Annual Environmental Performance Report (AEPR) - Camden Gas Project

July 2006 - June 2007

17 December 2007

43177447

AGL Gas Production (Camden) Pty Ltd
Lot 35 Medhurst Road
Menangle, NSW, 2568

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1.1 INTRODUCTION AND HISTORY OF THE PROJECT

AGL Gas Production (Camden) Pty Ltd ('AGL') is the Operator of the Camden Gas Project Joint Venture between AGL and Sydney Gas (Camden) Operations Pty Ltd ('Sydney Gas'). AGL commenced operations of the Joint Venture on 1 February 2006, which is comprised of 50:50 undivided interests of AGL and Sydney Gas.

Located 65 kilometres (km) south-west of Sydney in the Camden region of NSW, Sydney Gas developed Stage 1 of the Camden Gas Project comprising the first two Petroleum Production Leases (PPL) 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.

In Stage 1, the construction of the Ray Beddoe Treatment Plant (RBTP) and successful first gas delivery into the AGL distribution network in May 2001, lead to Sydney Gas applying for Development Consent and PPL 1.

Further appraisal led to the addition of three production wells in 2002 under PPL 2, bringing the total of drilled production wells in Stage 1 to twenty-five.

Camden Gas Project, Stage 2 under PPL 4 commenced commercial gas sales on 16 December 2004 and is currently in an expansion phase, including PPL 5.

As part of the progressive development of this gas field, wells have been drilled and proven in Wandinong, Glenlee, Menangle Park, Rosalind Park, Mt Taurus, Elizabeth Macarthur Agricultural Institute (EMAI) and Sugarloaf Farm. Further works are planned in Spring Farm, Menangle Park and El Bethel. Razorback and additional EMAI wells were drilled but not completed during the reporting period.

In February 2007, the RBTP was shut down and the Stage 1 wells were connected to the Rosalind Park Gas Plant (RPGP).

The Camden Gas Project Production Operations Plan (PPOP) together with the Environmental, Health and Safety Management Plan (EHSMP) form the basis for ongoing operations, environmental and OH&S management and monitoring of the Gas Field development, as required under all four PPLs issued by the DPI for the Project.

During the reporting period AGL received approval to drill exploration core holes in Currans Hill, Badgery's Creek, Cecil Park, Raby and Denham Court. These core holes relate to Stages 3 and 5 of the project however they are not addressed in this report as they are not covered by a Development Consent requiring an AEPR, or Petroleum Production Lease requiring an AEMR.

An Environmental Assessment Report is currently being assessed by the NSW Government for the construction and operation of gas wells within the Spring Farm and Menangle Park area. The proposal also includes the provision of associated infrastructure for the construction of 16 surface locations.

1.2 PURPOSE OF ANNUAL ENVIRONMENTAL PERFORMANCE REPORT

This Annual Environmental Performance Report (AEPR) has been prepared to meet the reporting requirements of the NSW Department of Planning (DoP) and the NSW Department of Primary Industries (DPI) for the AGL Camden Gas Project located in the Camden region, NSW for the period July 2006 to June 2007.

The requirements of the DoP and the DPI are provided in Section 1.2.1 and 1.2.2 below.

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1.2.1 Requirements of the NSW Department of Planning (DoP)

The requirement for an AEPR is set out in the following Development Consents:

- DA No. 15-1-2002i dated 23 July 2002, Schedule 3 Condition of Consent (CoC) No. 34;
- DA No. 282-6-2003i dated 16 June 2004, Schedule 5 CoC No. 5, and
- DA No. 75-4-2005 dated 7 October 2005, Schedule 2 CoC No. 54.

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

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

a) the standards, performance measures and statutory requirements the development is required to comply with;

b) an assessment of the environmental performance of the development to determine whether it is complying with these standards, performance measures, and statutory requirements;

c) reporting against the implementation of the Project Commitments Register;

d) copy of the Complaints Register for the preceding twelve month period and indicating what actions were (or are being) taken to address these complaints;

e) indication of what actions were taken to address any issue and/or recommendation raised by the Community Consultative Committee;

f) provision of the detailed results of all the monitoring required by this consent;

g) review of the results of this monitoring against:

  - impact assessment criteria;
  - monitoring results from previous years; and
  - predictions in the EIS;

h) identify any non-compliance during the year;

i) identify any significant trends in the data; and

j) 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 July 2006 to June 2007, in each of the above DAs as well as Project Approvals 06_0138 and 06_0137.

1.2.2 Requirements of the NSW Department of Primary Industries (DPI)

This AEPR also fulfils the requirements of the NSW Department of Primary Industries (DPI).

The requirement for an Annual Environmental Management Report (AEMR) is set out in the following Petroleum Production Leases (PPLs) issued by the NSW Minister for Mineral Resources (now the Department of Primary Industries – DPI):

- PPL No.1 issued 2 September 2002, Clause 4;
- PPL No.2 issued 10 October 2002, Clause 4;

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- PPL No.4 issued 6 October 2004, Clause 2B;
- PPL No. 5 issued 28 February 2007 Clause 3.

The above PPLs (layout shown in attached Figure 1) require the preparation of an AEMR in accordance with the DPI's guidelines.

This AEPR has been prepared in accordance with the DPI guideline 'Draft Guidelines and Format for Annual Environmental Management Reports' (dated September 2006, Reference ESB24). The headings in this AEPR are provided in accordance with the DPI guideline for formatting AEMRs. Where information required under a heading is not applicable to the Camden Gas Project, the heading has been kept and the applicability stated.

1.3 CAMDEN GAS AREA DETAILS

The details of the each area of the Camden Gas Project are provided in Table 1-1 .

Table 1-1 Camden Gas Project Property Details

Area	Well Numbers	Property Lot Number	Deposited Plan No.	DA No.
Apap	AP 01	11	664430	15-1-2002i
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
Mahon	MH 01	5	773423	15-1-2002i
Kay Park	KP 01 – KP 03	2	594242	246-8-2002i
Treatment Plant	Ray Beddoe Treatment Plant	11	664430	15-1-2002i
Gas Plant	Rosalind Park Gas Plant	35	230946	282-6-2003i
EMAI	EM 40 (EM01)-EM08	2	1050479	282-6-2003i
	EM 09-EM 17	1	1067320	282-6-2003i
	EM 18-EM 20	1	130288	282-6-2003i
	EM 21 (EM 1H), & EM 22 (EM 1V)	1	1067320	9-1-2005
	EM 23-27, 29-32	1	130288	PA 06_0138
	EM28	1	1067320	PA 06_0138
	EM33-36	2	1050479	PA 06_0138
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	Modification to 9-1-2005

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Area	Well Numbers	Property Lot Number	Deposited Plan No.	DA No.
	GL14, GL15	1102	883495	Modification to 282-6-2003
	GL 16	1101	883495	Modification to 282-6-2003
Menangle Park	MP 13-MP 17	10	1022204	183-8-2004-i
Mt Taurus	MT 01-MT 10	1	954424	183-8-2004-i
Rosalind Park	RP 01, RP 03	3	622362	282-6-2003i
	RP 02	35	230946	282-6-2003i
	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
Sugarloaf	SL 01-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
Wandinong	WG 01-WG 06	242	1046971	282-6-2003i
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
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

* Note the EL Bethel wells have been approved but not yet drilled.

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1.4 PROJECT DETAILS AND CONTACTS

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

Table 1-2 Project Details and Contacts

Project Details	
Mine/project name:	Camden Gas Project
Titles / Consents:	Refer to Table 2-2
Expiry Date of Titles / Consents(s)	Refer to Table 2-2
Titleholder	AGL Gas Production (Camden) Pty Limited and Sydney Gas (Camden) Operations Pty Ltd
Operator	AGL Gas Production (Camden) Pty Limited
Project Manager Details	
Contact name	Mike Roy
Contact address	AGL Rosalind Park Gas Plant, Lot 35, Medhurst Road, Menangle, NSW, 2568
Telephone	02 4633 5200
Mobile	0408 027 910
Facsimile	02 4633 5201
Email	mroy@agl.com.au
Reporting officer details	
Contact name	Aaron Clifton - Environment & Safety Officer – Camden Field
Contact address	AGL Rosalind Park Gas Plant, Lot 35, Medhurst Road, Menangle, NSW, 2568
Telephone	02 4633 5200
Mobile	0408 001 928
Facsimile	02 4633 5201
Email	aclifton@agl.com.au
Other Contact Details	
24 hour hotline	02 9963 1318
PPOP and AEMR Reporting Periods	
PPOP Commencement Date	July 2006
PPOP Period End Date	June 2007
AEMR Commencement Date	July 2006
AEMR Period End date	June 2007

Section 1 Introduction and Scope of AEPR

1.5 FORMAT OF ANNUAL ENVIRONMENTAL PERFORMANCE REPORT

This AEPR is formatted as follows:

- Section 1 - is introductory and provides the background to the AEPR;
- Section 2 - lists the environmental regulatory requirements relevant to the Camden Gas Project;
- Section 3 - describes the operations during the reporting period;
- Section 4 - outlines the environmental management and performance of the Camden Gas Project;
- Section 5 – describes the rehabilitation undertaken at the site;
- Section 6 – provides an update to the Project Commitments Register (Compliance Register);
- Section 7 – describes the stakeholder engagement that has been undertaken during the reporting period;
- Section 8 – lists non-conformances identified and actions to address these.

Section 2 Environmental Standards, Performance Measures and Statutory Requirements

This section provides a list of the environmental regulatory requirements relevant to the Camden Gas Project to June 2007.

2.1 CONSENTS, LEASES AND LICENCES

Seven Development Applications (DAs) have been approved for the Camden Gas Project under Section 80 of the Environmental Planning and Assessment Act 1979 and two Project Approvals. Table 2-1 Provides a description of the activities for which each of the DAs and Project Approvals has been issued.

Table 2-1 Description of Activities Described by Issued Development Applications (DAs)

Development Application No.	Description of Proposed Development
DA No. 15-1-2002i, dated 23 July 2002	The Minister for Planning (the Department of Planning – DoP) 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 01and Mahon 01."*
DA-246-8-2002i – dated 20 September 2002	The Minister for the NSW Department of Infrastructure, Planning and Natural Resources (now Department of Planning – DoP) 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 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."*

Section 2 Environmental Standards, Performance Measures and Statutory Requirements

Development Application No.	Description of Proposed Development
DA No. 282-6-2003-i – 16 June 2004	The Minister for Urban Affairs and Planning (now Department of Planning – DoP) 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 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: - relocation of the Rosalind Park Gas Plant access road
DA-183-8-2004i – 16 December 2004	The Minister for the NSW Department of Infrastructure, Planning and Natural Resources (now Department of Planning – DoP) 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.

Section 2 Environmental Standards, Performance Measures and Statutory Requirements

Development Application No.	Description of Proposed Development
DA 9-1-2005 – 26 May 2005	The Minister for the NSW Department of Infrastructure, Planning and Natural Resources (now Department of Planning – DoP) 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."*
	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."*
DA 75-4-2005 – 07 October 2005	The Minister for the NSW Department of Infrastructure, Planning and Natural Resources (now Department of Planning – DoP) 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."*
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.
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 summary of the status of the above approved works are described in Section 3.1 of the AEPR.

Since June 2007, a number of modifications to the above applications have been approved and will be reported in the AEPR for the next reporting period.

Section 2 Environmental Standards, Performance Measures and Statutory Requirements

The standards, performance measures and statutory requirements with which the Camden Gas Project are required to comply with are outlined in the consents, leases and licences listed in Table 2-2 below.

Note that the requirements of the Environment Protection Licence and 3A Permit requirements are incorporated into the Development Consent Conditions.

Table 2-2 Consents, Leases and Licences – Camden Gas Project

Requirement	Date of Requirement
Petroleum Exploration Licence No.2 (PEL), issued by the Department of Mineral Resources (now the Department of Primary Industries)	27 March 2006 to 28 March 2011
PPL No.1, issued by the Department of Mineral Resources (now the Department of Primary Industries)	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 the Department of Primary Industries)	10 October 2002 (for a period of 21 years)
PPL No.4, issued by the Department of Mineral Resources (now the Department of Primary Industries)	6 October 2004 (for a period of 21 years)
PPL No.5, issued by the Department of Mineral Resources (now the Department of Primary Industries)	28 February 2007 (for a period of 21 years)
Conditions of Consent for DA 15-1-2002i (file no. S00/00945), issued by the NSW Department of Planning. The requirements of the Environment Protection Licence have been incorporated into this Condition of consent:	23 July 2002 (for a period of 21 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 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.
Conditions of Consent for DA 246-8-2002i (file no. S02/01615), issued by the NSW Department of Planning	20 September 2002 (for a period of 21 from date of granting of the production lease)
Conditions of Consent for DA 282-6-2003-i, issued by the NSW Department of Planning. The requirements of the Environment Protection Licence 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 16 May 2006; - modification dated 22 October 2006 - modification dated 1 November 2006 - modification dated 2 May 2007
Conditions of Consent for DA-183-8-2004i, issued by the NSW Department of Planning	16 December 2004 (for a period of 21 years)
Conditions of Consent for DA 9-1-2005, issued by the NSW Department of Planning	26 May 2005 (for a period of 21 years) a Notice of Modification was issued dated 16 May 2006
Conditions of Consent for DA 75-4-2005, issued by the NSW Department of Planning	07 October 2005 (for a period of 21 years or expiry date of PEL No.4)
Environment Protection Licence No.11713, issued by the Environment Protection Authority, incorporated into the Department of Environment Conservation and Climate Change (DECC)	Issued January 2003, anniversary date 17 September, review date 12 September 2011.

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Requirement	Date of Requirement
Environment Protection Licence No.12003, issued by the Environment Protection Authority, incorporated into the Department of Environment Conservation and Climate Change (DECC), for hazardous, industrial or group A waste generation or storage (>100-500T) and petroleum refining (>200,000 to 500,000 T).	Issued September 2003, anniversary date 22 December, review date 22 December 2007
Project Production Operations Plan (PPOP)	2 November 2004 (for a period of 7 years)
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)
PPOP	2 November 2004 (for a period of 7 years)
Bore Water Licence relating to Lot 62 DP 735555 (Licence No: 10BL159415), issued by Department of Natural Resources	9 June 2005 to 8 June 2010

WorkCover Notification of Storage of Dangerous Goods

For part of the reporting period there was a requirement to notify WorkCover of the presence of Dangerous Goods stored at the RBTP as the quantities exceeded the “Manifest quantity” in the Table to Schedule 5 of the Occupational Health and Safety Regulation 2001. In February 2007, shortly after the plant was shutdown, the butane tank was taken offsite by Kleenheat, negating the need to notify WorkCover of the presence of Dangerous Goods.

There is no requirement to notify WorkCover regarding the storage of Dangerous Goods at the Stage 2 RPGP due to the minor quantities of Dangerous Goods stored on site.

Section 3 Operations During the Reporting Period

This section provides a description of the operation undertaken at the Camden Gas Project and the status of the project as of June 2007.

3.1 DESCRIPTION OF OPERATIONS FROM JULY 2006 TO JUNE 2007

3.1.1 Development

During this reporting period (July 2006 to June 2007), development associated with the Camden Gas Project comprised of the following:

Drilling

- 18 new wells were drilled and one well was redrilled.
- Three (3) Stage 1 wells (Johndilo) were Plugged and Abandoned in October and November 2006.
- Drilling of Surface to In-Seam (SIS) well GL 14 was completed in November 2006. Drilling of SIS well GL 15 was completed in December 2006. Drilling of SIS well EM 34 was completed February 2007.

Gathering Line Installation

- EMAI gathering lines were 90% complete as of June 2007.
- Razorback gathering lines were 90% complete as of May 2007.

Rosalind Park Gas Plant Compressors

- Civil Works for Compressors No.2 and No.3 started in July 2006.
- Compressor No.2 was installed in November / December 2006.
- Compressor No.1 was shutdown in November 2006 for five days for 16,000 hours service and piping tie in for Compressors No.2 and No.3.
- Compressor No.3 was installed in February 2007.

Ray Beddoe Treatment Plant Shutdown and Decommissioning

- All Stage 1 wells were tied in to Stage 2 by the end of January 2007.
- RBTP was shut down in February 2007 and plans commenced for decommissioning.

Land Access and Approvals

- Exploration Core Hole approvals received for Currans Hill, Badgery's Creek, Cecil Park, Raby and Denham Court.
- Glenlee SIS wells approved in October and November 2006.
- Razorback and EMAI West Project Approval received in December 2006.
- The Development Consent modification was received in May 2007 for the construction of the new Access Road into RPGP.
- PPL 5 was issued in February 2007

Section 3 Operations During the Reporting Period

The status of operations as of June 2007 are summarised in Table 3-1 below.

Table 3-1 Current Status of Operations (June 2007)

Well Name	Date Completed	Status June 2007
AP01	2000	Suspended
EB01-10	Incomplete	Approved – Not Drilled
EM01	Incomplete	Plugged and Abandoned
EM02, 05, 07, 09, 10, 11, 12, 13, 14, 15, 17, 18, 19 and 20	2005	Gas Producer
EM03, 04, 06, 08 and 16	2005	Suspended
EM21 and 22	2002	Gas Producer
EM23-36	Incomplete	Currently Drilling
EM 40	2006	Gas Producer
GL01	Incomplete	Approved – Not Drilled.
GL02, 04, 05, 06, 07, 08, 09 and 10.	2003	Gas Producer
GL03	2003	Plugged and Abandoned
GL11	2005	Gas Producer
GL12, 13, 14 and 15	2007	Gas Producer
GL16	Incomplete	Not Completed
JD01 and 11	1999	Gas Producer
JD02, 03, 06, 07, 09 and 10	1999	Plugged and Abandoned
JD04, 05 and 7A	1999	Suspended
JD08	Incomplete	Approved under PEL 2 – Not Drilled
JS01, 03 and 04	2000	Suspended
JS02	2000	Plugged and abandoned
KP01, 02 and 03	2002	Gas Producer
KP04, 05, 06 and 07	Incomplete	Approved under PEL 2 – Not Drilled
LB01, 02, 03, 04 and 08	Incomplete	Approved – Not Drilled
LB05 and 07	2001	Suspended
LB06, 09 and 10	2001	Gas Producer
LB11	2007	Gas Producer
LP01	Incomplete	Not Completed
MH01	Incomplete	Not Completed
MP14, 15, 16 and 17	2003	Gas Producer
MP13	2003	Suspended
MT01 – 10	2004	Gas Producer
Ray Beddoe Treatment Plant	2001	Shut Down (as of 05 February 2007)
RB03-12	Incomplete	Currently Drilling
Rosalind Park Gas Plant	2005	Operating
RP01	Incomplete	Approved – Not Drilled
RP02, 07, 08, 10 and 12	2003	Gas Producer
RP03, 04, 05, 06, 09 and 11	2003	Suspended
SL01, SL04, SL05, SL06 and SL07	Incomplete	Approved – Not Drilled

Section 3 Operations During the Reporting Period

Well Name	Date Completed	Status June 2007
SL02 and SL03	Incomplete	Production Testing
WG02 and 03	2003	Gas Producer
WG01, 04 and 05	2003	Suspended
WG06	Incomplete	Not Completed

3.1.2 Exploration

Exploration activities undertaken during the reporting period included the drilling of exploration core holes as part of Stages 3 and 5 of the Project. Approval was received to drill core holes Cecil 1, Raby 1, Denham Court 1, Currans Hill and Badgery's Creek 1. The Currans Hill and Badgery's Creek core holes were drilled during the reporting period.

Between 21 August 2006 and 8 October 2006, 33.53km of Mini-SOSIE seismic was acquired. This work was undertaken within the Stage 2 and Stage 3 areas of the Camden Gas Project from Denham Court to Menangle.

3.1.3 Production

Production information is provided to the DPI on a monthly basis in accordance with the project's production lease requirements. This information has not been reproduced here as it is commercially sensitive but can be provided to the DoP upon request.

3.1.4 Land Preparation

Wells recently drilled on EMAI and Razorback continue to be completed, fracture stimulated and brought on to a production capability. For all other Stage 1 and Stage 2 well sites, full rehabilitation of the construction works has occurred and each well site now constitutes a fenced footprint containing the well head, water separating equipment and ancillary equipment. The surrounding clearing, required for possible future well maintenance, has been rehabilitated and is under a long term monitoring program. Where possible, the land has been returned to landholder use.

All installed gas gathering infrastructure has been rehabilitated and is under a long term monitoring program.

3.1.5 Mining, Mineral Processing and Ore Product Stockpiles

The Camden Gas Project primarily extracts coal bed methane. Therefore no mining, mineral processing or ore stockpiling is undertaken.

3.1.6 Other Infrastructure Management

In late May 2007, works commenced on the construction of the new internal access road to the RPGP. Details of the impacts of these works are discussed under each relevant section in Section 4 of this report.

There were no other significant infrastructure developments associated with the Camden Gas Project during the reporting period.

Section 4 Environmental Management and Performance

This section of the AEPR outlines the environmental management and performance of the Camden Gas Project. The headings are provided in accordance with the DPI guideline for formatting AEMRs. Where environmental monitoring is required by the Conditions of Consent for the development (issued by the DoP), the monitoring requirement and results are discussed within the relevant section.

4.1 INTRODUCTION

This section documents the implementation and effectiveness of control strategies for environmental risks identified in the PPOP and previous AEPR, in the following order:

- Actions required from the previous AEPR review
- Air pollution
- Erosion and sediment control
- Surface water pollution
- Groundwater pollution
- Waste management
- Hazardous materials
- Contaminated land
- Threatened flora and fauna
- Noxious weeds
- Blasting
- Operational noise
- Visual amenity
- Aboriginal heritage
- European heritage
- Spontaneous combustion
- Bushfire
- Mine subsidence
- Hydrocarbon contamination
- Methane drainage/ventilation
- Public safety
- Safety and risk management
- Environmental training

4.2 ACTIONS REQUIRED FROM PREVIOUS AEPR REVIEW

This section provides an overview of actions required from the previous AEPR review. Further information is available in the referenced sections of this AEPR.

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Table 4-1 summarises the requirements that were identified in the previous AEPR and comments on the actions taken or planned.

Table 4-1 Non-Compliances Identified with Environmental Standards

Schedule/ CoC No.	Requirement	Comment on Non-Compliance	Action Taken
DA 15-1-2002i Schedule 3 CoC No.37	Within two years of the date of this consent and every two years thereafter, the Applicant shall commission and pay the full costs of an Independent Environmental Audit.	SAI Global was appointed to undertake the first audit in within two years of the consent being issued on the 23 July 2002. Due to availability, the audit was not undertaken until the first quarter of 2004/ 05. The report did not identify any significant issues.	Director General approval was received for the proposal to conduct an independent audit and the audit was conducted in November -December 2006.
DA 15-1-2002i Schedule 3 CoC No.39	The applicant shall comply with the noise criteria specified.	Noise has been annually monitored at locations A, B, C and D, but not F, E, G and M. In June 2006, monitoring results were unable to demonstrate compliance with EPL Limits. An internal review of operations has been unable to identify any operations changes which could contribute to an increase in site noise.	The RBTP was shut down in February 2007.
DA 282 Schedule 4 Clause 3	The Applicant shall implement reasonable measures to screen gas wells GL 4, GL 5 and GL 10 and the interconnecting gas gathering line from the Banksia Garden picnic area within the Mount Annan Botanic Garden. The Applicant shall undertake such measures to the satisfaction of the Director-General	The three wells mentioned were existing at the time of issue of the Development Consent. The proponent considers that the existing vegetation is adequate to screen these wells but proposes to have these wells assessed by an external agent.	This issue is outstanding and an external agent will be engaged to undertake a visual amenity assessment of the three wells GL 4, GL 5, GL 10 and the interconnecting gas line.
DA 282 Schedule 4 Clause 90	The Applicant shall ensure roadside plantings for sites EM 16, EM 18, EM 19 and EM 20 are strengthened using the species outline provided in the report titled “Statement of Heritage Impact for Land within the Elizabeth Macarthur Agricultural Institute NSW Agriculture, Menangle” by Geoffrey Britton dated September 2003.	AGL are currently waiting for advice from the EMAI land manager as to if and where the plantings are required.	Trees have been planted in consultation with the EMAI land manager.
DA 282 Schedule 4 Clause 100	The quantity of hazardous and/or industrial and/or Group A waste stored at the premises must not exceed 9000 L at any one time.	EPA has been notified that the current onsite storage volume is exceeding licence limits due to changes in the oily waste water separation process. All waste continues to be stored and disposed of in compliance with EPL conditions.	Negotiations with the EPA continue to resolve this issue.

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Schedule/ CoC No.	Requirement	Comment on Non-Compliance	Action Taken
DA 282 Schedule 4 Clause 101	The quantity of hazardous and/or industrial and/or Group A waste generated and/or stored at the premises must not exceed 85,000L per year.	EPA has been notified that the current annual generation volume is exceeding licence limits due to changes in the oily waste water separation process. All waste continues to be stored and disposed of in compliance with EPL conditions.	Negotiations with the EPA continue to resolve this issue.
DA 282 Schedule 4 Clause 102	The quantity of non controlled aqueous liquid wastes generated at the premises must not exceed 3,000,000 L per year.	Non controlled aqueous liquid wastes generated includes produced water returned from dewatering wells post fracing. This waste is re-used on site for future drilling and fracing programs, and excess waste is disposed off-site. Depending on the number of wells to be drilled and fracture stimulated in any 12 months, the quantity of liquid required to be disposed can exceed 3,000,000 L.	Negotiations with the EPA continue to resolve this issue.
DA 282 Schedule 5 Clause 4	The Applicant shall review and update the OEMP annually, or as directed by the Director-General.	Following on from a major review and approval by DMR (DPI), DIPNR (DoP and DNR) and EPA (DEC) in April 2004, the OEMP (Operations EHSMP) was updated in June 2004 to incorporate new company changes. The document was not reviewed again until May 2006. During this period, there were no changes required to be made to the document. Conditions of Consent issued for new field development during this time were continued to be communicated via site specific inductions as specified in the Operations EHSMP.	The EHSMP was updated to incorporate the installation of Compressors 2 and 3.
DA 282 Schedule 5 Clause 10	Within two years of the date of this consent and every two years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full costs of an Independent Environmental Audit.	The Independent Audit has not yet been undertaken, however an Independent company has recently been requested to prepare a proposal for the approval of the Director General.	Director General approval was received for the proposal to conduct an independent audit and the audit was conducted in November -December 2006.
DA 282 Schedule 8 Record Keeping	O5.13 The licensee must record and retain all information related to each consignment of waste.	Waste Data Forms have been provided by the waste transport & disposal company and signed by the driver at the time of collection. However, signed copies of these forms have not been provided for delivery at the receipt point.	Waste records are maintained on site.

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Schedule/ CoC No.	Requirement	Comment on Non-Compliance	Action Taken
DA 282 Schedule 8 Reporting Periods	Regular reporting R4.2 The licensee must supply to the EPA, for each transporter that transported waste from the licensee's premises, the information as set out in Appendix 2, table 1. R4.3 The licensee must supply to the EPA, for each destination within NSW which received waste from the licensee, the information as set out in Appendix 2, table 2. Reporting periods R4.4 Reports to the EPA in accordance with R4.2 and R4.3 shall be supplied on or before: (a) 30 April for the reporting of information relating to wastes transported from the premises between 1 January and 31 March of that year; (b) 31 July for the reporting of information relating to wastes transported from the premises between 1 April and 30 June of that year; (c) 31 October for the reporting of information relating to wastes transported from the premises between 1 July and 30 September of that year; (d) 31 January for the reporting of information relating to wastes transported from the premises between 1 October and 31 December of the previous year.	The quarterly reporting of hazardous waste to the NSW EPA was not undertaken between June 2004 and June 2006.	This is no longer a Licence requirement. The Conditions of Consent need to be revised to reflect this change.
DA 9-1-2005 Clause 15	Except as may be expressly provided for by a licence under the Protection of the Environment Operations Act 1997 in relation to the development, the Applicant shall comply with section 120 of the Protection of the Environment Operations Act 1997, in carrying out this development.	The Environment Protection Licence current at the time was not updated to include the premises details of the activities under this DA.	The EPL was revised to include the updated premises details.

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Schedule/ CoC No.	Requirement	Comment on Non-Compliance	Action Taken
DA 9-1-2005 Clause 33	Three months after commencement of operation of the development, the Applicant shall submit to the Director-General a compliance report detailing compliance with Condition 32, including: (a) dates of study/plan/system completion/submission and commencement of construction and commissioning; (b) actions taken or proposed, to implement recommendations made in the studies/plans/systems; and (c) responses to any requirement imposed by the Director-General under Condition 35	No record available of this being undertaken.	AGL to action
DA 9-1-2005 Clause 44	The Applicant shall include the operation of wells GL2 – 4 inclusive, GL 6, EMAI-1H and EMAI-1V and the associated gas gathering system, and the conditions of this consent, in the Independent Environmental Audit required under Schedule 5 Condition 10 of development consent DA-282-6-2003i, dated 16 June 2004.	The Independent Audit has not yet been undertaken, however an Independent company has recently been requested to prepare a proposal for the approval of the Director General.	Director General approval was received for the proposal to conduct an independent audit and the audit was conducted in November -December 2006.
DA 74-4-2005 Clause 53	The Applicant shall provide an annual return to the EPA in relation to the development as required by any Licence under the Protection of the Environment Operations Act 1997 in relation to the development. In the return the Applicant must report on the annual monitoring undertaken (where the activity results in pollutant discharges), provide a summary of complaints relating to the development, report on compliance with Licence conditions and provide a calculation of licence fees (administrative fees and where relevant, load based fees) that are payable.	An Annual return was provided to the EPA in January 2006 for the first 12 months of Stage 2 operations. The Environment Protection Licence current at the time was not updated to include the premises details of the activities under this DA.	The EPL was revised to include the updated premises details.
DA 183-8-2004-I Clause 9	Except as may be expressly provided for by a licence under the Protection of the Environment Operations Act 1997 in relation to the development, the Applicant shall comply with section 120 of the *Protection of the Environment Operations Act 1997*, in carrying out this development.	The Environment Protection Licence current at the time was not updated to include the premises details of the activities under this DA.	The EPL was revised to include the updated premises details.

Schedule/ CoC No.	Requirement	Comment on Non-Compliance	Action Taken
DA 183-8-2004-I Clause 25	The Applicant shall include the operation of MT1 -MT 10 inclusive and MP13 -MP17 inclusive and the associated gas gathering system, and the conditions of this consent, in the Independent Environmental Audit required under Schedule 5 Condition 8 of development consent DA-282-6-2003-i, dated 16 June 2004.	The Independent Audit has not yet been undertaken, however an Independent company has recently been requested to prepare a proposal for the approval of the Director General.	Director General approval was received for the proposal to conduct an independent audit and the audit was conducted in November -December 2006.

4.3 AIR POLLUTION

4.3.1 Air Pollution Management

Significant air emissions associated with the Project are NOx associated with compression of the coal seam methane resource, and to a lesser extent vehicle emissions.

In regard to air quality, the management objectives are to:

- Adequately protect existing air quality; and
- Minimise the potential for emissions that may cause public concern.

As part of the Stage 2 EIS process, a detailed air quality impact assessment for the proposed facilities of the Project area was conducted. Mathematical air dispersion modelling was used to predict ground level concentrations for both short term and long term effects. The results of the analysis and modelling conducted confirmed that acceptable air impacts were to be expected. To further mitigate potential air quality impacts, AGL has adopted a number of mitigation measures and safeguards including:

- Best Management Practices for site operations as detailed by the EPA;
- Ongoing community consultation through the Community Consultation Committee; and
- Maintenance of a complaints register.

Further management strategies used to meet the objectives for air quality include:

Activity	Management Strategies	Responsibility
Planning	- The workforce induction program shall inform site personnel of the required procedures for the protection of air quality.	Environment & Safety Officer

Activity	Management Strategies	Responsibility
Operations	- Plant and equipment shall be regularly maintained and serviced to limit the amount of vehicle pollution generated. - Greenhouse gas emissions associated with production shall be minimised by adopting strict operating procedures. - The volume of flared gas shall be minimised, measured and recorded. - Vehicles shall remain on designated roads and access tracks and shall adhere to vehicle speed limits. - Operations activities shall be monitored to identify excessive dust generation. Dust control measures such as the use of water carts shall be implemented to avoid dust generation.	All personnel

4.3.2 Air Quality Monitoring Requirements

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

Requirements to monitor air quality for the Stage 1 production area are specified in the Development Consent DA-15-1-2002i, Schedule 3 Clause 76. These requirements are summarised in Table 4-2 below.

Table 4-2 Air Quality Monitoring Requirements- DA-15-1-2002i

Schedule 3. Clause 76 The following locations shall be monitored for discharges to air: POINT 1: TEG reboiler exhaust, POINT 2: flare, POINT 3. coal seam methane gas supply to TEG reboiler, 4. odour control system exhaust.
Schedule 3. Clause 79 The concentration of Nitrogen oxides shall not ecxceed 0.35 g/m^3 and the concentration of sulphuric acid mist and /or sulphur trioxide shall not exceed 0.1 g/m^3 at the TEG reboiler exhaust flare.
Schedule 3. Clause 80 The Volatile organic compound destruction efficiency shall be equal to or greater than 98%
Schedule 3. Clause 81 The residence time shall be equal to or greater than 0.6s and the temperature equal to or greater than 760^oC at the flare.
Schedule 3. Clause 82 The Applicant shall submit a report to the EPA, which includes a site specific emission concentration limit for sulphuric acid mist and/or sulfur trioxide (as SO3) and sulfur dioxide for discharge monitoring point 1. The date of submission of the report shall be negotiated with the EPA prior to the issue of the licence.
Schedule 3. Clause 83 The emission concentration limits for sulphuric acid mist and/or sulphur trioxide and sulphur dioxide shall be developed in accordance with the *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW* and utilise the ground-level concentration criteria specified in Table 7 of the DA.

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Schedule 3. Clause 88

The following pollutants shall be monitored:

POINT 1: Carbon dioxide in stack gases, Carbon monoxide, Dry gas density, Moisture content in stack gases , molecular weight of stack gases, nitrogen oxides, oxygen in stack gases, sulphur dioxide, sulphuric acid mist and/or sulphur trioxide, temperature, velocity, volatile organic compounds and volumetric flow rate - Annually

POINT 2: temperature and volumetric flow rate - Continuously

POINT 3: Carbon dioxide in stack gases, Dry gas density, Moisture content in stack gases , molecular weight of stack gases, oxygen in stack gases, temperature, velocity, volatile organic compounds and volumetric flow rate - Annually

POINT 4: tertiary butyl mercaptan

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

Requirements to monitor air quality for the Stage 2 production area are specified in the Development Consent DA-282-6-2003-i, Schedule 4 Clause 58 & 59. These requirements are as per the Environment Protection Licence No. 12003 and are reproduced in Table 4-3 below.

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Table 4-3 Air Quality Monitoring Requirements – DA-282-6-2003-i

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, Sulfuric Acid Mist/Sulfur Trioxide, Sulfur 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*).
Schedule 4. Clause 59 For each monitoring/discharge point or utilisation area specified below (by point number), 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 opposite in the other columns: POINT 7 – Temperature, Volume

4.3.3 Air Quality Monitoring Results

Ray Beddoe Treatment Plant – Annual Monitoring

The DA requires that annual monitoring is undertaken to assess pollutant concentrations. As the RBTP was shut down in February 2007 no air monitoring was undertaken during the reporting period.

Rosalind Park Gas Plant - Quarterly Monitoring

Quarterly monitoring reports were prepared for the following dates by Stephenson Environmental Management Australia:

- Quarterly Stack Emission Survey, September 2006
- Quarterly and Assessable Pollutants Stack Emission Survey, December 2006 (Gas Plant, Gilead)
- Quarterly Stack Emission Survey, March 2007
- Quarterly Stack Emission Survey, June 2007

Monitoring results are provided in **Appendix A**.

The following exceedances of EPL concentration limits were recorded. These are discussed in more detail in Section 4.3.6:

- September 2006, Engine No.1 (Point 1): sulfur dioxide
- September 2006, Engine No.1 (Point 1): sulphuric acid mist / sulfur trioxide
- September 2006, Reboiler flue (Point 4): sulphuric acid mist / sulfur trioxide
- March 2007, Reboiler flue (Point 4): sulphuric acid mist / sulfur trioxide

In March 2007 SEMA recommended that AGL request an increase in the SO_3 EPL limit for the reboiler flue (Point 4) as it is the same as the 8 hour Workplace Exposure limit. AGL are currently in discussions with the DECC to increase this EPL limit.

Rosalind Park Gas Plant - Continuous Monitoring

The licence requirement (M2.1) to provide continuous monitoring of NOx, temperature, flow rate and oxygen at Point 1 was successfully undertaken in 2006/2007.

Compressor Engine 2 was installed in November - December 2006 and commissioned in July 2007. Some pre-commissioning air monitoring was undertaken of the engine exhaust stack in June 2007 and these results (EPA Monitoring Point 2) are included in Appendix A.

Compressor Engine 3 was installed in February 2007 and commissioned in August 2007 and therefore monitoring results for EPA Monitoring Point 3 (Compressor Engine 3 – Engine Exhaust Stack 3) were not available for inclusion in this reporting period.

4.3.4 Air Monitoring Results at Point 7 (Schedule 4, Clause 59)

Correspondence was submitted to the DECC (EPA) on 19 August 2004, demonstrating the combustion performance of the horizontal flare. As the flare predominantly operates in a pilot mode, it is impractical and of limited value to sample the flare. Any analysis of flare emissions will be based on the above report and plant availability data.

At the close of the reporting period, AGL remained in consultation with the DECC to have this condition deleted from the licence.

4.3.5 National Pollutant Inventory Reporting

The National Pollutant Inventory (NPI) Report for the RPGP for the 2006/07 financial year was submitted in September 2007.

The National Pollutant Inventory (NPI) Report for the RBTP for the 2006/07 financial year was submitted in September 2007.

Note the RBTP was shut down in February 2007. As stack testing is conducted once a year for the purpose of calculating the annual loads, no testing was conducted for the 2006-2007 financial year as the plant was off-line. Therefore the previous year's results were used to estimate the quantity of NPI reportable substances being emitted to air for the Category 2a substances. This was reported in the NPI Report.

4.3.6 Air Pollution Environmental Performance / Trends

Sulphur Dioxide, Sulphur Trioxide / Sulphuric Acid Mist Emissions

Sulfur trioxide / sulphuric acid mist emissions were below the licence limits for monitoring points 2 and 5 throughout the reporting period. Exceedances of the licence limits for Points 1 and 4 were recorded during the September 2006 quarterly survey. A level of 3.6 mg/m^3 was measured at Point 1 and a level of 3.1 mg/m^3 was measured at Point 4. These were above the licence limits of 3.1 mg/m^3 and 1 mg/m^3 for Points 1 and 4 respectively. A slight exceedance of the Point 4 licence limit was also recorded in the March 2007 quarterly survey were a level of 1.2 mg/m^3 was recorded.

The consultants undertaking the air quality emission surveys recommended that the sulfur trioxide / sulphuric acid licence limit for Point 4 be increased as it is currently the same as the 8 hour Workplace Exposure Limit. AGL are looking into this recommendation.

Sulfur dioxide levels were below the licence limits for monitoring points 2, 4 and 5. One exceedance of the licence limit (7 mg/m^3) was recorded at monitoring point 1 during the September 2006 quarterly

survey where a level of 12 mg/m^3 was recorded. It was noted by the consultants undertaking the air quality emission surveys that the result was within the drift error allowed for the analyser used. Other results for this monitoring point were below the detection limit of 3 mg/m^3.

The lack of sulfur bearing compounds in the feed gas precludes any subsequent reactions.

Hydrogen Sulphide

Hydrogen sulphide is measured annually in order to calculate the annual pollutant loads and associated fees under the EPL. During the reporting period hydrogen sulphide was not sampled as the laboratory used by the air quality consultants could not complete the H_2S analysis in accordance with the DEC NSW Approved Methods. The air quality consultants could not locate another laboratory within Australia that can analyse H_2S to the DEC NSW Approved Test Method

Odour

The odour emission concentrations emitted from the Carbon Scrubber Vent were considered to be low throughout the reporting period.

Nitrogen Oxides Generation of Gas Engines

Nitrogen oxide levels complied with the licence limits for all monitoring points throughout the reporting period.

4.4 EROSION AND SEDIMENT

Soil types within all Project areas are assessed both on a regional, as well as, 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.

Operation 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:

- Reduce the occurrence and extent of soil erosion; and
- Promote and maintain soil stability.

Management strategies employed to meet the objectives for erosion and sediment are outlined in Table 4-4 below.

Table 4-4 Management Strategies - Erosion

Activity	Management Strategies	Responsibility
Planning	• The workforce induction program shall inform site personnel of the required procedures for sediment and erosion control.	Environment & Safety Officer
Operations	• All operations 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 clearing and rehabilitation shall be minimised. • Erosion and sediment control measures shall be implemented as per the Soil and Water Management 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 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 & Safety Officer All personnel

Construction works undertaken during the reporting period included:

- Construction of the new internal access road to the RPGP;
- Gas gathering line construction; and
- Construction of new wells.

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

- A Stormwater Management Plan was developed for the new access road which included sediment and erosion control measures during construction;
- AGL has developed a Soil and Water Management Plan which details sediment and erosion control measures for construction works including construction of new wells;
- Regular inspections of sediment and erosion controls are undertaken during construction works to ensure the controls are effective.

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

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4.5 SURFACE WATER POLLUTION

4.5.1 Water Generation

The Camden Gas Project produces water from the following five sources:

- Produced water that is brackish. 2,723,000 L of produced water from the Stage 2 wells was disposed to the Campbelltown City Council Sanitary Depot. Note this figure does not include water that is reused on site for new drilling programs. Volumes have significantly reduced on a per well basis due to recycling of drill and frac waters from previous drill campaigns to new well development, fracture stimulating or workover.
- Gas gathering water is condensed water from the methane gas as it depressurises and cools in the gathering line system. This water is condensed from the gas and is quite pure. It was estimated 25,000 L of water was taken from the gas gathering line water traps during the reporting period.
- Gas Plant water which is condensed water from the methane gas and contains traces of hydrocarbon. During the reporting period 858,500 L was taken off site by licensed contractors for recycling.
- Grey water and septic tank water from the RPGP - 559,000 L was disposed to the Sewerage Treatment Plant by contractors.
- Septic tank and produced water from the RBTP - 43,000 L was disposed to the Sewerage Treatment Plant by contractors.

4.5.2 Surface Water Management

During the reporting period, Stage 1 development was limited to the drilling of well LB 11, while Stage 2 development included drilling of additional wells and/ or construction of access roads and/ or installation of gas gathering lines on Glenlee, EMAI and Razorback and Rosalind Park fields. This required a restricted capability in terms of managing water, either from an input view point or on its reuse or disposal.

With the expansion of the Stage 2 design in Camden an opportunity exists to manage water as an integral part of a process; a process based on continuity of operations (drilling and fracing) with the opportunity to introduce the benefits of scale. These benefits include improved scheduling, better engineering, improved community consultation and understanding, and, importantly, more robust regulatory acceptance.

Experience in managing the movement of progressively increasing volumes of well water resulted in a reduced number of minor spills and leakages.

All data to date has indicated that recovered / produced waters from wells is:

- Limited in volume;
- Of no local value as a potable water resource without expensive further treatment; and
- Marginally suitable for stock use.

Management options of this resource are currently the subject of ongoing consultation with the EPA.

4.5.3 Surface Water Monitoring Requirement

The monitoring requirements for surface water quality, required of DA-282-6-2003-i are outlined in below.

Table 4-5 Surface Water Monitoring Requirement

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*).

4.5.4 Surface Water Monitoring Results

Surface water monitoring was undertaken at EPL Point 8 during the reporting period for the parameters listed in Table 4-5 above. The results of the monitoring are summarised below:

- The water level in the evaporation pond ranged from 1.7 to 2 metres.
- Electrical conductivity levels ranged from 4,860 to 17,500 uS/cm.
- Total suspended solids was generally in the range from 10 to 35 mg/L however a level of 102 mg/L was recorded in June 2007. This was believed to be influenced by heavy rainfall.
- Biochemical oxygen demand levels varied throughout the reporting period with results ranging from 0 to 672 mg/L.
- Oil and grease results were low throughout the reporting period with levels of 0 mg/L recorded for all months except August 2006 where a level of 6 mg/L was recorded.
- Total polycyclic aromatic hydrocarbons results ranged from 0 to 1.9 ug/L.
- Total phenols ranged from 0 to 0.431 mg/L.
- Total organic carbon levels ranged from 10 to 279 mg/L.
- Total petroleum hydrocarbons ranged from 0 to 2,600 ug/L.

There are no limits on the site's EPL for the parameters required to be monitored and no water has been discharged from the pond since it was built.

4.5.5 Surface Water – Environmental Performance Trends

No water was taken from or discharged from the evaporation pond during the reporting period.

4.6 GROUNDWATER POLLUTION

A previous technical assessment of the groundwater regime found that as the entire casing of each well is cemented from top to bottom, connection between the Illawarra coal measures and overlying aquifers is not possible. The potential for cross contamination between aquifers during the production life of a well is therefore extremely unlikely.

Given the limited volumes of groundwater generated during well construction and the nature of the containment within the coal measures as well as overlying formations, surface aquifer depletion or subsidence are not considered to be significant issues.

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4.7 WASTE MANAGEMENT

The following wastes were generated and disposed during the reporting period:

- Disposal of RBTP process water from the dehydration of CSM by a licensed contractor to a licensed disposal facility;
- Disposal of sewage and grey water from the RPGP and the RBTP site facilities by a licensed contractor to a licensed disposal facility;
- Disposal of minor quantities of industrial wastes from the RPGP facility by a licensed contractor to a licensed land fill site;
- Disposal of construction and packaging waste; and
- Disposal of general waste.

The following waste streams were recycled during the reporting period:

- Oily waste water from the RPGP;
- Waste oil
- Steel;
- Batteries;
- Oil filters;
- Plastic;
- Timber / green waste;
- Paper;
- Printer cartridges.

The RPGP site holds an Environment Protection Licence (12003) for the hazardous, industrial or Group A waste generation or storage (>100 -500 T). The requirement for quarterly waste reporting to the EPA has been removed from the Licence following changes in legislation.

It is a requirement of the Licence (12003: L5.4 and L5.5) as well as the site's Consent conditions that the quantity of hazardous and/or industrial and/or Group A waste stored at the premises must not exceed 9,000 L at any one time, and the total annual generation volume must not exceed 85,000 L. The EPA was notified in the Annual Return prepared for the period 22 December 2005 to 21 December 2006 that current on site storage and generation volume is exceeding licence limits due to changes in the oily waste water separation process. An application to change this licence condition is being prepared.

The RBTP site holds an Environmental Protection Licence (11713) for the hazardous, industrial or Group A waste generation or storage (>10 -100 T). Wastes were managed in accordance with the Licence requirements. In February 2007, the RBTP was shut down and since this time no waste has been generated or stored on site.

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4.8 HAZARDOUS MATERIALS

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 for the quantities of Dangerous Goods stored at the RPGP.

For part of the reporting period there was a requirement to notify WorkCover of the presence of Dangerous Goods stored at the RBTP as the quantities exceeded the “Manifest quantity” in the Table to Schedule 5 of the Occupational Health and Safety Regulation 2001. In February 2007, shortly after the plant was shutdown, the butane tank was taken off site by Kleenheat, negating the need to notify WorkCover of the presence of Dangerous Goods.

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

4.9 CONTAMINATED LAND

There is no land identified as contaminated or polluted on any part of AGL operations.

A number of chemicals are required for the various phases of a project. These include:

- Tri-ethylene glycol and mercaptan for Gas Plant operations;
- Fuel and lube oils during all phases; and
- Drilling and fracing aids during well construction.

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 Table 4-6 below.

Table 4-6 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 & Safety Officer

Activity	Management Strategies	Responsibility
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.	Environment & Safety Officer All personnel

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

4.10 THREATENED FLORA AND FAUNA

An assessment of flora and fauna is undertaken from inception of a Project and with any 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 examination of all individual well sites, access routes, pipeline routes and Project areas.

In general terms, due to AGL selection criteria, an assessment of the Project area indicates that due to past activities by others (agriculture in particular), native vegetation within the area has already been significantly disturbed.

The disturbance created by the activities involved with the Project is mainly limited to construction activities including ground disturbance from vehicles and drilling related equipment, pipeline trenching activities and limited land clearing for well sites. Disturbances due to operational activities are minimal and no mature trees or other native vegetation have been removed.

Through careful planning the Project components avoid significant flora and fauna habitats. There has been no identified significant issue discovered in a Project to date.

The Elizabeth Macarthur Agricultural Institute (EMAI) is an exception where preservation of significant stands of Cumberland Plains Woodland have retained a habitat suitable for the endangered Cumberland Plains Land Snail and provides a breeding area suitable for numerous raptor species. Through careful planning and adaptation of the well patterns and gathering line requirements, AGL has been able to develop a program for EMAI that satisfies the threatened flora and fauna requirements whilst also meeting restrictions imposed by Aboriginal and European Cultural Heritage.

In regard to native flora and fauna the environmental management objective is to minimise adverse impacts to flora, fauna and fauna habitats.

Management strategies employed to meet the objective for flora and fauna are outlined in Table 4-7 below.

Table 4-7 Management Strategies – Flora and Fauna

Activity	Management Strategies	Responsibility
Planning	• The workforce induction program shall inform site personnel of the required procedures for the protection of flora, fauna and fauna habitat areas. • No hollow-bearing trees shall be removed or damaged for the operation.	Environment & Safety Officer
Operation	• All operations activities shall be restricted to the well site area, gathering line route, site office, lay down yard, workshop, Gas plant and designated access routes. • Personnel shall adhere to Project vehicle speed limits and remain on designated roads and access tracks. • Measures to mitigate impacts to fauna associated with noise shall be implemented. • Vermin shall be discouraged by the implementation of sound waste management practices. • Pets shall be prohibited from all sites. • Firearms shall be prohibited from all sites. • Fauna shall not be harassed, hunted or eggs or nests destroyed. • Fauna shall not be fed and direct contact with fauna shall be avoided. • Waste management shall be implemented to avoid attracting vertebrate pests.	Environment & Safety Officer All personnel

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

4.11 NOXIOUS WEEDS

Noxious weeds may be introduced and/or dispersed via personnel vehicles, equipment and plant.

The environmental management objective in regard to weed control is to minimise the introduction, establishment and spread of weeds.

Management strategies employed to meet the objectives for weed control are outlined in Table 4-8 below.

Table 4-8 Management Strategies – Noxious Weeds

Activity	Management Strategies	Responsibility
Planning	• The induction program shall inform personnel of the required procedures for the control of weeds species.	Environment & Safety Officer
Operations	• 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.	Environment & Safety Officer All personnel

Activity	Management Strategies	Responsibility
	• 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. • The restored areas and access tracks shall be inspected following the completion of operations, for evidence of weeds and pest animals. • Active weed and pest control shall be required at sites identified as infested for at least one year after operations. Additional appropriate control measures shall be utilised after this time, on the basis of monitoring results. • Disturbed areas shall be progressively rehabilitated as soon as practicable.	

Details of weed spraying including dates, areas sprayed, chemicals used etc, are kept on file. The following provides a summary of the weed spraying undertaken during the reporting period:

October 2006

- -WG 1 well
- -MP 15,16 wells
- -RPGP

November 2006

- 4-11-06 -RPGP car park

December 2006

- 11-12-06 -RPGP access road

March 2007

- 27-3-07 -EM 18 access road
- 28-3-07 -EM 18-25 access road

April 2007

- 2-4-07 -LB house and yard
- 16-4-07 -EM under bore – EM 20
- 16-4-07 -EM 25 access road

May 2007

- 1-5-07 -EM 26,23,20 wells
- 1-5-07 -EM 19-20 access road
- 1-5-07 -EM28 access road
- 2-5-07 -EM 28 well

June 2007

- 6-6-07 -GL 5,7,8,9,14/15/10 wells
- 12-6-07 -EM 2,4,6,8,9,10,13,14,15,40 wells

The main herbicides used are Cutlas M (selective herbicide) and Wipeout 450 (glysophate)

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

4.12 BLASTING

No blasting is undertaken as part of the project.

4.13 OPERATIONAL NOISE

4.13.1 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; 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.

All noise complaints are compiled and lodged with the DPI on a bi-monthly basis (refer to Section 7.1.2 of this AEPR for a summary of complaints).

The environmental management objectives regarding noise are to:

- Limit noise impacts as experienced by landholder or adjacent residents to licence conditions; and
- Limit noise disturbance to wildlife and livestock.

Management strategies employed to meet the objectives for noise are outlined in Table 4-9 below.

Table 4-9 Management Strategies – Noise Management

Activity	Management Strategies	Responsibility
Planning	• The workforce induction program shall inform site personnel of the required procedures regarding protection of local amenity.	Environment & Safety Officer
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. • Except in an emergency, operations will not generate noise impacts. • Noise generated from the Gas plant shall comply with noise limits set out in the development consent condition 38.	Environment & Safety Officer All personnel

4.13.2 Noise Monitoring Requirements

The noise monitoring requirements detailed in the Development Applications approved for the project are summarised in Table 4-10 below.

Table 4-10 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)
DA 282-6-2003-i
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".
Schedule 4. Clause 42 Within six months of the date of this consent, the Applicant shall submit a detailed Noise Monitoring Program for the development to the Director-General for approval prior to commissioning. The Applicant must comply with the Noise Monitoring Program at all times during operation of the development. Refer to the DA for details of the required content of the Program.
Schedule 4. Clause 43 The Applicant must submit to the EPA within seven months of commissioning of the Gas Treatment Plant, a report on noise from operation of the flare in the first 6 months of operation of the plant. The report must assess the compliance of noise levels during the range of flaring incidents experienced since commissioning, with the noise limits provided in Conditions 29 and 31. The noise monitoring must be undertaken in accordance with the Noise Monitoring Program in condition 42. Where during the first six month period all flare types identified in Condition 31 have not occurred, noise measurements shall be carried out of a simulation of the remaining events by applying the appropriate flow rates in order to assess compliance. Refer to the DA for details of the information to be contained in the report
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 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
Schedule 3. Clause 4 – Operational Noise Criteria 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.
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
Schedule 3. Clause 4 - Operational Noise Criteria 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.
DA 171-7-2005
Schedule 3 Clause 3. 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. Refer to DA for notes relating to this condition.

4.13.3 Noise Monitoring Results

- Noise monitoring was not undertaken at the RBTP as the plant ceased operation in February 2007.
- Wells SL 01-SL 07 are yet to be completed therefore noise monitoring in accordance with DA 75-4-2005 has not been undertaken.
- Wells RB 03 to RB 12 are currently being drilled and completed. Noise monitoring was undertaken during the reporting period to demonstrate compliance during various construction operations of wells RB06, RB07, RB08, RB09, RB10, RB11and RB12.
- Wells EM 23 to EM 36 are currently being drilled and completed. Noise monitoring was undertaken during the reporting period to demonstrate compliance during various construction operations of wells EM23, EM24, EM25, and EM27.
- Wells EB 01 to EB 10 are yet to be drilled and therefore noise monitoring in accordance with DA 171-7-2005 has not been undertaken.

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

In accordance with this requirement, a noise compliance report will be submitted to the DECC and the DoP on an annual basis with the annual return.

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 acoustic consultants and is summarised in Table 4-11 below.

Table 4-11 Summary of Quarterly Noise Monitoring

Noise Monitoring Undertaken	Summary of Results
Attended noise monitoring 26 June 2006 (report dated July 2006)	Measured noise levels complied with the EPL limits for the Mount Gilead sensitive receivers for day, evening and night time. Noise levels between 30-33 dB(A) were recorded at R7 and between 31-32 dB(A) at R1.
Attended noise monitoring 27 September 2006 (report dated October 2006)	Measured noise levels complied with the EPL limits for the Mount Gilead sensitive receivers for day, evening and night time. Noise levels between 33-35 dB(A) were recorded at R7 and 32 dB(A) at R1.
Attended noise monitoring 14 February 2007 (report dated February 2006)	Measured noise levels complied with the EPL limits for the Mount Gilead sensitive receivers for day, evening and night time. Noise levels between 33-35 dB(A) were recorded at R7. At R1 noise from the RPGP was inaudible and the L_{Aeq} level could not be established due to masking Hume Highway traffic noise.
Attended noise monitoring 26 April 2007 (report dated May 2007)	Measured noise levels complied with the EPL limits for the Mount Gilead sensitive receivers for day, evening and night time. Noise levels of 36 dB(A) were recorded at R7 and 32 dB(A) at R1.

DA 282-6-2003-i Schedule 4 Clause 42 – Noise Monitoring Program

The Noise Monitoring Program was revised to incorporate Compressor No. 2 and 3 and the 12 month continuous monitoring at R7 Mt Gilead extended to capture potential impacts from the operation of all three compressors simultaneously. A close-out report will be provided to the DECC prior to the logger being removed.

DA 282-6-2003-i Schedule 4 Clause 43 – Flare Noise Monitoring

Flare monitoring in accordance with this requirement was reported on for the previous reporting period.

4.13.4 Noise – Environmental Performance / Trends

Noise Performance at the Rosalind Park Gas Plant

In an effort to maintain compliance with EPL noise limits at the RPGP site the following mitigation measures were implemented:

- A noise wall was erected adjacent to the cooling fans for compressor No.1 to minimise noise from the cooling fans;
- Acoustic louvers were installed above the cooling fans for compressor No.1 to minimise noise from the cooling fans;
- Improvements were made in the design phase for the cooling fans of compressors 2 and 3 and fan blades with lower noise emissions were selected.

Section 4 Environmental Management and Performance

4.14 VISUAL AMENITY

4.14.1 Visual Amenity Management

The visual impacts of the well sites can be considered to be relatively low, primarily due to the small area of land surface occupied by them. Their design, spacing and the prevailing topography in the majority of situations means that it would be difficult to identify more than one or two well sites from any one location, without assistance.

Flaring at the RBTP and RPGP can have a significant impact in the event that it occurs at night. The overall approach by AGL has however, progressed to the point where operational flaring has significantly reduced by the connection of most well sites to the plant with telemetry control and by the implementation of a strategy of planned flaring during daytime operations, and wherever possible by reducing the flow from the wells whenever the plant is shutdown.

No further visual amenity measures were implemented during the reporting period.

A visual amenity assessment of the new internal access road to the RPGP was conducted as part of the overall impact assessment of the road.

4.14.2 Visual Amenity Monitoring Requirement

No visual amenity / landscape vegetation monitoring is required by DA 15-1-2002i.

The monitoring requirements for visual amenity, required of DA 282-6-2003-i are outlined in Table 4-12 below.

Table 4-12 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) “AGL Proposal Stage 2 Coal Seam Methane Project Visual Assessment of Lighting and Flare” prepared by URS for AGL dated 6 November 2003."
Schedule 4. Clause 13. The Applicant shall prepare and implement a Vegetation and Landscape Management Plan for the Gas Treatment Plant site and the gas well sites. The plan shall include, but not necessarily be limited to: (a) reasonable measures to protect mature trees as part of the well drilling, gas gathering system and Treatment Plant Site construction activities; (b) a landscape strategy detailing the design and proposed planting of trees and shrubs to be undertaken; (c) ensuring that tree and shrub species used for landscaping of the site are indigenous to the locality; (d) details of a program to ensure that all landscaped areas are maintained in a tidy, healthy state; (e) measures intended to maximise the screening of infrastructure from views from the Mt Gilead property through planting and other measures; (f) details of the visual appearance of all new buildings, structures and facilities (including paint colours and specifications). New buildings shall be constructed so as to present a neat and orderly appearance and to blend as

far as practicable with the surrounding landscape; (g) details of any necessary irrigation system to ensure that adequate supplies of water are made available to all landscaping on site, the trees between the site and Menangle Creek and the trees located on the southern boundary of the Gas Treatment Plant site; (h) details of any necessary methods to be employed in the establishment of trees on cut batters in the event that the excavated surface is not conducive to the planting of vegetation of the type displayed in the Landscape Design; (i) provision for assessing and regularly monitoring the health of 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; (j) reasonable measures to ensure that mature trees within the riparian corridor along Menangle Creek are retained and protected; (k) details of proposed screening works including supplementary planting along the border of the site with Menangle Creek; (l) reasonable measures to minimise the impacts of the gas wells on the cultural heritage landscape of the EMAI; (m) details of a monitoring program to assess the effectiveness of all visual impact mitigation measures, particularly the measures used to minimise the visual impacts on the Mount Gilead Homestead; and (n) reporting the results of the visual impact monitoring in the Annual Environmental Performance Report. The monitoring results will specifically identify any remedial measures required. The Vegetation and Landscape Management Plan must be submitted and approved by the Director-General prior to commencement of construction on the Gas Treatment Plant site.
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 at the conclusion of each stage of monitoring.

4.14.3 Effectiveness of Lighting Controls (Schedule 4 Clause 10)

Adjustments were made to the lighting at zones K1 and A3 during the previous reporting period in accordance with the recommendations made in the independent audit of the Vegetation and Landscape Management Plan. The adjustments reduced the illumination impacts outside of the immediate work area achieving the desired outcome.

No complaints were received during the reporting period relating to lighting impacts.

4.14.4 Flare Events (Schedule 4 Clause 11)

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

4.14.5 Vegetation and Landscape Management Plan (Schedule 4 Clause 13)

In accordance with DA 282-6-2003-i Schedule 4 Clause 13, a Vegetation and Landscape Management Plan (VLMP) was prepared. The VLMP was submitted and approved by the DoP on 2 July 2004.

Monitoring of the implementation of the VLMP is undertaken by URS. Three monitoring rounds were undertaken in the previous reporting period with the final round of monitoring undertaken in this reporting period (February 2007).

The findings presented in the final monitoring report, February 2007, are provided in Section 4.14.7.

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

In accordance with DA 282-6-2003-i Schedule 4 Clause 14, Distinctive Landscape Planning were commissioned to undertake an independent audit in the form of a Visual Impact Assessment in August 2005. The recommendations of this audit were presented in the previous reporting period. Table 4-13 below details those actions which had not been closed out in the previous AEPR and provides an update of the recommendation status.

Table 4-13 Visual Impact Assessment 2005 Recommendations Status

Land-scape Zone	Performance Targets	Assessment	Recommendation	Action Undertaken by AGL
K	South eastern corner of site, screening sediment pond and flare wall	Reparation works evident with protective barriers in place to prevent further goat damage	On going monitoring to assess selective removal of wire barriers as plant material matures.	Ongoing
T3	Mature Tree to South Eastern Boundary	Tree showing naturally occurring structural damage and evidence of decline. SULE rating (Safe Useful Life Expectancy) would indicate tree should be removed immediately	Tree removal to occur to prevent safety hazard to adjoining gas plant infrastructure. Consult council for tree removal order.	Tree has not yet been removed, but plans remain in place for this to occur.
T4	Mature Tree to South Eastern Boundary	Tree showing naturally occurring structural damage and evidence of decline. SULE rating (Safe Useful Life Expectancy) would indicate tree should be removed immediately	Tree removal to occur to prevent safety hazard to adjoining gas plant infrastructure. Consult council for tree removal order.	Tree has not yet been removed, but plans remain in place for this to occur.

4.14.7 Visual Impact Amenity Performance / Trends

The conclusions and recommendations presented in the final (4th) monitoring report, February 2007 (URS) are provided below:

Since the June 2006 monitoring inspection the standard of maintenance has been improved. Landscaped areas are generally consistent with the objectives of the Vegetation and Landscape Management Plan. The majority of recommendations outlined in the Round 3 Report have been adopted, including:

- The fitting of tree guards in Zones A2 and K;
- Slashing of grass throughout landscaped areas;
- Mulching around the base of plantings;
- The keeping of a Maintenance Log Book; and
- Application of slow-release fertiliser.

A landscape contractor has been engaged by AGL to carry out fertilising and spraying in response to insect attack. In some cases proactive management of landscaped areas is apparent, for instance the number of recently replanted trees exceeds the number of dead trees identified in the Round 3 Report. It is recommended that this practice of progressive replanting be continued to ensure that dead plants are replaced as early as is practicable.

The results and recommendations identified in the Assessment and Recommendations Table should be read in association with the Landscape Monitoring Zones Drawing No. A-01, the Vegetation and Landscape Management Plan and 3 Monitoring Reports prepared by URS in August 2005, January 2006 and June 2006 respectively. For replanting of areas where tube stock losses have been identified the recommendations for plant species in the Assessment and Recommendation Table for each sub-zone or zone should be followed.

Two *Eucalyptus molucanna* trees (Tree nos. 2 and 3 refer to Landscape Monitoring Zones Dwg A-01) on the southern boundary are in very poor condition and structurally weak. In their current condition and position they represent a direct threat to health and property. It is recommended that AGL engage a qualified contractor to remove these two trees.

The following additional recommendations are made to ensure the maintenance and improvement in health of tree planting.

- Continue to monitor health of plantings and replace dead plants as required. In the interests of efficiency it is recommended that dead plants be replaced once a combined total of ten dead plants are identified in all landscaped areas;
- Engage 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 active insect control including weed and grass control around seedlings and mulch where necessary to suppress grass growth;
- The removal of tree guards can be trialled on well-established plantings defined as greater than 1.5m tall and with a basal stem diameter of greater than 30mm. These should be monitored for losses due to ringbarking and if any plant deaths occur guards should be replaced and maintained;
- Continue use of the Maintenance Log Book; and
- Continue the watering program for replanted areas as required to maintain growth.

The following tree maintenance activities were undertaken during the reporting period:

- 108 trees were replaced;
- 18 trees were relocated;
- Grass was slashed on several occasions;
- Weeds were sprayed on a number of occasions;
- Mulch was placed around trees during December 2006 to February 2007;
- Grass and plants were watered throughout the reporting period; and

- An inspection of trees for insect damage and tree growth was undertaken in Spring 2006;

4.15 ABORIGINAL HERITAGE

Ongoing aboriginal archaeological assessment was conducted over each new drilling program as part of the Environmental Impact Assessment process.

The conclusion from these studies is that the Project area represents an area considered to be of low archaeological potential. Despite this, evidence of Aboriginal occupation of the area has been identified during surveys conducted for this Project. This evidence of occupation or use leads to a highly significant appreciation of the area by the local Aboriginal groups.

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 Table 4-14 below.

Table 4-14 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 & Safety Officer
Operations	• All operations 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 & Safety Officer 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 *Department of Environment and Climate Change* and 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

Aboriginal heritage activities conducted during the reporting period are summarised below.

EMAI

AGL and Dominic Steele Consulting Archaeology (DSCA) prepared an Aboriginal Cultural Heritage Management Plan (ACHMP) in consultation with the DECC, Tharawal Local Aboriginal Land Council (TLALC) and Cubbitch Barta Native Title Claimants Aboriginal Corporation (CBNTAC) for wells EM23-36 and associated access roads and gas gathering lines. The ACHMP was one of the first plans to be approved by the DoP.

Following the plan's approval, the plan was implemented by AGL and associated management works were completed in-field including the relocation and recording of Aboriginal cultural heritage artefacts and detailed mapping and recording of locally significant Aboriginal cultural heritage artefact sites.

Razorback

AGL and DSCA prepared an ACHMP in consultation with the DECC, TLALC and CBNTAC for wells RB03-12 and associated access roads and gas gathering lines. The ACHMP was approved by the DoP and implemented by AGL.

Spring Farm/ Menangle Park

AGL, HLA-Envirosciences and DSCA undertook field assessments in consultation with TLALC and CBTNAC for an Environmental Assessment of proposed well sites, access roads and gas gathering lines on the Menangle Park and Spring Farm fields.

Other Work

AGL and DSCA completed field assessments in consultation with TLALC and CBTNAC at Rosalind Park, Menangle Park, EMAI, Kay Park, Glenlee, APAP and Sugarloaf for Environmental Assessments of proposed additional wells sites and gas gathering lines at existing locations.

AGL and DSCA completed field assessments in consultation with TLALC and CBTNAC at Rosalind Park for an Environmental Assessment of the construction of the RPGP Access Road.

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

4.16 EUROPEAN HERITAGE

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 performance terms:

- The development of areas on the Elizabeth McArthur Agricultural Institute met all Development Consent requirements for heritage protection.
- There were no other European heritage items and/or archaeological sites located during other field surveys.

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

Management strategies employed to meet the objectives for cultural heritage are outlined in Table 4-15 below.

Table 4-15 Management Strategies – European Heritage

Activity	Management Strategies	Responsibility
Planning	• The workforce induction program shall inform site personnel of the required procedures for protection of cultural heritage.	Environment & Safety Officer
Operations	• All operations activities shall be restricted to the well site area, site office, gathering line route, lay down yard, workshop, Gas plant and designated access routes.	Environment & Safety Officer All personnel

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

4.17 SPONTANEOUS COMBUSTION

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

4.18 BUSHFIRE

Operations activities have the potential to ignite bushfires through the operation of flammable fuel powered equipment, flares and / or vehicles. Flaring in particular is strictly controlled so as to minimise any potential to start or spread a bushfire situation. This is achieved by positioning the flare in a non-hazardous location.

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 Table 4-16.

Table 4-16 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 operations activities.	Environment & Safety Officer
Operations	• All operations 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 & Safety Officer All personnel

No bushfires affected the Project during the reporting period.

Section 4 Environmental Management and Performance

4.19 MINE SUBSIDENCE

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

4.20 HYDROCARBON CONTAMINATION

Spills of fuel, oil or chemicals 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 Table 4-17.

Table 4-17 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 & Safety Officer
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 to 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 & Safety Officer All personnel

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

Section 4 Environmental Management and Performance

4.21 METHANE DRAINAGE / VENTILATION

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

4.22 PUBLIC SAFETY

Public safety is assured through compliance with:

- Operational Protocols;
- Traffic Management Plans; and
- Site and Infrastructure Security.

All activities associated with public safety were compliant for the period with no reportable incidents. AGL did receive one community complaint relating to public safety during approved works on Menangle Road. Further details of this complaint are given in Table 7-1.

4.23 SAFETY AND RISK MANAGEMENT

4.23.1 Safety and Risk Management Monitoring Requirement

The monitoring requirements for incident reporting, required of the Development Application approval conditions, are outlined in Table 4-18**.**

Table 4-18 – Incident Reporting Monitoring Requirement

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 DECC, 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 DECC, 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
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.

4.23.2 Incident Reporting

One operations incident was reported during the reporting period to the DPI in June 2007. The incident related to a field air compressor catching alight. The DPI requested and was provided with a copy of the Incident Investigation Report. The DECC was advised of this incident but responded that a formal notification was not necessary.

No reportable environmental incidents were recorded during the July 2006 to June 2007 reporting period.

4.24 ENVIRONMENTAL TRAINING

During the reporting period, staff were provided with a range of internal and external environmental training, addressing the following areas:

- Environment Protection Licences for the Camden Gas Project;
- Environment, Health and Safety Management Plans for the Camden Gas Project;
- Environmental risks and management across the Oil and Gas Industry; and
- Reviewing the Environmental performance of the Camden Gas Project during 2005/06 financial year.

Further Environmental training is planned for the next reporting period to address the critical areas of the Project.

Section 5 Rehabilitation

5.1 REHABILITATION

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.

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

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 Table 5-1.

Table 5-1 Management Strategies - Rehabilitation

Activity	Management Strategies	Responsibility
Planning	For each property a rehabilitation plan shall be developed to include requirements for reseeding and fertiliser in consultation with the landholder. The workforce induction program shall inform site personnel of the required clean up and rehabilitation procedures.	Environment & Safety Officer Land Access and Compliance Officer
General Clean-up	All waste materials and equipment shall be removed from the area once backfilling and tie-ins are completed. All flagging and bunting installed for environmental or safety reasons shall be removed. Small amounts of rocks and stones generated by the operations process shall be distributed evenly over the work area or removed to a location offsite in consultation with the landholder.	Environment & Safety Officer Construction Supervisor

Section 5 Rehabilitation

Activity	Management Strategies	Responsibility
Soils and Terrain	Compacted areas shall be deep ripped or scarified for relief as required. Disturbed areas shall be graded to reinstate pre-existing surface contours and natural drainage patterns. Erosion and sediment control devices shall be installed. Topsoil shall not to be used for the installation of contour berms. Stockpiled topsoil and seed stock shall be respread across the work areas from which it was removed. Surface roughness shall be encouraged when respreading topsoil to assist water retention and seed trapping.	Environment & Safety Officer Construction Supervisor
Access	Private roads and tracks used during operations shall be returned to their pre-operations state, or to a condition agreed by the landholder.	Environment & Safety Officer Construction Supervisor
Property Infrastructure	Any infrastructure disturbed during operations shall be restored to the landholder's satisfaction. 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.	Environment & Safety Officer Construction Supervisor

5.1.1 Rehabilitation of Disturbed Land

Specific rehabilitation activities associated with the Project during the reporting period may be subdivided into three main components:

- Wellheads;
- Gas gathering system;
- Access Roads

Progressive rehabilitation is an ongoing management practice for all areas impacted by the Project.

Table 5-2 shows the total area of the Camden Gas Project, the area of disturbance and final rehabilitation.

Table 5-2 Summary of Recent and Proposed Rehabilitation

	Area Affected/Rehabilitated (hectares)		
	Cumulative to Date	Last Report	Next Report (Estimated)
PPL LEASE AREA			
PPL1	4,800	4,800	4,800
PPL2	94	94	94
PPL 4	5,527	5,527	5,527
PPL5	10,240	10,240	10,240
DISTURBED AREAS			
Well site construction leases rehabilitated to final	68	64.5	15

Section 5 Rehabilitation

	Area Affected/Rehabilitated (hectares)		
	Cumulative to Date	Last Report	Next Report (Estimated)
well production compound			
Gathering System route rehabilitated following installation (based on a 3m wide area of disturbance)	26	21.5	6
Rosalind Park Gas Plant	2	2	3
Ray Beddoe Treatment Plant	2	2	3
Other Non Specific Areas (access roads)	4	4	
Office, Workshop and Lay down Yard (Stage 1)	2	2	
REHABILITATION PROGRESS			
Total Rehabilitated area (except for maintenance)	104	96	27
SURFACE OF REHABILITATED LAND			
Pasture and grasses	104	90	27
Native forest/ecosystems	6	6	2
Plantation and crops	Nil	Nil	Nil
Other (include non-vegetative outcomes)	0	0	0

No tree planting was conducted during the reporting period (apart from replacement planting of dead trees) due to delays in approvals and construction of well sites on EMAI and Razorback sites. These tree plantings are planned to take place in 2007/2008.

Table 5-3 Summary of Maintenance Activities on Rehabilitated Land

Nature of Treatment	Area Treated (ha)		Comment/ control strategies/ treatment detail
	Report Period	Next Report (estimated)	
Additional erosion control works (drains, re-contouring, rock protection)	<1	<1	Contour drains installed on areas with gentle slopes.
Re-covering (detail – further topsoil, subsoil sealing etc)	0	0	N/A
Soil treatment (detail – fertiliser, lime, gypsum etc)	0	0	N/A
Treatment/ Management (detail – grazing, cropping, slashing etc)	104	27	Areas slashed or grazed to encourage improved growth and vegetation cover.
Reseeding/ Replanting (detail – species density, season etc)	<1	<1	Native trees replanted as a result of impacts from drought and native and feral animals.
Adversely affected by weeds (detail – type and treatment)	1	1	Weeds, predominantly thistle varieties are controlled by chipping and/ or herbicides.
Feral animal control (detail – additional fencing, trapping, baiting etc)	0	<1	Additional fencing may possibly be installed around tree planting areas to limit impact from feral animals.

Section 5 Rehabilitation

5.1.2 Well Sites

All well sites are located in cleared farm land or in areas within cleared native vegetation with additional clearing being minimal or not required at all.

Long term operation of the wells requires the retention of a 6 metres x 9 metres cleared area around each wellhead. Cleared area beyond this point required during drilling and construction has been rehabilitated in the following manner:

- Any remaining debris or equipment removed;
- All sumps utilised during drilling operations backfilled to natural surface with the retained subsoil;
- Any tracks or hardstand areas, or areas of compacted ground not required for ongoing use ripped. Fences have been retained at the landholder's discretion;
- Wherever recoverable, stockpiled topsoil has been respread across the surface;
- Where the surrounding land use is agricultural, consultation has been held with the landholder to determine what cover crop was required; and
- Where the surrounding land use is native vegetation, the inherent seed load within the respread topsoil has been relied upon for natural revegetation.

Upon depletion of the field, the wells will be plugged and abandoned in accordance with the requirements of the DPI 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 6 metres x 9 metres 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 Camden Gas Project Stage 2 works has been progressed as each field develops. This process has been accelerated by the use of impervious plastic liners in all drill pits. The removal of waters is quicker and there is no need to wait for desiccation.

5.1.3 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 with a grader;
- Spreading of retained topsoil across the disturbed working area with a grader;
- 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 or fence line track, 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.

Section 5 Rehabilitation

Upon depletion of the field and the completion of the Project, the gas gathering system will be purged with air or water to remove remaining gas, sealed and left in position.

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.

5.1.4 Buildings and Auxiliary Facilities

The provision of offices and auxiliary services for the Camden operations of AGL are located at the RPGP and RBTP sites. Current planning for decommissioning of the RBTP buildings and auxiliary facilities includes the salvage and sale of all 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.

5.2 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 pasture land.

5.3 FURTHER DEVELOPMENT OF THE 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.

It is AGL's intention to review the details of the final rehabilitation every five years prior to the conclusion of the Project in consultation with the local Council and the DPI. This will ensure that the most up to date methods for rehabilitation are identified and adequate provisions are allocated in the Project planning and budget cycle.

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.

5.4 ACTIVITIES PROPOSED IN THE NEXT AEMR PERIOD

Further drilling will be targeted at locating adequate reserves in PPL 1, PPL 2, PPL 4 and PPL 5 to service an expansion of capacity of the RPGP. Operations are planned to develop well fields on the Sugarloaf Farm, Spring Farm, Menangle Park, Kay Park and EMAI properties.

5.5 FURTHER IMPROVEMENTS

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

Section 5 Rehabilitation

5.6 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. 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.

Section 6 Project Commitments Register

During the reporting period there has been a significant increase in the number of DA modifications and approvals. AGL are managing the requirements of the various requirements and Conditions of Consent through a Compliance Register.

This Compliance Register replaces the Project Commitments Register which was used during previous years. The Compliance Register is a live document that is used to monitor and track compliance with the Consent Conditions and other requirements. The register is currently being set up to include an automated trigger system to assist in ensuring conditions are complied with.

Section 7 Stakeholder Engagement

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

7.1 ENVIRONMENTAL COMPLAINTS

7.1.1 Stakeholder Management

A complaint handling procedure has been set in place for the Camden Gas Project operations. AGL has a 24 hour complaints handling hotline 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 fliers that have been distributed to local households and businesses and in local newspapers.

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.

7.1.2 Complaints Register Requirement

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 actioned is outlined in the following Development Consents:

- DA 282-6-2003-i Schedule 5, Clause 19;
- DA 15-1-2002i Schedule 3, Clause 29;
- 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 be 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 DECC or the Director-General upon request. The Applicant shall also make 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.

Section 7 Stakeholder Engagement

7.1.3 Summary of Environmental Complaints

A summary of the environmental related complaints received for the Camden Gas Project between July 2006 and June 2007 is provided in Table 7-1. The actions taken to address issues to address these complaints are outlined in the table.

Table 7-1 Environmental Complaint Details from July 2006 to June 2007

Complaint	Complainant	Date	Action Taken
Landowner complained about the presence of an AGL contractor working on the council strip of Menangle Road and the safety implications, despite AGL receiving approval from Wollondilly Shire Council to work in that area.	Available upon request	07 October 2006	AGL Land Manager spoke with Landowner and apologised for any inconvenience caused. Works were completed promptly and equipment removed from the area that afternoon.
Landowner concerned that AGL activities were discharging saline water into Menangle Creek.	Available upon request	November 2006	EPA officer inspected the creek with AGL and complainant and collected water samples for analysis. EPA advised that the saline water was not caused by AGL activities, but instead by groundwater naturally welling to the surface in the creek bed.

7.1.4 Complaint Trend

The number of complaints received in 2006/07 has increased from zero in 2005/06 to two. It should be noted that after investigation one of the complaints was found not to have been a result of AGL activities.

7.2 COMMUNITY CONSULTATIVE COMMITTEE (CCC)

7.2.1 Monitoring Requirement

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

- DA 282-6-2003-i Schedule 5, Clause 17;
- DA 15-1-2002i Schedule 3, Clause 90;

The requirements of the above DA's are outlined in Table 7-2below.

Section 7 Stakeholder Engagement

Table 7-2 Requirements for Community Consultative Committee

Development Application	Requirement
DA 282 – 6-2003-i Schedule 5, Clause 17	The Applicant shall ensure the continuation of the existing AGL Operations Camden Project Community Consultative Committee to oversee the environmental performance of the development. The Committee shall continue to be chaired by an independent chairperson approved by the Director-General in consultation with the Applicant, Camden Council, Campbelltown City Council and Wollondilly Shire Council. The Committee shall: (a) have four community representatives residing in the PEL 2 area; (b) have one representative from each of the following Councils: Camden Council, Campbelltown City Council and Wollondilly Shire Council; (c) meet at least quarterly; (d) take minutes of the meeting; and (e) 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 Stage 2 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.
DA 15-1-2002i Schedule 3, Clause 90	The Applicant shall establish a Community Consultative Committee 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.

7.3 COMMUNITY LIAISON

AGL has pro-actively engaged the community, in order to keep residents informed of the Camden Gas Project, and ensure that community interests are 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:

- Consultation with affected landholders;
- Hosting information days with community members and local businesses and numerous site tours;
- Providing site tours for the University of New South Wales petroleum engineering students; and
- Distributing community consultation material to the local municipalities' offices.

A great deal of consultation has taken place in person directly with each landowner. This has ensured that their interests can be quickly understood and specifically addressed.

Section 7 Stakeholder Engagement

The Community Consultation Committee (CCC) was formed in early 2003, as a forum to oversee the environmental performance of the Camden Gas Project. The committee meets on a quarterly basis and consists of:

- Chairperson;
- Camden Council;
- Campbelltown City Council;
- Wollondilly Shire Council;
- Four Community Members;
- Two Local Environment Members; and
- Two AGL Members.

AGL plans to continue to pro-actively engage the community for the duration of the Project. There have been no environmental based actions arising from the community consultative meetings held. All actions have been advisory or administrative actions.

7.3.1 Community Consultation

Community Consultative Committee (CCC)

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

- No.14 17 August 2006
- No.15 23 November 2006
- No.16 22 February 2007

The CCC meeting planned for May 2007 was rescheduled and held in July 2007 and will therefore be included in the next reporting period.

Other Consultation

The following consultation processes have also been undertaken for the Camden Gas Project:

- Aboriginal consultation processes have been undertaken for planning of works at EMAI, Razorback, Spring Farm and Menangle Park;
- Landowner advices to affected properties on a weekly basis;
- Operational issues requiring letter drops including drilling and fracing of EMAI and Razorback wells

Section 7 Stakeholder Engagement

7.4 AUDITS AND VISITS

Site visits undertaken by regulatory authorities during the reporting period are provided in Table 7-3.

Table 7-3 Site Visits by Regulators During 2006 - 2007

Camden Gas Project	Regulator / Shire etc	Issues or Concerns
22 August 2006	DECC - EPA	Site visit to RBTP to discuss upcoming EPL 11713 review.
10 November 2006	DECC - EPA	Site visit to RPGP in response to landowner concerns of alleged discharge into Menangle Creek. No issues to address.
28 November 2006	DECC - EPA	Site visit to RPGP to discuss air emissions for compressors and avenues available to change EPL 12003 limits.
01 February 2007	DPI - Minerals	Site visit to RPGP, EM34 and Currans Hill core hole to familiarise with Project.
20 April 2007	DPI - Minerals	Site visit to Raby, Denham Court and Cecil core hole sites to inspect sites pre construction as part of drilling approvals process
03 May 2007	DECC - EPA	Site visit to RPGP and EM field to familiarise with Project.

Section 8 Summary of Environmental Non-compliance Issues and Actions

8.1 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 2.1 of this AEMR). AGL has reviewed the requirements of Environmental Standards through the following process:

- Review during Annual Return process for NSW EPA.
- Independent Audit by URS (December 2006);

8.1.1 Annual Return

Non-conformances with the site's Environment Protection Licence are reported in the Annual Return to the EPA (last Annual Return for period December 2005 to December 2006). Where non-conformances were reported these are discussed under the relevant sections of this AEPR.

8.1.2 Non-Compliances Identified During Independent Audit

An Independent Audit was undertaken by URS during the reporting period. Non-conformances identified or areas where compliance was indeterminate are listed in Table 8-1 along with actions to address these non-compliances.

Section 8 Summary of Environmental Non-compliance Issues and Actions

Table 8-1 Non-Compliances Identified with Environmental Standards

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 15-1-2002i Schedule 3 CoC No.37	Non-compliant.	Within two years of the date of this consent and every two years thereafter, the Applicant shall commission and pay the full costs of an Independent Environmental Audit.	SAI Global were appointed to undertake the first audit within two years of the consent being issued on the 23 July 2002. Due to availability, the audit was not undertaken until the first quarter of 2004/ 05.	This audit fulfils the requirements of the second biannual audit. No further action required.	None required.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 15-1-2002i Schedule 3 CoC No.38 & 39	Non-compliant.	The applicant shall comply with the noise criteria specified.	Noise has been annually monitored at locations A, B, C and D, but not F, E, G and M. In June 2006, monitoring results were unable to demonstrate compliance with EPL Limits. An internal review of operations has been unable to identify any operations changes which could contribute to an increase in site noise. There have been no complaints in regards to operations noise, however, AGL is continuing to work with the EPA to reduce site noise.	Continue negotiations with the EPA. It is understood that AGL plans to shutdown the RBTP facility in early 2007.	The RBTP facility was shut down in February 2007.
DA 15-1-2002i Schedule 3 CoC No.82/83/84/88	Non-compliant.	Air emission concentration limits.	All results were compliant with EPL limits, except for NO_x levels monitored in June 2005. Scheduled routine maintenance works and further monitoring has since demonstrated continued compliance.	No action recommended.	No action recommended.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 3 Condition 11	Indeterminate	The Applicant shall run verticality logs for new gas wells located within coal exploration titles	The verticality logs have reportedly been developed for all wells installed, however these were not observed during the site visit.	Confirm compliance with this CoC.	Due to wells being vertical, geophysical logs with callipers are run as a more suitable tool instead of verticality logs. Logs from each well are kept in hard copy format in the well files in the office. Therefore this condition should be deleted.
DA 282 Schedule 3 Condition 13	Indeterminate	The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.	Confirmation has reportedly been received from the building manufacturer (ATCO) that all buildings comply with the requirements of the Building Code of Australia. This confirmation was not observed during the site visit.	Confirm compliance with this CoC.	Atco fax dated 28 Sept 06 available for viewing.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 3 Condition 15 & 17 Schedule 2 DA-183-8-2004-i Condition 6 Schedule 2 DA 9-1-05 Condition 7	Indeterminate	The Applicant shall provide Camden Council, Campbelltown City Council and Wollondilly Shire Council with the Geographical Positioning System (GPS) co-ordinates and digital survey data for gas well sites and gas gathering systems within their respective Local Government Area, in a format suitable to each of these Councils, within two months of the completion of the gas wells and gas gathering system	Confirmation has reportedly been received by AGL that this requirement has been previously fulfilled. However, evidence was not available at the time of the site visit.	Confirm compliance with this CoC.	Evidence available – SGL letters.
A 282 Schedule 3 Condition 16 & 17 Schedule 2 DA-183-8-2004-i Condition 7 Schedule 2 DA 9-1-05 Condition 8	Indeterminate	The Applicant shall provide Camden Council, Campbelltown City Council and Wollondilly Shire Council with the wellhead configurations of each gas well within two months of the gas well being completed or two months from the date of this consent, whichever is the later.	Confirmation has reportedly been received by AGL that this requirement has been previously fulfilled by Sydney Gas. However, evidence was not available at the time of the site visit.	Ensure that all correspondence is fulfilled and documented for future wells with a similar requirement.	Ensure that all correspondence is fulfilled and documented for future wells with a similar requirement.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 3 Schedule 2 DA-183-8-2004-i Condition 8 Schedule 2 DA 9-1-05 Condition 9	Indeterminate	The Applicant shall implement reasonable measures to screen gas wells GL 4, GL 5 and GL 10 and the interconnecting gas gathering line from the Banksia Garden picnic area within the Mount Annan Botanic Garden. The Applicant shall undertake such measures to the satisfaction of the Director-General	During the audit it was observed that two of the three wells GL5 and GL10 were screened from the Botanic Garden by existing vegetation. Some vegetation was observed to screen GL4 although it may be visible from the Gardens. No requirement to provide additional screening to that naturally present has reportedly been requested by the Botanic Garden to date.	It is recommended that the Botanic Gardens are contacted to ask whether the existing vegetation is a sufficient screen or whether additional screening is required to meet the requirements of this CoC. If no additional screening is required by the Botanic Gardens it is recommended that this is recorded and filed by AGL, or any actions requested implemented.	AGL to confirm requirements with Botanic Gardens and obtain response in writing if no further screening around the three wells required.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 11	Indeterminate.	The Applicant shall record the frequency of the operation of the flare and shall make this information available for inspection by the Director-General on request. (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) "Sydney Gas Proposal Stage 2 Coal Seam Methane Project Visual Assessment of Lighting and Flare" prepared by URS for Sydney Gas dated 6 November 2003."	A record of the frequency of the operation of the flare is maintained in accordance with this CoC and a copy provided with the AEPR. However the requirement of (f) does not appear to be included in the flare log.	Continue to minimise flaring and in the event of flaring, record the details of all such flaring.	The RPGP is operated and manned 24 hours per day, seven days per week. As an Operational Standard, if an operational problem is anticipated, the gas source is cut by shutting in wells immediately, minimising flaring events.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 29	Indeterminate	The Applicant shall ensure that noise from the normal operation of the premises, excluding flaring events, must not exceed the noise limits.	A review of noise monitoring reports within the audit period indicates that the requirements of this CoC are generally met. Some minor exceedances have been recorded within the audit period of up to 39 dB(A). However, the last attended noise monitoring within the audit period (May 2006) states the following: measurements indicated that the site contribution to noise levels at the residence was 30 dB(A). The weather data confirmed wind speed and direction at the time of the measurement to be 3.22 m/s and east south easterly. This is within the day time noise limit of 37 dB(A). No noise complaints have reportedly been received by AGL.	Continue to monitor noise emissions and investigate any future exceedances to ensure the noise limits are met.	Additional noise mitigation has now been installed. Monitoring indicates compliance.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 34 & 35 & 38	Non-compliant	The Applicant shall prepare and implement a Construction and Well Maintenance Noise Management Protocol to be used for the duration of the project.	A Noise Management Plan for the Camden Gas Project Stage 2 (ERM, December 2004) was prepared. It is understood that the EPA have recently provided comments and the plan is being compiled by an acoustic consultant (Wilkinson Murray).	Construction and Well Maintenance Noise Management Protocol to be completed and implemented.	To be actioned.
DA 282 Schedule 4 Condition 40	Indeterminate	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	The Gas Treatment Plant was commissioned in December 2004 and a noise compliance report was prepared (ERM, Ref: 0022362RP2, May 2005), this appears to be after the one month required by the CoC. Following this, quarterly noise compliance reports were submitted to the EPA as a means of reporting results more frequently. In the event of a non compliance, results are duplicated and reported in the Annual Returns.	Ensure quarterly or annual noise compliance reports are prepared and submitted with the Annual Return to the DEC.	Following this, quarterly noise compliance reports were submitted to the EPA as a means of reporting results more frequently. In the event of a non compliance, results are duplicated and reported in the Annual Returns.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 42	Indeterminate	Within six months of the date of this consent, the Applicant shall submit a detailed Noise Monitoring Program for the development to the Director-General for approval prior to commissioning.	A Noise Monitoring Program was submitted to the DEC and comments recently received. A meeting with the DEC is due in February 2007 to finalise the program.	Finalise Noise Monitoring Program with the DEC	To be actioned.
DA 282 Schedule 4 Condition 44	Indeterminate	The Applicant shall obtain the prior approval of the Director-General for the redrilling and/or additional fraccing of a gas well.	Re-fraccing of one well has been undertaken. Well RP-11 was refracced in March 2006. Approval was obtained for this well dated 7 February 2006 from Glyn Macdonald, Senior Inspector of Coal Mines, Department of Primary Industries. It was not confirmed whether prior approval was also obtained from the DG of DoP.	Ensure that prior approval from the DoP is obtained prior to re-fraccing or additional fraccing of wells.	To be actioned.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 48	Non-compliant	For each discharge point specified in the table below, the Applicant shall ensure that the concentration of a pollutant discharged at that point does not exceed the concentration limit specified for that pollutant in the table, and where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges	Exceedance in NOx at discharge point No.1. Reported in the annual return to the NSW EPA. Value of 1,012 mg/m3 (limit of 461 mg/m3. It is suspected that the high NOx level was due to the operation of the engine under-loaded. The June value was compliant and reflected the much higher production rate and consequent increase in gas engine load.	No further action necessary, continue to monitor continuously and quarterly	All subsequent results have not exceeded the concentration limit.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 58	Non-compliant.	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	As requested in Condition 63, air emissions monitoring as required by Condition 58 on a quarterly basis is for the first 12 months of the operation of the Gas Treatment Plant. Due to an unresolved decision between SGL and EPA, the fifth round of quarterly monitoring was not completed. Detection limits for sulphuric acid mist and sulphur trioxide were on a number of occasions set outside of the concentration limits specified in the EPA licence due to laboratory analysis restrictions. All affected samples showed readings below the detection limits.	A laboratory is now used which can analyse sulphuric acid mist and sulphur trioxide within licence concentration limits.	No further action required.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 59	Non-compliant.	For each monitoring/discharge point or utilisation area specified below (by point number), 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 opposite in the other columns	Correspondence was submitted to the DEC (EPA) on 19 August 2004, demonstrating the combustion performance of the horizontal flare. As the flare predominantly operates in a pilot mode, it is reported to be impractical and of limited value to sample the flare. Analysis of flare emissions are to be based on the above report and plant availability data. No further sampling has since been requested from the DEC.	It is recommended that AGL request an EPL variation if DEC are satisfied that the monitoring of the flare is not practical.	AGL are working with the DEC to have the EPL varied and the flare monitoring removed

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 66 & 67	Indeterminate	Except as may be expressly provided for by a licence under the Protection of the Environment Operations Act 1997 in relation to the development, the Applicant shall comply with section 120 of the Protection of the Environment Operations Act 1997 in carrying out the development.	All sites are reportedly constructed in accordance with the site specific, approved Soil and Water Management Plans (SWPMs). At the time of the site visit there were no wells approved during the audit period that were in the process of installation. Two wells were observed to have recently been installed (GL13 and GL15). These wells were approved since June 2006 and outside of the audit period. However, GL13 had a pit for collecting water in place. The pit liner was observed to contain a couple of small holes. Water was evident outside of the pit, however, it could not be determined whether this was from the well. A sample of the water was taken by AGL at the time of the audit. Water management at GL15 (also approved outside of the audit period) also appeared to require some improvement as collection ponds were observed to be full with evidence of some spillage outside of the lined pits with well development water.	Confirm if the water outside of the collection pit was from the well (at well no. GL13). Improve stormwater controls for in-seam drilling where larger quantities of water than that for vertical drilling is produced.	To be actioned.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 72	Indeterminate	Subject to any express provision to the contrary in this licence, the Applicant shall undertake monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area or taken off-site in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.	Off-site discharges comprise the release from the sedimentation pond at the Rosalind Park Treatment Plant and off-site disposal of process water from the Treatment Plant. Before releasing the sedimentation pond water, it is visually checked for suspended solids and oils/grease. Discharge from the sedimentation pond has reportedly occurred twice during the audit period. However, no written records of water quality are kept. Process water from the power plant is sampled prior to collection for off-site disposal to an appropriately licensed facility.	Document and record discharge events from the sedimentation pond including a record of visual inspection.	Water is no longer discharged from the sediment pond but is retained on site for use in the event of a grass fire.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 88	Non-compliant	The Applicant shall provide a report of the Indigenous Heritage Monitoring undertaken for the Stage 2 project to NPWS and the Director-General within two months of the Heritage Monitoring being completed.	A copy of the Heritage Monitoring was reportedly provided to the NPWS (now part of the Department of Environment and Conservation NSW - DEC) within two months, however, it was reportedly not provided to the DG. The report has since been forwarded to the DG.	No further action recommended.	No further action required.
DA 282 Schedule 4 Condition 90	Indeterminate	The Applicant shall ensure roadside plantings for sites EM 16, EM 18, EM 19 and EM 20 are strengthened using the species outline provided in the report titled “Statement of Heritage Impact for Land within the Elizabeth Macarthur Agricultural Institute NSW Agriculture, Menangle” by Geoffrey Britton dated September 2003.	AGL are currently waiting for advice from the EMAI land manager as to if and where the plantings are required.	To obtain advice from the EMAI land manager as to if and where plantings are required.	Plantings were completed in consultation with the EMAI Manager.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 93	Indeterminate	The Applicant shall submit to the Director-General one month prior to the commissioning of the plant, or within such period approved by the Director-General, a compliance report detailing compliance with Conditions 91 and 92.	As this CoC applies to CoC No. 91 (pre-construction) DIPNR approved this CoC in a letter dated 26 November 2004, subject to conditions. Evidence to indicate how these conditions were met was not observed.	Provide evidence of compliance with DIPNR's comments, dated 26 November 2004.	To be actioned.
DA 282 Schedule 4 Condition 97	Non-compliant	The Applicant shall ensure that the storage, handling, and transport of: Dangerous goods is done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code; and Explosives are carried out in accordance with the requirements of DMR.	At the time of the site visit improvements to Dangerous Goods storage appeared to be required, in particular signage and segregation.	It is recommended that a Dangerous Goods audit is undertaken against the requirements of the Occupational Health and Safety Act 2000 and Regulation 2001 (particularly Chapter 6A) and relevant standards.	To be actioned.
DA 282 Schedule 4 Condition 100	Non-compliant	The quantity of hazardous and/or industrial and/or Group A waste stored at the premises must not exceed 9,000 L at any one time.	The EPA has been notified (5 July 2006) that the current generation and on-site storage volume is exceeding licence limits (of 500 T and hence the CoC limit of 9,000 L) due to changes in the oily waste water separation process.	AGL to continue liaisons with EPA and DOP and request an Environment Protection Licence variation if levels are to remain above licence limits.	To be actioned.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 101	Non-compliant	The quantity of hazardous and/or industrial and/or Group A waste generated and/or stored at the premises must not exceed 85,000L per year.	The EPA has been notified (5 July 2006) that the current generation and on-site storage volume is exceeding licence limits (of 500 T – and hence also the CoC limit of 85,000 L) due to changes in the oily waste water separation process.	AGL to continue liaisons with EPA and DOP and request an Environment Protection Licence variation if levels are to remain above licence limits.	To be actioned.
DA 282 Schedule 4 Condition 102	Non-compliant	The quantity of non controlled aqueous liquid wastes generated at the premises must not exceed 3,000,000 L per year.	Non controlled aqueous liquid wastes generated comprise saline water produced from the drilling and fracing of wells. This water is re-used on site and any excess water is disposed off-site. The quantity of water required to be disposed can exceed 3,000,000 L per year if sufficient number of wells are drilled and fraced and there is no availability for reuse.	Continue liaisons with DoP and EPA and consider requesting an Environment Protection Licence variation if levels are to remain above licence limits.	To be actioned.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 4 Condition 115	Indeterminate	The Applicant shall implement the following bushfire hazard measures at the site: (b) Provision of a 20 metre asset protection zone managed as an inner protection area, around the perimeter of the Gas Treatment Plant and gas well sites;	The requirements have been implemented except for (b). The RPGP site is adjacent to a riparian area with protection requirements and also contains extensive tree plantings, both of which are required by Condition 13.	Confirm with NSW Rural Fire Service that in the absence of the 20 m asset protection zone alternative bushfire hazard measures in place are sufficient to meet their requirements.	To be actioned.
DA 282 Schedule 5 Condition 4	Non-compliant	The Applicant shall review and update the OEMP annually, or as directed by the Director-General.	The OEMP (EHSMP) has not been updated when additional DAs have been issued.	Develop a schedule to ensure that the Operations EHSMP is updated annually.	To be actioned.
DA 282 Schedule 5 Condition 9	Indeterminate	Within one month of completion of the audit, the Applicant must submit a copy of the audit report to the Director-General, the NSW Heritage Office and NSW Agriculture.	Sydney Gas has confirmed that a copy of the audit was forwarded to Department of Planning, but all correspondence details could not be located.	No further action.	No further action.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 282 Schedule 8 Record Keeping	Non-compliant	O5.13 The licensee must record and retain all information related to each consignment of waste.	Evidence that the oily wastewater has been received by the waste treatment plant at Windsor is not always maintained on site.	Ensure that the waste receiver provides a copy of the signed waste transfer documentation.	This requirement has now been removed from the site's Licence.
DA 282 Schedule 8 Reporting Periods	Indeterminate	Regular reporting R4.2 The licensee must supply to the EPA, for each transporter that transported waste from the licensee's premises, the information as set out in Appendix 2, table 1. R4.3 The licensee must supply to the EPA, for each destination within NSW which received waste from the licensee, the information as set out in Appendix 2, table 2. R4.4 Reports to the EPA in accordance with R4.2 and R4.3 shall be supplied.	All waste details are recorded and maintained onsite, however, AGL's waste contractor supplies the EPA with all waste transport and disposal information.	The information required by the NSW EPA during this period should be supplied and future quarterly reports submitted.	This requirement has now been removed from the site's Licence.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 9-1-2005 Condition 4	Indeterminate	The Applicant shall comply with the following in the construction of the gas gathering system pipeline: (g) the Department shall be notified on the completion of any trenching works.	Compliance with the CoC was generally observed. Sydney Gas is unable to locate correspondence to confirm that DoP were notified upon completion of trenching works.	No further action.	No further action.
DA 9-1-2005 Condition 14	Indeterminate	The Applicant shall obtain a Part 3A Permit prior to the commencement of construction of any crossing of a stream by the gas gathering line	It was not confirmed if a 3A Permit was required under this DA.	Confirm whether a 3A Permit was required under this DA, and if so whether it was obtained.	A 3A permit was not required.
DA 9-1-2005 Condition 15	Non-compliant	Except as may be expressly provided for by a licence under the Protection of the Environment Operations Act 1997 in relation to the development, the Applicant shall comply with section 120 of the Protection of the Environment Operations Act 1997, in carrying out this development.	The EPL had not been updated to include the development under this DA. However, a variation was submitted and the current licence now includes the Glenlee development.	No action recommended.	The works subject to this condition were completed pre this audit.

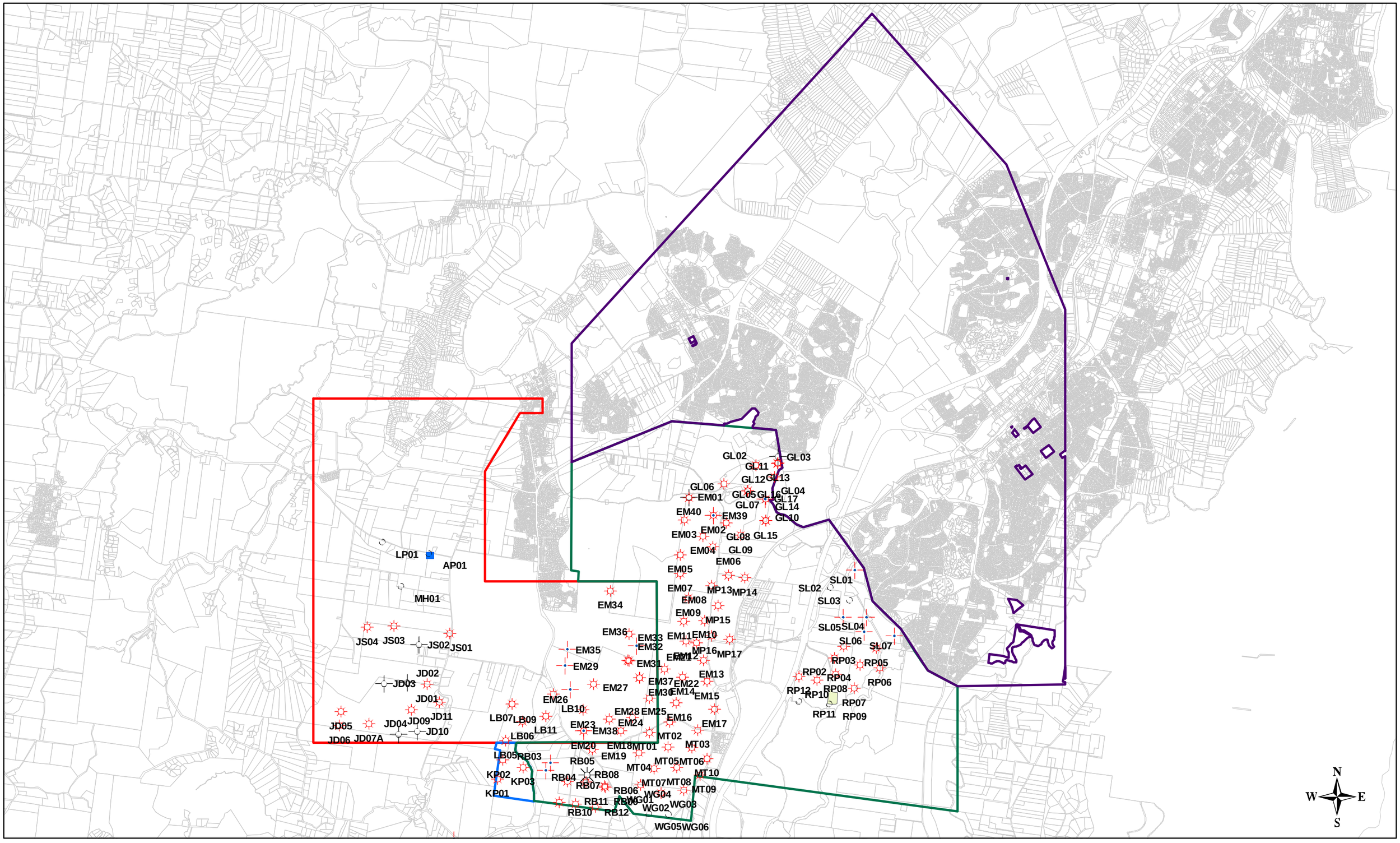
Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 9-1-2005 Condition 33	Non-compliant.	Three months after commencement of operation of the development, the Applicant shall submit to the Director-General a compliance report detailing compliance with Condition 32, including: dates of study/plan/system completion/submission and commencement of construction and commissioning; actions taken or proposed, to implement recommendations made in the studies/plans/systems; and responses to any requirement imposed by the Director-General under Condition 35	A compliance report was not observed for the development subject to this condition.	Confirm whether a compliance report exists for development subject of this condition.	To be actioned.

Section 8 Summary of Environmental Non-compliance Issues and Actions

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment on Non-Compliance	Recommended Action	Action Undertaken by AGL
DA 75-4-2005 Condition 28	Indeterminate	Prior to construction of the wellhead, the Applicant shall provide a Report to the Department from an independent and suitably qualified person approved by the Director-General, to confirm that the design and operation of the wellhead complies with the Department's Locational Guidelines - Development in the Vicinity of Operating Coal Seam Methane Wells (May 2004) for an Automatically Controlled Well (with Separator/Optional Pump). In particular, the Report shall confirm that all safety related systems required by the Guidelines have been included.	Evidence was not available at the time of the site visit to confirm compliance with this CoC. Sydney Gas has confirmed compliance with this condition but could not find correspondence.	No further action.	No further action.
DA 183-8-2004-I Condition 9	Non-compliant	Except as may be expressly provided for by a licence under the Protection of the Environment Operations Act 1997 in relation to the development, the Applicant shall comply with section 120 of the Protection of the Environment Operations Act 1997, in carrying out this development.	The EPL was not updated to include the activities under this DA, however, a variation request was submitted and the Mount Taurus development is now included in EPL No. 12003.	No action recommended.	The works subject to this condition were completed pre this audit.

Figure 1 PPL Locations



AGL

Author: Courtney Collins

Date: 25/10/2007

Ref: 1567R1

PPL Locations

Kilometres

0 2 4 6

Scale 1:80,000

Legend

- PPL1
- PPL2
- PPL4
- PPL5
- P & A
- Producing
- Proposed
- Suspended
- RPGP
- RBTP
- Property Boundaries

Appendix A Air Quality Monitoring Results

Air Monitoring Results – Rosalind Park Gas Plant

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	4	342	348.5	356	N/A
Nitrogen Oxides	Mg/m^3	4	4	204	335.3	428	461
Sulfur Dioxide	Mg/m^3	4	4	<3	5.3	12	7
Oxygen (O2)	%	4	4	12.9	13.4	14.2	N/A
Volumetric Flowrate	M^3/s	4	4	2.65	2.9	3.27	N/A
Molecular Weight of Stack Gases	g/g-mole	4	4	29.2	29.2	29.3	N/A
Sulfuric Acid and sulfur trioxide	Mg/m^3	4	4	<0.7	1.6	3.6	3.1
Dry gas density	Kg/m^3	4	4	1.3	1.3	1.31	N/A
Velocity	m/s	4	4	23.2	24.9	26.8	N/A
Moisture	%	4	4	2.4	6.3	8.3	N/A
Carbon Dioxide	%	4	4	3.8	4.3	4.6	N/A

Appendix A Air Quality Monitoring Results

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	1	1	455	455.0	455	N/A
Nitrogen Oxides	Mg/m^3	1	1	38	38.0	38	461
Sulfur Dioxide	Mg/m^3	1	1	<3	3.0	<3	7
Oxygen (O2)	%	1	1	2.4	2.4	2.4	N/A
Volumetric Flowrate	M^3/s	1	1	0.72	0.7	0.72	N/A
Molecular Weight of Stack Gases	g/g-mole	1	1	29.7	29.7	29.7	N/A
Sulfuric Acid and sulfur trioxide	Mg/m^3	1	1	0.7	0.7	0.7	3.1
Dry gas density	Kg/m^3	1	1	1.33	1.3	1.33	N/A
Velocity	m/s	1	1	18	18.0	18	N/A
Moisture	%	1	1	15.8	15.8	15.8	N/A
Carbon Dioxide	%	1	1	10	10.0	10	N/A

Note. Compressor 2 was installed in December 2006 and commissioned in July 2007. Pre-commissioning air monitoring was carried out in June 2007 and the results are included in the Table above.

Appendix A Air Quality Monitoring Results

EPA Monitoring Point 4							
Pollutant	**Unit**	**No. of Samples Required**	**No. of Samples Collected**	**Lowest Sample**	**Mean of Samples**	**Highest Sample**	**Licence Limit**
Temperature	Degrees Celsius	4	4	250	269.0	304	N/A
Nitrogen Oxides	Mg/m^3	4	4	106	107.3	109	110
Sulfur Dioxide	Mg/m^3	4	4	<0.4	1.9	<3	35
Oxygen (O2)	%	4	4	11.5	13.1	15.7	N/A
Volumetric Flowrate	M^3/s	4	4	0.07	0.1	0.083	N/A
Molecular Weight of Stack Gases	g/g-mole	4	4	29.2	29.3	29.3	N/A
Sulfuric Acid and sulfur trioxide	Mg/m^3	4	4	<0.73	1.5	3.1	1
Dry gas density	Kg/m^3	4	4	1.3	1.3	1.31	N/A
Velocity	m/s	4	4	2.9	3.0	3.1	N/A
Moisture	%	4	4	1.1	5.6	10.5	N/A
Carbon Dioxide	%	4	4	3.1	4.4	5.2	N/A

Appendix A Air Quality Monitoring Results

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	80.5	89.5	99.3	N/A
Nitrogen Oxides	Mg/m^3	4	4	<2	4.3	6	13
Sulfur Dioxide	Mg/m^3	4	4	0.6	2.4	2.9	1042
Oxygen (O2)	%	4	4	1.6	6.0	14.3	N/A
Volumetric Flowrate	M^3/s	4	4	0.001	0.0	0.017	N/A
Molecular Weight of Stack Gases	g/g-mole	4	4	29	30.1	31.5	N/A
Sulfuric Acid and sulfur trioxide	Mg/m^3	4	4	<1.42	8.6	22.3	35
Dry gas density	Kg/m^3	4	4	1.29	1.3	1.41	N/A
Velocity	m/s	4	4	1.5	1.7	1.9	N/A
Moisture	%	4	4	1.3	49.1	85	N/A
Carbon Dioxide	%	4	4	10.4	23.3	53.4	N/A

Appendix A Air Quality Monitoring Results

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	17	25.6	38	N/A
Oxygen (O2)	%	4	4	20.7	20.9	21	N/A
Volumetric Flowrate	M^3/s	4	4	0.2	0.2	0.23	N/A
Molecular Weight of Stack Gases	g/g-mole	4	4	28.8	28.8	28.8	N/A
Odour	ou	4	4	<19	96.5	271	N/A
Dry gas density	Kg/m^3	4	4	1.29	1.3	1.29	N/A
Velocity	m/s	4	4	7	7.6	8	N/A
Moisture	%	4	4	0	1.0	2.5	N/A
Carbon Dioxide	%	4	4	0	0.1	0.3	N/A

Appendix B

Flare Event Monitoring

The RPGP flare log is provided in this Appendix from July 2006 to June 2007.

Date	Time	Duration (hh:mm)	Light (Day, Dusk, Night, Dawn)	Plant Throughput at Time of Flare Occurrence (GJ/hr)	Plant Discharge Pressure (kPa)	No. Compressors Online	No. Cooler Fans Online	Cause of Flare Occurrence
04-Jul-06	13:30	0:30	Day	407	4382	1	2	Instrument Fault.
04-Jul-06	20:30	0:30	Night	407	4382	1	2	Instrument Fault.
05-Jul-06	05:45	0:30	Dawn	402	4382	1	2	Instrument Fault.
11-Jul-06	19:40	0:16	Night	367	4228	1	2	High inlet differential from soaping
11-Jul-06	20:30	0:10	Night	467	4283	1	2	High inlet differential from soaping
14-Aug-06	13:00	0:40	Day	408	4368	1	2	False ESD problem Caused by contractor pulling cable
15-Aug-06	12:12	0:21	Day	409	4365	1	2	False ESD problem Caused by contractor pulling cable
15-Aug-06	17:00	0:10	Dusk	413	4383	1	2	Replacement of leaking PSV 271 on TEG unit
03-Sep-06	07:55	5:25	Day	406	4165	1	2	Cool down S/D scheduled maintenance
04-Sep-06	05:28	1:32	Dawn	390	4395	1	2	Compressor ignition system fault
04-Sep-06	08:02	0:50	Day	456	4378	1	2	Engine Speed Sensor Failure
11-Sep-06	10:12	0:42	Day	389	4387	1	2	AFM control unit reprogram
12-Sep-06	09:55	1:22	Day	327	4382	1	2	Replacement of flexible oil pipe causing major oil leak
15-Sep-06	20:23	0:30	Night	261	4388	1	2	High inlet differential from soaping

Appendix B

Flare Event Monitoring

Date	Time	Duration (hh:mm)	Light (Day, Dusk, Night, Dawn)	Plant Throughput at Time of Flare Occurrence (GJ/hr)	Plant Discharge Pressure (kPa)	No. Compressors Online	No. Cooler Fans Online	Cause of Flare Occurrence
12-Oct-06	11:02	0:22	Day	406	4427	0	3	Plant unknown ESD
17-Nov-06	11:00	1.30	day					getting plant back on line after planned shut down
23-Nov-06	09:00	0:50	day					due to bad fuel gas
21-Dec-06	09:00	0:45	day					Power failure S/D
28-Feb-07	14:51	4:44	Day			0		Power Failure
01-Apr-07	04:37	0:29	Day			0		Plant ESD
19-Jun-07	09:37	4:29	Day / Dusk			0		Comp 2 and 3 trip, Plant ESD