

AGL – ROSALIND PARK GAS PLANT

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ANNUAL COMPLIANCE NOISE MONITORING – 2022

RWDI # 2200822.17

21 December 2022

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GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} – The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} – The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (L_{A90}) for each period.

RBL – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

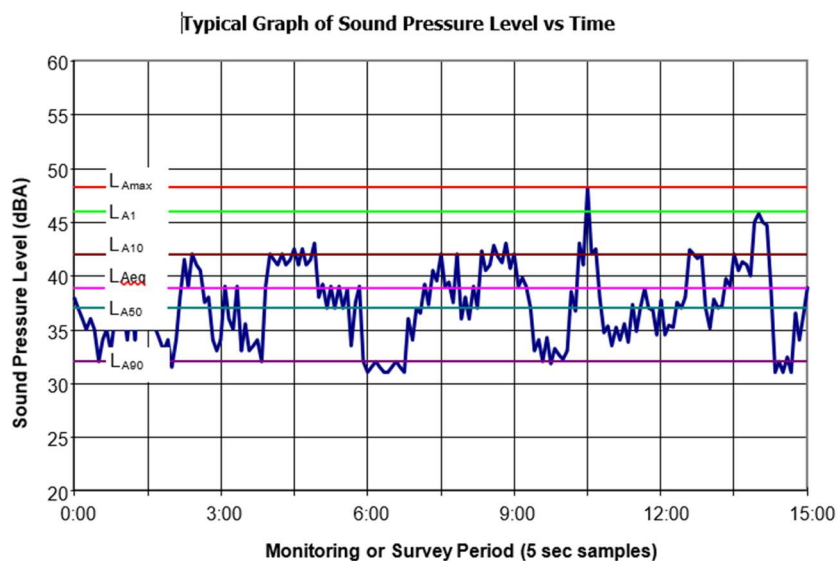




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1 INTRODUCTION

Noise monitoring of the AGL Upstream Investments Pty Ltd Rosalind Park Gas Plant (RPGP) was carried out by RWDI Australia Pty Ltd (RWDI) in order to assess compliance with the relevant noise limits set by the NSW Environment Protection Authority (EPA) Environment Protection Licence conditions (Licence No. 12003) and the Department of Planning and Environment’s Conditions of Consent (DA No. 282-6-2003-i).

Noise monitoring was undertaken in accordance with the *NSW Industrial Noise Policy (INP)* (NSW EPA, 2017), and *Approved Methods for the Measurements and Analysis of Environmental Noise in NSW* (NSW EPA, 2022).

This Annual Noise Compliance Monitoring Report is based on quarterly noise monitoring conducted by RWDI on 15 April, 20 June, 16 September, and 7 December 2022. The report has been prepared to satisfy the EPA’s Licence Condition R1.9 (Licence No. 12003).

2 NOISE-SENSITIVE RECEIVERS

Two receiver locations were identified in the RPGP Environmental Impact Statement (EIS) where compliance noise measurements are to be undertaken. These are shown in **Figure 3-1** and are listed as follows:

- R1: Medhurst Road, Gilead (approx. 0.9 kilometre [km] north of RPGP); and
- R7: Mount Gilead, Gilead (approx. 1.1 km southeast of RPGP).

Both receiver locations represent the residential premises most potentially impacted by noise emanating from the RPGP.

3 NOISE LIMITS

The noise limits identified in the EPA’s Licence Condition L5.1 (Licence No. 12003) apply to day, evening and night periods and are expressed as $L_{Aeq,15min}$ noise levels. The noise limits are summarised in **Table 3-1**.

Table 3-1: Noise Limits (EPA Licence No. 12003)

Location	Daytime ($L_{Aeq,15min}$)	Evening ($L_{Aeq,15min}$)	Night ($L_{Aeq,15min}$)
R1	35	35	35
R7	37	36	36

Notes:
Daytime = 7:00 am – 6:00 pm Monday to Saturday; 8:00 am – 6:00 pm Sunday.
Evening = 6:00 pm – 10:00 pm.
Night = 10:00 pm – 7:00 am Monday to Saturday; 10:00 pm – 8:00 am Sunday.

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Figure 3-1: Noise Monitoring Locations

4 MONITORING PROCEDURE

Noise monitoring was conducted at both identified receivers for the three time periods defined in **Table 3-1** to assess compliance for the day, evening and night periods.

Monitoring was carried out during typical operating conditions (one compressor unit operating).

Measurement of noise was carried out in accordance with Australian Standard AS 1055:2018 *Description and Measurement of Environmental Noise* and *Approved Methods for the Measurements and Analysis of Environmental Noise in NSW* (NSW EPA, 2022).

All attended noise measurements were conducted at a location representative of the most affected point within the 30 metre (m) perimeter surrounding the dwelling for both identified noise-sensitive receivers.

The measurements were conducted in suitable meteorological conditions (no significant wind and no rain).

5 MONITORING RESULTS

Table 5-1 summarises the noise results expressed as $L_{Aeq,15min}$ noise levels.

The plant was generally found to be inaudible or only barely audible. When the plant was barely audible, the measurement data was used to estimate the noise contribution from the plant.

Noise emission limits identified in EPL 12003 apply under all meteorological conditions except:

- during rain and wind speeds (at 10 m height) greater than 3 metre per second (m/s); and
- under "non-significant weather conditions".

Gilead is considered a non-arid area (annual average rainfall greater than 500 millimetres [mm]) according to the *INP* and as such, strong temperature inversions (G-class Pasquill-Gillford stability category) are considered to be a "non-significant weather condition". Therefore, the noise limits set out in **Table 3-1** do not strictly apply to strong temperature inversions (G-class Pasquill-Gilford stability category).

Local meteorological data sourced from the Campbelltown (Mount Annan) Bureau of Meteorology (BoM) weather station indicates that wind speeds at 10 m height were no greater than 3 m/s during monitoring.

No temperature inversion analysis of the metrological data was conducted as compliance was achieved during both evening and night measurements.



Table 5-1: Summary of 2022 Noise Monitoring Results

Quarterly Monitoring Date	Assessment Period	R1 Medhurst			R7 Mt Gilead		
		Measurement Period	Measured $L_{Aeq,15min}$ due to RPGP (dBA)	$L_{Aeq,15min}$ Criterion (dBA)	Measurement Period	Measured $L_{Aeq,15min}$ due to RPGP (dBA)	$L_{Aeq,15min}$ Criterion (dBA)
15 April 2022	Day	5:44 pm – 5:59 pm	Inaudible	35	4:49 pm – 5:04 pm	Inaudible	37
	Evening	8:46 pm – 9:01 pm	Inaudible	35	8:00 pm – 8:15 pm	Inaudible	36
	Night	10:55 pm – 11:10 pm	Inaudible	35	10:01 pm – 10:16 pm	Inaudible	36
20 June 2022	Day	5:43 pm – 5:58 pm	Inaudible	35	4:50 pm – 5:05 pm	30	37
	Evening	9:10 pm – 9:25 pm	Inaudible	35	8:24 pm – 8:39 pm	34	36
	Night	11:01 pm – 11:16 pm	Inaudible	35	10:08 pm – 10:23 pm	35	36
16 September 2022	Day	5:40 pm – 5:55 pm	Inaudible	35	4:48 pm – 5:03 pm	32	37
	Evening	9:07 pm – 9:22 pm	Inaudible	35	8:15 pm – 8:30 pm	34	36

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Quarterly Monitoring Date	Assessment Period	R1 Medhurst			R7 Mt Gilead		
		Measurement Period	Measured $L_{Aeq,15min}$ due to RPGP (dBA)	$L_{Aeq,15min}$ Criterion (dBA)	Measurement Period	Measured $L_{Aeq,15min}$ due to RPGP (dBA)	$L_{Aeq,15min}$ Criterion (dBA)
	Night	11:05 pm – 11:20 pm	Inaudible	35	10:14 pm – 10:29 pm	34	36
7 December 2022	Day	5:45 pm – 6:00 pm	Inaudible	35	4:55 pm – 5:10 pm	Inaudible	37
	Evening	8:50 pm – 9:05 pm	Inaudible	35	7:44 pm – 7:59 pm	Inaudible	36
	Night	11:02 pm – 11:17 pm	Inaudible	35	10:00 pm – 10:15 pm	Inaudible	36

Note:
 Daytime = 7:00 am – 6:00 pm; Evening = 6:00 pm – 10:00 pm; Night = 10:00 pm – 7:00 am.



6 CONCLUSION

The results of the noise monitoring of the Rosalind Park Gas Plant conducted in 2022 in accordance with the *NSW Industrial Noise Policy* show compliance with the relevant operational noise limits set by the NSW EPA's Environment Protection Licence conditions (Licence No. 12003) and the Department of Planning and Environment's Conditions of Consent (DA No. 282-6-2003-i) at both receiver locations for day, evening and night time with typical operating conditions.

7 STATEMENT OF LIMITATIONS

This report entitled AGL – Rosalind Park Gas Plant – Annual Compliance Noise Monitoring – 2022, dated 21 December 2022, was prepared by RWDI Australia Pty Ltd ("RWDI") for AGL Upstream Investments Pty Ltd ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.