



Our reference: EPBC 2008/4398

Mr David Reinke  
QGC Environment Operations Manager  
QGC Pty Ltd  
275 George Street  
BRISBANE QLD 4000

Dear Mr Reinke

**Directed independent compliance audit of *the approval granted to develop, construct, operate and decommission the coal seam gas field component of the Queensland Curtis LNG Project, including expansion of the QGC operated coal seam gas fields in the Surat Basin, QLD.***

I am writing in relation to the second directed independent compliance audit (compliance audit) of *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval 2008/4398.

On 4 December 2015 Queensland Gas Company (QGC) was directed to undertake a compliance audit of the EPBC Act approval granted to develop, construct, operate and decommission the coal seam gas field component of the Queensland Curtis LNG Project, including expansion of the QGC operated coal seam gas fields in the Surat Basin, QLD – EPBC 2008/4398. This was undertaken in accordance with condition 100 of the approval and as part of the strategic audit component of the Department of the Environment and Energy (the Department) annual compliance audit program.

The scope of the compliance audit focussed on the Stage 1, Stage 2 and Stage 3 Water Monitoring and Management Plan (WMMP) requirements, Coal Seam Gas (CSG) water use and management requirements and threshold and breach notification requirements.

The original report provided to the Department on 8 August 2016 required further clarification and information in order for the audit report to be accepted. The final audit report was submitted on 12 October 2016 and has been reviewed by officers of the Department. As Delegate of the Minister for the Environment and Energy, I wish to advise that the final audit report now addresses the approved criteria to my satisfaction.

The compliance audit found that QGC had complied with the conditions of the EPBC 2008/4398 approval within the scope of the audit. I would like to congratulate you on this excellent result.

The compliance audit identified one improvement opportunity that related to signage at one of the groundwater wells (the lack of visible signage resulting in difficulty in identifying one of QGC's groundwater wells). Although signage is not a requirement of the EPBC approval, the Department agrees with the recommendation that this will enable more effective identification of groundwater wells.

The improvement opportunity identified and the actions that the Department requires QGC to undertake to address this opportunity are detailed in [Attachment A](#).

The Department has in place a compliance monitoring program to ensure that approval holders meet the requirements of the conditions of approval. The Department will continue

to monitoring the project in this regard, and may seek to undertake a compliance monitoring inspection to verify that the improvement opportunity identified through this audit process has been acted upon.

**Publication of the final compliance audit report**

The Department requires that QGC publish the final audit report on their website within two weeks of the date of this letter. I request that you please advise the Department of publication and provide a link to the report. It is my expectation that the report will remain on the website for the duration of the approval.

A summary of the audit findings and conclusions will be posted on the Department's website at <http://www.environment.gov.au/epbc/compliance/auditing.html>.

I would like to thank you for your assistance and cooperation throughout the audit process. Should you have any queries about the audit report please contact [REDACTED] on [REDACTED] or email [audit@environment.gov.au](mailto:audit@environment.gov.au).

Yours sincerely



Monica Collins  
Assistant Secretary  
Compliance and Enforcement Branch  
Environment Standards Division

28 November 2016

Attachment

A. Improvement opportunity identified and actions required.

**Attachment A**

## Improvement opportunity identified and actions required

Area identified for improvement:	
<b>Signage at one of the groundwater monitoring wells</b>	
Audit Finding	Action Required
<b>Improvement Area 1</b> – The lack of visible signage resulting in difficulty in identifying one of QGC's groundwater monitoring wells.	QGC to review their processes and procedures in erecting signage around all operational wells. If any wells are identified without adequate signage, QGC to remedy the situation as soon as possible.



Independent compliance audit of  
Environmental Protection and Biodiversity  
Conservation Upstream Approval (EPBC  
2008/4398) – specified conditions relating  
to water management

Queensland Curtis Liquefied Natural Gas  
(QCLNG) project

7 October 2016

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Mr. David Reinke  
Environment Operations Manager  
QGC Pty Limited  
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Brisbane QLD 4000

Sent via email: [thamara.gunasekera@bg-group.com](mailto:thamara.gunasekera@bg-group.com)

07 October 2016

Dear David,

**Re: Independent compliance audit of EPBC 2008/4398 Upstream Approval Queensland Curtis LNG (QCLNG) Project with regard to specified conditions relating to water management**

We include in the attached report the findings from our independent environmental compliance audit conducted in accordance with condition 100 of the Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Upstream Approval (EPBC 2008/4398) as directed by the letter received from the Department of the Environment (Department) dated 4 December 2015. These findings have taken into account the comments and queries provided by the Department to QGC Pty Limited on the 26<sup>th</sup> August and the 29<sup>th</sup> September 2016.

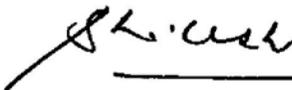
Our work has been conducted in accordance with applicable Australian Standards on Assurance Engagements ASAE 3100 Compliance Engagements, issued by the Australian Auditing and Assurance Standards Board. The matters raised in this report are only those which came to our attention during the course of performing our procedures.

Our report has been prepared for the use of QGC Pty Limited for the sole purpose of reporting on the matter being audited in accordance with condition 100 of EPBC 2008/4398. We understand that a copy will also be provided to the Department. No responsibility to any other party shall be accepted, as our report was not prepared, and shall not be intended, for any other purpose.

Should you have any questions with the above please contact me on (02) 9322 5741 or at [shtyagi@deloitte.com.au](mailto:shtyagi@deloitte.com.au).

Yours sincerely

DELOITTE TOUCHE TOHMATSU



Shailesh Tyagi  
Partner

## 1. Audit Opinion

### **Independent Assurance Report to the Directors of QGC Pty Limited and the Department of the Environment**

We have been engaged by QGC Pty Limited ("QGC") to conduct a reasonable assurance engagement relating to QGC's compliance with conditions 49, 50, 51, 52, 53, 53A, 53B, 53C, 54, 55, 56, 57, 58, 59, 60, 60a, 72, 73, 74, 76 and 77 ('the Conditions') as set out in the approval granted to develop, construct, operate and decommission the coal seam gas component of the Queensland Curtis LNG Project, including expansion of the QGC operated Coal Seam Gas fields in the Surat basin - "Queensland Curtis LNG Project" – EPBC 2008/4398, as measured by the Audit Criteria and Methodology, Stage 1 Coal Seam Gas Water Monitoring and Management Plan ('CSG WMMP'), Stage 2 CSG WMMP and Stage 3 CSG WMMP approved by the Department of Environment and included in Appendices 1 to 4 (together referred to as 'the criteria'), as at 7 October 2016.

### **The Directors' Responsibility for Compliance with the Conditions**

The Directors of QGC are responsible for compliance with the Conditions as measured by the criteria. This responsibility includes establishing and maintaining internal control relevant to compliance with the Conditions as measured by the criteria.

### **Our Responsibility**

Our responsibility is to express a conclusion on the entity's compliance with the Conditions, based on our procedures. Our engagement has been conducted in accordance with applicable Australian Standards on Assurance Engagements ASAE 3100 Compliance Engagements, issued by the Australian Auditing and Assurance Standards Board to express a conclusion whether, in our opinion, QGC has complied, in all material respects, with the Conditions as measured by the criteria as at 7 October 2016. ASAE 3100 also requires us to comply with the relevant ethical requirements of the Australian professional accounting bodies.

Our procedures included;

- Desktop review of Queensland Curtis LNG Project documentation and examination of third party reports and plans
- Performing interviews with relevant stakeholders
- Performing site inspection in the project area conducted on 12th and 13th July 2016.

Please refer to Appendices 1 to 4 for verification methods, measurements made and findings for each of the Conditions.

### **Limitation on Use**

This report has been prepared for the Directors of QGC and the Department of the Environment in accordance with the directive for audit of the Conditions made by the Department of the Environment to QGC on 5 December 2015. We disclaim any assumption of responsibility for any reliance on this report to any persons or users other than the Directors of QGC and the Department of the Environment or for any purpose other than that for which it was prepared.

## **Inherent Limitations**

Because of the inherent limitations of any compliance procedure, it is possible that fraud, error or non-compliance may occur and not be detected. A reasonable assurance engagement is not designed to detect all instances of non-compliance with the Conditions as measured by the criteria, as the engagement is not performed continuously throughout the period and the procedures performed in respect of compliance with the Conditions as measured by the criteria are undertaken on a test basis.

The conclusion expressed in this report has been formed on the above basis.

## **Independence**

In conducting our engagement, we have complied with the independence requirements of the Australian professional accounting bodies.

## **Reportable Exceptions**

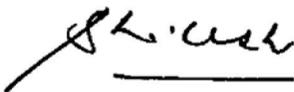
No exemptions identified with respect to compliance with the Conditions - please refer to Section 3.

## **Conclusion**

In our opinion, QGC has complied, in all material respects, with the Conditions, as measured by the criteria as at 7 October 2016.



DELOITTE TOUCHE TOHMATSU



Shailesh Tyagi  
Partner  
Sydney, 7 October 2016

## 2. Activated Conditions

All conditions applicable to the scope of this audit were activated with the exception of the following:

Condition	Audit Report Reference	Condition Description
53B.5.e.i.III.	Appendix 1	Confirmed that the emergency discharge plan included in the Stage 3 CSG WMMP included processes for uncontrolled discharge of CSG water, brine or chemicals. Through discussion, confirmed that the emergency discharge procedure has not been activated, and as such, this condition is not applicable.
54.1	Appendix 1	Confirmed via discussion with QGC's Lead Compliance & Reporting Advisor, QCLNG Land and Environment and review of publicly available information that no subsequent major stages of gas field development have taken place for the QCLNG project up to the time of the approval of the Stage 3 CSG WMMP.
58.1	Appendix 1	Consistent with an adaptive management approach the Stage 3 CSG WMMP must be reviewed and updated for each new stage of gas field development: to take into account of major updates to the Regional Groundwater Model; and to address findings of Cumulative Impact Assessment Reports required by the Queensland Government and these conditions of this approval.
59.1	Appendix 1	A reviewed and updated Stage 3 CSG WMMP must be submitted to the Minister for written approval. The Stage 3 WMMP has been approved. However, note that this Condition relates to the requirement to update the Stage 3 WMMP for each new stage of gasfield development only. There has not been any new gasfield development within the boundaries of the scope of this audit.
59.2	Appendix 1	Commencement of each new stage of gas field development must not occur without approval.
59.3	Appendix 1	The proponent may undertake activities that are critical to commencement that are associated with mobilisation of plant and equipment, materials, machinery and personnel prior to the start of development only if such activities will have no adverse impact on MNES, and only if the proponent has notified the Department in writing before the activity is undertaken.
73.1	Appendix 1	Within 10 days of a surface or groundwater water threshold value (for example, water quality, environmental value, pressure, head, volume, or flow) being exceeded, the proponent must advise the Minister in writing of the circumstances, the threshold exceeded, the immediate action taken by the proponent, and proposed action to remedy the breach and avoid a subsequent breach.

<b>74.1</b>	Appendix 1	The proponent's proposed response action associated with a range of measures including but not limited to further monitoring and investigation, the ceasing of water/gas extraction and/or water discharge or use in the area affected, or such other measures as are appropriate, until investigations can be completed to determine the cause and remedial action. The proponent's proposed response must be notified to the Minister in writing.
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### 3. Summary of Non-Compliances and Associated Recommendations

A summary of our compliance findings are summarised in the table below.

Finding Category	Condition Description
Compliance	68
Non-compliance	-
Not applicable	8
Undetermined	-
Observation	-
<b>Total assessed conditions including sub-elements</b>	<b>76</b>

In addition to these findings, the degree of implementation of the Stage 1, Stage 2 and Stage 3 Coal Seam Gas Water Management and Monitoring Plans ('CSG WMMPs') was assessed in accordance with Conditions 50, 53A, 53C, 59 and 77. Our findings are summarised in the table below.

Implemented	Stage 1 CSG WMMP	Stage 2 CSG WMMP	Stage 3 CSG WMMP
Yes	18	7	10
No	-	-	-
Not applicable	-	-	-
Undetermined	-	-	-
Observation	-	-	-
<b>Total assessed elements</b>	<b>18</b>	<b>7</b>	<b>10</b>

## 4. Improvement Opportunities

The following opportunity to improve the Proponent's systems and processes was noted during the course of the audit. This improvement opportunity relates to the signage at one of the groundwater well impacting the ability to identify the respective groundwater well.

Scope ref	Observation	Improvement Opportunity	Proponent Response
49.4 g.ii	During the site visit it was difficult to identify one of the wells (GW18) as signage was not on the well.	Improvement opportunity Design and implement a process to ensure clear signage is erected and maintained at all wells.	

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**Appendix 1: Audit Criteria and Methodology**

See attachment

Audit Criteria and Methodology Template

**Project Client** Approval granted to develop, construct, operate and decommission the coal seam gas component of the Queensland Curtis LNG Project, including expansion of the QGC operated coal seam gas fields in the Surat Basin - EPBC Approval 2008/4398  
QGC Pty Limited

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
<b>Stage 1 CSG Water Monitoring and Management Plan</b>					
EPBC 2008/4398 Condition 49					
Within 6 months from the date of the project approval, the proponent must submit for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes at least:					
<p><b>Groundwater monitoring and management</b></p> <p>a. groundwater drawdown limits for each targeted aquifer;</p> <p>b. [removed to Stage 3 WMMP]. <i>Note: A variation to the conditions was provided by the Minister for Sustainability, Environment, Water, Population and Communities in his letter approving the Stage 2 Water Monitoring and Management Plan (WMMP). The variation was provided following the consideration of advice given by The Expert Panel for Major Coal Seam Gas Projects and included the removal of a number of conditions relating to the Stage 1 and Stage 2 WMMP to the Stage 3 WMMP.</i></p> <p>c. a program and schedule for field piloting of aquifer reinjection of treated CSG water and other groundwater repressurisation techniques;</p> <p>d. early warning indicators where drawdown thresholds are being approached.</p> <p><b>Hydraulic fracturing</b></p> <p>e. the estimated number and the spatial distribution of boreholes where hydraulic fracturing may be necessary, an annual review of the estimate, and recording of actual use;</p> <p>f. [removed f. to Stage 3 WMMP]. <i>Note: As per previous note.</i></p> <p><b>Surface water monitoring and management</b></p> <p>g. an ongoing water quality and quantity surface water monitoring plan that includes at least:</p> <p>i. identification of the surface and aquatic systems to be monitored and their environmental values; water quality, and environmental characteristics, and the rationale for selection;</p> <p>ii. the number and locations of monitoring sites upstream and downstream of proposed discharge of CSG water (whether treated water, amended water or raw water), including test and reference sites upstream and downstream and before and after any proposed impacts;</p> <p>iii. the frequency of the monitoring and rationale for the frequency;</p> <p>iv. baseline data for each monitoring site for comparison of monitoring results over the life of the project;</p> <p>v. the approach to be taken to analyse the results including the methods to determine trends to indicate potential impacts;</p> <p>vi. threshold values that protect relevant MNES (such as reporting or control line values for additional investigation, more intensive management action, make good, and cease operations) at which management actions will be initiated to respond to escalating levels of risk and designed to protect water quality and the associated environmental values of surface and aquatic systems;</p> <p>vii. water treatment and amendment methods and standards;</p> <p>viii. water storage locations and volumes including any storage and volumes required to pilot or implement reinjection or other groundwater repressurisation techniques;</p> <p>ix. water use or disposal options and methods (whether for beneficial use or not) including frequency, volumes, quality and environmental values documented for each receiving environment;</p> <p>x. brine storage locations and volumes, and brine crystal waste management;</p> <p>xi. emergency water discharges, their volumes and quality;</p> <p><b>Response actions</b></p> <p>h. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if:</p> <p>i. threshold values for surface water quality and water environmental values specified in the CSG WMMP are exceeded;</p> <p>ii. [removed to Stage 3 WMMP]</p> <p><b>Reporting</b></p> <p>i. performance measures, annual reporting to the Department, and publication of reports on the internet.</p> <p>Note: A key objective of the CSG WMMP groundwater components is to maintain or restore aquifer pressure, as affected by CSG production, to levels that avoid risk of adverse impact on MNES.</p>					
<b>Criterion 1</b>					
Within 6 months from the date of the project approval, the proponent must submit for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP)					
49.1 Within 6 months from the date of the project approval, the proponent must submit for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP).	Obtained evidence of QGC's QCLNG Project Approval date and also QGC's submission of the Stage 1 CSG WMMP for the approval of the Minister. Per evidence, approval date was 20 October 2010 and submission date was 19 April 2011.  Given that the submission of the Stage 1 WMMP was within six months from the date of the project approval, it is in accordance with the approval requirements.	QGC's submission of the Stage 1 CSG WMMP to the DSEWPAC	Check that the proponent has submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan, within 6 months from the date of the project approval.	1. Obtain evidence of QGC's QCLNG Project Approval date  2. Obtain evidence of QGC's submission of the Stage 1 CSG WMMP, including the date of submission, and assess whether submission was made within 6 months of the receipt of the project approval	Y
<b>Criterion 2</b>					
The proponent must submit for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes at least:					
<p><b>Groundwater monitoring and management</b></p> <p>a. groundwater drawdown limits for each targeted aquifer;</p> <p>b. [removed to Stage 3 WMMP]. <i>Note: As per previous note.</i></p> <p>c. a program and schedule for field piloting of aquifer reinjection of treated CSG water and other groundwater repressurisation techniques;</p> <p>d. early warning indicators where drawdown thresholds are being approached.</p>					
49.2 The proponent must submit for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes at least:	Obtained evidence of QGC's submission of the Stage 1 CSG WMMP for the approval of the Minister, dated 19 April 2011. Confirmed via discussions with QGC's Lead Compliance & Reporting Advisor, QCLNG Land and Environment that the contents of the Stage 1 CSG WMMP is now included as appendices in the Stage 2 CSG WMMP rather than a standalone CSG WMMP.  Reviewed a sample of key components from the Stage 1 CSG WMMP to confirm the existence and completeness of this document in accordance with the requirements.	Stage 1 CSG WMMP		1. Obtain a copy of the Stage 1 CSG WMMP and evidence the that Stage 1 CSG WMMP was submitted to the Minister for approval as well as confirmation of the submission date  2. Review the Stage 1 CSG WMMP to determine if it includes the following components:	Y
49.2.a. Groundwater drawdown limits for each targeted aquifer, and	Obtained evidence of the inclusion of groundwater drawdown limits for targeted aquifers in Section 7.6.5 of the Stage 1 CSG WMMP.  Refer to the Stage 1 CSG WMMP Checklist which documents the assessment of groundwater bore locations, which were confirmed with the GIS Specialist via a demonstration of MapMagic in a follow up interview. It was identified Groundwater Well #11 (GW11) was plugged and abandoned and replaced with Groundwater Well #18 (GW18). GW18 is not an OGIA required bore and, therefore, does not having any mandatory reporting requirements under the Queensland Government's Office of Groundwater Impact Assessment (OGIA). It is however available to OGIA if they should require data from it in the future.  Drawdown limits were reviewed with the QGC Specialists and a sample of wells identified for the investigation of threshold triggers (i.e. Charlie GW1 & GW2, Coochiemudlo GW 1 & GW2, Charlotte GW1.). Groundwater monitoring data was examined to identify water level data (mAHD). No exceedances of threshold limits have been identified. Drawdown Baseline development was discussed and QGC are working towards setting of rigorous baselines grounded in time series data sets.	Stage 1 CSG WMMP; discussions with GIS Specialist; walkthrough of GIS system; site visit to groundwater bores (GW11 and GW18).	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (a).	1. Review the Stage 1 CSG WMMP to determine if it includes the requirements included in (2a)	Y

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
49.2.c. a program and schedule for field piloting of aquifer reinjection of treated CSG water and other groundwater repressurisation techniques; and	<p>Review of QGC's Stage 1 CSG WMMP confirmed the inclusion of a program and schedule for field piloting of aquifer reinjection of treated CSG water and other groundwater repressurisation techniques. Refer to Section 11 'Re-injection and repressurisation options': <a href="http://www.bg-group.com/files/pdf/qgc/11.0_-_re-injection_and_repressurisation_options.pdf">http://www.bg-group.com/files/pdf/qgc/11.0_-_re-injection_and_repressurisation_options.pdf</a></p> <p>Refer to Stage 1 CSG WMMP Checklist which confirms that discussions with a Proponent representative that the reinjection program was not implemented. This was corroborated through inspection of letters to the Department, advising the program has not commenced.</p>	Stage 1 CSG WMMP; discussions with a Proponent representative; Letters from QGC to the DoE on the subject of 'QGC's Aquifer Injection Program under EPBC Act approval 2008/4398', dated 13 March 2015 and 8 December 2015	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (c).	1. Review the Stage 1 CSG WMMP to determine if it includes the requirements included in (2c)	Y
49.2.d. early warning indicators where drawdown thresholds are being approached.	<p>Review of QGC's Stage 1 CSG WMMP, and in particular, Section 3 of the 'Draft Exceedance Response Plans' confirmed the inclusion of early warning indicators where drawdown thresholds are being approached. Refer to the following: <a href="http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf">http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf</a>.</p> <p>Refer to Stage 1 CSG WMMP Checklist which confirms that discussions with a Proponent representative indicated, and data corroborated, that early warning thresholds have not been breached.</p>	Stage 1 CSG WMMP; discussions with a Proponent representative	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (d).	1. Review the Stage 1 CSG WMMP to determine if it includes the requirements included in (2d)	Y
<b>Criterion 3</b>	<p>The proponent must submit for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes at least:</p> <p><b>Hydraulic fracturing</b></p> <p>e. the estimated number and the spatial distribution of boreholes where hydraulic fracturing may be necessary, an annual review of the estimate, and recording of actual use;</p> <p>f. [removed f. to Stage 3 WMMP]. <i>Note: As per previous note.</i></p>				
49.3.e. the estimated number and the spatial distribution of boreholes where hydraulic fracturing may be necessary, an annual review of the estimate, and recording of actual use.	<p>Review of QGC's Stage 1 CSG WMMP confirmed the inclusion of the 'Hydraulic Fracturing - Risk Assessment and Management Plan', which included information on the estimated number and the spatial distribution of boreholes where hydraulic fracturing may have been necessary (refer to Figure 2 on p. 12 and Section 6). DTT also confirmed the inclusion of requirements for an annual review of the estimate and recording of actual use (refer to Section 11 which details the 'Monitoring Program': <a href="http://www.bg-group.com/files/pdf/qgc/Appendix_W.1_Fracking_Chemicals_Assessment.pdf">http://www.bg-group.com/files/pdf/qgc/Appendix_W.1_Fracking_Chemicals_Assessment.pdf</a></p> <p>Refer to the Stage 1 CSG WMMP Checklist confirming inspection of the Fracking Chemicals Assessment from 2011 noted that fracking activity was reported at this time. Through interviews it was noted that there has been no active program of hydraulic stimulation; however, test stimulations had been completed as per WMMP 3, Section 13.0.</p>	Stage 1 CSG WMMP; 2011 Fracking Chemicals Assessment	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (e).	1. Review the Stage 1 CSG WMMP to determine if it includes the requirements included in (3e)	Y
<b>Criterion 4</b>	<p>The proponent must submit for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes at least:</p> <p>Surface water monitoring and management</p> <p>g. an ongoing water quality and quantity surface water monitoring plan that includes at least:</p> <p>i. identification of the surface and aquatic systems to be monitored and their environmental values; water quality, and environmental characteristics, and the rationale for selection;</p> <p>ii. the number and locations of monitoring sites upstream and downstream of proposed discharge of CSG water (whether treated water, amended water or raw water), including test and reference sites upstream and downstream and before and after any proposed impacts;</p> <p>iii. the frequency of the monitoring and rationale for the frequency;</p> <p>iv. baseline data for each monitoring site for comparison of monitoring results over the life of the project;</p> <p>v. the approach to be taken to analyse the results including the methods to determine trends to indicate potential impacts;</p> <p>vi. threshold values that protect relevant MNES (such as reporting or control line values for additional investigation, more intensive management action, make good, and cease operations) at which management actions will be initiated to respond to escalating levels of risk and designed to protect water quality and the associated environmental values of surface and aquatic systems;</p> <p>vii. water treatment and amendment methods and standards;</p> <p>viii. water storage locations and volumes including any storage and volumes required to pilot or implement reinjection or other groundwater repressurisation techniques;</p> <p>ix. water use or disposal options and methods (whether for beneficial use or not) including frequency, volumes, quality and environmental values documented for each receiving environment;</p> <p>x. brine storage locations and volumes, and brine crystal waste management;</p> <p>xi. emergency water discharges, their volumes and quality;</p> <p>xii. references to standards and relevant policies and guidelines;</p>				
49.4.g. an ongoing water quality and quantity surface water monitoring plan that includes at least:	Confirmed the inclusion of an ongoing water quality and quantity surface water monitoring plan in the Stage 1 CSG WMMP, the requirements of which have been subsequently summarised in the Stage 2 CSG WMMP available at: <a href="http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf">http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf</a>	Stage 1 CSG WMMP		1. Review the Stage 1 CSG WMMP to determine if it includes an ongoing water quality and quantity surface water monitoring plan, which includes the following components at the least:	Y
49.4.g.i. identification of the surface and aquatic systems to be monitored and their environmental values; water quality, and environmental characteristics, and the rationale for selection; and	Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP included the identification of surface and aquatic systems to be monitoring and their environmental values, water quality, environmental characteristics, and their rationale for selection. Refer to the 'Ensuring responsible CSG water management and beneficial use' report: <a href="http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf">http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf</a> . Reference and test sites were identified both upstream and downstream of the discharge point.	Stage 1 CSG WMMP	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (i).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g i)	Y
49.4.g.ii. the number and locations of monitoring sites upstream and downstream of proposed discharge of CSG water (whether treated water, amended water or raw water), including test and reference sites upstream and downstream and before and after any proposed impacts; and	<p>Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP included the location of monitoring sites. Section 3 9.1 through 9.1.5 relates to the location and rationale for monitoring, and includes details of the reference and test sites.</p> <p>At the time of the Stage 1 Plan the only surface water monitoring system that was in place was the REMP for the proposed temporary treated water discharge point from the Kenya WTP to Wieambilla Creek. As reviewed, the REMP included surface water sampling points on Condamine River and Wieambilla Creek as proposed.</p> <p>Discussions with Proponent Representative identified that there is no requirement for discharge to surface water due to treatment at the WTP and BUA with Sunwater. Sunwater has there own monitoring program and EPBC Approval in place.</p>	Stage 1 CSG WMMP; REMP (Stage 2 WMMP, Appendix X.1) Discussions with a Proponent representative;	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (ii).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g ii)	Y
49.4.g.iii. the frequency of the monitoring and rationale for the frequency; and	<p>Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP, Section 9.1 included the frequency and rationale of monitoring.</p> <p>Reviewed the rationale and planning for monitoring site and baseline data analysis in REMP Sections 1.3.1 and 3.0 inc. Tables 3.1, 3.4, and 3.6</p>	Stage 1 CSG WMMP; REMP (Stage 2 WMMP, Appendix X.1) Discussions with a Proponent representative	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (iii).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g iii)	Y

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
49.4.g.iv. baseline data for each monitoring site for comparison of monitoring results over the life of the project; and	Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP referenced to details of the baseline data for each monitoring site for comparison of monitoring results over the life of the project.  Reviewed the planning for monitoring site and baseline data analysis in REMP Section 3.0 and Tables 3.1, 3.4, and 3.6	Stage 1 CSG WMMP; REMP (Stage 2 WMMP, Appendix X.1)	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (iv).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g iv)	Y
49.4.g.v. the approach to be taken to analyse the results including the methods to determine trends to indicate potential impacts; and	Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP included details on the analysis approach used, threshold values and water quality parameters and detection limit values for discharge for each monitoring site for comparison of monitoring results over the life of the project. Refer to: <a href="http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf">http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf</a>	Stage 1 CSG WMMP	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (v).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g v)	Y
49.4.g.vi. threshold values that protect relevant MNES (such as reporting or control line values for additional investigation, more intensive management action, make good, and cease operations) at which management actions will be initiated to respond to escalating levels of risk and designed to protect water quality and the associated environmental values of surface and aquatic systems; and	Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP included threshold values. This condition has been met even though the REMP has not been activated. The Beneficial Use Approval (BUA) has been activated through the Agreement with Sunwater to manage all BUA water provided by QGC.	Stage 1 CSG WMMP	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (vi).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g vi)	Y
49.4.g.vii. water treatment and amendment methods and standards; and	Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP included detail on the water treatment and amended methods and standards to ensure the sustainable treatment of water produced from CSG wells.  In addition, in WMMP 2 expanded upon treatment and amendment methods identifying Reverse Osmosis as the primary treatment method to be used. Refer to Section 14.5 of the 'Ensuring responsible CSG water management and beneficial use' report: <a href="http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf">http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf</a>	Stage 1 CSG WMMP; Stage 2 CSG WMMP reference Chapter 14.	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (vii).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g vii)	Y
49.4.g.viii. water storage locations and volumes including any storage and volumes required to pilot or implement reinjection or other groundwater repressurisation techniques; and	Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP included detail on the water storage locations and volumes, including any storage and volumes required to pilot or implement reinjection or other groundwater repressurisation techniques.	Stage 1 CSG WMMP, Section 9.3 and Appendix J	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (viii).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g viii)	Y
49.4.g.ix. water use or disposal options and methods (whether for beneficial use or not) including frequency, volumes, quality and environmental values documented for each receiving environment; and	Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP included information on the water use or disposal options and methods, including beneficial reuse, in the Central and Southern Gas fields. This includes details on the frequency, volumes, quality and environmental values for each of the receiving environments.	Stage 1 CSG WMMP	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (ix).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g ix)	Y
49.4.g.x. brine storage locations and volumes, and brine crystal waste management;	Confirmed that the surfacing monitoring plan included in the Stage 1 CSG WMMP included details on the brine storage locations and volumes.  As detailed in Section 14.5.1 of the 'Ensuring responsible CSG water management and beneficial use', mechanical brine concentrators are to receive RO Reject from the Water Treatment Plant and will separate this into a concentrated brine stream and a purified water stream. Section 14.5.1 includes a list of the water treatment works to take place as well as their maximum capacities. Refer to: <a href="http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf">http://www.bg-group.com/files/pdf/qgc/14.0_-_ensuring_responsible_csg_water_management_and_beneficial_use.pdf</a>	Stage 1 CSG WMMP	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (x).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g x)	Y
49.4.g.xi. Emergency water discharges, their volumes and quality;	Confirmed that the surfacing monitoring plan included in the Stage 1 CSG WMMP included details of the emergency water discharges.  Through discussion it was noted that the emergency discharge procedure has not needed to be activated. There have been no emergency discharges recorded at the wells, bores or WTP, and there have been no flood / weather impacts at WTF or recorded at wells / bores.  It was also noted that, in relation to the WTF, there is a closed-loop system, drawing water back to Stage 1 treatment as a fail-safe. The sump pumps and ground fall to a low point and drainage emergency water discharge measures are in place. The chemical storage and loading area is bunded to prevent emissions to ground.	Stage 1 CSG WMMP; discussions with a Proponent representative	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (xi).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it includes the requirements included in (4g xi)	Y
49.4.g.xii. References to standards and relevant policies and guidelines;	Confirmed that the surfacing monitoring plan included in the Stage 1 CSG WMMP included details of the emergency water discharges.  Through discussion, confirmed that there has never been a release of water, and as such, this condition is not applicable.	Stage 1 CSG WMMP; discussions with a Proponent representative	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (xii).	1. Review the surface water monitoring plan included in the Stage 1 CSG WMMP to determine if it references standards and relevant policies and guidelines underpinning these processes.	Y
<b>Criterion 5</b>	The proponent must submit for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes at least: Response actions h. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if: i. threshold values for surface water quality and water environmental values specified in the CSG WMMP are exceeded; ii. [removed to Stage 3 WMMP]. Note: A variation to the conditions was provided by the Minister for Sustainability, Environment, Water, Population and Communities in his letter approving the Stage 2 Water Monitoring and Management Plan (WMMP). The variation was provided following the consideration of advice given by The Expert Panel for Major Coal Seam Gas Projects and included the removal of a number of conditions relating to the Stage 1 and Stage 2 WMMP to the Stage 3 WMMP.				
49.5.h. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if:	Disclosed in the Stage 2 Appendices at <a href="http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf">http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf</a> . Refer to Appendix U Draft exceedance response plans section 1.0 which includes regarding mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if 49.5.h.i. applies.	Stage 1 CSG WMMP		1. Review the Stage 1 CSG WMMP to determine if mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent with respect to the following are outlined:	Y

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
49.5.h.i. threshold values for surface water quality and water environmental values specified in the CSG WMMP are exceeded; and	Through discussion it was noted that the threshold values for surface water quality monitoring were not in use as QGC does not discharge treated CSG water to Wieambilla Creek as it was initially proposed within the stage 1 CSG WMMP. The treated water is being discharged to a third party for which there is a separate license in place to discharge water.	Discussions with a Proponent representative	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (i).	1. Review the Stage 1 CSG WMMP to determine if it outlines the mechanisms to be taken if threshold values for surface water quality and water environmental values specified in the CSG WMMP are exceeded.	Y
<b>Criterion 6</b>					
49.6.i. performance measures, annual reporting to the Department, and publication of reports on the internet.	Inspected the BG Group website and located the 2013, 2014, and 2015 annual report.	QGC WMMP Annual Reports. The 2014 Annual Report is online at the following link: <a href="http://www.bggroup.com/827/qgc/sustainability/environment/watermanagement/reports/">http://www.bggroup.com/827/qgc/sustainability/environment/watermanagement/reports/</a> . Please refer to Appendix T, in Stage 3 Appendices at the website link.	Check that the proponent submitted for the approval of the Minister a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) which includes requirement (i).	1. Review the Stage 1 CSG WMMP to determine if it outlines the required performance measures, annual reporting to the Department and publication of reports on the internet.	Y
<i>Note: A key objective of the CSG WMMP groundwater components is to maintain or restore aquifer pressure, as affected by CSG production, to levels that avoid risk of adverse impact on MNES.</i>					
<b>EPBC 2008/4398 Condition 50</b>					
<b>Criterion 1</b>					
50.1 The proponent must implement the Stage 1 CSG WMMP approved in writing by the Minister, on the advice of an expert panel.	Confirmed through discussion with QGC's Lead Compliance & Reporting Advisor - QCLNG Land and Environment and review of documentary evidence that the Stage 1 Plan was submitted on 22 April 2011 and had not been approved at the time of the submittal of the Stage 2 Plan on 22 April 2012. All matters considered in the Stage 1 Plan were rolled into the Stage 2 Plan, a revised version of which was approved by the Minister on 21 December 2012. Stage 1 Plan activities were ongoing from the time of the submittal of the Stage 1 Plan (22 April 2011) and beyond the time of submittal of the Stage 2 Plan (22 April 2012) until the approval of the Stage 2 Plan (21 December 2012).	Stage 1 CSG WMMP; Stage 2 CSG WMMP	Check that the proponent implemented the Stage 1 CSG WMMP approved in writing by the Minister, on the advice of an expert panel.	1. Obtain evidence of the Stage 1 CSG WMMP approval by the Minister on advice of an expert panel 2. The implementation of this plan will be assessed only up until the time of the Stage 2 CSG WMMP is approved and is brought into effect. Refer to checklist.	Y
<b>Criterion 2</b>					
50.2 The proponent must not exceed the groundwater drawdown limits for each aquifer specified in the Stage 1 CSG WMMP.	Inspection of the Stage 1 WMMP Appendix B Groundwater Contours (October 2011) noted that, in relation to both Springbok Sandstone and Gubberamunda Sandstone, minimum drawdown was calculated to be less than 2 m at all points in the aquifer from 2010 through to 4061. Further, inspection of the Stage 3 WMMP - Extracts on EWWI and TMP Bores noted that investigation and mitigation trigger values and drawdown limits have been articulated for GW1 (Hutton) and GW2 (Precipice) bores, in Cassio, Coochiemudio, Charlotte and Charlie. The comments indicate that the drawdown limits have not been reached.  Refer to the Stage 1 CSG WMMP Checklist which confirms inspection of Stage 1 WMMP Appendix C Golder Groundwater Impact Report (October 2011). The following was noted: - The modelled maximum drawdown in the Springbok Sandstone is 4.1 m which occurs in Year 2060 in the Northern Development Area - At all times the maximum drawdown in the Mooga Sandstone is predicted to be less than 0.2 m, and at all times the maximum drawdown in the Gubberamunda Sandstone is predicted to be less than or equal to 0.5 m.	Stage 1 CSG WMMP; Stage 1 CSG WMMP Checklist; Golder Groundwater Impact Report (October 2011)	Check that the proponent did not exceed the groundwater drawdown limits for each aquifer specified in the Stage 1 CSG WMMP.	1. Obtain proponent's processes and procedures for ensuring groundwater drawdown limits for each aquifer specified in the Stage 1 CSG WMMP did not exceed the specified thresholds 2. Review representative random sample of no less than 10% of relevant evidence to determine if groundwater drawdown limits have been breached.	Y
<b>Criterion 3</b>					
50.3 The Stage 1 CSG WMMP will apply until the commencement of the approved Stage 2 CSG WMMP.	As noted above, confirmed through discussion with QGC's Lead Compliance & Reporting Advisor - QCLNG Land and Environment that the Stage 1 Plan was submitted on 22 April 2011 and had not been approved at the time of the submittal of the Stage 2 Plan on 22 April 2012. All matters considered in the Stage 1 Plan were rolled into the Stage 2 Plan, a revised version of which was approved by the Minister on 21 December 2012. Stage 1 Plan activities were ongoing from the time of the submittal of the Stage 1 Plan (22 April 2011) and beyond the time of submittal of the Stage 2 Plan (22 April 2012) until the approval of the Stage 2 Plan (21 December 2012).  As such, the Stage 1 CSG WMMP applied until the commencement of the Stage 2 CSG WMMP i.e. at the time of its approval.	Discussions with a Proponent representative	Check if the Stage 1 CSG WMMP applied until the commencement of the approved Stage 2 CSG WMMP.	1. Obtain the commencement date of the approved Stage 2 CSG WMMP. 2. Review evidence to determine if the Stage 1 CSG WMMP applied until the commencement of the approved Stage 2 CSG WMMP.	Y
<b>Indicator</b>					
<b>Stage 2 CSG Water Monitoring and Management Plan</b>					
<b>EPBC 2008/4398 Condition 51</b>					
<b>Criterion 1</b>					
51.1 Within 18 months from the date of the approval of the action the proponent must submit for the approval of the Minister, a Stage 2 Coal Seam Gas Water Monitoring and Management Plan (Stage 2 CSG WMMP).	Obtained evidence of QGC's QCLNG Project Approval date and also QGC's submission of the Stage 2 CSG WMMP for the approval of the Minister. Per evidence, approval date was 20 October 2010 and submission date was 23 April 2012.  Given that the submission of the Stage 2 WMMP was within 18 months from the date of the project approval, it is in compliance with the approval requirements.	QGC's submission of the Stage 2 CSG WMMP to the DSEWPAC	Check that the proponent submitted a Stage 2 Coal Seam Gas Water Monitoring and Management Plan (Stage 2 CSG WMMP) within 18 months from the date of the approval of the action for the approval of the Minister.	1. Obtain evidence of the proponent's submission of the Stage 2 CSG WMMP to the Minister for approval, and evidence of the date of this submission 2. Review appropriateness of the timeframe for submission compared to the project approval date	Y
<b>Criterion 2</b>					
The proponent must allow a further 3 months for the Minister's consideration of approval of the Stage 2 CSG WMMP including seeking advice from an expert panel.					

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
51.2 The proponent must allow a further 3 months for the Minister's consideration of approval of the Stage 2 CSG WMMP including seeking advice from an expert panel.	<p>Obtained evidence confirming that the Stage 2 CSG WMMP was at the Department to have the WMMP reviewed by an expert panel. Obtained evidence of Minister's consideration of approval of the Stage 2 CSG WMMP and also comments from the Expert Panel. Per evidence, Minister's consideration of approval date is 21 December 2012 and comments from the Expert Panel is 1 August 2012.</p> <p>Given that the proponent allowed a further 3 months for the Minister's consideration of approval of the Stage 2 CSG WMMP, including seeking advice from an expert panel it is in compliance with the approval requirements.</p>	Minister's consideration of approval of Stage 2 CSG WMMP; Expert Panel comments on QGC's Stage 2 CSG WMMP	Check that the proponent allowed a further 3 months for the Minister's consideration of approval of the Stage 2 CSG WMMP including seeking advice from an expert panel.	1. Obtain evidence to determine if the proponent allowed a further 3 months for the Minister's consideration of approval of the Stage 2 CSG WMMP, including seeking advice from an expert panel, prior to commencing activities associated with stage 2.	Y
EPBC 2008/4398 Condition 52	<p>In addition to the matters in the Stage 1 CSG WMMP, the Stage 2 CSG WMMP must also include:</p> <p>Groundwater monitoring and management</p> <p>a. an ongoing CSG water treatment program to ensure that any water to be used for re-injection, or used for other groundwater repressurisation options, is treated at least equal to the water quality of the receiving groundwater system or environment;</p> <p>b. the method, data and the evidentiary standards necessary to support a conclusion that an aquifer from which CSG water is being extracted is not hydraulically connected to other aquifers;</p> <p>c. a groundwater quality and quantity monitoring plan to monitor the aquifers underlying the project area using a statistically and hydrogeologically valid, best practice bore monitoring network across project area, and at least:</p> <p>i. the aquifers to be monitored and the rationale for selection;</p> <p>ii. the number and locations of monitoring bores and their flow, pressure, head, and water quality characteristics;</p> <p>iii. the frequency of the monitoring and rationale for the frequency;</p> <p>iv. [removed to Stage 3 WMMP]. <i>Note: A variation to the conditions was provided by the Minister for Sustainability, Environment, Water, Population and Communities in his letter approving the Stage 2 Water Monitoring and Management Plan (WMMP). The variation was provided following the consideration of advice given by The Expert Panel for Major Coal Seam Gas Projects and included the removal of a number of conditions relating to the Stage 1 and Stage 2 WMMP to the Stage 3 WMMP.</i></p> <p>v. [removed to Stage 3 WMMP]. <i>Note: As per previous note.</i></p> <p>vi. groundwater drawdown threshold values and groundwater quality threshold values for each aquifer (based on regional groundwater modelling endorsed by the Minister) at which management actions (such as reporting or control line values for additional investigation, more intensive management action, make good, and cease operations) will be initiated to respond to escalating levels of risk, including increasing levels of drawdown, contamination of groundwater, or subsidence;</p> <p>vii. references to standards and relevant policies and guidelines;</p> <p>viii. [removed to Stage 3 WMMP]; <i>Note: As per previous note</i>; and,</p> <p>ix. performance measures, annual reporting to the Department, and publication of reports on the internet;</p> <p><i>Note 1: Threshold values will be identified in the plan and during the life of the approval and related conditions may be varied by the Minister on advice from an expert panel to reflect the best available data and scientific information.</i></p> <p><i>Note 2: For clarity, the monitoring required under this condition may be undertaken jointly with others.</i></p> <p>Response actions</p> <p>d. an exceedance response plan that includes:</p> <p>i. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if:</p> <p>I. threshold values for surface water quality and water environmental values specified in the CSG WMMP are exceeded;</p> <p>II. removed to Stage 3 WMMP; <i>Note: As per previous note.</i></p> <p>III. removed to Stage 3 WMMP; <i>Note: As per previous note.</i></p> <p>IV. removed to Stage 3 WMMP; <i>Note: As per previous note</i>; and,</p> <p>ii. [removed to Stage 3 WMMP.] <i>Note: As per previous note.</i></p>				
Criterion 1	<p>In addition to the matters in the Stage 1 CSG WMMP, the Stage 2 CSG WMMP must also include:</p> <p><b>Groundwater monitoring and management</b></p> <p>a. an ongoing CSG water treatment program to ensure that any water to be used for re-injection, or used for other groundwater repressurisation options, is treated at least equal to the water quality of the receiving groundwater system or environment;</p> <p>b. the method, data and the evidentiary standards necessary to support a conclusion that an aquifer from which CSG water is being extracted is not hydraulically connected to other aquifers;</p> <p>c. a groundwater quality and quantity monitoring plan to monitor the aquifers underlying the project area using a statistically and hydrogeologically valid, best practice bore monitoring network across project area, and at least:</p> <p>i. the aquifers to be monitored and the rationale for selection;</p> <p>ii. the number and locations of monitoring bores and their flow, pressure, head, and water quality characteristics;</p> <p>iii. the frequency of the monitoring and rationale for the frequency;</p> <p>vi. groundwater drawdown threshold values and groundwater quality threshold values for each aquifer (based on regional groundwater modelling endorsed by the Minister) at which management actions (such as reporting or control line values for additional investigation, more intensive management action, make good, and cease operations) will be initiated to respond to escalating levels of risk, including increasing levels of drawdown, contamination of groundwater, or subsidence;</p> <p>vii. references to standards and relevant policies and guidelines;</p> <p>viii. [removed to Stage 3 WMMP]; <i>Note: A variation to the conditions was provided by the Minister for Sustainability, Environment, Water, Population and Communities in his letter approving the Stage 2 Water Monitoring and Management Plan (WMMP). The variation was provided following the consideration of advice given by The Expert Panel for Major Coal Seam Gas Projects and included the removal of a number of conditions relating to the Stage 1 and Stage 2 WMMP to the Stage 3 WMMP</i>; and,</p> <p>ix. performance measures, annual reporting publication of reports on the internet;</p> <p><i>Note 1: Threshold values will be identified in the plan and during the life of the approval and related conditions may be varied by the Minister on advice from an expert panel to reflect the best available data and scientific information.</i></p> <p><i>Note 2: For clarity, the monitoring required under this condition may be undertaken jointly with others.</i></p>				
52.1 In addition to the matters in the Stage 1 CSG WMMP, the Stage 2 CSG WMMP must also include:	<p>Obtained evidence of Stage 2 CSG WMMP from the QGC website at <a href="http://www.bg-group.com/files/pdf/qgc/1.0_-_stage_2_csg_water_monitoring_and_management_plan.pdf">http://www.bg-group.com/files/pdf/qgc/1.0_-_stage_2_csg_water_monitoring_and_management_plan.pdf</a>.</p> <p>The Stage 2 CSG WMMP appendices were reviewed and it was confirmed that the Stage 2 CSG WMMP includes the requirements included within the Stage 1 CSG WMMP.</p>	Stage 2 CSG WMMP		<p>1. Review Stage 2 CSG WMMP to ensure the requirements within the Stage 1 CSG WMMP are covered.</p> <p>2. The Stage 2 CSG WMMP is also required to satisfy the following requirements:</p>	Y
52.1.a. an ongoing CSG water treatment program to ensure that any water to be used for re-injection, or used for other groundwater repressurisation options, is treated at least equal to the water quality of the receiving groundwater system or environment;	<p>Disclosed in the Stage 2 CSG WMMP Re-injection and repressurisation options at <a href="http://www.bg-group.com/827/qgc/sustainability/environment/water-management/reports/">http://www.bg-group.com/827/qgc/sustainability/environment/water-management/reports/</a>. Refer to section 11.5 Objectives of re-injection program Woleebee Creek Block, which includes a study plan which seeks to predict and verify the spatial extent of regional groundwater level drawdown, groundwater balance and inter-formation leakage estimates in order to estimate the extent to which aquifer repressurisation may be required.</p> <p>Disclosed in the Stage 2 CSG WMMP Groundwater quality monitoring and hydrochemistry program at <a href="http://www.bg-group.com/files/pdf/qgc/7.0_-_groundwater_quality_monitoring_and_hydrochemistry_program.pdf">http://www.bg-group.com/files/pdf/qgc/7.0_-_groundwater_quality_monitoring_and_hydrochemistry_program.pdf</a>. Refer to Section 7.8 Integrated Hydrochemistry Study.</p> <p>Through discussion, confirmed that there has been no re-injection or repressurisation options implemented. This was corroborated through inspection of the letters provided to the Department, and through inspection of the damaged trial site infrastructure.</p> <p>Site visit conducted to the site of the trial re-injection facility at Woleebee Creek included visual inspection of trial injection bore GW18. Identified that bore has never been used through discussion with Proponent representative.</p> <p>Observation: Ensure appropriate signage on 'suspended' bores and alignment with Map Magic identifiers for suspended or 'plugged and abandoned' bores as GW18 was difficult to identify during the site visit.</p>	Stage 2 CSG WMMP; discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (a).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine if it includes the requirements included in (1a)	Y

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
52.1.b. the method, data and the evidentiary standards necessary to support a conclusion that an aquifer from which CSG water is being extracted is not hydraulically connected to other aquifers;	Disclosed in the Stage 2 CSG WMMP Quantifying aquifer connectivity at <a href="http://www.bg-group.com/files/pdf/qgc/6.0_-_quantifying_aquifer_connectivity.pdf">http://www.bg-group.com/files/pdf/qgc/6.0_-_quantifying_aquifer_connectivity.pdf</a> . Refer to section 6.2 Connectivity program objectives and 6.5 Program of aquifer connectivity investigation.	Stage 2 CSG WMMP; discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (b).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine if it includes the requirements included in (1b)	Y
52.1.c. a groundwater quality and quantity monitoring plan to monitor the aquifers underlying the project area using a statistically and hydrogeologically valid, best practice bore monitoring network across project area, and at least;	Disclosed in the Stage 2 CSG WMMP Establishing a comprehensive monitoring network – Stage 2 at <a href="http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf">http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf</a> Refer to Section 5.1. Introduction.  Discussions were held with auditors explaining basis for design of network which included the requirements for state agencies.	Stage 2 CSG WMMP; Discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (c).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine if it includes the requirements included in (1c)	Y
52.1.c.i. the aquifers to be monitored and the rationale for selection;	Disclosed in the Stage 2 CSG WMMP Establishing a comprehensive monitoring network – Stage 2 at <a href="http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf">http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf</a> Refer to Section 5.3 Monitoring Bore Rationale.  Discussions were held with auditors on aquifers to be monitored and rationale for selection of monitoring locations	Stage 2 CSG WMMP; Discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (i).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine that it requires (i) to be addressed in the groundwater quality and quantity monitoring plan	Y
52.1.c.ii. the number and locations of monitoring bores and their flow, pressure, head, and water quality characteristics;	Disclosed under the Stage 2 CSW WMMP Appendices at <a href="http://www.bg-group.com/files/pdf/qgc/Appendix_C_1-5_Water_balance_figures_GEN2_modelled_drawdowns_groundwater_quality_maps-.pdf">http://www.bg-group.com/files/pdf/qgc/Appendix_C_1-5_Water_balance_figures_GEN2_modelled_drawdowns_groundwater_quality_maps-.pdf</a> . Refer to Appendix C.5 pilot production monitoring bores.  Also, disclosed in the Stage 2 CSW WMMP, Chapter 5.0 Establishing a comprehensive monitoring network - Stage 2 at <a href="http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf">http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf</a> . Refer to Figure 23 (page 63) where locations of Stage 1 and proposed Stage 2 monitoring bores and VVPs are shown.	Stage 2 CSG WMMP; Discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (ii).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine that it requires (ii) to be addressed in the groundwater quality and quantity monitoring plan	Y
52.1.c.iii. the frequency of the monitoring and rationale for the frequency;	Disclosed in the Stage 2 CSG WMMP Establishing a comprehensive monitoring network – Stage 2 at <a href="http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf">http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf</a> Refer to Section 5.6 Monitoring Data Needs, Monitoring Timing.  Through discussion, confirmed that no exceedents have occurred. This was corroborated with a document review. The supporting documentation confirmed that drawdown limits have not been reached.	Stage 2 CSG WMMP; Discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (iii).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine that it requires (iii) to be addressed in the groundwater quality and quantity monitoring plan	Y
52.1.c.vi. groundwater drawdown threshold values and groundwater quality threshold values for each aquifer (based on regional groundwater modelling endorsed by the Minister) at which management actions (such as reporting or control line values for additional investigation, more intensive management action, make good, and cease operations) will be initiated to respond to escalating levels of risk, including increasing levels of drawdown, contamination of groundwater, or subsidence;	Disclosed under the Stage 2 CSG WMMP Appendices at <a href="http://www.bggroupp.com/files/pdf/qgc/Appendix_G.1_Groundwater_Monitoring_Plan.pdf">http://www.bggroupp.com/files/pdf/qgc/Appendix_G.1_Groundwater_Monitoring_Plan.pdf</a> Refer to Section 2.3 Monitoring trigger thresholds and 2.3.1 Water Levels.	Stage 2 CSG WMMP	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (vi).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine that it requires (iv) to be addressed in the groundwater quality and quantity monitoring plan	Y
52.1.c.vii. references to standards and relevant policies and guidelines;	Disclosed in the Stage 2 CSG WMMP Establishing a comprehensive monitoring network – Stage 2 at <a href="http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf">http://www.bg-group.com/files/pdf/qgc/5.0_-_establishing_a_comprehensive_monitoring_network_-_stage_2.pdf</a> Refer to Section 5.9 Installing bores for monitoring.	Stage 2 CSG WMMP	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (vii).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine that it requires (vii) to be addressed in the groundwater quality and quantity monitoring plan	Y
52.1.c.ix. performance measures, annual reporting to the Department, and publication of reports on the internet;	Disclosed in the Stage 2 CSG WMMP Reporting at <a href="http://www.bg-group.com/files/pdf/qgc/16.0_-_reporting.pdf">http://www.bg-group.com/files/pdf/qgc/16.0_-_reporting.pdf</a>  Refer to Section 16.1 Reporting obligations which includes QGC's commitment to reporting in conformance with the conditions of approval EPBC 2008/4398 which includes performance measures, annual reporting to the SEWPAC, and publication of reports on the internet.	Stage 2 CSG WMMP	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (ix).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine that it requires (ix) to be addressed in the groundwater quality and quantity monitoring plan	Y
<b>Note 1:</b> Threshold values will be identified in the plan and during the life of the approval and related conditions may be varied by the Minister on advice from an expert panel to reflect the best available data and scientific information.					
<b>Note 2:</b> For clarity, the monitoring required under this condition may be undertaken jointly with others.					

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
<b>Criterion 2</b>	In addition to the matters in the Stage 1 CSG WMMP, the Stage 2 CSG WMMP must also include:  <b>Response actions</b> d. an exceedance response plan that includes: i. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if: I. threshold values for surface water quality and water environmental values specified in the CSG WMMP are exceeded; II. removed to Stage 3 WMMP; Note: A variation to the conditions was provided by the Minister for Sustainability, Environment, Water, Population and Communities in his letter approving the Stage 2 Water Monitoring and Management Plan (WMMP). The variation was provided following the consideration of advice given by The Expert Panel for Major Coal Seam Gas Projects and included the removal of a number of conditions relating to the Stage 1 and Stage 2 WMMP to the Stage 3 WMMP. III. removed to Stage 3 WMMP; Note: As per previous note. IV. removed to Stage 3 WMMP; Note: As per previous note; and, ii. [removed to Stage 3 WMMP.] Note: As per previous note. Note: The design of these groundwater repressurisation activities must be informed by a regional-scale groundwater model and a hydrochemical model approved by the Minister.				
52.2.d. an exceedance response plan that includes:	Confirmed that the Stage 2 CSG WMMP included an Exceedance Response Plan. Refer to: <a href="http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf">http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf</a>	Stage 2 CSG WMMP		1. Review the Stage 2 CSG WMMP to determine if it includes an Exceedance Response Plan, including the following aspects:	Y
52.2.d.i. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if:	Disclosed in the Stage 2 CSG WMMP Appendix U Draft exceedance response plans at <a href="http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf">http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf</a> Refer to Section 1.0 Exceedance response plans which include mechanisms to avoid, minimise and manage risks of adverse impacts and response actions and timeframes.	Stage 2 CSG WMMP		1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine that it requires (i) to be addressed in the Exceedance Response Plan	Y
52.2.d.i.l. threshold values for surface water quality and water environmental values specified in the CSG WMMP are exceeded;	Disclosed in the Stage 2 CSG WMMP Appendix U Draft exceedance response plans at <a href="http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf">http://www.bg-group.com/files/pdf/qgc/Appendix_U_Draft_Exceedance_Response_Plan.pdf</a>  Refer to Section 2.0 Threshold values for surface water quality and water environmental values are exceeded. Through discussion, confirmed that there has never been a discharge of produced water to the watercourse.	Stage 2 CSG WMMP	In addition to the matters in the Stage 1 CSG WMMP, check that the Stage 2 CSG WMMP includes requirement (l).	1. Review the Stage 2 CSG WMMP with respect to groundwater monitoring and management to determine that it requires (i l) to be addressed in the Exceedance Response Plan	Y
<b>Note: The design of these groundwater repressurisation activities must be informed by a regional-scale groundwater model and a hydrochemical model approved by the Minister.</b>					
<b>EPBC 2008/4398 Condition 53</b>	The proponent must implement the approved Stage 2 WMMP no later than 26 months from the date of the project approval.				
53.1 The proponent must implement the approved Stage 2 WMMP no later than 26 months from the date of the project approval.	Inspected the project approval and noted the approval date was 22/10/2010 . Inspection of the Stage 2 approval noted the approval date was 21/12/2012. This is 26 months from the date of project approval.  Through inspection of the 2013 annual report, it was confirmed that the Stage 2 Plan was implemented. Furthermore, obtained evidence that the Stage 2 Plan was approved, which would not have occurred had the Stage 2 Plan not been approved.	QGC 2013 WMMP Annual Report	Check that the approved Stage 2 WMMP was implemented no later than 26 months from the date of the project approval.	1. The implementation of this plan will be assessed only up until the time of the Stage 3 CSG WMMP is approved and is brought into effect. Refer to Checklist.  2. Review implementation date of Stage 2 CSG WMMP against the date of the project approval to confirm implementation within 26 months of the project approval.	Y
<b>Indicator</b>	<b>Independent auditor Comments</b>	<b>Measurements made</b>	<b>Requirement</b>	<b>Verification Method</b>	<b>Compliance finding</b>
<b>Implementation of Stage 1 and Stage 2 CSG WMMP</b>					
<b>EPBC 2008/4398 Condition 53A</b>	Within 33 months from the date of the approval of the action the proponent must submit for the approval of the Minister, a Stage 3 Coal Seam Gas Water Monitoring and Management Plan (Stage 3 CSG WMMP). The proponent must allow at least a further 3 months for the Minister's consideration of approval of the Stage 3 CSG WMMP including seeking advice from an expert panel.				
<b>Criterion 1</b>	Within 33 months from the date of the approval of the action the proponent must submit for the approval of the Minister, a Stage 3 Coal Seam Gas Water Monitoring and Management Plan (Stage 3 CSG WMMP).				
53A. Within 33 months from the date of the approval of the action the proponent must submit for the approval of the Minister, a Stage 3 Coal Seam Gas Water Monitoring and Management Plan (Stage 3 CSG WMMP)	Obtained evidence of QGC's QCLNG Project Approval dated 20 October 2010 and also written approval of the Stage 3 CSG WMMP from the Minister to the Managing Director, QGC dated 19 December 2013 stating that the Stage 3 WMMP was submitted by QGC on 22 July 2013. Given that the submission of the Stage 3 WMMP was within 33 months from the date of the project approval, it is in accordance with the audit criteria and methodology requirements.	QGC's submission of the Stage 3 CSG WMMP to the DSEWPac	Check that the proponent has submitted for the approval of the Minister a Stage 3 Coal Seam Gas Water Monitoring and Management Plan (Stage 3 CSG WMMP), within 33 months from the date of the approval of the action.	1. Obtain copy of the Stage 3 CSG WMMP submitted to the Minister for written approval and verify timeframe for submission outlined in criteria 53A.1 against the evidence of project approval obtained.	Y
<b>Criterion 2</b>	The proponent must allow at least a further 3 months for the Minister's consideration of approval of the Stage 3 CSG WMMP including seeking advice from an expert panel.				
53A.2 The proponent must allow at least a further 3 months for the Minister's consideration of approval of the Stage 3 CSG WMMP including seeking advice from an expert panel.	Obtained evidence of Minister's consideration of approval of the Stage 3 CSG WMMP. Per evidence, Minister's consideration of approval date is 19 December 2013. Given that the proponent allowed a further 3 months for the Minister's consideration of approval of the Stage 3 CSG WMMP, it is in accordance with the audit criteria and methodology requirements.	Approval of Stage 3 CSG WMMP	Check that the proponent has allowed at least a further 3 months for the Minister's consideration of approval of the Stage 3 CSG WMMP including seeking advice from an expert panel.	1. Review project development plans to verify that the proponent allowed for at least an additional 3 months for the Minister's consideration of the approval of the Stage 3 CSG WMMP including seeking advice from the expert panel, prior to scheduled commencement of the next Stage 3 plans.	Y
<b>EPBC 2008/4398 Condition 53B</b>	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, the Stage 3 CSG WMMP must also include: a. a program and schedule for aquifer connectivity studies and monitoring of relevant aquifers to determine hydraulic connectivity; b. details of constituent components of any hydraulic fracturing agents and any other reinjected fluid(s), and their toxicity as individual substances and as total effluent toxicity and ecotoxicity, based on methods outlined in the National Water Quality Management Strategy; c. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if there are any unforeseen emergency discharges; d. a groundwater quality and quantity monitoring plan to monitor the aquifers underlying the project area using a statistically and hydrogeologically valid , best practice bore monitoring network across the project area, and at least: i. baseline data for each monitoring site for comparison of monitoring results over the life of the project; ii. the approach to be taken to analyse the results including the methods to determine trends to indicate potential impacts; and iii. mechanisms to monitor, avoid, minimise, manage, and respond to risks. Note 1: For clarity, the monitoring required under this condition may be undertaken jointly with others. e. an exceedance response plan that includes: i. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if: I. threshold values specified in the CSG WMMP for aquifer drawdown or groundwater contamination are exceeded ; II. subsidence or surface deformation occurs which impacts on surface or groundwater hydrology ; III. there are any unforeseen emergency discharges ; and ii. a program and timetable for repressurisation using re-injection of CSG water from hydraulically connected aquifers back into appropriate permeable aquifers and for other groundwater repressurisation options to re-establish pressure levels and water qualities to the satisfaction of the Minister on the advice of an expert panel, in conjunction with appropriate measures to forecast and proactively manage any term impacts. Note: The design of these groundwater repressurisation activities must be informed by a regional-scale groundwater model and a hydrochemical model approved by the Minister.				
53B. In addition to the matters in the Stage 1 CSG WMMP and Stage 2 CSG WMMP, the Stage 3 CSG WMMP must also include:	Obtained a copy of the Stage 3 CSG WMMP documentation and assessed the inclusion of the following:	Stage 3 CSG WMMP		In addition to verifying that the Stage 3 CSG WMMP includes all matters required in the Stage 1 CSG WMMP and Stage 2 CSG WMMP identified above, assess whether the Stage 3 CSG WMMP satisfies the following requirements:	Y
<b>Criterion 1</b>	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, the Stage 3 CSG WMMP must also include:				

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
53B. a program and schedule for aquifer connectivity studies and monitoring of relevant aquifers to determine hydraulic connectivity	Disclosed in the Stage 3 CSG WMMP Connectivity of aquifers and aquitards at <a href="http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_7.0.pdf">http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_7.0.pdf</a> Refer to Section 7.1 Overview of connectivity program which includes a program and schedule for aquifer connectivity studies and monitoring of relevant aquifers to determine hydraulic connectivity  Through discussion, confirmed that the reinjection program was not implemented. This was corroborated through inspection of letters to the Department, advising the program has been not commenced.	Stage 3 CSG WMMP; discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (a).	1. Review the Stage 3 CSG WMMP and verify that the requirements specified in 53B a are addressed	Y
<b>Criterion 2</b>					
53B. b Details of constituent components of any hydraulic fracturing agents and any other reinjected fluid(s), and their toxicity as individual substances and as total effluent toxicity and ecotoxicity, based on methods outlined in the National Water Quality Management Strategy;	Details of constituent components of any hydraulic fracturing agents and any other reinjected fluid(s), and their toxicity as individual substances As per the letter titled 'EPBC Act Approval 2008/4398 - Approved Stage 3 WMMP' sent to the DoE by QGC on 22 December 2014, the Golder Associates Report (Confidential) provides a hydraulic stimulation risk assessment inclusive of identification of agent constituent components and their toxicity as per this Conditions requirements.	QGC's letter to the DoE entitled 'EPBC Act Approval 2008/4398 - Approved Stage 3 WMMP'	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (b).	1. Review the Stage 3 CSG WMMP and verify that the requirements specified in 53B b are addressed	Y
<b>Criterion 3</b>					
53B. c Mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if there are any unforeseen emergency discharges;	Mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if there are any unforeseen emergency discharges; Disclosed in the Stage 3 CSG WMMP Water management - Emergency discharge plans at <a href="http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_16.0.pdf">http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_16.0.pdf</a> This document presents the QGC Upstream Gas Field - Unforeseen Emergency Discharge Plan (UEDP) for the QCLNG project. Refer to Section 16.6.1, Regulated dam collapse, breach or overflow (CSG Water or brine), Table 16-4 which provides a summary of typical mechanisms to avoid, minimise and manage risks of emergency discharge from regulated storages.  Through discussion, confirmed that the emergency discharge procedure has not been activated, and as such, this condition is not applicable.	Stage 3 CSG WMMP; Discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (c).	1. Review the Stage 3 CSG WMMP and verify that the requirements specified in 53B c are addressed	Y
<b>Criterion 4</b>					
53B. d.a groundwater quality and quantity monitoring plan to monitor the aquifers underlying the project area using a statistically and hydrogeologically valid, best practice bore monitoring network across the project area, and at least:	A groundwater quality and quantity monitoring plan to monitor the aquifers underlying the project area using a statistically and hydrogeologically valid, best practice bore monitoring network across the project area, and at least: Disclosed in the Stage 3 CSG water monitoring and management plan identifying the Conceptual Model of Groundwater flow in the Surat Basin at <a href="http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_5.0.pdf">http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_5.0.pdf</a>  Supported under the Stage 3 CSG WMMP Appendices at <a href="http://www.bg-group.com/files/pdf/qgc/appendix_e.2.1.pdf">http://www.bg-group.com/files/pdf/qgc/appendix_e.2.1.pdf</a> Refer to Appendix E.2.1 - Monitoring implementation table.	Stage 3 CSG WMMP		1. Review the Stage 3 CSG WMMP and verify that the requirements specified in 53B d are addressed	Y
53B.d.i. data for each monitoring site for comparison of monitoring results over the life of the project	Disclosed in the Stage 3 CSG water monitoring and management plan at <a href="http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_4.0.pdf">http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_4.0.pdf</a>  Through discussion it was noted that monitoring and analysis of trends are reported frequently to QGC through data loggers, physical sampling and subsequent trend analysis of data performed on an ongoing basis. Inspection of the Sample Pressure and Water Quality Data noted that pressure and water quality data has been provided for the 12 sample wells (refer to 'Samples - wells' for list of sampled wells). The sampled wells represent a 10% sample of wells.	Stage 3 CSG WMMP; discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (i).	1. Review the Stage 3 CSG WMMP to determine that it requires (d i) to be addressed in the groundwater quality and quantity monitoring plan	Y
53B.4.d.ii. the approach to be taken to analyse the results including the methods to determine trends to indicate potential impacts	Disclosed in the Stage 3 CSG water monitoring and management plan at <a href="http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_4.0.pdf">http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_4.0.pdf</a>  Through discussion it was noted that monitoring and analysis of trends are reported frequently to QGC through data loggers, physical sampling and subsequent trend analysis of data performed on an ongoing basis. Inspection of the Sample Pressure and Water Quality Data noted that pressure and water quality data has been provided for the 12 sample wells (refer to 'Samples - wells' for list of sampled wells). The sampled wells represent a 10% sample of wells.	Stage 3 CSG WMMP; discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (ii).	1. Review the Stage 3 CSG WMMP to determine that it requires (d ii) to be addressed in the groundwater quality and quantity monitoring plan	Y
53B.4.d.iii. mechanisms to monitor, avoid, minimise, manage, and respond to risks	Disclosed in the Stage 3 CSG water monitoring and management plan at <a href="http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_4.0.pdf">http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_4.0.pdf</a>  Through discussion it was noted that, in regards to the WTF, a two day capacity of stage 1 process treated water is maintained as a buffer between the warning system and actions being implemented (i.e. warnings are caught early in stage 1 treatment process).	Stage 3 CSG WMMP; discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (iii).	1. Review the Stage 3 CSG WMMP to determine that it requires (d iii) to be addressed in the groundwater quality and quantity monitoring plan	Y
<b>Note 1: For clarity, the monitoring required under this condition may be undertaken jointly with others.</b>					
<b>Criterion 5</b>					
53B.5.e An exceedance response plan that includes:	An exceedance response plan that includes: Confirmed the inclusion of an Exceedance Response Plan as part of the Stage 3 CSG WMMP; <a href="http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_16.0.pdf">http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_16.0.pdf</a>	Stage 3 CSG WMMP		1. Review the Stage 3 CSG WMMP to determine if it includes an Exceedance Response Plan, including the following aspects:	Y
53B.5.e.i. mechanisms to avoid, minimise and manage risk of adverse impacts and response actions and timeframes that can be taken by the proponent if:	Confirmed that the groundwater response plans and actions included in the Stage 3 CSG WMMP included mechanisms to avoid, minimise and manage risk.  Through discussion, it was noted that a 'Barrier Model' (e.g. Swiss Cheese Model) is applied to risk management processes across the Water Monitoring Program'. There are engineered redundancies and fail-safes in the process including, for example, overflow back to Stage 1 treatment and bunding of the WTP chemical storage and loading area.	Stage 3 CSG WMMP; discussions with a Proponent representative		1. Review the Stage 3 CSG WMMP to determine that it requires (e i) to be addressed in the Exceedance Response Plan  2. Review regional-scale groundwater model and hydrochemical model approved by the Minister  3. Hold discussions with responsible and/or accountable management and review supporting underlying processes and procedures in place to avoid, minimise and manage the risk of adverse impacts and response actions, as well as required timeframes for managing the following:	Y

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
53B.5.e.i. I. threshold values specified in the CSG WMMP for aquifer drawdown or groundwater contamination are exceeded	Confirmed that the groundwater response plans and actions included in the Stage 3 CSG WMMP included response plans for if threshold values for aquifer drawdown or groundwater contamination are exceeded. These plans are located in Section 13 on Page 212 of the Stage 3 WMMP.	Stage 3 CSG WMMP	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (I).	1. Review the Stage 3 CSG WMMP to determine that it requires (e.i I) to be addressed in the Exceedance Response Plan	Y
53B.5.e.i.II. subsidence or surface deformation occurs which impacts on surface or groundwater hydrology	Confirmed that the groundwater response plans and actions included in the Stage 3 CSG WMMP included response plans for if subsidence or surface deformation occurs which impacts on surface or groundwater hydrology. These plans are located in Section 13 on Page 212 of the Stage 3 WMMP.  Inspected Ground Motion Progress Report 2014 and noted that an update is provided on the Monitoring Data Acquisition Program.	Stage 3 CSG WMMP; Ground Motion Progress Report 2014 Discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (II).	1. Review the Stage 3 CSG WMMP to determine that it requires (e.i II) to be addressed in the Exceedance Response Plan	Y
53B.5.e.i.III. there are any unforeseen emergency discharges	Confirmed that the emergency discharge plan included in the Stage 3 CSG WMMP included processes for uncontrolled discharge of CSG water, brine or chemicals.  Through discussion, confirmed that the emergency discharge procedure has not been activated, and as such, this condition is not applicable.	Stage 3 CSG WMMP	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (III).	1. Review the Stage 3 CSG WMMP to determine that it requires (e.i III) to be addressed in the Exceedance Response Plan	NA
53B.5.e.ii. a program and timetable for repressurisation using re-injection of CSG water from hydraulically connected aquifers back into appropriate permeable aquifers and for other groundwater repressurisation options to re-establish pressure levels and water qualities to the satisfaction of the Minister on the advice of an expert panel, in conjunction with appropriate measures to forecast and proactively manage any short-term impacts.	Confirmed that the groundwater response plans and actions included in the Stage 3 CSG WMMP included a program and timetable for repressurisation. <a href="http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_13.0.pdf">http://www.bg-group.com/files/pdf/qgc/qgc_stage_3_wmmp_dec_13_13.0.pdf</a> Information on Groundwater reinjection is on page ES28 and in section 12 of the stage 3 WMMP.  Through discussion with QGC's Lead Compliance & Reporting Advisor confirmed that the reinjection program was not implemented. This was corroborated through inspection of letters to the Department, advising the program has been not commenced.	Stage 3 CSG WMMP; discussions with a Proponent representative	In addition to the matters in the Stage 1 CSG WMMP and the Stage 2 CSG WMMP, check that the Stage 3 CSG WMMP includes requirement (ii).	1. Review the Stage 3 CSG WMMP to verify that it requires (e ii) to be addressed in the Exceedance Response Plan	Y
<i>Note: The design of these groundwater repressurisation activities must be informed by a regional-scale groundwater model and a hydrochemical model approved by the Minister.</i>					
<b>Indicator</b>	<b>Independent auditor Comments</b>	<b>Measurements made</b>	<b>Requirement</b>	<b>Verification Method</b>	<b>Compliance finding</b>
<b>Implementation of Stage 3 CSG WMMP</b>					
<b>EPBC 2008/4398</b> <b>Condition 53C</b>	The proponent must implement the approved Stage 3 CSG WMMP, no later than 38 months from the date of the project approval.				
53C.1 The proponent must implement the approved Stage 3 CSG WMMP, no later than 38 months from the date of the project approval.	Inspected the project approval and noted the approval date was 22/10/2010. Inspection of the Stage 3 approval noted the approval date was 19/12/2013. This is within the 38 month timeframe.  Inspection of the 2015 Annual Report noted that the Stage 3 Plan has been implemented.	QGC's 2015 WMMP Annual Report	Check that the proponent implemented the approved Stage 3 CSG WMMP, no later than 38 months from the date of the project approval.	1. Review implementation date of Stage 3 CSG WMMP against the date of the project approval to confirm implementation within 38 months of the project approval.  2. Refer to Checklist.	Y
<b>EPBC 2008/4398</b> <b>Condition 54</b>	Three months before commencement of each subsequent major stage of the proponent's gas field development the proponent must submit a revised Stage 3 CSG WMMP for the consideration of approval of the Minister including seeking the advice of an expert panel.				
54.1 Three months before commencement of each subsequent major stage of the proponent's gas field development the proponent must submit a revised Stage 3 CSG WMMP for the consideration of approval of the Minister including seeking the advice of an expert panel.	Confirmed via discussion with QGC's Lead Compliance & Reporting Advisor, QCLNG Land and Environment and review of publicly available information that no subsequent major stages of gas field development have taken place for the QCLNG project up to the time of the approval of the Stage 3 CSG WMMP.	Discussions with a Proponent representative	Check that the proponent submitted a revised Stage 3 CSG WMMP for the consideration of approval of the Minister including seeking the advice of an expert panel, three months before commencement of each subsequent major stage of the proponent's gas field development.	1. Obtain evidence of the proponent's gas field development plans highlighting the commencement dates of the major stages of development  2. Obtain evidence of the proponent's submission of revised Stage 3 CSG WMMP for approval by the Minister, including seeking advice from expert panel, and verify that revised Stage 3 CSG WMMPs were submitted at least three months prior to the commencement of the subsequent major development stage.	NA
<b>EPBC 2008/4398</b> <b>Condition 55</b>	The Coal Seam Gas Water Monitoring and Management Plan should be based on the proponent's planned staged development within the project area over the total life of the project consistent with approvals granted by the Queensland Government. <i>Note: Condition 88 requires notification of commencement of major stages of gas field development.</i>				
<b>Criterion 1</b>	The Coal Seam Gas Water Monitoring and Management Plan should be based on the proponent's planned staged development within the project area over the total life of the project is consistent with approvals granted by the Queensland Government.				
55.1 The Coal Seam Gas Water Monitoring and Management Plan should be based on the proponent's planned staged development within the project area over the total life of the project consistent with approvals granted by the Queensland Government.	Confirmed that the stage 3 CSG water monitoring and management plan included acknowledgment that the development period is 50 years, to 31 October 2060. This is consistent with the expiry date of the approval, which is noted in the Project Approval.  The Stage 3 WMMP is consistent with Queensland State approvals. a review of the conditions relating to the state approvals that would be relevant to the WMMP's, was completed. These conditions relate to: • general statements relating to not causing environmental harm while extracting groundwater; • conditions relating to the Stimulation of wells which is also covered within the WMMP; and, • regulated structures such as dams which is also covered within the WMMP.	Stage 3 CSG WMMP	Check that the Coal Seam Gas Water Monitoring and Management Plan is based on the proponent's planned staged development within the project area over the total life of the project is consistent with approvals granted by the Queensland Government.	1. Hold discussion with responsible and/or accountable management to determine how the proponent's CCSG WMMP was based on the planned staged development within the project area over the total life of the project in accordance with approvals granted by the Queensland Government  2. Understand from discussions with responsible and/or accountable management whether any significant deviations from the planned staged development within the project area has taken place, the rationale for these changes, subsequent approvals received from the Queensland Government and whether the CSG WMMP required updating to reflect these changes  3. Evaluate the CSG WMMP against the Queensland Government approvals for planned staged development within the project area.	Y
<i>Note: Condition 88 requires notification of commencement of major stages of gas field development.</i>					
<b>EPBC 2008/4398</b> <b>Condition 56</b>	The proponent may only have, own, hold, take, or otherwise utilise sufficient CSG water as is required to undertake the approved activities within the approved project area.				
56.1 The proponent may only have, own, hold, take, or otherwise utilise sufficient CSG water as is required to undertake the approved activities within the approved project area.	Disclosed in the QGC WMMP Annual report 2014, Figure 3-3, Actual and predicted water production profile. It is noted that QGC has been below the predicted water taken.  Discussions were held with responsible and accountable management to understand the proponent's approach for satisfying the requirement of 56.1. It was determined that the level of produced water that QGC have, own, hold, take or otherwise utilise is well below produced water modelling prepared. Produced water trends are well below modelled consumption trends, which is evidenced by a stated 15% running capacity at the WTF in the Northern Development Area (Woleebee Creek).	QGC 2014 WMMP Annual Report; discussions with a Proponent representative	Check if the proponent had, owned, held, took, or otherwise utilised sufficient CSG water as is required to undertake the approved activities within the approved project area.	1. Hold discussions with responsible and/or accountable management to understand proponent's approach for satisfying the requirements of 56 (1)  2. Review underlying studies against across CSG water consumption trends across the project period to date and request explanation from proponent for the rationale associated with any significant variation identified between the planned consumption and actual CSG water consumption.	Y
<b>EPBC 2008/4398</b> <b>Condition 57</b>	The Stage 1, Stage 2 and Stage 3 CSG WMMP as approved by the Minister in writing acting on advice of an expert panel and in accordance with the timing requirements under these conditions must be implemented. <i>Note: The Queensland Coordinator-General also requires surface water and groundwater monitoring and management. The proponent may incorporate requirements into plans that meet both Queensland and Commonwealth requirements.</i>				

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
57.1 The Stage 1, Stage 2 and Stage 3 CSG WMMP as approved by the Minister in writing acting on advice of an expert panel and in accordance with the timing requirements under these conditions must be implemented.	<p>Per discussion with QGC's Lead Compliance &amp; Reporting Advisor, QCLNG Land and Environment, the following was confirmed:</p> <p><u>Stage 2 WMMP</u> In relation to the first version of Expert Panel comments (April 2012) version, these were addressed in a second version of the Plan in September 2012. Itemised responses to each comment prepared by QGC were presented to DTT for review. Subsequently a final version of the Stage 2 Plan was submitted in December 2012. Proponent Representative (Compliance Advisor) advised that, during the Stage 2 Plan, he doesn't recall any formal responses to Expert Panel comments being provided to SEWPaC. Expert Panel comments were generally discussed in face-to-face meetings in Canberra with either the full Expert Panel or only some representatives (i.e. GA representatives). Proponent Representative (Compliance Advisor) recalls attending two meetings.</p> <p><u>Stage 1 WMMP</u> During Stage 1 there was communication between SEWPaC and QGC post the submission of the Stage 1 WMMP in April 2011. DTT were provided an example of a QGC response to the first Expert Panel comments in August 2011.</p> <p><u>Stage 3 WMMP</u> In relation to the Stage 3 Plan, the first version was submitted to the DoE on 22 July 2013. Expert Panel comments were received from the DoE on 4 November 2013 and responses were incorporated in a revised version submitted on 22 November 2013. Further revisions were subsequently made in the version submitted 2 December which was approved. Inspection of the approval letter noted reference to revisions.</p>	Discussions with a Proponent representative	Check that the Stage 1, Stage 2 and Stage 3 CSG WMMP as approved by the Minister in writing acting on advice of an expert panel and in accordance with the timing requirements under these conditions was implemented.	1. Obtain evidence of written approvals from the Minister acting on advice from the expert panels with respect to the Stage 1, Stage 2 and Stage 3 WMMPs and verify that these WMMPs were implemented in accordance with the specified timing requirements.	Y
<i>Note: The Queensland Coordinator-General also requires surface water and groundwater monitoring and management. The proponent may incorporate requirements into plans that meet both Queensland and Commonwealth requirements.</i>					
Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
<b>Revisions of Stage 1, Stage 2 and Stage 3 CSG WMMP</b>					
<b>EPBC 2008/4398 Condition 58</b>	Consistent with an adaptive management approach the Stage 3 CSG WMMP must be reviewed and updated for each new stage of gas field development: to take into account of major updates to the Regional Groundwater Model; and to address findings of Cumulative Impact Assessment Reports required by the Queensland Government and these conditions of this approval.				
58.1 Consistent with an adaptive management approach the Stage 3 CSG WMMP must be reviewed and updated for each new stage of gas field development: to take into account of major updates to the Regional Groundwater Model; and to address findings of Cumulative Impact Assessment Reports required by the Queensland Government and these conditions of this approval.	<p>Confirmed via discussion with QGC's Lead Compliance &amp; Reporting Advisor, QCLNG Land and Environment and review of publicly available information that no new stages of gas field development have taken place for the QCLNG project prior to the approval of the Stage 3 CSG WMMP. DTT also confirmed that the Regional Groundwater Model has not been updated.</p> <p>It is noted that discussion with the Proponents Representative revealed that QGC's groundwater model for the Queensland Office of Groundwater Impact Assessment (OGIA) has been updated but is not yet publicly available. The Proponent Representative also indicated that the Surat North Project has subsequently been approved. A Surat North Project WMMP has been submitted to DoE and a Stage 4 WMMP is in preparation in accordance with commitments made in the Stage 3 WMMP.</p>	Discussions with a Proponent representative	Consistent with an adaptive management approach, check that the Stage 3 CSG WMMP has been reviewed and updated for each new stage of gas field development: to take into account of major updates to the Regional Groundwater Model; and to address findings of Cumulative Impact Assessment Reports required by the Queensland Government and these conditions of this approval.	<p>1. Hold discussions with responsible and/or accountable management to review the proponent's approach to reviewing and updating the Stage 2 CSG WMMP for each new stage of gas field development, to take into account the major updates to the Regional Groundwater Model; and to address findings of the Cumulative Impact Assessments Reports required by the Queensland Government and these conditions of this approval</p> <p>2. Obtain supporting evidence, including evidence of updated Stage 3 CSG WMMPs, to confirm that above requirements for were satisfied.</p>	NA
<b>EPBC 2008/4398 Condition 59</b>	A reviewed and updated Stage 3 CSG WMMP must be submitted to the Minister for written approval. Commencement of each new stage of gas field development must not occur without approval. The proponent may undertake activities that are critical to commencement that are associated with mobilisation of plant and equipment, materials, machinery and personnel prior to the start of development only if such activities will have no adverse impact on MNES, and only if the proponent has notified the Department in writing before the activity is undertaken. The approved CSG WMMP must be implemented for the relevant gas field area.				
<b>Criterion 1</b>	A reviewed and updated Stage 3 CSG WMMP must be submitted to the Minister for written approval.				
59.1 A reviewed and updated Stage 3 CSG WMMP must be submitted to the Minister for written approval.	Refer to Auditor comments in 58.1.	Discussions with a Proponent representative	Check that a reviewed and updated Stage 3 CSG WMMP has been submitted to the Minister for written approval.	1. Obtain evidence to verify that all reviewed and updated Stage 3 CSG WMMPs were submitted to the Minister for written approval, including the date of submission.	NA
<b>Criterion 2</b>	Commencement of each new stage of gas field development must not occur without approval.				
59.2 Commencement of each new stage of gas field development must not occur without approval.	Refer to Auditor comments in 58.1.	Discussions with a Proponent representative	Check that the commencement of each new stage of gas field development did not occur without approval.	<p>1. Obtain evidence to determine the commencement date of each new stage of gas field development</p> <p>2. Review evidence to determine that each new stage of gas field development did not occur without written approval from the Minister.</p>	NA
<b>Criterion 3</b>	The proponent may undertake activities that are critical to commencement that are associated with mobilisation of plant and equipment, materials, machinery and personnel prior to the start of development only if such activities will have no adverse impact on MNES, and only if the proponent gas notified the Department in writing before the activity is undertaken.				
59.3 The proponent may undertake activities that are critical to commencement that are associated with mobilisation of plant and equipment, materials, machinery and personnel prior to the start of development only if such activities will have no adverse impact on MNES, and only if the proponent has notified the Department in writing before the activity is undertaken.	Refer to Auditor comments in 58.1.	Discussions with a Proponent representative	Check that the proponent only undertakes activities that are critical to commencement that are associated with mobilisation of plant and equipment, materials, machinery and personnel prior to the start of development only if such activities will have no adverse impact on MNES, and only if the proponent gas notified the Department in writing before the activity is undertaken.	<p>1. Hold discussions with responsible and/or accountable management to understand the proponent's approach to undertaking activities critical to the commencement, as outlined in 59.3, prior to receipt of written approval by the Minister, but with notification provided to the Department in writing before the activity is undertaken</p> <p>2. Obtain evidence of any such notifications provided to the Department and review against the nature of activities, evidence that these activities would have no impact on MNES and timing of these activities against the notification date.</p>	NA
<b>Criterion 4</b>	The approved CSG WMMP must be implemented for the relevant gas field area.				
59.4 The approved CSG WMMP must be implemented for the relevant gas field area.	<p>Inspection of the Stage 3 WMMP noted that the Surat Basin is specified.</p> <p>Refer to 53.1 and 53C.1 for evidence that the Stage 2 and 3 CSG WMMPs were approved and implemented (including implementation date). Refer to WMMP 3 Checklist for further evidence of compliance.</p>	Stage 3 CSG WMMP	Check that the approved CSG WMMP has been implemented for the relevant gas field area.	1. Obtain evidence that approved CSG WMMP was implemented in the relevant gas field area, including evidence of the implementation date.	Y
<b>EPBC 2008/4398 Condition 60</b>	The Minister may, through a request in writing, require that the Stage 1, Stage 2 or Stage 3 CSG WMMP be revised or amended, which may include requirements for amendments to address independent expert advice. Any such request must be acted on within the timeframe specified. <i>Note: The Minister may throughout the project life seek advice from experts, or an expert panel. As a consequence specific matters identified through such advice may need to be addressed in the Plan. Where such advice is sought the proponent would be provided with opportunity to submit information and respond to the specific matters identified, in order to ensure the Plan is based on the best available information. Review requirements will facilitate adaptive management, alignment with Queensland Government approval requirements, and account for potential cumulative impacts as new scientific information becomes available over the life of the project.</i>				
<b>Criterion 1</b>	The Minister may, through a request in writing, require that the Stage 1, Stage 2 or Stage 3 CSG WMMP be revised or amended, which may include requirements for amendments to address independent expert advice. Any such request must be acted on within the timeframe specified.				

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
60.1 The Minister may, through a request in writing, require that the Stage 1, Stage 2 or Stage 3 CSG WMMP be revised or amended, which may include requirements for amendments to address independent expert advice. Any such request must be acted on within the timeframe specified.	Obtained and reviewed evidence of letters from the Minister stating amendments to address independent expert advice through a request in writing. DTT notes that a full draft summary document was to be provided to the secretariat by 20 September 2011 and a revised Stage 1 WMMP be submitted to the department by 14 October 2011. The panel noted that QGC did not provide its full draft summary document within the requested timeframe. However, QGC provided it in person to the Panel at its meeting on 5 October 2011. The panel considered the document and advised that a finalised summary document be provided to the secretariat by close of business 21 October 2011.	Evidence of letters from the Minister stating amendments to address independent expert advice through a request in writing	Check if the Minister required that the Stage 1, Stage 2 or Stage 3 CSG WMMP be revised or amended, which may include requirements for amendments to address independent expert advice through a request in writing.  Check if any such request has been acted on within the timeframe specified.	1. Hold discussions with responsible and/or accountable management and check to see if the Minister required that the Stage 1, Stage 2 or Stage 3 CSG WMMP be revised or amended, which may include requirements for amendments to address independent expert advice through a request in writing.  2. Obtain evidence to determine if any such request has been acted on within the timeframe specified.	Y
<b>Note:</b> The Minister may throughout the project life seek advice from experts, or an expert panel. As a consequence specific matters identified through such advice may need to be addressed in the Plan. Where such advice is sought the proponent would be provided with opportunity to submit information and respond to the specific matters identified, in order to ensure the Plan is based on the best available information. Review requirements will facilitate adaptive management, alignment with Queensland Government approval requirements, and account for potential cumulative impacts as new scientific information becomes available over the life of the project.					
<b>EPBC 2008/4398 Condition 60A</b>	The proponent must treat all coal seam gas water as required under this approval before the coal seam gas water associated with the approved action enters the following pipelines: a. The Kenya to Chinchilla Pipeline referred to the Department (EPC 2011/6000) b. The Woleebee Creek to Glebe Weir pipeline (EPBC 2011/6181) Once the coal seam gas water has been treated as required under this approval and has entered the pipelines specified above, conditions 43-60 will no longer apply to that water.				
<b>Criterion 1</b>	The proponent must treat all coal seam gas water as required under this approval before the coal seam gas water associated with the approved action enters the following pipelines:				
60A. 1 The proponent must treat all coal seam gas water as required under this approval before the coal seam gas water associated with the approved action enters the following pipelines: a. The Kenya to Chinchilla Pipeline referred to the Department (EPC 2011/6000) b. The Woleebee Creek to Glebe Weir pipeline (EPBC 2011/6181)	Obtained evidence of Monitoring Compliance Reports for the two pipelines where the parameters are from the beneficial use agreement between QGC and Sunwater. It was confirmed that the data in the Monitoring Compliance Reports represents all results up until the month of the report.  An appropriate representative random sample was reviewed during the site visit. Veolia manages the WTF at Woleebee Creek and Kenya and provided an onscreen demonstration of monitoring and sampling results for the current treatment activity being conducted. The QGC Field Water Manager provided an overview of the sampling and systems failsafes for treated water prior to water custody transfer occurring in the approved pipelines between QGC and Sunwater.	Monitoring and Compliance Reports; Refer to Stage 3 CSG WMMP Checklist Reviewed Water Sampling Results in Veolia's Control Room (Woleebee Creek WTP) during site visit. Review of Sunwater BUA Agreement with QGC.	Check that the proponent treated all coal seam gas water as required under this approval before the coal seam gas water associated with the approved action entered pipeline (a) and pipeline (b).	1. Review the proponent's process and procedures in place for treating all coal seam gas water as required by the approval before the coal seam gas water associated with the approved project enters the following pipelines: - The Kenya to Chinchilla Pipeline referred to the Department (EPC 2011/6000) - The Woleebee Creek to Glebe Weir pipeline (EPBC 2011/6181)  2 - Review a representative random sample of no less than 10% of CSG water treatment results to determine that all coal seam gas water treated on the sample dates were completed in accordance with the approval prior to entering the Kenya to Chinchilla Pipeline referred to the Department (EPC 2011/6000) and the Woleebee Creek to Glebe Weir pipeline (EPBC 2011/6181).	Y
Once the coal seam gas water has been treated as required under this approval and has entered the pipelines specified above, conditions 43-60 will no longer apply to that water.					
<b>Indicator</b>	<b>Independent auditor Comments</b>	<b>Measurements made</b>	<b>Requirement</b>	<b>Verification Method</b>	<b>Compliance finding</b>
<b>Notification of threshold breaches and response actions</b>					
<b>EPBC 2008/4398 Condition 72</b>	Within 10 business days of the proponent identifying monitoring outcomes that indicate a risk of reduction in groundwater pressure or water quality, the proponent must notify the Minister in writing of and the proponent's response action.				
72.1 Within 10 business days of the proponent identifying monitoring outcomes that indicate a risk of reduction in groundwater pressure or water quality, the proponent must notify the Minister in writing of and the proponent's response action.	Discussions were held with responsible and/or accountable Management to understand the notification process and procedures. Discussions indicated that no notifications to the Minister have been required up to the present date due to no threshold breaches being recorded and/or response actions being implemented.	Discussions with a Proponent representative	Check that the proponent has notified the Minister in writing of the proponent's response action within 10 business days of the proponent identifying monitoring outcomes that indicate a risk of reduction in groundwater pressure or water quality.	1. Hold discussion with responsible and/or accountable management to understand: - The process and procedures in place that enable the proponent to identify monitoring outcomes that indicate a risk of reduction in groundwater pressure or water quality - The frequency with which monitoring outcomes have been identified that indicate a risk of reduction in groundwater pressure or water quality over the course of the project, and the proponent's approach to developing a response action  2. Obtain evidence of all notifications provided by QGC to the Minister in writing with respect threshold breaches and response actions associated with the identification of monitoring outcomes that indicated a risk of reduction in groundwater pressure or water quality  3. Assess the date of the notification and confirm inclusion of the trend and proponent's response actions.	Y
<b>EPBC 2008/4398 Condition 73</b>	Within 10 days of a surface or groundwater water threshold value (for example, water quality, environmental value, pressure, head, volume, or flow) being exceeded, the proponent must advise the Minister in writing of the circumstances, the threshold exceeded, the immediate action taken by the proponent, and proposed action to remedy the breach and avoid a subsequent breach.				
73.1 Within 10 days of a surface or groundwater water threshold value (for example, water quality, environmental value, pressure, head, volume, or flow) being exceeded, the proponent must advise the Minister in writing of the circumstances, the threshold exceeded, the immediate action taken by the proponent, and proposed action to remedy the breach and avoid a subsequent breach.	Confirmed via discussions with a Proponent representative that surface and groundwater threshold values had not been exceeded.	Discussions with a Proponent representative	Check that the proponent has advised the Minister in writing of the circumstances, the threshold exceeded, the immediate action taken by the proponent, and proposed action to remedy the breach and avoid a subsequent breach within 10 days of a surface or groundwater water threshold value (for example, water quality, environmental value, pressure, head, volume, or flow) being exceeded.	1. Hold discussion with responsible and/or accountable management to understand: - The process and procedures in place that enable the proponent to identify and quantify situations where surface or groundwater threshold value (for example, water quality, environmental value, pressure, head, volume, or flow) are being exceeded, approach to identifying and implementing immediate actions and approach to developing proposed actions to remedy such breaches and avoid subsequent breaches - The frequency of surface or groundwater threshold values being exceeded has been experienced across the project's duration  2. Obtain evidence of all notifications provided by QGC to the Minister in writing with respect surface or groundwater threshold values being exceeded, including communication of the circumstances, threshold exceeded, immediate action taken by the proponent, proposed action/s to remedy the breach and to avoid subsequent breaches  3. Assess the date of the notification submitted to the Minister	NA
<b>EPBC 2008/4398 Condition 74</b>	Immediate action may include a range of measures including but not limited to further monitoring and investigation, the ceasing of water/gas extraction and/or water discharge or use in the area affected, or such other measures as are appropriate, until investigations can be completed to determine the cause and remedial action. The proponent's proposed response action must be notified to the Minister in writing.				
<b>Criterion 1</b>	The proponent's proposed response action associated with a range of measures including but not limited to further monitoring and investigation, the ceasing of water/gas extraction and/or water discharge or use in the area affected, or such other measures as are appropriate, until investigations can be completed to determine the cause and remedial action. The proponent's proposed response must be notified to the Minister in writing.				

Indicator	Independent auditor Comments	Measurements made	Requirement	Verification Method	Compliance finding
74.1 The proponent's proposed response action associated with a range of measures including but not limited to further monitoring and investigation, the ceasing of water/gas extraction and/or water discharge or use in the area affected, or such other measures as are appropriate, until investigations can be completed to determine the cause and remedial action. The proponent's proposed response must be notified to the Minister in writing.	Confirmed via discussions with a Proponent representative that surface and groundwater threshold values had not been exceeded.	Discussions with a Proponent representative	Check that the proponent's proposed response action associated with a range of measures including but not limited to further monitoring and investigation, the ceasing of water/gas extraction and/or water discharge or use in the area affected, or such other measures as are appropriate, until investigations can be completed to determine the cause and remedial action, was notified to the Minister in writing.	1. In the event of surface or groundwater threshold values being exceeded, assess whether the immediate action taken included, but was not limited to, the measures outlined in Condition 74 2. Confirm via reference to evidence pertaining to the investigation that the immediate actions continued until investigations were completed, with the cause and remedial action determined 3. Confirm that the proponent's notification to the Minister for any instance of surface or groundwater threshold values being exceeded, obtained as part of Criteria 73, were communicated in writing.	NA
<b>Indicator</b>	<b>Independent auditor Comments</b>	<b>Measurements made</b>	<b>Requirement</b>	<b>Verification Method</b>	<b>Compliance finding</b>
<b>Notifications and requirements about construction, operation, brine management and environmental management plans</b>					
<b>EPBC 2008/4398</b>	The proponent must notify the Department in writing when developing or reviewing construction, operational, groundwater, CSG water, brine management, salinity management, environmental management, or other plans where the scope of the plans relates to potential direct, indirect or cumulative adverse impacts on MNES, or involves management of MNES. The proponent must in the notification indicate the relevant components of such plans relating to MNES and their management, and the timeframe for development and approval of the plans under Queensland Government requirements.				
<b>Condition 76</b>	The proponent must notify the Department in writing when developing or reviewing construction, operational, groundwater, CSG water, brine management, salinity management, environmental management, or other plans where the scope of the plans relates to potential direct, indirect or cumulative adverse impacts on MNES, or involves management of				
<b>Criterion 1</b>	The proponent must in the notification indicate the relevant components of such plans relating to MNES and their management, and the timeframe for development and approval of the plans under Queensland Government requirements.				
76.1 The proponent must notify the Department in writing when developing or reviewing construction, operational, groundwater, CSG water, brine management, salinity management, environmental management, or other plans where the scope of the plans relates to potential direct, indirect or cumulative adverse impacts on MNES, or involves management of MNES.	Through discussion with QGC's Lead Compliance & Reporting Advisor, QCLNG Land and Environment's confirmed QGC's approach to managing impacts upon the MNES. Evidence of the MNES assessment conducted was obtained and reviewed.  QGC's Lead Compliance & Reporting Advisor, QCLNG Land and Environment confirmed that the Stage 1 - WMMP identified the focus to be on Wieambilla Creek Discharge and Condamine River Catchment. There was a REMP Developed Specifically for Wieambilla Creek Discharge and Condamine River Catchment and it was developed in conjunction with the Stage 1 WMMP and was included in appendix to the Stage 1 WMMP. No update or redevelopment of the REMP was conducted and the REMP was not activated as QGC did not need to discharge to Wieambilla Creek.	Discussions with a Proponent representative; MNES assessment; REMP for Wieambilla Creek Discharge and Condamine River Catchment.	Check that the proponent has notified the Department in writing when developing or reviewing construction, operational, groundwater, CSG water, brine management, salinity management, environmental management, or other plans where the scope of the plans relates to potential direct, indirect or cumulative adverse impacts on MNES, or involves management of MNES.	1. Hold discussions with responsible and/or accountable management to understand the proponent's processes and accompanying procedures for identifying potential direct, indirect or cumulative adverse impacts on MNES, or involves the management of MNES, when included within the scope of the development or review of construction, operational, groundwater, CSG water, brine management, salinity management, environmental management or other plans 2. Understand from discussions with responsible and/or accountable management the frequency with which such issues have been identified during the development or review of the construction, operational, groundwater, CSG water, brine management, salinity management, environmental management or other plans.	Y
<b>Criterion 2</b>	The proponent must in the notification indicate the relevant components of such plans relating to MNES and their management, and the timeframe for development and approval of the plans under Queensland Government requirements.				
76.2 The proponent must in the notification indicate the relevant components of such plans relating to MNES and their management, and the timeframe for development and approval of the plans under Queensland Government requirements.	Confirmed through discussion with QGC's Lead Compliance & Reporting Advisor, QCLNG Land and Environment that a specific approval was obtained from SEWPac for the Chinchilla Weir Beneficial Use Scheme, which involved the transfer by pipeline of treated QGC CSG water by Sunwater from the Kenya Water Treatment Plant to Chinchilla Weir for release for downstream agricultural usage. Documentation in relation to this approval was provided at Appendix AA of the Stage 2 CSG WMMP. Inspected the referral decision (Appendix X.7) Stage 2 Plan. Similarly, Sunwater transfer treated CSG water via pipeline from QGC's Woleebee Creek Water Treatment Plant to Glebe Weir on the Dawson River. Inspected the referral decision for Glebe Weir (Appendix X.8) Stage 2 Plan. Further documentation for both projects was included in the Stage 3 WMMP. Inspected the Glebe Weir Beneficial Reuse approval (Stage 3 Plan Appendix Q) as an example	Discussions with a Proponent representative; Stage 2 CSP WMMP; Stage 3 CSG WMMP	Check that the proponent has indicated the relevant components of such plans relating to MNES and their management, and the timeframe for development and approval of the plans under Queensland Government requirements in the notification.	Review a representative random sample of no less than 10% of construction, operational, groundwater, CSG water, brine management, salinity management, environmental management or other plans either developed or reviewed over the duration of the project where potential direct, indirect or cumulative adverse impacts on MNES, or involves the management of MNES were identified, and assess whether the proponent's notification to the Minister: - Appropriately indicated the relevant components of such plans related to MNES and their management - Included the timeframe for the development and approval of plans under the Queensland Government requirements.	Y
<b>EPBC 2008/4398</b>	Where the scope of the plans relates to potential adverse impact on MNES, or involves management of MNES the plans must be submitted to the Minister for approval of those components. Approved components of plans must be implemented.				
<b>Condition 77</b>	<i>Note: Where efficiency will be enhanced the proponent may also prepare and align management plans required under these conditions with the requirements of the Queensland Government as long as the relevant matters under the conditions of this approval are clearly and adequately addressed.</i>				
<b>Criterion 1</b>	Where the scope of the plans relates to potential adverse impact on MNES, the plans must be submitted to the Minister for approval of those components.				
77.1 Where the scope of the plans relates to potential adverse impact on MNES, or involves management of MNES the plans must be submitted to the Minister for approval of those components.	Refer to comment in 76.1. The REMP was submitted to the Department as appendix to the Stage 1 WMMP.  In addition, this condition was addressed by the REMP and the Exceedance Response Plans. The REMP has not had to be implemented in regards to produced water being emitted to receiving environments and having a potential effect on MNES. There isn't a 10% representative sample beyond the REMP as the actions that would trigger an impact upon MNES have not been implemented (i.e. no discharge of PW to receiving environments, no re-injection, no exceedances).	REMP; Exceedance Response Plans (WMMP 2, Appendix U)	Where the scope of the plans relates to potential adverse impact on MNES or involves management of MNES, check that the plans have been submitted to the Minister for approval of those components.	1. Hold discussions with responsible and/or accountable management to understand the proponent's processes and accompanying procedures for identifying potential adverse impacts on MNES, or involves the management of MNES, within the scope of the development or review of construction, operational, groundwater, CSG water, brine management, salinity management, environmental management or other plans 2. Understand from discussions with responsible and/or accountable management the frequency with which such issues have been identified during the development or review of the construction, operational, groundwater, CSG water, brine management, salinity management, environmental management or other plans. 3. Review a representative random sample of no less than 10% of construction, operational, groundwater, CSG water, brine management, salinity management, environmental management or other plans either developed or reviewed over the duration of the project involving the management of potential adverse impacts on MNES, or management of MNES, and assess whether: - The proponent submitted the scope of these plans to the Minister for approval of these components	Y
<b>Approved components of plans must be implemented.</b>					
77.2 Approved components of plans must be implemented.	Refer to comment in 76.1. The REMP was submitted to the Department as appendix to the Stage 1 WMMP. The components of the REMP relating to background water monitoring of the receiving environment were implemented. There was no requirement to conduct ongoing monitoring of the receiving environment as no produced water was emitted to receiving environment.  In addition, this condition was to be addressed by the REMP. The REMP has not had to be implemented in regards to produced water being emitted to receiving environments and having a potential effect on MNES. There isn't a 10% representative sample beyond the REMP as the actions that would trigger an impact upon MNES have not been implemented (i.e. no discharge of produced water to receiving environments, no re-injection, no exceedances).	REMP	Check that the approved components of plans were implemented.	Based on the review of a representative random sample of no less than 10% of construction, operational, groundwater, CSG water, brine management, salinity management, environmental management or other plans either developed or reviewed over the duration of the project involving the management of potential adverse impacts on MNES, or management of MNES, identified as part of Criteria 77.1: - Obtain evidence confirming the implementation of the approved components.	Y
<i>Note: Where efficiency will be enhanced the proponent may also prepare and align management plans required under these conditions with the requirements of the Queensland Government as long as the relevant matters under the conditions of this approval are clearly and adequately addressed.</i>					



**Appendix 2: Stage 1 CSG WMMP Checklist**

See attachment

Ref Condition	Evidence to show implementation of Stage 1 CSG WMMP	Evidence Reviewed	Independent Auditor Comments	Implemented?
49.2.a.	Review representative random sample of no less than 10% of relevant evidence to determine if the drawdown limits proposed within the Stage 1 CSG WMMP was met.	1. Drawdown limit samples 2. Letter from SEWPAC re Condition 48 Default Drawdown Levels	No exceedances of threshold limits have been identified. Drawdown Baseline development was discussed and QGC are working towards setting of rigorous baselines established through groundwater pressure time series data sets.  GW bore locations identified as drawdown monitoring bores were reviewed and confirmed with the GIS Specialist via a demonstration of MapMagic in a follow up interview. Drawdown limits were reviewed with the QGC Specialists and a sample of wells identified for the investigation of threshold triggers (i.e. Charlie GW1 & GW2, Coochiemudlo GW 1 & GW2, Charlotte GW1.). Groundwater monitoring data was examined to identify water level data (mAHD).	Yes
49.2.c.	Review representative random sample of no less than 10% of relevant evidence to determine if the status of the aquifer reinjection program and determine if this is in line with what was been proposed in the Stage 1 WMMP.	1. QGC letter re Aquifer Injection Program 150313 2. QGC letter re Aquifer Injection Program 151208	Through discussion, confirmed that the reinjection program was not implemented. This was corroborated through inspection of letters to the Department, advising the program has been not commenced. It was indicated that the Department provided responses acknowledging the above. It is also noted that the Department only requires a reinjection management plan to be completed to close out the approval requirement.	Yes
49.2.d.	Review representative random sample of no less than 10% of relevant evidence to determine if the early warning thresholds have been breached at the designated early warning monitoring sites.	1. WMMP Stage 1, Section 7.10 2. WMMP Stage 2, Appendix U - Draft Exceedance Response Plan 3. WMMP Stage 3 WMMP - Extracts on EWMI and TMP Bores	Inspection of the Draft Exceedance Response Plan noted that a plan is in place. Interviewees indicated, and data corroborated, that early warning thresholds have not been breached.	Yes
49.3.e.	Review representative random sample of no less than 10% of relevant evidence to determine if the annual review of fraccing activity and other reporting requirements stipulated within the Stage 1 WMMP has been carried out.	1. QGC 2013 WMMP Annual Report 2. QGC 2015 WMMP Annual Report 3. Appendix W.1 Fraccing Chemicals Assessment 4. WMMP Stage 1, Section 8.0 5. WMMP Stage 3, Section 11.0	Inspection of the Fraccing Chemicals Assessment from 2011 noted that fraccing activity was reported at this time. Through interviews it was noted that there has been no active program of hydraulic stimulation; however, test stimulations have been completed as per WMMP 3, Section 11.0 and in accordance with the Stage 1 WMMP and the approval requirements.	Yes
49.4 g.i.	Review representative random sample of no less than 10% of relevant evidence to determine if the items outlined in section 9.1.5 of Stage 1 WMMP has been implemented.	1. Doc_1501737_-_Chinchilla_beneficial_use_scheme_surface_water_quality_monitoring_November_2013 2. WMMP Stage 1, Section 9.1.5 3. REMP	Reference and test sites were identified in the documentation reviewed for both upstream and downstream of the proposed discharge point. It is noted that QGC have prepared a clear rationale and approach to the identification of the surface and aquatic systems to be monitored and their environmental values, water quality, and environmental characteristics bearing in mind that no produced water is being, or has been, discharged to receiving environments prior to, or at the time, of the audit.	Yes
49.4 g.ii.	Review representative random sample of no less than 10% of relevant evidence to determine if the items outlined in section 9.1.5 of Stage 1 WMMP has been implemented.	1. WMMP Stage 1, Section 9.1.5 2. REMP	Refer comment at 49.4.g.1	Yes
49.4.g.iii.	Review representative random sample of no less than 10% of relevant evidence to determine if the items outlined in section 9.1.5 of Stage 1 WMMP has been implemented.	1. WMMP Stage 1, Section 9.1.5 2. REMP	Refer comment at 49.4.g.1	Yes
49.4.g.iv.	Review representative random sample of no less than 10% of relevant evidence to determine if baseline data for each monitoring site for comparison of monitoring results over the life of the project are in evidence.	1. Stage 1 CSG WMMP; 2. REMP (Stage 2 WMMP, Appendix X.1)	Confirmed that the surface monitoring plan included in the Stage 1 CSG WMMP referenced to details of the baseline data for each monitoring site for comparison of monitoring results over the life of the project.  Reviewed the planning for monitoring site and baseline data analysis in REMP Section 3.0 and Tables 3.1, 3.4, and 3.6	Yes

Ref Condition	Evidence to show implementation of Stage 1 CSG WMMP	Evidence Reviewed	Independent Auditor Comments	Implemented?
49.4.g.v.	Review representative random sample of no less than 10% of relevant evidence to determine if data has been analysed in accordance the requirements outlined in the Stage 1 WMMP.	1. WMMP Stage 1, Section 9.1 2. REMP (Appendix 1)	Through discussion and site visit, confirmed that there has never been a release of water to the receiving environment as per the Surface Water Monitoring and Management Plan (WMMP Stage 1, Section 9).	Yes
49.4.g.vi.	Review representative random sample of no less than 10% of relevant evidence to determine if threshold values have been exceeded. Assess if appropriate management actions have been implemented.	1. WMMP Stage 1, Section 9.1 2. REMP (Appendix 1)	This condition has been met though the REMP and is referenced in the WMMP Stage 1. However, the Plan has not been activated. The Beneficial Use Approval (BUA) has been activated and plan implemented through the Agreement with Sunwater to manage all BUA water provided by QGC under their own EPBC Approval.	Yes
49.4.g.vii.	Review representative random sample of no less than 10% of relevant evidence to determine if water treatment and amendment methods and standards are in accordance with the Stage 1 CSG WMMP.	1. WMMP Stage 1, Section 9.2 (with reference to CSG Water Management Plan, CWMP, App. H) 2. Review of Surface Water Facilities Water Collection Diagram (North-Water - QCLNG-BB00-POC-SCD-812002_00) 3. Interview of Proponent Respondent and Site Visit (Woleebee Creek).	GW bores, gathering lines, and ponds are inspected and physical samples taken as required to support data loggers and remote sensors. In addition to the GW bores, it was noted through discussion/observation at the site visit that treatment processes occurring at the WTP are monitored in sequence and rely upon centralised, control room and supplemented by a field sample collection schedule. The process differs between Kenya and Wollobee Creek, in that, at Kenya, the water is filtered twice at stage 1 treatment due to its profile (i.e. more particulate matter/solids to exclude in early stages). The water treatment and amendment approach and methods are applied in fulfilment of this condition.	Yes
49.4.g.viii.	Review representative random sample of no less than 10% of relevant evidence to determine if the storage locations and volumes are in line with those indicated within the Stage 1 WMMP.	1. WMMP Stage 1, Section 9.1 (with reference to REMP) and 9.2 (with reference to the CSG Water Management Plan, CWMP, App. H) and 9.3. 2. Review of Surface Water Facilities Water Collection Diagram (North-Water - QCLNG-BB00-POC-SCD-812002_00) 3. Interview of Proponent Respondent and Site Visit (Woleebee Creek).	The locations of storage ponds (pre and post treatment) are as per the WMMP. The treated volumes of PW are well below the modelled volumes leading to overcapacity of storage available.	Yes
49.4.g.ix.	Review representative random sample of no less than 10% of relevant evidence to determine if the water treatment options and methods identified within the Stage 1 WMMP are implemented.	1. WMMP Stage 1, Section 9.2.2 and 9.4 (with reference to the CSG Water Management Plan, CWMP, App. H). 2. Interview of Proponent Respondent, Contractor managing the WTP and Site Visit (Woleebee Creek).	Through discussion with the Water Operations Manager it was noted that Wollabee Creek WTP is at 15% treatment capacity usage and has not wavered from this since it was commissioned. There is much less PW being collected at the Wellhead and fed into the treatment process. The RO process stage is made up of 6 trains at 20ML per train capacity. There is a clean in place RO filter system, and they are currently taking RO capacity offline to scale to feed volume lower than modelling (and increase efficiency of WTP including energy saving measures). The Water Operations Manager advised that there is flattening demand.	Yes
49.4.g.x.	Review representative random sample of no less than 10% of relevant evidence to determine if brine storage locations and volumes are tracking as predicted within the Stage 1 WMMP.	1. WMMP Stage 1, Section 9.5 (with reference to the CSG Water Management Plan, CWMP, App. H). 2. Produced Water vs Brine Production Modelling 3. Interview of Proponent Respondent and Site Visit (Woleebee Creek).	Through discussion it was noted that, with the WTP running at 15% of capacity, there is much less brine than modelled. As such, there is less production and required storage. The brine pond lifecycle is currently to 2022-2025. This is an extension out beyond the initial modelling. The maximum capacity and location are defined in the Stage 1 WMMP.  Storage ponds are designed and constructed in accordance with relevant standards. The pond lining and barrier protection (bund wall) are in place to protect against leaching/emissions to ground, and are as per specifications.  Interviewed Brine Specialist whom indicated that the lower perosity of the coal seams led to less PW and, therefore, less Brine production. Reviewed the chart comparing PW and Brine production actuals vs modelling (in AS2 file), which corroborates the discussions had at the site visit regarding Brine production volumes.	Yes

Ref Condition	Evidence to show implementation of Stage 1 CSG WMMP	Evidence Reviewed	Independent Auditor Comments	Implemented?
49.4.g.xi.	Review representative random sample of no less than 10% of relevant evidence to determine emergency water discharge procedures have been followed.	1. WMMP Stage 1, Section 9.6 (with reference to the CSG Water Management Plan, CWMP, App. H). 2. Interview of Proponent Respondent and Site Visit (Woleebee Creek).	Through discussion it was noted that the emergency discharge procedure has not needed to be activated. There have been no emergency discharges recorded at the wells, bores or WTP, and there have been no flood / weather impacts at WTP or recorded at wells / bores.  It was also noted that, in relation to the WTP, there is a closed-loop system, drawing water back to Stage 1 treatment as a fail-safe. The sump pumps and ground fall to a low point and drainage emergency water discharge measures are in place. Chemical storage and handling area is bunded to prevent emissions to ground.	Yes
49.4.g.xii.	Review representative random sample of no less than 10% of relevant evidence to determine if references to standards and relevant policies and guidelines are in evidence.	1. Stage 1 CSG WMMP; 2. Discussions with a Proponent representative.	Confirmed that the surfacing monitoring plan included in the Stage 1 CSG WMMP included details of the emergency water discharges.  Through discussion, confirmed that there has never been a release of water, and as such, this condition is not applicable.	Yes
49.5.h.i.	1. Review representative random sample of no less than 10% of relevant evidence to determine if mechanisms in place to avoid, minimise and manage risk of adverse impacts are being followed if the threshold values for surface water quality and water environmental values specified in the Stage 1 CSG WMMP are exceeded.  2. Review representative sample of no less than 10% of relevant evidence to determine if threshold values have been exceeded	1. Interview of Proponent Respondent and Site Visit (Woleebee Creek).	Through discussion it was noted that there has been no discharge of surface water to the receiving environment, as the volume of produced water is lower than modelled. Nevertheless, a license is in place to discharge water and Surface Water Management Plan in place to monitor and manage impacts and exceedances should the need arise.	Yes
49.6.i.	Check if annual reports have been submitted to the department and have been posted on the internet.	1. Annual Reports (2013, 2014, 2015) have been submitted to the department as per correspondence. The 2014 Annual Report is online at the following link: <a href="http://www.bgggroup.com/827/qgc/sustainability/environment/watermanagement/reports/">http://www.bgggroup.com/827/qgc/sustainability/environment/watermanagement/reports/</a> Please refer to Appendix T, in Stage 3 Appendices on the website.	Inspected the BG Group website and located the 2013, 2014, and 2015 annual report.	Yes



**Appendix 3: Stage 2 CSG WMMP Checklist**

See attachment

Ref Condition	Evidence to show implementation of Stage 2 CSG WMMP	Evidence Reviewed	Independent Auditor Comments	Implemented?
52.1.a.	<p>1. Review treatment programs in place to see if these are consistent with those that are identified in the WMMP.</p> <p>2. Review representative random sample of no less than 10% of relevant evidence to verify that any water used for re-injection, or used for other groundwater repressurisation options, is treated at least equal to the water quality of the receiving groundwater system or environment.</p>	<p>1. QGC letter re Aquifer Injection Program 150313</p> <p>2. QGC letter re Aquifer Injection Program 151208</p>	Through discussion, confirmed that there has been no re-injection or repressurisation options implemented. This was corroborated through inspection of the letters provided to the Department, and through inspection of the damaged trial site infrastructure.	Yes
52.1.b	Review representative random sample of no less than 10% of relevant evidence to determine if the program of aquifer connectivity investigations are proceeding in accordance with the WMMP.	<p>1. WMMP Stage 2, Extract re Condition 52.1.b aquifer connectivity (Executive Summary).</p> <p>2. WMMP Stage 2, Section 6.0</p> <p>3. Annual Report, October 2014, Sections 6.0 and 7.0</p>	Modelling indicates that QGC's GEN2 and QWC's UWIR show minor impacts caused by minimal hydraulic connectivity between the Springbok and Hutton Aquifers. QGC indicated that it does not propose to present data to support a conclusion that any aquifer is not hydraulically connected to other aquifers or formations. QGC is however implementing a program of work to assess the magnitude and extent of aquifer connectivity as indicated in the WMMP Stage 2 (e.g. Walloon Coal Measures and adjacent formations post-gas field life). Ongoing reporting regarding program scope, commitments and progress is recorded in the Annual Reports.	Yes
52.1.c	Review representative random sample of no less than 10% of relevant evidence to determine if the monitoring plan is implemented in accordance with the WMMP.	<p>1. Stage 2 CSG WMMP, Section 7</p> <p>2. Annual Report, October 2014, Section 5.0</p> <p>3. Review of Groundwater Bore Monitoring Network</p> <p>4. Discussions with Proponent Respondent and Site Visit (Woleebee Creek)</p>	Discussions were held with auditors explaining basis for design of network which included the requirements for state agencies. It was identified that hydrochemical studies are a key component of QGC's wider aquifer connectivity studies and longer-term hydrochemistry programs inform their understanding of water chemistry and water rock reactions in aquifer systems.	Yes
52.1.c.i.	Review representative random sample of no less than 10% of relevant evidence to determine if the aquifers identified in the WMMP are being monitored.	<p>1. Stage 2 CSG WMMP, Section 7</p> <p>2. Annual Report, October 2013, Section 5.0</p> <p>3. Annual Report, October 2014, Section 5.0</p> <p>4. Discussions with Proponent Respondent and Site Visit (Woleebee Creek)</p>	Discussion with Proponent Respondents (Water Specialists) identified that aquifers have been identified and are being monitored in line with the WMMP and applicable Condition. Review or reporting in annual reviews (2013 and 2014) confirmed commitments and progress.	Yes
52.1.c.ii.	Review representative random sample of no less than 10% of relevant evidence to determine the locations of the monitoring bores and their flow, pressure, head and water quality characteristics;	<p>1. Stage 2 CSG WMMP, Section 7.13 &amp; 7.14</p> <p>2. Annual Report, October 2014, Section 5.0</p> <p>3. Review of Groundwater Bore Monitoring Network</p> <p>4. Review of Online Publication of groundwater monitoring data (Oct-Aug. 2014)</p> <p>5. Discussions with Proponent Respondent and Site Visit (Northern Development Area and Woleebee Creek)</p>	<p>Evidence, discussions with Proponent Respondents, and a site visit to a selection of GW bore sites indicate that the groundwater monitoring program is being delivered in accordance with the WMMP Stage 2, and network of monitoring bores are monitoring and recording applicable data.</p> <p>Improvement Opportunity noted: During the site visit it was difficult to identify one of the wells (GW18) as signage was not on the well. QGC recommends the design and implementation of a process to ensure clear signage is erected and maintained at all wells - refer to &lt;2110&gt;.</p>	Yes
52.1.c.iii	Review representative random sample of no less than 10% of relevant evidence to determine if aquifer drawdown thresholds have been exceeded.	<p>1. Stage 2 CSG WMMP, Section 5.0</p> <p>2. Discussions with Proponent Respondents and review of Drawdown Limit samples provided.</p>	Discussion with Proponent Respondents (Water Specialists) and the review of supporting documentation confirmed that drawdown thresholds have not been reached or exceeded.	Yes
52.2.d.i.i	<p>1. Review representative random sample of no less than 10% of relevant evidence to determine if there has been an exceedance in threshold values for surface water quality and water environmental values specified in the WMMP.</p> <p>2. If threshold values have been exceeded review a representative random sample of no less than 10% of relevant evidence to determine if the appropriate response actions have been taken within the required timeframes.</p>	1. Northern WTP - BUA and WTA Compliance Report (02-06-16)	Through discussion with Water Specialists confirmed that there has never been an exceedance in the threshold values for surface water quality and water environmental values specified in the WMMP. This was corroborated with a document review.	Yes



**Appendix 4: Stage 3 CSG WMMP Checklist**

See attachment

Ref Condition	Evidence to show implementation of Stage 3 CSG WMMP	Evidence Reviewed	Independent Auditor Comments	Implemented?
53B.a	1. Review representative random sample of no less than 10% of relevant evidence to determine if the program for scheduled for aquifer connectivity studies is being followed.	1. Stage 3 WMMP Apr 2015 Aquifer Connectivity Synthesis Report 2. Annual Report, 2014 Section 6.0 and 2015 Section 6.0 3. QGC Departmental Letters 4. Discussions with Proponent Respondent and Site Visit (Woleebee Creek and Northern Development Area)	Through discussion and documentary review, confirmed that elements of the reinjection program were completed; however, the need for trial reinjection by QGC no longer existed. The Auditor notes the DoE response to QGC requesting submission of a reinjection management plan to be used in the event of operational reinjection being required. This was corroborated through inspection of letters to the Department, advising the program has been not commenced. The updated Plan has since been finalised and was submitted to the DoE on August 19th 2016.	Yes
53B.c	1. Review representative random sample of no less than 10% of relevant evidence to determine if unforeseen emergency discharges have occurred.  2. Review representative random sample of no less than 10% of relevant evidence to see if emergency discharge plans were followed.	1. Stage 3 s12: Groundwater management - reinjection and repressurisation options 2. REMP	Through discussion, confirmed that the emergency discharge procedure has not been activated. However, it is noted that emergency discharge procedures are prepared should the need to manage a discharge arises.	Yes
53B.d.i	Review representative random sample of no less than 10% of relevant evidence to assess if an appropriate comparison of the monitoring results were undertaken.	1. Stage 3 s4: Quantitative analysis of monitoring data - trend analysis, baseline data and threshold values 2. Sample Pressure and Water Quality Data	Through discussion it was noted that monitoring and analysis of trends are reported frequently to QGC through data loggers, physical sampling and subsequent trend analysis of data performed on an ongoing basis.  Inspection of the Sample Pressure and Water Quality Data noted that pressure and water quality data has been provided for the 12 sample wells (refer to 'Samples - wells' for list of sampled wells). The sampled wells represent a 10% sample of wells.	Yes
53B.4.d.ii	Review representative random sample of no less than 10% of relevant evidence to assess if the approach to analyse the results including the methods to determine trends to indicate potential impacts have been used.	1. Stage 3 s4: Quantitative analysis of monitoring data - trend analysis, baseline data and threshold values 2. Sample Pressure and Water Quality Data	Through discussion it was noted that monitoring and analysis of trends are reported frequently to QGC through data loggers, physical sampling and subsequent trend analysis of data performed on an ongoing basis.  Inspection of the Sample Pressure and Water Quality Data noted that pressure and water quality data has been provided for the 12 sample wells (refer to 'Samples - wells' for list of sampled wells). The sampled wells represent a 10% sample of wells.	Yes
53B.4.d.iii	Review representative random sample of no less than 10% of relevant evidence to determine whether the mechanisms to monitor, avoid, minimise, manage and respond to risk outlined within the WMMP are being implemented.	1. Stage 3 s4: Quantitative analysis of monitoring data - trend analysis, baseline data and threshold values 2. Stage 3 s13: Groundwater management - response plans and actions	Through discussion it was noted that, in regards to the WTF, a two day capacity of stage 1 process treated water is maintained as a buffer between the warning system and actions being implemented (i.e. warnings are caught early in stage 1 treatment process).	Yes
53B.5.e.i.	Review representative random sample of no less than 10% of relevant evidence to determine whether the mechanisms and commitments outlined within section 4 and 13 of the WMMP for avoiding, minimising and managing risks of adverse impacts have been implemented.	1. Stage 3 s4: Quantitative analysis of monitoring data - trend analysis, baseline data and threshold values 2. Stage 3 s13: Groundwater management - response plans and actions	Through discussion, it was noted that a 'Barrier Model' (e.g. Swiss Cheese Model) is applied to risk management processes across the Water Monitoring Program'. There are engineered redundancies and fail-safes in the process including, for example, overflow back to Stage 1 treatment and bunding of 'chemical ally' at the WTF (Northern Development Area).  It was identified that no exceedances have occurred to trigger the plan.	Yes

Ref Condition	Evidence to show implementation of Stage 3 CSG WMMP	Evidence Reviewed	Independent Auditor Comments	Implemented?
53B.5.e.i. I.	<p>1. Hold discussions with responsible and/or accountable management to understand the frequency with which threshold values for aquifer drawdown or groundwater contamination values specified in the CSG WMMP have been exceeded.</p> <p>2. Review representative random sample of no less than 10% of relevant evidence to determine if any actions taken is in line with what is outlined in the WMMP for (e.i.I)</p>	<p>1. Stage 1 WMMP Appendix B Groundwater Contours  2. Stage 3 WMMP - Extracts on EWMI and TMP Bores  3. Stage 1 WMMP Appendix C Golder Groundwater Impact Report</p>	<p>Through discussion, confirmed that no exceedents have occurred. This was corroborated with a document review. However, it is noted that emergency discharge procedures are prepared should the need to manage a discharge arises.</p>	<p>Yes</p>
53B.5.e.i.II.	<p>1. Hold discussions with responsible and/or accountable management to understand the frequency with which subsidence or surface deformation occurs which impacts on surface or groundwater hydrology</p> <p>2. Review representative random sample of no less than 10% of relevant evidence to determine if any actions taken is in line with what is outlined in the WMMP for (e.i.II)</p>	<p>1. Year 2015 Ground Motion Progress Report 2014 Final</p>	<p>Inspected Ground Motion Progress Report 2014 Final and noted that an update is provided on the Monitoring Data Acquisition Program. Interviewees indicated no subsidence or surface deformation had occurred, which would have impacts related to this Condition.</p>	<p>Yes</p>
53B.5.e.i.III.	<p>1. Hold discussions with responsible and/or accountable management to understand the frequency with which there are any unforeseen emergency discharges</p> <p>2. Review representative random sample of no less than 10% of relevant evidence to determine if any actions taken is in line with what is outlined in the WMMP for (e.i.III)</p>	<p>1. WMMP Stage 3, Section 12.0, Groundwater management - reinjection and repressurisation options  2. WMMP Stage 3, Section 16.0, Emergency Discharge Plans  3. REMP</p>	<p>Through discussion, confirmed that there have been no unforeseen emergency discharges and that the emergency discharge procedure has not been activated. However, it is noted that emergency discharge procedures are prepared should the need to manage a discharge arises.</p>	<p>Yes</p>

Ref Condition	Evidence to show implementation of Stage 3 CSG WMMP	Evidence Reviewed	Independent Auditor Comments	Implemented?
53B.5.e.ii.	<p>1. Review representative random sample of no less than 10% of relevant evidence to determine if the program and timetable for re-injection of CSG water is in accordance with what is outlined in the WMMP for (e.ii.)</p> <p>2. Obtain evidence of the proponent's measures in place to forecast and proactively manage any short-term impacts associated impacts as outlined in (e ii).</p>	<p>1. WMMP Stage 3, Section 12.0  2. QGC letter re Aquifer Injection Program 150313  3. QGC letter re Aquifer Injection Program 151208</p>	<p>Through discussion and documentary review, confirmed that elements of the reinjection program were completed; however, the need for trial reinjection by QGC no longer existed. QGC understands that the intent of this commitment was to ensure that the Hutton and Precipice aquifers could be re-pressurised in a timely way, should they be significantly impacted by QGC's activities. Following major storm damage at QGC's trial site, QGC completed a thorough review of its trial program.</p> <p>The key findings of the review were:</p> <ul style="list-style-type: none"> <li>• existing work by QGC and APLNG provides sufficient information to enable timely implementation of a full scale reinjection scheme should that be required;</li> <li>• proceeding to Stage 3 of QGC's injection trial using water sourced from the Precipice formation would not add to the level of understanding needed for an operational injection scheme; and</li> <li>• QGC has been advised by APLNG that it has obtained necessary permits and is currently commissioning wells to inject up to 40ML/d of treated CSG water into the Lower Precipice at Reedy Creek. This program will likely result in pressure rises of at least 1m over QGC's northern development area within three years of commencement. As a result full scale re-injection at the Woleebee Creek site by QGC is unlikely to be required. QGC has completed Stages 1 and 2 of its trial program to characterise the subsurface and prepare for the injection trial.</li> </ul> <p>This involved:</p> <ul style="list-style-type: none"> <li>• Stage 1 – monitoring bore Woleebee Creek GW4 data acquisition; and</li> <li>• Stage 2 – construction of a trial injection bore and adjacent monitoring bore and surface infrastructure.</li> </ul> <p>QGC has approached the Department regarding the above in early 2015 and sought to amend the aquifer reinjection program due to the reasons described above.</p>	Yes

## Appendix 5: Evidence List

A description of the evidence to support audit findings of compliance is as follows:

1. Stage 1 CSG WMMP
2. Stage 2 CSG WMMP
3. Stage 3 CSG WMMP
4. Springbok Sandstone Characterisation Study
5. Groundwater Monitoring Map
6. Fracking Chemicals Assessment
7. Groundwater Monitoring Data
8. EPBC Approval
9. Expert Panel Comments on the QGC Stage 2 Water Plan
10. Annual Reports: 2013, 2014 and 2015
11. Approval Letter
12. Gas Field Expert Panel Site Visit
13. Kenya WTP BUA & RMP Compliance Monitoring Report
14. Northern WTP BUA & WTA Compliance Monitoring Report
15. Kenya and Windibri Gasfields Receiving Environment Monitoring Program (REMP)
16. Baseline Monitoring for the Chinchilla Beneficial Use Scheme
17. Groundwater Contours
18. Golder Groundwater Impact Report
19. Groundwater Drawdown Limits
20. Extracts on Statistical Methods
21. Aquifer Connectivity Synthesis Report
22. Groundwater Motion Progress Report
23. Letters regarding the Aquifer Injection Program
24. Pressure and Water Quality Data for a sample of wells
25. Central and Southern Gas Fields Collection Networks
26. North Gas Fields Collection Networks
27. Groundwater Monitoring Network
28. Water Map Glossary