



## Interagency Report on Regulatory Activities

# for AGL's Gloucester Coal Seam Gas Operations - Waukivory Pilot Project: Hydraulic Fracture Stimulation

December 2014



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## Purpose of the Report

- This document provides a summary of regulatory activities carried out by the following agencies in relation to AGL's Waukivory Coal Seam Gas Pilot Project within Petroleum Exploration Licence (PEL) 285:
  - Environment Protection Authority (EPA)
  - Office of Coal Seam Gas (OCSG)
  - NSW Office of Water (NOW)
  - Department of Planning and Environment (Planning)
- The Waukivory Coal Seam Gas Pilot Project involved the hydraulic fracture stimulation of four wells at the Waukivory site. The report covers the period 6 August to 6 December 2014.
- The Waukivory operation is in Petroleum Exploration Licence (PEL) 285.

## Waukivory Pilot Project

Areas/activities requiring regulation:

Area	Grant	Expiry	Responsible Agency	Legislation
Activity approval - initial	6 August 2014	6 August 2016	OCSG	Petroleum (Onshore) Act 1991
Activity approval – additional approvals	23 September 2014	6 August 2016	OCSG	Petroleum (Onshore) Act 1991
PEL285 Conditions	4 August 2014	4 August 2020	OCSG	Petroleum (Onshore) Act 1991
Environment Protection Licence 20358	Updated 6 August	Ongoing until surrendered, suspended or revoked.	EPA	Protection of the Environment Operations Act 1997

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## Summary of Regulators Activities

### Environment Protection Authority (EPA)

The EPA is the lead regulator of environmental and health impacts of CSG activities in NSW with responsibility for compliance and enforcement. All exploration, assessment and production activities, once approved by OCSG or DP&E, are required to hold an environment protection licence issued by the EPA.

#### Legislation administered by the EPA

The EPA has responsibilities and functions under the following NSW environmental legislation.

*Protection of the Environment Administration Act 1991*

*Protection of the Environment Operations Act 1997*

*Contaminated Land Management Act 1997*

*Dangerous Goods (Road and Rail Transport) Act 2008*

*Environmentally Hazardous Chemicals Act 1985*

*Forestry Act 2012*

*National Environment Protection Council (New South Wales) Act 1995*

*Ozone Protection Act 1989*

*Pesticides Act 1999*

*Radiation Control Act 1990*

*Recreation Vehicles Act 1983*

*Waste Avoidance and Resource Recovery Act 2001*

A brief summary of these Acts may be accessed from the EPA's website at:

<http://www.epa.nsw.gov.au/legislation/Actssummaries.htm>

#### Environment protection licences

The activities listed in Schedule 1 to the POEO Act (broadly, activities with potentially significant environmental impacts) require an environment protection licence (EPL) issued by the EPA. The licences are issued subject to conditions. Licence conditions can control the air, noise, water and waste impacts of an activity. Licences are ongoing but subject to review at least once every five years and can be varied, suspended or revoked. Importantly the licence needs to be generally consistent with the activity's approval or consent.

Copies of all EPLs are publicly available on the EPA website.

The EPA inspected the premises on 13 separate occasions during the reporting period. This included both prior to and during the fracture stimulation activities. As part of the EPA's regulatory activities the EPA has undertaken noise monitoring, leak detection at CSG well heads and water quality monitoring.

The following inspections were carried out:

Date	Purpose	Comments
04 September 2014	Routine Site Inspection	Assessment of discharge from Catch Dams East and West, leak detection undertaken
18 September 2014	Opportunistic Site Inspection	Site inspection following Gloucester meeting
24 September 2014	Routine Site Inspection	Leak detection undertaken
16 October 2014	Routine Site Inspection	Leak detection undertaken
21 October 2014	Routine Site Inspection	Inspection of wireline operations, noise monitoring, leak detection and water quality monitoring undertaken
27 October 2014	Routine Site Inspection	Fracture stimulation event noise monitoring and leak detection undertaken
28 October 2014	Routine Site Inspection	Fracture stimulation event monitored, leak detection undertaken
30 October 2014	Routine Site Inspection	Fracture stimulation event monitored, noise monitoring and leak detection undertaken
04 November 2014	Routine Site Inspection	Fracture stimulation event monitored, noise monitoring and leak detection undertaken
11 November 2014	Routine Site Inspection	Leak detection undertaken
17 November 2014	Routine Site Inspection	Fracture stimulation event monitored, noise monitoring and leak detection undertaken
19 November 2014	Routine Site Inspection	Fracture stimulation event monitored, noise monitoring undertaken
24 November 2014	Routine Site Inspection	Fracture stimulation event monitored, noise monitoring and leak detection undertaken
9 December 2014	Routine Site Inspection	Leak detection undertaken, groundwater monitoring

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### Findings

During the EPA's site inspection there were no EPL non-compliances or breaches of the POEO Act identified.

### Actions

No further action required.

### Access to data, reports

Under the POEO Act, holders of environment protection licences must publish or make pollution monitoring data available to members of the public. This must occur in a timely manner.

### Ongoing activities

The EPA will continue to undertake routine site inspections of the premises to check for ongoing EPL compliance.

To report any pollution incidents, telephone the Environment Line on 131 555.

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## Office of Coal Seam Gas (OCSG)

### Summary

Since 6th August 2014 Waukivory Pilot Project approval date:

- 26 separate site inspections (Environmental Operations 16, Petroleum Safety 8, Regulatory Audit and Investigations Team 2)
- 17 separate inspections days (Environmental Operations 7, Petroleum Safety 8, Regulatory Audit and Investigations Team 2)

Furthermore, during the Waukivory Pilot Project activity approval assessment period (29th September 2013 - 6th August 2014), the following inspections were carried out:

- 16 separate site inspections (Environmental Operations 12, Petroleum Safety 4)
- 4 separate inspections days (Environmental Operations 3, Petroleum Safety 1)

The OCSG is responsible for:

- administering CSG titles and activity approvals granted under the *Petroleum (Onshore) Act 1991* and associated assessments under the *Environmental Planning and Assessment Act 1979*;
- monitoring and auditing title compliance, including in relation to rehabilitation and security deposits;
- the application of workplace health and safety requirements under the *Petroleum (Onshore) Act 1991* and the Work Health and Safety Act 2011 (NSW) to petroleum operations; and
- general enforcement and compliance of CSG operations within these acts.

Under the *Petroleum (Onshore) Act 1991*, inspectors and officers authorised by the Director-General have access to any land, building, structure, equipment, book, accounts, documents and other records relating to the petroleum title.

Appointed Inspectors have powers to use a range of enforcement tools including notices to suspend operations or to carry out defined improvements. Inspectors can immediately stop operations if they believe that to continue would jeopardise the health or safety of workers or the community.

Inspectors have the power to enter a work site at any time to inspect operations.

The following inspections were carried out:

Date	Inspectors	Site(s)	Notes
27-Nov-14	Operations Team (Environment)	Waukivory (WK) 11, WK13, WK12, WK14	<ul style="list-style-type: none"> <li>Inspected WK13 during workover operation (post fracture stimulation activities).</li> <li>Inspected WK12 and WK14 post fracture stimulation activities.</li> <li>Inspected WK11 to assess current condition and maintenance.</li> <li>Inspected Jacks Road site access to assess condition and maintenance.</li> </ul>
27-Nov-14	Operations Team (Environment)	WKMB06A, WKMB06B (associated Category 1 groundwater monitoring bores)	<ul style="list-style-type: none"> <li>Inspected rehabilitation of recent drilling works.</li> </ul>
24-Nov-14	Petroleum Safety	WK11	<ul style="list-style-type: none"> <li>Safety inspection during operations.</li> </ul>
22-Nov-14	Petroleum Safety	WK12	<ul style="list-style-type: none"> <li>Safety inspection during operations.</li> </ul>
14-Nov-14	Regulatory Audit and Investigations Unit	Waukivory Pilot Project, truck movements, etc.	<ul style="list-style-type: none"> <li>Assessed matters pertaining to complaints (e.g. truck movements).</li> </ul>
12-Nov-14	Petroleum Safety	Safety Inspection	<ul style="list-style-type: none"> <li>Safety inspection during operations</li> </ul>
11-Nov-14	Operations Team (Environment)	WKMB06A, WKMB06B	<ul style="list-style-type: none"> <li>Inspected sites during drilling operations.</li> </ul>
11-Nov-14	Operations Team (Environment)	WK11, WK12	<ul style="list-style-type: none"> <li>Inspected WK11 prior to fracture stimulation activities.</li> <li>Inspected WK12 during perforation and fracture stimulation activities.</li> </ul>
7-Nov-14	Petroleum Safety	Safety Inspection	<ul style="list-style-type: none"> <li>Inspection of workover rig</li> </ul>
5-Nov-14	Regulatory Audit and Investigations Unit	WK13	<ul style="list-style-type: none"> <li>Took samples of fracture stimulation fluid additives.</li> </ul>
4-Nov-14	Petroleum Safety	WK13	<ul style="list-style-type: none"> <li>Inspection of microseismic monitoring activities with independent expert witness.</li> </ul>
30-Oct-14	Petroleum Safety	WK13	<ul style="list-style-type: none"> <li>Safety inspection during operations.</li> </ul>
29-Oct-14	Petroleum Safety	WK13	<ul style="list-style-type: none"> <li>Explosives storage and licence inspection.</li> </ul>
28-Oct-14	Operations Team (Environment)	WK13	<ul style="list-style-type: none"> <li>Inspected WK13 during perforation and fracture stimulation activities.</li> <li>Took samples of fracture stimulation fluid additives.</li> </ul>
22-Oct-14	Petroleum Safety	WK13	<ul style="list-style-type: none"> <li>Explosives storage and licence inspection.</li> </ul>
21-Oct-14	Petroleum Safety	WK13	<ul style="list-style-type: none"> <li>Safety inspection during operations.</li> </ul>

Date	Inspectors	Site(s)	Notes
14-Oct-14	Petroleum Safety	WK13	<ul style="list-style-type: none"> <li>Safety inspection of site before fracture stimulation activities commenced.</li> </ul>
3-Sep-14	Operations Team (Environment)	WK11, WK13, WK12, WK14	<ul style="list-style-type: none"> <li>Inspected condition and maintenance of civil works.</li> </ul>
13-Aug-14	Operations Team (Environment)	Waukivory Creek near WK13	<ul style="list-style-type: none"> <li>Inspection of potential incident during underboring identified and disclosed by AGL – investigation found an <b>incident had not occurred</b>.</li> </ul>
17-Jul-14	Operations Team (Environment)	WK11, WK13, WK12, WK14, Tiedmans Irrigation Program (disposal location for produced water)	<ul style="list-style-type: none"> <li>Inspected sites to assist in current security review.</li> </ul>
18-Jun-14	Operations Team (Environment)	Waukivory (WK) 11, WK13, WK12, WK14	<ul style="list-style-type: none"> <li>General environmental inspection.</li> </ul>
18-Jun-14	Petroleum Safety	Waukivory (WK) 11, WK13, WK12, WK14	<ul style="list-style-type: none"> <li>General safety inspection of suspended wells.</li> </ul>
24-Oct-13	Operations Team (Environment)	WK11, WK13, WK12, WK14, Tiedmans Irrigation Program	<ul style="list-style-type: none"> <li>REF Inspection to groundtruth activity application and gain site familiarisation.</li> </ul>

## BTEX

NSW Trade & Investment Policy TI-O-120 states that the use of the volatile organic compounds benzene, toluene, ethylbenzene and xylene (BTEX) in CSG drilling additives and CSG fracture stimulation additives is prohibited.

OCSG tested chemicals used by AGL and found they complied with the policy, that is less than:

- 0.001 mg/L for benzene
- 0.8 mg/L for toluene
- 0.3 mg/L for ethylbenzene
- 0.6 mg/L for xylene

## Inspection Findings

Several minor safety issues were identified during inspections (oil leaks, safety pin design, missing hand rail) and were dealt with to the satisfaction of the Inspector. In general health & safety management has been attended to very well with appropriate procedures in place and equipment meeting required standards. No notices were required to be issued to the operator.

Two minor incidents were reported: neck & back pain for one operator and superficial ankle injury for another.

Analysis of microseismic monitoring data will be conducted by an independent expert to determine the results of the fracture stimulation of Waukivory 13.



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### Ongoing activities

Further safety inspections until the wells are completed.

Members of the public can report an alleged breach of the *Petroleum (Onshore) Act 1991* here email: [compliance.environment@trade.nsw.gov.au](mailto:compliance.environment@trade.nsw.gov.au)

### **NSW Office of Water (NOW)**

The NSW Office of Water is responsible for managing the state's water sources. A key part of this responsibility is ensuring compliance with water management legislation to enable the secure and sustainable sharing of water between users.

The Office of Water Compliance Policy explains how we work to prevent, detect and stop illegal water activities. This includes:

- assisting the community to understand their water rights and how to comply with the rules
- monitoring water related activities to identify potential breaches
- investigating alleged breaches and taking appropriate action when a breach occurs.

A water licence or other approval from the NSW Office of Water is generally required to extract water from rivers or aquifers to use for commercial purposes.

NSW is currently operating under two pieces of legislation relevant to water licences and water trading (the buying and selling of water licences or annual allocation water):

- The Water Management Act 2000 governs the issue of new water licences and the trade of water licences and allocations for those water sources (rivers, lakes and groundwater) in NSW where water sharing plans have commenced.
- The Water Act 1912 governs the issue of water licences in other areas.

### Waukivory Pilot Project

The four Waukivory wells are licenced for the extraction of groundwater under the *Water Act 1912*. NOW did not carry out any regulatory activities during this reporting period.

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## Department of Planning and Environment (DPE)

AGL has received the following approvals under the former Part 3A of the *Environmental Planning and Assessment Act 1979* for the Gloucester Gas Project:

- Gloucester Gas Project Concept Plan
- Gloucester Gas Project Stage 1
- Gloucester Gas Project Modification 1 – Pipeline Realignments

Because AGL has not yet commenced any works under these approvals, DPE has not undertaken any regulatory activities to date against those approvals. When AGL does commence works, DPE's compliance and post approval branch will be responsible for:

- investigating alleged breaches of conditions of approval;
- conducting inspections and strategic campaigns (pro-active and reactive);
- responding to complaints;
- assessing post approval reports;
- assessing environmental management plans.