Amendment Report

Application for Works Approval Amendment

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W6332/2019/1
Works Approval Holder	Woodside Burrup Pty. Ltd.
ACN	120 237 416
File Number	APP-0027313 / DER2019/000559
Premises	Pluto LNG (Pluto Train 2) Burrup Road BURRUP WA 6714 Legal description – Lot 384 on Deposited Plan 220146 and Lots 572 and 574 on Deposited Plan 28209 As defined by the coordinates in Schedule 1 of the Revised Works Approval
Date of Report	9 June 2025
Decision	Revised works approval granted

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1. Decision summary

The Delegated Officer has determined to make amendments to Works Approval W6332/2019/1.

The amendments include changes to the ambient air monitoring requirements to align them with those detailed in the Pluto LNG Air Quality Management Plan required under Ministerial Statement 757 and the updated National Environment Protection (Ambient Air Quality) Measure 2021. The Delegated Officer has determined that the amendments do not alter the risk profile of the Premises, providing that activities, emissions and receptors as stated in existing approvals remain unchanged.

This Amendment Report documents the assessment of the proposed changes and the amendments made to the works approval pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act). The Decision Report for the existing works approval will remain on the department's website for future reference and will act as a record of the department's decision making.

2. Scope of assessment

2.1 Regulatory framework

In amending the works approval, the Department of Water and Environmental Regulation (DWER, the department) has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://www.wa.gov.au/service/building-utilities-and-essential-services/integrated-essential-services/dwer-regulatory-documents.

2.2 Overview of the premises

Works Approval W6332/2019/1 held by Woodside Burrup Pty Ltd (works approval holder, Woodside) for Pluto LNG Project – Train 2 was issued on 26 May 2021. The works approval authorises the construction, commissioning and time limited operation of a second Liquefied Natural Gas (LNG) train (Pluto Train 2) and domestic gas (Domgas) plant, to facilitate expansion of the existing single train Pluto LNG Facility (Pluto Train 1).

The premises relates to Category 10 (oil or gas production from wells), Category 34 (Oil or gas refining) and Category 52 (Electric power generation), as defined under Schedule 1 to the Environmental Protection Regulations 1987 (EP Regulations) which are defined in works approval W6332/2019/1.

Pluto Train 1 has a design capacity of 4.9 million tonnes of LNG per year and operates under licence L8752/2013/2, granted to Woodside in July 2014. Pluto Train 2 will have a total design capacity of 5.3 million tonnes per year of LNG and the Domgas plant will have a design capacity of 225 terajoules per day.

The infrastructure will be located on Lot 384 on Deposited Plan 220146, and Lots 572 and 574 on Deposited Plan 28209 (the premises), on the Burrup Peninsula about 7 kilometres (km) north-west of the town of Dampier in the City of Karratha. Pluto Train 2 will process natural gas from the Greater Scarborough gas fields located approximately 375 km west-northwest of the Burrup Peninsula in the Carnarvon Basin.

Natural gas will be transported by a 430 km pipeline to the premises. The Domgas Plant will produce natural gas for export to the Dampier-Bunbury Natural Gas Pipeline for domestic gas supply. Some infrastructure required to support the operation of Pluto Train 2 already operates as part of Pluto Train 1. This includes the pressure relief / liquids disposal and flare systems, LNG and condensate product storage and export facilities, and the sewage and effluent treatment systems.

2.3 Application summary

On 30 January 2025, Woodside submitted an application to the department to amend W6332/2019/1 under section 59B of the EP Act.

The application seeks changes to the ambient air monitoring requirements specified in Condition 9, Table 5 and Condition 26, Table 11 as well as correction of some clerical errors in the works approval. The following changes are sought:

- Remove the requirement to monitor ozone at the Burrup Road monitoring station and revise the averaging period to an 8-hour rolling average.
- Remove the requirement to monitor BTEX at the Karratha and Dampier monitoring stations and change the monitoring method to Gas Chromatograph with Photoionization Detector (PID).

The changes sought by Woodside are to align the ambient air quality monitoring requirements with those detailed in the Pluto LNG Air Quality Management Plan (Pluto AQMP) required under Ministerial Statement (MS) 757 and to align the ozone monitoring averaging period with the *National Environment Protection (Ambient Air Quality) Measure* (AAQ NEPM) which was amended through a variation in 2021.

2.4 Part IV of the EP Act

The Pluto LNG Project (comprising two LNG processing trains with a capacity up to 12 million tonnes per annum (Mtpa), a Domgas facility, and supporting infrastructure and activities) has been the subject of assessment by the Environmental Protection Authority (EPA) and subsequent Ministerial approval under Part IV of the EP Act.

The Pluto LNG Project was granted approval in the form of MS 757 in December 2007 and amended via MS 850 in January 2011 following an inquiry under section 46(1) of the EP Act. The Pluto LNG Project was also assessed in parallel by the *Commonwealth under the Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Commonwealth approval for the Pluto LNG Project under the EPBC Act was granted on 12 October 2007 (EPBC 2006/2968).

Woodside is required by condition 11 of MS 757 to prepare, implement and make publicly available an Air Quality Management Plan (AQMP) to meet the objective "*to ensure that best available practicable and efficient technologies are used to minimise and monitor air emissions from the plant"*. The Pluto AQMP (Revision 4) required under Part IV of the EP Act was revised in 2019 to include Pluto Train 2.

2.5 Pluto ambient air quality monitoring requirements

Ambient air quality monitoring for the Pluto LNG Project was initially undertaken from 2008 to 2011 in accordance with MS 757. The ambient monitoring program was recommenced in 2019 in advance of the commencement of Pluto Train 2 development. The original works approval application for W6332/2019/1 and the W6332/2019/1 Decision Report 2021 both make reference to continuation of the existing ambient monitoring regime for the Pluto project.

The conditions of both the Pluto Train 2 works approval W6332/2019/1 and MS 757 require ambient air quality monitoring is undertaken however, there is some discrepancy between the ambient monitoring programs required under the two instruments. The ambient air monitoring conditions specified in the existing works approval W6332/2019/1, require monitoring of all parameters (ozone, oxides of nitrogen and, benzene, toluene, ethylbenzene and xylene (BTEX)) at all three ambient monitoring stations (Dampier, Karratha and Burrup Road) whereas the monitoring network established under the MS 757 Pluto AQMP specifies monitoring of oxides of nitrogen at all three locations (Dampier, Karratha and Burrup Road), monitoring of ozone at only two stations (Dampier and Karratha) and monitoring of BTEX at only one station (Burrup

Road).

Woodside advised that ozone is only monitored at Karratha and Dampier, the nearest residential areas, as it is expected at greater concentrations at these locations based on previous monitoring, and ozone being a secondary pollutant, therefore is not localised to the LNG facility. Conversely, BTEX is a localised emission and therefore is only monitored at the Burrup Road monitor in close proximity to the LNG facility. BTX monitoring was undertaken at all three locations from 2008-2010 which found insignificant air quality impacts with measured levels much lower at the further monitoring locations (Dampier and Karratha). BTX monitoring at these locations was therefore discontinued and the current Pluto AQMP specifies BTEX monitoring at only the Burrup Road monitor.

The BTEX monitoring method specified the Pluto AQMP (Gas Chromatography Synspec GC955) does not meet the requirements of the BTEX monitoring method AS 3580.11.1 specified in W6332/2019/1. BTEX monitoring in accordance with AS 3580.11.1 can only measure total non-methane organics and not individual components whereas the Synspec GC955 can detect and measure individual BTEX components and complies with European Standard CSN EN 14662-3. The National Environment Protection (Air Toxics) Measure (Air Toxics NEPM) establishes that monitoring methods used or developed by recognised agencies such as the European Commission are suitable alternative methods.

2.6 National Environment Protection (Ambient Air Quality) Measure Variation

The National Environment Protection Council approved a variation to the *National Environment Protection (Ambient Air Quality) Measure* (AAQ NEPM) standards for ozone, nitrogen dioxide and sulfur dioxide on 15 April 2021 and the variation to the instrument came into effect on 18 May 2021. As a result of the variation the standards for ozone were changed from a 1-hour (100 ppm) and 4-hour rolling average (80 ppm), to a new 8-hour rolling average standard of 65 ppm.

The averaging periods for ambient monitoring specified in W6332/2019/1 were based on the averaging periods for the AAQ NEPM standards to allow for direct comparison of monitoring results with relevant standards. The assessment of the works approval application was completed throughout 2020 and early 2021, therefore reference was made to the AAQ NEPM standards which applied prior to the 2021 variation in specifying ambient air monitoring averaging periods in the works approval. The specified averaging periods for ozone are therefore not aligned to the updated AAQ NEPM.

3. Risk assessment

The risk associated with emissions and discharges from the operation of Pluto LNG Project – Train 2 has been previously assessed following the department's regulatory risk framework in the W6332/2019/1 Decision Report 2021 (Decision Report). The operational aspects of the Project are described in section 3.1 of t the Decision Report and the risk assessment of these aspects is documented in section 9. Taking into account that the changes sought by Woodside are to align with what was considered in the assessment of the original works approval the delegated officer did not identify any changes to the previously assessed risk profile that required further detailed assessment.

4. Consultation

Table 1 provides a summary of the consultation undertaken by the department.

Table 1: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 1 April 2025.	None received.	N/A
Local Government Authority advised of proposal on 1 April 2025.	The City of Karratha replied on 16 April 2025 stating that the Pluto Processing Train and all associated infrastructure has received development approval, and that they have no comment on the proposed amendment to works approval.	Noted.
Department of Biodiversity Conservation and Attractions (DBCA) advised of proposal on 1 April 2025.	The DBCA replied on 16 April 2025, advising that they had provided comments to DWER during the Environmental Impact Assessment process under Part IV of the EP Act and are aware that it is subject to conditions under Ministerial Statement 757. DBCA noted that, given DWER's capacity to assess the application and apply appropriate regulatory measures, they have no further comments.	Noted.
Friends of Australian Rock Art (FARA) advised of proposal on 1 April 2025.	No comments received.	N/A
Conservation Council of Western Australia (CCWA) advised of proposal on 1 April 2025.	No comments received.	N/A
Murujuga Aboriginal Corporation (MAC) advised of proposal on 1 April 2025.	No comments received.	N/A
Works Approval Holder was provided with draft amendment on 29 May 2025	The works approval holder provided an email response on 4 June 2025 stating that they do not have any comments and wish to waive the consultation period.	Noted..

5. Decision

The delegated officer has considered the information in the application and this assessment, as detailed in section 2, and considers it appropriate to amend works approval W6332/2019/1 to align ambient air monitoring requirements with the MS 757 Pluto AQMP as set out in section 2.3, and to revise the ozone averaging period from a 4-hour rolling average to an 8-hour rolling average to align the revised AAQ NEPM. The delegated officer considered it appropriate to retain the 1-hour averaging period for ozone as 8-hour rolling averages are determined based on 1-hour averages and the short-term monitoring data can inform understanding of peak short-term ambient ozone concentrations.

The delegated officer additionally considered it appropriate to make the clerical corrections set out in Table 2 to ensure the works approval requirements are sufficiently clear and certain. In accordance with section 105 (b) clerical corrections are not able to be appealed.

In determining to amend the works approval the following matters were considered by the delegated officer:

- The discrepancy between the monitoring requirements in the existing works approval and the Pluto AQMP appears to be unintentional as:
    - the original works approval application, and the department's Decision Report, both refer to continuing the existing in place ambient monitoring program; and
    - there was no commentary or recommendations in the works approval application or the department's Decision Report to suggest that changes to the existing monitoring program were required which reinforces the intent of the ambient monitoring conditions that was to capture the existing monitoring program as per the Pluto AQMP.
- The risk of air quality impacts has not increased since the Pluto AQMP was approved therefore aligning the works approval monitoring requirements with the Pluto AQMP is considered commensurate with risk.
- The proposed Synspec GC955 BTEX monitor, complies with a relevant European monitoring standard therefore is expected to provide suitably reliable and accurate monitoring data, and is considered an appropriate alternative to the monitoring method specified in the existing licence.
- Aligning the averaging period for ozone with that specified for the ozone standard in the updated (2021) AAQ NEPM will allow for direct comparison of monitoring results with the standard.
- Retaining a 1-hour averaging period for ozone does not require additional monitoring and allows for detection of peak short-term ambient ozone concentrations.

The delegated officer has therefore determined that an amended works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 2 below provides a summary of the proposed amendments and will act as a record of implemented changes. All proposed changes have been incorporated into the Revised works approval as part of the amendment process.

Table 2: Summary of works approval amendments

Condition no.	Proposed amendments
Works approval history table	Added to works approval to include this amendment.
Condition 11 Condition 18(c) Condition 20(b) Condition 40(c)	Correct references from "*Conditions 8, 0, and 0*" to "*Conditions 8, 9, and 10".*
Condition 9 – Table 5 Condition 26 – Table 11	<u>Dampier and Karratha Ambient Monitoring Station:</u> • Remove monitoring of BTEX. • Replace ozone '4-hour' with '8-hour' rolling averaging period. <u>Burrup Ambient Monitoring Station:</u> • Update the method of monitoring of BTEX from AS 3580.11.1 to Gas chromatography Synspec GC955 Series. • Remove monitoring of Ozone.
Condition 18	Correct references to "*Condition 170*" to "*Condition 17*".

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2019, *Guideline: Decision Making*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. DWER 2021, *W6332/2019/1 Decision Report,* Perth, Western Australia.
5. Pluto LNG Project: Air Quality Management Plan (revision 4) Woodside, December 2019, available at: AA0127 - Woodside Controlled Document Template (Accessed 14 May 2025).
6. Woodside Burrup Pty Ltd, *Application to amend W6332/2019/1 including attachments prepared by Woodside Burrup Pty Ltd January 2025*, Perth, Western Australia.