Onshore) Act 1991], activities allowed under the beneficial use of gas provisions are no longer permissible."

The audit period for this audit will be from 30<sup>th</sup> September 2020 (the date of approval of SSD 6456) to 24<sup>th</sup> August 2023 (the scheduled last day of the auditors' on-site attendance for this audit).

In accordance with Sections 3.2 and 3.3 of the IPAR, we invite your agency to:

1. provide input into the audit scope as proposed above, to enable us to refine the audit scope if needed;
2. raise any specific environmental issues of concern regarding the Project; and
3. provide feedback on the environmental management and/or environmental performance of the Project to date.

Members of the audit team will attend the Project site from **Tuesday 22<sup>nd</sup> August to Thursday 24<sup>th</sup> August 2023**. The auditors will undertake a site inspection during this attendance.

If your agency wishes to respond to this invitation, please email your response to me at: [rubak1512@gmail.com](mailto:rubak1512@gmail.com), on or before close of business on **Monday 21<sup>st</sup> August 2023**. We will appreciate your early response.

This letter and your written response (if any) will be included in the final issued version of the audit report as referred to in Condition D10 of SSD 6456.

Yours sincerely,

**INTEGRATED ENVIRONMENTAL SYSTEMS PTY LTD**



Kurt Hammerschmid B.App.Sc. (Chem), M.Sc., MEANZ  
Director and Principal Environmental Auditor

From: Joel Curran <Joel.Curran@planning.nsw.gov.au>  
Sent: Monday, August 7, 2023 8:42 AM  
To: Jamie Lees <jamie@espoconsulting.com.au>; Heidi Watters <Heidi.Watters@planning.nsw.gov.au>  
Cc: rubak1512 <rubak1512@gmail.com>  
Subject: RE: Narrabri Gas Project IEA 2023 - Consultee concurrence

Hi Jamie

Thank you for getting in touch with the department. Please see my below comments in red.

It would be appreciated if the Department can review the attached consultation letter and list of consultees and reply to confirm:

1. that the attached consultation letter is satisfactory from the Department's perspective; **YES**
2. whether the Department has any comments / input in relation to points 1, 2 and 3 in the attached letter; **The audit must be carried out in accordance with the conditions of SSD-6456 as modified, and the Independent Audit Post Approval Requirements 2020. The department does not have any specific focus areas for the audit at this time. No feedback on the environmental performance of the project at this time**
3. that the attached consultation letter is suitable for use as a template for us to send to the proposed consultees in the attached list; **YES**
4. whether the Department agrees with the attached list of proposed consultees, or requires any additional consultees; **AGREED (no additional consultees required)**
5. whether the Department can add any specific Officer contact details in the list of proposed consultees, to help ensure all correspondence is directed to the relevant Officer. **Apologies, I don't have specific officer contact details for other government agencies.**

Regards

Joel Curran  
Senior Compliance Officer

Development Assessment | Department of Planning and Environment  
T 02 4904 2702 | M 0412 323 331 | E [joel.curran@planning.nsw.gov.au](mailto:joel.curran@planning.nsw.gov.au)  
PO Box 1226 | Newcastle NSW 2300  
Please direct all email correspondence to [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au)  
[www.dpie.nsw.gov.au](http://www.dpie.nsw.gov.au)



The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

If you are submitting a compliance document or request as required under the conditions of consent or approval, please note that the Department is no longer accepting lodgement via [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au).

The Department has upgraded the Major Projects Website to improve the timeliness and transparency of its post approval and compliance functions. As part of this upgrade, proponents are now requested to submit all post approval and compliance documents online, via the Major Projects Website. To do this, please refer to the instructions available [here](#).

From: Jamie Lees <jamie@espoconsulting.com.au>  
Sent: Monday, August 7, 2023 7:54 AM  
To: Heidi Watters <Heidi.Watters@planning.nsw.gov.au>; Joel Curran <Joel.Curran@planning.nsw.gov.au>  
Cc: rubak1512 <rubak1512@gmail.com>  
Subject: Narrabri Gas Project IEA 2023 - Consultee concurrence  
Importance: High

Hi Heidi and Joel

Further to my email last week (2 August 2023) [REDACTED] Environmental Advisor) for Santos NSW (Eastern) Pty Ltd has confirmed that the Planning Secretary has endorsed the audit team (excluding the Well Integrity expert) on 3 August 2023. As a result, the Audit team urgently requires the Department's concurrence with the proposed list of Agencies and Advisory groups consultees so we can request their input in accordance with Condition D9 of SSD 6456 and Sections 3.2 and 3.3 of the IPAR (May 2020).

I have attached an updated Consultee list which identifies a primary contact officer for the various agencies for your review and agreement.

The Audit team proposes emailing the consultation letter to the relevant consultees **today**, so our efforts to promptly provide the required response to this email and my email dated 2 August 2023 would be greatly appreciated.

Please do not hesitate to contact me (on behalf of Kurt Hammerschmid) on mob 0428 619 577 if you would like to discuss either the consultation letter or proposed consultees.

Kind Regards

Jamie Lees  
On behalf of Kurt Hammerschmid (Integrated Environmental Systems Pty Ltd)

From: Jamie Lees  
Sent: Wednesday, August 2, 2023 3:01 PM  
To: [heidi.watters@planning.nsw.gov.au](mailto:heidi.watters@planning.nsw.gov.au)  
Cc: Kurt Hammerschmid <rubak1512@gmail.com>; [joel.curran@planning.nsw.gov.au](mailto:joel.curran@planning.nsw.gov.au)  
Subject: Narrabri Gas Project IEA 2023

Dear Heidi

Please see the email below that was sent to Joel Curran regarding the Narrabri Gas Project IEA. The proposed Audit schedule is very tight, and I note that Joel is on away until the 7<sup>th</sup> August 2023.

It would be appreciated if you could assist by confirming the matters raised below on the basis that Joel is unavailable.

Please do not hesitate to contact me if you would like to discuss these matters in more detail.

Regards

Jamie Lees  
0428 619 577

From: Jamie Lees  
Sent: Wednesday, August 2, 2023 2:49 PM  
To: 'Joel.Curran@planning.nsw.gov.au' <Joel.Curran@planning.nsw.gov.au>  
Cc: 'Information@planning.nsw.gov.au' <information@planning.nsw.gov.au>; Kurt Hammerschmid <rubak1512@gmail.com>  
Subject: Narrabri Gas Project IEA 2023

Dear Joel

The Narrabri Gas Project (Project) - State Significant Development No. 6456 (SSD 6456), is required to undertake an Independent Environmental Audit (audit) in accordance with Condition D9 of the SSD within 12 months of commencement of Phase 1 of the Project. Phase 1 commenced on the 8th February 2023.

We understand that [REDACTED] Environmental Advisor) for Santos NSW (Eastern) Pty Ltd, has requested the Planning Secretary's endorsement of the proposed Integrated Environmental Systems Pty Ltd (IES) audit team, and this endorsement / approval is pending. Subject to the Planning Secretary's written endorsement of the Audit Team, the Project site inspection is proposed from **Tuesday 22<sup>nd</sup> August to Thursday 24<sup>th</sup> August 2023**. However, prior to commencement of the audit, the audit scope requires input from relevant agencies, committees, and groups (consultees).

We propose to contact the relevant consultees by email correspondence by no later than **4th August 2023** (subject to Audit Team endorsement being received) to request their input in accordance with Condition D9 of SSD 6456 and Sections 3.2 and 3.3 of the IPAR (May 2020).

I attach the consultation letter to the Department in accordance with Section 3.2 of the IPAR.

I also attach a list of the proposed consultees. To ensure a comprehensive approach to stakeholder consultation is taken, the attached list of consultees has been compiled by reviewing SSD 6456 and the bodies who made a submission during the Project EIS exhibition period - 21 February to 22 May 2017.

It would be appreciated if the Department can review the attached consultation letter and list of consultees and reply to confirm:

1. that the attached consultation letter is satisfactory from the Department's perspective;
2. whether the Department has any comments / input in relation to points 1, 2 and 3 in the attached letter;
3. that the attached consultation letter is suitable for use as a template for us to send to the proposed consultees in the attached list;
4. whether the Department agrees with the attached list of proposed consultees, or requires any additional consultees;
5. whether the Department can add any specific Officer contact details in the list of proposed consultees, to help ensure all correspondence is directed to the relevant Officer.

Your efforts to provide the above required responses promptly would be greatly appreciated.

Please do not hesitate to contact myself (on behalf of Kurt Hammerschmid) on mob 0428 619 577 if you would like to discuss either the consultation letter or proposed consultees.

Kind Regards

Jamie Lees  
On behalf of Kurt Hammerschmid (Integrated Environmental Systems Pty Ltd)



Mr. Kurt Hammerschmid  
Director and Principal Environmental Auditor  
Integrated Environmental Systems Pty Ltd  
Email: [rubak1512@gmail.com](mailto:rubak1512@gmail.com)

Your reference: SSD-6456  
Our reference: DOC23/718224

Dear Kurt,

**Independent Environmental Audit – State Significant Development – Narrabri Gas Project –  
SSD-6456**

Thank you for your referral seeking comment from Heritage NSW on the scope for the Independent Environmental Audit for the above State Significance Development (SSD). Thank you for the continued opportunity to comment on the project.

In respect to the scope of audit for Aboriginal cultural heritage, Heritage NSW notes the requirements under Section 5.8 (Disturbance activities and preclearance surveys) and Section 5.9 (Management of new finds) within the Narrabri Gas Project Aboriginal Cultural Heritage Management Plan (Santos 2022).

It is recommended that the Department of Planning and Environment's Compliance Team be contacted ([info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)) to determine if there is any non-compliance with Conditions of Consent for the project.

Please note that the above comments relate only to Aboriginal cultural heritage regulation matters. If you have any questions regarding these comments, please contact Alison Lamond, Senior Assessments Officer, at Heritage NSW on 0419 762 918 and [alison.lamond@environment.nsw.gov.au](mailto:alison.lamond@environment.nsw.gov.au)

Yours sincerely

A handwritten signature in black ink that reads "Nicole Davis".

Nicole Davis  
Manager Assessments  
Heritage NSW  
Department of Planning and Environment  
(As Delegate under National Parks and Wildlife Act 1974)  
25 August 2023

Locked Bag 5020 Parramatta NSW 2124  
P: 02 9873 8500 ■ E: [heritagemailbox@environment.nsw.gov.au](mailto:heritagemailbox@environment.nsw.gov.au)





AREQ0043786

Mr Kurt Hammerschmid  
PO Box 98  
Battery Point  
Hobart TAS 7004

By email: [rubak1512@gmail.com](mailto:rubak1512@gmail.com)

Dear Mr Hammerschmid,

**Subject: Narrabri Gas Project – Independent Environmental Audit**

Thank you for your email and letter dated 7 August 2023 requesting consultation on the independent environmental audit to be undertaken of the Narrabri Gas Project which is covered by the following petroleum titles:

- Petroleum Exploration Licence 238 (1955) – PEL238
- Petroleum Assessment Lease 2 (1991) – PAL2
- Petroleum Production Lease 3 (1991) – PPL3

The independent environmental audit is required to assess compliance against the relevant environmental management conditions of the petroleum licence and leases, including, where relevant, implementation of the petroleum operations plan for the site.

The audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice. It would be appreciated if a copy of the final audit report could be sent to the Regulator at [nswresourcesregulator@service-now.com](mailto:nswresourcesregulator@service-now.com) upon completion of the audit.

Yours sincerely

**Jenny Ehmsen**  
Principal Compliance Auditor  
9 August 2023

**NSW Resources Regulator**  
516 High Street Maitland NSW 2320 | PO Box 344 HRMC NSW 2310 | Tel: 1300 814 609 |  
[resourcesregulator.nsw.gov.au](http://resourcesregulator.nsw.gov.au)



## Department of Planning and Environment

Our Ref: DOC23/167396

Kurt Hammerschmid  
Director and Principal Environmental Auditor  
Integrated Environmental Systems Pty Ltd

Via email: [rubak1512@gmail.com](mailto:rubak1512@gmail.com)

Dear Mr Hammerschmid

**Re: Narrabri Gas Project (SSD 6456) – Independent Environmental Audit**

Reference is made to your email and correspondence addressed to Danny Young of the Department of Planning and Environment – Crown Lands (the Department), dated 7 August 2023 with regards to the Narrabri Gas Project (SSD 6456).

The Department has had the opportunity to review and comment in relation to the upcoming environmental audit of the Narrabri Gas Project. The Department has no further comment to add to the scope of the audit and information presented; however, a copy of the outcomes of the auditing process are requested to be provided to the Department.

Please don't hesitate to contact me should you wish to further discuss this matter.

Yours sincerely

A handwritten signature in black ink, appearing to read "Vicky Lyons".

Vicky Lyons  
A/Group Leader Property Management, Tamworth  
Department of Planning and Environment – Crown Lands

11 August 2023

66-68 Frome Street | PO Box 388 | MOREE NSW 2400 | [dpie.nsw.gov.au](http://dpie.nsw.gov.au)



> 15 Warren Road, Gilgandra 2827  
> PO Box 23, Gilgandra NSW 2827  
> P 02 6817 8800  
> council@gilgandra.nsw.gov.au  
[www.gilgandra.nsw.gov.au](http://www.gilgandra.nsw.gov.au)

EM.PL.1 (DN:RB)

Contact: David Neeves

15 August 2023

Attn: Mr Kurt Hammerschmid  
Director and Principal Environmental Auditor  
Integrated Environmental Systems Pty Ltd  
PO Box 98  
Battery Point  
HOBART TAS 7004

Dear Mr Hammerschmid

**NARRABRI GAS PROJECT (SSD 6456) – CONSULTATION AND INVITATION  
FOR INPUT INTO INDEPENDENT ENVIRONMENTAL AUDIT 2023**


We refer to your letter dated 7 August 2023.

Council wishes to advise that it has no:

- input to contribute in relation to the audit scope as proposed in your correspondence
- specific environmental issues of concern regarding the project and
- feedback to provide in relation to the environmental management and/or environmental performance of the Project to date.


Thank you for providing the opportunity for Council to provide input into the Project.

Yours faithfully




David Neeves  
General Manager



**Adam Jones**  
Please refer to the attached letter of 7 August 2023. Regards Adam Jones (Auditor), phone 0427 880 501 on behalf of Kurt Hammerschmid (Director and Principal En

Mon, 7 Aug, 16:31 (2 days ago) ☆

**David Durrheim (Hunter New England LHD)** <David.Durrheim@health.nsw.gov.au>  
to Philippe, me, HNELHD-SRC, d.durrheim@newcastle.edu.au, Kurt ▾

Tue, 8 Aug, 19:04 (21 hours ago) ☆ ↶ ⋮

Dear Adam

Thank you for this invitation.

We note that the Audit of SSD 6456 Narrabri Gas Project is for the period 30 September 2020 to 24 August 2023 and covers Phase 1 of this four Phase Project. Excluded from the audit is the hazard audit as it was not part of Phase 1 of the Project.

We understand that the scope of the audit as it relates to Phase 1 of the Project focuses on environmental management and environmental performance of the Project.

We would have interest in providing comment on the scope for future audits of the continuing Phases of the Project to ensure that potential public health impacts are being adequately managed, addressed and controlled.

Kind regards

David


Dr David Durrheim, AM  
MBCbB, MPH&TM, DTM&H, DCH, DrPH, FAFPHM, FACTM, FAAHMS  
Director of Health Protection, Hunter New England Local Health District  
Conjoint Professor of Public Health Medicine, University of Newcastle  
Adjunct Professor of Public Health and Tropical Medicine, James Cook University

Email: [David.Durrheim@health.nsw.gov.au](mailto:David.Durrheim@health.nsw.gov.au)  
Tel: [REDACTED]


## Narrabri Gas Project (SSD 6456) - Consultation and invitation for input into Independent Environmental Audit 2023

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**Adam Jones**  
Please refer to the attached letter of 7 August 2023. Regards Adam Jones (Auditor), phone 0427 880 501 on behalf of Kurt Hammerschmid (Director and Principal En

Mon, 7 Aug, 16:05 (2 days ago) ☆

**Daire Fleming**  
Admin, Please forward to appropriate team for action. @Adam Jones - Please forward all correspondence through the Admin (fire safety) email to ensure the appro

Mon, 7 Aug, 16:13 (2 days ago) ☆

**Operational Liaison** <Opl.Liaison@fire.nsw.gov.au>  
to Operational, me, Fire ▾

10:43 (5 hours ago) ☆ ↶ ⋮

Dear Adam,

Fire and Rescue NSW (FRNSW) acknowledge correspondence received on the 7 August 2023, requesting input into the Independent Environmental Audit 2023. FRNSW have reviewed the letter and linked development consent and make the following comments:

There is currently insufficient information available regarding the fire safety and emergency response management aspects of the project. FRNSW support Part 872 and 873 of the Development Consent and requests to be consulted and given the opportunity to review and provide comment regarding the proposed fire and life safety systems at phase 2 of the project.

Proponents of projects that require engagement with FRNSW are required to engage directly with FRNSW. Requests for a meeting with FRNSW can be submitted via the [FRNSW meeting](#) process. If a written response from FRNSW regarding this matter is required, this can be done by completing the [FRNSW written report application](#) form and sending to [FireSafety@fire.nsw.gov.au](mailto:FireSafety@fire.nsw.gov.au)

FRNSW publish guidelines and general information that may assist in the preparation of development applications. These include [fire safety guidelines](#), [technical information sheets](#), [FRNSW position statements](#) and [public consultation documents](#). You may wish to refer to these in the first instance as any advice provided by FRNSW will be consistent with these publications.

Regards,  
Luke



**STATION OFFICER LUKE LOSEBY**  
Team Leader Fire Safety  
Operation Liaison and Special Hazards Unit | Fire and Rescue NSW  
T: (02) 9742 7434 | M: 0410 259 991  
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Tuesday, 21 August 2023

Kurt Hammerschmid  
Director and Principal Environmental Auditor  
Integrated Environmental Systems Pty Ltd

Associate Professor Chris Lidman  
Director Siding Spring Observatory  
Research School of Astronomy and  
Astrophysics  
Observatory Rd  
Coonabarabran, NSW, 2357  
Phone: +61 2 6125 0228  
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Email: [Christopher.Lidman@anu.edu.au](mailto:Christopher.Lidman@anu.edu.au)  
<http://rsaa.anu.edu.au>  
[www.anu.edu.au](http://www.anu.edu.au)

CRICOS Provider No. 00120C

**Reference: Narrabri Gas Project (SSD 6456) – Consultation and invitation for input into Independent Environmental Audit 2023**

Dear Mr. Hammerschmid,

Thank you for giving me an opportunity to provide input into the environmental audit that was outlined in your letter dated August 7<sup>th</sup>, 2023.

Siding Spring Observatory (SSO) is Australia's largest astronomical optical observatory and is part of Australia's first internationally recognized dark sky park. The Observatory is home to over a dozen facilities run by national and international organizations.

A night sky free of light pollution is critical to the operations of the Observatory.

Part B of the Development Consent lists several specific environmental conditions that are aimed at reducing the impact of light pollution from the development. The conditions most relevant are points (a) to (d) in B65. The Observatory wishes to understand if these conditions are being met.

An assessment of the impact of gas flaring on the night sky above the Observatory was published in Appendix K of the Response to Submissions. At that time, it was concluded that the flares would have a negligible impact on Observatory operations.

The Observatory would like to understand if there have been any changes to SANTOS operations that would change that conclusion.

Please do not hesitate to contact me if you have any questions.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Chris Lidman".

Associate Professor Chris Lidman  
Director, Siding Spring Observatory  
The Australian National University

Research School of Astronomy and Astrophysics

## Narrabri Gas Project (SSD 6456) - Consultation and invitation for input into Independent Environmental Audit 2023



Adam Jones

Please refer to the attached letter of 7 August 2023. Regards Adam Jones (Auditor), phone 0427 880 501 on behalf of Kurt Hammerschmid (Director and Principal En

Mon, 7 Aug, 16:11



Garry West &lt;garry.west@gbwconsulting.com.au&gt;

to me, Kurt

Wed, 9 Aug, 14:17

Adam

I wish to acknowledge receipt of your correspondence in regard to the Narrabri Gas Project (SSD 6456) Independent Environment Audit 2023.

I will forward your correspondence to members of the Community Consultative Committee to ascertain if anyone wishes to respond to your invitation. Thank you for providing the details that the audit will cover.

Regards

Garry West

From: Denise Murray  
Sent: Tuesday, 22 August 2023 9:32 AM  
To: rubak1512@gmail.com  
Cc: Denise Murray  
Subject: Current Independent Environmental Audit of the Narrabri Gas Project

Sir

As a former delegate and now an alternate delegate for People For The Plains to the Narrabri CCC and after much thought I have come to the decision NOT to participate in this Audit as its current format stands.

In the past there have been many requests to the NQPOCC to participate in various Studies as well as requesting CCC member input into various matters concerning the NGP both Environmental and Operational and this includes the Project EIS and Modifications to the Exploration, Widgee Park, Social Impacts of the Development as well as the Projects effect on ALL aspects of the Environment, this include Air/Water (all levels) and soil as well as the Fauna/Flora.

Only one body listened too and eventually accepted my requested input, this was despite a nearly concerted opposing effort by Santos. Santos retaliated by modifying the required and publically available, water level/time graphs to such an extent that they are now meaningless. They comply with the Guidelines but are meaningless compared with the original versions and Santos committed too, monitoring requirement.

With the exception of one, all my input has been ignored despite me having SANTOS provided documentation to back-up my statements, much of which has been provided with my "input" or "submission".

All this Audit will do is to allow Santos and others to know a small piece of what I know about Santos's Environmental Record and indeed the Environmental record history of the Gas Development in the Pilliga Forest and surrounds.

I will be honest and blunt with you: "Unless I and Santos are required to give input into your Audit under oath, I will not participate", and that will never happen the various levels of Departments overseeing and the "Process" in charge will never allow that to occur.

I am sure you already know all the modifications to the "Conditions of Consent" that Santos has already been granted, with regards to the NGP.

One final point before I send this email. I suggest that your Staff's time would be better spent going back over ALL the documentation, REP's, all the DIO's (old and new) documentation, ALL the Reports either by Santos or Commissioned and Reports by previous operators and Reports by non Project connected by never-the-less highly qualified people, concerning Environmental Matters around this project since the mid 1900's, and seeing that this Audit will pick up on ongoing, existing and future problems, making the correct, for the Environment, recommendations.

This Audit will find some reason not to look at ALL the records to see how Santos is truly complying, I will even go as far as to say that this Audit will miss at-least one, amongst many, both current and potential, very obvious Environmental matters, both preventative and existing, hidden in plain sight and there are many "Legacy" matters which will be glossed over by your Audit.

So, I lived in the Project area, I reported the Bibblebrook Forest Kill to DII well before Santos did. They tried to say it was "Eucalyptus water" that I saw. I even took two members of Santos Staff around the entire Project Area on 4th Jan 2012, showing them the Environmental damage that the project had brought to the Pilliga Forest. All this is recorded, despite what Santos claims.

Conclusion:  
Unless a proper under oath Audit is done, then this Audit will just be like all the rest and make no real change to the existing Status-quo.

To provide some validity I have included a Gas Analysis from over 20 years ago. Where is the current gas Analysis of these wells and how does it compare?

I have included the President and Secretary of People For The Plains in this email.

Yours Sincerely  
Mr A J Poyard

One attachment • Scanned by Gmail

From: Denise Murray  
Sent: Tuesday, 22 August 2023 2:16 PM  
To: rubak1512@gmail.com  
Subject: Re: Independent audit of Santos-- invitation

To Kurt,

To follow up on our phone conversation on Monday afternoon 21/8/2023.

I wish to advise that it is not possible in the time available (until Wednesday afternoon 23/8/2023) to come to grips with what is required under Consent Condition D9 and engage in the consultation required to provide meaningful input into this environmental survey.

To state the obvious, if you want consultation and input from the CCC then we (People for the Plains at least) would require much earlier notification.

We would appreciate being sent a copy of the final survey findings, as we may consider providing feedback if we thought it would be worth our while.

In an email to you one of our members has expressed his personal frustrations about the process of dealing with Santos.

This is something we understand.

Regards

Stuart Murray

People for the Plains

Narrabri Gas Project CCC Delegate

On Sat, Aug 19, 2023 at 4:59 PM Denise Murray wrote:

To Kurt,

Garry West the Chair of the Narrabri Gas Project Community Consultation Committee (CCC) has forwarded an invitation to participate in the Audit described in your PDF attachment to his email.

As a delegate for People for the Plains to the Santos Narrabri Gas Project Community Consultation Committee I would like to advise that we would like to accept the invitation to provide input into this Audit.

I would appreciate some details of how and when this could be achieved.

Regards

Stuart Murray

People for the Plains

Phone



## Appendix D: Planning Secretary's Endorsement of Audit Team

Department of Planning and Environment



Mr [REDACTED]  
Area Manager  
Production QLD/NSW NASCAR  
Santos Ltd  
60 Flinders Street  
ADELAIDE SA 5000

Sent via the Major Projects Portal only

03/08/2023

Dear Mr [REDACTED]

### **Narrabri Gas Project (SSD-6456) Auditor Endorsement Request – 2023 IEA**

I refer to your request (SSD-6456-PA-68) for the Planning Secretary's approval of suitably qualified persons to prepare the 2023 Independent Environmental Audit (IEA) as required by condition D9 of development consent SSD-6456 (the consent) for the Narrabri Gas Project.

Condition D9 of the consent requires an IEA to be undertaken within 1 year of commencement of Phase 1. The Department of Planning and Environment (the department) understands that Phase 1 commenced on 7 February 2023.

The department has reviewed the nominations and information you have provided and is satisfied that these experts are suitably qualified and experienced. Consequently, I can advise that the Planning Secretary endorses the following audit team:

- Kurt Hammerschmid – Lead Auditor
- Jamie Lees – Audit Facilitator
- Adam Jones – Consultation and Legal Review
- Andrew Moser – Groundwater Expert

The department notes that a well integrity expert as required by condition D9 of the consent has not yet been nominated for the 2023 IEA. A well integrity expert must be nominated as soon as possible; therefore please submit a nomination to the department via the Major Projects Portal by **18 August 2023**, or as otherwise agreed with the department prior to this date.

Further, as the hazard studies and plans referenced in condition D9(d) of the consent are not required by Phase 1 works, the hazard audit (and therefore the requirement for a hazard expert) is not required for the 2023 IEA.

Please note that the endorsement of the Planning Secretary must be sought for the audit team for future IEAs.



Department of Planning and Environment



Finally, the IEA must be prepared, undertaken and finalised in accordance with the conditions of the consent and with consideration of the department's *Independent Audit Post Approval Requirements* (2020). Failure to meet these requirements will require revision and resubmission of the IEA report.

Should you wish to discuss the matter further, please myself at [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au)

Yours sincerely

A handwritten signature in black ink that reads "H Watters".

Heidi Watters  
Team Leader Northern  
Compliance

As nominee of the Planning Secretary



Department of Planning and Environment

Mr [REDACTED]  
Area Manager  
Production QLD/NSW NASCAR  
Santos Ltd  
60 Flinders Street  
Adelaide SA 5000

Sent via the Major Projects Portal only

11/08/2023

Dear Mr [REDACTED]

**Narrabri Gas Project (SSD-6456)**  
**Well Integrity auditor endorsement request – 2023 IEA**

Reference is made to your post approval matter, SSD-6456-PA-70, request for the Planning Secretary's approval of a suitably qualified, experienced, and independent person to fulfill the role of Well Integrity Expert for the 2023 Independent Environmental Audit (IEA) as required by Schedule 2, Part D, Condition D9 of SSD-6456 (the consent) for the Narrabri Gas Project.

The department has reviewed the nomination and information you have provided and is satisfied that Gordon Duncan is suitably qualified, experienced, and independent. Consequently, I can advise that the Planning Secretary endorses Mr Gordon Duncan as the Well Integrity Expert for the 2023 IEA.

As per previous correspondence from the department dated 03/08/2023 endorsing the other members of the IEA team, the department considers the Hazard Audit under Condition D9(d) is not required for the 2023 IEA. Further to this, the department requires the well integrity related sections of the IEA to be audited and reported by Mr Duncan with due regard to the application of all relevant industry best practice, codes and standards relating to well integrity especially and not limited to those specified under Condition A16.

Please ensure this correspondence is appended to the IEA report.

The IEA must be prepared, undertaken, and finalised in accordance with the department's *Independent Audit Post Approval Requirements* (2020). Failure to meet these requirements will require revision and resubmission.

The department reserves the right to request an alternate auditor or audit team for future audits.

Should you wish to discuss the matter further, please contact Joel Curran on 02 4904 2702 or [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au)

Yours sincerely

A handwritten signature in black ink that reads "H Watters".

Heidi Watters  
Team Leader Northern  
Compliance

As nominee of the Planning Secretary

## Appendix E:

### Independent Audit Declaration


<b>Project Name</b>	Santos Narrabri Gas Project
<b>Consent Number</b>	Development Consent (as of 30 September 2020)
<b>Description of Project</b>	Narrabri Gas Project
<b>Project Address</b>	125 Maitland Street, Narrabri NSW 2390
<b>Proponent/Applicant</b>	Santos NSW (Eastern) Pty Ltd
<b>Title of Audit</b>	Santos Narrabri Gas Project Independent Environmental Audit Report 2023
<b>Date</b>	13 November 2023

I declare that I have undertaken the Independent Audit and prepared the contents of the attached Independent Audit Report and to the best of my knowledge:

- i. the audit has been undertaken in accordance with relevant condition(s) of consent and the Independent Audit Compliance Requirements (Department, May 2020);
- ii. the findings of the audit are reported truthfully, accurately and completely;
- iii. I have exercised due diligence and professional judgement in conducting the audit;
- iv. I have acted professionally, objectively and in an unbiased manner;
- v. I am not related to any proponent, owner or operator of the project neither as an employer, business partner, employee, or by sharing a common employer, having a contractual arrangement outside the audit, or by relationship as spouse, partner, sibling, parent, or child;
- vi. I do not have any pecuniary interest in the audited project, including where there is a reasonable likelihood or expectation of financial gain or loss to me or spouse, partner, sibling, parent, or child;
- vii. neither I nor my employer have provided consultancy services for the audited project that were subject to this audit except as otherwise declared to the Department prior to the audit; and
- viii. I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from payment for auditing services) from any proponent, owner or operator of the project, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.

#### Notes:

- a) Under section 10.6 of the Environmental Planning and Assessment Act 1979 a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both).

<b>Name of Auditor</b>	Kurt Hammerschmid
<b>Signature</b>	
<b>Qualification</b>	Lead Auditor (B. App. Sc. (Chem), M.Sc., MEIANZ)
<b>Company</b>	Integrated Environmental Systems Pty Ltd
<b>Company Address</b>	PO Box 98 Battery Point, Hobart, Tasmania 7004

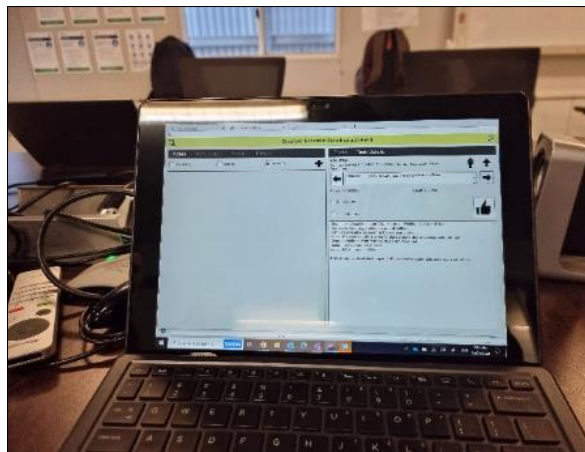


## Appendix F: Site Inspection Photographs

In accordance with Section 3.7.1 of the NSW Government's *Independent Audit Post Approval Requirements* (May 2020), this Appendix comprises the site inspection photographs taken (including the date that each photograph was taken) during this independent environmental audit.



**Photo 1** – Wilga Park Power Station (24 August 2023)



**Photo 2** – OEC Well Head inspection checklist (23 August 2023)



**Photo 3** – Leewood ponds volume (ML) and relative height (m) (22 August 2023)



**Photo 4** – RO Plant (not operational) at the Leewood facility (22 August 2023)



**Photo 5** – Drilling of a groundwater monitoring bore at Dewhurst 43 (AECOM/Impax Drilling Services) (22 August 2023)



**Photo 6** – Water extraction bore fitted with loggers/satellite telemetry for Santos and NSW Water (22 August 2023)





**Photo 7** – Example of road widening completion at the NGP (22 August 2023)



**Photo 8** – GIS mapping Well Pad constraints (screenshot taken on 17 August 2023)



**Photo 9** – GIS image of the 5.11 km distance between the Westport residence and the Bibblewindi facility (screenshot taken on 17 August 2023)



**Photo 10** – Leewood Facility Meteorological Station (25 August 2023)



**Photo 11** – Noise attenuated generator at Bibblewindi 5 (22 August 2023)



**Photo 12** – Dewhurst 35 new well pad and ESCP (under construction) (22 August 2023)





**Photo 13** – Dewhurst 43 new well pad and bunding (constructed)  
(22 August 2023)



**Photo 14** – Dewhurst 43 Well Pad ESCP additional controls  
(25 August 2023)



**Photo 15** – Leewood produced water ponds and monitoring  
equipment (22 August 2023)



**Photo 16** – Bibblewindi 27 groundwater monitoring bore (existing)  
(22 August 2023)



**Photo 17** – Bibblewindi 6 shallow groundwater  
monitoring bore (new) (22 August 2023)



**Photo 18** – NGP Water Cart (note: photo is from outside  
the Project area) (24 August 2023)





**Photo 19** – Low point drain container Dewhurst 27  
(22 August 2023)



**Photo 20** – Leewood groundwater bore and meters  
(25 August 2023)



**Photo 21** – Bibblewindi 5 groundwater bore and meters  
(22 August 2023)



**Photo 22** – Nest Box on NSW State Forest Access Track  
(22 August 2023)

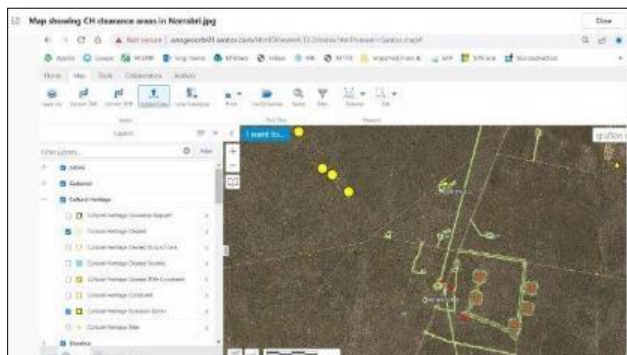


**Photo 23** – Flow line retention of hollow logs for habitat  
(22 August 2023)



**Photo 24** – Flow line regrowth mulching and replacement of habitat  
(25 August 2023)





**Photo 25** – Completed cultural heritage clearances and exclusion zones within the NGP (17 August 2023)



**Photo 26** – Example of recent road upgrade to new well sites (22 August 2023)



**Photo 27** – Example of the marking of a cultural heritage site in the field (CHAR-22-148 – NGP-Site-003) (22 August 2023)



**Photo 28** – RDM and Drilling fluid containment (Dewhurst 43) (22 August 2023)



**Photo 29** – Self-bunded bulk fuel storage facility at the Leewood Facility RO Plant (22 August 2023)



**Photo 30** – Trailer-mounted firefighting unit located at Bibblewindi 27 (22 August 2023)





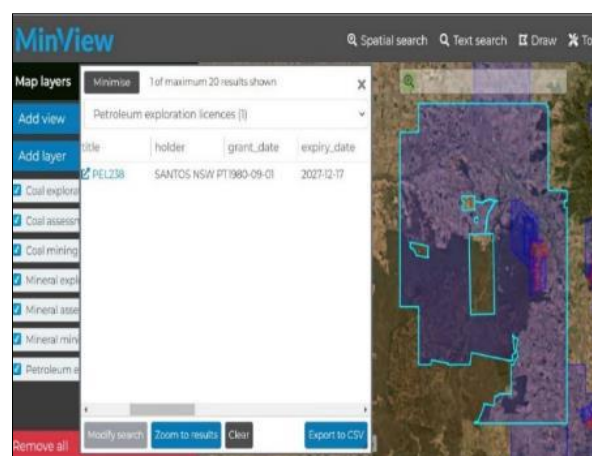
**Photo 31** – GIS image of Coonarah 4 partial rehabilitation (screenshot taken on 18 August 2023)



**Photo 32** – Bibblewindi 10 Well Pad partial rehabilitation (22 August 2023)



**Photo 33** – Example of seepage detection bore (LWDSDB03) at the Leewood Produced Water ponds (22 August 2023)



**Photo 34** – MinView Screenshot of overlapping tenure (image taken on 30 August 2023)



**Photo 35** – Coonarah 4 Well Pad – Suspended Well (23 August 2023)



**Photo 36** – Coonarah 4 Well Pad – Partial removal of well head gathering equipment (23 August 2023)





**Photo 37** – PPL 3 streams and water courses (screenshot taken on 17 August 2023)



**Photo 38** – PPL 3 Cultural Clearance areas (screenshot taken on 7 September 2023)



**Photo 39** – PPL 3 Pipeline signage (24 August 2023)



**Photo 40** – PPL 3 Pipeline marking (24 August 2023)



**Photo 41** – Dewhurst 16 gas gathering equipment and meters (22 August 2023)



**Photo 42** – Bibblewindi 1 Groundwater bore and meters (22 August 2023)

## **Appendix G:**

### **Independent Hydrogeological Audit Report**

In accordance with condition D9 of Development Consent SSD 6456, this Appendix comprises the Independent Hydrogeological Audit Report relating to groundwater aspects of the Narrabri Gas Project.



Ground & Water Australia Pty Ltd  
ABN 68 660 156 114

22 September 2023

Santos Ltd

e-delivery: Kurt Hammerschmid: [rubak1512@gmail.com](mailto:rubak1512@gmail.com)

Jamie Lees: [jamie@esgconsulting.com.au](mailto:jamie@esgconsulting.com.au)

Dear Sirs,

**Re: Santos Ltd, Narrabri Phase 1 – 2023 Independent Hydrogeological Audit  
Audit Report**

Ground & Water Australia Pty Ltd (GWA) is pleased to provide Santos Ltd (Santos) with the following audit report.

## 1 Statement of Professional Competency

The audit has been undertaken by Andrew Moser and the professional opinions are solely his. A copy of his approval as Groundwater Expert for this audit by the Department of Planning and Environment's Planning Secretary is provided in Attachment B.

**Andrew Moser, Principal Hydrogeologist, RPGeo (Hydrogeology)** is a qualified geologist with over 34 years of domestic and international experience, a large portion of which has been within the Coal Seam Gas (CSG) sector in the Surat Basin directly. Andrew is a registered professional geoscientist (RPGeo) with the AIG, with formal technical accreditation in the field of hydrogeology. He has direct and extensive experience in CSG operations and compliance.

Andrew is qualified, experienced and accredited in the field of hydrogeology, with a substantial and relevant supporting project experience / portfolio. Andrew Moser has been endorsed by the Planning Secretary (Attachment B) as suitably qualified and experienced Groundwater Expert.

Mob: 0437 337 996  
Post: PO Box 7252, Sippy Downs, Qld 4556  
Email: [info@groundandwater.com.au](mailto:info@groundandwater.com.au)  
Web: [www.groundandwater.com.au](http://www.groundandwater.com.au)

Page | 1



## 2 Introduction

This audit has been undertaken to satisfy the groundwater and hydrogeological components of the Independent Environmental Audit (IEA) required by Consent Condition D9 of New South Wales (NSW) State Significant Development (SSD) 6456 for the Santos Narrabri Gas Project. The Independent Environmental Audit and this audit relate only to Phase 1 of the project.

The audit included review of relevant published and unpublished approvals, documents and plans, interviews with key Santos employees in Santos's Brisbane offices, and analysis of data provided by Santos in response to auditor requests.

### 2.1 Scope of Work

The scope of work was to include:

1. **Condition B41 (iv) – Review and confirmation of compliance with Development Consent Condition B41 (iv) – Groundwater Management Plan.** A preliminary desk-top review has been undertaken by the IEA team, but the GWA scope is to include review and confirmation that the Santos Narrabri Groundwater Management Plan adequately addresses the requirements of Condition B41 (iv) – *relevant sub-conditions/requirements exist and are listed*. It is noted that on its completion and issue, the Santos Narrabri GWP was approved in November 2022 by the NSW Department of Planning and Environment.
2. **Condition B41 (iv) – In relation to the Groundwater Management Plan, also a) confirm the adequacy of existing groundwater performance criteria and trigger levels; b) confirm the adequacy of baseline data including the information relating to aquifer and aquitard health baseline information; and c) confirm that the existing groundwater monitoring program/system provides a suitable early warning of any impacts to potentially affected water sources, at varying depths in the geological profile.**
3. **Condition B39 – Groundwater Model – Assess and comment on the a) adequacy of the existing Narrabri groundwater model and its periodic updates; b) identify any additional work that may be needed to the model prior to Santos commencing Phase 2 of the project (2024); and c) confirm the adequacy of existing peer review processes for the model.**
4. **Petroleum Assessment Lease 2 (PAL 2) – Petroleum Operations Plan (POP) – As applicable, assess, identify and comment on how operations can be carried out on site in order to prevent and / or minimise harm to the-environment, including groundwater.**



### 3 Summary of Findings and Observations

Findings for each individual Consent Condition and the basis of the findings are provided as Attachment A. The audit concludes that the project is currently in compliance with the SSD Conditions of Consent for all groundwater and hydrogeological conditions. No non-compliances were identified during the audit.

This section documents some specific observations made during the course of the audit and corresponding actions which could improve the status of some of the management and monitoring plans.

It is noted that it is only 10 months since the approval of the relevant plans (Santos 2022 a, b, c, d) in November 2022 and 7 months since the approval of Phase 1 in February 2023, and therefore little new data or information has been generated for review. Furthermore, as the project Phase 1 pilot has not yet commenced operation there has been no pumping of groundwater from the target CSG reservoir and therefore no potential for groundwater impacts on any aquifers from the major potential project activity.

#### 3.1 Observation 1 – Timing of Monitoring Network Installation

Section 6 of the Groundwater Management Plan (Santos 2022a) states:

*“A total of 105 monitoring points are nominated as part of the monitoring network, with all proposed monitoring points to be operational prior to the commencement of Phase 1 of the Project.”*

This statement is considered to have the potential to cause misunderstanding, as at the time of approval of Phase 1 in February 2023 there were still 30 monitoring bores to be constructed, and Phase 1 approval was necessary to authorise the disturbance necessary to undertake the construction of these bores.

Amendment of the Groundwater Management Plan to clarify the timing of the remaining groundwater monitoring bore network installation is recommended to improve clarity.

A third of the outstanding monitoring bores had been or were being drilled between the Phase 1 approval and this audit (approximately 6 months) and is discussed in more detail below.

All 105 monitoring bores listed as part of the monitoring program contribute to the aims of the Conditions of Consent (Sub-observation – S4.2 of the Groundwater Monitoring Plan (Santos 2022b) incorrectly states 98 monitoring points), 7 of which are Level 2 trigger bores, and 9 are Level 3 trigger bores.

At the time of Phase 1 approval, 30 monitoring bores out of the 105 total were yet to be constructed (5 Piliga Sandstone, 5 Digby Formation, 5 Porcupine Formation, and 15 Mauls Creek Formation).

At the time of audit, 4 of the Digby Formation monitoring bores (DWH9PRDGY02, BHNS1PRDGY02, BWD6PRDGY02, DWH43PRDGY02) and 4 of the Piliga Sandstone monitoring bores (DWH9PRLPS01, BHNS1PRLPS01, BWD6PRLPS01, DWH43PRLPS01) had been constructed, and one more Digby Formation (DWH35PRDGY02) and Piliga Sandstone bore (DWH35PRLPS01) were under construction, with all 10 bores scheduled to be operational by December 2023. All 5 Digby Formation bores are linked to Level 2 triggers.





This means that at the time of this audit, 95 of the 105 monitoring bores constituting the monitoring program were either operational or well advanced to operational status. Of these, all 9 Level 3 trigger bores are operational, 2 of the 7 Level 2 trigger bores are operational and the 5 remaining Level 2 trigger bores have been or are being drilled and are scheduled to be operational by December 2023.

### 3.2 Observation 2 – Timing of Monitoring Implementation

There are numerous references in the Groundwater Management Plan (Santos 2022a) and Groundwater Monitoring Plan (Santos 2022b) to commencement of the monitoring obligations on approval of Phase 1. Some references are linked to the stated scope of Phase 1 including up to 25 pilot wells, potentially inferring that full monitoring obligations commence prior to the production of groundwater from pilot wells, but none definitively state this to be the case.

As discussed in Observation 1, it would not have been possible to construct all of the monitoring infrastructure prior to Phase 1 approval, and as a consequence the full monitoring program was also unable to be implemented immediately on project approval. The current logical reasoning that full monitoring obligations commence only prior to pilot operation has resulted in currently immature monitoring data systems – for example there is currently no systematic comparison of monitoring results against trigger levels, and improvement of these systems is an opportunity for improvement prior to production.

Amendment of the Groundwater Management Plan and Groundwater Monitoring Plan to clarify the timing of groundwater monitoring obligations is recommended to improve clarity.

### 3.3 Conclusions Aligned to Specific Scope Requirements

Notwithstanding the clarity around the commencement of obligations, the audit has reached the following conclusions aligned to the specific requirements of the scope of work.

Scope Section	Scope Requirement	Summary Finding
Condition B41 (iv)	Review and confirmation that the Santos Narrabri Groundwater Management Plan adequately addresses the requirements of Condition B41 (iv) (all relevant sub-conditions).	Findings against individual sub-conditions are documented in Attachment A. The audit finds that the Groundwater Management Plan (Santos 2022a) adequately addresses all relevant requirements of Condition B41 (iv).
Condition B41 (iv)	In relation to the Groundwater Management Plan above, also:	



Santos Ltd: Narrabri Phase 1 – 2023 Independent  
Hydrogeological Audit Reference GWA J231301

Scope Section	Scope Requirement	Summary Finding
	a) confirm the adequacy of existing groundwater performance criteria and trigger levels;	<p>The Groundwater Management Plan (Santos 2022a) was approved by the Planning Secretary in November 2022.</p> <p>The audit finds that there have been no material changes which would trigger revision of the approved performance criteria and trigger levels since approval.</p>
	b) confirm the adequacy of baseline data including the information relating to aquifer and aquitard health baseline information;	<p>The Groundwater Baseline Report (Santos 2022c) was approved by the Planning Secretary in November 2022, and is a static document.</p> <p>The audit finds no grounds on which to question the adequacy of the approved baseline report.</p> <p>The terminology of the Conditions of Consent also refers to the data to be collected for future model revisions as 'baseline' data (Condition B41, "a program for baseline data acquisition (works and timing) for the required groundwater model updates").</p> <p>The audit finds that relevant data such as groundwater pressures and water quality in non-trigger monitoring bores is being collected to support future model 'baseline' data (for those monitoring systems which are currently operational) and that the data is in accordance with the approved Groundwater Management Plan (Santos 2022a), the Groundwater Monitoring Plan (Santos 2022b) and the Groundwater Modelling Plan (Santos 2022d).</p>
	c) confirm that the existing groundwater monitoring program/system provides a suitable early warning of any impacts to potentially affected water sources, at varying depths in the geological profile.	<p>The Groundwater Management Plan (2022a) (including the Level 1, Level 2 and Level 3 trigger mechanisms which constitute the assessment basis for the early warning system) was approved by the Planning Secretary in November 2022.</p> <p>The audit finds there have been no material changes which would trigger revision of the early warning system since approval, and that the scientific</p>

Scope Section	Scope Requirement	Summary Finding
		basis for the trigger level and early warning assessment system is appropriate for both Great Artesian Basin and Alluvial aquifers for Phase 1 activities.
Condition B39 – Groundwater Model	Assess and comment on the: a) suitability of the existing Narrabri groundwater model and its periodic updates;	Approval of the groundwater model was integral to the approval of the suite of Groundwater management documents (Santos 2022a, b, c, d) by the Planning Secretary in November 2022.  The audit finds the approved model is suitable for purpose for Phase 1 of the project, and that the processes to update the model described in the Groundwater management documents are thorough and appropriate.
	b) identify any additional work that may be needed to the model prior to Santos commencing Phase 2 of the project (2024);	The current scope of work forming the basis for future model updates is included in the Groundwater management documents (Santos 2022a, b, c, d) approved by the Planning Secretary in November 2022.  The audit finds that there have been no material changes that would require a revision of the scope of work, and that unless monitoring reveals unexpected results that would impact on the basis for modelling, that the processes embodied in the Groundwater management documents are appropriate and no additional work would be required to support model updates.  However, monitoring in response to the hydraulic changes associated with pilot operation will be required for meaningful model updates. As pilot operations have not yet commenced, it is not possible to comment on whether sufficient monitoring may be collected prior to 2024 as per the current schedule in the Groundwater Modelling Plan (Santos 2022 d).

Scope Section	Scope Requirement	Summary Finding
	c) Confirm the adequacy of existing peer review processes	The model peer review process is included in the Groundwater Modelling Plan (Santos 2022d) approved by the planning Secretary in November 2022.  The review process is based on nationally recognised standards, and the audit finds that it is comprehensive and appropriate.
Petroleum Assessment Lease 2 (PAL 2) – Petroleum Operations Plan (POP)	As applicable, assess, identify and comment on how operations can be carried out on site in order to prevent and / or minimise harm to the environment, including groundwater.	In relation to regional groundwater management, the audit finds that the approved Groundwater management documents (Santos 2022a, b, c, d) for the entire project contain all appropriate measures to prevent and minimise harm to the groundwater environment, and that no more specific consideration is required under the PAL2 POP.

For and on behalf of Ground &amp; Water Australia Pty Ltd



Andrew Moser, RPA (Hydrogeology)  
Principal Hydrogeologist

## References

- Santos, 2022a : Narrabri Gas Project Groundwater Management Plan Phase 1, document reference 0041-150-PLA-0015
- Santos, 2022b : Narrabri Gas Project Groundwater Monitoring Plan Phase 1, document reference 0041-150-PLA-0011
- Santos, 2022c : Narrabri Gas Project Groundwater Baseline Report Phase 1, document reference 0041-150-PLA-0013
- Santos, 2022d : Narrabri Gas Project Groundwater Modelling Plan Phase 1, document reference 0041-150-PLA-0012



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### Attachment A – SSD 6456 Consent Condition Compliance Table

Consent Condition	Basis of Finding	Finding
<b>Consent Condition A1</b> In meeting the conditions of this consent, the Applicant must implement all reasonable and feasible measures to prevent and, if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction, operation or rehabilitation of the development.	Consideration of all audit results.	The activities, procedures, systems and results reviewed in this audit indicate that Santos is taking reasonable and feasible measures to prevent material harm from project activities relating to groundwater and hydrogeology included in the approved Groundwater management documents (Santos 2022a, b, c and d).
<b>Consent Condition A23 c)</b> Update any strategy, plan or program required by this consent ....	Interviews with Santos employees [redacted] <sup>1</sup> and [redacted] <sup>2</sup> and review of monitoring data.	There have been no relevant events which would trigger the revision and resubmission of any Groundwater management document (Santos 2022a, b, c and d) or related strategies or programs since the approval of Phase 1 of the project in February 2023.
<b>Consent Condition B37</b> The applicant must ensure that the development complies with the groundwater	Interviews with Santos employees [redacted] <sup>1</sup> and [redacted] <sup>2</sup> and review of monitoring data.	As the project Phase 1 pilot has not yet commenced operation there has

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Consent Condition	Basis of Finding	Finding
<p>management performance measures in Table 7 [of the CoC]:</p> <ul style="list-style-type: none"> <li>Namoi alluvial aquifers and Great Artesian Basin aquifers: <ul style="list-style-type: none"> <li>Negligible environmental consequences to the Namoi alluvial aquifers and Great Artesian Basin aquifers beyond those predicted in the EIS, including: <ul style="list-style-type: none"> <li>Negligible change in groundwater levels;</li> <li>Negligible change in groundwater quality;</li> <li>Negligible impact to other groundwater users.</li> </ul> </li> <li>No exceedance of the minimal harm considerations in the <i>Aquifer Interference Policy</i> (DPI, 2012); and</li> <li>Negligible change to baseline methane levels in groundwater user bores;</li> </ul> </li> <li>Gunnedah Oxley Basin aquifers:</li> </ul>		<p>been no pumping of groundwater from the target CSG reservoir and therefore essentially no potential for groundwater impacts on any aquifers or groundwater dependent ecosystems.</p> <p>As per the relevant Groundwater management documents (Santos 2022a and b), compliance with these conditions is equated with non-exceedance of Level 1, 2 and 3 triggers being:</p> <ul style="list-style-type: none"> <li>produced water volume from pilots;</li> <li>groundwater levels in 7 monitoring bores in the Gunnedah Oxley Basin Digby Formation (2 of the 7 bores are operational and the 5 remaining bores have been or are being drilled and are scheduled to be operational by December 2023); and</li> <li>groundwater level electrical conductivity and methane levels in 9 Great Artesian</li> </ul>





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Consent Condition	Basis of Finding	Finding
<ul style="list-style-type: none"> <li>○ Drawdown and water take to be generally consistent with the 'base case' predictions and produced water profile in the EIS; and,</li> <li>○ Negligible change in groundwater quality.</li> <li>• Riparian and aquatic ecosystems:               <ul style="list-style-type: none"> <li>○ Negligible impact on groundwater dependent ecosystems.</li> </ul> </li> </ul>		Basin Pilliga Sandstone monitoring bores (all operational).
<b>Consent Condition B39</b> The Applicant must periodically update the groundwater model for the development, to the satisfaction of the Planning Secretary. The model update must:	Interviews with Santos employees [redacted] <sup>1</sup> and [redacted] <sup>2</sup> .	There have been no relevant events which would trigger the update of the model to date.
<b>B39 a)</b> be prepared and peer reviewed by suitably qualified and experienced persons;	Review of Groundwater Modelling Plan (Santos 2022d)	The Groundwater Modelling Plan (Santos 2022d) incorporates provisions to ensure suitably qualified and experienced modellers and peer reviewers.  The plan was approved by the Planning Secretary in November 2022.





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Consent Condition	Basis of Finding	Finding
		This audit finds that the plan adequately addresses the consent condition and there are no current grounds to amend the approved plan.
<b>B39 b)</b> be undertaken in consultation with DPIE Water, EPA, and the Water Technical Advisory Group;	Review of Groundwater Modelling Plan (Santos 2022d)	The Groundwater Modelling Plan (Santos 2022d) incorporates provisions to ensure consultation with the required authorities.  The plan was approved by the Planning Secretary in November 2022.  This audit finds that the plan adequately addresses the consent condition and there are no current grounds to amend the approved plan.
<b>B39 c)</b> Be undertaken prior to Phase 2 and every 3 years thereafter (unless the Planning Secretary agrees or directs otherwise).	Interviews with Santos employees ■ <sup>1</sup> and ■ <sup>2</sup> and review of complaints and incidents log <a href="https://narrabrigasproject.com.au/complaints-incidents/">https://narrabrigasproject.com.au/complaints-incidents/</a> .	There have been no relevant events which would trigger the update of the model to date.
<b>B39 d)</b> Be undertaken in accordance with the <i>Australian Modelling Guidelines</i> (2012, or as updated) and other relevant guidelines including the IESC's <i>Information Guidelines</i>	Review of Groundwater Modelling Plan (Santos 2022d)	The Groundwater Modelling Plan (Santos 2022d) incorporates provisions to ensure modelling to the specified standards.



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Consent Condition	Basis of Finding	Finding
<i>Explanatory Note – Uncertainty analysis – Guidance for groundwater modelling within a risk management framework (2018)</i>		The plan was approved by the Planning Secretary in November 2022.  This audit finds that the plan adequately addresses the consent condition and there are no current grounds to amend the approved plan.
<b>B39 e)</b> Improve the model prior to the commencement of Phase 2 to be generally in accordance with the features of a Class 3 confidence level model (as per the <i>Australian Groundwater Modelling Guidelines</i> ) the features of which must be based on the Water Technical Advisory Group's advice on appropriate development specific modelling objectives and criteria; and	Review of Groundwater Modelling Plan (Santos 2022d)	The Groundwater Modelling Plan (Santos 2022d) incorporates provisions to ensure the specified modelling confidence level and appropriate input of the Water Technical Advisory Group.  The plan was approved by the Planning Secretary in November 2022.  This audit finds that the plan adequately addresses the consent condition and there are no current grounds to amend the approved plan.
<b>B39 f)</b> Include:  (i) Updated modelling objectives (ii) Transient groundwater flow modelling	Review of Groundwater Modelling Plan (Santos 2022d)	The Groundwater Modelling Plan (Santos 2022d) incorporates provisions to ensure that updated modelling addresses the technical



Consent Condition	Basis of Finding	Finding
<p>(iii) Updated geological modelling based on all available drill data and analysis, including;</p> <ul style="list-style-type: none"> <li>Detailed structure assessment (including faulting) at best practice resolution;</li> <li>Consideration of neotectonics and the stress field in the project area and surrounds;</li> </ul> <p>(iv) Updated hydrogeological modelling based on all well data, drilling data, hydrogeological analysis and water monitoring data for all aquifers and aquitards, including;</p> <ul style="list-style-type: none"> <li>Consideration of impacts from the GABSI;</li> <li>Consideration of leakage from the GAB to the Lower Namoi Groundwater Source using the heads predicted by the EIS model;</li> </ul> <p>(v) Updated predictions of groundwater drawdown and water take from all applicable groundwater sources as a result of the development; and</p>		<p>requirements of this condition of consent.</p> <p>The plan was approved by the Planning Secretary in November 2022.</p> <p>This audit finds that the plan adequately addresses the consent condition and there are no current grounds to amend the approved plan.</p>



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Consent Condition	Basis of Finding	Finding
<p>(vi) Consideration of the predicted impacts against the:</p> <ul style="list-style-type: none"> <li>• Previous model predictions and monitoring results;</li> <li>• Water management performance measures in Table 7 [of the CoC];</li> <li>• Minimal harm considerations in the NSW Aquifer Interference Policy; and</li> </ul> <p>Groundwater management response triggers in the Water Management Plan.</p>		
<p><b>Consent Condition B41</b></p> <p>Prior to the commencement of Phase 1, the Applicant must prepare a Water Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p>	<p>Review of approvals dates <a href="https://narrabrigasproject.com.au/about/environment/">https://narrabrigasproject.com.au/about/environment/</a></p>	<p>The Groundwater Management Plan (Santos 2022a) as described in Condition B41 (iv) was approved by the Planning Secretary in November 2022, prior to the commencement of Phase 1 in February 2023.</p>
<p><b>B41 d) (iv)</b></p> <p>Include a Groundwater Management Plan that includes:</p>	<p>Review of approvals dates <a href="https://narrabrigasproject.com.au/about/environment/">https://narrabrigasproject.com.au/about/environment/</a></p>	<p>The Groundwater Management Plan (Santos 2022a) was approved by the Planning Secretary in November 2022.</p>
<ul style="list-style-type: none"> <li>• Detailed baseline data of hydrogeology and groundwater levels, formation parameters (such as hydraulic conductivity, storage and yield), and</li> </ul>	<p>Review of Groundwater Baseline Report (Santos 2022c)</p>	<p>The Groundwater Baseline Report (Santos 2022c) was approved by the Planning Secretary in November 2022.</p>



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Consent Condition	Basis of Finding	Finding
<p>quality for groundwater resources potentially impacted by the development (based on at least 3 years of monitoring data), including:</p> <ul style="list-style-type: none"> <li>○ Aquifer and aquitard health;</li> <li>○ Subsidence and seismicity, including a topographic baseline survey using interferometric synthetic aperture radar (or similar method as agreed by the Planning Secretary);</li> <li>○ Groundwater supply and quality for other water users;</li> <li>○ Natural methane leaks and accumulations, including in privately owned bores and monitoring bores; and</li> <li>○ Groundwater dependent ecosystems;</li> </ul>		<p>The baseline report conforms with the requirements of this condition of consent. It is a static document which forms the basis against which the ongoing Phase 1 and subsequent development phase monitoring results will be compared and should not be confused with the ongoing 'baseline' data collection for the update of the groundwater model as required by Condition B41, "a program for baseline data acquisition (works and timing) for the required groundwater model updates"</p>
<ul style="list-style-type: none"> <li>• A detailed description of the groundwater management and monitoring system, including a monitoring network that is capable of; <ul style="list-style-type: none"> <li>○ Characterising temporal and spatial variations of all</li> </ul> </li> </ul>	<p>Review of Groundwater Management Plan (Santos 2022a), Groundwater Monitoring Plan (Santos 2022b) and Groundwater Modelling Plan (Santos 2022d). Interviews with Santos employees [REDACTED] and [REDACTED]</p>	<p>The relevant Groundwater management documents (Santos 2022a, b, d) were approved by the Planning Secretary in November 2022. The content of these documents</p>



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Consent Condition	Basis of Finding	Finding
<p>potentially affected water sources;</p> <ul style="list-style-type: none"> <li>○ Verifying actual direct and indirect water take;</li> <li>○ Providing an early warning of any impacts to potentially affected water sources, at varying depths in the geologic profile;</li> <li>○ Providing data to improve the confidence level class of the groundwater model as soon as reasonable and feasible; and</li> <li>○ Integrating with any government monitoring networks in the area;</li> </ul>		<p>conform with the requirements in this condition of consent.</p> <p>However, grammatical inconsistencies in the Groundwater Management Plan (Santos 2022a) and Groundwater Monitoring Plan (Santos 2022b) have the potential to create misunderstandings about the required timing of monitoring bore and monitoring obligation commencement, as discussed in the body of this report (Observations 1 and 2).</p>
<ul style="list-style-type: none"> <li>• Detailed performance criteria, including trigger levels for identifying and investigating any potentially adverse impacts associated with the development, on: <ul style="list-style-type: none"> <li>○ Regional and local aquifers and aquitards (alluvial and hardrock);</li> <li>○ Ground subsidence and seismicity;</li> </ul> </li> </ul>	<p>Review of Groundwater Management Plan (Santos 2022a), Groundwater Monitoring Plan (Santos 2022b) and Groundwater Modelling Plan (Santos 2022d).</p>	<p>The Groundwater Management Plan (Santos 2022a) was approved by the Planning Secretary in November 2022.</p> <p>The plan includes 3 trigger level mechanisms for identifying potential groundwater and groundwater dependent impacts, an investigation mechanism if the triggers are exceeded, and details of how the</p>



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Consent Condition	Basis of Finding	Finding
<ul style="list-style-type: none"> <li>Groundwater supply and quality for other water users, including all potentially affected privately owned licensed groundwater bores;</li> <li>Groundwater dependent ecosystems; and</li> <li>Aquatic habitat and stygofauna;</li> </ul>		<p>monitoring program for the triggers will be implemented (Santos 2002b).</p> <p>The Groundwater Monitoring Plan also includes a methodology and schedule for ground subsidence monitoring. The measures conform with the condition of consent.</p> <p>However, grammatical inconsistencies in the Groundwater Management Plan (Santos 2022a) and Groundwater Monitoring Plan (Santos 2022b) have the potential to create misunderstandings about the required timing of monitoring bore and monitoring obligation commencement, as discussed in the body of this report (Observations 1 and 2).</p>
<ul style="list-style-type: none"> <li>A program for baseline data acquisition (works and timing) for the required groundwater model updates.</li> </ul>	<p>Review of Groundwater Management Plan (Santos 2022a), Groundwater Monitoring Plan (Santos 2022b) and Groundwater Modelling Plan (Santos 2022d).</p> <p>Narrabri Gas Project Resources Library.</p> <p><a href="https://waterportal.santos.com/resources-library/">https://waterportal.santos.com/resources-library/</a></p>	<p>Data and information required to support the update of the project groundwater model are detailed in the Groundwater management documents (Santos 2022a, b, d). These documents were approved by the Planning Secretary in November 2022.</p>





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Consent Condition	Basis of Finding	Finding
		<p>Compliance with the groundwater monitoring provisions of the Groundwater Monitoring Plan has been checked through review of full quarterly monitoring results on the Narrabri Gas Project Resources Library. Periodic analysis of subsidence data has not fallen due since the approval of Phase 1, but ongoing INSAR data collection has been confirmed. This audit finds that the plans adequately address the consent conditions and there are no current grounds to amend the approved plans.</p> <p>Evidence of systematic calibration and QA/QC procedures for groundwater quality monitoring have been sighted in the form of sample scheduling and submittal paperwork.</p>
<ul style="list-style-type: none"> <li>A program to monitor and evaluate: <ul style="list-style-type: none"> <li>Compliance with the relevant performance measures listed in Table 7 [of the CoC] and the</li> </ul> </li> </ul>	Review of Groundwater Management Plan (Santos 2022a), Groundwater Monitoring Plan (Santos 2022b) and Groundwater Modelling Plan (Santos 2022d).	Evaluation of the data collected through the groundwater monitoring program is predominantly documented in sections 6, 9 and 12 of the Groundwater Management Plan (Santos 2022a) which was approved



Consent Condition	Basis of Finding	Finding
<p>performance criteria established above;</p> <ul style="list-style-type: none"> <li>Groundwater flows, quality and yield in regional and local aquifers and aquitards (alluvial and bedrock);</li> <li>Ground subsidence and seismicity;</li> <li>Geological fracturing and heterogeneity;</li> <li><del>water loss/seepage/leakage from water storages and Project related infrastructure into the groundwater system;</del> this point not in scope</li> <li>potential cross contamination of aquifers, including migration from lower aquifers to the GAB;</li> <li>sub-surface leakage of methane, drilling fluids, and saline groundwater;</li> <li>groundwater inflows, outflows and storage volumes to inform the Site Water Balance;</li> </ul>		<p>by the Planning Secretary in November 2022.</p> <p>The various evaluation methodologies address the requirements of the condition of consent.</p>



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Consent Condition	Basis of Finding	Finding
<ul style="list-style-type: none"> <li>the effectiveness of the groundwater management systems;</li> </ul>		
<ul style="list-style-type: none"> <li>reporting procedures for the results of the monitoring program (including timely public reporting).</li> </ul>	<p>Review of Groundwater Management Plan (Santos 2022a).</p> <p>Narrabri Gas Project Resources Library.  <a href="https://waterportal.santos.com/resources-library/">https://waterportal.santos.com/resources-library/</a></p> <p>Santos Water Portal <a href="https://waterportal.santos.com/">https://waterportal.santos.com/</a></p> <p>Narrabri Gas Project Complaints and Incidents Register  <a href="https://narrabrigasproject.com.au/complaints-incidents/">https://narrabrigasproject.com.au/complaints-incidents/</a></p>	<p>Reporting procedures are detailed in Section 12 of the Groundwater Management Plan (Santos 2022a) which was approved by the Planning Secretary in November 2022.</p> <p>No new annual or other reports have been produced since the approval of Phase 1.</p> <p>Publishing of full quarterly monitoring results on the Narrabri Gas Project Resources Library website and access to selected processed water monitoring information on the Santos Water Portal have been validated. The online complaints and incidents register is operational and contains no non-compliances.</p> <p>The plan provisions and implementation conforms with this condition of consent.</p>
<ul style="list-style-type: none"> <li>A plan to respond to any probable or actual exceedances of the groundwater performance criteria, and repair, mitigate and/or offset any</li> </ul>		<p>Exceedance response measures are detailed in Section 11 of the Groundwater Management Plan (Santos 2022a) which was approved</p>

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Consent Condition	Basis of Finding	Finding
adverse groundwater impacts of the development.		by the Planning Secretary in November 2022.  The plan provisions adequately address this condition of consent.

<sup>1</sup> [REDACTED] – Environmental Advisor

<sup>2</sup> [REDACTED] – Lead Environment Advisor



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**Attachment B – Planning Secretary Approval of Groundwater Expert**

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Department of Planning and Environment



Mr [REDACTED]  
Area Manager  
Production QLD/NSW Nascar  
Santos Ltd  
60 Flinders Street  
ADELAIDE SA 5000

Sent via the Major Projects Portal only

03/08/2023

Dear Mr [REDACTED]

**Narrabri Gas Project (SSD-6456)  
Auditor Endorsement Request – 2023 IEA**

I refer to your request (SSD-6456-PA-68) for the Planning Secretary's approval of suitably qualified persons to prepare the 2023 Independent Environmental Audit (IEA) as required by condition D9 of development consent SSD-6456 (the consent) for the Narrabri Gas Project.

Condition D9 of the consent requires an IEA to be undertaken within 1 year of commencement of Phase 1. The Department of Planning and Environment (the department) understands that Phase 1 commenced on 7 February 2023.

The department has reviewed the nominations and information you have provided and is satisfied that these experts are suitably qualified and experienced. Consequently, I can advise that the Planning Secretary endorses the following audit team:

- Kurt Hammerschmid – Lead Auditor
- Jamie Lees – Audit Facilitator
- Adam Jones – Consultation and Legal Review
- Andrew Moser – Groundwater Expert

The department notes that a well integrity expert as required by condition D9 of the consent has not yet been nominated for the 2023 IEA. A well integrity expert must be nominated as soon as possible; therefore please submit a nomination to the department via the Major Projects Portal by **18 August 2023**, or as otherwise agreed with the department prior to this date.

Further, as the hazard studies and plans referenced in condition D9(d) of the consent are not required by Phase 1 works, the hazard audit (and therefore the requirement for a hazard expert) is not required for the 2023 IEA.

Please note that the endorsement of the Planning Secretary must be sought for the audit team for future IEAs.

4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150 | Locked Bag 5022, Parramatta NSW 2124 | [dpe@nsw.gov.au](mailto:dpe@nsw.gov.au) | 1



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Department of Planning and Environment



Finally, the IEA must be prepared, undertaken and finalised in accordance with the conditions of the consent and with consideration of the department's *Independent Audit Post Approval Requirements* (2020). Failure to meet these requirements will require revision and resubmission of the IEA report.

Should you wish to discuss the matter further, please myself at [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au)

Yours sincerely

A handwritten signature in black ink that reads 'H Watters'.

Heidi Watters  
Team Leader Northern  
Compliance

As nominee of the Planning Secretary



## **Appendix H:**

### **Independent Well Integrity Audit Report**

In accordance with condition D9 of Development Consent SSD 6456, this Appendix comprises the Independent Well Integrity Audit Report relating to conditions A16(a) and A17 of Development Consent SSD 6456.



**Narrabri Gas Project SSD 6456 – Independent Environmental Audit 2023**  
**against Conditions A16(a) and A17**

**Summary Report**  
**to Support the Detailed Report against the Code of Practice (CoP) for**  
**Construction, Operation and Decommissioning of Petroleum Wells**  
**issued by the Department of Regional NSW in May 2023**

Company Name : Santos Limited  
 Name of Job : Technical Audit for the 2023 Phase 1 NGP Development Consent Audit (Well Integrity Management Condition), in accordance with conditions A16(a) and A17 of the Development Consent numbered SSD-6456 Narrabri Gas Project.  
 Date of Audit : 11<sup>th</sup> – 15<sup>th</sup> September 2023

**Well Integrity Expert – Gordon Duncan**

Over 40 years of Oilfield experience.

An all-rounder specialising in:

- Design, Planning & Execution for Drilling, Completions & Well Services
- Well Integrity Management Systems: Review, Develop, Maintain, Emergency call-out

"The go-to SME for all matters related to Well Integrity, always available to answer that elusive question"

Worked with a wide range of IOC's & service companies including Shell EP International, Santos, Petro-Canada, Petroleum Development Oman (PDO) and BP.

Since 2008, undertook several training instructor assignments over various countries including Malaysia, Spain, Thailand, Brazil, the UAE, Indonesia, USA as well as Australia & New Zealand. To date, over 200 courses to over 4000 participants.

Previously delivered training via DTA (Drilling Training Alliance) in Completions Fundamentals to BP Well Site Leaders of the Future as well as in the Chevron "Horizon Programme". This programme spans over 16 courses delivered in Houston, Baku, Indonesia, Thailand and the United Kingdom.

In respect of the above job, a comprehensive report, "Attachment A – Detailed Report" has been prepared in accordance with the above-mentioned Code of Practice (CoP) (Department Reference No. RDOC23/105866) detailing the assessment process and references to the evidence that was reviewed as well as the Santos personnel that were interviewed and provided the supporting evidence or provided answers to my questions and requests.

It should be noted that Santos acquired the Narrabri Gas Field from Eastern Star Gas Limited in 2011, although SSD-6456 was granted on 30<sup>th</sup> September 2020. Since then, only ongoing maintenance of the existing gas field only and supply of gas to the Wilga Park Power Station for beneficial reuse has been conducted.

As of August 2023, and since the commencement of Phase 1 of the project on 7<sup>th</sup> February 2023, 2 Well Pads (Dewhurst Well Pads 35 and 43) have been constructed, and seven (7) shallow groundwater-monitoring bores have been installed. Phases 2 and 3 of the project have not commenced.

I have broken this summary down to the main sub-sections of the CoP and detail the compliance recommendation and areas for consideration.

# Relentless Pursuit of Perfection



Section	Description	Well Integrity Expert Findings	Compliance
1.1	Well Life Cycle Records	<ul style="list-style-type: none"> <li>To date, for all wells that Santos have assumed ownership of, and for all wells they have constructed, the necessary records have been retained either in paper or electronic format and to date nothing has been disposed of.</li> <li>This includes any wells that have been formally decommissioned (P&amp;A).</li> </ul>	YES
2.1	Well Design and Barriers	<ul style="list-style-type: none"> <li>Santos have in place a rigorous process for the design of new wells to ensure all requirements contained within the principles of this section are met.</li> <li>In addition, Santos have in place both Well Integrity Management Procedures and P&amp;A Processes.</li> </ul>	YES
2.2	Casing & Tubing	<ul style="list-style-type: none"> <li>Casing &amp; Tubing design is contained in a Santos D&amp;C standard for onshore wells, Stress Check is the recognised software used to confirm the design whereas the monitoring portion is addressed within the Well Integrity Procedures.</li> <li>Comment: Points e &amp; l in Sub Section 2.2.3 are not applicable for CSG wells.</li> </ul>	YES, but note Comment
2.3	Cementing	<ul style="list-style-type: none"> <li>Santos has in place a detailed Onshore Cementing Standard that exceeds the requirements of this Section and subsequent Sub Sections.</li> <li>Any anomalies detected during the execution of a cement job would require investigation and if necessary remedial steps would be carried out.</li> </ul>	YES
2.4	Wellheads	<ul style="list-style-type: none"> <li>Industry Standards API 6A, 16A and NACE MR 0175 are all followed within the necessary documents governing wellheads.</li> <li>There are a few wells that do not meet the referenced industry and internal documents and as such are planned to be P&amp;A in Q4 of 2023.</li> </ul>	YES
2.5	Well Control	<ul style="list-style-type: none"> <li>Santos have a comprehensive Well Control Standard SMS-D&amp;C-OS01-TS-7 that addresses all relevant referenced points.</li> <li>A sub section of this standard details the various emergency drills that need to be conducted on a regular basis.</li> </ul>	YES
2.6	Fluids	<ul style="list-style-type: none"> <li>The API RPs with regards to Drilling and Completions Fluids are referenced within the Santos Standard of the same name.</li> <li>Furthermore, if fluids are used, all details are recorded electronically on WellView.</li> <li>This data includes the Chemical Name, CAS Number and volume used.</li> <li>Confirmation that only Water Based Fluids are used on all CSG Wells.</li> <li>The water used in cementing is provided to the contractor for further lab testing.</li> </ul>	YES

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# Relentless Pursuit of Perfection



Section	Description	Well Integrity Expert Findings	Compliance
2.7	Evaluation, logging, testing, and coring.	<ul style="list-style-type: none"> <li>The various logging suites utilised in well construction and production data are detailed in the various Well Programmes.</li> <li>Data gained from all of the logs are stored within the Santos EP Share database.</li> <li>At the time of audit, the last well in the area of interest was drilled in 2014, however, during discussions with D&amp;C staff it was confirmed that all mandatory requirements in sub section 2.7.2 would be met.</li> <li>Comment: With regards to points d &amp; e in Sub Section 2.7.2, Santos perform checks for all Wireline Operations as standard process and such documents were reviewed, however, no service company personnel were interviewed.</li> </ul>	YES, but note Comment
2.8	Fracture Stimulation	<ul style="list-style-type: none"> <li>In accordance with Section 4.38 of the Environmental Planning and Assessment Act 1979 and with regard to SSD 6456 for The Narrabri Gas project, condition A17.</li> <li>Clearly states that there must be no hydraulic fracturing of coal seams in the project area at any time.</li> <li>This was further confirmed by Santos personnel.</li> </ul>	YES
2.9	Well Integrity Management	<ul style="list-style-type: none"> <li>Santos has in place a WIMS which address the full well life cycle, this document was based on ISO 16530-1:2017 and during discussions and subsequent reviews of supporting evidence all 6 phases in the Well Life Cycle were fully addressed.</li> <li>Details of the inspection frequencies can be found in Sub Section 2.9.2 of the comprehensive report.</li> <li>Several supporting standards and procedures ensure compliance with this section of the CoP.</li> <li>Comment: <ul style="list-style-type: none"> <li>Current monitoring frequencies have recently been reduced from 6 months to 12 months based on historical data, and they have been approved by the EPA; however, should the new frequency highlight any issues, then the original frequency would be reverted to.</li> <li>Further consideration for future well designs should incorporate gate valves as opposed to ball valves on wellhead side outlet valves to allow for easier repair in the event of failures of the valve.</li> </ul> </li> </ul>	YES, but note Comment
2.10	Workover and Intervention	<ul style="list-style-type: none"> <li>Santos plan all workovers and interventions in accordance with the appropriate D&amp;C standard and as such individual programmes are prepared for all operations.</li> <li>It should be further noted that the condition of any recovered equipment as well as any corrosion logs conducted during such operations, which are recorded in WellView, feed back into material selection for future wells.</li> </ul>	YES, but note Comment

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# Relentless Pursuit of Perfection



Section	Description	Well Integrity Expert Findings	Compliance
		<ul style="list-style-type: none"> <li>Comment:               <ul style="list-style-type: none"> <li>Consideration for corrosion prevention on surface equipment, such as EVAPO-RUST RB018 or Lanolin.</li> <li>Application of such products will allow easier access to wells during workovers and interventions when studded or bolted equipment must be removed.</li> </ul> </li> </ul>	
2.11	Well Suspension	<ul style="list-style-type: none"> <li>Details of all suspended NSW Wells are available via the Well Integrity Register.</li> <li>It should be noted that all suspended wells are treated as "LIVE" with regards to monitoring and leak detection programs. All of these points can be found in the detailed report under Sub Section 2.11.2.</li> </ul>	YES
2.12	Well Decommissioning	<ul style="list-style-type: none"> <li>To date, Santos have not performed any decommissioning in NSW, however a three (3) Well P&amp;A program is commencing in Q4 2023.</li> <li>The detailed operations programs for this P&amp;A campaign as well as other examples of successful execution of decommissioning programs were reviewed and the supporting evidence confirmed as such.</li> <li>Comment: It should be noted that steps p, q, r, s &amp; t are not yet contained in the planned programs, however, it is intended to follow the Cut &amp; Cap program as executed in QLD.</li> </ul>	YES, but note Comment

Particular attention needs to be adhered to by Santos for the comments above as follows: -

## 2.2 Casing & Tubing

- For the points that do not apply to CSG Wells, there should be supporting approvals for dispensation or an adequate MoC in place.

## 2.7 Evaluation, logging, testing, and coring

- No service company personnel were interviewed as currently there are no operations being conducted in the area of interest.
- During the planned P&A operations, the evidence should continue to be gathered and consideration for service company personnel interviews considered for the next review audit in three (3) years' time.

## 2.9 Well Integrity Management

- The change of monitoring frequencies may require additional attention to reports to ensure the new frequencies are supporting the historical data.
- Although not mentioned in the detailed or summarised report, further consideration for future well designs should incorporate gate valves as opposed to ball valves on wellhead side outlet valves to allow for easier repair in the event of failures of the valve.

## 2.10 Workovers and Interventions

- Consideration for corrosion prevention on surface equipment, such as EVAPO-RUST RB018 or Lanolin.
- Application of such products will allow easier access to wells during workovers and interventions when studded or bolted equipment must be removed.

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## 2.12 Well Decommissioning

- The programs should be updated to address the Cut and Cap portion of the planned P&A Campaign.

To summarise the above table, it is my opinion that based on the documents reviewed and the interviews conducted, that Santos are in Full Compliance with the referenced CoP and that the comments on the relevant sections will further enhance the compliance level.

Reports and Summary Conducted by: -

A handwritten signature in blue ink, appearing to read "Gordon Duncan".

Gordon Duncan

SME for Well Integrity

8 November 2023

**Narrabri Gas Project SSD 6456 – Independent Environmental Audit 2023 against Conditions A16(a) and A17****Attachment A – Detailed Report**

Detailed Report to accompany Summary Report as issued on 8 November 2023  
against the Code of Practice (CoP) for Construction, Operation and Decommissioning of Petroleum Wells  
issued by the Department of Regional NSW in May 2023

**Code of practice**

Construction, Operation and Decommissioning of Petroleum Wells

May 2023

Department of Regional NSW: Department reference no. RDOC23/105866

Version 1.1

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
<b>1 Mandatory recording and reporting data</b>	Accurate information about well drilling, completion, fracture stimulation, workover, suspension and well decommissioning must be recorded. Titleholders must ensure that these records are well maintained in an accessible way for the periods specified (section 97E of the Petroleum Act) or, if no such retention periods are specified, for five years following the decommissioning of a well.  Titleholders must also keep geological plans, maps and records for work relating to the petroleum title, and submit plans and reports on the progress of operations in accordance with Part 8a of the Petroleum Act and Part 4 of the Petroleum (Onshore) Regulation 2016. Further detail is contained in the guideline <i>Onshore Petroleum Reporting and Data Submission</i> .			
<b>1.1. Well life cycle records</b>	A record of all work undertaken on a well must be maintained for each well's entire life through to decommissioning.	<ul style="list-style-type: none"> <li>As of September 2023, Santos have retained all information for all the wells they have responsibility for.</li> <li>WellView is the current software being used for recording all work undertaken on a well, as well as non D&amp;C work performed</li> <li>Personnel can access data via EP Share which is an online database. Was shown examples of recent intervention operations</li> <li>It is also planned to utilise Peloton (aligned to WellView) as the Well Integrity repository for all operating and maintaining records.</li> </ul>	Well Bohena 7 (in Narrabri PAL 2 Lease).  Viewed Dewhurst Wells in both WellView and EP Share.  Peloton is linked with WellView and will share common data to allow the Integrity portion to be managed effectively.	YES
<b>1.1.1. Good industry practice</b>	Records to be maintained may include, but are not limited to, the following: <ul style="list-style-type: none"> <li>engineering design basis</li> <li>kick tolerance/well control design assumptions</li> <li>blowout preventer (BOP) pressure testing requirements, and actual test records</li> <li>laboratory test results for cement slurries</li> <li>casing tallies for all casing strings run (including lengths, weights, grades, inside diameter, outside diameter, setting depth)</li> <li>cementing records for each casing string in each well</li> <li>casing pressure test reports</li> <li>leak off test and/or formation integrity test reports</li> <li>wireline logs</li> <li>core description reports</li> <li>stratigraphy encountered including zones that flowed or loss zones</li> <li>surface location and downhole survey records</li> <li>downhole installation records/schematic</li> </ul>	<ul style="list-style-type: none"> <li>BOD (Basis of Design) Basis of Design &amp; Design phase – reference DR-DC777-GEN-0656-0</li> <li>Kick tolerance included within drilling montage / program</li> <li>BOP tests included within rig reports</li> <li>Cement program includes cement testing lab results</li> <li>Casing tallies within WellView</li> <li>Cement reports within WellView and or WCR per casing string</li> <li>LOT/FIT included within WellView reports</li> <li>Logs saved within EP Share</li> <li>Core description and report is included in the Well Completion Report</li> </ul>	As per Section 1.1, various well records were viewed both in WellView and EP Share which included the referenced dot points where applicable.  These included examples from Wells Bohena 7 & Dewhurst 29.	YES



Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<ul style="list-style-type: none"> <li>records of chemicals used downhole, including any chemicals used in drilling fluid, treatment and workover or other well procedures (name, type CAS number and volume of each chemical used should be recorded)</li> <li>records of drilling and cementing, including any problems encountered</li> <li>risk assessments</li> <li>well drilling and completion programs including casing running and cementing procedures</li> <li>daily rig reports</li> <li>daily geological reports, if relevant</li> <li>service company reports.</li> </ul>	<ul style="list-style-type: none"> <li>All relevant wells reports are included within WellView.</li> </ul>		
<b>1.2. Cementing reports</b>	Cementing reports, including all materials and compression strength versus time graphs, cement pump charts and pressure records, problems encountered during cementing (losses etc.), logging reports including well deviation details and details of centraliser placing must be completed and submitted to the Department with well completion reports.	<ul style="list-style-type: none"> <li>Currently no wells have been drilled or P&amp;A during the relevant period.</li> <li>However, Santos do retain all necessary records and where applicable share the lab reports with the regulators as well as include the Lab Reports with the original program.</li> </ul>	Sample reports viewed for Wells Bohena 7 and Dewhurst 29.	YES
<b>2. Mandatory requirements and recommendations</b>				
<b>2.1. Well design and barriers</b>				
<b>2.1.1. Principles</b>	<p>Petroleum wells must be designed to ensure the environmentally sound, safe production of hydrocarbons and other wellbore fluids by containing them inside the well, protecting groundwater resources, isolating the productive formations, and by proper execution of treatment, stimulation and completion operations. Titleholders must ensure that a suitable well design, construction and integrity assurance process is in place, maintaining necessary well documentation and undertaking regular audits of the process for all wells.</p> <p>Well design and construction must ensure that no leaks occur through or between any casing strings. The fluids produced from the well must travel directly from the producing zone to the surface inside the well conduit, without contamination of groundwater or other aquifer resources, and must avoid leakage.</p> <p>All wells must be designed to ensure the safe and environmentally sound production of petroleum by:</p> <ol style="list-style-type: none"> <li>preventing any interconnection between hydrocarbon bearing formations and aquifers</li> <li>ensuring that fluid (oil, gas and water) is contained within the well and associated pipework and equipment without leakage.</li> <li>ensuring zonal isolation between different aquifers is achieved.</li> <li>not introducing substances that may cause environmental harm.</li> <li>testing and acceptance requirements being satisfied</li> <li>monitoring and maintaining wells to contain and control wellbore fluids, provide structural support and otherwise retain well integrity throughout all reasonably anticipated construction, testing, production, intervention, workover, suspension and decommissioning load conditions that may occur during the well's life; and</li> <li>ensuring the completion components are designed to operate within the maximum expected pressure and load conditions until final decommissioning.</li> </ol>	<ul style="list-style-type: none"> <li>Refer to Section 2.1.2 of this report.</li> <li>With regard to point f), Onshore Well Integrity Management Procedure 1541-286-WPR-009 Version 1 fully addresses this.</li> </ul>	Examples of BOD viewed. Referenced document viewed.	YES

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
<b>2.1.2. Mandatory requirements</b>	<p>The design basis for petroleum wells must incorporate the following:</p> <ol style="list-style-type: none"> <li>Planned casing setting depths, taking into account aquifer and production zone locations, and the requirements for well control.</li> <li>Provision for installation of pressure control equipment based on risk assessment.</li> <li>BOP equipment to API Standard 53.</li> <li>Specification of appropriate casing weight and grade, and casing running procedures.</li> <li>Specification of appropriate well design and construction materials.</li> <li>Specification of appropriate casing centralisation.</li> <li>Specification of engineered cement slurry and effective cement placement techniques.</li> <li>Design to ensure all fluids produced from the well travel directly from the production zone to the surface without contaminating groundwater.</li> <li>Design to ensure wells are constructed, operated, maintained and decommissioned with 2 verified well barriers between a hydrocarbon bearing or abnormally pressured formation and the surface, unless one of the following scenarios can be demonstrated through risk assessment: <ol style="list-style-type: none"> <li>There is no natural lift mechanism for hydrocarbons or water to flow to surface; or</li> <li>during top hole or surface hole drilling where shallow fluid risk has been assessed as being negligible; or</li> <li>during diverter drilling; or</li> <li>during planned underbalanced and managed pressure drilling where surface equipment design limits are not exceeded; or</li> <li>between the surface and the hydrocarbon bearing zone for a petroleum well during its producing phase. Titleholders must have appropriate processes in place to address well integrity risks; or</li> <li>during well decommissioning when 2 overlying formations need to be isolated from one another and two barriers are not feasible, then a continuous cement plug must be placed in accordance with section 2.3 of the code; or</li> <li>in other circumstances during well life cycle activities when a risk assessment has been completed as per the titleholders' risk management process.</li> </ol> </li> </ol> <p>All well designs and construction procedures should include contingency planning to mitigate the effects of failures in the event of unplanned process upsets or events during construction.</p>	<ul style="list-style-type: none"> <li>Santos D&amp;C has a rigorous process in place for new well designs.</li> <li>BOD (Basis of Design) Basis of Design &amp; Design phase DR-DC777-GEN-0656-0-BOED SIS CO2, Version 0</li> <li>The BOD includes specific sections addressing requirements as follows: <ul style="list-style-type: none"> <li>Casing size, rating and material selection</li> <li>Casing centralization requirements</li> <li>Aquifer isolation requirements</li> <li>Cementing Requirements</li> </ul> </li> <li>The D&amp;C procedure SMS-D&amp;C-OS01-TS07 Onshore Well Control Revision 4 addresses points b &amp; c.</li> <li>When the well is decommissioned, there are a minimum of 2 verified barriers required.</li> <li>With regard to point i), all CSG wells are constructed, operated, and maintained with single barriers in place, this has been risk assessed based on the inability of the wells to flow unaided.</li> </ul>	All referenced documents were viewed and found to comply with this section of the Code.	YES
<b>2.1.3. Good industry practice</b>	<ol style="list-style-type: none"> <li>Offset well information should be reviewed to assist in the design process for new wells.</li> <li>Nearby water bores should also be included in the record keeping and data set as part of the offset review.</li> <li>Consideration should be given to the potential for tubular corrosion including review of offset data detailing any evidence of tubular corrosion. If there is potential for corrosion or corrosion has been observed, titleholders need to conduct a risk assessment and act to ensure maintenance of well integrity.</li> <li>Titleholders should identify aquifers and ensure that these zones are isolated to ensure their long-term protection. Formation horizons or zones from which water bores produce should be noted during the offset well review and used to assist the programmed setting depths for casing strings.</li> <li>Sustainable construction practices and operating procedures should be used, for example, to conserve water use and minimise waste.</li> </ol>	<ul style="list-style-type: none"> <li>There have been no wells drilled since 2014 and the basis of design for those legacy wells is not readily available, however the Basis of Engineering Design Procedure DR-DC777-GEN-0656-0-BOED SIS CO2 Version 0 addresses all these points.</li> <li>This procedure considers wells of similar design as well as CO<sub>2</sub> content for the new wells to be constructed to ensure a fit for purpose design.</li> </ul>	The review of the referenced document and in particular, Table 20, confirms the robustness of the proposed well design for new wells in Narrabri.	YES

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>f) Casing hardware including float equipment, centralisers, cement baskets, wiper plugs (top and bottom), stage tools and external casing packers should be selected as appropriate as part of the well design to ensure integrity of the required zonal isolation.</p> <p>g) Titleholders should review information on geological strata and formation, and fluids within them, that the well may intersect and any hazards that strata and formations may contain.</p> <p>h) Schematic drawings of well barrier arrangements should be prepared for the well or group of wells of similar well design and architecture.</p> <p>i) A barrier should only be considered verified when there is physical evidence that the barrier has been placed in its desired location and will perform its required function.</p> <p>j) The test pressures for verifying well barriers should be applied in the direction of flow towards the external environment. If this is not possible or introduces additional risk, the test pressure can be applied against the direction of flow towards the external environment, provided the well barrier is designed to seal in both flow directions.</p> <p>k) A barrier placement and verification procedure should be developed to identify satisfactory establishment of barriers at each relevant stage of well operations during well construction.</p> <p>l) Borehole stability analysis should be considered for all deviated wells &gt;40 degrees inclination and for wells in areas known to be prone to wellbore instability issues.</p>			
<b>2.2. Casing and Tubing</b>				
<b>2.2.1. Principles</b>	<p>Casing and tubing must be designed to withstand the various compressive, tensile and bending forces that are exerted while running-in the hole, as well as the collapse and burst pressures that it may experience during different phases of the well's life, for example, cementing, pressure testing, stimulation and production cycles.</p> <p>Casing strings must be designed to facilitate installation of pressure control equipment. As well as providing a mechanism for extracting fluid from the production zones, casing and tubing also act to protect other resources such as groundwater.</p> <p>The casing program must be designed to accommodate all identified sub-surface hazards and to minimise risk either from crossflow between formations or the uncontrolled release of wellbore fluids to surface, throughout the life of the well.</p> <p>Casing setting depths must be selected to provide an adequate safety margin between the formation fracture pressure and anticipated pressures during well control and casing cementation operations.</p>	<ul style="list-style-type: none"> <li>Casing design is included within Santos Drilling and Completion Standard: SMS-D&amp;C-OS01-TS14_Onshore_Casing_and_Tubing Version 3</li> </ul>	Document viewed and found to comply with this section of the Code.	YES
<b>2.2.2. Mandatory requirements</b>	<p>a) Casing, casing connections, wellheads, and valves used in wells must be designed to withstand the loads, pressures and temperatures that may act on them throughout the entire well life cycle. This includes casing running and cementing, any treatment pressures, production pressures, any potential corrosive conditions, and other factors pertinent to local experience and operational conditions.</p> <p>b) Casing and tubing stress analysis must be carried out on all reasonably foreseeable load scenarios that may be imposed on the well. Casing design must consider both uniaxial and triaxial analysis.</p> <p>c) Conductor pipe does not need to meet the requirements in (a) or (b).</p> <p>d) Methods of preventing external corrosion that impact well integrity must be considered and implemented where appropriate.</p> <p>e) Barriers must be installed to prevent surface pollutants from entering the well and prevent wellbore fluids (oil, gas, water) from escaping to the surface environment.</p> <p>f) When designing casing strings and casing connections for petroleum wells, titleholders must design each well (or similar well type's) casing string using</p>	<ul style="list-style-type: none"> <li>With regard to points a) to e), casing design is included within Santos Drilling and Completion Standard: SMS-D&amp;C-OS01-TS14_Onshore_Casing_and_Tubing Version 3.</li> <li>Excerpt below from the above Drilling and Completion Standard confirms compliance with point f).</li> </ul>	Document viewed and found to comply with this section of the Code.	YES



Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance																		
	<p>appropriate design safety factors. A generic worst-case design and stress analysis may be adopted to cover multiple wells in a field development targeting the same/similar reservoir. Commonly used design safety factors are:</p> <ul style="list-style-type: none"><li>• collapse: 1.0</li><li>• burst: 1.1</li><li>• static tension: 1.3</li><li>• triaxial analysis: 1.25</li></ul> <p>The design safety factors used must be appropriately justified and need to be appropriate for the anticipated well life, service conditions and local experience.</p> <p>g) All steel casing and tubing must be manufactured to the latest edition of ISO 11960. The rated capacity of the pipe body and connections must be obtained from the latest edition of ISO 11960 or the manufacturer's technical specifications. Any material other than steel used for casing and tubing must have appropriate manufacturing specifications and verifiable properties.</p> <p>h) To verify casing integrity during the well construction process, casing must be pressure tested prior to drilling out for the next hole section (in the case of surface or intermediate casing), and before completion operations commencing (in the case of production casing). The test pressure must be greater than the maximum anticipated formation pressure possible at the surface but must not exceed the burst pressure rating of the casing with the design safety factor applied.</p> <p>i) Minimum surface casing setting depth must be sufficient to meet isolation requirements of shallow aquifers and provide an acceptable kick tolerance for the next hole section to be drilled. The kick tolerance criteria must be selected by the titleholder and be dependent upon knowledge of the local pore pressure and fracture gradient profiles, and of the likely kick conditions in the well.</p> <p>j) Steel casing connections must be made up to ensure an aligned, round, secure, and leakproof joint.</p> <p>k) Welded connections are not permitted for the joining of casing or tubing in a well unless they are seamless and electric-welded casing, tubing and pipe manufactured in compliance with ISO 11960.</p> <p>l) The yield stress of oil country tubular goods (OCTG) must be derated for temperature.</p>	<p>Table 14-1: Design Factors</p> <table><thead><tr><th>Description</th><th>Design Factor</th><th>Design Factor (stimulation loads)</th></tr></thead><tbody><tr><td>Collapse</td><td>1.0</td><td>1.0</td></tr><tr><td>Burst</td><td>1.1</td><td>N/A</td></tr><tr><td>Tension (yield strength adjusted for temperature)</td><td>1.3</td><td>N/A</td></tr><tr><td>Compression</td><td>1.2</td><td>N/A</td></tr><tr><td>Triaxial (yield strength adjusted for temperature)</td><td>1.25</td><td>1.10 for production casing 1.15 for production tubing</td></tr></tbody></table>	Description	Design Factor	Design Factor (stimulation loads)	Collapse	1.0	1.0	Burst	1.1	N/A	Tension (yield strength adjusted for temperature)	1.3	N/A	Compression	1.2	N/A	Triaxial (yield strength adjusted for temperature)	1.25	1.10 for production casing 1.15 for production tubing		
Description	Design Factor	Design Factor (stimulation loads)																				
Collapse	1.0	1.0																				
Burst	1.1	N/A																				
Tension (yield strength adjusted for temperature)	1.3	N/A																				
Compression	1.2	N/A																				
Triaxial (yield strength adjusted for temperature)	1.25	1.10 for production casing 1.15 for production tubing																				
2.2.3. Good industry practice	<p>a) For casing run in petroleum wells, pipe body and connections should have verifiable properties (i.e. in terms of burst, collapse and tensile strengths). Note that casing manufactured to API specifications must by definition meet strict requirements for compression, tension, collapse and burst resistance, as well as quality and consistency.</p> <p>b) Casing and tubing design should be carried out with the aid of industry recognised software, to confirm that temperature effects and flow back induced compression forces are adequately assessed in the casing and tubing design.</p> <p>c) When making up a casing connection it is important to apply the recommended torque. Too much torque may over-stress the connection and result in failure of the connection. Too little torque may result in leaks at the connection.</p> <p>d) The correct use of casing dope, appropriate temperature application and its impact on torque make-up should be incorporated into casing running procedures.</p> <p>e) Titleholders should consider the potential impact of high casing pressures on cement bond quality (especially before cement has properly set) when determining pressures for any casing tests.</p> <p>f) Titleholders, their drilling contractors and their well-site supervisors should review and ensure compliance with the work program to run, install and test all casing strings during well construction.</p> <p>g) Long term monitoring and recording of the casing condition should be undertaken.</p>	<ul style="list-style-type: none"><li>• Casing design is included within Santos Drilling and Completion Standard: SMS-D&amp;C-OS01-TS14_Onshore_Casing_and_Tubing Version 3</li><li>• The referenced D&amp;C Standard addresses points: - a, b, c, i, j &amp; k</li><li>• Points: - c, d, f &amp; h are covered in the individual well programs</li></ul> <p><b>Comment</b> Points e &amp; l in Sub Section 2.2.3 are not applicable for CSG wells.</p> <ul style="list-style-type: none"><li>• Point: - g is covered Within the Well Integrity Management Procedure (1541-286-WPR-0009), Version 1.</li></ul>	All referenced documents reviewed in detail to confirm they comply with this section of the Code.	YES, but note Comment																		

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>h) Pressure tests to verify casing integrity should:</p> <ol style="list-style-type: none"> <li>be greater than the maximum anticipated surface pressure if the well is voided to reservoir fluid, allowing for possible leak off at the previous casing shoe.</li> <li>be equal to the maximum annulus pressure utilised for pressure testing of completion strings/tools for the string and maximum surface treatment pressures for fracture stimulation.</li> <li>not exceed the casing design factor for the pressure test load.</li> <li>not exceed the rated capacity of the weakest component of the casing string.</li> <li>not exceed the rated burst capacity of the casing with a safety factor applied. A typical safety factor is 70% to 80% of rated burst capacity.</li> </ol> <p>i) Casing connection qualification testing should be to ISO 13679 based on intended service.</p> <p>j) Compression rating of connections should be applied to casing and tubing design as per the manufacturer's recommended values.</p> <p>k) Where appropriate, suitable allowance should be made for lifecycle wear, erosion and corrosion. Casing wear should be monitored closely in high angle wells during well construction, as well as during the well life.</p> <p>l) Consideration should be given for use of metal-to-metal seal thread connections in production casing and tubing strings for wells designed for gas lift, and non-CSG gas wells that cross hydrocarbon bearing or over-pressured water zones.</p>			
<b>2.3. Cementing</b>				
<b>2.3.1. Principles</b>	<p>Petroleum wells must be cemented to:</p> <ol style="list-style-type: none"> <li>prevent migration paths and isolate the targeted zone from other formations.</li> <li>protect groundwater from contamination.</li> <li>maintain aquifer pressures and quality.</li> <li>obtain and maintain well integrity.</li> <li>protect the casing from corrosion. Corrosion rates of steel with an adequate cement coating are sufficiently low that cement encapsulation of steel is accepted as a permanent barrier.</li> <li>provide axial support for the casing string to permit further drilling and to provide an anchor for BOP equipment.</li> <li>reduce possibilities of casing buckling and/or collapse, particularly in situations where abnormal formation stresses occur.</li> <li>seal off the casing shoe, or equivalent, in order to control pressure.</li> </ol>	<ul style="list-style-type: none"> <li>All these requirements are included within the Santos Cementing Standard SMS-D&amp;C-OS01-TS06_Onshore_Cementing Version 3</li> </ul>	The Cementing Standard was reviewed and found to comply with this section of the Code.	YES
<b>2.3.2. Mandatory requirements</b>	<ol style="list-style-type: none"> <li>To prevent interconnection between zones of differing pressure and water quality: <ol style="list-style-type: none"> <li>all surface casing must be cemented from shoe to surface.</li> <li>for cementing production and intermediate casing, titleholders must design to ensure cement is either brought to surface or designed to an appropriate safety overlap distance of at least 50 m back inside the previous casing shoe. However, where titleholders choose not to bring cement to surface, they must consider that after decommissioning, two adjacent cement barriers across all aquifers will be required under this code.</li> <li>testing pressures must take into account collapse pressure of the inner casing string and fracture gradient at the outer casing shoe.</li> </ol> </li> <li>Cement constituents and properties must be suitable for the intended conditions of use and used in compliance with the relevant safety data sheet (SDS) requirements.</li> <li>Appropriate cement laboratory testing procedures must be carried out (ISO 10426-2, API RP 10B-2) in advance of the well being drilled or decommissioned to ensure the resulting slurry meets the requirements of the well design.</li> </ol>	<ul style="list-style-type: none"> <li>All these requirements are included within the Santos Cementing Standard SMS-D&amp;C-OS01-TS06_Onshore_Cementing Version 3</li> </ul>	The Cementing Standard was reviewed and found to comply with this section of the Code.	YES

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>d) In the case where similar wells are drilled or decommissioned in an area with similar well properties (depths, temperatures and well design), constant cement materials and mix water properties, then a representative lab test may be acceptable. The testing, as a minimum, must include:</p> <ul style="list-style-type: none"> <li>i. slurry density</li> <li>ii. rheology</li> <li>iii. thickening time</li> <li>iv. free water</li> <li>v. fluid loss (if required)</li> <li>vi. fluid compatibility (cement, source/mix water, drilling fluid, spacers used)</li> <li>vii. mechanical properties</li> <li>viii. compressive strength development with time.</li> </ul> <p>e) Wait on cement setting time:</p> <ul style="list-style-type: none"> <li>i. Slacking off or removing BOPs – must be based on the cement achieving a minimum of 100 psi (0.7 MPa) compressive strength at the temperature of any potential flow zone in the annulus just cemented. Alternatively, titleholders may use a mechanical barrier that is compliant with API 65 – Part 2 and tested to verify a pressure seal prior to removing BOPs.</li> <li>ii. Pressure testing of casing (unless conducting a green cement pressure test on bump) or drilling out the shoe track for a subsequent hole section – must, as a minimum, have achieved a minimum compressive strength of 500 psi (3.5 MPa) based on the laboratory testing time for cement surrounding the casing shoe.</li> </ul> <p>f) Titleholders must ensure all zones (both hydrocarbon bearing and aquifers) are isolated with cement with a minimum ultimate compressive strength of 500 psi (3.5 MPa).</p> <p>g) Titleholders must determine and document in their well procedures a minimum required ultimate compressive strength for cement slurries to be used across zones which may be hydraulically fracture stimulated.</p> <p>h) Titleholders must ensure that the required compressive strength slurry for fracture stimulation is placed at least 150 m above any zone to be fracture stimulated. This must be verified by cement log evaluation. API Guidance Document HF-1 addresses this issue.</p> <p>i) During all cement jobs, where the casing being cemented is installed to the surface, cement returns to surface must be continuously monitored and recorded to confirm the effectiveness of the cement placement. Pressures during the cement job and immediately prior to plug bump must be similarly recorded as a potential indicator of height of cement column and downhole problems.</p> <p>j) Calcium chloride or other chloride-based accelerants must not be added to the cement mix unless the free water content of the cement is specified as &lt;2% as per the free water test outlined in API RP 10B-2.</p> <p>k) Casing centralisation simulation must be undertaken for the casing centralisation plan to achieve a minimum of 70% standoff across the total cementing depth. This equates to 23 mm for 9-5/8" casing in 12-1/4" hole, 13 mm for 7" casing in 8- 1/2" hole, 21 mm for 5-1/2" casing in 7-7/8" hole.</p> <p>l) Centralisation calculations for a vertical well must include a deviation of 3 degrees from vertical at casing depth unless otherwise proven. Where the actual deviation exceeds three degrees, the actual deviation data must be used. Refer API 10D-2.</p> <p>m) Titleholders must review centraliser selection and application in the API Technical Report 10TR4 Selection of Centralisers for Primary Cementing Operations. An appropriate wiper plug assembly must be used for production casing to enable plug bump and pressure test of the casing before cement cures.</p> <p>n) Titleholders must have a verification procedure for primary cement jobs. Acceptable verification and evaluation methods for primary cement jobs are outlined in Table 1. Titleholders must use at least three of the verification methods described in Table 1.</p>			

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance									
	<p>o) If surface casing is set shallower than 60 m true vertical depth (TVD), the next casing string must be cemented to surface.</p> <p>Where cement is not returned to surface, cement evaluation logging or pressure testing must be performed and recorded, to verify isolation of the casing/casing annulus has occurred, after the cement has reached a compressive strength of 500 psi (3.5MPa) at surface conditions. In wells in which it will take greater than 36 hours to reach a compressive strength of 500 psi (3.5MPa) at surface conditions, then 36 hours wait time can be used.</p> <p>Table 1: Verification and evaluation methods for primary cement jobs</p> <table><tr><th>Completion type</th><th>Verification criteria</th><th>Contingency</th></tr><tr><td>Requirements which cover both casing and liner completions</td><td><ul style="list-style-type: none"><li>- Slurry mixed and placed in accordance with contractor approved cementation procedures and the cement job pressure charts show pressure rise during cement displacement in line with expectations</li><li>- Shoe track volume not over displaced when displacing cement slurry</li><li>- Downhole losses not greater than the excess pumped within the cement procedure, and calculated TOC using final circulating pressure and measured fluid returns achieves the objectives identified within the cementing program.</li><li>- No significant losses or slumping post-placement of cement.</li><li>- Casing successfully pressure tested.</li><li>- A successful appropriate cement integrity test such as a formation integrity test (FIT) or leak off test (LOT). The titleholder must select a test suitable to the conditions.</li><li>- Appropriate cement evaluation log</li></ul></td><td><ul style="list-style-type: none"><li>- Where the verification is inconclusive, the cement job and zonal isolation requirements must be verified by appropriate cement evaluation tools, interpreted by a competent person.</li><li>- Remedial cementing/top-up job cementing as required.</li></ul></td></tr><tr><td>Additional liner only requirements</td><td><p>Pressure test of liner top packer must be performed and recorded to verify zonal isolation has occurred after all the cement has reached a compressive strength of 500 psi (3.5 MPa). Testing pressures must be no less than 500 psi (3.5 MPa) over the previous casing FIT or LOT at the shoe.</p></td><td><ul style="list-style-type: none"><li>- If a failed pressure test occurs on bump, set liner top packer, circulate out excess cement and WOC before conducting pressure test again.</li><li>- If the pressure test fails again, a liner tie back packer on top of the liner top may be run and then re-tested.</li></ul></td></tr></table>	Completion type	Verification criteria	Contingency	Requirements which cover both casing and liner completions	<ul style="list-style-type: none"><li>- Slurry mixed and placed in accordance with contractor approved cementation procedures and the cement job pressure charts show pressure rise during cement displacement in line with expectations</li><li>- Shoe track volume not over displaced when displacing cement slurry</li><li>- Downhole losses not greater than the excess pumped within the cement procedure, and calculated TOC using final circulating pressure and measured fluid returns achieves the objectives identified within the cementing program.</li><li>- No significant losses or slumping post-placement of cement.</li><li>- Casing successfully pressure tested.</li><li>- A successful appropriate cement integrity test such as a formation integrity test (FIT) or leak off test (LOT). The titleholder must select a test suitable to the conditions.</li><li>- Appropriate cement evaluation log</li></ul>	<ul style="list-style-type: none"><li>- Where the verification is inconclusive, the cement job and zonal isolation requirements must be verified by appropriate cement evaluation tools, interpreted by a competent person.</li><li>- Remedial cementing/top-up job cementing as required.</li></ul>	Additional liner only requirements	<p>Pressure test of liner top packer must be performed and recorded to verify zonal isolation has occurred after all the cement has reached a compressive strength of 500 psi (3.5 MPa). Testing pressures must be no less than 500 psi (3.5 MPa) over the previous casing FIT or LOT at the shoe.</p>	<ul style="list-style-type: none"><li>- If a failed pressure test occurs on bump, set liner top packer, circulate out excess cement and WOC before conducting pressure test again.</li><li>- If the pressure test fails again, a liner tie back packer on top of the liner top may be run and then re-tested.</li></ul>			
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Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
<b>2.3.3. Good industry practice</b>	<p>Titleholders should ensure:</p> <ul style="list-style-type: none"> <li>a) proper wellbore preparation, hole cleaning and conditioning prior to the cement job. Once casing has been run to landing depth, titleholders should circulate a minimum of one-hole volume immediately prior to commencing cementing procedures.</li> <li>b) movement of the casing (rotation and reciprocation) is considered where appropriate to improve drilling fluid removal and promote cement placement.</li> <li>c) cement design avoids cement shrinkage giving rise to the propagation of fractures and leakage paths</li> <li>d) cement job design includes proper cement spacer design and volume to ensure the appropriate contact time during pumping.</li> <li>e) caliper logs in production hole sections, where available, is used to confirm cement volume requirements and standoff calculations. The level of excess cement requirements should be based on local experience.</li> <li>f) water and cement slurry samples are taken (periodically during each cement job) by the titleholders well site supervisors as an aid to monitoring cement job quality and visual confirmation of speed of cement set up. Cement samples should be maintained on-site for the duration of the well with results recorded in reports.</li> <li>g) leak-off tests (LOT) or formation integrity tests (FIT) are used on drill out of surface casing shoes as a potential guide to shoe integrity (i.e. good cement around the casing shoe) as well as assisting with well design for well control risk.</li> <li>h) all cementing operations are carried out with proper mixing, blending and pumping of the cement job at the wellsite. These activities should be properly supervised and recorded in cementing reports. This includes recording any cementing problems encountered.</li> <li>i) Note: a cement mixed/ blended to the relevant specifications may be prepared off site.</li> <li>j) wiper plugs are used for surface and intermediate casings to prevent contamination of cement and to enable plug bump and pressure test of the casing before cement cures.</li> <li>k) baseline cement log evaluation is considered in each new field area where confirmation of cement placement has not been demonstrated. Confirmation of cement placement should be undertaken by recording cement returns to surface together with adequate displacement pressures or pressures immediately prior to plug bump. Cement evaluation logging should continue until repetitive success of slurry design and cement placement together with adequacy of cement bond for zonal isolation is confirmed (e.g. five wells in each new field or area of different geological conditions). There may be instances after repetitive success has been shown, such as when a new cementing provider is used or a new design is implemented, that cement log evaluation should take place. The additional cement evaluation log requirements for wells that are to be hydraulically stimulated should be noted.</li> </ul>	<ul style="list-style-type: none"> <li>Santos confirmed that should any anomalies be detected (not matching the model in the Cement Program) during the execution of any cement job on a CSG well that further investigation would be carried out and where necessary remedial steps performed.</li> </ul>	<p>Compliance with this section of the Code was confirmed within the within the Santos Cementing Standard SMS-D&amp;C-OS01-TS06_Onshore_Cementing Version 3 and in further discussions with D&amp;C personnel.</p>	YES
<b>2.4. Wellheads</b>				
<b>2.4.1. Principles</b>	<p>The wellhead is a part of the defined safe operating envelope for the duration of the well life. The primary purpose of a wellhead is to:</p> <ul style="list-style-type: none"> <li>a) ensure well integrity at the surface</li> <li>b) provide the suspension point and pressure seals for the casing strings that run from the bottom of the hole sections to the surface pressure control equipment</li> <li>c) support the BOP during the drilling phase and equipment during the production phase</li> <li>d) provide the arrangement for the sealing, testing, monitoring, injecting into and bleeding off between annuli.</li> </ul>	<ul style="list-style-type: none"> <li>Seals are tested at time of installation and also on an annual basis by well integrity crew.</li> <li>Wellhead valves are also tested at this time where practicable.</li> <li>Standard wellheads used by Santos have casing hanger and secondary seals so as to provide barriers between the surface casing and production casing.</li> <li>Some legacy wells do not meet this requirement and these are proposed for P&amp;A/suspension in Q4 of 2023.</li> </ul>	<p>The latest monthly (August 2023) leak survey report was reviewed and demonstrates compliance with this section of the Code.</p> <p>Brawboy 2 &amp; Bohena 7 P&amp;A Programs were reviewed.</p>	YES

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	Wellheads may be threaded or welded onto the first string of casing, which has been cemented in place during drilling operations, to form an integral part of the well structure.			
<b>2.4.2. Mandatory requirements</b>	<ul style="list-style-type: none"> <li>a) Titleholders must use wellhead equipment that complies with API Specification 6A Wellhead and Tree equipment/ISO 10423 and NACE MR0175/ISO 15156.</li> <li>b) Titleholders must monitor wellheads for leaks in accordance with their well integrity management system and leak detection and repair program.</li> <li>c) Wellhead and production tree pressure rating must exceed all reasonably expected loads for the entire life of the well. Wellhead product specification level (PSL) and trim must be matched to fluid properties, pressure and temperature of flowing conditions.</li> <li>d) Side outlet valves must be rated to at least the same pressure as the wellhead unit they are attached to. All wellhead components must be rated to the well pressure envelope.</li> <li>e) Wellheads must have adequate valve outlets accessible and operational for all annuli to allow for monitoring of annuli pressure.</li> <li>f) Casing to wellhead pressure tests ('P' seal area or equivalent) must not exceed 80% of the collapse rating of the casing.</li> <li>g) Any change to use of a wellhead must be risk assessed by the titleholder to ensure the compatibility of the existing equipment with the proposed usage.</li> </ul>	<ul style="list-style-type: none"> <li>• API 6A, 16A and NACE MR0175 is referenced in Santos wellhead standard - Refer SMS-D&amp;C-OS01-TS15 (Onshore) – Wellhead and Christmas Tree standard, Version 3</li> <li>• API Standard 53 is referenced in Santos Well Control Standard - SMS-D&amp;C-OS01-TS07_Onshore_Well_Control, Version 4</li> </ul>	The referenced Santos documents were reviewed and found to be following the relevant Industry Standards and therefore comply with this section of the Code.	YES
<b>2.4.3. Good industry practice</b>	<ul style="list-style-type: none"> <li>a) Wellheads should be designed to take into account maximum axial loading. If an emergency slip and seal assembly is run this might affect the maximum axial loading.</li> <li>b) Titleholders should ensure that during initial wellhead installation and subsequent well intervention workovers, wellhead seal tests are conducted to test the mechanical integrity of the wellhead sealing components (including valve gates and seals) and confirm they can hold against well pressure.</li> </ul>	<ul style="list-style-type: none"> <li>• Seals are tested at time of installation and also on an annual basis by well integrity crew.</li> <li>• Wellhead valves are also tested at this time where practicable.</li> <li>• Standard wellheads used by Santos have casing hanger and secondary seals so as to provide barriers between the surface casing and production casing.</li> <li>• Some legacy wells do not meet this requirement and these are proposed for P&amp;A/suspension in Q4 of 2023.</li> </ul>	<p>The August 2023 leak survey report was reviewed and demonstrates compliance with this section of the Code.</p> <p>Brawboy 2 &amp; Bohena 7 P&amp;A Programs were reviewed.</p>	YES
<b>2.5. Well control</b>				
<b>2.5.1. Principles</b>	<p>The primary purpose of well control is to provide barriers to prevent the uncontrolled release of formation fluids to the surface. Well control for overbalanced drilling can be defined as:</p> <ul style="list-style-type: none"> <li>a) Primary well control – the maintenance of a hydrostatic pressure of fluid in the wellbore, adequate to balance the fluid pressure (pore pressure) in the formations drilled. In practice this means an excess of hydrostatic pressure is maintained to provide a safe level of 'overbalance' to formation pressure.</li> <li>b) Secondary well control – used when the primary well control fails resulting in formation fluids flowing into the well. Appropriate pressure control equipment will be in place to contain any influx of formation fluid and allow it to be safely handled e.g. safely circulated out of the well.</li> </ul> <p>The requirements for well control systems will vary when underbalanced or managed pressure drilling techniques are used. However, in all operations the guiding principle is to maintain at least two well control barriers when hydrocarbon release is possible.</p>	<ul style="list-style-type: none"> <li>• Santos D&amp;C procedure SMS-D&amp;C-OS01-TS07_Onshore_Well_Control, Version 4 addresses all of these points, risks and mitigations to suit as well as API 53 is addressed within the Santos standard</li> </ul>	The referenced document was reviewed and found to comply with this section of the Code.	YES

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
<b>2.5.2. Mandatory requirements</b>	<ul style="list-style-type: none"> <li>a) Titleholders must address well control in safety management systems. Titleholders must have a well control standard document available at well sites, detailing requirements for equipment level, kick detection and well control techniques.</li> <li>b) During well construction, titleholders must install well pressure control equipment (e.g. BOP stack and wellhead) for all operations after the installation of the surface casing. Well pressure control equipment can be removed once the well is decommissioned or cased and suspended after all hydrocarbon zones and aquifers are isolated and barriers established and verified.</li> <li>c) Titleholders must use pressure control equipment compliant with API Specifications 16A, 16C and 16D.</li> <li>d) The level of pressure control equipment required on any operations, and the configuration employed, must be suitable for the well, the subject of a risk assessment and documented accordingly.</li> <li>e) Titleholders must function and pressure test pressure control equipment in accordance with API Standard 53, including drill through equipment, choke and kill line systems and pressure storage systems (e.g. accumulators).</li> <li>f) Titleholders must use best industry practice for early identification of fluid influx (well kick). This may include monitoring of drill fluid pit level, flowline rate and trip volume sheets derived from trip tank measurements.</li> <li>g) Titleholders using underbalanced techniques must ensure a well control risk assessment is conducted and control measures to counter the absence of primary well control are documented.</li> <li>h) Working temperature rating for well pressure control equipment must meet the maximum anticipated continuous exposure temperature for rubber/elastomer components.</li> <li>i) All well pressure control equipment, including connections, valves, fittings, piping etc (excluding annular BOPs), must be rated to exceed maximum anticipated shut-in surface pressure.</li> <li>j) A hydrocarbon and gas monitoring system must be used on the well site to identify hydrocarbon bearing formations and potential gas influx. Any identified hydrocarbon or gas bearing formations and hydrocarbon and gas properties must be recorded by the titleholder.</li> </ul>	<ul style="list-style-type: none"> <li>• API 6A, 16A and NACE MR0175 is referenced in Santos wellhead standard - Refer SMS-D&amp;C-OS01-TS15 (Onshore) – Wellhead and Christmas Tree standard, Version 3</li> <li>• API Standard 53 is referenced in Santos Well Control Standard - SMS-D&amp;C-OS01-TS07_Onshore_Well_Control, Version 4</li> </ul>	The documents reviewed comply with this section of the Code.	YES
<b>2.5.3. Good industry practice</b>	<ul style="list-style-type: none"> <li>a) Additional guidance for the selection and use of well pressure control equipment is documented in API Standard 53 - Blowout prevention equipment systems for drilling wells.</li> <li>b) Safety critical spares for BOP equipment should be readily accessible. Storage should prevent degradation of rubber and elastomer consumables by heat or light.</li> <li>c) Regular and realistic training drills, relevant to operations, should be conducted for all personnel involved in detection, prevention and recovery of a lost barrier.</li> </ul>	<ul style="list-style-type: none"> <li>• See Section 2.5.2 as well as SMS-D&amp;C_OS01_TS07.2-Well Control, Version 4, and also HSE-MAN-004 Emergency Response all address points a, b &amp; c.</li> <li>• Regular drills are also defined in the Rig Specific Well Control Bridging Document supplied by each Rig Contractor.</li> </ul>	The Santos standards reviewed were found to comply with this section of the Code.	YES
<b>2.6. Fluids</b>				
<b>2.6.1. Principles</b>	<p>Fluids are used throughout the lifecycle of a well including during drilling, completion, workovers and stimulation. While drilling, fluid is usually circulated down the drill string and up the annulus between the drill string and hole wall. This drilling fluid serves to lubricate the drilling assembly, remove the formation cuttings drilled, maintain pressure control of the well, and stabilise the hole being drilled. Drilling fluid is generally a mixture of water, clays, fluid loss control additives, density control additives, and viscosifiers.</p> <p>The drilling fluid used for the majority of wells in NSW is water based. It may be either fresh water or may be based on salt brine. Potassium chloride, the principal salt component, is often used as a weighting agent and to help control swelling clays.</p>	<ul style="list-style-type: none"> <li>• Recommended API practices are referenced in the Santos Drilling and Completions Fluid Standard - SMS-D&amp;C-OS01-TS13_Onshore_Drilling_and_Completions_Fluid dated July, 2022</li> <li>• Information regarding all fluids utilised in Well Construction can be found on WellView.</li> </ul>	The referenced standard was reviewed as well as WellView for Dewhurst 29 and found to comply with this section of the Code.	YES



Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>Organic polymers or clay may be added to the base fluid to raise the viscosity and aid in removal of drill cuttings.</p> <p>After use, drilling fluid is returned to the drilling sumps where the solids settle to the bottom of the sump. The liquid may then be recirculated.</p> <p>Losing drilling fluids downhole is undesirable as they are the primary means of controlling pressure within the well and maintaining removal of formation cuttings drilled. When a loss is detected, loss circulation material (LCM) may be incorporated in the drilling fluid. LCM prevents fluid loss by blocking the pores/fractures in the host rock.</p> <p>Underbalanced drilling techniques may be used for drilling where air, nitrogen or other underbalance 'aerated' fluids are used as a drilling medium.</p> <p>Titleholders and drilling contractors undertaking underbalanced drilling must ensure that all risk assessment, well design, operational and crew training requirements are addressed prior to and during execution of the project.</p> <p>Disposal of fluids must be done in accordance with the relevant activity approval and all regulatory requirements.</p> <p>The primary objectives for drilling and completion fluids are to:</p> <ol style="list-style-type: none"> <li>maintain primary well control as per the well barrier requirements</li> <li>optimise hole conditions for the retrieval of geological and reservoir data</li> <li>minimise reservoir damage and therefore optimise well productivity</li> <li>improve drilling performance.</li> </ol>			
<b>2.6.2. Mandatory requirements</b>	<ol style="list-style-type: none"> <li>Fluids must be selected and managed to ensure all products used during the well lifecycle are used in accordance with the manufacturer's recommendations and relevant safety data sheets (SDS).</li> <li>The name, type, CAS number (or SDS) and quantity of each chemical used on each well throughout the life of the well must be recorded</li> <li>Oil-based fluids or fluids containing benzene, toluene, ethylbenzene or xylene (BTEX) compounds must not be used for petroleum drilling in NSW. (<a href="http://www.industry.nsw.gov.au/policies/items/ban-on-use-of-btex-compounds-in-csg-activities">www.industry.nsw.gov.au/policies/items/ban-on-use-of-btex-compounds-in-csg-activities</a>)</li> <li>The source of water used for all well procedures (drilling, workover and stimulation) must be recorded for future well monitoring purposes.</li> <li>Personnel, including contractors, must be aware of the environmental impact and spill emergency procedure of the products and substances in use on site.</li> </ol>	<ul style="list-style-type: none"> <li>As per the above section, there is reporting set up within WellView software to track chemical usage.</li> <li>The data includes chemical name and CAS number and volume used.</li> <li>Oil based muds are not used for CSG wells.</li> <li>Rig personnel report all spills through the incident management system.</li> </ul>	Both WellView and the IMS were reviewed and suitable evidence was sighted to confirm compliance with this section of the Code.	YES
<b>2.6.3. Good industry practice</b>	<ol style="list-style-type: none"> <li>Drilling fluid should be a carefully monitored and controlled mixture designed to: <ol style="list-style-type: none"> <li>achieve best drilling results and ensure efficient removal of formation cuttings and</li> <li>control formation pressures; and minimise damage to formations.</li> </ol> </li> <li>Titleholders should ensure that the drilling fluid selected is appropriate for the well design to accommodate any locally experienced drilling problems and anticipated geological conditions likely to be encountered.</li> <li>Using biodegradable substances in the drilling fluid is preferred.</li> <li>Products should be chosen, stored, and used at concentrations that minimise the risk of causing environmental harm.</li> <li>Titleholders should use established, effective drilling practices to achieve a stable, uniform, and, as far as possible, in-gauge hole.</li> <li>Titleholders should consider water quality used in cement mixes.</li> <li>Biocide, oxygen scavenger and corrosion inhibitor should be considered for all water-based systems.</li> <li>Fluids should be captured and recycled for reuse as far as practicable</li> </ol>	<ul style="list-style-type: none"> <li>Santos Drilling and Completions Fluid Standard - SMS-D&amp;C-OS01-TS13_Onshore_Drilling_and_Completions_Fluid dated July, 2022 contains details on best practises for optimizing well construction including, hole cleaning guidelines, drilling fluid testing, EHS requirements associated with chemical etc.</li> <li>Santos Drilling and Completions Cementing Standard - SMS-D&amp;C-OS01-TS06_Onshore_Cementing dated July, 2022 requires mix water be provided to cementing contractor for lab testing.</li> </ul>	The referenced Santos standards were reviewed against the details in a selected well program (Biblewindi 5) to confirm compliance with this section of the Code.	YES

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>i) Lost circulation material strategies should be documented, and sufficient stocks of lost circulation material kept on site for contingency purposes and based on field experience.</p> <p>j) When drilling with a closed fluid system, fluid weight and viscosity in and out of the hole should be checked regularly and recorded by the drilling contractor or well servicing contractor. This frequency should be increased during narrow pore pressure/fracture pressure window drilling.</p> <p>k) To maintain accurate volume accounting, fluid transfers should not be made from or to the active system while drilling through critical pore pressure ramps, unknown pore pressure zones, narrow pore pressure/fracture pressure window drilling, during cementing operations or negative flowback/pressure testing.</p> <p>l) Use of air or gas drilling fluids in underbalanced drilling operations should be in accordance with API RP 92U Underbalanced Drilling Operations.</p>			
<b>2.7. Evaluation, logging, testing and coring</b>				
<b>2.7.1. Principles</b>	<p>The types of logs that are run in a petroleum well are selected by geologists and engineers at the time the well is designed. The main evaluation data is typically gathered with wireline logging tools or logging-while-drilling (LWD) tools. Common logging tools used for evaluation of petroleum wells include natural gamma ray, density, calliper, resistivity, sonic and image logs.</p> <p>Logging produces valuable information on all formations logged to accurately determine the nature and type of all strata encountered. This information is used in optimising future well design and drilling operations as well as determination of the actual depth and thickness of all subsurface formations in the drilled hole. Review of well logs assists in setting casing strings in the correct place to achieve well design objectives and to properly achieve the isolation requirements of the casing and cement.</p> <p>Formation testing may be carried out on some wells. The formation is sampled by either drill pipe conveyed drill stem test tools or by wireline deployed test tools.</p> <p>In some exploration wells, the well design may be modified to cut 'cores' of the strata encountered. This involves drilling a core of solid rock and recovering it to surface. The core is examined for geological information and any coals are tested for gas content.</p> <p>In petroleum exploration and development, formation evaluation is used to characterise formation fluids and determine the ability of a well to produce hydrocarbons. Formation evaluation seeks to:</p> <ol style="list-style-type: none"> <li>characterise reservoir properties, including: <ol style="list-style-type: none"> <li>petrophysical properties</li> <li>formation fluid properties</li> <li>geomechanical properties;</li> </ol> </li> <li>evaluate reservoir productivity.</li> </ol> <p>Cuttings samples, core samples, fluid samples and other samples from the well drilling process must be collected, stored and distributed according to legislative and regulatory requirements.</p>	<ul style="list-style-type: none"> <li>Logging suites are specified within drilling programs as are requested core intervals and assessed as per required by the geology and reservoir engineering teams.</li> <li>All logs are stored within Santos EP Share database.</li> </ul>	The program for Brawboy 2 was reviewed to confirm logging requirements and compliance with this section of the Code.	YES
<b>2.7.2. Mandatory requirements</b>	<ol style="list-style-type: none"> <li>Samples of formation cuttings, cores and fluid samples must be kept in accordance with legislative requirements.</li> <li>Appropriate equipment must be readily available to recover survey or logging equipment lost downhole.</li> <li>Well testing requirements (for wells that will not flow to surface, only the relevant requirements are applicable): <ol style="list-style-type: none"> <li>Well test programs must be prepared. For all DSTs a well and tool schematic must be prepared and included in the well test program.</li> </ol> </li> </ol>	<ul style="list-style-type: none"> <li>At the time of audit the last well in the area of interest was drilled in 2014, however, during discussions with D&amp;C personnel the following details were confirmed: <ol style="list-style-type: none"> <li>All samples such as cuttings, cores and fluids would be retained as per legislative requirements.</li> <li>Appropriate fishing tools would always be on location to enable recovery of survey or logging</li> </ol> </li> </ul>	<p>The answers stated in the evidence and the documents reviewed confirm compliance with this section of the Code.</p> <p>Echitek Assure document 9053 was viewed and confirmed that Schlumberger had all necessary licences and approvals in place.</p>	YES, but note Comment

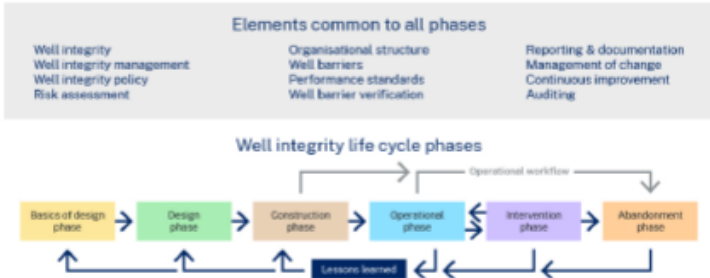
Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<ul style="list-style-type: none"> <li>ii. All well test equipment must be located in appropriate hazardous classification areas.</li> <li>iii. Clear and accurate definitions of temperature and pressure ratings must be provided for all surface equipment. Any pressure de-rating due to elevated temperatures must be addressed in the emergency shutdown and monitoring systems</li> <li>iv. The line to the testing choke manifold must be rated and pressure tested to the maximum expected surface pressure as calculated from the reservoir pressure less the hydrostatic pressure of a gas column to surface plus any kill or surface treatment pressure (e.g. fracture stimulation).</li> <li>v. Pressure monitoring capability must be available at the wellhead. During the well test, actual flowing conditions must be recorded and compared to predicted values.</li> <li>vi. The well test surface equipment must be designed, prepared and operated in accordance with API 6A, NACE MR-01-075, ANSI B31.3 (Spools and crossovers).</li> <li>vii. Emergency response procedures must be in place.</li> </ul> <p>d) Managing and transporting explosives must be in accordance with applicable regulatory requirements.</p> <p>e) The titleholder must ensure that service companies providing radioactive or explosive materials have appropriate licences and procedures for the safe transport, handling and use of:</p> <ul style="list-style-type: none"> <li>i. radioactive sources in formation evaluation tools</li> <li>ii. radioactive tracers</li> <li>iii. density measurement equipment</li> <li>iv. radioactive markers in well completions and well test strings</li> <li>v. explosives to be used in drilling, well completions and well testing operations.</li> </ul> <p>f) When coring operations are conducted, the testing for gas using handheld sensors at the rig floor must be conducted while retrieving the inner core barrels as well as when opening the core barrel and examining the cores.</p> <p>g) If an emitting source cannot be retrieved from downhole, an approval to dispose of it must be sought from the NSW EPA. Information regarding this can be found at: <a href="http://www.epa.nsw.gov.au/your-environment/radiation/management-licence/info-radiation-management/disposal-of-regulated-material">www.epa.nsw.gov.au/your-environment/radiation/management-licence/info-radiation-management/disposal-of-regulated-material</a></p>	<p>tools and in the event of failed recovery of an emitting source it would be handled as per point g).</p> <p>c) the necessary flow back equipment complies with points i to vii.</p> <p>d) &amp; e) are addressed within procedure SMS-D&amp;C-OS01-TS16_Onshore_Radioactive_Materials_and_Explosives. The onus for the necessary Licenses and procedures rest with the service companies and are monitored as such by the Santos HSER Department using an electronic checklist for all operations via Echitek Assure. Echitek Assure is a curated operational assurance software system that allows control of all operational HSE, and Quality requirements by scheduling, verifying and reporting on all aspects in detail and recording all evidence and actions taken.</p> <p>f) is specified in the required safety equipment within each well program.</p> <p><b>Comment</b> With regards to points d &amp; e in Sub Section 2.7.2, Santos perform checks for all Wireline Operations as standard process and such documents were reviewed, however, no service company personnel were interviewed.</p>		
<b>2.7.3. Good industry practice</b>	<ul style="list-style-type: none"> <li>a) Where appropriate (e.g. when hole conditions and pressure regimes dictate), titleholders should ensure secondary well pressure control equipment is in place during logging operations. This may include such equipment as wireline lubricators or pack-offs.</li> <li>b) Casing and tubing stress analysis should consider the well test load cases to confirm the operating envelope for the well, if applicable.</li> <li>c) Hole conditions should be assessed prior to running emitting sources into a well.</li> </ul>	<p>Discussions with D&amp;C personnel confirmed the following:</p> <ul style="list-style-type: none"> <li>a) SMS-D&amp;C-OS01-TS07_Onshore_Well_Control, Version 4 confirms this by operation and well type.</li> <li>b) Stresscheck Software models this and where necessary a 3<sup>rd</sup> party vendor can also confirm by conducting a "TubeMove" study.</li> <li>c) Risk assessments are conducted prior to running any RA (Radio Active) sources.</li> </ul>	The evidence sighted confirmed compliance with this section of the Code.	YES
<b>2.8. Fracture simulation</b>				
<b>2.8.1. Principles</b>	<p>Fracture stimulation is conducted to improve recovery of hydrocarbons. The underlying principles are to:</p> <ul style="list-style-type: none"> <li>a) ensure protection of aquifers is maintained during all operational phases for fracture stimulation and flow back</li> <li>b) ensure operations are carried out such that the well operating envelope is not exceeded and well barriers are maintained</li> <li>c) use and source water as per approved regulatory practices</li> </ul>	<ul style="list-style-type: none"> <li>• With regard to SSD 6456 for the Narrabri Gas Project, condition A17 states: "The Applicant must not undertake any hydraulic fracturing of coal seams in the project area at any time."</li> <li>• This was confirmed by Santos personnel.</li> </ul>	Not applicable	



Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	d) flow back fluids in such a manner as to ensure all recovered fluids are isolated and do not come into contact with aquifers or pollute soil or soil substrate.			
<b>2.8.2. Mandatory requirements</b>	<p>a) Titleholders wanting to undertake fracture stimulation activities must prepare and implement a fracture stimulation management plan (FSMP). The FSMP must be appropriate to the nature, scale, intensity and potential impacts of the proposed fracture stimulation activity.</p> <p>The FSMP must:</p> <p>b) set out the fracture stimulation activities to be carried out by the titleholder</p> <p>c) set out the management controls for those activities which ensure the effective prevention, or where that is not possible, mitigation, of risks associated with the fracture stimulation activity</p> <p>d) set out a summary of the impact assessment undertaken for the fracture stimulation activity, including a description of the location, scale, timing, duration and hours of operation of the activity, and any other relevant features of the activity</p> <p>e) identify the well(s) and zones to be fracture stimulated</p> <p>f) identify:</p> <ol style="list-style-type: none"> <li>all chemicals proposed to be injected as part of the fracture stimulation process</li> <li>the proposed source of water for the fracture stimulation fluid</li> <li>the proposed maximum (or minimum where relevant) volumes and concentrations of those chemicals.</li> </ol> <p>g) have monitoring arrangements set out that provide for the assessment and determination of the following:</p> <ol style="list-style-type: none"> <li>before fracture stimulation (before pumping is commenced): <ol style="list-style-type: none"> <li>annular and/or casing/tubing pressure, monitored at the surface</li> <li>bottom hole pressure<sup>1</sup>, calculated from the surface [<sup>1</sup> Although measuring bottom hole pressure directly through gauges is preferred, determination of an estimated bottom hole pressure using standard industry practices is acceptable.]</li> </ol> </li> <li>during fracture stimulation: <ol style="list-style-type: none"> <li>bottom hole, annular and surface injection pressure</li> <li>the volume, composition, and pumping rate of fracture fluids and proppants at surface conditions</li> </ol> </li> <li>post-stimulation: <ol style="list-style-type: none"> <li>the volume and quality of flowback and produced water (to determine whether induced inter-aquifer connectivity has been prevented)</li> <li>casing/tubing pressure (to verify that the integrity of the well and well equipment has been maintained)</li> </ol> </li> </ol> <p>h) include methodologies to verify the location, length and orientation of the fracture growth (such as micro-seismic observations), unless the titleholder can confirm each of the following:</p> <ol style="list-style-type: none"> <li>the applicable geomechanical and fluid transport model has been validated by fracture growth modelling in previous wells</li> <li>the previous monitoring that is relied upon was associated with a fracture stimulation activity in the same hydrocarbon bearing formation, with similar geological properties and location as the current fracture stimulation activity.</li> <li>aquifers, offset well or other sensitive features are not within the buffer zone nominated in the impact assessment.</li> </ol> <p>i) include a reference to a trigger action response plan (TARP). The TARP must:</p> <ol style="list-style-type: none"> <li>address the risks identified in the fracture stimulation risk assessment</li> <li>set out the procedures to be followed and actions to be taken in the event of: <ol style="list-style-type: none"> <li>well blowout or loss of integrity</li> <li>impacts to offset boreholes and/or wells</li> </ol> </li> </ol>	<ul style="list-style-type: none"> <li>See Section 2.8.1 of this report.</li> </ul>	Not applicable	



Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>3. impacts to an aquifer</p> <p>4. deviation of observed fracture propagation behaviour away from expected modelled propagation behaviour.</p> <p>Additionally:</p> <p>j) Wells that are to be hydraulically stimulated require evaluation of cement bond quality using appropriate cement evaluation tools. Cement evaluation logging must continue until repetitive success of slurry design and cement placement, together with adequacy of cement bond for zonal isolation is confirmed (e.g. five wells in each new field or area of different geological conditions). If there is a material change after repetitive success has been shown, such as when a new cementing provider is used, there are issues in the cement job/s or a new design is implemented, then cement evaluation logging must take place again until repetitive success of slurry design and cement placement.</p> <p>k) If the annulus between the production casing and the surface/intermediate casing has not been cemented to the surface, the pressure in the annular space must be monitored and controlled while conducting fracture stimulation.</p> <p>l) The pressure relief valves on the pump units must be set so that the pressure exerted on the casing does not exceed the working pressure rating of the casing and wellhead.</p> <p>m) Post fracture stimulation, flow-back or produced fluids must be recovered and managed as per approved regulatory practices.</p> <p>n) Post fracture stimulation, a report is to be submitted to the department within 30 days of the completion of the activity. The report must include:</p> <ol style="list-style-type: none"> <li>identifying information concerning the title, the contractor, and the location of the well</li> <li>commencement and completion dates of fracturing for each well</li> <li>details of each interval fractured</li> <li>summary of operations (including volume and type of chemicals used in each stage)</li> <li>assessment of the fracture stimulation for every targeted zone including: <ol style="list-style-type: none"> <li>annular pressure data (if available)</li> <li>casing and tubing pressure</li> <li>bottom hole pressure with time</li> <li>bottom hole calculated proppant concentration</li> <li>rate that fracturing fluid was pumped over time and the total volume pumped at each stage</li> <li>composition of the fracturing fluid and any other chemicals introduced into the well (quantity of each component; concentration of each component; name of chemical compounds contained in fluid)</li> <li>maximum surface pressure at each stage</li> <li>estimated fracture gradient for the target interval</li> <li>details of equipment and diagnostic techniques used</li> <li>if an event related to the fracturing activities has caused material environmental harm, details of each step taken to mitigate the harm.</li> </ol> </li> </ol>			
<b>2.8.3. Good industry practice</b>	<p>a) Stimulation design should take into account the location of known faults.</p> <p>b) Titleholders should consider the risk of casing deformation as part of the well design risk assessment process and they should document any resultant control measures in the operations program(s).</p> <p>c) Industry recognised software and geo-mechanics data should be used to develop the final stimulation design.</p> <p>d) The proposed design of the fracture geometry should be included in the stimulation design including (fracturing) target zones, sealing mechanism(s) (both natural geological seals as well as adequate casing and annular cement) and aquifers, so</p>	<ul style="list-style-type: none"> <li>See Section 2.8.1 of this report.</li> </ul>	Not applicable	

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>as to minimise possibility of stimulation fluids migrating from the designed fracture zone(s).</p> <p>e) Water used in hydraulic stimulation operations should be captured and recycled for reuse as far as reasonably practical.</p> <p>f) Title holders should refer to API Guidance Document HF1, <i>Hydraulic Fracturing Operations Well Construction and Integrity Guidelines</i>.</p>			
<b>2.9. Well integrity management</b>				
<b>2.9.1. Principles</b>	<p>Well integrity ensures containment and prevents the escape of fluids to subsurface formations or the surface. The elements common to the phases of well integrity management are shown in Figure 1.</p> <p>The titleholder must prepare a well integrity management system (WIMS) that sets out how well integrity is to be maintained for the well life cycle. The WIMS must address the elements in Figure 1.</p> <p>The Work Health and Safety (Mines and Petroleum Sites) Regulation 2022, clause 30 (7) requires a well integrity control plan be prepared. When preparing a WIMS titleholders should review the requirements for a well integrity control plan (WHS (MPS) Regulation 2022 Schedule 2 – clause 5) and consider addressing these in their WIMS. The control plan if properly prepared can fulfill the requirements for a WIMS.</p> <p>Relevant well integrity standards, such as ISO 16530-1 ISO 16530-2 and NORSOK D-010, should be reviewed when compiling a WIMS.</p> <p>Figure 1: Elements common to the phases of a well integrity management system (ISO 16530-1:2017 Petroleum and natural gas industries – Well Integrity, Part 1: Life cycle governance.)</p>  <p>Monitoring and maintenance is required to preserve the well in a suitable condition for its useful life. Well integrity management systems and associated documents for subsurface assets aim to ensure that wells meet operational availability objectives and well integrity goals for the full lifecycle of the well.</p> <p>Wells are designed to be operated such that:</p> <p>a) well barrier status is known and technical integrity risks are managed; and</p> <p>b) well safe operating envelopes are not transgressed.</p>	<ul style="list-style-type: none"> <li>Santos has in place a WIMS which address the full well life cycle, this document is: - <ul style="list-style-type: none"> <li>1541-286-WPR-0009 Onshore Well Integrity Management Procedure Version 1.</li> </ul> </li> <li>ISO16530-1 was reviewed when compiling the Well Integrity Management System</li> <li>Basis of Design &amp; Design phase – refer – DR-DC777-GEN-0656-0 Version 0.</li> <li>During the Construction phase – refer to the appropriate Drilling and Completion management standards.</li> <li>During the Operational phase - 1541-286-WPR-0009 Onshore Well Integrity Management Procedure Version 1 is the main document.</li> <li>During the Intervention phase – refer to the appropriate Drilling and Completion management standards.</li> <li>During the Abandonment phase – refer Drilling and Completion management standards.</li> <li>Well barriers are pressure tested at time of well construction as per D&amp;C Standards.</li> <li>Ongoing well integrity testing completed on an annual basis and Leak Detection Program 6-monthly.</li> <li>Well design and equipment selection incorporate known reservoir pressure and expected reservoir fluid composition in accordance with DR-DC777-GEN-0656-0 Version 0.</li> <li>With regard to the points a) and b):- <ul style="list-style-type: none"> <li>a) All wells are managed in accordance with 1541-286-WPR-0009 Onshore Well Integrity Management Procedure Version 1.</li> <li>Barriers are tested during construction and on a regular 2-yearly maintenance program.</li> <li>b) All wells are operated within the documented safe operating envelopes.</li> <li>Well design and equipment selection incorporates known reservoir pressure and expected reservoir fluid composition.</li> </ul> </li> </ul>	<p>All documents reviewed and discussed with the Well Integrity Focal Point (██████████, Well Integrity Engineer) included reviewing all 6 phases of the well life cycle, and were found to comply with this section of the Code.</p>	YES

<b>2.9.2. Mandatory requirements</b>	<p>a) The titleholder must be able to demonstrate that verification of well integrity and barriers exists through maintenance and monitoring, and through the establishment of a WIMS. Monitoring mechanisms and their frequencies must be determined through a risk assessment or asset integrity management guidelines.</p> <p>b) The WIMS must outline:</p> <ol style="list-style-type: none"> <li>a regular wellhead maintenance program</li> <li>inspections for identification of leaks</li> <li>routine operational visits</li> <li>monitoring and management of annuli pressures</li> <li>barrier maintenance and verification</li> <li>assessment during the well life cycles of the wellhead, tubing and casing, for any wear due to erosion or corrosion, and its impact on well integrity</li> <li>risk assessment and response levels for impaired barriers</li> <li>well integrity records to be maintained.</li> </ol> <p>c) The titleholder must ensure up-to-date integrity records are maintained and documented, with the existing risk level of wells and any other relevant observations related to well integrity documented.</p> <p>d) Well integrity records must contain the current operational status and completion status of all wells.</p> <p>e) If a well integrity issue is discovered, a risk assessment must be completed and any identified control measures, such as well monitoring, or abatement measures, must be implemented for the well to continue operating.</p> <p>f) Where a well integrity issue is identified involving one or more barriers being severely degraded or failed and not readily remediated the EPA must be notified as soon as reasonably practical but no later than 5 days. This includes where the well risk level set out under the WIMS increases to require additional monitoring and/or corrective action. Notification must be made in accordance with this code.</p>	<p>All of the referenced points are addressed below:-</p> <p>Point a)</p> <ul style="list-style-type: none"> <li>There is a well integrity management system in place which specifically includes for a two yearly well integrity maintenance and testing regime.</li> <li>The 1541-286-WPR-0009 Onshore Well Integrity Management Procedure contains risk assessment.</li> </ul> <p>Point b)</p> <ol style="list-style-type: none"> <li>Regular maintenance program in place – 2-yearly.</li> <li>3<sup>rd</sup> party leak detection audit previously 6 monthly, but moving to annually based on historical data.</li> <li>Operator visits in place for shut in wells at 6-monthly frequency or less.</li> <li>6-monthly wellhead pressure monitoring and annulus pressure monitoring at 2-yearly intervals.</li> <li>Barrier verification during wellhead integrity testing.</li> <li>Visual inspection of completion equipment retrieved from the well during workovers and casing integrity logs completed on some workovers to assess for CO<sub>2</sub> corrosion.</li> <li>Risk screening is performed based on well integrity and leak detection inspection data. Wells are classified a Concern Level 1 – 4 (1 being highest). Concern Level 1 and 2 wells subject to corporate risk assessment with risk entry entered in the IRR system. Well may be further subject to additional IMP and/or well repair or abandonment.</li> <li>Well integrity inspection records saved within filing structure and operator inspection saved within OEC system.</li> </ol> <p>Point c)</p> <ul style="list-style-type: none"> <li>Wellhead service and inspection records are filed in WellView.</li> <li>Risk classification for all wells is recorded in a spreadsheet along with well construction comments.</li> <li>Santos is implementing well integrity software by Peloton, however, this project is in the early stage of rollout as of September 2023.</li> <li>Peloton WIMS (WellMaster Integrity Management System) enables global oil and gas operators to achieve increased well uptime and safer operations through well integrity management. The solution has helped oil and gas operators reduce nonproductive time due to well risk and failures. Peloton WIMS encompasses a shared understanding and reporting of well integrity status across global operations and is used by operators of conventional and unconventional wells, both offshore and onshore.</li> <li>Features: <ul style="list-style-type: none"> <li>Real-Time Dashboards &amp; Reporting</li> <li>Corrosion / Erosion Prediction</li> </ul> </li> </ul>	<p>All documents reviewed and discussed with the Well Integrity Focal Point, in particular confirmed that regulator informed of leaks under point f) via letter.</p>	<p>YES, but note Comment</p>
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Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
		<ul style="list-style-type: none"> <li>System Integrations</li> <li>Compliance and international standards</li> <li>Deviations / Dispensations / Manage of Change</li> <li>MAASP, MAWOP &amp; MOP Management</li> </ul> <p>Point d)</p> <ul style="list-style-type: none"> <li>Operating status of wells is contained in Hikari production database.</li> </ul> <p>Point e)</p> <ul style="list-style-type: none"> <li>Risk assessments are completed for wells screened as Concern Level 1 and 2, Level 1 being Highest</li> <li>Current Concern Level 1 well – Bohena 3 – P&amp;A planned</li> <li>Current Concern Level 2 wells – Bibblewindi 5 and 7 – external casing corrosion risk – P&amp;A planned in 2024</li> <li>IRR (Infrastructure Risk Rating) risk assessments are in place for these wells.</li> </ul> <p>Point f)</p> <ul style="list-style-type: none"> <li>Bohena 3 and Bohena 7 wells previously reported to the regulator: <ul style="list-style-type: none"> <li>Bohena 3 – small gas leaks from hanger tie down screws – not repairable – well awaiting P&amp;A (planned for Q4 of 2023).</li> <li>Bohena 7 – leaking wellhead valve – well suspended with a bridge plug, awaiting P&amp;A commencing in Q4 2023.</li> </ul> </li> </ul> <p>Comment</p> <ul style="list-style-type: none"> <li>Current monitoring frequencies have recently been reduced from 6 months to 12 months based on historical data, and they have been approved by the EPA; however, should the new frequency highlight any issues, then the original frequency would be reverted to.</li> <li>Further consideration for future well designs should incorporate gate valves as opposed to ball valves on wellhead side outlet valves to allow for easier repair in the event of failures of the valve.</li> </ul>		
<b>2.9.3. Good industry practice</b>	<p>a) All surface equipment associated with the well barrier envelope should have a preventative maintenance program in place.</p> <p>b) If the annulus is being abnormally charged with gas, an analysis of the gas content should be considered to determine the source and nature of the potential leak.</p> <p>c) Well barriers should be identified and monitored or tested along with their related function and associated acceptance criteria as necessary. The barriers should be maintained as necessary through the well lifecycle and re-established/compensated for when impaired. Parameters that could affect well integrity negatively should be monitored.</p>	<ul style="list-style-type: none"> <li>All of these points have been addressed within Section 2.9.2 of this report namely:- <ul style="list-style-type: none"> <li>Regular maintenance program in place 2-yearly</li> <li>3<sup>rd</sup> party leak detection audit previously 6-monthly, recently approved by the EPA to amend to 12-monthly.</li> </ul> </li> </ul>	Evidence reviewed and discussed with the Well Integrity Focal Point and on that basis is evidence of compliance with this section of the Code.	



Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	d) Titleholders should conduct regular annular casing pressure management in accordance with relevant standards. Consideration of the provisions of API RP 90-2 Annular Casing Pressure Management for Onshore Wells is recommended unless specified otherwise in this code.			
<b>2.10. Workover and intervention</b>				
<b>2.10.1. Principles</b>	Well workovers and interventions can be done either as remedial work to restore barriers or to possibly enhance production and reconfigure the completion of the well. The workover may involve replacing tubing or a pump, testing pressure seals and measuring or logging well parameters such as flowrates and temperatures in the well, fluid sampling and pipe integrity.  Workovers and interventions are to be designed and implemented to meet relevant industry standards.	<ul style="list-style-type: none"> <li>All Workovers and Interventions are planned and executed in accordance with the Drilling and Completion Standard SMS-D&amp;C-OS01-TS05 (Onshore)</li> </ul>	Both the Standard and the Brawboy 2 P&A program were reviewed and confirmed compliance with this section of the Code.	YES
<b>2.10.2. Mandatory requirements</b>	a) The titleholder must ensure well barriers are in place to intervene on the well and if necessary, risk assess any deviations. b) The titleholder must use fit-for-purpose well design and construction materials as dictated in this code.	<ul style="list-style-type: none"> <li>All well workovers are subject to Drilling and Completion Standard SMS-D&amp;C-OS01-TS05 (Onshore)</li> <li>The appropriate program details the well barrier requirements:               <ul style="list-style-type: none"> <li>Section 1.6 BOP testing requirements</li> <li>Section 2.5 kill fluid weights</li> </ul> </li> </ul>	Both the Standard and the Brawboy 2 P&A program were reviewed and confirmed compliance with this section of the Code.	YES
<b>2.10.3. Good industry practice</b>	a) Well barrier schematics should be developed and included in the workover/intervention program. Barrier verification requirements should be clearly outlined in the well workover/intervention program. b) During well intervention, when equipment is removed from a well or depressurised for maintenance, a breakdown or visual inspection should take place of all equipment to confirm condition after being in service. c) Evidence of corrosion for recovered equipment should be used to determine mechanical integrity and help predict possible issues for intervention in similar wells. d) All new barriers or new operating envelopes should be verified and recorded prior to handover of the well back to production or decommissioning.	<ul style="list-style-type: none"> <li>The information below addresses all of the referenced points:               <ul style="list-style-type: none"> <li>a) P&amp;A barrier schematic provided with the Brawboy 2 P&amp;A program and BOP and downhole barrier test requirements also specified in this program (refer Section 1.6, and steps 3.10.23 and 3.10.24 for plug verification)</li> <li>b) Condition of wellhead equipment retrieved is included within operational reports refer 'Example records WellView, chemical usage' email (sent to [REDACTED] by Gordon Duncan 15/09/23), consideration for corrosion prevention of surface equipment would enhance operations.</li> <li>c) As per the BOD documentation which shows where casing integrity log information from offset wells has been used in material selection criteria for future wells.</li> <li>d) All barrier verification is included within well intervention records held in WellView.</li> </ul> </li> </ul> <p><b>Comment</b></p> <ul style="list-style-type: none"> <li>Consideration for corrosion prevention on surface equipment, such as EVAPO-RUST RB018 or Lanolin.</li> <li>Application of such products will allow easier access to wells during workovers and interventions when studded or bolted equipment must be removed.</li> </ul>	Both the Standard referred to in Section 2.10.2 and the Brawboy 2 P&A program were reviewed and confirmed compliance with this section of the Code.	YES, but note Comment

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
<b>2.11. Well suspension</b>				
<b>2.11.1. Principles</b>	<p>Well suspension applies to a shut-in well, which has additional requirements as defined by the titleholder's well integrity management system due to the length of time shut-in. Appropriate consideration is to be given in the titleholder's well integrity management system for wells that are suspended for significant periods of time.</p> <p>The main considerations when suspending a well are:</p> <ol style="list-style-type: none"> <li>All fluids from the well must be contained, and water cannot enter the well from the surface</li> <li>Monitoring requirements can be met, and production can readily be resumed</li> <li>Safe recommencement of operations can occur</li> <li>All safety requirements are met.</li> </ol> <p>The following matters are to be considered when suspending a well:</p> <ol style="list-style-type: none"> <li>Well construction and completion</li> <li>Well integrity history including the integrity of the cement columns</li> <li>Geological formations encountered</li> <li>Potential loss zones</li> <li>Hydrogeological conditions</li> <li>Environmental risk</li> <li>Regulatory requirements, petroleum title conditions and industry standards</li> <li>Perforated and hydraulic fracture stimulated zones.</li> </ol>	<ul style="list-style-type: none"> <li>All the referenced conditions are considered when a well is proposed to be suspended. Confirmation of this can be found in Section 2.11.2 of this report.</li> </ul>	See Section 2.11.2 of this report.	YES
<b>2.11.2. Mandatory requirements</b>	<ol style="list-style-type: none"> <li>Two tested well barriers must be used for well suspension, except: <ol style="list-style-type: none"> <li>during re-entry, workovers and other maintenance work</li> <li>during temporary suspension of open-hole sections due to weather or other operational reasons</li> <li>for wells, where a single barrier has been identified as appropriate in the WIMS.</li> </ol> </li> <li>Suspended wells must be classified and addressed in a titleholder's well integrity management system.</li> <li>Appropriate well suspension fluids must be used. Water-based fluid with biocide, oxygen scavenger and/or corrosion inhibitor must be used in the wellbore in-between or above isolation plugs.</li> <li>The well site must: <ol style="list-style-type: none"> <li>display appropriate safety signs</li> <li>be secured with a locked fence around the well</li> <li>be maintained clear of vegetation around the well</li> <li>have wellhead valves securely chained and locked or have their handles removed.</li> </ol> </li> <li>A program must be in place for regular inspections to check for gas leaks and well integrity monitoring and maintenance matters in accordance with the titleholder's WIMS.</li> <li>A record must be kept of all inspections in accordance with the titleholder's WIMS.</li> </ol>	<ol style="list-style-type: none"> <li>Examples of Well Barrier diagrams were reviewed and discussed.</li> <li>Details of all suspended wells are available via the Well Integrity Register NSW, and all suspended wells are treated as live and remain on Leak detection program.</li> <li>This is generally 'not applicable' based on point a) iii. However, based on Risk Assessment and the resulting Critical Level (1 or 2 normally require actions, 3 or 4 may be accepted based on mitigations) may be an option to mitigate the risks.</li> <li>Signage, fencing, vegetation management and wellhead valves are locked and or positively isolated from facilities and plugged to prevent leakage.</li> <li>The regular Well Integrity tests and the Leak detection program are intended to ensure this section of the Code is met. Further, Operations personnel visit all wells on a more frequent than planned basis and report back if any leaks or issues detected since last visit.</li> <li>The well suspension application to the regulator contains details of the maintenance and inspection records as well as the regular Leak Survey details.</li> </ol>	Discussions with the Well Integrity Focal Point, a review of Wilga Park 1 & Bohena 7 well programs, the generic (general well type risks) and specific (specific to this well failure) Risk Assessments, and examples of the Leak detection program confirmed compliance with this section of the Code.	YES
<b>2.12. Well decommissioning</b>				
<b>2.12.1. Principles</b>	Petroleum well decommissioning is required to ensure the environmentally sound and safe isolation of the well, protection of groundwater resources, isolation of the productive formations from other formations, and the proper removal of surface equipment.	<ul style="list-style-type: none"> <li>Santos has not completed any P&amp;A works on NSW as of September 2023, however, a 3 well P&amp;A program is commencing in early October 2023.</li> </ul>	Reviewed the Brawboy 2 – Plug and abandonment Cement Program-v4 and the Brawboy 2 CSG Abandonment Program-rev2.	YES



Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>Well decommissioning is to be conducted such that well barriers contain and control wellbore fluids, provide structural support and otherwise retain well integrity throughout the well decommissioning load conditions. Barriers used for the decommissioning of a well or a section of a well are permanent well barriers. The only permanent well barriers are open hole cement plugs or cement plugs in casing with good quality cement on the outside. Other materials may be considered by the titleholder but need qualification so that they can be considered permanent barriers.</p> <p>The well decommissioning objectives are to ensure:</p> <ol style="list-style-type: none"> <li>isolation of aquifers from each other and from permeable hydrocarbon zones</li> <li>isolation of permeable hydrocarbon zones from each other</li> <li>permeable formations containing fluids at different pressure gradients and/or significantly different salinities are isolated from each other to prevent crossflow</li> <li>there is no pressure or flow of hydrocarbons or fluids at surface both internally in the well and externally behind all casing strings</li> <li>recover/remove surface equipment to prevent adversely interfering with the normal activities of the owner of the land on which the well is located</li> <li>the site is left safe and free from contaminants.</li> </ol> <p>The following matters are to be considered when decommissioning a well:</p> <ol style="list-style-type: none"> <li>The construction characteristics of the well including, but not limited to: <ol style="list-style-type: none"> <li>confirmation of cement tops</li> <li>integrity of the cement column</li> <li>integrity of the casing and tubing</li> <li>any obstruction in the well</li> <li>sustained pressure/flow in casing annulus.</li> </ol> </li> <li>geological formations encountered.</li> <li>potential loss zones and zones prone to flow</li> <li>hydrogeological conditions i.e. location of aquifers</li> <li>environmental risk</li> <li>regulatory requirements, petroleum title conditions and industry standards</li> <li>perforated and fracture stimulated zones.</li> </ol>	<ul style="list-style-type: none"> <li>All of the points in this section of the Code have been addressed. Refer to the evidence listed in Section 2.12.2 of this report.</li> </ul>		
<b>2.12.2. Mandatory requirements</b>	<ol style="list-style-type: none"> <li>Before commencing sub-surface decommissioning activities, the titleholder must confirm the absence of pressure/flow externally behind all casing strings. A surface casing vent flow test must be used to detect the presence of flow/pressure build-up.</li> <li>If a positive surface casing vent flow is detected the titleholder must identify and remediate the source of the flow during decommissioning operations.</li> <li>Before conducting the final surface decommissioning activities, the titleholder must confirm the absence of pressure/flow internally within the well and externally behind all casing strings to surface. Wells with no history of external flow/pressure may be cut and capped immediately. All other wells must be monitored for a minimum of 6 months before conducting surface decommissioning (cut and cap).</li> <li>Sucker rods, pumps and tubing (unless sacrificial stinger) and any other debris/junk in the wellbore that can practicably be removed are removed.</li> <li>Any well that is to be decommissioned must be sealed and filled in such a manner to prevent leak of fluids.</li> <li>Cement must be used as the primary sealing material. Cement testing should be carried out as per requirements set out in Section 2.3 - "Cementing" of this code.</li> <li>A 50 m weighted high-vis pill must be spotted below each cement plug that is not set directly above a physical barrier (hole bottom is included as a physical barrier) and where there is any potential for losses below the cement plug i.e. any open section.</li> </ol>	<ol style="list-style-type: none"> <li>Surface casing historical monitoring results considered within Section 3.4 of the Brawboy 2 - Abandonment Program - no history of gas flow from surface casing - considered negligible as it is within industry acceptable leak rates.</li> <li>Not applicable – no surface casing vent flow.</li> <li>Bubble test to be completed ahead of cut and cap.</li> <li>All equipment is planned to be removed from the well – refer to page 29 for final downhole schematic of the well program.</li> <li>As per point d).</li> <li>The Brawboy 2 – Plug and Abandonment Cement Program V4, addresses this.</li> <li>Not applicable – plugs to be set from TD (Total depth).</li> <li>Step 3.10 – all plugs maximum height 200m.</li> <li>Not applicable – wellbore cemented to surface already.</li> <li>Cemented to surface.</li> <li>Cemented to surface.</li> <li>i) cemented to surface</li> </ol>	<p>Evidence of compliance with this section of the Code was sighted in the Brawboy 2 – Abandonment Program, Document No. DR-DC777-PRG0771-0.</p> <p>The Cut and Cap program dated June 2021 and subsequent well reports addressed points p)-t).</p>	YES, but note Comment

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>h) Cement must not be placed in plugs of more than 200 m lengths without use of coil tubing or sacrificial stinger unless a risk assessment indicates the integrity of the cement plug will not be compromised.</p> <p>i) A surface cement plug minimum 10 m in length must be placed at the top of the inner most casing. The surface plug acts as a barrier to prevent any long-term ingress into the wellbore and is not deemed to be a pressure containing barrier. Well barriers are to be established below the surface cement plug. If the top of surface cement plug is less than 10 m below the surface the casing can be topped up with cement.</p> <p>j) There must be a continuous cement barrier with a minimum 30 m length adjacent to the impermeable formation (cap rock) overlying the uppermost hydrocarbon zone.</p> <p>k) There must be a minimum of two adjacent cement barriers across all aquifers above the upper most hydrocarbon production zone. This can be achieved by the following:</p> <ol style="list-style-type: none"> <li>Having the surface casing set below the aquifer and cemented to surface and the production casing cemented from 30 m below the base of the lowermost aquifer to 30 m above the uppermost aquifer. In cases where the production zone is less than 30 m below the lowermost aquifer, casing is to be cemented from as low as practical below that aquifer</li> <li>Fully cementing the inner most casing string from the production zone to the surface provided the cement plug(s) are adjacent to good annulus cement</li> <li>If production casing has not been cemented with an overlap inside the surface casing shoe the titleholder must remediate the well until the required barriers are achieved. This could involve removing the production casing above the cement top if technically and commercially feasible to do so or performing remediation cement squeezes. Cement top-up jobs are not an approved method of remediation unless isolation can be confirmed with cement log evaluation.</li> </ol> <p><i>Note: Section 2.12.3 Cement plug requirements and verification methods of this code provides generalised diagrams depicting how decommissioning barrier requirements may be met as described in this section.</i></p> <p>l) Cement plugs for decommissioning must meet the minimum requirements as detailed in Section 2.12.3 Cement plug requirements and verification methods of this code and consider the following:</p> <ol style="list-style-type: none"> <li>The preferred method where possible is to cement the inner casing string to surface while noting the recommended maximum plug length and the requirement for a surface cement plug</li> <li>A mechanical barrier (e.g. bridge plug) may be used in appropriate situations as a support to set a cement plug on top of it. If a mechanical barrier is used it must be set as close as is practicable above perforations. When a mechanical barrier is used, it or the cement plug directly above it must be verified by tagging it with a minimum 5000 lb (2270 kg) set down weight and pressure tested to 500 psi (3.5 MPa) above the estimated (or previously recorded) leak off pressure (within the limits of the casing and wellhead pressure ratings)</li> <li>Consecutive stacked cement plugs set inside casing do not require additional tagging or pressure testing provided the initial base is verified appropriately i.e. the lower most cement plug of the stack is appropriately verified, or the mechanical barrier set is appropriately verified, or the well bottom has been tagged. Verification of the stacked cement plugs above the bottom plug may be completed via the post job cement report and appropriate calculations</li> </ol>	<p>ii) Refer 3.10.22 and 3.10.23 for cement plug verification</p> <p>iii) As per program</p> <p>iv) Not applicable – no sacrificial stinger used.</p> <p>v) Refer 3.10.22 and 3.10.23 for cement plug verification.</p> <p>m) As required depending on plug verification results.</p> <p>n) As required depending on plug verification results.</p> <p>o) BOPs removed after plugs are set and verified refer Section 3.11</p> <p>• Points p) – t) are not yet programmed as of September 2023, however, these requirements are in line with cut and cap operations completed in QLD operations, as detailed in Wingnut 1, cut and cap reports and the CSG_D&amp;C_Rigless_Operations_Cut&amp;CAP_Program-June 2021</p> <p><b>Comment</b> It should be noted that steps p, q, r, s &amp; t are not yet contained in the planned programs, however, it is intended to follow the Cut &amp; Cap program as executed in QLD.</p>		

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>iv. If using a sacrificial stinger to set open hole plugs, provided no losses observed during cement placement then no tag is necessary. This assumes the open hole plug is not set off bottom</p> <p>v. For a final surface cement plug extending from ground level, the top of cement must be visible and at surface. A shallow set plug is not considered a permanent barrier given the very low formation pressures at ground level. Well barriers must be established and verified with the plugs below the surface cement plug</p> <p>vi. If unable to achieve the required 5000 lb (2270 kg) set down weight (e.g. plug is too shallow or coiled tubing is used) the minimum force with which plugs must be verified is maximum string weight.</p> <p><i>Note: that the use of slick-line or wireline is not an approved method of verifying the tops of plugs.</i></p> <p>m) Plugs that do not pass pressure testing must be remediated until the requirements are achieved as noted below:</p> <p>i. If sufficient depth is available to meet requirements an additional cement plug may be installed and retested</p> <p>ii. For failed mechanical barriers an additional mechanical barrier may be installed and retested</p> <p>iii. If insufficient depth is available, the plugs must be circulated or drilled out. The plugs must then be rerun and pressure tested.</p> <p>n) Plugs that are confirmed as too low or too high after tagging are unacceptable. The titleholder must remediate until requirements are achieved as noted below.</p> <p>i. A plug is too low if it has a top less than 15 vertical metres above the zone it was intended to cover. Such a plug must be built up to required depth and its location confirmed.</p> <p>ii. High plugs must be drilled out if the theoretical plug base is less than 15 vertical metres below the base of the zone it was intended to cover. The plug must be recemented and its location confirmed.</p> <p>o) BOPs and/or wellhead must not be removed until the cement plug across the surface casing shoe or plug across the uppermost perforations has been physically tagged for correct location and pressure tested.</p> <p>p) Wellheads must be removed, and casing must be cut greater than 1.5 m below surface.</p> <p>q) A steel wellhead marker plate, of corrosion resistant alloy or similar grade steel, must be installed to cover all casing strings.</p> <p>r) Marker tape must be laid about 20 cm above the top of the casing.</p> <p>s) The marker plate must be permanently marked with the following details, in addition to any other details required by the Department:</p> <p>i. name of the well</p> <p>ii. total depth of the well in metres</p> <p>iii. the date of decommissioning of the well.</p> <p>t) Complete and accurate records of the entire decommissioning procedure must be kept, with these records submitted as part of the titleholder's legislative reporting requirements for the decommissioning of petroleum wells.</p>			
<b>2.12.3. Cement plug requirements</b>	The following figures provide guidance about the manner in which cement plugs are to be set within a well to achieve the objectives required during decommissioning.	<ul style="list-style-type: none"> <li>Santos has not completed any P&amp;A works in NSW as yet, however, a 3 well P&amp;A program is commencing in early October 2023.</li> <li>All of the points in this section of the Code have been addressed. Refer to the evidence listed in Section 2.12.2 of this report, and the Brawboy 2 – Plug and Abandonment Cement Program-v4 and the Brawboy 2 CSG Abandonment Program-rev2.</li> </ul>	Reviewed Brawboy 2 programs as indicated and discussed with Well Integrity Focal Point and found compliance with this section of the Code.	YES

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p><b>Figure 2: Cement encased casing - well barrier</b></p> <p>[See Code of Practice for additional Figures]</p>	<p>Figure 2: Cement encased casing - well barrier</p>		
2.12.4. Cement plug verification methods	<p><b>Completion type</b></p> <p>Open hole/uncased hole section</p> <p><b>Requirements</b></p> <ul style="list-style-type: none"> <li>Off bottom open hole cement plugs to be verified by tagging the plug with a minimum 5000 lb (2270 kg) set down weight.</li> <li>Verified cement plug(s) must be placed to provide cement coverage at least 30 m above and 30 m below the top of any permeable hydrocarbon or aquifer and between permeable zones of different pressure regimes or salinity.</li> </ul> <p>Cased hole section</p> <ul style="list-style-type: none"> <li>For a cased hole cement plug barrier that is either unsupported or supported by a high-vis pill and not exposed to open reservoir below, verification to be done by tagging the plug with a minimum 5000 lb (2270 kg) set down weight.</li> <li>Verified cement plug(s) placed adjacent to good annulus cement must be placed to provide cement coverage to surface or at least 30 m overlap with the impermeable formation overlying the uppermost hydrocarbon zone.</li> <li>Verified cement plug(s) must also be placed to provide minimum 30 m coverage above aquifers unless these are already isolated by two cemented casing strings.</li> </ul> <p>Casing shoe or equivalent with open hole below</p> <ul style="list-style-type: none"> <li>Verified cement plug(s) must be placed to provide cement coverage at least 30 m above and 30 m below the previous casing shoe.</li> <li>For a cased hole cement plug with the bottom of the plug exposed to open hole, verification to be done by tagging the top plug with a minimum 5000 lb (2270 kg) set down weight</li> </ul>	<ul style="list-style-type: none"> <li>As per the Brawboy 2 P&amp;A N reviewed program the open hole is pressure tested only to ensure full coverage of the open hole</li> <li>The second Cement plug which is inside the shoe is Load tested to 5,000 lb and pressure tested to 1200 psi</li> <li>Any further cement plugs will be pressure tested only, and it should be noted that the wells will be cemented to approx. 2.5m below grade and have had verification carried out on the condition of the cement in the other annuli.</li> <li>All other verification methods are documented within the well program, and it should be noted that a Bubble Test is carried out prior to cutting casing and removing the wellhead.</li> </ul>	<p>The proposed programs Brawboy 2 Plug and Abandonment program DR-DC777-PRG-0771-0 and the Halliburton Plug &amp; Abandonment – Plug 1-6 cement program were reviewed as well as the Cut and Cap process, confirmed compliance with this section of the Code by the procedures of cementing to surface and conducting a bubble test as final verification of the Cut &amp; Cap procedure.</p>	YES



Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<p>and by pressure testing to 500 psi (3.5 MPa) above the estimated (or previously recorded) leak off pressure (within the limits of the casing and wellhead pressure ratings).</p> <p>Casing shoe or equivalent with open hole below (with lost circulation) or casing shoe or equivalent with uncemented liner below</p> <ul style="list-style-type: none"> <li>Where lost circulation conditions exist or there is open hole behind casing/liner below the shoe, a mechanical barrier may be set as close as is practicable above the casing shoe with at least a 30 m cement plug set above the mechanical barrier, adjacent to good annulus cement (only applicable if co-mingling is allowed).</li> </ul> <p>Cut and recovered casing/liner</p> <ul style="list-style-type: none"> <li>Cement plug must be verified by tagging the plug with a minimum 5000 lb (2270 kg) set down weight and by pressure testing to 500 psi (3.5 MPa) above the estimated (or previously recorded) leak off pressure (within the limits of the casing and wellhead pressure ratings).</li> <li>Verified cement plug(s) must be placed to provide cement coverage at least 30 m above and 30 m below the casing cut.</li> </ul> <p>Perforated casing</p> <ul style="list-style-type: none"> <li>A mechanical barrier with cement on top may be used.</li> <li>For a cased hole cement plug exposed to open perforations below, verification to be done by tagging the top of the first cement plug extending above the perforations with a minimum 5000 lb (2270 kg) set down weight and by pressure testing to 500 psi (3.5 MPa) above the estimated (or previously recorded) leak off pressure (within the limits of the casing and wellhead pressure ratings).</li> <li>Verified cement plugs must be placed to provide cement coverage to at least 30 m above perforated intervals.</li> <li>Verified cement plug must be used to isolate perforated intervals of different pressure regimes, as per regulatory requirements. If co-mingling is allowed, a plug placed above the perforated intervals is sufficient.</li> </ul> <p>Production liner laps</p> <ul style="list-style-type: none"> <li>A cement plug barrier must be set across each liner top in the form of a T-plug with at least 30 m of cement below and at least 30 m of cement above liner top.</li> <li>Cement plug must be verified by tagging the plug with a minimum 5000 lb (2270 kg) set down weight and by pressure testing to 500 psi (3.5 MPa) above the estimated (or previously recorded) leak off pressure (within the limits of the casing and wellhead pressure ratings).</li> </ul>			
2.12.5. Good industry practice	<p>a) Use integrated open hole volume calculated from calliper on wireline logs to calculate cement volumes where possible (this applies mostly to exploration wells that are to be decommissioned).</p> <p>b) If no caliper data is available, 20% - 30% above theoretical volume or local knowledge should be used, along with local hydrogeological knowledge and offset well data.</p> <p>c) Plugs should normally be a minimum of 30 m in length (height). If the hole is badly washed out, it may be better to set two short plugs over the washed out section then to try to cover this interval with one plug.</p>	<ul style="list-style-type: none"> <li>The detailed Brawboy 2 Cementing Program addresses the points below as follows:- <ul style="list-style-type: none"> <li>a) &amp; b), 33% excess to be used based on calliper log</li> <li>c) all plugs are minimum 200m in length</li> <li>d) &amp; e) detailed in both the Cementing program and the step by step operational program</li> <li>f) not applicable for CSG Wells as this process is not followed.</li> </ul> </li> </ul>	Detailed Cementing programs reviewed and discussed with Well Integrity Focal Point and CSG D&C Engineer, and Good Industry Practices for CSG Wells are followed based on the experiences gained by Santos with regard to QLD CSG well abandonments.	YES

Code Section	Requirements	Evidence	Well Integrity Expert Findings	Section Compliance
	<ul style="list-style-type: none"> <li>d) After placement of a cement plug the rate to pull the work string should be controlled to avoid intermixing of the plug and other fluids in the hole.</li> <li>e) When placing a plug, excess cement should be used and circulated off the top of the plug to minimise contamination issues.</li> <li>f) Work-string wiper dart/balls should be used to separate cement and fluids during displacement. If wiper darts are used, a catcher sub should be included in the work-string.</li> <li>g) Displacement rates during cement plug placement should be kept as high as possible without exceeding the open-hole fracture gradient. This aids in the displacement of the wellbore fluids by the spacer and cement flowing up the annulus. Spacer volumes should be adjusted to provide adequate contact time based on the estimated displacement rate.</li> <li>h) The wait on cement (WOC) time for tagging should be based on the pre-job lab testing of the slurry at bottom hole static temperature (BHST), preferably on an ultrasonic cement analyser (UCA). Typically, the time to 500psi (3.5MPa) compressive strength is adequate for tagging cement. If the cement plug does not take weight, it is recommended to increase WOC in 4 hour increments up to a maximum of 12 hours additional WOC time.</li> <li>i) Balanced cement plug volumes pumped should incorporate allowances for open hole and cased hole contamination</li> <li>j) In order to pull dry pipe after placing a balanced cement plug, the plug should be well under-displaced to enable the plug to fall into a hydrostatically balanced position.</li> </ul>			