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AGL

Annual Environmental Performance Report 2012-2013

Camden Gas Project

Date: 17th October 2013

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Document Revision History

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Abbreviations

Abbreviation	Description
AEMR	Annual Environmental Management Report
AEPR	Annual Environmental Performance Report
APPEA	Australian Petroleum Production and Exploration Association
CCC	Community Consultative Committee
CGP	Camden Gas Project
CoC	Condition of Compliance
CSG	Coal Seam Gas
DA	Development Application
DG	Director General
DTIRIS	Department of Trade and Investment, Regional Infrastructure and Services
DoPI	Department of Planning and Infrastructure
EECs	Endangered Ecological Communities
EMAI	Elizabeth Macarthur Agricultural Institute
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environment Protection Authority
EIS	Environmental Impact Statement
EPL	Environmental Protection Licence
GGL	Gas Gathering Line
HS&E	Health Safety and Environment
LGA	Local Government Area
NOW	NSW Office of Water
NO_X	Nitrogen oxides
NPI	National Pollutant Inventory
OEH	Office of Environment and Heritage
PA	Project Approval
PAC	Planning Assessment Commission
PEL	Petroleum Exploration Lease
POP	Production Operations Plan
PPL	Petroleum Production Lease
RBTP	Ray Beddoe Treatment Plant
RPGP	Rosalind Park Gas Plant
SEWPaC	Sustainability, Environment, Water, Populations and Communities
SIS	Surface to-In-Seam
SO_X	Sulphur oxides
SSD	State Significant Development
VLMP	Vegetation and Landscape Management Plan

Executive Summary

This Annual Environmental Performance Report (AEPR) has been prepared to meet the reporting requirements of the NSW Department of Planning and Infrastructure (DoPI) and Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS) for the AGL Camden Gas Project (CGP) located in the Camden, Campbelltown and Wollondilly Local Government Areas (LGA's) for the period of July 2012 to June 2013.

Reporting Requirements

The purpose of the AEPR is to report in accordance with the CGP's Development Application Approvals and Project Approvals on the following matters:

- The standards, performance measures and statutory requirements the development is required to comply with;
- An assessment of the environmental performance of the development to determine whether it is complying with these standards, performance measures, and statutory requirements;
- Reporting against the implementation of the Project Commitments Register;
- Copy of the Complaints Register for the preceding twelve month period and indicating what actions were (or are being) taken to address these complaints;
- Indication of what actions were taken to address any issue and/or recommendation raised by the Community Consultative Committee;
- Provision of the detailed results of all the monitoring required by each consent;
- Review of the results of this monitoring against:
  - Impact assessment criteria;
  - Monitoring results from previous years;
  - Predictions in relevant environmental assessment documents.
- Identify any non-compliance during the year;
- Identify any significant trends in the data; and
- If any non-compliance is detected, describe what actions and measures would be carried out to ensure compliance, clearly indicating who would carry out these actions and measures, when they would be carried out, and how the effectiveness of these measures would be monitored over time.

Field Development

Field development during this reporting period consisted of the construction and continued connection into the gas gathering line (GGL) networks within Menangle Park. Drilling was completed in Menangle Park for gas well MP25 in September 2012 and was successfully brought onto production and connected into the GGL network. Construction activities included the connection of gas wells at the MP03 well surface location (includes wells MP01, MP02, MP03, MP09 and MP10) into the GGL network by the construction of MP03-05 GGL and the installation of MP14-25 GGL during the reporting period.

AGL had been working to deliver the next stage of the CGP, the Northern Expansion Project (Northern Expansion Project). The Northern Expansion Project proposed to extend the current CSG operations in Camden to include 11 additional gas well surface locations and associated infrastructure to the north-east of the existing development area as part of an application for development consent under the *Environmental Planning and Assessment Act 1979* (EP&A Act). Following submissions on the Environmental Assessment from the public exhibition period, AGL amended the development application and responded to the issues raised in their Submission Report in October 2012.

In February 2013 AGL requested that DoPI suspend its assessment of the proposed Northern Expansion Project of the CGP so that AGL could consider and address concerns raised by the community.

Environmental Management & Performance

In 2008 AGL commenced the development of a Project Environmental Management System (EMS) to manage potential environmental aspects associated with CGP activities. As part of this process an Environmental Management Plan (EMP) and Environmental Sub Plans were prepared in order to facilitate the uniform implementation of environmental management. In 2012 the EMP and selected sub-plans were updated to improve AGL's environmental management and procedures.

In 2012, AGL completed a Pollution Incident Response Management Plan (PIRMP) for the CGP in response to an amendment to the *Protection of the Environment Operations Act 1997* (NSW) (POEO Act). The POEO Act includes a provision that requires holders of any EPL to prepare, keep and test a PIRMP and implement that plan in the event of a pollution incident in accordance with Part 5.7A of the POEO Act and the *Protection of the Environment Operations (General) Regulation 2009* (NSW) (POEO (General) Regulation).

Air Pollution

Quarterly stack emissions monitoring results were compliant with the licence concentration limits of EPL 12003 for this period and the previous reporting period. Air emission monitoring methodology was amended throughout the reporting period to comply with EPL 12003 Condition M2.4 (See Section 9 for more detail). AGL is continuing discussions with the EPA in regards to this Condition to enable full compliance.

Nitrogen Dioxide, Sulphuric Acid Mist and Sulphur Dioxide concentrations were measured at the emission points of the RPGP and compared to the input data used in the modelling for the air impact assessment. The testing confirmed compliance with air emission limits at the RPGP and therefore compliance at the nearest residence during this reporting period.

There were no exceedances of the EPL 12003 licence limits for any of the assessable annual pollutant loads for the RPGP as reported within the 2011/2012 Annual Return. All assessable pollutants were also reported at below the annual load estimations as predicted in the RPGP Environmental Impact Statement (EIS). This is similar to last year's reporting period.

There was a non-compliance identified in relation to an exceedance of air concentration levels for nitrogen oxides on a number of occasions. Details of this non-compliance are provided within Section 9.1.1 of this report. This is the first known occurrence at the RPGP.

Non-compliance in relation to continuous monitoring of EPL 12003 conditions O2 and M2.1 in relation to M2.3, and DA-282-6-2003-I Sch. 4, Condition 58 occurred during part of this reporting period as continuous monitoring for air emissions at the RPGP was not carried out for the full reporting period.

The National Pollutant Inventory for the 2012/13 financial year was submitted on the 29 September 2013.

During the reporting period, there were no registered complaints regarding dust.

Erosion & Sediment Control

All activities associated with erosion and sediment controls were compliant for the period with no community complaints or reportable incidents recorded.

Surface Water

The CGP harvests rain water from the run off of all buildings within the RPGP. This water is stored in above ground rain water tanks and is used to service the RPGP's amenities and wash bay. Once used, the water is separately stored in ground tanks for grey water and septic water. A combined total of 454KL of grey water and septic water was transported off site by licensed contractors for disposal at a licensed facility.

During periods of continued dry weather, town water was delivered to the RPGP to enable the continued use of the amenities and wash bay. There were no issues in relation to surface water for the reporting period.

Groundwater

The total volume of produced water generated has slightly decreased from 4727 KL last year to 4586 KL this period, representing a decrease of 3.0%. This is relatively consistent with the last reporting period.

The total volume of produced water reused for well workovers and drilling has slightly increased for this period in comparison with last reporting period. Total volume of produced water that was reused this reporting year was 1,905.6 KL as opposed to 1265 KL for the previous reporting period. This increase is due to the increased volume of produced water consumed in well workovers throughout the year.

Total recycled or disposed water has increased from 7292 KL last reporting period to 8,880.3 KL this period. This increase is partially due to an increase in the volume of produced water removed the RPGP flare pit.

During this reporting period AGL was compliant with its bore licence conditions and new EPL 12003 reporting requirements.

Waste Management

Waste volumes were recorded for the RPGP during this reporting period which conforms to the relevant conditions of DA 282-6-2003-I. It was reported in the bi-annual 2010-2012 Independent Environmental Audit Report that information on waste transporters is not currently provided to the EPA as required by DA 282-6-2003-I. It is noted that this condition is no longer included in the EPL 12003 following a variation of the licence by the EPA which removed this waste reporting requirement.

AGL has commenced consultation with the DoPI and EPA in order to seek a modification of the development consent for DA 282-6-2003-I to provide consistency with EPL 12003 so that conformance will be achieved.

Hazardous Materials and Land Contamination

All activities associated with hazardous materials management were compliant for the period with no reportable incidents recorded or community complaints received.

All activities associated with land contamination or pollution were compliant for the period with no reportable incidents or community complaints recorded.

Flora & Fauna

All activities associated with threatened or native flora and fauna were compliant for the period with no incidents or complaints recorded.

Noxious Weeds

All activities associated with weed control were compliant for the period with no reportable incidents or community complaints recorded.

Noise (Operational and Construction)

No exceedances and no noise complaints relating to operational noise from the RPGP were received during the 2012/13 reporting period. This trend is consistent with previous years. Noise performance is consistent with operational noise predictions in the RPGP EIS.

The CGP's operations continued to meet its noise requirements during the reporting period.

No complaints were received relating to operational noise during the reporting period. Noise monitoring of newly operating gas wells and previously operating wells were assessed as compliant with the relevant noise criteria's.

The CGP construction activities continued to meet the licenced construction noise requirements during the reporting period.

One complaint was received on 27th December 2012 at Campbelltown Council by a local resident, in relation to AGL's activities at the MP03 location. Council also notified the EPA of the complaint. AGL's Land and Compliance Officer contacted the resident to discuss the noise and time of the occurrence. It was confirmed in the follow up investigation that the source of noise was not attributed to AGL as there were no AGL related activities occurring during the period of the complaint. This was recorded as a misunderstanding of AGL's operations.

No other complaints were received relating to construction noise from any other operations during the reporting period.

Visual Amenity

The Landscape and Lighting Audit Report concluded that ground-truthing of landscape works identified that the majority of all aspects of Vegetation and Landscape Management Plan (VLMP) monitoring was correct, in accordance with performance and review objectives, and in a format that is suitable for continued and on-going report monitoring.

Landscape maintenance works and adherence to the landscape plan by AGL was clearly evident. The audit of the VLMP monitoring report is considered complete and successful.

Two full field flare events occurred during this reporting period with a combined duration of 627 minutes. This is an increase to the previous AEPR reporting period where a single full field flare event occurred at the RPGP which lasted 93 minutes.

Cultural Heritage

There were no activities associated with Aboriginal or European heritage matters identified and therefore no reportable incidents or community complaints recorded.

Bushfire

During the reporting period, there were no bushfires on land managed by AGL.

Hydrocarbons

All activities associated with hydrocarbon contamination control were compliant for the period with no reportable incidents or community complaints recorded.

Public Safety

During this reporting period there were no public safety related reportable incidents recorded.

Safety and Risk Management

During this reporting period there were no significant safety or risk management related reportable environmental incidents recorded.

On several occasions throughout the year, there were minor flooding events of the Nepean River following significant rainfall, and as a result, AGL's producing gas well sites MP16 and MP25 were surrounded by minor flooding.

Rehabilitation

Rehabilitation during this reporting period consisted of:

- Gas wells MP22 and MP11 underwent further rehabilitation;
- Rehabilitation of the SF20 well surface location (SF05, SF07, SF08, SF09 wells);
- Gas well MP25; and
- Gas gathering line infrastructure for gas well MP03 and MP25.

Environmental Complaints

One community complaint regarding environmental concerns was received during this reporting period. The complaint was received via the EPA complaints line and forwarded to AGL.

The number of complaints received in 2012/13 has decreased in comparison with the previous reporting period where two environmental complaints were received.

Community Liaison

AGL has pro-actively engaged with the community in order to keep residents informed of the CGP and ensure that community interests are listened to and addressed. AGL has raised awareness of its activities and created a strong relationship with the community through a range of community engagement initiatives which include:

- Employment of a permanent Community Relations Manager for the CGP;
- Consultation with affected landholders;
- Hosting community member and industry stakeholder site tours and information sessions;
- Participate in community events; and
- Distributing community consultation material to the local council offices.

A considerable amount of consultation has taken place directly with each landowner. This has ensured that their interests can be quickly understood and specifically addressed.

Community Consultation Committee (CCC) meetings were undertaken on the following dates:

- No. 33: 16 August 2012;
- No. 34: 15 November 2012;
- No. 35: 14 March 2013; and
- No. 36: 27 June, 2013.

The following consultation processes have also been undertaken for the CGP:

- Community Information marquee at the Campbelltown Show (September 2012);
- Community Information marquee at the Camden Show (March 2013);
- Letter drops to the residents of the proposed Northern Expansion project area (July and November 2012);
- Letter drops to affected residents regarding the MP25 drilling commencements (July 2012);

- Briefing to Councillors of Wollondilly Council on the CGP and developments (July 2012);
- Four community open days(September and November 2012, February and May 2013);
- Two media open days (July and November 2012);
- Community and Industry Open Days (November 2012, February, April, May and June 2013);
- External presentations to Engineers Australia, University of Western Sydney and Narellan Chamber of Commerce (July and November 2012 & April 2013);
- Three community drop in sessions for the proposed Northern Expansion (November and December 2012);
- Participated in Council run forums including Campbelltown and Wollondilly LGAs (February and April 2013);
- Email Updates to General Managers and Mayors of Camden, Wollondilly and Camden Local Governments;
- Email Updates to local Members of Parliament in the Camden, Campbelltown and Wollondilly Councils;
- AGL's Camden Website updated regularly http://agk.com.au/camden/index.php/news/;
- Advertorials placed in the Macarthur Chronicle and Camden/ Campbelltown Advertisers to update the community on the project, water monitoring and general operations update;
- Camden Community Consultative Committee Meetings (August and November 2012 and March and June 2013);
- Community consultation on the expanded ground water and fugitive emissions monitoring program for the CGP (April 2013); and
- On-going consultation with stakeholders regarding the Camden North expansion (note the application for the Northern Expansion is currently suspended).

Environmental Non Compliance Issues and Incidents

Non-conformances with the RPGP site's EPL 12003 are reported in the Annual Return to EPA.

There were four non-conformances with the EPL reported within the Annual Return in relation to the following:

- EPL 12003 Condition M2.4;
- EPL 12003 Conditions O2 and M2.1 in relation to M2.3;
- EPL 12003 Condition O2 in relation to L3.4; and
- EPL 12003 Condition R1.5.

During this reporting period AGL received one Penalty Infringement Notice from the EPA in relation to an incidence of non-compliance.

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1 Introduction

1.1 History of the Camden Gas Project

This Annual Environmental Performance Report (AEPR) has been prepared by AGL Upstream Investments Pty Ltd (AGL) to meet the reporting requirements for the period of 1st July 2012 to 30th June 2013 for the Camden Gas Project (CGP).

The CGP is located 65 kilometres (km) south-west of Sydney in the Camden region of NSW and consists of 144 gas wells, low-pressure underground gas gathering line's (GGLs), a high pressure supply line, gas plant facilities and associated infrastructure.

Sydney Gas initially developed the CGP and established the first two Petroleum Production Leases (PPLs) in New South Wales. Exploration activities in the Camden region commenced in 1998 and since that time an extensive program of geological surveys and exploration drilling has been completed.

On 1 April 2009 the CGP changed from a Joint Venture between AGL and Sydney Gas (Camden) Operations to become wholly owned by AGL. On 29 January 2010 AGL Gas Production (Camden) Pty Limited re-named to become AGL.

The construction of the Ray Beddoe Treatment Plant (RBTP) and the first successful gas delivery into the AGL distribution network occurred in May 2001. This progress led to Sydney Gas applying for PPL 1.

Further appraisal led to the addition of three production wells in 2002 under PPL 2, bringing the total of drilled production wells to twenty-five.

Operation of the Rosalind Park Gas Plant (RPGP) commenced under PPL 4 on 16 December 2004 and the project expanded to include PPL 5 and PPL 6.

Further to AGL's consolidation efforts, PPLs 1, 2, 4, 5, and 6 were transferred to AGL in November 2010.

In February 2007, the RBTP was shut down and the wells were connected to the RPGP. The RBTP was decommissioned, rehabilitated and the land handed back to the landowner during the 2008/09 reporting period.

In 2008 AGL developed an Environmental Management Plan (EMP) to consolidate the environmental management of the CGP. This plan and selected sub plans were updated during 2012 to improve AGL's environmental management and procedures for the CGP. The 2012 EMP was approved and implemented by the Director General in July 2013.

As part of the progressive development of the CGP gas field, to date, wells have been drilled and proven in the Logan Brae, Wandinong, Glenlee, Menangle Park, Rosalind Park, Mt Taurus, Razorback, Elizabeth Macarthur Agricultural Institute (EMAI), Sugarloaf, Spring Farm and Kay Park fields.

Field development during this reporting period consisted of the construction and continued connection into the GGL networks within Menangle Park. Drilling was completed in Menangle Park for gas well MP25 in September 2012 and was successfully brought onto production and connected into the GGL network. Construction activities included the connection of gas wells at the MP03 well surface location (includes wells MP01, MP02, MP03, MP09 and MP10) into the GGL network by the construction of MP03-05 GGL and the installation of MP14-25 GGL during the reporting period.

AGL had been working to deliver the next stage of the CGP, the Northern Expansion Project (Northern Expansion Project). The Northern Expansion Project proposed to extend the current CSG operations in Camden to include 11 additional gas well surface locations and associated infrastructure to the north-east of the existing development area as part of an application for development consent under the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). Following submissions on the Environmental Assessment from the public exhibition period, AGL amended the development application and responded to the issues raised in their Submission Report in October 2012.

In February 2013 AGL requested that the NSW Department of Planning & Infrastructure (DoPI) suspend its assessment of the proposed Northern Expansion Project of the CGP so that AGL could consider and address concerns raised by the community.

1.1.1 Environmental Management Improvements

During this reporting period AGL has maintained a focus on enhanced environmental improvements. On-going environmental management improvements have included:

- Continued enactment of the CGP EMS;
- Implementation of the updated CGP EMP and associated sub plans;
- Implementation of the prepared Pollution Incident Response Management Plan (PIRMP) (November 2012);
- Continued recycling of produced water for drilling and workover operations where possible;
- Working with the EPA to complete the 2 remaining Pollution Reduction Programs on the CGP Environment Protection Licence 12003 (EPL 12003), focussed on Leak Detection and Repair and Groundwater Monitoring;
- Regularly scheduled Community Open Days to educate the community on the CGP and the coal seam gas industry;
- In June 2013, 14 members of the Camden Team participated in AGL's Energy for Life volunteer program. Some of the team worked with Wollondilly Council planting close to 1,000 trees, mulching and putting protective plant guards up along Stone Quarry Creek in Picton. The Council are in the process of creating a new sports field and wanted to revegetate the creek banks with local eucalypts which are rare in the region. Some of the team also assisted the Wollondilly Community Nursery and completed tasks that the older volunteers cannot;
- Continued provision of environmental monitoring data to external stakeholders through the uploading of information to the CGP website;
- Continued engagement of environmental and engineering consultants, Parsons Brinckerhoff, to continue the development of a detailed groundwater assessment and hydrogeological model for the Northern Expansion Project area;
- Commencing a 12 week fugitive emissions monitoring program across the CGP area and surrounding region;
- Commencing an Environmental Health Impact Assessment for the Northern Expansion Project area; and
- Working in partnership with contract drilling companies, appropriate authorities and the community to resolve issues and concerns with the CSG industry and ensure a practical and sustainable future for the industry.

1.2 Purpose of Annual Environmental Performance Report

This AEPR has been prepared to meet the reporting requirements of the NSW DoPI and Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS) for the AGL CGP located in the Camden, Campbelltown and Wollondilly Local Government Areas (LGAs) for the period of July 2012 to June 2013.

The requirements of the DoPI and the DTIRIS are provided in Section 1.2.1 and 1.2.2 below.

1.2.1 Requirements of the NSW Department of Planning and Infrastructure (DoPI)

The requirements for an AEPR are set out in the following Development Consent Conditions:

- DA No. 15-1-2002-i dated 23 July 2002, Schedule 3 Condition of Consent (CoC) No. 34;
- DA No. 246-8-2002-i dated 20 September 2002 Schedule 3 CoC No. 16;
- DA No. 282-6-2003-i dated 16 June 2004, Schedule 5 CoC No. 5;
- DA No. 183-8-2004-i dated 16 December 2004 Schedule 2 CoC No. 24;
- DA No. 9-1-2005 dated 26 May 2005 Schedule 2 CoC No. 42;
- DA No. 75-4-2005 dated 7 October 2005, Schedule 2 CoC No. 54;
- PA No. 06_0137 dated 9 December 2006, Schedule 4 CoC No. 3;
- PA No. 06_0138 dated 9 December 2006, Schedule 4 CoC No. 3; and
- PA No. 06_0291 dated 4 September 2008, Schedule 4 CoC No.3.

In summary, the Development Consents require the preparation of an AEPR within twelve months of the date of the consent, and annually thereafter during the life of the development. As the approval dates vary, the AEPR is prepared on a July to June basis to standardise reporting and to meet the requirements of both the DoPI and DTIRIS.

The AEPR is to be submitted to the Director-General and shall include, but not be limited to:

- The standards, performance measures and statutory requirements the development is required to comply with;
- An assessment of the environmental performance of the development to determine whether it is complying with these standards, performance measures, and statutory requirements;
- Reporting against the implementation of the Project Commitments Register;
- Copy of the Complaints Register for the preceding twelve month period and indicating what actions were (or are being) taken to address these complaints;
- Indication of what actions were taken to address any issue and/or recommendation raised by the Community Consultative Committee;
- Provision of the detailed results of all the monitoring required by each consent;
- Review of the results of this monitoring against:
  - Impact assessment criteria;
  - Monitoring results from previous years;
  - Predictions in relevant environmental assessment documents.
- Identify any non-compliance during the year;
- Identify any significant trends in the data; and

- If any non-compliance is detected, describe what actions and measures would be carried out to ensure compliance, clearly indicating who would carry out these actions and measures, when they would be carried out, and how the effectiveness of these measures would be monitored over time.

This document has been prepared to address the requirement for an AEPR, for the period of 1st July 2012 to 30th June 2013, pursuant to the above listed Development Application Approvals and Project Approvals.

1.2.2 Requirements of Department of Trade and Investment, Regional Infrastructure and Services NSW (DTIRIS NSW)

The requirement for an Annual Environmental Management Report (AEMR) is set out in Clause 3 of the PPLs 1, 2, 4, 5, and 6 transferred to AGL by the Director-General 22 November 2010.

The PPLs require the preparation of an AEMR in accordance with the DTIRIS guidelines.

This AEPR has been prepared in accordance with the DTIRIS guideline EDG03 '*Guidelines to the Mining, Rehabilitation and Environmental Management Process*' (dated January 2006) (EDG03). This was the current policy guideline at the time of drafting this report. Accordingly the headings in this AEPR are provided in accordance with the 2006 Guideline for preparation and formatting of AEMRs. Where information required under a heading is not applicable to the CGP, the heading has been kept and the applicability stated.

On 9 September 2013, the Department released '*ESG3: Mining Operations Plan (MOP) Guidelines', September 2013* (ESG3) which details a new process for monitoring and managing progression towards successful rehabilitation outcomes. The ESG3 Guideline requires industry to identify and provide measurable data and demonstrate that proposed rehabilitation outcomes are achievable and realistic within a given timeframe.

The ESG3 Guideline supersedes or replaces:

- EDG03 Guidelines to the mining, rehabilitation and environmental management process (January, 2006) (EDG03); and
- EDG11 Format and guideline.

As the ESG3 Guideline was issued after the reporting period of this AEPR, this report follows the requirement of EDG03 Guidelines.

The plans required by DTIRIS's EDG03 and ESG3 guidelines are not relevant to the operation of the CGP or its annual reporting. A plan showing the locations of the PPLs is included as Appendix A.

1.3 Format of the Annual Environmental Performance Report

This AEPR is formatted as follows:

- **Section 1:** Introduction - Provides an introduction and background of the AEPR and its previous histories;
- **Section 2:** Camden Gas Project Area Details – Provides the projects details and relevant contacts;
- **Section 3:** Environmental Standards, Performance Measures and Statutory Requirements - Lists the environmental regulatory performance requirements relevant to the Camden Gas Project;
- **Section 4:** Operations within the Reporting Period - Describes the operations during the reporting period;
- **Section 5:** Environmental Management and Performance - Outlines the environmental management and performance of the Camden Gas Project for the period;
- **Section 6:** Rehabilitation - Describes the rehabilitation undertaken within the CPG during the reporting period;
- **Section 7:** Project Commitments Register - Provides an update to the Project Commitments Register (Compliance Register);
- **Section 8:** Stakeholder Engagement - Describes the stakeholder engagement that has been undertaken during the reporting period; and
- **Section 9:** Summary of Environmental Non-Compliance Issues and Actions – Describes the non-conformances identified and any actions to address non-conformance for the reporting period.

2 Camden Gas Project Area Details

2.1 Project Details and Contacts

A map of the CGP and its PPL locations is contained in Appendix A. The details of each property or area of the CGP are provided in Appendix B. The CGP infrastructure map for works undertaken during this reporting period is provided in Appendix C.

A list of project details and contacts as required by DTIRIS is provided in Table 2-1 below.

Table 2-1: Project Details and Contacts

Project Details	
Mine/project name:	**Camden Gas Project**
Titles / Consents:	Refer to Table 3-1
Expiry Date of Titles / Consents(s)	Refer to Table 3-2
Titleholder	AGL Upstream Investments Pty Limited
Operator	AGL Upstream Investments Pty Limited
Project Manager Details	
Contact name	Dennis Chia
Position	Operations Manager
Contact address	AGL Rosalind Park Gas Plant, Lot 35, Medhurst Road, Menangle, NSW, 2568
Telephone	02 4633 5200
Facsimile	02 4633 5201
Email	dchia@agl.com.au
Reporting officer details	
Contact name	Aaron Clifton – Environment Manager, Upstream Gas
Contact address	AGL Rosalind Park Gas Plant Lot 35, Medhurst Road, Menangle, NSW, 2568
Telephone	02 4633 5200
Facsimile	02 4633 5201
Email	aclifton@agl.com.au
Other Contact Details	
24 hour hotline	02 9963 1318
POP and AEMR Reporting Periods	
POP Commencement Date	01 May 2008
POP Period End Date	31 May 2015
AEMR Commencement Date	July 2012
AEMR Period End date	June 2013

3 Environmental Standards, Performance Measures and Statutory Requirements

This section provides a list of the environmental regulatory requirements relevant to the CGP to June 2013.

3.1 Consents, Leases and Licences

Seven Development Applications (DAs), three Project Approvals and one Concept Plan Approval have been approved for the CGP under the EP&A Act. Table 3-1 provides a description of the activities for which each of the DAs and Project Approvals has been issued.

Table 3-1: Activities described by approved Development Applications (DAs)

Development Application No.	Description of Proposed Development
DA No. 15-1-2002i, dated 23 July 2002	The Minister for Planning (DoPI) determined the development application for Stage 1 in accordance with Section 76A, Section 80, and Section 91 of the *Environmental Planning and Assessment Act 1979* by granting consent to the proposed development referred to as "The Camden Gas Project Stage 1". The Conditions of Development Consent for DA No. 15-1-2002i-I dated 23 July 2002 relate to the Camden Gas Project Stage 1 (the 'Development') issued to Sydney Gas Operations Ltd. The Development Consent describes the Development as: - *"The continued operation of the existing 20 production wells;* - *Operation of 5 additional wells not yet completed and/or drilled;* - *Operation of the existing and proposed gas gathering system;* - *Operation of the existing gas treatment plant;* - *Production of up to 93,000 GL/month from the treatment plant;* - *Sale and distribution of gas to the AGL gas network; and* - *Operation of the existing site office and pipeyard depot."*
	A modification to this DA, dated 16 May 2006, was issued for the following: - *"Construction, drilling and operation of a directional well from LB09".*
	A modification to this DA, approved 9 February 2007, was issued for the following: -*"re-drilling of wells Apap 01 and Mahon 01."*
	A modification to this DA, dated 4 July 2007, was issued for the following: -*"construction, drilling and operation of 2 surface to in-seam wells (AP02/AP03) at AP01".*
	A modification to this DA, dated 4 August 2008, was issued for the Kay Park and Loganbrae gas gathering line modification project.
DA-246-8-2002i – dated 20 September 2002	The Minister for the NSW Department of Infrastructure, Planning and Natural Resources (now DoPI) determined the development application in accordance with Section 80 of the *Environmental Planning and Assessment Act 1979*. The Conditions of Development Consent for DA No. DA-246-8-2002i dated 20 September 2002, relate to the Camden Gas Project Stage 1 (the 'Development'). The Development Consent describes the proposed

Development Application No.	Description of Proposed Development
	development as: -*"The connection of 3 existing wells (KP1, KP2, and KP3) to the Ray Beddoe Treatment Plant, and the continued production and sale of methane gas from the 3 wells. "*
	A modification to this DA, dated 4 July 2007, was issued for the following: *-construction, drilling and operation of 2 surface to inseam wells (KP05 and KP06) at KP01"*
	A modification to this DA, dated 4 August 2008 was issued for the Kay park and Loganbrae gas gathering line modification project.
	A modification to this DA, dated 3 December 2008 was issued for the construction and operation of one Surface SIS well (KP05) and one direction well (KP06) from KP01.
	A modification to this DA, dated 20 April 2011, was issued for the construction, drilling and operation of 2 surface to in-seam wells (KP05 and KP06).
DA No. 282-6-2003-i – 16 June 2004	The Minister for Urban Affairs and Planning (now DoPI) determined the development application for Stage 2 in accordance with Section 76A, Section 77A, and Section 91 of the *Environmental Planning and Assessment Act 1979* by granting consent to the proposed development referred to as "The Camden Gas Project Stage 2". The Conditions of Development Consent (reference 112467721) for DA No. 282-6-2003-i dated 16 June 2004 relate to the Camden Gas Project Stage 2 (the 'Development') issued to Sydney Gas Operations Ltd. The Development Consent describes the Development as: *- "construction and drilling of 20 wells on the EMAI site;* *- Operation and production of gas from the existing (drilled) 23 wells and 20 wells to be constructed (a total of 43 wells);* *- Construction and operation of the gas gathering system;* *- Construction and operation of the gas treatment plant, associated workshop and office facilities; and* *- Production of up to 14.5 petajoules per annum from the gas treatment plant."*
	A modification to this DA, dated 26 August 2004, was issued to include additional land that was emitted from the development consent.
	A modification to this DA, dated 01 February 2005, was issued to amend an access road and gathering line route on the EMAI.
	A modification to this DA, was issued, dated 01 June 2005.
	A modification to this DA, dated 16 May 2006, was issued for the following: *- "Construction, drilling and operation of 1 directional well from GL7 and 2 directional wells from GL10".*
	A modification to this DA, approved 22 October 2006, was issued for the following: -*"Construction, drilling and operation of 1 directional well (GL16) from GL7 and 1 directional well (GL15) and 1 Surface to in-seam well (GL14) from GL10"*
	A modification to this DA, approved 1 November 2006, was issued for the following: -*"construction, drilling and operation of 1 directional well (GL16) from GL7 and 2 Surface to in-seam wells (GL14 and GL15) from GL10."*
	A modification to this DA, approved 2 May 2007 was issued for the following:

Development Application No.	Description of Proposed Development
	- relocation of the Rosalind Park Gas Plant access road
	A modification to this DA, dated 4 July 2007, was issued for the following: -*"construction, drilling and operation of 1 surface to in-seam well (EM38) at EM20 and upgrading (twinning) of the gas gathering line between MP14-GL10, GL10-GL05, GL05-GL07 and RP03-RP08"*
	A modification to this DA, dated 11 April 2008, was issued for the following: *"construction, drilling and operation of 2 surface to in-seam wells EM39 (from EM02) and GL17 (from GL05), upgrading (twinning) of the gas gathering line from EM39 to the junction of the gas gathering line and road to the EM03 well, and connection of the new wells to the existing gas gathering system."*
	A modification to this DA, dated 16 March 2009, was issued for the construction of an access road to the existing RP09 gas well and the twinning of a small section of the existing gas gathering line between RP08 and the RPGP.
	A modification to this DA, dated 18 September 2009, was approved for the re-routing of a damaged gas gathering line at Glenlee.
	A modification to this DA, dated 25 November 2010, was issued for the modification of RPGP noise monitoring requirements, air emission concentration limits and waste storage and generation volumes.
DA-183-8-2004i – 16 December 2004	The Minister for the NSW Department of Infrastructure, Planning and Natural Resources (now DoPI) determined the development application in accordance with Section 80 of the *Environmental Planning and Assessment Act 1979*. The Conditions of Development Consent for DA No. DA-183-8-2004i dated 16 December 2004 relate to the Camden Gas Project Stage 2 (the 'Development'). The project involves the following: - Connection of 15 existing coal seam methane wells to the Rosalind Park Gas Plant from the Mount Taurus and Menangle Park properties, for the production of methane gas; and - Construction of a Dam at the MT1 gas well site.
	A modification to this DA , dated 4 July 2007, was issued for the following: *"construction, drilling and operation of 1 surface to in-seam well (MP30) at MP13 and upgrading (twinning) of the gas gathering line between MP13 and MP14."*
	A modification of this DA (DA 183-8-2004i - Mod 2), dated the 9 July 2012, was issued for the following: *"Construction, drilling and operation of 1 surface to in-seam well (MP25) adjacent to MP16 and upgrading (twinning) of the gas gathering line between MP16 and MP13/30."*
DA 9-1-2005 – 26 May 2005	The Minister for the NSW Department of Infrastructure, Planning and Natural Resources (now DoPI) determined the development application in accordance with Section 80 of the *Environmental Planning and Assessment Act 1979*. The Conditions of Development Consent for DA No. DA-9-1-2005 dated 26 May 2005, relate to the Camden Gas Project Stage 2 (the 'Development'). The Development Consent describes the proposed development as: - *"Construction and drilling of well GL11;* *- Construction of a gas gathering system between four wells at Glenlee and two wells at EMAI;* *- Connection of 6 coal seam methane wells to the previously approved Stage 2 Camden Gas Project – Gas Treatment Plant, for the production of methane gas."*

Development Application No.	Description of Proposed Development
	A modification to this DA, dated 16 May 2006, was issued for the following: - *"Construction, drilling and operation of a directional well from each of GL02 and GL11."*
	A modification to this DA, dated 4 July 2007, was issued for the following: *"upgrading (twinning) of the gas gathering line between GL02 and GL05."*
	A modification to this DA, dated 16 November 2010, was issued for the following: modification of Schedule 2, Condition 26.
DA 75-4-2005 – 07 October 2005	The Minister for the NSW Department of Infrastructure, Planning and Natural Resources (now DoPI) determined the development application in accordance with Section 80 of the Environmental *Planning and Assessment Act 1979*. The Conditions of Development Consent for DA No. DA-75-4-2005 dated 07 October 2005 relate to the Camden Gas Project Stage 2 (the 'Development'). The Development Consent describes the proposed development as: - "Construction and drilling of 7 wells; - Construction of a gas gathering system and access roads; - Connection of the wells to the Stage 2 Camden Gas Project – Gas Treatment Plant; and - Production of methane gas."
	A modification to this DA, dated 4 July 2007, was issued for the following: *"construction and drilling of 9 wells, including 2 surface to in-seam wells (SL08 and SL09) at SL03."*
	A modification to this DA, dated 10 January 2010, was approved for the twinning of a gas gathering line from well surface locations SL03 and SL09 to the Rosalind Park Gas Plant.
DA 171-7-2005 – 2006	The Minister for Planning determined the application in accordance with Section 80 of the *Environmental Planning and Assessment Act 1979*. The Conditions of Consent for DA 171-7-2005 relate to the El Bethel wells. The project involves the following: - Construction and drilling of 10 wells (EB01 – EB10); - Construction of a gas and water gathering system and access roads; - Connection of the wells to the Rosalind Park Gas Plant; and - Production of methane gas. ***Note: This Development Consent has expired during this reporting period. This Development Consent will be removed for future reporting periods.***
Project Approval 06_0137 – 9 December 2006	The Minister for Planning approved the Project under Section 75J of the *Environmental Planning and Assessment Act 1979*. The Conditions of Consent for Project Approval 06_0137 dated 9 December 2006 relate to the Razorback Wells (RB03-RB12). The project involves the following: - Construction and drilling of wells RB03-RB12 and gas gathering lines.
Project Approval 06_0138 – 9 December 2006	The Minister for Planning approved the Project under Section 75J of the *Environmental Planning and Assessment Act 1979*. The Conditions of Consent for Project Approval 06_0138 dated 9 December 2006 relate to the Elizabeth Macarthur Institute Wells (EM23-EM36). The project involves the following: - Construction and drilling of wells EM23-36 and gas gathering lines.
	A modification to this Approval, dated 6 August 2007, was issued for the following:

Development Application No.	Description of Proposed Development
	"One additional directional well at an existing well, changing an approved but not yet constructed well to a directional well, connection of the wells to the existing gas gathering system and production of coal seam methane gas."
Project Approval 06_0291 – 4 September 2008	The Minister for Planning approved the Project under 75J of the *Environmental Planning and Assessment Act 1979*. The Conditions of Consent for Project Approval 06_0291 dated 4 September 2008 relate to the Spring Farm and Menangle Park wells. The project involves the following: Construction and drilling of wells and gas gathering lines in the Spring Farm and Menangle Park area.
	Modifications to this PA were issued 7 January 2011 and 20 April 2011 to include gas gathering lines MP06 – 11 and MP11 – MP23 (via MP19), and, MP03-05 and MP22 – SL02 respectively.
Concept Plan Approval 06_0292 – 4 September 2008	The Minister for Planning approved the Project under 75O of the *Environmental Planning and Assessment Act 1979*. The Conditions of Consent for Project Approval 06_0292 dated 4 September 2008 relate to the Spring Farm and Menangle Park wells. The project involves the following: - Construction and operation of coal seam methane gas wells and associated infrastructure within the Stage 2 Concept Plan area of the Camden Gas Project.

The standards, performance measures and statutory requirements with which the CGP is required to comply with are outlined in the consents, leases and licences for the CGP. A list of the relevant consents, leases and licences is contained in Table 3-2. The standards, compliance levels and regulatory requirements resulting from the consents, leases and licences are identified for each matter reported in Section 5 Environmental Management and Performance of this AEPR.

Table 3-2: Consents, Leases and Licences

Requirement	Date of Requirement
Petroleum Exploration Licence No.2 (PEL), issued by the Department of Mineral Resources (now DTIRIS)	The application for the renewal of PEL 2 has been lodged, and AGL are awaiting the offer for renewal from NSW Coal & Petroleum Titles.
PPL No.1, issued by the Department of Mineral Resources (now DTIRIS)	2 September 2002 (for a period of 21 years - the lease holder shall relinquish areas where no wells have been drilled within 10 years of granting this lease)
PPL No.2, issued by the Department of Mineral Resources (now DTIRIS)	10 October 2002 (for a period of 21 years)
PPL No.4, issued by the Department of Mineral Resources (now DTIRIS)	6 October 2004 (for a period of 21 years)
PPL No.5, issued by the Department of Mineral Resources (now DTIRIS)	28 February 2007 (for a period of 21 years)
PPL No. 6, issued by the Department of Industry and Investment (now DTIRIS)	29 May 2008 (for a period of 21 years)
Conditions of Consent for DA 15-1-2002i (file no. S00/00945), issued by the DoPI. The requirements of the Environment Protection Licence 12003 have been incorporated into relevant conditions of consent	23 July 2002 (for a period of 21 years from date of granting of the production lease). If after 5 years of the date of this consent any well that is subject of this

Requirement	Date of Requirement
	consent has not yet been drilled or completed, then the applicant shall surrender the approval for that well. The following modifications have been issued to this DA: - modification dated 16 May 2006 - modification dated 9 February 2007 - modification dated 4 July 2007 - modification dated 4 August 2008
Conditions of Consent for DA 246-8-2002i (file no. S02/01615), issued by the DoPI	20 September 2002 (for a period of 21 years from date of granting of the production lease). The following modifications have been used to this DA: -modification dated 4 July 2007 -modification dated 4 August 2008 -modification dated 3 December 2008 -modification dated 20 April 2011
Conditions of Consent for DA 282-6-2003-i, issued by the DoPI. The requirements of the Environment Protection Licence 12003 and 3A Permit have been incorporated into this Condition of Consent.	16 June 2004 (for a period of 21 years). The following modifications have been issued to this DA: - modification dated 26 August 2004 - modification dated 01 February 2005 - modification dated 01 June 2005 - modification dated 16 May 2006 - modification dated 22 October 2006 - modification dated 1 November 2006 - modification dated 2 May 2007 - modification dated 4 July 2007 - modification dated 11 April 2008 - modification dated 16 March 2009 - modification dated 18 September 2009 -modification dated 25 November 2010
Conditions of Consent for DA-183-8-2004i, issued by the DoPI	16 December 2004 (for a period of 21 years). A notice of modification was issued on the 4 July 2007. A notice for modification was issued on the 9 July 2012
Conditions of Consent for DA 9-1-2005, issued by the DoPI	26 May 2005 (for a period of 21 years). The following modifications have been issued to this DA: - modification dated 16 May 2006 - modification dated 4 July 2007 -modification dated 16 November 2010
Conditions of Consent for DA 75-4-2005, issued by the DoPI	07 October 2005 (for a period of 21 years or expiry date of PPL No.4) The following modifications have been issued to this DA:

Requirement	Date of Requirement
	- modification dated 4 July 2007 - modification dated 10 January 2010
Conditions of Consent for DA 171-7-2005, issued by the DoPI	25 March 2006 (for a period of 21 years or expiry date of PPL No.4)
Conditions of Approval for PA 06_0137, issued by the DoPI	9 December 2006 (for a period of 21 years or expiry date of PPL No.4)
Conditions of Approval for PA 06_0138 issued by the DoPI	9 December 2006 (for a period of 21 years or expiry date of PPL No.4) A notice of modification was issued on the 6 August 2007.
Conditions of Approval for PA 06_0291 issued by the DoPI	4 September 2008 (for a period of 21 years or expiry date of PPL No.5) The following modifications have been issued to this PA: - modification dated 7 January 2011 - modification dated 20 April 2011
Conditions of Approval for Concept Plan Approval 06_0292 issued by the DoPI	4 September 2008 (for a period of 5 years)
Environment Protection Licence No.12003, issued by the Environment Protection Authority, incorporated into the Office of Environment and Heritage, for Petroleum and Fuel Production (>200,000 to 500,000 T)	Issued September 2003, anniversary date 22 December, review date 23 June 2013. This licence has most recently been varied by notice 1507776 and re-issued on the 13 May 2013.
Production Operations Plan (POP)	01 May 2008 – 31 May 2015
Pipeline Licence No.30, issued by Department of Energy, Utilities and Sustainability, under NSW *Pipelines Act 1987*	19 May 2004 (for a period of 20 years)
Bore Water Licence relating to Lot 6 DP 808569 (Licence No: 10BL160600), issued by Department of Natural Resources (Now NSW Office of Water)	24 September 2009 to 23 September 2014
Bore Water Licence relating to Lot 62 DP 735555 (Licence No: 10BL159415), issued by Department of Natural Resources (Now NSW Office of Water)	09 June 2010 to 08 June 2015
Controlled Activity Approval for a gas gathering line crossing of an existing drainage line at Kay Park	10 December 2008 to 10 December 2012
Controlled Activity Approval for temporary culvert installation and removal at GL17 well site	3 June 2008 to 3 June 2013
Bore Water Licences for Industrial (CSG dewatering) for 136 bores at various locations – Transitioned to 4 Water Access Licences, Works Approvals and Use Approvals (WAL25054, WAL 24856, WAL 24734 and WAL 24965)	February 2011 to February 2016

AGL was issued 136 bore licences in February 2011 by the NSW Office of Water under the *Water Act 1912* for the CGP. These production bore licences have now been transitioned to four Water Access Licences, Works Approvals and Use Approvals under the *Water Management Act 2000*. Existing production gas wells have a combined allocation of 30 ML per year and are licensed for industrial purposes.

AGL has been instructed by the NSW Office of Water to continue to comply with the previous conditions as listed on the bore licences until the NSW Office of Water has finalised conditions on the newly transitioned Water Access Licences.

3.1.1 WorkCover Notification of Storage of Dangerous Goods

There is no requirement to notify WorkCover regarding the storage of Dangerous Goods at the RPGP due to the minor quantities of Dangerous Goods stored on site.

4 Operations within the Reporting Period

This section provides a description of the operations undertaken for the CGP and the status as of June 2013.

4.1 Description of Operations from July 2012 to June 2013

4.1.1 Development/Construction

During the reporting period development associated with the CGP comprised of the following:

Drilling

The drilling and completion of gas well MP25 at Menangle Park was completed in September 2012. No wells were fracture stimulated.

The location of the existing wells and new well is illustrated in Appendix C.

Gathering Line Installation

Approximately 2720m of GGL was constructed and commissioned across the Menangle Park site for gas well MP03 and MP25 (being MP03-05 GGL and MP14-25 GGL). The location of the installed GGLs is illustrated in Appendix C.

Installation of the GGLs included the following construction activities:

- Underbore of M5 Freeway;
- Installation of gathering line within the Australian Botanic Gardens Mt Annan;
- Crossing of the HP Gas Pipelines;
- Underbore of the SCA Upper Canal;
- Underbore of Sydney Water, water main; and
- Underbore and connection to MP05.

Rosalind Park Gas Plant Compressors

The RPGP compressors operated during the reporting period for:

- Compressor No.1 operated for 8,346 hours;
- Compressor No.2 operated for 6,883 hours; and
- Compressor No.3 operated for 2,425 hours.

Land Access and Approvals

The RPGP Environment Protection Licence No. 12003 (EPL 12003) was varied (May 2013) after consultation between the EPA and AGL. The licence was varied to include amended Leak Detection and Repair Program (LDAR) monitoring and reporting requirements, the addition of water quality monitoring requirements in accordance with AGL's Groundwater Monitoring Plan, an added condition that requires the updating of spatial information data when major infrastructure changes take place, and an increased well head maintenance area as requested by AGL.

The CGP Northern Expansion Project has been a pending application for development consent since 2010, originally as a Part 3A Major Project and more recently as a State Significant Development under the EP&A Act. In February 2013 AGL requested to suspend DoPI's assessment of the proposal to allow further investigation and response to community concerns with the project.

A modification to DA 183-8-2004i was submitted in October 2011 with approval received on 9 July 2012. The modification is for the addition of one production well (MP25) adjacent to MP16, the upgrade of the associated GGLs and the development of additional access tracks for construction access.

Current Status of Well Operations

The status of CGP well operations as of 30th June 2013 are summarised in Appendix E. The only amendment from the previous reporting period is the development of MP25.

4.1.2 Exploration

No exploration activities were undertaken during this reporting period.

4.1.3 Production

Production information is provided to DTIRIS on a monthly basis in accordance with the project's production lease requirements.

4.1.4 Land Preparation

Wells drilled during the previous reporting period MP22 and MP11 underwent further rehabilitation for site access during this reporting period. The sites are under a long-term monitoring program. The land at these well sites has been returned to the landholder's use where possible.

During this reporting period on-going rehabilitation and management measures were completed for SF20 well surface locations (SF05, SF07, SF08, and SF09) which were drilled during previous reporting periods.

The only drilled well MP25 during this reporting period has been completed and brought onto production with the drilling footprint area of disturbance undergoing rehabilitation. At the completion of rehabilitation, the operational area will only consist of a fenced footprint containing the wellhead, water separating equipment and ancillary equipment.

The area of disturbance associated with the installation of gas gathering infrastructure for gas well MP03 and MP25 has also been rehabilitated and is under a long-term monitoring program.

4.1.5 Mining, Mineral Processing and Ore Production Stockpiles

The CGP primarily extracts coal seam gas. Therefore no mining, mineral processing or ore stockpiling is undertaken.

4.1.6 Other Infrastructure Management

No other infrastructure development associated with the CGP during the reporting period has occurred.

4.1.7 Production and Waste Summary

A summary of waste produced is included in Section 5.7.

4.1.8 Water Management

A summary of water management is included in Section 5.5 and 5.6 of this report.

4.1.9 Hazardous Material Management

A summary of hazardous material management for the reporting period is included within Section 5.8 of this report.

5 Environmental Management and Performance

This section of the AEPR outlines the environmental management and performance of the CGP. Where environmental monitoring is required by the Conditions of Consent for the development, the monitoring requirement and results are discussed under the relevant sections headings. The specific management strategies, conditions of consent or monitoring requirements are provided within Appendix F.

This section documents the implementation and effectiveness of control strategies for environmental risks identified in the EMP and previous AEPR.

5.1 Overview of Environmental Management

CGP Environmental Management Plan (EMP)

In 2008 AGL commenced the development of a Project Environmental Management System (EMS) to manage potential environmental aspects associated with CGP activities. As part of this process an Environmental Management Plan (EMP) and Environmental Sub Plans were prepared in order to facilitate the uniform implementation of environmental management. In 2012 the EMP and selected sub-plans were updated to improve AGL's environmental management and procedures. The 2012 EMP was approved by the Director General in July 2013 and implemented immediately by AGL.

The EMP and its approved Sub Plans cover the following issues:

- Noise Management;
- Flora and Fauna Management;
- Soil and Water Management;
- European Heritage Management;
- Landscape and Rehabilitation Management;
- Aboriginal Cultural Heritage Management;
- Air Quality Management;
- Waste Management;
- Traffic Management;
- Dangerous Goods and Hazardous Materials Storage; and
- Environmental Emergency Response.

Additions to the EMP in this reporting period include:

- Groundwater Management Plan;
- Updated Health, Safety and Environment Policy;
- Supplement to the Aboriginal Cultural Heritage Management Plan; and
- Site Layout and Rehabilitation Plans.

Pollution Incident Response Management Plan

In November 2012, AGL completed a Pollution Incident Response Management Plan (PIRMP) for the CGP in response to an amendment to the POEO Act. The POEO Act includes a provision that requires holders of any EPL to prepare keep and test a PIRMP and implement that plan in the event of a pollution incident in accordance with Part 5.7A of the POEO Act and the POEO (General) Regulation.

The PIRMP details the procedures for the notification of pollution incidents resulting in or having the potential to cause material harm to the environment. The notification of environmental incidents under the PIRMP is only required for those incidents causing or threatening to result in material environmental harm (a material harm incident) as defined in the POEO Act.

All other incidents deemed by AGL not to be causing or threatening to result in material environmental harm will be managed through AGL's Emergency Response Plan and supporting procedures. In situations where notification of environmental harm is required under EPL 12003 Condition R.2, AGL will comply with Condition R.2 and report the incident to the EPA accordingly.

5.2 Actions Required by Regulatory Authorities from Previous AEPR Review

This section provides an overview of actions requested by DTIRIS following their review of the previous AEPR, AGL had received no comment from DTIRIS on the 2011/12 AEPR at the time of the preparation of this report.

5.3 Air Pollution

5.3.1 Air Pollution Management

Air emissions associated with the CGP are primarily oxides of nitrogen (NO_X) and oxides of sulphur (SO_X) associated with compression of the coal seam gas, and to a lesser extent vehicle emissions. Other air emissions include potential dust emissions associated with construction activities and vehicle movements and fugitive emissions from production operations.

The management objectives with regards to air quality is to adequately protect air quality by controlling the quality and minimising the quantity of air emissions associated with compression of the coal seam gas; minimising the quantity of vehicle exhaust emissions; preventing/minimising dust generation during construction, maintenance and operations and rehabilitation activities; and ensuring that any uncontrolled air emissions are acted upon immediately.

Management strategies used to meet the objectives for air quality that are contained in the CGP EMP are detailed in Table F-1 in Appendix F.

Fugitive Emissions Monitoring Program

On the 1st March 2013 AGL announced that the CGP will become the first coal seam gas project in New South Wales to implement a fugitive methane emissions monitoring program. This program is part of the new and expanded air and water monitoring program, which has been developed following consultation with the Office of the New South Wales Chief Scientist and Engineer, the New South Wales Land and Water Commissioner, the EPA, and the DoPI.

The new program is leading the industry in best practice for emissions monitoring. The details of the revised air monitoring program include:

- Monitoring concentrations of fugitive methane emissions within the existing CGP area, which will be completed by an external air monitoring consultant at each monitoring location over 12 weeks;
- The use of two methane gas instruments with isotopic analysers which are able to fingerprint the source of methane emissions from coal as opposed to methane emissions from landfill, agriculture or other natural or industrial sources; and
- Sampling and testing of the methane concentrations in the areas surrounding the existing CGP area.

This enhanced monitoring was commenced during the reporting period. Once the monitoring is completed, a report will be prepared and made publicly available to provide residents of Wollondilly, Campbelltown and Camden access to more information about air quality in their communities.

5.3.2 Air Quality Criteria and Monitoring Requirements

Ray Beddoe Treatment Plant – DA-15-1-2002i

The Ray Beddoe Treatment Plan (RBTP) was shut down in February 2007, fully decommissioned, rehabilitated and the EPL surrendered in June 2009, therefore there are no further requirements to undertake air emissions monitoring.

Rosalind Park Gas Plant – DA-282-6-2003-i

Development Consent DA-282-6-2003-i, Schedule 4 Clause 47, 48, and 58 specifies requirements to monitor air quality for the production area and air emission criteria. These requirements are as per the EPL No. 12003 (with the exception of Clause 47 which is not a requirement of this EPL) and are reproduced in Table F-2 in Appendix F.

DA 282-6-2003, Schedule 5, CoC 12 and EPL 12003 (L2) stipulate load limits for assessable pollutants that must not be exceeded during the reporting period from the RPGP. These are summarised in Table F-3 in Appendix F.

Construction and Field Operations – Dust

A number of development consents stipulate requirements relating to dust management. These are summarised in Table F-4 of Appendix F.

5.3.3 Air Quality Monitoring Results

Rosalind Park Gas Plant – Quarterly Stack Emission Monitoring

Quarterly monitoring reports for the RPGP were prepared by Emission Testing Consulting (ETC) and EML Air Pty Ltd (EML):

- Quarterly Stack Emission Survey, 11-13th September 2012 (EML);
- Quarterly Stack Emission Survey, 4-6th December 2012 (EML);
- Quarterly Stack Emission Survey, 27-28th March 2013 (ETC); and
- Quarterly Stack Emission Survey, 12-13th June 2013 (ETC).

Monitoring results are provided in Appendix H. All quarterly monitoring results were compliant with the licence concentration limit conditions of the current EPL 12003 for this period.

Rosalind Park Gas Plant – Air Emissions at Residences (Schedule 4, Clause 47)

EML and ETC undertook emission testing at the RPGP at quarterly intervals in accordance with the air pollutant criteria stipulated in DA 282-6-2003-I, Schedule 4, Clause 47.

Nitrogen Dioxide, Sulphuric Acid Mist and Sulphur Dioxide concentrations were measured at the emission points and compared to the input data used in the modelling for the air impact assessment. The testing confirmed compliance with air emission limits at the RPGP and therefore compliance at the nearest residence during this reporting period.

Rosalind Gas Plant – Assessable Pollutants and Air Concentration Limits

Under EPL 12003 for the RPGP, AGL is required to meet load limits for assessable pollutants plus calculate the annual pollutant loads and associated fees. Monitoring to enable the annual pollutant loads to be calculated was conducted quarterly by EML and ETC with the results included in the 2011/2012 Annual Return (summarised in Appendix H). In addition to this the EPL requires the monitoring of air concentration levels at discharge points for which the concentration of the pollutant must not exceed, which is monitored quarterly and continuously.

No exceedances of any of the pollutant load limits were reported within the 2011/2012 Annual Return. There was one exceedance of air concentration limits during the reporting period.

Rosalind Park Gas Plant – Continuous Monitoring

The EPL 12003 *Condition M2.3* and *DA-282-6-2003-i Schedule 4 Consent Condition 58* require continuous monitoring of NOx, temperature, flow rate, moisture and oxygen at Points 1, 2, and 3 at all times when the compressors are operating. A non-compliance with this condition was reported in the EPL Annual Return 2011/2012 for a portion of this AEPR's reporting period. Details of this non-compliance are provided within Section 9.1.1 of this report.

National Pollutant Inventory Reporting

The National Pollutant Inventory (NPI) Report for the RPGP for the 2011/2012 financial year was prepared and submitted on 28th September 2012. The NPI lists the fuel and energy usage plus emissions data for the Rosalind Park Gas Plant across the financial year prior to the report date. The NPI for the 2012/13 financial year was submitted on the 29 September 2013.

Construction and Field Operations – Dust Monitoring

During construction and field operations, various measures are implemented to ensure dust generation is avoided or ameliorated; including reduced travelling speeds on unsealed roads and use of water carts to suppress dust. Visual inspections of dust conditions are undertaken by site personnel to ensure dust generation avoidance measures are implemented.

No registered complaints regarding dust were recorded during the reporting period.

5.3.4 Air Pollution Environmental Performance / Trends

RPGP Quarterly Stack Emissions Monitoring

Quarterly stack emissions monitoring results were compliant with the licence concentration limits of EPL 12003 for this period and the previous reporting period. Air emission monitoring methodology was amended throughout the reporting period to comply with EPL 12003 Condition M2.4 (See Section 9 for more detail). AGL is continuing discussions with the EPA in regards to this Condition to enable full compliance.

RPGP Assessable Pollutant and Air Concentration Limits

The following pollutants are assessable emissions from the RPGP for which limits of the pollutants annual load or its air concentration is stipulated by the EPL 12003. These limits are reproduced in Appendix F. The annual assessable pollutant loads are calculated and reported within the Annual Return each year.

The assessable pollutants and air concentration limits for this reporting period are as follows:

- **Benzene -** Benzene is an assessable pollutant, measured annually in order to calculate the annual pollutant loads and associated fees under EPL 12003. For the 2011/ 2012 Annual Return the calculated annual load for benzene was 18.39 kg/year, which is well below the limit of 47 kg/year as required by EPL 12003. This represented an increase from the previous reporting period where 14.117 kg/year was calculated but is less than the annual load estimation of 42.5kg/yr as predicted in the RPGP EIS;
- **Benzo(a)pyrene (equivalent) -** Benzo(a)pyrene air emissions are an assessable pollutant and are measured annually in order to calculate the annual pollutant loads and associated fees under the EPL 12003. For the 2011/2012 Annual Return, the calculated annual load for Benzo(a)pyrene was 0.03 kg/yr, which is less than the annual load limit of 0.27 kg/yr as required by EPL 12003. This is also less than the annual load estimation of 0.24 kg/yr as predicted in the RPGP EIS;
- **Fine Particulates -** Fine particulates are an assessable pollutant and are calculated annually to determine the associated fees under EPL 12003. For the 2011/2012 Annual Return, the calculated annual total load for fine particulates was 94.28 kg/year. This is less than the 460 kg/year load limit required by EPL 12003, and less than the annual load estimation of 415kg as predicted in the RPGP Environment Impact Statement (EIS). This result was significantly less than that of the previous year's level of 391.75 kg/year;
- **Hydrogen Sulphide -** Hydrogen sulphide is an assessable pollutant and is calculated the annually to determine the associated fees under EPL 12003. For the 2011/2012 Annual Return, the calculated annual load for hydrogen sulphide was 0.727 kg/yr. This was an increase from the previous reporting period where the annual load calculated was 0.342 kg/year and is less than the 1.6 kg/yr load limit required by EPL 12003. The annual load also remains less than the annual load estimation of 1.4 kg/yr as predicted in the RPGP EIS;

- **Nitrogen Oxides -** Nitrogen oxide annual pollutant loads and air concentration limits are monitored on a quarterly and continuous basis. AGL has also voluntarily completed additional monthly monitoring at compressors 1, 2 and 3. All monitoring points throughout the reporting period complied with licence annual load limits. For the 2011/2012 Annual Return, the calculated annual load was 39,406 kg/yr, which is well below the licensed limit of 103,000 kg/yr. The Nitrogen oxides annual load for this reporting period was less than half the predicted assessable load of 93,226 kg/yr as stated in the RPGP EIS.
    - During the reporting period, Nitrogen oxides air concentration levels exceeded the licence limit at compressor 1 and compressor 2 on 4 occasions between September and December 2012. Details of this non-compliance are provided within Section 9.1.1 of this report;
- **Sulphur Dioxide, Sulphur Trioxide / Sulphuric Acid Mist Emissions –** Air concentration limits for Sulphur Dioxide, Sulphur Trioxide / Sulphuric Acid Mist Emissions are measured quarterly. No exceedances of the sulphur trioxide or sulphur trioxide/sulphuric acid mist concentration limits were recorded during the quarterly monitoring of this reporting period at any of the monitoring points as stated by EPL 12003;
- **Sulphur Oxides** – Sulphur oxides are measured quarterly in order to calculate the annual pollutant loads and the associated fees under EPL 12003. For the 2011/2012 Annual Return, the calculated annual total load for Sulphur Oxides was 5.222 kg/yr. This is significantly less than the 3000 kg/yr load limit required by EPL 12003 and less than the annual load estimation of 2689 kg/yr for sulphur oxide emissions as predicted in the RPGP EIS; and
- **Volatile Organic Compounds (VOCs) –** VOCs discharged to air are measured annually in order to calculate the annual pollutant loads and associated fees under EPL 12003. For the 2011/2012 Annual Return, the calculated annual load for VOCs was 27 kg/yr, which is well below the limit of 33,000 kg/year as required by EPL 12003. This load is less than the annual load limit of 29,696 kg/yr as predicted by the RPGP EIS.

There were no exceedances of the EPL 12003 licence limits for any of the assessable annual pollutant loads for the RPGP as reported within the 2011/2012 Annual Return. All assessable pollutants were also reported at below the annual load estimations as predicted in the RPGP EIS. This is similar to last year's reporting period.

There was a non-compliance identified in relation to an exceedance of air concentration levels for nitrogen oxides on a number of occasions. Details of this non-compliance are provided within Section 9.1.1 of this report. This is the first known occurrence at the RPGP.

RPGP Continuous Air Monitoring

Non-compliance with *EPL 12003 conditions O2 and M2.1 in relation to M2.3,* and *DA-282-6-2003-I Sch. 4, Condition 58* occurred during part of this reporting period as continuous monitoring for air emissions at the RPGP was not carried out for the full reporting period. See Section 9 for more detail.

Details of this non-compliance are provided within Section 9.1.1 of this report.

5.4 Erosion and Sediment

5.4.1 Erosion and Sediment Management

Soil types within all project areas are assessed on a regional and local scale. The aim of the assessment is to determine the impact of the existing and proposed operations on the soil groups identified within the area and assess what, if any, impacts may arise.

It has been determined that the soils and land capability within the area of current or proposed operations do not pose a significant constraint to development.

Activities that necessitate the removal of vegetation and disturbance to the soil surface have the potential to cause an increase in the effects of wind and water erosion.

Control of water erosion is a key environmental issue requiring careful consideration and management, so as to avoid the reduction of surface water quality through erosion processes and subsequent siltation.

In regard to erosion, the management objectives are to:

- Minimise and where possible, prevent soil disturbance and contamination caused by construction;
- Promote and maintain soil stability;
- Ensure there is no long-term erosion on compound areas; and
- Continue to monitor and manage soil erosion on the leased areas consistent with surrounding land and until the area has stabilised.

Management strategies employed to meet the objectives for erosion and sediment are outlined in the Soil and Water Management Sub Plan of the CGP EMP. A summary of some of the strategies is presented in Table F-5 of Appendix F.

5.4.2 Erosion and Sediment Related Activities

Construction works undertaken during the reporting period that related to erosion and sediment impacts consisted of the drilling of MP25 and GGL construction works within the Menangle Park site for MP03 and MP25.

To mitigate potential sediment and erosion impacts, the following controls were in place during each construction period:

- AGL's Soil and Water Management Sub Plan, which details sediment and erosion control measures for construction works including construction of new wells;
- Site specific Sediment and Erosion Control Plans were developed for MP25;
- Regular inspections of sediment and erosion controls were undertaken during construction works to ensure the controls are effective;
- Removal and decommissioning of sediment and erosion controls are fully documented and may only be completed upon approval by AGL's Environmental Operator and/or Field Environment & Safety Officer; and
- Prompt rehabilitation of well sites, access tracks and GGL to minimise soil exposure times.

5.4.3 Erosion and Sediment – Environmental Performance

All activities associated with erosion and sediment controls were compliant for the period with no community complaints or reportable incidents recorded.

5.5 Surface Water

5.5.1 Surface Water Management

Management strategies employed to meet the objectives for surface water are outlined in the Soil and Water Management Sub Plan of the CGP EMP. A summary of the strategies for erosion and sediment measures which relate to surface water are presented in Table F-5 of Appendix F.

5.5.2 Surface Water Generation Results

The CGP harvests rain water from the run off of all buildings within the RPGP. This water is stored in above ground rain water tanks and is used to service the RPGP's amenities and wash bay. Once used, the water is separately stored in ground tanks for grey water and septic water. A combined total of 454KL of grey water and septic water was transported off site by licensed contractors for disposal at a licensed facility.

5.5.3 Surface Water Monitoring Requirements

5.5.4 Surface Water Related Activities

During the reporting period, activities included the continued operation of the RPGP, drilling of a single well and the construction of associated GGL's.

Rain water that is not harvested at the RPGP is managed by the site's permanent sediment control pond.

5.5.5 Surface Water – Environmental Performance

During periods of continued dry weather, town water was delivered to the RPGP to enable the continued use of the amenities and wash bay. There were no issues in relation to surface water for the reporting period.

5.6 Groundwater

5.6.1 Groundwater Management

Management strategies employed to meet the objectives for groundwater are outlined in the Soil and Water Management Sub Plan and Groundwater Management Plan of the CGP EMP. A summary of the strategies for erosion and sediment measures which relate to groundwater are presented in Table F-5 of Appendix F.

The objectives and roles and responsibilities for groundwater management as stated in the Groundwater Management Plan is included under heading 'Surface Water and Groundwater Management' and Table F-6 of Appendix F.

5.6.2 Groundwater Generation Results

During the reporting period, water was produced from CSG wells during dewatering and well workovers in Kay Park, Spring Farm, Menangle Park, Razorback, Mt Taurus, EMAI, Wandinong and Glenlee fields. The following volumes were generated and recycled or disposed:

- 4,586KL of produced groundwater generated from wells during dewatering during this reporting period. This volume is well below the licensed 30ML (i.e. 30,000 KL) of groundwater allocated to the CGP;
- 1,905.6KL of produced water from AGL wells was reused for production, well workovers and drilling operations during the 2012/13 reporting period; and
- A combined total of 8,880.3KL of produced water from well sites and the RPGP was recycled or disposed during the 2012/13 reporting period at Worth Recycling.

5.6.3 Groundwater Related Activities

During the reporting period, AGL has actively undertaken a number of measures in relation to groundwater management:

- Phase 2 *Groundwater Investigations – Northern Expansion Area of the Camden Gas Project* continues to progress and has evolved to include the existing Camden Gas Project area;
- A *Hydrogeological Summary of the Camden Gas Project area* report was completed in January 2013 for the CGP area;
- EPL 12003 was varied during this reporting period after discussions between AGL and the EPA to add water monitoring requirements including a requirement to submit annually a Groundwater Monitoring Report;
- A Groundwater Management Plan, including implementation and broadening of a groundwater monitoring network, was approved by the NOW and EPA;
- A Bore Licence Compliance technical report is submitted to NOW annually; and
- The implementation of an expanded revised groundwater monitoring program for the CGP area in relation which includes:
  - The addition and accelerated installation of eight dedicated groundwater monitoring bores (increasing the current number of existing monitoring bores from three to eleven) to test water levels and water quality in the project area; and
  - Increasing the frequency of water quality sampling at the monitoring bores to quarterly and expanding the range of chemicals that are analysed.

AGL is currently undertaking Phase 2 of the *Groundwater Assessment and Conceptual Hydrogeological Model for the Northern Expansion Project*, which has evolved to include the existing CGP area as well. Phase 2 has involved the installation of an additional 5 monitoring bores during the reporting period (now eight monitoring bores in total), with a remaining three more to be installed in FY14. The environmental and radiogenic isotope sampling that was undertaken during October and November 2011 at the first site will be repeated at all sites in FY14. Preliminary findings of the sampling have been released to verify and enhance the understanding of aquifer characteristics and the hydrogeological conceptual model and were placed on the AGL Camden Website for public review during this reporting period (August 2012). Further results are expected to be released in early FY14.

The *Hydrogeological Summary Report of the Camden Gas Project* provides a summary of the hydrogeological environment within the CGP area. It has been compiled from available data including publicly available reports and data collected from AGL's activities in recent years. The report focuses on the geology, hydrogeology and groundwater use of the CGP area.

Discussions between AGL and the EPA in relation to the previously prepared Pollution Reduction Plans (PRPs) led to the variation in May 2013 of EPL 12003. The variations to the licence in relation to groundwater included the incorporation of groundwater monitoring conditions that are in accordance with AGL's Groundwater Monitoring Plan. This Plan was required by PRP 2 as stated in (the now deleted condition of) EPL 12003.

AGL's Annual Bore Licence Compliance Report was submitted during September 2013 as per requirements within the NOW bore licence conditions for the CSG wells.

5.6.4 Groundwater Monitoring Requirements

The monitoring requirements for water quality, required by DA-282-6-2003-I, are outlined in Table F-7 of Appendix F. It is noted that there are no limits for the specified parameters below.

The groundwater quality monitoring requirements for quarterly and annual sampling of water quality, required by *EPL 12003 Condition M2.5 and M2.6*, and the Water Bore Licences are outlined in Table F-8 of Appendix F. The EPL 12003 was varied during the reporting report to include groundwater monitoring requirements. There are currently no limits for the specified parameters.

5.6.5 Groundwater Monitoring Results

Water quality monitoring was undertaken monthly at the former EPL 12003 Point 8 (flare pond) during the reporting period for the factors required by DA-282-6-2003-I (listed in Table F-7 of Appendix F). Water samples were analysed by NATA accredited external laboratories, and the results of the water monitoring for the reporting period are summarised as follows:

- The water level in the flare pond remained at greater than 2m;
- Electrical conductivity levels ranged from 7320 µS/cm to 11100 µS/cm;
- Total suspended solids ranged from 8 to 72 mg/L;
- Biochemical oxygen demand levels ranged from 18 to 70 mg/L;
- Oil and grease results were all <5 mg/L;
- Total polycyclic aromatic hydrocarbons results were all 0.0 µg/L;
- Total phenols ranged from <0.05 to 0.06 mg/L;
- Total organic carbon levels ranged from <1 to 63 mg/L; and
- Total petroleum hydrocarbons ranged from 0 to 1940 µg/L.

Groundwater quality monitoring required by the recently varied EPL 12003, for the parameters listed in Table F-7 of Appendix F are to be undertaken at monitoring points 8-15 at quarterly and yearly intervals. Results are released quarterly. In addition, the results of the monitoring are to be submitted annually as a Groundwater Monitoring Report with the Annual Return. The first annual Groundwater Monitoring Report will be prepared and submitted with the 2012/2013 Annual Return.

5.6.6 Groundwater – Environmental Performance / Trends

The total volume of produced water generated has slightly decreased from 4727 KL last year to 4586 KL this period, representing a decrease of 3.0%. This is relatively consistent with the last reporting period.

The total volume of produced water reused for well workovers and drilling has slightly increased for this period in comparison with last reporting period. Total volume of produced water that was reused this reporting year was 1,905.6 KL as opposed to 1265 KL for the previous reporting period. This increase is due to the increased volume of produced water consumed in well workovers throughout the year.

Total recycled or disposed water has increased from 7292 KL last reporting period to 8,880.3 KL this period. This increase is partially due to an increase in the volume of produced water removed the RPGP flare pit.

In an attempt to meet the changing CSG industry and to reduce community concerns in relation to groundwater management and performance trends AGL has liaised with the EPA to include groundwater monitoring requirements for the CGP in the EPL 12003. As discussed above, EPL 12003 was varied during the reporting period to include such a condition.

During this reporting period AGL was compliant with its bore licence conditions and new EPL 12003 reporting requirements.

5.7 Waste Management

5.7.1 Waste Management

The management objective with regards to waste is to minimise waste creation and disposal and maximise reuse or recycling.

Management strategies used to meet the objectives for waste management are detailed in the CGP EMP with a summary included in Table F-9 of Appendix F.

5.7.2 Waste Generated and Disposed/Recycled

Table 5-1 summarises the amount of waste generated, disposed and recycled during the reporting period.

Table 5-1: Waste Generated and Disposed / Recycled

Waste Stream	Amount Disposed	Amount Recycled
Sewage and grey water from the RPGP site facilities	453.8 KL	
General waste	163.21 tonnes	
Waste oil		50.67 tonnes
Scrap steel		71 tonnes
Batteries		0.16 tonnes
Oil filters		1.2 tonnes
Paper		23.04 tonnes

AGL continues to operate a small wastewater treatment and separation plant at the RPGP. Oily water from the 65,000 L holding tank is pumped to the plant which separates the oil from the water by injecting the wastewater with a clay polymer that binds to the hydrocarbons producing a solid effluent. The solid effluent is stored in a skip bin and is taken off site to a licensed landfill. The clean water is transferred to the flare pond on site. Once a month, oil recycling contractors extract the oil from the top of the holding tank and take it off site for recycling.

5.7.3 Waste Management – Environmental Performance

Waste volumes were recorded for the RPGP during this reporting period which conforms to the relevant conditions of DA 282-6-2003-I. It was reported in the bi-annual 2010-2012 Independent Environmental Audit Report that information on waste transporters is not currently provided to the EPA as required by DA 282-6-2003-I. It is noted that this condition is no longer included in the EPL 12003 following a variation of the licence by the EPA which removed this waste reporting requirement.

AGL has commenced consultation with the DoPI and EPA in order to seek a modification of the development consent for DA 282-6-2003-I to provide consistency with EPL 12003 so that conformance will be achieved.

5.8 Hazardous Materials

5.8.1 Hazardous Material Management

The management objective with regard to hazardous materials is to manage the purchasing, storage, transport, handling and disposal of Dangerous Goods and Hazardous Materials (including waste Dangerous Goods and Hazardous Materials) during construction, operation and maintenance activities to avoid pollution of the environment (soil, surface water, groundwater, atmosphere).

AGL has developed a Dangerous Goods and Hazardous Materials Sub Plan which outlines the management strategies for achieving this objective.

5.8.2 Hazardous Materials Related Activities

AGL maintains an on-site chemicals register of all chemicals in use. The system includes Material Safety Data Sheets (MSDS) for all chemicals and appropriate emergency response and first aid provisions.

A Dangerous Goods Notification issued by WorkCover NSW is not required due to the small quantities of Dangerous Goods stored at the RPGP.

5.8.3 Hazardous Materials – Environmental Performance

All activities associated with hazardous materials management were compliant for the period with no reportable incidents recorded or community complaints received.

5.9 Contaminated Land

5.9.1 Contaminated Land Management

No land identified as contaminated or polluted forms part of AGL CGP land holdings.

In regard to preventing contamination or pollution, the management objectives are to:

- Avoid contamination of land or water; and
- Minimise risks to health and safety.

Management strategies employed to meet the objectives for preventing contamination or pollution are outlined in the Soil and Water Management Sub Plan and the Dangerous Goods and Hazardous Materials Sub Plan of the CGP EMP. A summary of the strategies is presented in Table F-10 of Appendix F.

5.9.2 Contaminated Land Management Requirements

In addition, the prevention of contamination or pollution management includes a duty to report and manage pollution incidents in accordance with the POEO Act. The provisions of the Act include a requirement for holders of EPL's to prepare, keep, test and implement a PIRMP. The specific requirements for PIRMPs are set out in Part 5.7A of the POEO Act and the *POEO (General) Regulation 2009*.

AGL completed their requirement to develop and implement a PIRMP in 2012.

5.9.3 Contaminated Land – Environmental Performance

All activities associated with land contamination or pollution were compliant for the period with no reportable incidents or community complaints recorded.

5.10 Threatened Flora and Fauna

5.10.1 Threatened Flora and Fauna Management

An assessment of flora and fauna is undertaken as part of each environmental assessment application with new project development. The aim of the assessment is to determine the potential impact of AGL's operations on the local ecology and to develop suitable management practices to be applied during the project's current and future full scale operational activities. The site assessments are based on a detailed site survey of all individual well sites, access routes, pipeline routes and project areas.

In general terms, AGL's selection criteria for new sites, highly regards previously disturbed areas and actively avoids areas of native vegetation or of environmental significance.

The disturbance created by the activities involved with the project is primarily limited to construction activities including ground disturbance from vehicles and drilling related equipment, pipeline trenching activities and limited land clearing for well sites.

Through careful planning the project components avoid significant flora and fauna habitats. There have been no identified significant issues that have been unable to be effectively avoided or managed during the project to date.

The EMAI is an area where preservation of significant stands of Cumberland Plains Woodland provides a breeding area suitable for numerous raptor species. During the reporting period no drilling related activities were undertaken in the EMAI field.

With regards to native flora and fauna the environmental management objective is to minimise the loss of remnant native vegetation and minimise adverse impacts on fauna.

Management strategies employed to meet the objective for flora and fauna are outlined in the CGP EMP with a summary included in Table F-11 of Appendix F.

5.10.2 Threatened Flora and Fauna – Environmental Performance

All activities associated with threatened or native flora and fauna were compliant for the period with no incidents or complaints recorded.

5.11 Noxious Weeds

5.11.1 Noxious Weeds Management

The environmental management objective for weed control is to minimise the introduction, establishment and spread of weeds. Noxious weeds may be introduced and/or dispersed via personnel vehicles, equipment and plant.

Management strategies employed to meet the objectives for weed control are included within the Rehabilitation and Landscape Management Sub Plan of the CGP EMP. A summary of these measures are outlined in Table F-12 of Appendix F.

5.11.2 Noxious Weed Related Activities

Details of weed spraying including dates, areas sprayed, chemicals used, weather conditions and personnel details are maintained at the RPGP site. The following provides a summary of the locations of weed spraying undertaken during the reporting period:

- 9th August 2012: EM 3-9, 12-15, 17, 19, 21, 27, 30-32, 37, 40 Wells;
- 14th August 2012: SF20 and MP03 Wells;
- 10th October 2012: MP wells14-17, MP13/30 and GL2/12, 5/17, 08, 09, 11, 14/15/10;
- 17th October 2012: SF20, MP03;
- 26th October 2012: LB Yard, Cottage, EM19;
- 14th November 2012: SF17;
- 6th December 2012: SF20;
- 18th January 2013: RB09, RP10-12, SF17-20;
- 28th February 2013: RPGP;
- 10 April 2013: EM40, 39, 05, 07, 09, 11, 12, 14, 08, 13, 28, 31, 32, 24, 27, 06;
- 5th June 2013: LB Yard.

The main herbicides used were Round Up, Broadside and Dicamba (selective herbicide). Approximately 37.6 L of herbicides were used during the reporting period.

5.11.3 Noxious Weeds – Environmental Performance

All activities associated with weed control were compliant for the period with no reportable incidents or community complaints recorded.

5.12 Blasting

No blasting is undertaken as part of the project.

5.13 Operational Noise

5.13.1 Operational Noise Management

All project aspects are designed with the aim of ensuring the amenity of surrounding residents is safeguarded through the proper management of all noise generating activities. The assessment of noise and the design of safeguards have been carried out in conjunction with field noise studies that have been undertaken since the inception of the project.

A program of monitoring has been established at the RPGP. The purpose of the monitoring is to meet licence conditions; demonstrate compliance with licence limits; and to link potential complaints to operational procedures in order to discern those aspects of the project which may be responsible for causing a specific noise problem.

Any noise complaints are compiled and presented for discussion at the regular Community Consultation Committee meetings.

The environmental management objectives regarding noise are to:

- Comply with the operations standards for noise control;
- Ensure that there are no unresolved noise-related complaints from the public; and
- Implement practice noise management measures for Production Operation works.

Management strategies employed to meet the objectives for noise are outlined in the Noise Management Sub Plan of the CGP EMP. A summary of these measures are outlined in Table F-13 of Appendix F.

5.13.2 Operational Noise Limits and Monitoring Requirements

The noise limits and monitoring requirements for the project are summarised in Table F-14 of Appendix F.

Noise monitoring of newly operational and previously operating gas wells in CGP was carried out by Wilkinson Murray during this reporting period.

Noise monitoring was undertaken in order to assess compliance with the relevant noise criteria set out by the Department of Planning's Conditions of Consent (Development Approval DA 246-8-2002i and Project Applications No. 06_0138, 06_0291 and 06_0137). Noise generation from the operating gas wells were measured, assessed and estimated to predict the expected noise levels at the closest sensitive receivers for each well site.

Noise monitoring of newly operating gas wells and previously operating wells was undertaken on 3rd April and 4th April 2013 at the following well sites:

- SF17 well surface location (SF01, SF02, SF03 well sites); and
- SF20 well surface location (SF05, SF07 well sites).

All gas wells were monitored under suitable weather conditions and were assessed as compliant with the relevant noise criteria's.

DA 282-6-2003-i Schedule 4 Clause 40 – Annual Noise Monitoring

Noise compliance reports are submitted annually to the EPA as part of the projects Annual Returns. The DoPI receive a summary of this information as part of this AEPR. A summary of the annual reports results is provided in Appendix J.

DA 282-6-2003-i Schedule 4 Clause 41 – Quarterly Noise Monitoring

Quarterly noise monitoring in accordance with DA 282-6-2003-i Schedule 4 Clause 41 was undertaken by Wilkinson Murray at sites R1 and R7, which represent the residential premises most impacted by noise emanating from the RPGP.

Quarterly noise monitoring for this reporting period included:

- Attended noise monitoring 16th and 21st August 2012;
- Attended noise monitoring 14th December 2012; and
- Attended noise monitoring 3rd April 2013.

Four quarterly operational noise monitoring reports were prepared for the period of January 2012 to December 2012 for the RPGP, however not all four quarterly noise monitoring operations and reports were undertaken with this Financial year reporting period.

All reports stated the RPGP to be compliant with noise stipulations of DA-282-6-2003-I. A summary of the findings of each report is included within Appendix J.

5.13.3 Operational Noise - Environmental Performance / Trends

Operational Noise performance at the Rosalind Park Gas Plant

No exceedances and no noise complaints relating to operational noise from the RPGP were received during the 2012/13 reporting period. This trend is consistent with previous years. Noise performance is consistent with operational noise predictions in the RPGP EIS.

Noise Performance – Operations

The CGP's operations continued to meet its noise requirements during the reporting period.

No complaints were received relating to operational noise during the reporting period. Noise monitoring of newly operating gas wells and previously operating wells were assessed as compliant with the relevant noise criteria's.

5.14 Construction Noise

5.14.1 Construction Noise Management

Noise generating activities associated with the construction of wells, gas gathering system and access roads may include:

- Drilling of wells;
- Installation of well heads and casing;
- Hydraulic fracturing of the coal seam (not applicable for the reporting period);
- Earth moving activities associated with construction of infrastructures i.e. drilling pads, gathering lines, access roads and rehabilitation; and
- Truck movement.

The environmental management objectives regarding construction noise are to:

- Comply with the construction standards for noise control;
- Minimise noise during the construction phase;

- Limit work activities (other than drilling SIS wells) to daylight hours between 7:00am and 6:00pm weekdays and between 8:00am and 1:00pm on Saturday. No work on Sundays or public holidays except in emergencies; and
- Implement best practice noise management measures for construction works.

Management strategies employed to meet the objectives for noise are outlined in the Noise Management Sub Plan of the CGP EMP. A summary of the measures are provided in Table F-15 Appendix F.

5.14.2 Construction Noise Limits and Monitoring Requirements

The noise limits and monitoring requirements detailed in the Development Consents, Project Approvals and Modifications for the project are summarised in Table F-16 of Appendix F. A summary of relevant activities (if any) that were undertaken under each approval is also included in the table.

5.14.3 Construction Noise Monitoring Results

Well site MP25 Menangle Park (Gas Well MP25)

Wilkinson Murray was engaged by AGL to conduct unattended noise monitoring associated with the drilling works for MP25 at Menangle Park.

Unattended noise monitoring was conducted between the 23rd to 30th August 2012 at the rear of Menangle Park Fire Station. The location was deemed suitable due to the clear line of site to the MP25 drilling site and the proximity to the potentially most affected residence.

The results of the noise monitoring show compliance with the noise limits in EPA's Notice of Modification dated 9 July 2012 (DA 183-8—2004-i) at the nearest residential receiver for night time assessment periods. As the night time construction noise limits are the most stringent, compliance was demonstrated for all periods.

5.14.4 Construction Noise – Environmental performance / Trends

The CGP construction activities continued to meet the licenced construction noise requirements during the reporting period.

One complaint was received on 27th December 2012 at Campbelltown Council by a local resident, in relation to AGL's activities at the MP03 location. Council also notified the EPA of the complaint. AGL's Land and Compliance Officer contacted the resident to discuss the noise and time of the occurrence. It was confirmed in the follow up investigation that the source of noise was not attributed to AGL as there were no AGL related activities occurring during the period of the complaint. This was recorded as a misunderstanding of AGL's operations.

No other complaints were received relating to construction noise from any other operations during the reporting period.

5.15 Visual Amenity

5.15.1 Visual Amenity Management

The visual impact of the well sites can be considered to be relatively low, primarily due to the small area of land surface occupied. The visual impacts of well sites are minimized further through their design, spacing and integration with the prevailing topography.

Flaring at the RPGP can result in significant glow in the event that it occurs at night. The overall approach by AGL has however progressed to the point where operational flaring was completely minimised during the reporting period due to the connection of most well sites to the plant with telemetry control.

5.15.2 Visual Amenity Monitoring Requirements

The monitoring requirements for visual amenity, required of DA 282-6-2003-i are outlined in Table F-17, Appendix F.

Visual amenity assessments of the RPGP were completed by Distinctive Living Design (Distinctive) in March 2012. The biennial independent "Landscape and Lighting Audit Report" (Landscape and Lighting Audit) remains current for this reporting period.

The Landscape and Lighting Audit reviewed the performance of the mitigation measures implemented to prevent and minimise visual impacts of the RPGP. It also specifically assessed and recommended in relation to lighting performance and visual impact from the RPGP to the adjoining residence of Mount Gilead.

5.15.3 Visual Amenity Monitoring Results

Effectiveness of Lighting Controls (Schedule 4, Clause 10)

The Landscape and Lighting Audit (March 2012) specifically reported in relation to lighting performance and visual impact from the RPGP as required by DA 282-6-2003-I Schedule 4 Clause 10.

The Landscape and Lighting Audit for lighting performance identified one location which required adjustment of directional light wash, to reduce the visible prevalence of a single light location, angle and source. Adjustments were made after this reporting period to redirect this lights wash to confirm with this recommendation. All other light sources identified as visible in the assessment were considered acceptable, well within the desired scope and it was noted that continued growth of landscaped areas would further reduce light emissions.

There were no further requirements for lighting adjustments and no complaints were received relating to lighting controls during the reporting period.

Flare Events (Schedule 4, Clause 11)

In accordance with DA 282-6-2003-i Schedule 4 Clause 11, AGL recorded the frequency and operation of the flare. The Flare event log is provided in Appendix K.

Two full field flare events occurred during the reporting period. The first event occurred on the 24th February 2013 in the early hours of the morning into the day and lasted 335 minutes. The flare event was due to a local power failure which caused a full plant shutdown. The second flare event occurred on the 4th April 2013 during the late afternoon through to the night. The event was caused by a Programmable Logic Controller (PLC) fault causing the plant to shut down. The event lasted 292 minutes.

Smaller flaring operations take place more regularly as part of controlled operations when AGL depressurise a line to switch compressors.

In comparison with the previous AEPR period there was only a single full field flare event at the RPGP which occurred for 93 minutes.

Independent Audit of Vegetation and Landscape Management Plan (Schedule 4, Clause 13 and 14)

In accordance with DA 282-6-2003-i Schedule 4 Clause 13, a Vegetation and Landscape Management Plan (VLMP) was prepared, submitted and approved by the DoPI on 2 July 2004. The RPGP is maintained and monitored in accordance with the VLMP to ensure the condition the landscaping and the effectiveness of visual mitigation measures remains adequate.

In accordance with DA 282-6-2003-i Schedule 4 Condition 14 the VLMP was independently monitored every 6 months for the first two years and thereafter every 2 years by an approved independent and suitably qualified arborist.

The March 2012 Landscape and Lighting Audit specifically assesses the performance of the mitigation measures to prevent and minimise the visual impacts of the RPGP and aims to facilitate on-going review, management and maintenance performance of the landscape treatment.

Appendix L provides a summary of the recommendations by Distinctive in relation to their observation of AGL's implementation of the 2008 landscaping recommendations.

Distinctive concluded that;

> *"…the majority of all aspects of VLMP monitoring was correct, in accordance with performance and review objectives, and in a format that is suitable for continued and on-going report monitoring.*
>
> *Landscape maintenance works and adherence to the landscape plan by AGL was clearly evident. Responsive remediation and reparation works to any landscape zone identified in the monitoring report was also evident at time of assessment. Minor suggestions for further development of landscape works are included in the audit report."*

Independent Audit of Visual Impacts of the RPGP (Schedule 4, Clause 18)

The Landscape and Lighting Audit also reported in relation to lighting performance and visual impact from the RPGP to the adjoining residence of Mount Gilead as required by DA 282-6-2003-I, Schedule 4 Clause 18.

It was determined by Distinctive visual observations that the landscape performance in general is excellent and is now considered well established. The established landscape provides layered screening, dense canopy growth and delivers effective and maturing screening to the Mt Gilead Homestead.

Lighting visibility of the RPGP from Mount Gilead Homestead was in accordance with lighting performance objectives of the development. Evidence of the efficacy of the landscape planting plan and the efficacy of the landscape establishment was visually apparent as the ability to visually connect to and see the AGL site is significantly obscured by the landscape measures that have been implemented. It was also recommended that although the landscape planting plan documented the retention of several existing trees within and to the south of the gas plant, these trees now pose a potential safety risk to on site workers. The audit recommendation is to remove dead wood to trees as part of continuing management.

AGL has continued to monitor the trees since the audit but has not yet proceeded to remove the dead wood within the trees.

Landscape Planting Plan for the relocated access road (DA Mod 2 May 2007, Schedule 4, Clause 19A and 19B)

A Landscape Planting Plan was prepared for the Rosalind Park access road and approved by the Director General (DG) on 21 May 2007.

Clause 19B requires that the requirements of the Landscape Planting Plan is independently audited initially within 6 months of completion of the landscaping and biennially thereafter. The independent audit was combined with the independent audit of the VLMP required under Clause 18 and was undertaken in 2012.

Distinctive concluded that the evidence of the efficacy of the landscape planting plan and the efficacy of the landscape establishment was visually apparent and in compliance with the Landscape Planting Plan.

5.15.4 Visual Amenity Performance / Trends

Landscaping and Lighting

The Landscape and Lighting Audit Report concluded that ground-truthing of landscape works identified that the majority of all aspects of VLMP monitoring was correct, in accordance with performance and review objectives, and in a format that is suitable for continued and on-going report monitoring.

Landscape maintenance works and adherence to the landscape plan by AGL was clearly evident. The audit of the VLMP monitoring report is considered complete and successful.

The established landscape now provides layered screening, dense canopy growth and delivers effective and maturing screening to the Mt Gilead Homestead.

Ground-truthing for lighting performance identified that the RPGP was in accordance with the objectives of the development consent and the audit of the VIA for lighting performance is considered complete and successful.

No complaints or reportable incidents were received during this reporting period in relation to landscaping or visual impacts at the RPGP for this reporting period.

During the next reporting period, AGL plans to continue the current maintenance program for on-going landscape maintenance measures to ensure continued health of the tree plantings. These include:

- Continued engagement of a qualified landscape contractor to carry out inspections twice a year (early Spring and early Autumn) for insect damage and treatment with insecticide as required;
- Continue to observe for insect attack and respond if an infestation is evident;
- Continue on-going weed and grass control around trees and mulch where necessary to suppress grass growth; and
- Continued update of the Maintenance Log Book.

In addition to this AGL will complete the following recommendations within the next reporting period:

- Continue to monitor and remove dead wood to trees as required as part of continuing management; and
- The audits recommendations to adjust the directional light wash of a single light, to reduce the visible prevalence of a single light location, angle and source.

Flare Events

Two full field flare events occurred during this reporting period with a combined duration of 627 minutes. This is an increase to the previous AEPR reporting period where a single full field flare event occurred at the RPGP which lasted 93 minutes.

5.16 Aboriginal Heritage

5.16.1 Aboriginal Heritage Management

Aboriginal cultural heritage and archaeological assessments are conducted over each new drilling program as part of the Environmental Impact Assessment process.

The conclusion from the various assessments is that the CGP area is generally considered to be of low archaeological potential. Despite this, evidence of Aboriginal occupation of the area has been identified during the surveys.

In regard to cultural heritage, the management objective is to protect and preserve cultural heritage. Management strategies employed to meet the objectives for Aboriginal heritage are outlined in the Aboriginal Cultural Heritage Management Sub Plan of the CGP EMP. A summary of these measures are summarised in Table F-18 of Appendix F.

A supplement of the CGP EMP is the CGP Aboriginal Cultural Heritage Management Plan which was updated in July 2012 by Biosis Research. This plan provides the process for on-going management of recorded aboriginal archaeological sites and identified areas of Potential Archaeological Deposit (PAD) to guide the design, location and implementation of future works within the CGP.

5.16.2 Aboriginal Heritage Related Activities

During the reporting period there were no new matters identified in relation to Aboriginal cultural heritage significance.

5.16.3 Aboriginal Heritage Management Performance

There were no activities with associated with aboriginal heritage matters identified and therefore no reportable incidents or community complaints recorded.

5.17 European Heritage

5.17.1 European Heritage Management

In terms of European heritage, the area falls within the lands originally granted to John Macarthur. Accordingly, the project is located within an area associated with early European occupation and land use, particularly in regard to early agricultural expansion.

The project area is located, at least partially, within three Historic Cultural Landscapes. These areas have been classified on the basis of their landscape patterns and historical associations according to relevant and standard evaluation criteria. For the most part, project components were selected to avoid known or potential sites of non-Aboriginal or natural heritage significance.

In regard to cultural heritage, the management objective is to protect and preserve European cultural heritage.

Management strategies employed to meet the objectives for cultural heritage are outlined in the European Heritage Management Sub Plan of the CGP EMP and reproduced in Table F-19 Appendix F.

5.17.2 European Heritage Related Activities

No activities impacting on European heritage were carried out by AGL during the 2012-2013 reporting period.

5.17.3 European Heritage Management Performance

No activities impacting on cultural heritage were undertaken for this period with no reportable incidents or community complaints recorded.

5.18 Spontaneous Combustion

Spontaneous combustion is an environmental aspect associated with coal mining and as such is not applicable to this Project.

5.19 Bushfire

5.19.1 Bushfire Management

Operational activities have the potential to ignite bushfires through the operation of flammable fuel powered equipment, flares and / or vehicles. Flaring at the RPGP is strictly controlled to minimise any potential to start or spread a bushfire situation. This is achieved by positioning the flare in a non-hazardous location directly above a flare pond containing water and surrounding the pond adjacent to the flare with non-combustible screens.

In regard to bushfire risk, the management objective is to reduce the threat of bushfires to personnel, third parties, property and the environment. Management strategies employed to meet the objectives for bushfire control are outlined in the Emergency Response Plan and are reproduced in Table F-20 of Appendix F.

5.19.2 Bushfire – Environmental Performance

During the reporting period, there were no reported bushfires on land managed by AGL.

5.20 Mine Subsidence

Mine subsidence is an environmental aspect associated with coal mining and as such is not applicable to this project.

5.21 Hydrocarbon Contamination

5.21.1 Hydrocarbon Contamination Management

Fuel, oil or chemical spills may occur during operations. The environmental management objectives associated with spill response are to:

- Prevent spills from occurring;
- Protect the safety of the workforce and third parties; and

- Prevent or minimise contamination of soil and water.

Management strategies employed to meet the objectives for hydrocarbon contamination control are outlined in the Dangerous Goods and Hazardous Materials Management Sub Plan. A summary of these measures are summarised in Table F-21 of Appendix F.

5.21.2 Hydrocarbon Contamination – Environmental Performance

During the reporting period, there were no reportable hazards in relation to hydrocarbon spills and leaks. All activities associated with hydrocarbon contamination control were compliant for the period with no reportable incidents or community complaints recorded.

5.22 Methane Drainage / Ventilation

Methane drainage is the process employed to recover Coal Seam Gas (CSG) for production. As such, it represents AGL's core business and is detailed under production.

5.23 Public Safety

5.23.1 Public Safety Management

Public safety is assured through compliance with:

- Operational Protocols;
- AGL Health, Safety and Environment Policy;
- Implementation of management sub plans within the EMP; and
- Site and Infrastructure Security.

5.23.2 Public Safety - Performance

During this reporting period there were no public safety related reportable incidents recorded.

5.24 Safety and Risk Management

5.24.1 Safety and Risk Management Monitoring Requirement

The monitoring requirements for incident reporting as a result of a Development Consent condition are outlined in Table F-22 of Appendix F.

5.24.2 Incident Reporting

On several occasions throughout the year, there were minor flooding events of the Nepean River following significant rainfall, and as a result, AGL's producing gas well sites MP16 and MP25 were surrounded by minor flooding.

During the first flood event on 29 January 2013, air bubbles were observed to be visible on the surface of the water surrounding the wells. As a precaution AGL immediately notified the NSW EPA. Testing and site inspections were undertaken by AGL, Jemena (the owner of Sydney's natural gas distribution system), DTIRIS and the EPA on 29th January 2013. Testing confirmed there was no natural gas present.

The bubbles were simply air that has been trapped in the dry river bank being released to the surface when soaked by the rain. This commonly occurs in areas when there has been a long dry spell and where there has been a previous soil disturbance, such as at this site with previous sand mining and AGL's own construction activities.

On 30th January 2013 the minor flooding subsided from the area.

AGL confirmed by community update notifications that the wells are completely sealed and secure. All of AGL's wells are designed so that AGL operators can shut wells in remotely and wells are constructed to be safe at all times, even if a well is totally submerged. AGL emphasised that there was no need for concern and that there was **no** environmental harm.

The EPA on the 1 March 2013 published as a news release stating that *"AGL's planning approval includes conditions which specifically address flooding due to the wells sensitive location, including the requirement for a Flood Management Plan. "These site management measures require AGL to take precautions to prevent any environmental impacts and to secure the site to prior to flooding occurring." "The EPA is confident that the AGL Menangle Park site was appropriately secured during flood events, and that no contaminants, including any stored chemicals, could have moved off the site".*

5.24.3 Safety and Risk – Environmental Performance

During this reporting period there were no significant safety or risk management related reportable environmental incidents recorded.

5.25 Environmental Training

During the reporting period, staff, were provided with environmental training on Environmental Legal Obligations, presented by Herbert Smith Freehills Law Firm.

AGL also began drafting an Upstream Gas, "*Environmental Training Needs: Project Execution Plan"* which aims to identify environmental training needs and provide a strategic plan for the roll out of environmental training across AGL's Upstream Gas workforce. Ultimately the goal is to improve environmental awareness and hence compliance across the Upstream Gas business. This plan is expected to be completed during the next reporting period.

6 Rehabilitation

6.1 Rehabilitation Overview

All operations are planned such that disturbance occurs to the minimum area of land possible. Large trees and canopy areas are avoided wherever possible by careful route and site selection and all disturbed areas restored to as near as practicable their pre-existing conditions and contours. A program of planned maintenance ensures that regrowth is facilitated and weeds do not establish.

At the end of the project's life all surface infrastructure will be removed prior to full site restoration being undertaken.

The management objectives for rehabilitation are to:

- Minimise potential for soil erosion and sedimentation;
- Minimise impact on existing drainage patterns;
- Minimise weed establishment;
- Restore fauna habitats;
- Minimise the visual impact of the well site; and
- Minimise adverse impacts of the well site on other existing land use.

Management strategies employed to meet the objectives for rehabilitation are outlined in the Rehabilitation and Landscape Management Sub Plan. A summary of these measures are contained in Table F-23 of Appendix F.

6.1.1 Rehabilitation of Disturbed Land

Specific rehabilitation activities associated with the project may be subdivided into three main components:

- Wellheads;
- Gas gathering system; and
- Gas plants.

Progressive rehabilitation is an on-going management practice for all areas that have resulted in disturbance from the project. Table 6-1 lists a summary of the rehabilitation works completed since the project was commenced.

Table 6-1: Summary of project rehabilitation works complete to date

PPL	Wells Drilled (total)	Wells – Initial Rehabilitation (only)	Wells – Fully Rehabilitated (including P&A)	Gas Plant – Fully Operational	Gas Plant – Fully Rehabilitated	Gas Gathering Line – Fully Operational (km)	Gas Gathering Line – Fully Rehabilitated (km)
1	39	33	6	0	1	30	5*
2	5	5	0	0	0	1.5	0
4	95	93	2	1	0	68.2	0.3*
5	5	5	0	0	0	1.1	0
6	0	0	0	0	0	0	0

*denotes gas gathering lines which have been fully decommissioned including purging and removal of all surface equipment, but have been left in situ.

Rehabilitation during this reporting period consisted of:

- Gas wells MP22 and MP11 underwent further rehabilitation;
- Rehabilitation of the SF20 well surface location (SF05, SF07, SF08, SF09 wells);
- Gas well MP25; and
- Gas gathering line infrastructure for gas well MP03 and MP25.

6.1.2 Well Sites

All well sites are located in cleared farmland or in areas clear of native vegetation, with additional clearing being minor or not required.

Long-term operation of the wells requires the retention of a cleared area around each wellhead. The disturbed area outside of the on-going operational area of the well is rehabilitated in the following manner:

- Any remaining debris or equipment removed;
- All sumps utilised during drilling operations backfilled to natural surface level with the retained subsoil;
- Any tracks or hardstand areas, or areas of compacted ground not required for on-going use ripped. Fences are retained at the landholder's discretion;
- Wherever recoverable, stockpiled topsoil has been re-spread across the surface; and
- Consultation is undertaken with the landholder to determine the preferred rehabilitation model (as defined by the Landscape and Rehabilitation Management Sub Plan).

Upon depletion of the field, the wells will be plugged and abandoned in accordance with the requirements of the DTIRIS and all surface structures removed.

All wellhead assembly and near surface casing to a depth of approximately 1 metre will be removed, backfilled and rehabilitated. The cleared area around each wellhead will be lightly ripped and be returned to the landholder for pastoral use or be revegetated with broadcast seed of compatible species to the surrounding dominant species.

Rehabilitation of the CGP works has been progressed as each field develops. This process has been accelerated by the use of impervious plastic liners in all drill pits. This allows faster removal of waters as there is no need to wait for desiccation.

6.1.3 Gas Gathering System

Rehabilitation of the gas gathering system occurs at the time of construction. The rehabilitation of the area disturbed consisted of the following steps:

- Placement of retained subsoil into the trench;
- Spreading of retained topsoil across the disturbed working area;
- Where the surrounding land use was pasture, consultation with the landowner was undertaken to determine what, if any, cover crop would be required;
- Where the previous land use was an access track or fence line, revegetation was limited to areas beyond the track that were disturbed during the construction. Where the route crossed fences or roads / tracks, they were repaired and re-instated; and
- Where clearing of vegetation had occurred, felled material was redistributed over the rehabilitated area.

Whilst the gas gathering system is operating, external specialist consultants are engaged to undertake annual gas leakage audits of the entire gas gathering system network to ensure that the gas gathering system is operating without leaks.

Upon depletion of the field and the completion of the CGP, the preferred method of rehabilitation for the gas gathering system would be to purge with air or water to remove remaining gas, seal and leave in position for future beneficial use and to prevent further disturbance. This method is subject to consultation with the landowner.

It is considered that removal of the buried component of the gas gathering system would be counterproductive and result in an unnecessary disruption to the environment and local community.

Should removal of the gas gathering system be required, the excavated trench would be backfilled and rehabilitated, including contouring and revegetating.

6.1.4 Buildings and Auxiliary Facilities

The provision of offices and auxiliary services for the CGP operations of AGL are located at the RPGP site. There was no rehabilitation of buildings and auxiliary facilities during the reporting period.

6.1.5 Other Infrastructure

Rehabilitation of other infrastructure is not required as part of the CGP.

6.2 Rehabilitation Trials and Research

AGL conducts its operations in areas of extensive previous rural use. It avoids wherever possible any stands of remnant native or regrowth native flora at the planning stage. As such AGL rehabilitation processes for the most part only require the re-establishment of pastureland.

During this reporting period AGL did not undertake or participate in any rehabilitation or research or trials during this reporting period.

6.3 Further Development of Final Rehabilitation Plan

Though the current operations of AGL are not likely to cease for at least 20 years, AGL will continue planning work for site closure. Site closure is a continuous series of activities undertaken throughout the life of a project, and it is important that these activities occur in a systematic and cost-effective manner. AGL recognises that early planning will ensure that the closure of operations is technically, socially and economically feasible, and will result in a more satisfactory environmental outcome.

Upon decommissioning of the gas field infrastructure and cessation of gas production, the current plan for a plant site would be the salvage and sale of all equipment, buildings and facilities, ripping of hardstand and compacted areas, the re-profiling and filling of any voids, spreading of retained topsoil and revegetation with a species mix compatible with the former vegetation.

6.4 Rehabilitation Activities Proposed in Next AEPR Period

Rehabilitation activities proposed during the next AEPR period include:

- Further rehabilitation of MP25 located within PPL 4.

6.5 Further Improvements

Over the forthcoming reporting period, AGL will continue to develop the CGP to ensure that all areas of operations strive to advance and work in accordance with the CGP EMS and AGL's *Life Guard* system, a Health, Safety and Environment Management System based on ISO 14001: 2004.

6.6 Closure Plan

Though the current operations of AGL are not likely to cease for at least 20 years, AGL will continue planning work for site closure.

7 Project Commitments Register

During the reporting period, AGL maintained the electronic compliance tracking database, Mipela, which includes a register of all Project Approval Conditions with an on-going monitoring or reporting requirement. Email reminders are automatically generated and sent to persons responsible prior to the due date. Following completion of the monitoring / reporting requirement, actions completed are logged. AGL is presently reviewing the Mipela database as part of the development and implementation of an improved Compliance Management System.

8 Stakeholder Engagement

This Section of the AEPR discusses community relation issues, including environmental complaints and actions from the Community Consultation Committee.

8.1 Environmental Complaints

8.1.1 Stakeholder Management

A complaint handling procedure has been set in place for the CGP operations. AGL has a 24 hour contact telephone number which allows the community to raise any issues or concerns that relate to the operations of the Project.

The details of this are included on signs at all property entries and well site compounds as well as on notifications to landowners.

All complaints are entered into a complaints database whereupon AGL staff undertake an investigation. Relevant site personnel are also notified to resolve any issues and to make them promptly aware of the concern.

Resolution details are communicated directly to the complainant and are presented at the next Community Consultation Committee forum or other public opportunities.

8.1.2 Complaints Register Requirements

This section provides a summary of the environmental complaints received and management actions taken to address any issues. The requirement for a complaints register to be maintained and complaints' actions is outlined in the following Development Consents as well as the EPL 12003 for the RPGP:

- DA 246-8-2002-I Schedule 3, Clause 15;
- DA 282-6-2003-i Schedule 5, Clause 19;
- DA 15-1-2002i Schedule 3, Clause 29; and
- DA 75-4-2004 Schedule 2, Clause 59.

The requirements detailed in the above Development Consents correlate with only minor differences in wording between the different approval documents.

In summary the Development Consents require the applicant to record details of all complaints received in an up to date register and record but not necessarily limited to the following:

a) *the date and time, where relevant of the complaint;*
b) *the means by which the complaint was made;*
c) *any personal details of the complainant that were provided, or if no details were provided, a note to that effect;*
d) *the nature of the complaints;*
e) *any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and*
f) *if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.*

The Complaints Register shall be made available for inspection by the EPA or the Director-General upon request. AGL also makes summaries of the register, without details of the complainants, available for public inspection. A record of the complaint must be kept for at least 4 years after it was made.

8.1.3 Summary of Environmental Complaints

One community complaint regarding environmental concerns was received during this reporting period. The complaint was received via the EPA complaints line and forwarded to AGL.

Table 8-1: Environmental Complaint Details

Complaint	Date	Action Taken
A Glen Alpine resident contacted Campbelltown Council, and then EPA in regards to noise coming from the MP03 location during the Christmas/ New Year period.	December 2012	AGL's Land and Compliance Officer spoke with the resident to discuss the type of noise and timing of the noise, and was able to confirm that the source of the noise was not AGL as there were no AGL related activities occurring during the period of complaint. The AGL Land and Compliance officer provided his personal contact details for any future problems, but received no further complaints.

8.1.4 Complaint Trend

The number of complaints received in 2012/13 has decreased in comparison with the previous reporting period where two environmental complaints were received.

8.2 Community Consultative Committee

8.2.1 Monitoring Requirement

The monitoring requirement for a community consultative committee is outlined in the following Development Consents:

- DA 246-8-2002-I Schedule 3, Clause 31;
- DA 282-6-2003-i Schedule 5, Clause 17;
- DA 15-1-2002i Schedule 3, Clause 90;
- DA 171-7-2005 Schedule 4, Clause 11;
- DA 75-4-2005: Schedule 2 Clause 61;
- PA 06_137: Schedule 4, Clause 8;
- PA 06_138: Schedule 4, Clause 8; and
- PA 06_0291 Schedule 4, Clause 8.

The requirements detailed in the above Development Consents correlate with only minor differences in wording between the different approval documents.

In summary the Development Consents require that a Community Consultative Committee is established to oversee the environmental performance of the development. This Committee shall:

a) *be chaired by an independent chairperson approved by the Director-General in consultation with the Applicant, Wollondilly Council and Camden Council;*

b) *have four community representatives residing in the PAL 1 area;*

c) *have one representative from each council;*

d) *two representatives appointed by the Applicant (including the environmental officer);*

e) *two (2) representatives from a recognised environmental group;*

f) *meet at least quarterly;*

g) *take minutes of the meeting; and*

h) *make comments and recommendations about the implementation of the development and environmental management plans, monitor compliance with conditions of this consent and other matters relevant to the operation of the development during the term of the consent.*

Representatives from relevant government agencies or other individuals may be invited to attend meetings as required by the Chairperson.

8.3 Community Liaison

AGL has pro-actively engaged with the community in order to keep residents informed of the CGP and ensure that community interests are listened to and addressed. AGL has raised awareness of its activities and created a strong relationship with the community through a range of community engagement initiatives which include:

- Employment of a permanent Community Relations Manager for the CGP;
- Consultation with affected landholders;
- Hosting community member and industry stakeholder site tours and information sessions;
- Participate in community events; and
- Distributing community consultation material to the local council offices.

A considerable amount of consultation has taken place directly with each landowner. This has ensured that their interests can be quickly understood and specifically addressed.

The CCC was formed in early 2003. The purpose of the committee is to provide a forum of open discussion between AGL and the community. It is aimed at facilitating good working relationships amongst committee members and to act as a channel to assist AGL in improving communication, education and notification within the general community.

The committee consists of:

- Chairperson;
- Camden Council;
- Campbelltown City Council;
- Wollondilly Shire Council;
- Three Community Members; and
- Three AGL Members.

AGL plans to continue to pro-actively engage the community for the duration of the project.

8.3.1 Community Consultative Committee (CCC)

Community Consultation Committee (CCC) meetings were undertaken on the following dates:

- No. 33: 16 August 2012;
- No. 34: 15 November 2012;
- No. 35: 14 March 2013; and
- No. 36: 27 June, 2013.

CCC meeting minutes are made available on the CGP project website. The minutes for Meeting No.36 had not been finalised during this reporting period and will not be available until before the next CCC meeting within the next reporting period.

http://www.agk.com.au/camden/index.php/community-matters/

The following table outlines a summary of the meetings actions and their current status at the time of this documents publication that arose from each meeting.

Table 8-2: CCC Meeting Action Items (1 July 2012 to 30 June 2013)

Action Item	Responsible	Status
Meeting 33 - 16th August 2012		
AGL to investigate whether a map of dewatering well locations can be provided to Community member depending on security issues.	AGL	Complete
AGL to follow up with community member regarding further information requested following on from the community open day	AGL	Complete
Meeting 34 - 15th November 2012		
AGL to provide further information regarding distance and breakup of private and public land when available to community member.	AGL	Complete
AGL to upload presentations with minutes to AGL website regarding Operations and HSE Update	AGL	Complete
AGL to advise CCC when AEPR and Independent Environmental Audit has been uploaded to website	AGL	Complete
AGL to provide an update on fugitive emissions report at next meeting	AGL	Complete
Community member raised a query as to the standard of well integrity. AGL to follow up on the standards adhered to by AGL regarding petroleum standards.	AGL	Complete
AGL to provide all relevant agencies with copies of the latest maps relating to presentation given on Project and Government Updates	AGL	Complete
Chair to provide new members with copy of Department Guidelines with the distribution of minutes	Chair	Complete
AGL to provide a presentation on water disposal at next meeting	AGL	Complete
Meeting 35 - 14th March 2013		
AGL to provide clarification on status of production wells and their locations on private vs. public land.	AGL	Complete
AGL to provide a simplified breakdown of the infrastructure for production wells on public vs. private land.	AGL	Complete
AGL to review proposals and pass on information to the Chair in relation to the pros and cons of an Enforceable Undertaking (EU) being an adequate regulated response as opposed to prosecuting AGL for its breach of	AGL	Complete

Action Item	Responsible	Status
continuous emissions monitoring system licence.		
AGL is to provide to the CCC the EPA media release in relation to the incident at Menangle Park (Menangle Park AGL coal seam gas well flooded after recent rains, dated 1 March 2013)	AGL	Complete
AGL is to provide the Flood Response Plan to the CCC.	AGL	Complete
The Chair is to distribute the email address of the NSW Land and Water Commissioner.	Chair	Complete
Meeting 36 - 28th June 2013		
AGL is to provide the Flood Response Plan to the CCC.	AGL	Complete
AGL to provide information clarifying that pipelines located on the same land as the wells.	AGL	Complete

8.3.2 Other Consultation

The following consultation processes have also been undertaken for the CGP:

- Community Information marquee at the Campbelltown Show (September 2012);
- Community Information marquee at the Camden Show (March 2013);
- Letter drops to the residents of the proposed Northern Expansion project area (July and November 2012);
- Letter drops to affected residents regarding the MP25 drilling commencements (July 2012);
- Briefing to Councillors of Wollondilly Council on the CGP and developments (July 2012);
- Four community open days(September and November 2012, February and May 2013);
- Two media open days (July and November 2012);
- Community and Industry Open Days (November 2012, February, April, May and June 2013);
- External presentations to Engineers Australia, University of Western Sydney and Narellan Chamber of Commerce (July and November 2012 & April 2013);
- Three community drop in sessions for the proposed Northern Expansion (November and December 2012);
- Participated in Council run forums including Campbelltown and Wollondilly LGA's (February and April 2013);
- Email Updates to General Managers and Mayors of Camden, Wollondilly and Camden Local Governments;
- Email Updates to local Members of Parliament in the Camden, Campbelltown and Wollondilly Councils;
- AGL's Camden Website updated regularly http://agk.com.au/camden/index.php/news/;
- Advertorials placed in the Macarthur Chronicle and Camden/ Campbelltown Advertisers to update the community on the project, water monitoring and general operations update;
- Camden Community Consultative Committee Meetings (August and November 2012 and March and June 2013);
- Community consultation on the expanded ground water and fugitive emissions monitoring program for the CGP (April 2013); and

- On-going consultation with stakeholders regarding the Camden North expansion (note the application for the Northern Expansion is currently suspended).

8.4 Audits and Visits

During the reporting period, the following site visits were completed.

- Community Drop in Sessions-Northern Expansion (November & December 2012);
- Russell Matheson MP visit to RPGP (December 2012);
- EPA site visit/inspection of gas wells MP16 and MP25 (January 2013);
- DTIRIS site visit/inspection of gas wells MP16 and MP25 (January 2013);
- Jemena (Sydney's Natural Gas Distributors) site visit/inspection of gas wells MP16 and MP25 (January 2013);
- EPA inspection of CEMS unit (March 2013).
- Project Open Days for the CGP were held for the Community (September and November 2012 and February and May 2013);
- Project Open Days for the CGP were held for the media (July and November 2012);
- Gloucester CCC visited the CGP (August 2012);
- NSW Country Women's Association Agricultural and Environment Committee visited the CGP (November 2012);
- Participated in APPEA partnered event (February 2013)
- Industry visits to CGP (November 2012, February, April and May 2013);
- Clean Coal Victoria visited the CGP (June 2013);
- NSW Land & Water Commissioner visited the CGP (April 2013);
- State Members of Parliaments visits to CGP (January and June 2013); and
- EPA and Office of CSG site visits of RPGP and production well facilities (routinely).

An Independent Environmental Audit (Audit Report) was undertaken by Treo Environment Pty Ltd (Treo) for the period of 1st July 2010 to the 30th June 2012 which was completed in August 2013 (after this reporting period). The audit assessed whether the CGP is complying with the relevant standards, performance measures, and statutory requirements. The findings in the audit report reflect conditions and documentation presented to Treo from the 27th August to 5th October 2012.

9 Summary of Environmental Non-Compliance Issues and Actions

9.1 Identification of Environmental Non Compliance Issues

It is a requirement to include in the AEPR a review of the requirements of the Environmental Standards (listed in Section 3.1 of this AEPR). AGL reviews the requirements of Environmental Standards through the following process:

- Review during Annual Return process; and
- Independent Audits undertaken biennially.

This section provides a summary of the identified environmental non-compliances relevant to this reporting period.

9.1.1 Annual Return

Non-conformances with EPL 12003 are reported in the Annual Return to EPA. The Annual Return for EPL 12003 for the period of 22/12/11 to 21/12/12 was not submitted before the 20th February 2013 as required by the EPA. The Annual Return for 2011-2012 was submitted on the 26th February 2013, and resubmitted on 15 May 2013 due to minor calculation errors.

There were four non-conformances with the EPL reported within the Annual Return in relation to the following:

- EPL 12003 Condition M2.4;
- EPL 12003 Conditions O2 and M2.1 in relation to M2.3;
- EPL 12003 Condition O2 in relation to L3.4; and
- EPL 12003 Condition R1.5.

These are detailed below.

Non-Compliance with EPL 12003 Condition M2.4 – Regarding Quarterly Sampling Methodologies

A failure to comply was noted within the Annual Return for 2011-2012 for EPL Condition M2.4. Condition M2.4 requires the sampling positions for quarterly monitoring at points 1-6 to be carried out in accordance with test method TM-1 as specified in the "*Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, 2000*". Compliance with TM-1 was not achieved at monitoring points 1, 4 and 5 during the Annual Return reporting period (December 2011-December 2012).

Prior to the 2011-2012 Annual Return AGL did not comply with Condition M2.4 for monitoring points 1-5. The cause of this non-compliance is a design fault from the previous RPGP operator and will be rectified by AGL.

The 2011-2012 Annual Return for EPL 12003 reported that the following non-compliances occurred at:

- **Monitoring Point 1 -** between 22nd December 2011 to October 2012; and
- **Monitoring Points 4 & 5 -** between 22nd December 2011 to 21st December 2012.

At the date of the submission of the 2011-2012 EPL 12003 Annual Return (26 February 2013), AGL was still not compliant with the sampling methodology of Condition M2.4 for monitoring point 4 and point 5.

The periods of non-compliance and AGL's actions are provided in the table below.

The *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, 2000* (Approved Methods) provides that in relation to TM-1, the selection of sampling positions should be assessed in accordance with *Australian Standard 4323.1 -1995 Stationary Source Emissions Method 1: Selection of Sampling Positions* (AS 4323.1).

AS 4323.1 requires, among other things, that:

- a minimum of two sampling ports are to be installed at right angles to each other (Table 3 and section 6 of AS 4323.1); and
- the location of the sampling plane shall be such that it meets relevant criteria, including that the gas velocity at all sampling points is greater than 3m/s (section 4.1 of AS 4323.1).

AGL has not complied with AS 4323.1 as set out in Table 9-1.

Table 9-1: Monitoring Points and non-compliance matters

Monitoring Point	Period of Non-Compliance	Non-Compliance	Actions to comply with AS 4323.1
1	February 2006 - October 2012 (2006 AGL took over operations from Sydney Gas, the former operator of RPGP)	Contains two ports at 90 degrees to each other. However only one of the ports was accessible in the top of the duct. The other port was not accessible because it had a continuous monitoring system (CEMS) probe installed in it. Accordingly it was not compliant with AS 4323.1	In October 2012, AGL rectified this non-compliance by installing additional new sample ports. Accordingly, as at the date of this AEPR, AGL complies with EPL 12003 Condition M2.3 in relation to this monitoring point.
2	January 2007 - September 2011 (2007 AGL commissioned the compressor engine with this monitoring point)	Contains two ports at 90 degrees to each other. However, only one of the ports was accessible because it had an EMS probe installed in it. Accordingly it was not compliant with AS 4323.1	In September 2011, AGL rectified this non-compliance. Since that time, when undertaking quarterly emissions monitoring, AGL's external consultants would remove the two CEMS probes from the second port for stack testing. Accordingly as at the date of this AEPR, AGL complies with EPL 12003 Condition M2.3 in relation to this monitoring point.
3	January 2007 - September 2011 (2007 AGL commissioned the compressor engine with this monitoring point)	Contains two ports at 90 degrees to each other. However, only one of the ports was accessible because it had a CEMS probe installed in it. Accordingly it was not compliant with AS 4323.1	In September 2011, AGL rectified this non-compliance. Since that time, when undertaking quarterly emissions monitoring, AGL's external consultants would

Monitoring Point	Period of Non-Compliance	Non-Compliance	Actions to comply with AS 4323.1
			remove the two CEMS probes from the second port for stack testing. Accordingly as at the date of this AEPR, AGL complies with EPL 12003 Condition M2.3 in relation to this monitoring point.
4	February 2006 – February 2013	There is no second port installed at 90 degrees to the existing port. Accordingly it is not compliant with AS 4323.1	A second useable port was installed in March 2013. Accordingly, as at the date of this AEPR, AGL complies with EPL 12003 Condition M2.3 in relation to this monitoring point.
5	February 2006 – February 2013	There is no second port installed at 90 degrees to the existing port. The gas velocity in this monitoring point is not greater than 3m/s. Accordingly, it is not compliant with AS 4323.1.	A second useable port was installed in March 2013. Due to the design specifications of the RPGP, it is not possible to obtain a gas velocity at greater than 3m/s at this monitoring point. Monitoring point 5 is simply not an adequate point to measure gas velocity at that level because of the low flow rate emitted at this point. AGL is in discussions with the EPA regarding an EPL variation to amend the requirement to comply with TM-1 in relation to monitoring point 5.

As outlined in Table 9-1 monitoring points 1, 2 and 3 were designed in compliance with AS 4323.1 with at least 2 sampling ports positioned at right angles. However, because points 1 to 3 were also required for continuous emissions monitoring, the CEMS probes had to be inserted in the second sampling port resulting in a non-compliance with AS 4323.1.

For monitoring point 1, EML tried to remove the CEMS probe to make it compliant with AS 4323.1, but was unsuccessful in this regard. The non-compliance was addressed by AGL through the installation of additional ports. Similarly, for points 2 and 3, EML was able to address the issue by removing two CEMS probes in the ducts of each point during quarterly emissions monitoring. The design fault for monitoring points 4 and 5 (which were implemented by the former RPGP operator) was not picked up by AGL's external experts until late 2008. From 2008 until November 2012, AGL did not relate non-compliance with AS 4323.1 with non-compliance with TM-1 due to oversight combined with a lack of understanding of the relationship between the two.

The non-compliance with EPL Condition M2.4:

- Did not, and does not, have any adverse environmental effects; and
- Does not affect the accuracy of the previous quarterly monitoring results reported to the EPA.

As referred to in Table 9-1 AGL is in discussions with the EPA regarding point 5, including a proposed variation of the EPL relating to this point.

Non-Compliance with EPL 12003 Condition M2.3 and DA-282-6-2003-I Sch, 4 Condition 58 – Regarding the undertaking of continuous air monitoring

During part of this reporting period and the previous reporting period (as stated in the previous AEPR) continuous emissions monitoring was not achieved. Review of earlier monitoring following the identification of the non-compliance also identified the same result for the years 2008, 2009, 2010 and 2011. This non-compliance was incorrectly stated as complying within the AEPRs for the years ending 2008, 2009, 2010 and 2011 which stated that continuous monitoring of NOx, temperature, flow rate, moisture and oxygen was successfully undertaken. Correction notices have since been issued to rectify the erroneous statements within the four AEPRs. (AGL's Annual Environmental Performance Correction Notices for 2008-2011)

Independent quarterly air emissions monitoring, which has always been performed at the RPGP, confirms AGL is well below its emission limits. AGL's technical expert, PAEHolmes (now Pacific Environment) has confirmed that there is no evidence of harm to the environment or human health arising from the lack of continuous monitoring data.

In August 2012, AGL took immediate steps to address the non-compliance issue including the appointment of technical experts PAE Holmes to review the emission monitoring program, conducting monthly independent emission monitoring, repairs and partial reinstatement of existing CEMS on compressor 1, compressor 2, and compressor 3.

On the 13th March 2013 AGL announced by media release, that the newly purchased continuous emissions monitoring equipment unit was installed on compressor 1 at the RPGP. The unit was purpose built and imported from Sweden with modifications to meet stringent operating standards. The unit is operating as designed to undertake continuous monitoring for air emissions from the plant's main compressor, as required by DA-282-6-2003-i Schedule 4 Consent Condition 58 and EPL 12003. AGL is working with the EPA to assess the suitability of a Predictive Emissions Monitoring System to replace the partially operating CEMS for compressor 2 and compressor 3.

Non-Compliance with EPL 12003 Conditions M2.1 and O2 – Regarding AGL not operating equipment in a proper and efficient manner for continuous air monitoring

Due to the non-compliance with EPL Licence Condition M2.3 and DA-282-6-2003-i Sch. 4 Condition 58 (requirements to undertake continuous monitoring), AGL was unable to comply with EPL Conditions O2 (requirement to maintain plant equipment) and M2.1 (requirement to monitor pollutants using the specific sampling method).

EPL Condition O2 requires AGL to maintain and operate all plant equipment in a proper and efficient manner. As equipment failure resulted in the non-compliance for the continuous monitoring, Condition O2 could not be met.

EPL Condition M2.1 and DA-282-6-2003-i Sch. 4 Condition 58, requires all monitoring to be undertaken in accordance with the specified pollutant concentration, sample frequency and sampling method. Due to equipment failure AGL was not able to comply with these conditions. This failure is stated in the 2011-2012 EPL 12003 Annual Return to have occurred from April 2009 to December 2012 (the end of the Annual Return Reporting Period). This non-compliance continued for the duration of the reporting period. Despite the installation of the new CEMS on compressor 1 in March 2013 (as mentioned above), compressor 2 and compressor 3 are not yet fully compliant with these conditions.

Non-Compliance with EPL 12003 Conditions O2 in relation to L3.4 – Regarding the exceedance of concentration limits of Oxides of Nitrogen

AGL failed to comply with EPL Condition O2 in relation to L3.4 when the CEMS on compressor 1 and 2 recorded exceedances of concentration limits as specified by Condition L3.4 of EPL 12003 for Oxides of Nitrogen at compressors 1 and 2.

These exceedances were recorded at:

- **Compressor 2 -** from the 5-12th September 2012 and the 7-9th November 2012; and
- **Compressor 1 -** for the 9-25th November 2012 and the 4-5th December 2012.

In relation to Compressor 2, AGL upon the diagnosis of the first exceedance of NO_x limits in September 2012 acted to shut down the compressor. As the compressor was due for its annual service around that time, it was diagnosed that this exceedance of NO_x was caused by the compressor requiring its annual service.

Following this service the compressor was brought back online on 12 October 2012 and operated under an increased load while compressor 1 was serviced.

When compressor 2 resumed operation at its normal load (when compressor 1's service was complete) on 7 November 2012 there was a further NO_x exceedance recorded. This exceedance occurred from 8th-9th November 2012.

Upon this identification the compressor was once again shut down for investigation. Upon inspection of Compressor 2, it was found that the unit's exhaust catalyst had been fouled with ash. This resulted in a decreased surface area of the catalyst to react with exhaust gases and therefore led to increased NO_x emission concentrations.

AGL removed and cleaned the exhaust catalyst following manufacturer's guidelines and the compressor brought back onto service and NO_x limits were seen to significantly reduce and be compliant with licence concentration limits.

AGL has now incorporated into the maintenance program a requirement to inspect and clean if required the exhaust catalyst at the compressors annual service.

The cause of the NO_x exceedance on compressor 1 was found to be a minor drift in one voltage adjustment potentiometer (set screw) for the engines Air Fuel Ratio controller. Due to this drift the compressor was operating slightly richer (more fuel), resulting in increased NO_x emissions. When this was determined, the potentiometer was adjusted back into specification and was verified several times to be maintaining accuracy with no further drift in settings. The adjustment is now secured to ensure that it cannot drift.

The total duration for NO_x exceedance for compressor 1 in November 2012 was 169 hours. Although the maximum NO_x exceedance was 605 mg/m3, it should be noted that the minimum exceedance was 461.5 mg/m^3 and the average for the hours exceeded was 506 mg/m^3.

In March 2013, AGL installed a new CEMS onto Compressor 1 which provides data to the RPGP control room allowing operators to immediately act on any abnormalities.

In addition to this AGL is also undertaking trend monitoring for NO_x to evaluate trends and potentially prevent future exceedances. This evaluation is performed in lag times.

Non-Compliance with EPL 12003 Condition R1.5 – Regarding the submission of the EPL 12003's Annual Return for 2011-2012

The 2011/2012 Annual Return was not submitted within 60 days of the end of the reporting period (i.e. 19 February 2013). On 19 February 2013, AGL verbally informed the EPA of a delay in submitting the annual return, and explained that AGL's directors are exercising due diligence in reviewing the Annual Return. On 20 February 2013, AGL confirmed the delay in writing to the EPA. AGL will undertake to improve its internal reporting and sign off process to avoid this in the future. This non- compliance was reported within the Annual Return for 2011-2012 upon the request of the EPA.

9.1.2 Penalty Infringement Notices (EPA)

During this reporting period AGL received one Penalty Infringement Notice (PIN) from the EPA in relation to an incidence of non-compliance.

On 13 March 2013 AGL received a PIN for the 'Failure to Maintain Plant Equipment'. This PIN was issued in relation to the exceedance of nitrogen oxides concentration limits for Licence Discharge Points 1 and 2 during 2012. The details of this non-compliance (EPL 12003 Condition L3.4) are included in the above section. The PIN resulted in a penalty payment by AGL to the EPA of $1500.

9.1.3 Enforceable Undertaking (EU)

During this reporting period AGL proposed an Enforceable Undertaking (EU) to the EPA for its approval in response to AGL's failure to comply with continuous emissions monitoring for air emissions at the RPGP between 2009 and 2012.

An EU is a regulatory response available to the EPA under the POEO Act. It is a written, legally enforceable document where AGL provide a full disclosure on the non-compliance, how they addressed the behaviour and the consequences of the non-compliance. In addition, AGL has to make good the consequences that came out of the breach. The EU document is signed by the EPA's Chief Regulator.

On 9 July 2012, AGL verbally informed the EPA that since October 2009, AGL had failed to fully undertake continuous emissions monitoring of air emissions on Compressor Engines 1, 2 & 3. AGL stated this was because of repeated technical and mechanical failures of the CEMS. AGL stated this failure in the monitoring system was not fully recognised by AGL until all monitoring data required under a licence was required by the EPA to be regularly published in accordance with the amendments to the POEO Act as set out in the *Protection of the Environment Legislation Amendment Act 2011* (NSW).

AGL responded to this non-compliance by issuing media statements and fact sheets regarding the details of the non-compliance. They also introduced interim measures in cooperation with the EPA until continuous monitoring could be undertaken in accordance with the EPL 12003 licensing conditions.

The EU has been prepared in cooperation with the EPA and was approved by the EPA after the AEPR reporting period on 8 August 2013. The EU details a number of actions to be taken by AGL. A report on the completion of each action will be incorporated into the next AEPR for the 2013/14 reporting period.

9.1.4 Non-Compliances Identified During Independent Environmental Audit

An Independent Environmental Audit (2010-2012 Audit Report) was undertaken by Treo Environment Pty Ltd (Treo) for the period of 1st July 2010 to the 30th June 2012 which was completed in August 2013 (after this reporting period). The audit assessed whether the CGP is complying with the relevant standards, performance measures, and statutory requirements.

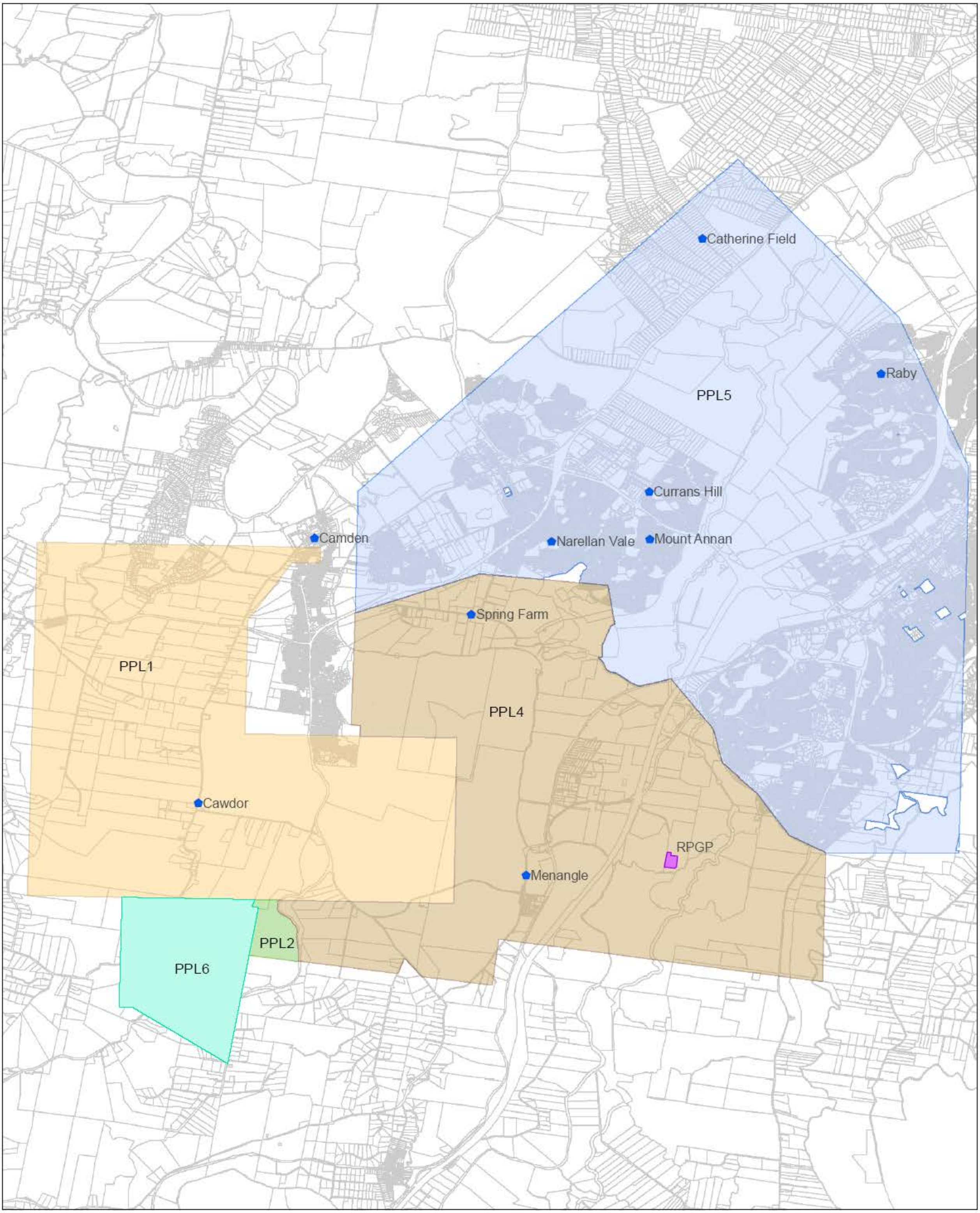
The findings in the 2010-2012 Audit Report reflect conditions and documentation presented from the 27th August to 5th October 2012. To ensure currency, information reported externally by AGL after the 5th October 2013 has been reflected. The report summarises its findings and recommends for future improvement in environmental conformance and performance as follows:

- **Air monitoring** – Non-conformances were identified in relation to continuous emissions, quarterly monitoring and sampling positions. It is recommended that AGL resolve the matters of non-conformance in consultation with the EPA;
- **Consultation** – Stakeholder consultation on the CGP was not consistently undertaken by AGL. It is recommended that AGL engage with the nominated stakeholders in accordance with consent conditions;
- **Independent audits** – On a number of occasions, independent audits were not conducted within the required timeframe. It is recommended that AGL ensures suitably qualified and approved professionals are engaged to complete the audits in a timely manner;
- **Land subsidence** – A subsidence report was prepared in April 2007 by Mine Subsidence Engineering Consultants Pty Ltd. The report notes the risk of subsidence is almost negligible and hence monitoring was not conducted. If AGL is satisfied, based on expert opinion that no subsidence monitoring is required, then they should seek to modify this condition accordingly;
- **Maintenance and operation of plant and equipment** – The EPA issued AGL with a Warning Letter in relation to the emission of foam and water during a well workover operation at well site SL03 in 17th May 2011. The EPA determined that the degasser unit was not being operated in a proper and efficient manner. It was noted in the EPA correspondence that AGL has taken corrective actions to reduce the likelihood of a reoccurrence;
- **Noise management** – The content of the Noise Management Plan was largely in conformance with the conditions of consent with the exception of drilling and maintenance notification requirements. Two non-conformances were also identified in relation to implementation of the noise monitoring program. It is recommended that AGL revise the Noise Management Plan to establish effective monitoring tools to achieve conformance;
- **Reporting** – Matters of non-conformance were identified in relation to a number of reporting requirements which were administrative in nature. It is recommended that AGL establish an appropriate system to identify reporting requirements, allocate responsibility and ensure completion within the required timeframe; and
- **Water Monitoring** – Load limits for the nominated water pollutants are not calculated in accordance with a condition of consent. It is noted that the EPA removed this requirement from EPL 12003. It was recommended that AGL seek a modification of the DA 282-6-2003-I to align with the conditions of the EPL 12003.

In accordance with the "Audit Findings and Recommendations" Section of the audit report AGL's has prepared a corrective actions register which responds to the issues and recommendations raised by Treo, which are summarised above. The statuses of corrective actions by AGL are included within the Corrective Actions Register attached at Appendix G of this AEPR of which some were in progress or completed during the reporting period.

Appendix A. Camden Gas Project Petroleum Production Licence Locations

Camden Gas Project PPL Locations



Energy in action

AGL

Author: Courtney Collins

Date: 10/07/2008

Ref: 1652R3

Kilometres

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Scale 1:77,500

Legend

PPL1 PPL5 Towns

PPL2 PPL6 RPGP

PPL4 Property Boundaries

N W E S

Appendix B. Camden Gas Project Property Details

Area	Well Numbers	Property Lot Number	Deposited Plan No.	DA No.
Apap	AP 01	11	664430	15-1-2002i
	AP 02* & AP03*	11	664430	15-1-2002i (Mod 4 July 07)
Campbelltown Council – Menangle Park	Gas gathering system	3 7 1	236059 787284 249393	282-6-2003i (Mod 26 August 2004)
	Water storage tank	2	236059	282-6-2003i (Mod 26 August 2004)
Joe Stanley	JS 01, JS 03 & JS 04	2	14701	15-1-2002i
Johndilo	JD 01, JD 04, JD 05, JD 08* & JD 11	64	785367	15-1-2002i
Lipsombe	LP 01	100	793384	15-1-2002i
Logan Brae	LB 05- LB 07 & LB 09 – LB 11	6	808569	15-1-2002i
Landcom	Gas gathering system	2 X D 2	790254 378264 19853 737485	282-6-2003i (Mod 26 August 2004)
Mahon	MH 01	5	773423	15-1-2002i
Kay Park	KP 01 – KP 03	2	594242	246-8-2002i
	KP05 & KP06	2	594242	246-8-2002i (Mod 4 July 2007 & Mod 20 April 2011)
EMAI	EM 01 - EM 08	11	658458	282-6-2003i (Mod 26 August 2004)
	EM 09, EM11, EM12, EM 14 - EM 17	PT1	168893	282-6-2003i (Mod 26 August 2004)
	EM 10 & EM 13	1	726446	282-6-2003i (Mod 26 August 2004)
	EM 18-EM 20	1	130288	282-6-2003i
	EM 21 (EM 1H), & EM 22 (EM 1V)	1	1067320	9-1-2005
	EM 23-26*, 27, 29*-32	1	130288	PA 06_0138
	EM 28	1	1067320	PA 06_0138
	EM 33-35*, 36*	2	1050479	PA 06_0138

Area	Well Numbers	Property Lot Number	Deposited Plan No.	DA No.
	EM 37	2	1050479	PA 06_0138 (Mod 6 August 2007)
	EM 38	1	130288	282-6-2003i (Mod 4 July 2007)
	EM 39	2	1050479	282-6-2003i (Mod 11 April 2008)
	Gas gathering system	1 1 11 PT1	130288 726446 658458 168893	282-6-2003i (Mod 26 August 2004)
Glenlee	GL 02, GL 04	501	869561	9-1-2005
	GL 05, GL 7-GL 9	1101	883495	282-6-2003i
	GL 06	2	1076817	9-1-2005
	GL 10	1102	883495	282-6-2003i
	GL 11	501	869561	9-1-2005
	GL 12, GL13	501	869561	9-1-2005
	GL14, GL15	1102	883495	282-6-2003 (Mod 16 May 2006)
	GL 16	1101	883495	282-6-2003 (Mod 16 May 2006)
	GL 17	1101	883495	282-6-2003 (Mod 11 April 2008)
	Gas gathering system	1102 & 1101	883495	282-6-2003i (Mod 26 August 2004)
Menangle Park	MP 13-MP 17	10	1022204	183-8-2004-i
	MP30	10	1022204	183-8-2004-i (Mod 4 July 2007)
Mt Taurus	MT 01-MT 10	1	954424	183-8-2004-i
Razorback	RB 03* & RB 04*	1	959711	PA 06_0137
	RB 05*	2	572954	PA 06_0137
	RB 07	81	588337	PA 06_0137
	RB 06, RB 08 & RB 09	124	809576	PA 06_0137
	RB 10	82	588337	PA 06_0137
	RB 11 & RB 12	123	809576	PA 06_0137
Rosalind Park	RP 01*- RP 03	3	622362	282-6-2003i
	RP 02	3	622362	282-6-2003i (Mod 26 August 2004)
	RP 04-RP 07	58	632328	282-6-2003i
	RP 08, RP 09	PT35	230946	282-6-2003i
	RP 10-RP 12	2	622362	282-6-2003i

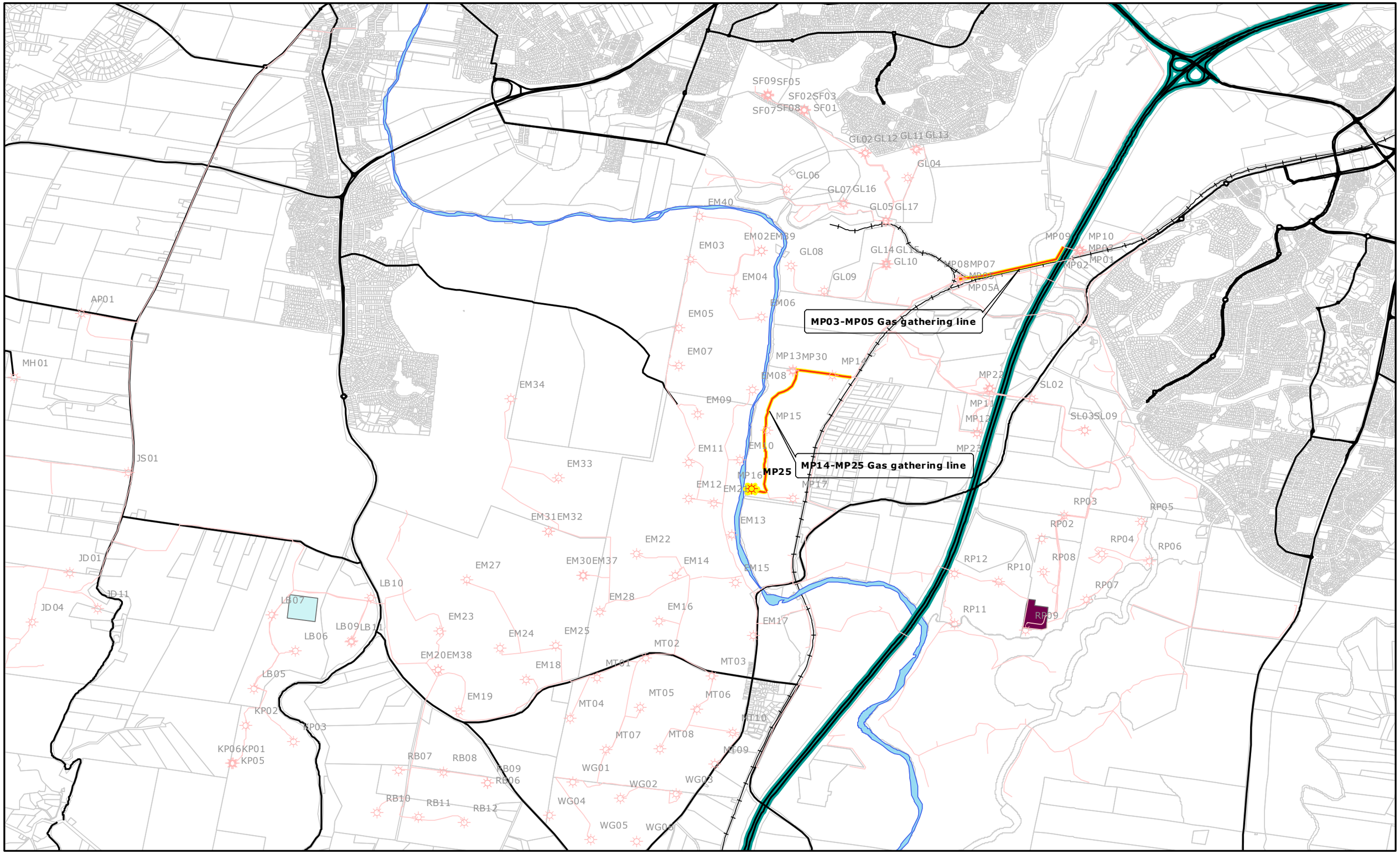
Area	Well Numbers	Property Lot Number	Deposited Plan No.	DA No.
	Rosalind Park Gas Plant	PT35	230946	282-6-2003i (Mod 2 May 2007)
	Gas gathering system	2 & 3 PT35 58	622362 230946 632328	282-6-2003i (Mod 26 August 2004)
Sugarloaf	SL 01*, SL02, SL 03	2	842735	75-4-2005
	SL 04*, SL 06*, SL 07*	3	1007066	75-4-2005
	SL 05*	2	842735	75-4-2005
	SL 08* & SL 09	2	842735	75-4-2005 (Mod 4 July 2007)
Wandinong	WG 01 & WG 04	24	4450	282-6-2003i (Mod 26 August 2004)
	WG 02, WG 03, WG 05 & WG 06	23	4450	282-6-2003i (Mod 26 August 2004)
	Gas gathering system	23 & 24	4450	282-6-2003i (Mod 26 August 2004)
Wollondilly Shire Council – EMAI and Loganbrae	Gas gathering system	Road Reserve		282-6-2003i (Mod 26 August 2004)
El Bethel*	EB 5	21	581462	DA 171-7-2005
	EB 1	201	590247	DA 171-7-2005
	EB 2, EB 3, EB 4, EB 6, EB 9	202	590247	DA 171-7-2005
	EB 7, EB 8, EB 10	203	590247	DA 171-7-2005
Spring Farm	SF01 – 03 (SF17 site), SF04A*	13	1081753	PA 06_0291
	SF05, SF07 – 09 (SF 20 site), SF10*,	1	1007608	PA 06_0291
	Gas gathering system & access roads	13 1 4 11 2 54	1081753 1007608 1007608 1081753 1076817 864754	PA 06_0291
Menangle Park	MP01 – 03, 09, 10 (MP03 site)	7	253700	PA 06_0291
	MP06*	2 X	790254 378264	
	MP11	2	737485	
	MP19*, MP22	8	249530	
	MP21*, MP12 &	1	598067	

Area	Well Numbers	Property Lot Number	Deposited Plan No.	DA No.
	MP23 (MP23 site)			
	MP04*	31	1100981	
	MP05, MP05A, MP07 & MP08	1	790254	
	MP33*	1	249393	
	MP24*	2	236059	
Menangle Park	Gas gathering system and access roads	7 2 X D 2 8 1 11 3 8 31 26 27 1 9 Book 70 Book 80 2 3 1 Menangle Road reserve 63 64 2 12 1001 1002	253700 790254 378264 19853 737485 249530 598067 584016 628052 253700 1100981 249530 249530 790254 253700 No.447 No. 475 236059 236059 249393 Between rail overpass and the Nepean River Bridge 1104486 1104486 842735 249530 734435 734436	PA 06_0291 (Mod 3 20 Apr 2011)

Note the above table does not include potential gathering line options and potential access options.

*Note these wells have been approved but not yet drilled.

Appendix C. Camden Infrastructure Map for FY2012-2013



Energy in action.™

AGL

Author: Upstream Gas

Date: 09/08/2013

Ref: 2790R2

Camden Infrastructure Map Construction Work completed 2012-13

Kilometres

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Scale 1:40,000 @A3

Geocentric Datum of Australia 1994

Sources: AGL Energy Limited, Omnilink PSMA Data, SKM

Legend

- Wells
- MP25
- Gathering Line
- Gathering Line FY 2012-13
- Hume Highway
- Public Roads
- Nepean River
- Railway
- Logan Brae Yard
- RPGP
- Property Boundaries

N

Appendix D. List of Bore Licences and Water Access Licences

Attachment 1

Licence Listing of Gas Production Wells

Operational gas production wells or those that are potentially operational were previously licensed under the Water Act (1912). The current list of operational/potentially operational gas production wells (with their former licence, WAL, field and well name) is provided Table 1. The works approval number is 10WA112288.

Table 1: Wells and bore licence / Water Access Licence (WAL) number

Licence No.	WAL	Field	Well name	Licence No.	WAL	Field	Well name
10BL603867	24856	EMAI	EM02	10BL603953	24856	Logan Brae	LB09
10BL603868	24856	EMAI	EM03	10BL603954	24856	Logan Brae	LB11
10BL603869	24856	EMAI	EM04	10BL603955	24856	Mahon	MH01
10BL603870	24856	EMAI	EM05	10BL603956	24856	Menangle Park	MP05
10BL603871	24856	EMAI	EM06	10BL603957	24856	Menangle Park	MP07
10BL603872	24856	EMAI	EM07	10BL603958	24856	Menangle Park	MP08
10BL603873	24856	EMAI	EM08	10BL603959	24856	Menangle Park	MP13
10BL603874	24856	EMAI	EM09	10BL603960	24856	Menangle Park	MP14
10BL603875	24856	EMAI	EM10	10BL603961	24856	Menangle Park	MP15
10BL603876	24856	EMAI	EM11	10BL603962	24856	Menangle Park	MP16
10BL603877	24856	EMAI	EM12	10BL603963	24856	Menangle Park	MP17
10BL603878	24856	EMAI	EM13	10BL603964	24856	Menangle Park	MP30
10BL603881	24856	EMAI	EM14	10BL603965	24856	Mt Taurus	MT01
10BL603882	24856	EMAI	EM15	10BL603976	24856	Mt Taurus	MT02
10BL603883	24856	EMAI	EM16	10BL603978	24856	Mt Taurus	MT03
10BL603884	24856	EMAI	EM17	10BL603981	24856	Mt Taurus	MT04
10BL603885	24856	EMAI	EM18	10BL603989	24856	Mt Taurus	MT05
10BL603886	24856	EMAI	EM19	10BL603990	24856	Mt Taurus	MT06
10BL603887	24856	EMAI	EM20	10BL603991	24856	Mt Taurus	MT07
10BL603888	24856	EMAI	EM21	10BL603992	24856	Mt Taurus	MT08
10BL603889	24856	EMAI	EM22	10BL603993	24856	Mt Taurus	MT09
10BL603890	24856	EMAI	EM23	10BL603994	24856	Mt Taurus	MT10
10BL603891	24856	EMAI	EM24	10BL604007	24856	Razorback	RB06
10BL603892	24856	EMAI	EM25	10BL604008	24856	Razorback	RB07
10BL603893	24856	EMAI	EM27	10BL604009	24856	Razorback	RB08
10BL603897	24856	EMAI	EM28	10BL604010	24856	Razorback	RB09
10BL603898	24856	EMAI	EM30	10BL604011	24856	Razorback	RB10
10BL603899	24856	EMAI	EM31	10BL604012	24856	Razorback	RB11
10BL603900	24856	EMAI	EM32	10BL604013	24856	Razorback	RB12
10BL603901	24856	EMAI	EM33	10BL604014	24856	Rosalind Park	RP02
10BL603902	24856	EMAI	EM34	10BL604015	24856	Rosalind Park	RP07

Licence No.	WAL	Field	Well name	Licence No.	WAL	Field	Well name
10BL603903	24856	EMAI	EM37	10BL604016	24856	Rosalind Park	RP08
10BL603905	24856	EMAI	EM39	10BL604017	24856	Rosalind Park	RP09
10BL603906	24856	EMAI	EM40	10BL604031	24856	Rosalind Park	RP10
10BL603911	24856	Glenlee	GL02	10BL604032	24856	Rosalind Park	RP12
10BL603912	24856	Glenlee	GL04	10BL604033	24856	Spring Farm	SF01
10BL603913	24856	Glenlee	GL05	10BL604034	24856	Spring Farm	SF02
10BL603914	24856	Glenlee	GL06	10BL604035	24856	Spring Farm	SF03
10BL603915	24856	Glenlee	GL07	10BL604036	24856	Spring Farm	SF17 #
10BL603917	24856	Glenlee	GL08	10BL604037	24856	Sugarloaf	SL02
10BL603918	24856	Glenlee	GL09	10BL604038	24856	Sugarloaf	SL03
10BL603919	24856	Glenlee	GL10	10BL604039	24856	Sugarloaf	SL09
10BL603920	24856	Glenlee	GL11	10BL604040	24856	Wandinong	WG01
10BL603921	24856	Glenlee	GL12	10BL604041	24856	Wandinong	WG02
10BL603922	24856	Glenlee	GL13	10BL604042	24856	Wandinong	WG03
10BL603924	24856	Glenlee	GL14	10BL604043	24856	Wandinong	WG04
10BL603925	24856	Glenlee	GL15	10BL604044	24856	Wandinong	WG05
10BL603926	24856	Glenlee	GL16	10BL604045	24856	Wandinong	WG06
10BL603927	24856	Glenlee	GL17	10BL604131	24856	EMAI	EM38
10BL603928	24856	Johndilo	JD01	10BL604582	24856	Menangle Park	MP10
10BL603929	24856	Johndilo	JD04	10BL604597	24734	Kay Park	KP06
10BL603930	24856	Johndilo	JD05	10BL604623	24856	Menangle Park	MP01
10BL603931	24856	Johndilo	JD06	10BL604624	24856	Menangle Park	MP02
10BL603932	24856	Johndilo	JD07A	10BL604625	24856	Menangle Park	MP03
10BL159415	24965	Johndilo	JD10	10BL604626	24856	Menangle Park	MP09
10BL603933	24856	Johndilo	JD11	10BL604672	24856	Menangle Park	MP11
10BL603934	24856	Joe Stanley	JS01	10BL604673	24856	Menangle Park	MP22
10BL603935	24856	Joe Stanley	JS03	10BL604888		Menangle Park	MP25
10BL603936	24856	Joe Stanley	JS04	10BL604877		Menangle Park	MP18
10BL603937	24856	Kay Park	KP01	10BL604876		Menangle Park	MP33
10BL603938	24856	Kay Park	KP02	10BL604874		Menangle Park	MP24
10BL603939	24856	Kay Park	KP03	10BL604881		Spring Farm	SF01
10BL603940	24856	Kay Park	KP05	10BL604882		Spring Farm	SF02
10BL603941	24856	Logan Brae	LB05	10BL604883		Spring Farm	SF03
10BL603942	25054	Logan Brae	LB06	10BL604884		Spring Farm	SF05
10BL603952	25054	Logan Brae	LB07	10BL604885		Spring Farm	SF07
Key				10BL604886		Spring Farm	SF08
	Proposed well as at 30 June 2013			10BL604887		Spring Farm	SF09
	Duplicate licence			10BL604878		Menangle Park	MP05A
	Plugged and abandoned well			10BL604879		Menangle Park	MP12
#	Pad location only			10BL604880		Menangle Park	MP23

Total number of bore licences held: 137. This has currently transitioned to four WALs and one WA.

Appendix E. Status of Well Operations FY2012/2013

Changes from the previous reporting period are shaded in grey.

Current Status of Well Operations (Current as of June 2013)

Well Name	Date Completed	Status June 2013
AP01	2000	Drilled
EB01-10	Incomplete	Approved – Not Drilled (DA now expired)
EM01	Incomplete	Plugged and Abandoned
EM02, 05, 07, 09, 10, 11, 12, 13, 14, 15, 17, 18, 19 and 20	2005	Drilled
EM03, 04, 06, 08 and 16	2005	Drilled
EM21 and 22	2002	Drilled
EM23	2007	Drilled
EM24, 25, 27, 28, 30, 33, 34, 37, 38	2007	Drilled
EM26, 29, 35, 36	Incomplete	Approved – Not Drilled
EM31, 32	2007	Drilled
EM39	2008	Drilled
EM 40	2006	Drilled
GL01	Incomplete	Approved – Not Drilled.
GL02, 04, 05, 06, 07, 08, 09 and 10.	2003	Drilled
GL03	2003	Plugged and Abandoned
GL11	2005	Drilled
GL12, 13, 14, 15 and 16	2007	Drilled
GL17	2008	Drilled
JD01, 07A and 11	1999	Drilled
JD02, 03, 06, 09 and 10	1999	Plugged and Abandoned
JD04 and 05	1999	Drilled
JD08	Incomplete	Approved under PEL 2 – Not Drilled
JS01, 03 and 04	2000	Drilled
JS02	2000	Plugged and Abandoned
KP01, 02 and 03	2002	Drilled
KP05	2008	Drilled
LB01, 02, 03, 04 and 08	Incomplete	Approved – Not Drilled
LB05 and 07	2001	Drilled
LB06, 09 and 10	2001	Drilled
LB11	2007	Drilled

Well Name	Date Completed	Status June 2013
LP01	Incomplete	Not Completed
MH01	Incomplete	Not Completed
MP14, 15, 16 and 17	2003	Drilled
MP13	2003	Drilled
MP30	2008	Drilled
MT01 02, 03, 04, 06, 07, 08, 09 and 10	2004	Drilled
MT05	2004	Drilled
Ray Beddoe Treatment Plant	2008	Decommissioned and rehabilitated
RB03, 04 and 05	Incomplete	Approved – Not Drilled
RB06, 07, 08, 09, 10, 11 and 12	2007	Drilled
Rosalind Park Gas Plant	2005	Operating
RP01	Incomplete	Approved – Not Drilled
RP02, 07, 08, 10 and 12	2003	Drilled
RP03, 04, 05, 06, 09 and 11	2003	Drilled
SL01, SL04, SL05, SL06, SL07, SL08	Incomplete	Approved – Not Drilled
SL02 and SL03	2006	Drilled
SL09	2008	Drilled
WG01 – 05	2003	Drilled
WG06	Incomplete	Not Completed
SF04A, 10,	Incomplete	Approved – Not Drilled
MP05, 07, 08	2009	Drilled
MP04, 06, 19, 21, 24, 33	Incomplete	Approved – Not Drilled
SF 17 (01,02,03)	2010	Drilled
SF 20 (05,07,08,09)	2010	Drilled
MP01, 05A, 12, 23	2010	Drilled
KP06	2011	Drilled
MP02, 03, 09, 10	2011	Drilled
MP22	2011	Drilled
MP11	2011	Drilled
MP25	2012	Drilled

Note: Shading indicates drilling during this reporting period.

Appendix F. Environmental Management Strategies and Monitoring Requirements

APPENDIX F

Environmental Management Strategies and Monitoring Requirements

This section provides an overview of the management strategies and monitoring requirements that are required by the CGP's project approvals, development consents and licence conditions for the following environmental factors:

- Air Pollution;
- Erosion and Sediment;
- Surface Water and Groundwater;
- Contaminated Land;
- Threatened Flora and Fauna;
- Noxious Weeds;
- Operational Noise;
- Construction Noise;
- Visual Amenity;
- Aboriginal Heritage;
- European Heritage;
- Bushfire;
- Hydrocarbon Contamination;
- Safety and Risk Management; and
- Rehabilitation.

Air Pollution

Air pollution is managed in relation to air quality management strategies which are contained in the Air Quality Management Sub Plan. The key management strategies employed to meet the objectives for air quality are summarised in the below table.

Table F - 1: Management strategies used to meet the objectives for air quality

CGP Activity	Action	Area		Responsibility
		RPGP	Field	
General	The workforce induction program shall inform site personnel of required procedures for the protection of air quality.	✓	✓	Environment Manager
Construction	Greenhouse gas emissions associated with production testing shall be minimised by adopting strict operating procedures.		✓	All personnel
Construction, Operation and Rehabilitation	Plant and equipment shall be regularly maintained and serviced to limit the amount of pollution generated.	✓	✓	All personnel
	The volume of flared gas shall be minimised.	✓	✓	All personnel
	Activities shall be monitored to identify excessive dust generation. Dust control measures such as the use of water carts shall be implemented in the event of dust generation. Vehicles shall remain on designated roads and access tracks and adhere to project vehicle speed limits. Vehicles that carry a potentially dust generating load will be covered at all times, except during loading and unloading.		✓	All personnel
	Activities will be carried out in a manner that does not cause or aggregate air pollution.	✓	✓	All personnel
Operation	All pollution control equipment is to be maintained in an efficient condition.	✓		All personnel
	Air emissions monitoring will be carried out at the points described in EPL 12003 and following the methodology defined in DA 282-6-2003 CoC 47, 48 and 58.	✓		All personnel

Rosalind Park Gas Plant – DA-282-6-2003-i

Development Consent DA-282-6-2003-i, Schedule 4 Clause 47, 48, and 58 specifies requirements to monitor air quality for the production area and air emission criteria.

Table F - 2: Air Quality Criteria and Monitoring Requirements - DA-282-6-2003 (Rosalind Park Gas Plant)

DA-282-6-2003 RPGP - Air Quality Criteria and Monitoring Requirements
Schedule 4. Clause 47
The applicant shall ensure air pollutant emissions do not exceed the following criteria at any privately owned residence:
Nitrogen Dioxide: 246 µg/m3 (1 hour average) and 62 µg/m3 (annual average)
Sulphur Dioxide: 570 µg/m3 (1 hour average) and 60 µg/m3 (annual average)
Sulphuric acid mist: 33 µg/m3 (3 minute average)
Methyl mercaptan: 0.84 µg/m3 (3 minute average)

DA-282-6-2003 RPGP - Air Quality Criteria and Monitoring Requirements
Schedule 4. Clause 48 For each discharge point the applicant shall ensure the concentration of the pollutant discharged does not exceed the concentration limit specified for that pollutant in the table. POINTS 1,2,3: Oxides of Nitrogen (461 mg/m^3) Sulphur Dioxide (7 mg/m^3) Sulphuric acid mist and/or sulphur trioxide (5 mg/m^3) POINT 4: Oxides of Nitrogen (110 mg/m^3) Sulphur Dioxide (35 mg/m^3) Sulphuric acid mist and/or sulphur trioxide (3.5 mg/m^3) POINT 5: Oxides of Nitrogen (13 mg/m^3) Sulphur Dioxide (1042 mg/m^3) Sulphuric acid mist and/or sulphur trioxide (35 mg/m^3)
Schedule 4. Clause 58 For each monitoring/ discharge point or utilisation area specified in the tables below (by a point number), the Applicant must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The Applicant must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns. POINTS 1, 2, 3 - Oxides of Nitrogen, Temperature, Moisture, Volumetric flow rate, Oxygen (*continuous*). POINTS 1, 2, 3, 4, 5 – Velocity, Volumetric flow rate, Temperature, Moisture, Dry gas density, Molecular weight of stack gases, Oxygen, Carbon dioxide, Oxides of Nitrogen, Sulphuric Acid Mist/Sulphur Trioxide, Sulphur Dioxide, Selection of sampling positions (*quarterly*). POINT 6 – Velocity, Volumetric flow rate, Temperature, Moisture, Dry gas density, Molecular weight of stack gases, Oxygen, Carbon dioxide, Odour, Selection of sampling positions (*quarterly*).

DA 282-6-2003, Schedule 5, CoC 12 and EPL 12003 (L2) stipulate annual load limits for assessable pollutants that must not be exceeded during the reporting period from the RPGP. The load limits are reproduced in the table below. AGL is required to report the calculated annual load amounts of the below pollutants within the Annual Return document each year.

Table F - 3: EPL Load Limits for Assessable Pollutants – RPGP (Sch. 5 CoC 12 and EPL. CoC L2)

Assessable Pollutant	Load Limit (kg)
Arsenic	No limit stipulated
Benzene	47
Benzo(a) pyrene	0.27
Fine Particulates	460
Hydrogen Sulphide	1.6
Lead	No limit stipulated
Mercury	No limit stipulated
Nitrogen Oxides	103,000
Nitrogen Oxides – summer	No limit stipulated
Sulphur Oxides	3,000
Volatile Organic Compounds	33,000
Volatile Organic Compounds - summer	No limit stipulated

Note: DA 282-6-2003 includes the additional load limits relating to water emissions however these have since been removed from the EPL.

Construction and Field Operations – Dust Requirements

A number of development consents stipulate requirements relating to dust management. These are summarised in the table below.

Table F - 4: Dust Minimisation Requirements

Condition	Requirement
EPL 12003, Operating Condition 6. DA 15-1-2002, CoC 58; DA 246-8-2002, CoC 25 to 27; DA 282-6-2003, CoC 4-51 to 53; DA 75-4-2005, CoC 23; DA 171-7-2005, CoC 3-9; Petroleum Production Lease (PPL) No.2, Condition 7 and PPL No.1, Condition 7. Project Approval 06-137, CoC 3-7, Project Approval 06-138, CoC 3-7 and Project Approval 06_0291 CoC 3-8.	AGL should ensure that activities are carried out in a manner that will minimise or prevent the emission of dust, including traffic generated dust.

Erosion and Sediment

Erosion and sediment management strategies are contained in the Soil and Water Management Sub Plan. The key management strategies employed to meet the objectives for erosion and sediment are summarised in the below table.

Table F - 5: Management Strategies – Erosion and Sediment Control

Activity	Management Strategies	Responsibility
Planning	The workforce induction program shall inform site personnel of the required procedures for sediment and erosion control. Implementation of the Soil and Water Management Plan (SWMP) as part of the EMP with the main aim being to prevent sediment leaving the construction areas.	Environment Manager
Operations	All operational activities shall be restricted to the well site area, gathering line route, site office, lay down yard, workshop, Gas plant and designated access routes. Ground disturbance and vegetation clearing shall be minimised. The time between disturbance and rehabilitation shall be minimised. Minimise stockpiling by coordinating excavation, spreading, regarding, and compaction activities. Stockpiling to be managed in accordance with Soil and Water Management Sub Plan. Erosion and sediment control measures shall be implemented as per the Soil and Water Management Sub Plan to prevent erosion and water contamination and shall be in place prior to the commencement of works. Activities shall be monitored to identify excessive dust generation. Dust control measures (such as the use of water carts) shall be implemented in the event of dust generation. Erosion and sediment control structures and bunded areas shall be routinely inspected and maintained to ensure they remain effective (namely removal of silt build up, replacement of failed components such as straw bales, silt fencing, breached berms). Where erosion does occur, the area shall be stabilised as soon as practicable.	Environment Manager

There are no specific monitoring requirements for erosion and sediment control in addition to dust minimisation requirements as specified in Table F – 4 above that applied during this reporting period.

Surface Water and Groundwater Management

Water Management Strategies

Water Management strategies are contained in the Soil and Water Management Sub Plan and Groundwater Management Plan (GMP). The key management strategies to meet the objectives of surface and groundwater management are the same as those included in Table F-5 above.

The GMP's objectives are as follows:

- To describe the water level and water quality monitoring network across the different groundwater systems located beneath the CGP area;
- To build a database of baseline information (both water levels and water quality for shallow beneficial use aquifers) located beneath the Camden North extension area;
- To identify water level and water quality trends that may suggest connectivity or contamination of aquifers due to dewatering activities;
- To provide a monitoring (and an action response) framework for water users and regulators on the groundwater monitoring program at Camden; and
- To outline the reporting and review requirements for the monitoring program.

A summary of the individual roles and responsibilities in relation to groundwater management and compliance with the GMP are provided in Table F-6 below.

Table F - 6: Management Strategies and Monitoring Requirements – Groundwater Water

Role	Responsibility	Frequency
Preparation and review of Groundwater Management Plan (GMP).	AGL - Manager Hydrogeology.	Annually in June each year.
Peer Review of the GMP.	Parsons Brinckerhoff – Senior/Principal Hydrogeologist.	Every time a major change and the GMP is resubmitted to NOW/EPA.
Gas Wells		
Water level monitoring within the CGP.	AGL – Production Supervisor.	See Note 1.
Water quality monitoring within the CGP.	AGL– Environment Manager.	Quarterly.
Dewatering volumes within the CGP.	AGL– Production Supervisor.	Monthly.
Monitoring Bores		
Water level monitoring within the CGP.	Parsons Brinckerhoff.	Continuous (data loggers) Quarterly (manual dips)
Water quality monitoring within the CGP.	Parsons Brinckerhoff.	Baseline (new areas) – 2 events. Ongoing (operational areas) – 1 event every 2 years.

Role	Responsibility	Frequency
Compliance Matters		
Annual (NOW) Bore Licence Compliance Report.	AGL - Manager Hydrogeology.	Annual report by 30 September each year.
Response triggers and actions.	AGL - Manager Hydrogeology.	As required.
Audits and actions Regarding compliance.	NOW – Regional Hydrogeologist/Licensing Manager – Parramatta Office.	As required.
Annual (EPA) EPL Compliance Report.	AGL– Environment Manager.	Annual report by 20 February each year.

Notes: (1) water level monitoring is not possible within operational gas wells but levels are generally within the perforated interval of each well when operational

Surface Water Quality Monitoring Requirements

Water monitoring requirements as specified in the relevant licences and development approvals are included in the below tables.

Table F - 7: DA 282-6-2003-I COC Sch. 4 Clause 69 and EPL 12003 Conditions M2.5 & 2.6 - Water Monitoring Requirements (RPGP)

Water Monitoring Requirements
DA-282-6-2003-I Schedule 4. Clause 69
For each monitoring/discharge point or utilisation area specified (by point number) in the table below, the Applicant must monitor (by sampling and obtaining results by analysis) each parameter specified in Column 1. The Applicant must use the sampling method, units of measure and sample at the frequency specified in the respective columns. *POINT 8 - Total suspended solids, Biochemical oxygen demand, Oil & Grease, Total polycyclic aromatic hydrocarbons, Phenols, Total organic carbon, Total petroleum hydrocarbons, Electrical conductivity, Water level in storage (monthly).*
EPL 12003 Condition M2.5 and M2.6 Water Quality Monitoring Requirements
For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1 (Listed Below)*. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:* *M2.5 Water and/ or Land Monitoring Requirements* *Quarterly Samples will be collected (mg/L) for: Aluminium, Arsenic, Barium, Beryllium, Bicarbonate, Boron, Bromide, Cadmium, Calcium, Carbonate, Chloride, Chromium, Cobalt, Copper, Electrical conductivity (micro siemens per centimetre), Fluoride, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium* *Yearly Samples will be collected (mg/L) for: Ammonia, Benzene, Ethyl benzene, Methane, Nitrate, Nitrite, Phenols, Polycyclic aromatic hydrocarbons.* *M2.6 For the purposes of the table above for points 8, 9, 10, 11, 12, 13, 14, and 15 the monitoring results are required to be submitted annually as a Groundwater Monitoring Report with the Annual Return.*

Table F - 8: Water Bore Licence Groundwater Monitoring Requirements

Ground Water Licence	Condition Requirements
Water Licence Conditions for Existing and Proposed Gas Production Wells. Issued Bore Licence No: 10BL603867 to 10BL603878 10BL603881 to 10BL603893 10BL603897 to 10BL603903 10BL603905 to 10BL603906 10BL603911 to 10BL603915 10BL603917 to 10BL603922 10BL603924 to 10BL603942 10BL603952 to 10BL603965 10BL603976 10BL603978 10BL603981 10BL603989 to 10BL603994 10BL604007 to 10BL604017 10BL604031 10BL604032 to 10BL604045 10BL604131 10BL604582 10BL604597 10BL604623 to 10BL604626 10BL604672 and 10BL604673 10BL604874 10BL604876 to 10BL604888	**Condition 10** (for Existing bore licences) and **Condition 12** (for Proposed bore licences) generally state: *The licensee must maintain records of the results of water quality testing of sampled from any extraction or monitoring locations and provide this information to the NSW Office of Water on an agreed basis, at the completion of the project, or upon request from the NSW Office of Water.* **Condition 11** (for Existing bore licences) or **Condition 13** (for Proposed bore licences) generally state: *The license holder must install, if and when called upon to do so monitoring bores to the satisfaction of the NSW Office of Water in respect to location and depth.* *The installation of monitoring bores is to be carried out within three years of the commencement of this license.* *The license holder must maintain the records of the groundwater levels as measures in the monitoring bores* *Measurements of groundwater levels are to be taken and recorded as a minimum throughout the duration of the project and quarterly for a five year period thereafter as required by the NSW Office of Water.* *Groundwater level records are to be maintained for all aquifers and any additional water bearing zone(s) or stratigraphic horizon(s) is required by the NSW Office of Water overlying the coal seam(s) from which gas is to be extracted,* *Records of groundwater levels from the monitoring bores are to be provided to the NSW Office of Water on an annual basis after the monitoring period has expired, or upon request from the NSW Office of Water.*

Waste Management

Waste management strategies are contained in the Waste Management Sub Plan. The key management strategies employed to meet the objectives for waste management are summarised in the below table.

Table F - 9: Waste Management Strategies

Activity	Action	Area		Responsibility
		RPGP	Field	
General	The employee and contractor induction shall inform all site personnel about correct waste management procedures based on the principles of reduce, reuse and recycle and appropriate disposal.	✓	✓	Environment Manager
	Waste containers shall be provided at all work sites.	✓	✓	All personnel
	All work areas shall be maintained in a neat and tidy condition, litter bins will be used at all times and regular emptying shall prevent the accumulation of litter onsite.	✓	✓	All personnel
	Activities will be carried out to minimise waste where possible, and any waste generated is disposed in a correct manner.	✓	✓	All personnel
Spills	Spills of waste materials shall be dealt with in a prompt and thorough manner, and reported to the Environment Manager.	✓	✓	All personnel/ Environment Manager
Disposal	All waste shall be recycled or disposed of to licensed waste facilities.	✓	✓	Environment Manager and Operations Manager
	Onsite waste disposal is prohibited.		✓	All

Waste volumes were recorded for the RPGP during this reporting period which conforms to the relevant conditions of DA 282-6-2003-I. It was reported in the bi-annual 2010-2012 Independent Environmental Audit Report that information on waste transporters is not currently provided to the EPA as required by DA 282-6-2003-I. It is noted that this condition is no longer included in the EPL 12003 following a variation of the licence by the EPA which removed this waste reporting requirement.

AGL has commenced consultation with the DoPI and EPA in order to seek a modification of the development consent for DA 282-6-2003-I to provide consistency with EPL 12003 so that conformance will be achieved.

There are no other monitoring requirements for waste that are covered under the relevant project approvals, development consents or licences that applied during this reporting period.

Contaminated Land

Management strategies employed to meet the objectives for preventing contamination or pollution are outlined in the Soil and Water Management Sub Plan and the Dangerous Goods and Hazardous Materials Sub Plan. A summary of some of the strategies is presented in the following table.

Table F - 10: Management Strategies - Contaminated / Polluted Land

Activity	Management Strategies	Responsibility
Planning	A chemical manifest shall be prepared and detailed procedures for chemical storage and handling, waste management and spill response shall be in place. The workforce induction program shall inform site personnel of the required chemical storage and handling procedures.	Environment Manager/ Health and Safety Business Partner
Operations	All chemicals stored on site shall be entered on the Chemical Manifest. Due to its stenchant characteristics, Odorant is handled in accordance with the strictest of protocols. The storage and handling of fuels and chemicals shall comply with legislation and Australian standards. Hazardous materials shall be transported, stored and handled in accordance with the requirements of relevant legislation and industry standards. Fuels, lubricants and chemicals shall be stored and, where practicable, handled within containment facilities (for example, bunded areas, leak proof trays) designed to prevent the release of spilt substances to the environment. All storage and handling equipment (including transfer hoses) shall be kept in a well maintained condition. All vehicles and equipment shall be adequately maintained so as to minimise drips/leaks of oil and fuel. All spills of fuel, oil or chemicals shall be addressed.	All personnel

There are no specific monitoring requirements for contaminated land covered under the relevant project approvals, development consent or licences that applied during this reporting period.

Threatened Flora and Fauna

Flora and Fauna management strategies are contained in the Flora and Fauna Management Sub Plan. The key management strategies employed to meet the objectives for Flora and Fauna are summarised in the below table.

Table F - 11: Management Strategies - Flora and Fauna

Activity	Action	Responsibility
General	The AGL Employee and Contractor Induction shall inform all site personnel about flora and fauna management measures and the designated work areas and access routes.	Environment Manager
	The construction footprint is to be kept to a minimum and areas of significant flora and fauna, particularly Endangered Ecological Communities (EEC), will be avoided where possible through the site design and layout process.	Environment Manager
	The gas gathering line routes will be selected to use previously or currently disturbed areas of land wherever possible.	Environment Manager/ Land and Compliance Officer
Access	All construction and maintenance activities shall be restricted to the well compound area or designated gathering line construction corridor and designated access routes. All vehicles shall obey speed limits and remain on designated vehicle tracks and in designated work areas.	Environment Manager/ Operations Manager
Construction	The site design and layout process will determine which trees / vegetation to clear to minimise disturbance. Temporarily fence off or clearly mark out significant habitat (e.g. mature trees) if present at well surface locations, along access roads and gas gathering lines, so that they are clearly visible as no-go areas to construction staff and vehicles. All open trenches shall be checked daily for trapped animals, and those found shall be removed, recorded and relocated to appropriate areas away from construction activities by qualified personnel. Trenches shall generally not be left open overnight on public land. Where this is necessary, bunting shall be installed.	Environment Manager/ Operations Manager/ Land and Compliance Officer
Stockpiles	Cleared vegetation shall be stockpiled so as not to impede vehicles, stock or wildlife, surface drainage or water flows and to avoid damage to adjacent live vegetation. Cleared vegetation shall be stockpiled separately for subsequent re-spreading within the compound during site rehabilitation.	Environment Manager/ Land and Compliance Officer

There are no specific monitoring requirements for threatened flora and fauna covered under the project approvals, development consent or licences that applied during this reporting period.

Noxious Weeds

Management strategies employed to meet the objectives for weed control are included within the Rehabilitation and Landscape Management Sub Plan. The key measures are summarized in the table below.

Table F - 12: Management Strategies - Noxious Weeds

Activity	Action	Responsibility
General	The induction program shall inform all employees and contractors about rehabilitation management measures, control procedures for weeds, pathogens and pest species and the designated work areas and access routes and procedures.	Environment Manager
Construction - Weeds and Pathogens **Cleaning** **Introduced Pest Species**	On first (and subsequent) entry to the District and prior to entering the construction area all vehicles, equipment and portable infrastructure shall be washed by air or water or demonstrated they are clean (namely, certificate/or other document to show they have been cleaned down), prior to coming to site. This shall be done prior to mobilisation to site. Cleaning procedures shall be thorough so as to remove all soil or organic matter from the surfaces of vehicles, equipment and portable infrastructure, including the undercarriage. Wash down by air or water of a vehicle and/or portable equipment shall be supervised by trained personnel and the vehicles details shall be recorded in a vehicle wash down register to be maintained by the Drilling Contractor. All vehicles shall be certified and registered as clean, before they shall be permitted access to the well site area. Topsoil and vegetation material shall be re-spread in the immediate vicinity of the area of origin to limit the potential spread of weeds and pathogens. All plant and equipment shall be inspected and be free of invertebrates and pest species prior to coming on site. Waste management shall be implemented to avoid attracting vertebrate pests (see Waste Management Sub Plan).	Environment Manager
Weed control and monitoring	The well site, restored access tracks and gathering line routes shall be inspected for 12 months following the completion of rehabilitation, for evidence of soil settlement, weeds and pest animals. Active weed control shall be required at sites identified as infested for at least one year after construction. Additional appropriate control measures shall be utilised after this time, on the basis of monitoring results. Herbicides are to be used to kill noxious weeds. Drift, drip or run-off to surface waters or non-target species is to be avoided. Personnel using herbicides are to be appropriately trained and qualified.	Environment Manager

There are no specific monitoring requirements for noxious weeds covered under the project approvals, development consent or licences that applied during this reporting period.

Operational Noise

Management strategies employed to meet the objectives for operational noise are outlined in the Noise Management Sub Plan. The key measures are outlined in the table below.

Table F - 13: Operational Noise Management Strategies

Activity	Management Strategies	Responsibility
Planning	The workforce induction program shall inform site personnel of the required procedures regarding protection of local amenity.	Environment Manager
Operations	Under normal operating conditions, field operations shall be limited to the hours between 7:00am to 6:00pm, Monday to Friday; from 8:00am to 1:00pm Saturday and no work on Sundays or Public Holidays. Except in an emergency, operations will not generate noise impacts. Noise generated from the Gas plant shall comply with noise limits set out in DA 282-6-2003-I 4-38.	All personnel

The noise limits and monitoring requirements detailed in the Development Applications for Operational Noise Monitoring approved for the CGP are summarised in the table below.

Table F - 14: CoC's Operational Noise Monitoring Requirements

Operational Noise Monitoring Requirements
DA 15-1-2002 – i
Schedule 3. Clause 38 The Applicant shall comply with the following noise criteria ($L_{Aeq\ 15\ minute}$): RECEIVER A: 40 dBA (Day, Evening and Night) RECEIVER B, C and F: 37 dBA (Day, Evening and Night) RECEIVER D, E and G to M: 37 dBA (Day and Evening), 35 dBA (Night) Any other residential receiver: 35 dBA (Day, Evening and Night) *Note: This development refers to the RBTP, which has been decommissioned and rehabilitated*
DA 282-6-2003-i
Schedule 4. Clause 29 The Applicant shall ensure that noise from the normal operation of the premises, excluding flaring events, must not exceed the noise limits ($L_{Aeq\ 15\ minute}$) in the table below: R1 Medhurst Rd, Gilead: 35dBA (Day, Evening and Night) R7 Mt Gilead, Gilead: 37dBA (Day), 36dBA (Evening and Night) *Note: This Development refers to the operation of the RPGP*
Schedule 4. Clause 40 The Applicant must submit a noise compliance report to the EPA and the Department within one month of commissioning of the Gas Treatment Plant and on an annual basis with the Annual Return required by the EPA's licence to assess the project's compliance with the noise limits in Conditions 29 and 31. The noise monitoring must be conducted in accordance with Condition 42
Schedule 4. Clause 41 Following the first 12 months of continuous noise monitoring, during the life of the Development or as otherwise agreed by the Director-General, the Applicant shall undertake quarterly attended monitoring at the Mt Gilead Homestead to the satisfaction of the Director-General, in accordance with the NSW Industrial Noise Policy and AS 1055: "Acoustics – Description and Measurement of Environmental Noise".

Operational Noise Monitoring Requirements
DA 75-4-2005
Schedule 2. Clause 18. Noise from the operation of the development shall not exceed 35dBA ($L_{Aeq\ 15\ minute}$) at any residential or noise sensitive premises during the day, evening or night. The $L_{A1\ (1\ minute)}$ shall not exceed 45 dBA at any residential or noise sensitive premises during the night. *Note: This development refers to the drilling and operation of wells SL01-SL07 and associated gas gathering lines.*
PA 06_0137
Schedule 3. Clause 4 The proponent shall ensure that the noise generated by the project does not exceed 39 dBA during the day and evening and 35 dBA at night at any residential receiver ($L_{Aeq\ 15\ minute}$). The $L_{A1(1\ minute)}$ shall not exceed 45 dBA at night at any residential receiver. Refer to DA for notes relating to this condition. *Note: This development refers to the operation of wells RB03-RB12*
PA 06_0138
Schedule 3. Clause 4 The Proponent shall ensure that the noise generated by the project does not exceed 39 dBA during the day and evening and 35 dBA at night at any residential receiver ($L_{Aeq\ 15\ minute}$). The $L_{A1(1\ minute)}$ shall not exceed 45 dBA at night at any residential receiver. Refer to DA for notes relating to this condition. *Note: This development refers to the operation of wells EM23-EM36*
PA 06_0291
Schedule 3 Clause 5 The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria (dB(A)$L_{Aeq\ (15\ minute)}$ in the table below: SF10: Day (43), Evening (42), Night (37) SF04, SF17, SF20: Day (43), Evening (41), Night (36) MP05, MP06, MP11: Day (40), Evening (40), Night (40) MP19, MP21, MP24, MP33 Day (42), Evening (42), Night (40) MP02, MP03, MP04, MP22, MP23 Day (49), Evening (45), Night (40) *Note: This development refers to the operation of wells in the Spring Farm and Menangle Park areas.*
EPL 12003, Condition L5.1 and R1.10
Condition L5.1 Noise from the premises must not exceed the noise limits in the table below: Receiver Location: R1 MEDHURST RD, Mt. GILEAD: Day (35 $L_{Aeq\ (15\ minute)}$), Evening (35), Night (35), Flaring (night) (45) R7 Mt. Gilead, Gilead: Day (37), Evening (36), Night (35),Flaring 9night) (45) *Note: Pressure safety valve (discharge) and pressure safety valve (suction) flaring events are exempted from the limits in condition L5.1* Condition R1.10 The licensee must submit a noise compliance monitoring report on 16 April 2004 and on an annual basis with the annual return required in condition R1.1 thereafter, to assess compliance with the noise limits provided in condition L6.1. The noise monitoring must be undertaken in accordance with the NSW *Industrial Noise Policy August 2000*.

The above conditions which relate to operational noise were applicable for this reporting period.

Construction Noise

Management strategies employed to meet the objectives for construction noise are outlined in the Noise Management Sub Plan. The key measures are provided in the following table.

Table F - 15: Construction Noise Management Strategies

Activity	Management Strategies	Responsibility
Planning	The workforce induction program shall inform site personnel of the required procedures regarding protection of local amenity.	Environment Manager
Operations	Under normal operating conditions, field operations shall be limited to the hours between 7:00am to 6:00pm, Monday to Friday; from 8:00am to 1:00pm Saturday and no work on Sundays or Public Holidays. Surface to Inseam wells are an exception to these hours, requiring 24 hour/ 7 day drilling. Equipment will be maintained and orientated away from sensitive receivers to minimise noise impacts. Noise walls are to be used where suitable to minimise offsite noise impacts. Notice of works will be provided to relevant affected residents at least 5 days prior to commencing construction activities. Maximise offset distance between noisy equipment and sensitive receivers. Regular consultation with potentially sensitive receivers. Except in an emergency, operations will not generate noise impacts.	All personnel

The construction noise limits and monitoring requirements detailed in the Development Applications, Project Approvals and Modifications approved for the CGP are summarised in the following table.

Table F - 16: Construction Noise Limits and Monitoring Requirements

Approval Criteria for Construction Noise	Activities undertaken during the reporting period
PA 06_0137	
Schedule 3. Clause 2 – Construction noise Criteria The proponent shall use its best endeavours to undertake construction activities to comply with Day time noise goal of 54 dBA at any residential receiver. *Note: This development refers to the drilling of wells RB 03- RB 12.*	No construction or drilling activities were undertaken at these wells sites during the reporting period.
PA 06_0138	
Schedule 3. Clause 2 – Construction Noise Criteria The Proponent shall use its best endeavours to undertake construction activities to comply with the construction Day, Evening and Night goals of 54 dBA, 39 dBA and 35 dBA respectively at any residential receiver. *Note: This development refers to the drilling of wells EM23-36*	No construction or drilling activities were undertaken at these wells sites during the reporting period.
PA 06_0291	
Schedule 3 Clause 3 – Construction Noise Goals The Proponent shall use its best endeavours to undertake construction activities to comply with the construction noise goals dB(A)$L_{Aeq(15\ minute)}$ specified below at the nearest residential dwelling: MP02, MP03, MP04: Day (49), Evening (47), Night (41), Sat & Sun (47)	No construction or drilling activities were undertaken at these wells sites during the reporting period.

Approval Criteria for Construction Noise	Activities undertaken during the reporting period
MP05, MP06: Day (40), Evening (40), Night (40), Sat & Sun (40) MP11, MP24, MP33: Day (42), Evening (42), Night (40), Sat & Sun (42) MP19 R3: Day (40), Evening (40), Night (40), Sat & Sun (40) MP19 R25: Day (49), Evening (47), Night (41), Sat & Sun (47) MP21, MP22, MP23: Day (49), Evening (47), Night (41), Sat & Sun (47) SF04A: Day (43), Evening (42), Night (37), Sat & Sun (42) SF10, SF17, SF20: Day (43), Evening (41), Night (36), Sat & Sun (43)	
DA 75-4-2005 (Mod 4 July 2007)	
Schedule 2, Clause 18A Noise from the drilling and construction of SL08 and SL09 shall not exceed the following noise limits at the nearest sensitive receiver: Weekday (7am to 6pm) and Sat (7am-1pm): 54 dB(A)L_{Aeq} Saturday (1pm to 6pm) and Sunday (7am to 6pm): 44 dB(A)L_{Aeq} Evening: 47 dB(A)L_{Aeq} Night: 41 dB(A)L_{Aeq}	No construction or drilling activities were undertaken at these wells sites during the reporting period.
DA 15-1-2002 (Mod 4 July 2007)	
Schedule 3 Clause 47A Noise from the drilling and construction of AP02 and AP03 shall not exceed the following limits at receivers A1, A2, A3 and A4: Weekday (7am to 6pm) and Sat (7am-1pm): 45 dB(A)L_{Aeq} Saturday (1pm to 6pm) and Sunday (7am to 6pm): 40 dB(A)L_{Aeq} Evening: 40 dB(A)L_{Aeq} Night: 30 dB(A)L_{Aeq}	No construction or drilling activities were undertaken at the above wells sites during the reporting period.
DA 246-8-2002-I (Mod 20 April 2011)	
Schedule 3, Clause 19B Noise from the drilling and construction of KP05 and KP06 shall not exceed the following noise limits at the nearest receiver: Weekday (7am to 6pm) and Sat (7am-1pm): 53 dB(A)L_{Aeq} Saturday (1pm to 6pm) and Sunday (7am to 6pm): 48 dB(A)L_{Aeq} Evening: 41 dB(A)L_{Aeq} Night: 35 dB(A)L_{Aeq}	No construction or drilling activities were undertaken at the above wells sites during the reporting period.
DA 282-6-2003i (Mod 4 July 2007)	
Schedule 4, Clause 34B Noise from the drilling and construction of EM38 shall not exceed the following noise limits at the nearest sensitive receiver: Weekday (7am to 6pm) and Sat (7am-1pm): 54 dB(A)L_{Aeq} Saturday (1pm to 6pm) and Sunday (7am to 6pm): 39 dB(A)L_{Aeq} Evening: 39 dB(A)L_{Aeq} Night: 35 dB(A)L_{Aeq}	No construction or drilling activities were undertaken at this location during the reporting period.
DA 282-6-2003i (Mod 11 April 2008)	
Schedule 4, Clause 34C Noise from the drilling and construction of EM39 and GL17 shall not exceed the following noise limits at receivers EM39-R3 and GL17 – R3: Weekday (7am to 6pm) and Sat (7am-1pm): 40 dB(A)L_{Aeq} Saturday (1pm to 6pm) and Sunday (7am to 6pm): 40 dB(A)L_{Aeq}	No construction or drilling activities were undertaken at the above wells sites during the reporting period.

Approval Criteria for Construction Noise	Activities undertaken during the reporting period
Evening: 40 dB(A)L_{Aeq} Night: 38 dB(A)L_{Aeq}	
DA 183-8-2004 (Mod 4 July 2007)	
Schedule 2, Clause 13B Noise from the drilling and construction of MP30 shall not exceed the following noise limits at the nearest sensitive receiver: Weekday (7am to 6pm) and Sat (7am-1pm): 57 dB(A)L_{Aeq} Saturday (1pm to 6pm) and Sunday (7am to 6pm): 42 dB(A)L_{Aeq} Evening: 42 dB(A)L_{Aeq} Night: 40 dB(A)L_{Aeq}	No construction or drilling activities were undertaken at the above well site during the reporting period.
DA 183-8-2004 (Mod 9 July 2012)	
Schedule 2, Clause 13C Noise from the drilling and construction of MP25 shall not exceed the sound pressure level (noise) limits at the nearest sensitive receiver locations: Weekday (7am to 6pm) and Sat (7am-1pm): 47 dB(A)L_{Aeq} Saturday (1pm to 6pm) and Sunday (7am to 6pm): 42 dB(A)L_{Aeq} Evening: 42 dB(A)L_{Aeq} Night: 40 dB(A)L_{Aeq}	MP25 completed drilling activities in September of this reporting period. Refer to the AEPR Section 5, Environmental Management and Performance for discussion of monitoring results.

No construction or drilling activities were undertaken at the above well sites (except MP25) during the reporting period for which construction noise monitoring was required.

Visual Amenity

Strategies implemented to manage visual amenity are included within the Rehabilitation and Landscape Management Sub Plan. The key objectives in relation to visual amenity are as follows:

- To minimise visual impacts from operations activities in consultation with the relevant landowner; and
- To minimise impacts to the visual characteristics of the area.

In addition to the Sub Plan there are a number of monitoring requirements for visual amenity required by the project and development approvals. The relevant monitoring conditions required of DA 282-6-2003-i are outlined in the following table.

Table F - 17: Visual Amenity Monitoring Requirements

Visual Amenity Monitoring Requirements
DA 282-6-2003-i
Schedule 4. Clause 10. The applicant shall report on the effectiveness of the lighting controls in the AEPR.
Schedule 4. Clause 11. The Applicant shall record the frequency of the operation of the flare and shall make this information available for inspection by the DG on request. The records shall include but not be limited to the following: (a) date and time of each flare event; (b) duration of each flare event; (c) whether the flare operated during daylight or night-time hours; (d) the cause for the operation of the flare; (e) the number of compressor engines that have been commissioned and operating during the period; and (f) comparison of the frequency, night-time frequency, duration and estimated light level of each type of flare event with the flare events predicted in Table 2 of the following report: URS (2003) "*SGL Proposal Stage 2 Coal Seam Methane Project Visual Assessment of Lighting and Flare" prepared by URS for SGL dated 6 November 2003.*"
Schedule 4. Clause 14. As part of an independent audit required under condition 18, the Vegetation and Landscape Management Plan must make provision for ensuring that landscaping of the Gas Treatment Plant site and surrounds is maintained in an adequate condition by providing details of a monitoring program. Monitoring must be carried out pursuant to the monitoring program every 6 months for the first two years from the commencement of planting and thereafter every 2 years by an independent and suitably qualified and experienced arborist whose appointment has been approved for the purposes of this condition by the Director-General. The monitoring program must include the following features: (a) Identification of mature trees surrounding the site which afford screening of the Gas Treatment Plant from Mt Gilead Homestead; (b) Provision for assessing and regularly monitoring the health of landscaping on the site and the trees in the Menangle Creek riparian zone adjacent to the Gas Treatment Plant site. The objective of the monitoring is to determine the health of the trees and to recommend measures (if required) to improve the health of the trees; (c) Description of the health of each tree identified under condition (a); (d) Recommendation of reasonable measures to ensure that mature trees within the riparian corridor along Menangle Creek are retained and protected, including trees that lie within the transmission line easement to the East of the site; (e) Recommendation of any watering or fertilising that needs to be implemented to maintain the landscaping and surrounding trees; (f) Recommendation of how to manage the landscaping to promote the maximisation of growth to maturity. The results and recommendations of the monitoring program must be submitted to the Director-General

Visual Amenity Monitoring Requirements
at the conclusion of each stage of monitoring.
Schedule 4, Clause 18 The Applicant shall commission and pay the full cost of an Independent Audit of the performance of the mitigation measures implemented to prevent and minimise visual impacts of the proposal including landscaping, preservation of existing trees, and night-lighting effects. The audit must be conducted within 6 months of the commissioning of the proposed development and every 2 years thereafter, unless the Director-General directs otherwise. This audit must: (a) Be conducted by an independent landscape expert who is suitably qualified and experienced and whose appointment has been approved by the Director-General; (b) Assess the performance of the visual mitigation measures with specific reference to the effectiveness of mitigation measures in screening the development and lighting from the development from the Mount Gilead Homestead; (c) Review the adequacy of the Vegetation and Landscape Management Plan; (d) Recommend actions or measures to improve the performance of the visual mitigation measures and the adequacy of the Vegetation and Landscape Management Plan (if required); and (e) Be submitted to the Director-General; and (f) Be implemented to the satisfaction of the Director-General.
Schedule 4, Clause 125 The applicant shall maintain and monitor all rehabilitated riparian zones for a period of at least two years after final planting. Maintenance must include sediment and erosion control, watering, weed control, replacement of plant losses, disease and insect control, mulching and any other requirements for achieving successful vegetation establishment.
Modification to DA 282-6-2003-I dated 2 May 2007 (access road construction)
Schedule 4, Clause 19B Within 6 months of completion of the landscaping and every two years thereafter, unless otherwise directed by the DG, the Applicant shall commission and pay the full cost of an independent audit of the performance of the mitigation measures. The audit shall: (a) be conducted by a suitably qualified, experienced and independent person(s) whose appointment has been approved by the DG; (b) assess the performance of the visual mitigation measures with specific reference to the effectiveness of mitigation measures in screening the road from the Mount Gilead homestead; (c) review the adequacy of the Landscape Planting Plan; (d) recommend actions of measures to improve performance of the visual mitigation measures and the adequacy of the Landscape Planting Plan (if required); and (e) be submitted and implemented to the satisfaction of the DG Note: the Applicant may include this audit in the Independent Audit required under Schedule 4 Clause 18 of DA 282-6-2003-i. The due date for a combined audit shall be the earlier of the due dates for the separate audits.

Aboriginal Heritage

Management strategies employed to meet the objectives for aboriginal heritage are outlined in the Aboriginal Cultural Heritage Management Sub Plan. The key measures are summarised in the below table.

Table F - 18: Management Strategies - Aboriginal Heritage

Activity	Management Strategies	Responsibility
Planning	The workforce induction program shall inform site personnel of the required procedures for protection of cultural heritage. Flagging and fencing shall be place around known sites in the vicinity of the proposed areas of disturbance prior to construction commencing.	Environment Manager
Operations	All operational activities shall be restricted to the well site area, gathering line route, site office, lay down yard, workshop, Gas plant and designated access routes. If in an area where monitoring is required and a previously unrecorded archaeological item is identified by the archaeologist, all ground disturbing activities shall cease and the Project Manager informed. The archaeologist will assess the item/s or site and provide a report to the Environment Manager with recommendations. This report will be submitted to National Parks and Wildlife Service for assessment. No work will commence without approval from NPWS and the Project Manager. Should any Aboriginal sites or objects be unearthed during works, these activities should temporarily cease within the immediate vicinity of the find locality, be relocated to other areas of the site (allowing for a curtilage of at least 50m), and the Office of Environment & Heritage should be contacted and permission sought for the *Tharawal Local Aboriginal Land Council* and the *Cubbitch Barta Native Title Claimants Aboriginal Corporation* to record/salvage these items.	Environment & Safety Officer All personnel

During the reporting period there were no monitoring requirements triggered under the project approvals or development consents which related to aboriginal heritage.

European Heritage

Management strategies employed to meet the objectives for cultural heritage are outlined in the European Heritage Management Sub Plan and reproduced in the below table.

Table F - 19: Management Strategies - European Heritage

Activity	Action	Responsibility
Pre-Activity	Select locations of wells, access roads and gas gathering lines to avoid items of heritage significance where possible by redesign or relocation of proposed infrastructure and/ or activities.	Environment Manager
Construction, Operation, Rehabilitation	Brief personnel/ contractors prior to excavation during the site specific induction on heritage issues and on the appropriate course of action if any historic relics are discovered.	Environment Manager
Construction, Operation, Rehabilitation	Maintain existing vegetation which provides screening of works and minimise removal of vegetation where possible.	Environment Manager
Construction, Operation, Rehabilitation	Implement the recommendations of heritage assessments, where relevant.	Environment Manager/ Operations Manager
Construction, Operation, Rehabilitation	If any historic relics, as defined by the Heritage Act 1977 are identified in the course of activities, then works in the vicinity of the finds are to cease immediately, and an archaeologist from the NSW Heritage Office is to be contacted, and an appropriate course of action implemented.	Environment Manager/ Operations manager

During the reporting period there were no monitoring requirements triggered under the project approvals or development consents which related to European Heritage.

Bushfire

Management strategies employed to meet the objectives for bushfire control are outlined in the Emergency Response Plan and are reproduced in the table below.

Table F - 20: Management Strategies – Bushfire

Activity	Management Strategies	Responsibility
Planning	The induction program shall inform personnel of the required bushfire management procedures. AGL shall maintain regular liaison with local emergency services organisations. Regular liaison with landholders shall be conducted regarding the nature and schedule of operational activities.	Environment Manager/ Health and Safety Business Partner
Operations	All operational activities shall be restricted to the well site area, gathering line route, site office, lay down yard, workshop, Gas plant and designated access routes. All vehicles shall carry fire extinguishers. All machinery shall be maintained and operated to comply with relevant fire safety standards. Defective machinery shall be shut down until the defect is rectified and the machine made safe for operations. The event of a fire shall be limited through the employment of fire prevention mechanisms.	Environment Manager/ Health and Safety Business Partner All personnel

There are no specific monitoring requirements for bushfire covered under the project approvals or development consents that applied during this reporting period.

Hydrocarbon Contamination

Management strategies employed to meet the objectives for hydrocarbon contamination control are outlined in the Dangerous Goods and Hazardous Materials Management Sub Plan. The key measures are summarised in the below table.

Table F - 21: Management Strategies - Hydrocarbon Contamination

Activity	Management Strategies	Responsibility
Planning	During operations appropriate strategies and equipment shall be in place to deal with a spill of all types of fuel, oil or chemicals to be used on-site. The workforce induction program shall inform site personnel of the required spill prevention and response procedures.	Environment Manager
Operations	All fuel, oils and chemicals shall be stored and handled in accordance with Australian Standards. Spills shall be stopped at source as soon as practicable. Spilt material shall be contained to the smallest possible area. Spilt material shall be recovered as soon as possible, using appropriate equipment. Contaminated soil, or spill recovery materials (such as kitty litter and absorbent pads) shall be disposed of at appropriately licensed facilities. Spill response equipment shall be maintained on-site and replaced as required. Containment and recovery equipment shall include, but not be limited to absorbent materials (for example, pads and straw bales), shovels and sand bag sacks and protective clothing (for example, gloves, overalls, and boots).	Environment Manager All personnel

There are no specific monitoring requirements for hydrocarbon contamination covered under the project approvals, development consent or licences that applied during this reporting period.

Safety and Risk Management

Public safety is assured through compliance with:

- Operational Protocols;
- AGL Health, Safety and Environment Policy;
- Implementation of management sub plans within the EMP; and
- Site and Infrastructure Security.

AGL's management measures relating to environmental risk are covered under the respective items included within the EMP and its sub-plans. Incident reporting and monitoring requirements with regard to safety and risk management are included in the below table for the relevant project approvals, development consents and licence conditions.

Table F - 22: Incident Reporting Monitoring Requirements

Incident Reporting Monitoring Requirements
DA 15-1-2002-i
EPL Requirement *The Licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident.*
DA 282-6-2003-i
Schedule 4. Clause 94 *The Applicant is required within 24 hours of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment, to supply a report to the Department outlining the basic facts. A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventive measures. That report must be submitted to the Director-General no later than 14 days after the incident or potential incident.* *The Applicant shall maintain a register of accidents, incidents and potential incidents. The register shall be made available for inspection at any time by the independent hazard auditor and the Director-General.*
DA 246-8-2002-i
Schedule 3. Clause 13 *The Applicant shall notify the OEH (now EPA), DPI and the Director-General of any incident with significant off-site impacts on people or the biosphere environment as soon as practicable after the occurrence of the incident. The Applicant shall provide written details of the incident to the Director-General, the OEH (now EPA), DPI, and Wollondilly Council within seven days of the date on which the incident occurred.* ***Schedule 3. Clause 14*** *The Applicant shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this consent, reported in accordance with Condition 13 of this consent, within such period as the Director-General may agree.*
PA 06_0137, PA 06_0138 & PA 06_0291
Schedule 4. Clause 2 *Within 7 days of detecting an exceedance of the goals/limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment; the Proponent shall report the exceedance/incident to the Department (and any relevant agency). The report shall:* *(a) describe the date, time, and nature of the exceedance/incident;* *(b) identify the cause (or likely cause) of the exceedance/incident;* *(c) describe what action has been taken to date; and* *(d) Describe the proposed measures to address the exceedance/incident.*

Incident Reporting Monitoring Requirements
EPL 12003, Condition R2 - Notification of environmental harm
R2.1 Notifications must be made by telephoning the Environment Line service on 131 555. *R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.* *Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.*

Rehabilitation

Management strategies employed to meet the objectives for rehabilitation are outlined in the Rehabilitation and Landscape Management Sub Plan. Some of these measures are summarised in the below table.

Table F - 23: Management Strategies – Rehabilitation

Activity	Action	Responsibility
General	The induction program shall inform all employees and contractors about rehabilitation management measures, control procedures for weeds, pathogens and pest species and the designated work areas and access routes and procedures.	Environment Manager
Access Roads	All operations activities including rehabilitation and maintenance shall be restricted to the compound area or designated gathering line corridor and designated access routes (where possible).	Environment Manager/ Operations Manager/ Land & Compliance Officer
Visibility (construction)	For well surface locations where residents may be exposed to extended periods of uninterrupted views during construction, green mesh or other appropriate fencing is to be erected around the construction compound in accordance with the recommendations of the relevant EA or Site Plan.	Environment Manager/ Operations Manager/ Land & Compliance Officer
Initial Rehabilitation	All waste materials and equipment shall be removed from the area once backfilling and tie-ins are completed. Topsoil and vegetation material shall be respread in the immediate vicinity of the area of origin to limit the potential spread of weeds and pathogens. Waste management shall be implemented to avoid attracting vertebrate pests (see Waste Management Sub Plan). Sediment control measures shall be implemented where necessary to prevent erosion and water contamination. (See Soil and Water Management Sub Plan). Areas to be rehabilitated shall be graded to reinstate pre-existing surface contours and natural drainage patterns. All fences which were cut and replaced by gates during operations shall be repaired to at least the equivalent pre-operations condition, unless permanent gates or other arrangements are agreed with the landholder. Initial rehabilitation of the well construction compound and gas gathering lines is to be consistent with the established character of surrounding land. All flagging and bunting installed for environmental or safety reasons shall be removed.	Environment Manager/ Land & Compliance Officer
Stockpiles	Cleared vegetation shall be stockpiled separately for subsequent re-spreading within the compound during site rehabilitation. Disturbed areas shall be progressively rehabilitated as soon as practicable.	Environment Manager/ Land & Compliance Officer
Construction - Weeds and Pathogens **Cleaning**	On first (and subsequent) entry to the District and prior to entering the construction area all vehicles, equipment and portable infrastructure shall be washed by air or water or demonstrated they are clean (namely, certificate/or other document to show they have been cleaned down), prior to coming to site. This shall be done prior to mobilisation to site. Cleaning procedures shall be thorough so as to remove all soil or organic matter from the surfaces of vehicles, equipment and	Environment Manager/ Land & Compliance Officer

Activity	Action	Responsibility
Introduced Pest Species	portable infrastructure, including the undercarriage. Wash down by air or water of a vehicle and/or portable equipment shall be supervised by trained personnel and the vehicles details shall be recorded in a vehicle wash down register to be maintained by the Contractor. All vehicles shall be certified and registered as clean, before they shall be permitted access to the well site area. Topsoil and vegetation material shall be respread in the immediate vicinity of the area of origin to limit the potential spread of weeds and pathogens. All plant and equipment shall be inspected and be free of invertebrates and pest species prior to coming on site. Waste management shall be implemented to avoid attracting vertebrate pests (see Waste Management Sub Plan).	
Weed control and monitoring	The well site, restored access tracks and gathering line routes shall be inspected for 12 months following the completion of rehabilitation, for evidence of soil settlement, weeds and pest animals. Active weed control shall be required at sites identified as infested for at least one year after construction. Additional appropriate control measures shall be utilised after this time, on the basis of monitoring results. Herbicides are to be used to kill noxious weeds. Drift, drip or run-off to surface waters or non-target species is to be avoided. Personnel using herbicides are to be appropriately trained and qualified.	Environment Manager/ Land & Compliance Officer
Final Rehabilitation	For each property a rehabilitation plan shall be developed to include requirements for reseeding and fertiliser as approved by the landholder. All rehabilitation works would be undertaken with maximum regard to environmental protection and rehabilitation, vegetation, subsoil and topsoil management, weed control, erosion and sedimentation management and revegetation in accordance with the EMP and this Sub Plan. Earthworks, vegetation clearing and soil disturbance would be limited to the construction and operational footprint as appropriate. Existing vegetation will be maintained wherever possible. If removal of the gas gathering system is required, the excavated trench would be backfilled and rehabilitated, including contouring and revegetation. Revegetation is to be undertaken as soon as works are complete. Revegetating would include broadcast of seed and on-going maintenance and monitoring activities. All private tracks used during operations will be returned to their pre-operations state, or to a condition agreed by the landholder.	Environment Manager/ Land & Compliance Officer

There are no specific monitoring requirements for rehabilitation in addition to visual amenity monitoring requirements as specified in Table F-17 above that applied during this reporting period.

Appendix G. 2010-2012 Independent Audit Report – Non-Conformances Corrective Actions Register

AGL's corrective action status update for Non-conformances identified within the 2010-2012 Independent Environmental Audit Report by Treo Environment

AGL Corrective Action Register based on Independent Audit Recommendations

September 2013

[Note: these actions reflect the Audit Findings and Recommendations in Section 4 of the Independent Environmental Audit Report.]

Issue Raised in Audit Report	Auditor Recommendations	Actions taken by AGL	Action Due Date	Action Status	Notes
Air Monitoring - 1 Continuous Emissions Monitoring System (CEMS)	Resolve CEMS air monitoring issues in consultation with EPA	On 8th August 2013, AGL entered into an Enforceable Undertaking with EPA with an action to address this non-conformance.	8 February 2014	IN PROGRESS	AGL has commenced actions to rectify this non compliance, including purchase, installation and operation of a new Continuous Emissions Monitoring System for compressor unit 1, and consultation with the EPA in relation to potential alternative monitoring methods for compressor units 2 and 3.
Air Monitoring - 2 Quarterly Sampling	Conduct air emissions monitoring on a quarterly basis on all compressors operating during that quarter.	Since September 2012, AGL has conducted air emissions monitoring on a quarterly basis on all compressors operating during that quarter.	Ongoing (each quarter)	COMPLETED	
Air Monitoring - 3 Sampling Positions	Sampling positions for quarterly air emissions monitoring at Points 1, 4 & 5 to be compliant with test method TM-1.	Points 1 & 4: Install second sampling port. Point 5: Install second sampling port. Consult with EPA in regards to minimum volumetric flow rate.	21 December 2013	COMPLETED Point 1: October 2012 Point 4: April 2013 IN PROGRESS Point 5	AGL has installed a second sampling port on Point 5, and is presently consulting with the EPA to comply with the minimum volumetric flow rate.
Independent Audits	Ensure that suitably qualified and approved professionals are engaged early enough to allow completion of the audit and submission within the required timeframe.	AGL has improved its Upstream Gas Compliance Management System to ensure that all future auditors are engaged, with sufficient time to allow completion of the audit report and submission within the required timeframe.	Ongoing	COMPLETED	AGL notes that in instances where it may not be possible for the auditor to complete and submit the report within the required timeframe, prior consultation will take place with the appropriate regulator.
Consultation	Ensure consultation with nominated regulatory authorities/stakeholders during the development or update of Plans in accordance with consent conditions.	AGL has improved the Upstream Gas Compliance Management System to ensure that all nominated stakeholders are identified and consulted with in accordance with consent conditions for future/ongoing operations. AGL has commenced updates to Plans since the audit and commenced consultation with relevant stakeholders prior to submission of relevant plans.	Ongoing	IN PROGRESS	AGL has commenced updates to the Environmental Management Plan and Emergency Response Plan following the audit and is presently consulting with all relevant stakeholders as required by the appropriate conditions.
Land Subsidence	If AGL is satisfied, based on expert opinion that no subsidence monitoring is required, then they should seek to modify this condition accordingly.	AGL has engaged a suitably qualified expert to conduct subsidence monitoring. If the results confirm AGL's previous expert subsidence report prepared in April 2007 (risk of subsidence almost negligible) and hence monitoring is not required, AGL will seek to modify this condition.	31 December 2013	IN PROGRESS	AGL has engaged a suitably qualified subsidence expert to conduct further subsidence monitoring.
Reporting	Establish an appropriate system to identify reporting requirements, allocate responsibility and ensure submission within the required timeframe.	AGL has improved its Upstream Gas Compliance Management System, which will identify and track its reporting obligations, allocate responsibility and ensure submission within the required timeframe.	Ongoing	COMPLETED	AGL has engaged a Compliance Manager and Compliance Liaison Officer who meet on a weekly basis to review compliance with regulatory obligations across Upstream Gas.
Reporting	Seek a modification of the development consent DA282-6-2003-I to provide consistency with EPL 12003 (requirement for quarterly reports for waste transports and waste disposal facilities).	AGL will seek a modification of the development consent to provide consistency with EPL 12003.	30 June 2014	IN PROGRESS	AGL has commenced consultation with the DoPI and EPA.
Noise Management	Review and revise the Noise Management Plan to establish effective monitoring tools to achieve compliance.	AGL has engaged an external noise consultant to update the latest Noise Management Plan.	31 October 2013	IN PROGRESS	Once updated, AGL will submit the NMP to the EPA and Department of Planning and Infrastructure for approval as part of AGL's revised Environmental Management Plan (EMP). AGL will then upload the approved NMP to AGL's corporate website.
Water Monitoring	Seek a modification of DA 282-6-2003-I to align with the conditions of EPL 12003 (water monitoring).	AGL will seek a modification of the development consent to provide consistency with EPL 12003.	30 June 2014	IN PROGRESS	AGL has commenced consultation with the DoPI and EPA.

Appendix H. Air Quality Monitoring Results

Air Quality Monitoring Results – Rosalind Park Gas Plant (as reported for 2011-12 Annual Returns)

EPA Monitoring Point 1							
Pollutant	**Unit**	**No. of Samples Required**	**No. of Samples Collected**	**Lowest Sample**	**Mean of Samples**	**Highest Sample**	**Licence Limit**
Temperature	Degrees Celsius	4+CEMS	4+CEMS	317.00	344.96	385.00	N/A
Nitrogen Oxides	mg/m^3	4+CEMS	4+CEMS	174.00	349.52	605.00	461
Sulphur Dioxide	mg/m^3	4	4	BLD*	0.05	BLD*	7
Oxygen (O_2)	%	4+CEMS	4+CEMS	11.00	12.80	13.85	N/A
Volumetric Flow rate	m^3/s	4+CEMS	4	2.80	2.90	3.10	N/A
Molecular Weight of Stack Gases	g/g-mole	4	4	29.30	29.43	29.50	N/A
Sulphuric Acid mist and sulphur trioxide (as SO3)	mg/m^3	4	4	0.02	0.14	0.37	5.0
Dry gas density	Kg/m^3	4	4	1.31	1.32	1.32	N/A
Velocity	m/s	4	4	25.00	26.00	27.00	N/A
Moisture	%	4+CEMS	4	6.00	10.05	14.00	N/A
Carbon Dioxide	%	4	4	4.40	5.03	5.70	N/A

*BLD: Below Limit of Detection

EPA Monitoring Point 2							
Pollutant	**Unit**	**No. of Samples Required**	**No. of Samples Collected***	**Lowest Sample**	**Mean of Samples**	**Highest Sample**	**Licence Limit**
Temperature	Degrees Celsius	4+CEMS	3+CEMS	289.00	406.85	513.00	N/A
Nitrogen Oxides	mg/m^3	4+CEMS	3+CEMS	71.00	255.40	896.00	461
Sulphur Dioxide	mg/m^3	4	3	BLD*	0.03	BLD	7
Oxygen (O_2)	%	4+CEMS	3+CEMS	0.36	1.17	2.20	N/A
Volumetric Flow rate	m^3/s	4+CEMS	3	0.70	0.79	0.84	N/A
Molecular Weight of Stack Gases	g/g-mole	4	3	29.90	29.97	30.00	N/A
Sulphuric Acid mist and sulphur trioxide (as SO3)	mg/m^3	4	3	*BLD	0.01	*BLD	5.0
Dry gas density	Kg/m^3	4	3	1.33	1.34	1.34	N/A
Velocity	m/s	4	3	17.00	20.00	23.00	N/A
Moisture	%	4+CEMS	3	13.00	14.67	16.00	N/A
Carbon Dioxide	%	4	3	10.60	11.10	11.50	N/A

*BLD: Below Limit of Detection

Notes: Only 3 samples were collected as Compressor 2 was not operating during the first quarterly monitoring.

EPA Monitoring Point 3							
Pollutant	**Unit**	**No. of Samples Required**	**No. of Samples Collected***	**Lowest Sample**	**Mean of Samples**	**Highest Sample**	**Licence Limit**
Temperature	Degree Celsius	4+CEMS	3+CEMS	305.00	413.58	521.00	N/A
Nitrogen Oxides	mg/m^3	4+CEMS	3+CEMS	50.00	132.31	395.00	461
Sulphur Dioxide	mg/m^3	4	2	*BLD	0.02	*BLD	7
Oxygen (O_2)	%	4+CEMS	3+CEMS	0.07	1.46	3.10	N/A
Volumetric Flow rate	m^3/s	4+CEMS	3	0.63	0.73	0.80	N/A
Molecular Weight of Stack Gases	g/g-mole	4	3	29.90	29.97	30.00	N/A
Sulphuric Acid mist and sulphur trioxide (as SO3)	mg/m^3	4	3	*BLD	0.02	0.05	5.0
Dry gas density	Kg/m^3	4	3	1.33	1.34	1.34	N/A
Velocity	m/s	4	3	16.00	18.67	20.00	N/A
Moisture	%	4+CEMS	3	12.00	14.33	17.00	N/A
Carbon Dioxide	%	4	3	10.60	11.00	11.20	N/A

*BLD: Below Limit of Detection

Notes: Only 3 samples were collected as Compressor 3 was not operating during the second quarterly monitoring.

EPA Monitoring Point 4							
Pollutant	**Unit**	**No. of Samples Required**	**No. of Samples Collected**	**Lowest Sample**	**Mean of Samples**	**Highest Sample**	**Licence Limit**
Temperature	Degree Celsius	4	4	221.00	258.00	293.00	N/A
Nitrogen Oxides	mg/m^3	4	4	99.00	99.75	100.00	110
Sulphur Dioxide	mg/m^3	4	4	*BLD	0.07	0.16	35
Oxygen (O_2)	%	4	4	12.40	13.45	14.40	N/A
Volumetric Flow rate	m^3/s	4	4	0.08	0.08	0.08	N/A
Molecular Weight of Stack Gases	g/g-mole	4	4	29.40	29.43	29.50	N/A
Sulphuric Acid mist and sulphur trioxide (as SO3)	mg/m^3	4	4	*BLD	0.03	0.06	3.5
Dry gas density	Kg/m^3	4	4	1.31	1.31	1.32	N/A
Velocity	m/s	4	4	3.10	3.15	3.20	N/A
Moisture	%	4	4	6.30	7.15	7.90	N/A
Carbon Dioxide	%	4	4	4.30	4.75	5.10	N/A

*BLD: Below Limit of Detection

EPA Monitoring Point 5							
Pollutant	**Unit**	**No. of Samples Required**	**No. of Samples Collected**	**Lowest Sample**	**Mean of Samples**	**Highest Sample**	**Licence Limit**
Temperature	Degrees Celsius	4	4	87.00	90.00	92.00	N/A
Nitrogen Oxides	mg/m^3	4	4	*BLD	2.15	4.40	13
Sulphur Dioxide	mg/m^3	4	4	*BLD	0.27	0.60	1042
Oxygen (O_2)	%	4	4	0.20	0.35	0.70	N/A
Volumetric Flow rate	m^3/s	4	4	0.003	0.004	0.004	N/A
Molecular Weight of Stack Gases	g/g-mole	4	4	29.90	30.05	30.20	N/A
Sulphuric Acid mist and sulphur trioxide (as SO3)	mg/m^3	4	4	0.63	1.73	3.20	35
Dry gas density	Kg/m^3	4	4	1.33	1.34	1.35	N/A
Velocity	m/s	4	4	1.90	2.03	2.40	N/A
Moisture	%	4	4	61.00	68.75	72.00	N/A
Carbon Dioxide	%	4	4	10.90	11.90	12.60	N/A

*BLD: Below Limit of Detection

EPA Monitoring Point 6							
Pollutant	**Unit**	**No. of Samples Required**	**No. of Samples Collected**	**Lowest Sample**	**Mean of Samples**	**Highest Sample**	**Licence Limit**
Temperature	Degrees Celsius	4	4	24.00	28.00	30.00	N/A
Oxygen (O_2)	%	4	4	20.80	20.85	20.90	N/A
Volumetric Flow rate	m^3/s	4	4	0.14	0.15	0.17	N/A
Molecular Weight of Stack Gases	g/g-mole	4	4	29.00	29.00	29.00	N/A
Odour	Odour Units	4	4	29.00	132.25	180.00	N/A
Dry gas density	Kg/m^3	4	4	1.29	1.29	1.29	N/A
Velocity	m/s	4	4	5.50	5.93	6.70	N/A
Moisture	%	4	4	*BLD	1.05	1.70	N/A
Carbon Dioxide	%	4	4	*BLD	0.06	0.10	N/A

*BLD: Below Limit of Detection

Appendix I. Assessable Pollutant Results – RPGP

Load Limits for Assessable Pollutants – RPGP

Assessable Pollutant	Assessable Load (kg)	Load Limit (kg)
Arsenic	0.039	No limit stipulated
Benzene	18.39	47
Benzo(a) pyrene	0.03	0.27
Fine Particulates	94.28	460
Hydrogen Sulphide	0.727	1.6
Lead	0.413	No limit stipulated
Mercury	0.00331	No limit stipulated
Nitrogen Oxides	41,532.89	103,000
Nitrogen Oxides – summer	12,635.91	No limit stipulated
Sulphur Oxides	5.222	3,000
Volatile Organic Compounds	27	33,000
Volatile Organic Compounds - summer	6.64	No limit stipulated

Appendix J. Quarterly and Annual Noise Monitoring Results

Summary of Quarterly Noise Monitoring Results

Noise Monitoring Undertaken	Summary of Results
Attended noise monitoring 16th and 21st August 2012 (report dated August 2012)	Measured noise levels complied with the noise criteria for the sensitive receivers during the day, evening and night time periods. At R1 noise from the RPGP was inaudible at all times (day, evening and night) and was almost constantly masked by Hume HWY traffic, other noise such as fauna or aeroplanes. At R7 noise from RPGP noise from the RPGP was inaudible at all times and was almost constantly masked by Hume HWY traffic, other noise such as fauna or aeroplanes.
Attended noise monitoring 14 December 2012 (report dated December 2012)	Measured noise levels complied with the noise criteria for the sensitive receivers during the day, evening and night time periods. At R1 noise from the RPGP was inaudible at all times and the L_{Aeq} level could not be established due to masking Hume Highway traffic and surrounding fauna and aeroplane noise. At R7 the RPGP was recorded as just audible during the day with a L_{Aeq} level of below 30dBA. Other daytime sounds consisted of Hume HWY traffic and Aeroplane noises of between 34-36 and 58dBA. Evening and night-time monitoring showed the RPGP was audible at times with an evening L_{Aeq} level of below 30dBA and night-time L_{Aeq} level of 34dBA. Other evening and night time noise consisted of Hume HWY traffic and aeroplane noise.
Attended noise monitoring 3 April 2013 (report dated April 2013)	Measured noise levels complied with the noise criteria for the sensitive receivers during the day, evening and night time period. At R1 noise from the RPGP was inaudible at all times and the L_{Aeq} level could not be established due to masking Hume Highway traffic, aeroplane and surrounding fauna noise. At R7 noise from RPGP was audible at times during the day and evening with respective L_{Aeq} levels of 32dBA and 34dBA. The RPGP during night time was audible at times with a L_{Aeq} level of 34dBA amongst Hume Hwy traffic and Aeroplane noise sources.
Annual Noise Report Summary (Dated 21st January 2013)	This Annual report outlines that 4 quarterly noise monitoring were completed for the period of January 2012 to December 2012. All monitoring showed the RPGP to be compliant with the relevant operational noise limits set by the EPL and DA Consent No. 282-6-2003-I at both R1 and R7 receiver locations for day, evening and night under typical operating conditions.

Note: Four quarterly operational noise monitoring reports were undertaken for the period of January 2012 to December 2012 for the RPGP, however not all four quarterly noise monitoring operations and reports were undertaken with this Fiscal year reporting period.

Appendix K. Flare Event Monitoring

The RPGP flare log is provided in this Appendix from July 2012 to June 2013.

Date	Time	Duration (minutes)	Light (Day, Dusk, Night, Dawn)	No. Compressor on line	Cause of Flare Occurrence
24/02/2013	6.28am to 12.03pm	335	Dawn to Day	none	Local power failure causing full plant shutdown.
4/04/2013	5.19pm to 10.12pm	292	Dusk to Night	none	PLC fault forcing plant into shutdown and not allowing re-start.

Appendix L. Visual Audit Comments and Implementation

Landscape zones that required no further recommendations in or actions in 2012 were excluded from this summary table.

Summary of 2012 visual audit comments on the implementation of the 2008 recommendations and their status

Landscape Zones	Visual Audit of the Implementation of 2008 Recommendations (Distinctive 2012)	Implementation Status (As of June 2013)
A1	Trees established with growth in excess of 3m. Consistent and even growth. Minor pruning for safety and maintenance requirements to buildings. No plant replacement required. Continued maintenance and tree establishment in all areas.	Maintenance which includes tree pruning has continued for this reporting period, by AGL's contractors.
A2	No signs of insect attack. Well established plantings. Minor pruning undertaken and required to power lines	AGL's maintenance contractors have conducted pruning as recommended.
B3	Planting requires on-going fertiliser and treatment due to poor establishment in this area only	Due to increased rainfall during the reporting period, tree growth has been accelerated. AGL has closely monitored this section and applied mulch to maintain plant growth and bank stability, shortly after the reporting period.
D1	Re-mulching sloping bank for on-going support of planting establishment	AGL has closely monitored this section over the reporting period, and bank stability has been maintained. No mulch has been applied during the reporting period.
E1	No further works required. Continue on-going maintenance should be undertaken.	On-going maintenance which includes grass slashing around trees has continued for this reporting period, by AGL's contractors.