

The logo consists of a large tan square with the text "Energy in action.™" in blue. Below this are three smaller tan squares of varying sizes, and a small blue square containing the AGL logo.

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AGL

AGL UPSTREAM INVESTMENTS PTY LTD

CAMDEN GAS PROJECT

Monthly Flare Pit Water Quality Monitoring Report

Reporting Period: October 2016

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Foreword

| | |
|---------------------------|--|
| PREMISES | Rosalind Park Gas Plant Lot 35 Medhurst Road GILEAD NSW 2560 |
| LICENCE DETAILS | Environment Protection Licence 12003 |
| LICENCEE | AGL Upstream Investments Pty Limited (AGL) |
| LICENCEE'S ADDRESS | Locked Bag 1837, North Sydney, NSW 2060 |
| MONITORING DATE | October 2016 (06 October 2016) |
| MONITORING BY | AGL |
| ANALYSIS BY | ALS Laboratory, Smithfield (Work order number: ES1622422) |
| DATE DATA OBTAINED | 13 October 2016 |
| REPORT DATE | 24 October 2016 |
| REPORT PREPARED BY | A. Clifton, Environment Business Partner |

Introduction

Rosalind Park Gas Plant, located approximately 60km south west of Sydney, is a natural gas processing and treatment plant, used to process coal seam natural gas from the Camden Gas Project.

The premises are covered by Environment Protection Licence 12003 which includes all gas wells, gas gathering, reticulation systems, trunk lines and associated effluent storage areas and work areas of the Camden Gas Project.

This Monitoring Report relates to those water monitoring activities specified in Part 5, Monitoring and Recording Conditions, of the Environment Protection Licence, specifically monitoring point 16 (Rosalind Park Gas Plant Flare Pit) (Table 1). The Licence conditions stipulate water monitoring is required to be carried out at the locations, at the frequency and using the test methods as set out in Table 2. Table 3 presents the results of this month's water monitoring. This report is prepared in accordance with the Requirements for Publishing Pollution Monitoring Data (EPA, October, 2013) (**Publication Requirements**).

The water quality samples are analysed by an external NATA certified laboratory (ALS Environmental, Smithfield), in accordance with the EPA Approved Methods Publication "*Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales*" (EPA, 2004), with the exception of phenols and PAHs, which were analysed with an alternate method following written approval from the EPA (EPA, 2014) (refer to Table 2 for analytical methodology).



Table 1- Flare pit water quality monitoring point location

| EPA monitoring point | Location | Latitude | Longitude |
|----------------------|----------|--------------|---------------|
| 16 | RFPF | 34°07'17.0"S | 150°46'08.1"E |

Coordinate reference system: Map Grid of Australia 1994 Zone 56

Table 2 – Analytes monitored, frequency (as per EPL 12003) and methodology

| Analyte | Units of measure | Frequency | Sampling Method | Analytical method |
|-------------------------------------|-----------------------------|-----------|-----------------|---|
| BOD | milligrams per litre | Monthly | Grab sample | APHA 5210 B using APHA 4500-O G for the determination of dissolved oxygen |
| Electrical conductivity | Microsiemens per centimetre | Monthly | Grab sample | APHA (1998) section 2510 B |
| Oil and grease | milligrams per litre | Monthly | Grab sample | APHA 5520 B |
| Phenols | micrograms per litre | Monthly | Grab sample | USEPA (1996a) method 8270 D |
| Total organic carbon | milligrams per litre | Monthly | Grab sample | APHA 5310 B |
| Total PAH's | micrograms per litre | Monthly | Grab sample | USEPA (1996a) method 8270 D |
| Total petroleum hydrocarbons | micrograms per litre | Monthly | Grab sample | USEPA (1996h) method 8015B |
| Total suspended solids | milligrams per litre | Monthly | Grab sample | APHA 2540 D |

Table 3 – Flare pit water monitoring results – October 2016

| | | Monitoring point | 16 |
|--------------------------------|-------|--------------------|------------|
| | | Location | RFPF |
| | | Sampled Date | 06/10/2016 |
| | | Data obtained | 13/10/2016 |
| Analyte | Units | Limit of reporting | |
| BOD | mg/L | 2 | 57 |
| Electrical conductivity | µS/cm | 1 | 8360 |
| Oil and grease | mg/L | 5 | <5 |
| Phenols | | | |
| Phenol | µg/L | 1 | <1.0 |
| 2-Chlorophenol | µg/L | 1 | <1.0 |
| 2-Methylphenol | µg/L | 1 | <1.0 |
| 3- & 4-Methylphenol | µg/L | 2 | <2.0 |
| 2-Nitrophenol | µg/L | 1 | <1.0 |
| 2,4-Dimethylphenol | µg/L | 1 | <1.0 |
| 2,4-Dichlorophenol | µg/L | 1 | <1.0 |
| 2,6-Dichlorophenol | µg/L | 1 | <1.0 |
| 4-Chloro-3-methylphenol | µg/L | 1 | <1.0 |
| 2,4,6-Trichlorophenol | µg/L | 1 | <1.0 |
| 2,4,5-Trichlorophenol | µg/L | 1 | <1.0 |
| Pentachlorophenol | µg/L | 2 | <2.0 |

| | | Monitoring point | 16 |
|---|-------|--------------------|------------|
| | | Location | RFPF |
| | | Sampled Date | 06/10/2016 |
| | | Data obtained | 13/10/2016 |
| Analyte | Units | Limit of reporting | |
| Total organic carbon | mg/L | 1 | 298 |
| Total PAH's | | | |
| Naphthalene | µg/L | 1 | <1.0 |
| Acenaphthylene | µg/L | 1 | <1.0 |
| Acenaphthene | µg/L | 1 | <1.0 |
| Fluorene | µg/L | 1 | <1.0 |
| Phenanthrene | µg/L | 1 | <1.0 |
| Anthracene | µg/L | 1 | <1.0 |
| Fluoranthene | µg/L | 1 | <1.0 |
| Pyrene | µg/L | 1 | <1.0 |
| Benz(a)anthracene | µg/L | 1 | <1.0 |
| Chrysene | µg/L | 1 | <1.0 |
| Benzo(b+j)fluoranthene | µg/L | 1 | <1.0 |
| Benzo(k)fluoranthene | µg/L | 1 | <1.0 |
| Benzo(a)pyrene | µg/L | 0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | µg/L | 1 | <1.0 |
| Dibenz(a.h)anthracene | µg/L | 1 | <1.0 |
| Benzo(g.h.i)perylene | µg/L | 1 | <1.0 |
| Sum of polycyclic aromatic hydrocarbons | µg/L | 0.5 | <0.5 |
| Benzo(a)pyrene TEQ (zero) | µg/L | 0.5 | <0.5 |
| Total petroleum hydrocarbons | | | |
| C6 - C9 Fraction | µg/L | 20 | <20 |
| C10 - C14 Fraction | µg/L | 50 | <50 |
| C15 - C28 Fraction | µg/L | 100 | <100 |
| C29 - C36 Fraction | µg/L | 50 | <50 |
| C10 - C36 Fraction (sum) | µg/L | 50 | <50 |
| Total suspended solids | mg/L | 5 | 8 |

References

- Environment Protection Authority (EPA), 2014. Letter correspondence to AGL Upstream Investments Pty Ltd., titled: *Environment Protection Licence 12003*, EPA reference: EF13/2522:DOC14/95163-07:CK, dated 28 August 2014, signed: Greg Newman (Acting Manager Illawarra).
- Environment Protection Authority (EPA), 2004. Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales, The Department of Environment and Conservation, Sydney, Australia. Available online: <http://www.environment.nsw.gov.au/resources/water/approvedmethods-water.pdf>
- The State of NSW and Environment Protection Authority (EPA), 2013. Requirements for publishing pollution monitoring data. Environment Protection Authority, Sydney, Australia. Available online: <http://www.epa.nsw.gov.au/resources/licensing/130742reqpubpmdata.pdf>