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**AGL UPSTREAM INVESTMENTS PTY LTD
ROSALIND PARK GAS PLANT
Quarterly Air Monitoring Report**

Reporting Period: 4th Quarter – December 2015

AGL Upstream Investments Pty Ltd

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Foreword

PREMISES	Rosalind Park Gas Plant Lot 35 Medhurst Road GILEAD NSW 2560
LICENCE DETAILS	<u>Environment Protection Licence 12003</u>
LICENCEE	AGL Upstream Investments Pty Limited
LICENCEE'S ADDRESS	Locked Bag 1837, St Leonards, NSW 2065
MONITORING DATE	4 th Quarter – 01 December 2015
MONITORING BY	Ektimo
ANALYSIS BY	Ektimo (laboratory report number R001964)
OBTAINED DATA DATE	17 December 2015 (Ektimo Report R001964)
REPORT DATE	23 December 2015
REPORT PREPARED BY	Aaron Clifton Environment Manager

SUMMARY OF ACTIVITY

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.

Produced natural gas is cleaned, dehydrated, compressed and odourised before being measured and transported by pipeline about 500 metres into the nearby Moomba to Sydney Natural Gas Pipeline. 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 air monitoring activities specified in Part 5, Monitoring and Recording Conditions, of the Environment Protection Licence. The Licence conditions stipulate air monitoring is required to be carried out at the locations, at the frequency and using the test methods as set out in the tables below.

This report sets out the results of quarterly monitoring. A separate report is issued for continuous monitoring.

This report is prepared in accordance with the *Requirements for Publishing Pollution Monitoring Data* (EPA, October 2013) (**Publication Requirements**).

AIR MONITORING LOCATIONS

Point	Location	Monitoring Frequency
1	Exhaust Stack 1 on Compression Engine 1	Quarterly
2	Exhaust Stack 2 on Compression Engine 2	Quarterly
3	Exhaust Stack 3 on Compression Engine 3	Quarterly
4	Reboiler Flue	Quarterly
5	Reflux Column Vent	Quarterly
6	Carbon Scrubber Vent	Quarterly

Note: monitoring is only undertaken when the compression engines are running.

AIR MONITORING TEST METHODS – POINTS 1, 2, 3, 4 and 5

Parameter	NSW EPA Test Method (Sampling Method)
Carbon dioxide	TM-24
Dry gas density	TM-23
Moisture	TM-22
Molecular weight of stack gases	TM-23
Nitrogen Oxides	TM-11
Oxygen (O ₂)	TM-25
Sulfuric acid mist and sulphur trioxide (as SO ₃)	TM-3
Sulphur dioxide	TM-4
Temperature	TM-2
Velocity	TM-2
Volumetric flowrate	TM-2



AIR MONITORING TEST METHODS – POINT 6

Parameter	NSW EPA Test Method (Sampling Method)
Carbon dioxide	TM-24
Dry gas density	TM-23
Moisture	TM-22
Molecular weight of stack gases	TM-23
Odour	OM-7
Oxygen (O ₂)	TM-25
Temperature	TM-2
Velocity	TM-2
Volumetric flowrate	TM-2



Air Monitoring Results

Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Average Concentration	Concentration limit
1	Compressor Engine 1	Carbon dioxide	Percent		TM-24	Quarterly	No Result*	Not applicable
		Dry gas density	Kilograms per cubic metre		TM-23	Quarterly	No Result*	Not applicable
		Moisture	Percent		TM-22	Quarterly	No Result*	Not applicable
		Molecular weight of stack gases	Grams per gram mole		TM-23	Quarterly	No Result*	Not applicable
		Nitrogen Oxides (as NO ₂ equivalent)	Milligrams per cubic metre	7% oxygen	TM-11	Quarterly	No Result*	461
		Oxygen (O ₂)	Percent		TM-25	Quarterly	No Result*	Not applicable
		Sulfuric acid mist and sulphur trioxide (as SO ₃)	Milligrams per cubic metre		TM-3	Quarterly	No Result*	5.0
		Sulphur dioxide	Milligrams per cubic metre		TM-4	Quarterly	No Result*	7
		Temperature	Degrees Celsius		TM-2	Quarterly	No Result*	Not applicable
		Velocity	Metres per second		TM-2	Quarterly	No Result*	Not applicable
		Volumetric flowrate	Cubic metres per second		TM-2	Quarterly	No Result*	Not applicable

*Due to mechanical issues, Compressor Engine 1 was not operating during the 4th quarter 2015.



Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Average Concentration	Concentration limit
2	Compressor Engine 2	Carbon dioxide	Percent		TM-24	Quarterly	11.7	Not applicable
		Dry gas density	Kilograms per cubic metre		TM-23	Quarterly	1.34	Not applicable
		Moisture	Percent		TM-22	Quarterly	20	Not applicable
		Molecular weight of stack gases	Grams per gram mole		TM-23	Quarterly	30.0	Not applicable
		Nitrogen Oxides (as NO ₂ equivalent)	Milligrams per cubic metre	7% oxygen	TM-11	Quarterly	32	461
		Oxygen (O ₂)	Percent		TM-25	Quarterly	0.5	Not applicable
		Sulfuric acid mist and sulphur trioxide (as SO ₃)	Milligrams per cubic metre		TM-3	Quarterly	0.085	5.0
		Sulphur dioxide	Milligrams per cubic metre		TM-4	Quarterly	<5.4	7
		Temperature	Degrees Celsius		TM-2	Quarterly	493	Not applicable
		Velocity	Metres per second		TM-2	Quarterly	29	Not applicable
Volumetric flowrate	Cubic metres per second		TM-2	Quarterly	0.94	Not applicable		



Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Average Concentration	Concentration limit
3	Compressor Engine 3	Carbon dioxide	Percent		TM-24	Quarterly	11.8	Not applicable
		Dry gas density	Kilograms per cubic metre		TM-23	Quarterly	1.34	Not applicable
		Moisture	Percent		TM-22	Quarterly	21	Not applicable
		Molecular weight of stack gases	Grams per gram mole		TM-23	Quarterly	30.0	Not applicable
		Nitrogen Oxides (as NO ₂ equivalent)	Milligrams per cubic metre	7% oxygen	TM-11	Quarterly	17	461
		Oxygen (O ₂)	Percent		TM-25	Quarterly	0.5	Not applicable
		Sulfuric acid mist and sulphur trioxide (as SO ₃)	Milligrams per cubic metre		TM-3	Quarterly	0.037	5.0
		Sulphur dioxide	Milligrams per cubic metre		TM-4	Quarterly	<5.4	7
		Temperature	Degrees Celsius		TM-2	Quarterly	502	Not applicable
		Velocity	Metres per second		TM-2	Quarterly	30	Not applicable
		Volumetric flowrate	Cubic metres per second		TM-2	Quarterly	0.95	Not applicable



Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Average Concentration	Concentration limit
4	Reboiler Flue	Carbon dioxide	Percent		TM-24	Quarterly	5	Not applicable
		Dry gas density	Kilograms per cubic metre		TM-23	Quarterly	1.31	Not applicable
		Moisture	Percent		TM-22	Quarterly	7.4	Not applicable
		Molecular weight of stack gases	Grams per gram mole		TM-23	Quarterly	29.4	Not applicable
		Nitrogen Oxides (as NO ₂ equivalent)	Milligrams per cubic metre	7% oxygen	TM-11	Quarterly	49	110
		Oxygen (O ₂)	Percent		TM-25	Quarterly	12.1	Not applicable
		Sulfuric acid mist and sulphur trioxide (as SO ₃)	Milligrams per cubic metre		TM-3	Quarterly	<0.034	3.5
		Sulphur dioxide	Milligrams per cubic metre		TM-4	Quarterly	<5.4	35
		Temperature	Degrees Celsius		TM-2	Quarterly	276	Not applicable
		Velocity	Metres per second		TM-2	Quarterly	<2.1	Not applicable
		Volumetric flowrate	Cubic metres per second		TM-2	Quarterly	<0.051	Not applicable



Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Average Concentration	Concentration limit
5	Reflux Column Vent	Carbon dioxide	Percent		TM-24	Quarterly	12.8	Not applicable
		Dry gas density	Kilograms per cubic metre		TM-23	Quarterly	1.35	Not applicable
		Moisture	Percent		TM-22	Quarterly	66	Not applicable
		Molecular weight of stack gases	Grams per gram mole		TM-23	Quarterly	30.2	Not applicable
		Nitrogen Oxides (as NO ₂ equivalent)	Milligrams per cubic metre	7% oxygen	TM-11	Quarterly	<2.8	13
		Oxygen (O ₂)	Percent		TM-25	Quarterly	<0.4	Not applicable
		Sulfuric acid mist and sulphur trioxide (as SO ₃)	Milligrams per cubic metre		TM-3	Quarterly	1.2	35
		Sulphur dioxide	Milligrams per cubic metre		TM-4	Quarterly	<5.4	1042
		Temperature	Degrees Celsius		TM-2	Quarterly	89	Not applicable
		Velocity	Metres per second		TM-2	Quarterly	<2	Not applicable
		Volumetric flowrate	Cubic metres per second		TM-2	Quarterly	<0.0039	Not applicable



Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Average Concentration	Concentration limit
6	Carbon Scrubber Vent	Carbon dioxide	Percent		TM-24	Quarterly	<0.3	Not applicable
		Dry gas density	Kilograms per cubic metre		TM-23	Quarterly	1.29	Not applicable
		Moisture	Percent		TM-22	Quarterly	0.96	Not applicable
		Molecular weight of stack gases	Grams per gram mole		TM-23	Quarterly	29	Not applicable
		Odour	Odour Units		OM-7	Quarterly	160	Not applicable
		Oxygen (O ₂)	Percent		TM-25	Quarterly	20.9	Not applicable
		Temperature	Degrees Celsius		TM-2	Quarterly	43	Not applicable
		Velocity	Metres per second		TM-2	Quarterly	5.9	Not applicable
		Volumetric flowrate	Cubic metres per second		TM-2	Quarterly	0.14	Not applicable