



Pluto LNG Annual Compliance Report 2019

Ministerial Statement 757 as Amended by Ministerial Statement 850

Production Environment
31 March 2020
Final

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1. INTRODUCTION

This Annual Compliance Report (ACR) is provided to the Department of Water and Environment Regulation (DWER) for the Pluto Liquefied Natural Gas Development (Site B Option) Burrup Peninsula, City of Karratha under Ministerial Statement 757, as amended by Ministerial Statement 850. This ACR covers the reporting period from 1 January 2019 to 31 December 2019.

The Pluto Liquefied Natural Gas (LNG) Plant processes hydrocarbon gas and liquids piped onshore from the offshore Pluto riser platform to produce LNG and condensate.

Licensed operation continued through the reporting period in accordance with DWER (EP Act Part V) Licence L8752/2013/2.

1.1 Structure of this Document

Section 2 of the ACR is a table that sets out the status of the Ministerial Statement conditions during the reporting period. Appendix 1 describes the status of key actions contained within Environmental Management Plans.

This document is provided in accordance with the requirements of the Annual Audit Program approved by the Department of Environment and Conservation (DEC), now the DWER, on 30 June 2008.

1.2 Section 45C

Woodside submitted a request to change an approved proposal under section 45C (s. 45C) of the Environmental Protection Act (EP Act) to the Environmental Protection Authority (EPA) in late 2018, to align Schedule 1 of Ministerial Statement 757 with current and proposed activities. This change was approved under s. 45C by the EPA on 1 July 2019. To ensure compliance with Ministerial Statement 757, Woodside is undergoing a revision and approval process with the EPA for the following management plans:

1. Air quality management plan
2. Greenhouse gas abatement plan
3. Sea turtle management plan

The revised management plans are currently under assessment. Once approved, implementation of the management plans will be reflected in future annual compliance reports.

AUDIT TABLE

Pluto LNG

Ministerial Statement 757 as amended by Ministerial Statement 850 Annual Compliance Report 2019

Key

C = Compliant

CLD = Closed

NR = Not relevant for this reported period

2. MINISTERIAL CONDITIONS AND COMMENTS

TABLE 1

• Audit Code • Subject	• What action must be taken • How action must be taken and/or objective of action • Objective • Evidence that action has been taken	• Project phase • When action to be taken • Where it is to be taken	• To requirements of • On advice from	Reporting period 1 January 2019 to 31 December 2019
757:M1.1 Proposal Implementation	Action Implement the proposal as documented and described in schedule 1 of this statement (Ministerial Statement 757) subject to the conditions and procedures of this statement. Objective To minimise environmental impact of the project. Evidence Confirmed in Pluto LNG Project Ministerial Statement 757 Compliance Report.	Overall Ongoing	Minister for Environment	C The proposal is being implemented as documented in Schedule 1. The plant was in licensed operation for the entire period under Licence L8752/2013/2.
757:M2.1 Proponent Nomination and Contact Details	Action The proponent for the time being nominated by the Minister for the Environment under sections 38(6) or 38(7) of the Environmental Protection Act 1986 (the Act) is responsible for the implementation of the proposal. Objective To ensure legal responsibility for the project rests with a nominated proponent. Evidence Confirmed in Pluto LNG Project Ministerial Statement 757 Compliance Report.	Overall Ongoing	Minister for Environment	C Woodside Energy Ltd remains responsible for implementation of Ministerial Statement 757 as nominated by the Minister for Environment.
757:M2.2 Proponent Nomination and Contact Details	Action Notify the Chief Executive Officer (CEO) of the DEC of any change of the name and address of the proponent for the serving of notices or other correspondence within 30 days of such change. How In the event of change in address, notify DEC within 30 days of change. Objective To ensure that the DEC is able to maintain contact with the proponent. Evidence Details of change of name/and or address.	Overall Ongoing	CEO of DWER	C No changes in the reporting period. The address of the proponent, and a change to the person occupying the role of Asset Manager of the Pluto LNG Project, were updated via correspondence and the DWER application form in December 2018.
757:M3.1 Time Limit of Authorisation	Action The proposal must be substantially commenced within five years of the date of publication of this statement. Objective To ensure that the project is implemented using the most recent information and technology available. Evidence Pluto LNG Project Ministerial Statement 757 Compliance Report.	Overall Within five years	Minister for Environment	CLD Construction commenced on 15 October 2007. Proposal has been substantially commenced, as demonstrated in Pluto LNG Project Ministerial Statement 757 - 2008 Annual Compliance Report (2008 ACR).
757:M3.2	Action Provide the CEO with written evidence which	Overall	Minister for	CLD

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Time Limit of Authorisation	demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement. Objective To ensure that the project is implemented using the most recent information and technology available. Evidence Confirmed in Pluto LNG Project Ministerial Statement 757 Compliance Report.	Within five years	Environment	Pluto LNG Project Ministerial Statement 757 - 2008 ACR provided evidence which demonstrated the substantial commencement of the Project.
757:M4.1 Compliance Reporting	Action Submit to the CEO an annual environmental compliance report relating to the previous twelve-month period, the first report to be submitted within 15 months after the commencement of operations and thereafter annually, unless required by the CEO to report more frequently. Objective To provide evidence that the proposal is being implemented as approved, and the relevant conditions and commitments are being met. Evidence Pluto LNG Project Ministerial Statement 757 Compliance Report to be submitted for the period of 15 October 2012 to end 31 December 2013 (and then calendar years). Content to include the "Evidence" listed in this audit table against each Ministerial Condition plus internal audit results. Report to be submitted by 31 March each year.	Overall Annually Reported	CEO of DWER	C This ACR fulfils this requirement for the period of reporting.
757:M4.2 Compliance Reporting	Action The environmental compliance reports shall address each element of an audit program approved by the CEO and shall be prepared and submitted in a format acceptable to the CEO. Objective To provide evidence that the proposal is being implemented as approved, and the relevant conditions and commitments are being met. Evidence Audit Program.	Overall	CEO of DWER	C Pluto LNG Project Annual Audit Program was submitted to DEC for comment on 28 May 2008. DEC approved the audit program on 30 June 2008. This ACR follows the approved format.
757:M4.3 Compliance Reporting	Action The environmental compliance reports shall: 1. be endorsed by signature of the proponent's Managing Director or a person, approved in writing by the CEO, delegated to sign on behalf of the proponent's Managing Director; 2. state whether the proponent has complied with each condition and procedure contained in this statement; 3. provide verifiable evidence of compliance with each condition and procedure contained in this statement; 4. state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement; 5. provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement; 6. identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non-conformance; 7. review the effectiveness of all corrective and preventative actions taken; and 8. describe the state of implementation of the proposal. Objective To demonstrate compliance with Ministerial Conditions. Evidence See condition M4.1.	Overall	DWER Compliance	C This ACR fulfils the requirements of 757:M:4.3

757:M4.4 Compliance Reporting	<p>Action Make the environmental compliance reports required by Condition 4-1 publicly available in a manner approved by the CEO.</p> <p>How Environmental compliance reports to be made available in accordance with the Office of the Environmental Protection Authority (OEPA) Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012.</p> <p>Objective To ensure the public is kept informed.</p> <p>Evidence Report available on the Woodside website or upon request.</p>	Overall Annually	DWER Compliance	<p>C Pluto ACR's from 2008 to 2018 are publicly available on the Woodside website; https://www.woodside.com.au/our-business/pluto-lng/pluto-lng-environmental-compliance-reporting</p> <p>This 2019 ACR will also be published on the Woodside website following submission to DWER.</p>
757:M5.1 Performance Review	<p>Action Submit a Performance Review report, every five years after the start of operations to the Environmental Protection Authority, which addresses: 1. the major environmental issues associated with implementing the project; the environmental objectives for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those objectives; 2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable; 3. significant improvements gained in environmental management, including the use of external peer reviews; 4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and 5. the proposed environmental objectives over the next five years, including improvements in technology and management processes.</p> <p>How 5-yearly report will be submitted following commencement of operations.</p> <p>Objective To demonstrate compliance with Ministerial Conditions.</p> <p>Evidence Submit five-yearly Performance Review report to the EPA.</p>	Operation Every five years	DWER Compliance	<p>C The first Performance Review Report for the Pluto LNG Project was provided to the OEPA on 14 January 2013 for the 2007- October 2012 five-year period.</p> <p>The second Performance Review Report for the Pluto LNG Project was submitted to DWER on 28 December 2017 for the November 2012 – October 2017 five-year period.</p>
757:M5.2 Performance Review	<p>Action Make the Performance Review reports required by condition 5-1 publicly available in a manner approved by the CEO.</p> <p>How Performance Review Reports to be made available in accordance with OEPA Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012.</p> <p>Objective To ensure the public is kept informed.</p> <p>Evidence Report available on the Woodside website or upon request.</p>	Operation Every 5 years	DWER Compliance	<p>C The Performance Review Reports were made publicly available following acceptance by the Office of the Environmental Protection Authority. The reports are available on the Woodside website: https://www.woodside.com.au/our-business/pluto-lng/pluto-lng-environmental-compliance-reporting</p>
757:M6.1 Marine Impacts	<p>Action Undertake all works to ensure that the Limits of Coral Loss, specified in Schedule 2 (of Ministerial Statement 757), associated with each of the designated Impact Criteria Zones described and defined in figure 3, are not exceeded.</p>	Construction During Construction	Minister for Environment	<p>CLD This condition was met during the 2010 reporting period and no further action is required.</p> <p>Dredging was completed on 21 May 2010.</p>

	<p>How - Implement Best Environmental Practice (BEP) techniques; - Implement the Dredging and Spoil Disposal Management Plan (DSDMP) specified Water Quality Monitoring Program to identify any decline in water quality and allow contingency management actions to be applied; - Implement the DSDMP specified Coral Health Monitoring Program to identify any net coral mortality and allow contingency management actions to be applied.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Ongoing provision of Water Quality Reports and Coral Health Reports to the Pluto Dredge Environmental Management Group on a timely basis for review and overview of status. Results of the above captured in Dredging Environmental Management Group (DEMG) minutes; Compliance reports to the DEC Compliance Monitoring Section if Level 1, 2 or 3 trigger levels are exceeded.</p>			
757:M6.2 Compliance Reporting	<p>Action If any Level 1 Coral Condition Management Trigger Criterion referred to in Schedule 3 is exceeded, within 12 hours following detection of the exceedance, notify the CEO and provide details of the actions being taken to reduce turbidity generating activities which are effecting that site; and within 24 hours of the criterion being exceeded, implement management actions to keep impacts within approved limits specified in schedule 2.</p> <p>How Management actions taken are dependent on circumstances (dredge location, meteorological conditions, tide etc.). Appropriate contingency actions will be selected from those specified in the DSDMP in consultation with the DEMG.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Compliance reports to the DEC CEO in the event of a Schedule 3 exceedance; DEMG minutes outlining actions taken and assessment of adequacy.</p>	Construction	DEC	CLD This condition was met during the 2010 reporting period and no further action is required.
757:M6.3 Compliance Reporting	<p>Action If any Level 2 Coral Condition Management Trigger Criterion referred to in schedule 3 is exceeded at any monitoring site,; 1. Immediately suspend all dredging and dredge spoil activities that contributed to the exceedance; 2. Provide a report to the CEO on the measures to be implemented to keep impacts below the limits in schedule 2, prior to recommencing any dredging and dredge spoil activities that contributed to the exceedance which could affect that site; and 3. Provide a report, on advice of the Dredge Environmental Management Group, defining marine water quality conditions which will be met for the endorsement of the Minister for the Environment on advice of the CEO to allow for the recommencement of dredging ensuring that mortality and / or impacts will not exceed the limits specified in schedule 2.</p> <p>How The Coral Health Monitoring Program will be maintained with the results made immediately available to the Dredging</p>	Construction	DEC	CLD This condition was met during the 2010 reporting period and no further action is required.

	<p>Environmental Coordinator and Dredging Senior Environmental Advisor. Should an exceedance be identified, the process specified by MC6-3 will be implemented.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Notification reports to the CEO in the event of a Schedule 3 exceedance; Investigation reports analysing the exceedance; Reports required by 2 and 3 of MSt: 6.3.</p>			
757:M6.4 Compliance Reporting	<p>Action If any Level 3 Coral Condition Management Trigger Criterion referred to in schedule 3 is exceeded at any monitoring site, 1. Immediately suspend all dredging and dredge spoil activities that contributed to the exceedance; and 2. Provide a report to the Minister for the Environment regarding the non-compliance with condition 6-1.</p> <p>How As per Ministerial Condition 6.3 above.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Investigation reports analysing the exceedance. Compliance reports to the Minister for the Environment regarding the Schedule 3 exceedance.</p>	Construction	Minister for Environment	<p>CLD This condition was met during the 2010 reporting period and no further action is required.</p>
757:M6.5 Marine Impacts	<p>Action Prior to commencement of turbidity-generating activities, prepare a Dredge Impact Management Plan for dredge activities which demonstrates that the activities can achieve the management targets for the Marine Park as set out in the Indicative Management Plan for the Proposed Dampier Archipelago Marine Park and Cape Preston Marine Management Area, and which demonstrates that management strategies will be employed which will minimise impacts on benthic habitats and communities (including corals) outside the Marine Park, to the requirements of the Minister on advice of the Environmental Protection Authority. Further details on the content required in this Plan are provided in schedule 4.</p> <p>How Dredge and Spoil Disposal Management Plan (DSDMP) (DIMP) developed in consultation with key stakeholders (including DEC, DPA, DoF). Address the following: 1. comprehensive monitoring of water quality, sediment deposition, and coral condition; 2. best practice dredge procedures; 3. selection of a suitable location for the off-shore spoil ground which demonstrably does not cause impacts on the Marine Park; 4. optimum timing of works with respect to sea and meteorological conditions; 5. establishment of conservative 'stop work' trigger levels; 6. identification and temporal definition of key ecological windows when dredging activity will not occur, such as during coral spawning periods; and 7. contingency plans. Further details on the content required in this Plan are provided in schedule 4.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Dredge Impact Management Plan.</p>	Design	Minister for Environment EPA	<p>CLD DSDMP was approved by DEC on 20 March 2008 (DEC ref: 4610).</p> <p>The DSDMP was revised in August 2009 (Revision 9) to incorporate minor operational changes to the Water Quality Exceedance Investigation Protocol approved by DEC on 10 August 2009. The DSDMP was re-submitted to DEC with these approved changes incorporated on 25 November 2009 (Woodside ref: PLU/GOV/00422).</p>

757:M6.6 Marine Impacts	<p>Action Implement the Dredge Impact Management Plan required by Condition 6-5.</p> <p>How Communicate Legal and Other Requirements to responsible parties (training); Implement an internal audit program involving six monthly audits and Verification Plans for application/review of contractors.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Internal audit schedule, audit criteria, and evidence of completion. DEMG minutes.</p>	Construction	Minister for Environment	<p>CLD This condition was met during the 2010 reporting period and no further action is required.</p>
757:M6.7 Marine Impacts	<p>Action Make the Dredge Impact Management Plan required by condition 6-5 publicly available in a manner approved by the CEO.</p> <p>How Dredge Impact Management Plan to be made available in the following locations: - the Local Government Authority (2 copies), Battye Library (2 copies); Karratha Public Library (2 copies); and DEC Library Perth (2 copies - 1 hard copy, 1 cd copy) - Copies also to be freely available for download from the Woodside internet site, (availability and locations of the Dredge Impact Management Plan are to be advertised in the Local newspaper Public Notices).</p> <p>Objective To ensure that the public is kept informed.</p> <p>Evidence Evidence of advertisement of Dredge Impact Management Plan.</p>	Construction	DEC	<p>CLD This condition was met during the 2008 reporting period. Since dredging and the dredge monitoring programme are now complete, the DSDMP has been removed from the Woodside website.</p>
757:M6.8 Marine Impacts	<p>Action Resource a DEMG for the duration of the marine works and for such time before and after the marine works so as to carry out its function, to the requirements of the Minister for the Environment.</p> <p>How The role of the DEMG is to provide the Minister for the Environment, the Department of Environment and Conservation and the proponent with advice including, but not limited to: 1. the marine management plans; 2. the marine monitoring programs; 3. the management of turbidity-generating activities and marine works; 4. impacts on marine fauna and flora, including corals; 5. reporting; 6. new management measures and 7. Level 1 and 2 Coral Condition Management Trigger Criteria for Zone C as required in Schedule 3. The membership of the Dredge Environmental Management Group may include: an independent chair appointed by the Minister for the Environment on advice from the CEO, and experts appointed by the Minister for the Environment, and the following may nominate one member each; the Department of Fisheries; the Dampier Port Authority; the Department of Environment and Conservation; and the proponent.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Letters of appointment for the DEMG Chair and members from the Minister for the Environment. DEMG minutes.</p>	Overall For the duration of the Marine Works and for such time before and after the marine works so as to carry out its function.	Minister for Environment	<p>CLD The final DEMG Meeting was held on 12 May 2010. Following this a DEMG Conclusion and Recommendations Workshop was held on 31 August 2010. The intention of this workshop was for DEMG members to summarise valuable information and experience gained during the Pluto dredging program. A final DEMG dredging report and recommendations has been provided to the OEPA.</p> <p>The Minister for Environment and Water acknowledged that the DEMG has completed its function.</p>
757:M6.9	<p>Action Prepare and submit to the Department of</p>	Design	Minister for	<p>CLD</p>

<p>Marine Impacts</p>	<p>Environment and Conservation, a scope of Baseline Marine Habitat Survey document to the requirements of the Minister for the Environment. The objective of this document is to specify procedures to quantitatively determine the pre-development baseline distribution, community composition and health of benthic marine habitats (see note below) within the area which may be affected by any works associated with the proposal. Note: "Marine habitats" includes hard and soft coral communities, sponge communities, seagrass and macro-algal communities.</p> <p>How Address the following: 1. survey methods; 2. location and establishment of survey sites; 3. timing and frequency of surveys; 4. habitat classification schemes; 5. treatment of survey data; and 6. mapping methodologies.</p> <p>Objective To determine the baseline distribution, community composition and health of benthic marine habitats within the area.</p> <p>Evidence DEC approval/endorsement of the Scope of Baseline Marine Habitat Survey document.</p>	<p>Prior to commencement of marine works</p>	<p>Environment DEC</p>	<p>This condition was met during the 2008 reporting period and no further action is required.</p>
<p>757:M6.10 Compliance Reporting</p>	<p>Action Provide an initial report on a detailed survey of coral habitat and communities, and a map showing the general distribution of other benthic habitat types (including soft corals, sponges, algal reef communities) within and adjacent to the area of predicted effects of dredging to the Department of Environment and Conservation at least one month prior to the commencement of dredging.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Initial report on detailed survey of coral habitat and communities and map showing general distribution of other benthic habitat types.</p>	<p>Design One month prior to dredging construction</p>	<p>DEC</p>	<p>CLD This condition was met during the 2008 reporting period and no further action is required.</p>
<p>757:M6.11 Compliance Reporting</p>	<p>Action Conduct a comprehensive field survey, consistent with the approved Scope of Baseline Marine Habitat Survey document, and provide a report of the results to the Department of Environment and Conservation within twelve months following commencement of any marine works associated with the proposal.</p> <p>How This report shall 1. contain spatially accurate (e.g. rectified and geographically referenced) maps showing the locations and spatial extent of the different marine habitat types and percentage cover of each component of their associated benthic communities including corals, macro algae, non-coral macro-invertebrates and seagrass; 2. record the existing hard and soft corals, macro-algae, non-coral benthic macro invertebrates, seagrass and demersal fish observed within the communities; 3. record the population structure, as size class frequency distributions, and other population statistics, such as recruitment, survival and growth, of key hard coral species; 4. evaluate baseline</p>	<p>Construction Within 12 months of commencement of dredging works</p>	<p>DEC</p>	<p>CLD The final report to address specific requirements of Condition 6-11 was submitted to DEC on 21 November 2008 (WBPL ref: PLU/GOV/00154). DEC acknowledged receipt of the report on 25 November 2008 (DEC reference: DEC0652-04).</p>

	<p>pre-development health of the benthic communities at representative survey sites; and 5. include data provided in an appropriate GIS data set format.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence Report on the results of the comprehensive field survey that is consistent with the Scope of Baseline Marine Habitat Survey document.</p>			
757 as amended by 850:M6.12 Compliance Reporting	<p>Action Within three months following completion of the marine works, repeat evaluation of the health of benthic communities, at the representative survey sites established by conditions 6-11(4) and 6-11(5), to the requirements of the OEPA.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence See M6.14.</p>	Post-construction Within three months of dredging completion	DEC	CLD Marine works were completed in mid-July 2010 and post benthic habitat surveys commenced in mid-October 2010.
757 as amended by 850:M6.13 Marine Impacts	<p>Action Repeat the survey required by condition 6-12, at the same time of the year annually for three years, or for a lesser number of years as determined by the CEO of the OEPA, on advice of the Department of Environment and Conservation and the Department of Fisheries.</p> <p>How A Post-Dredging Marine Habitat Survey shall be undertaken in accordance with the approved Scope of Baseline Habitat Survey.</p> <p>Objective To minimise impact of dredging on the marine environment.</p> <p>Evidence See M6.14.</p>	Post-construction At the same time of the year annually for three years, or until such time as determined by the Minister for Environment	Minister for Environment	<p>CLD Marine works were completed in mid-July 2010 and post benthic habitat surveys commenced in mid-October 2010.</p> <p>The findings of the post benthic habitat surveys show no pattern of change consistent with a dredging impact.</p> <p>Based on the post benthic habitat survey results and comprehensive monitoring program during the marine works, advice from the DEC, Department of Fisheries and OEPA is that further post dredging surveys under Condition 6-13 are no longer required.</p> <p>The General Manager of the OEPA has acknowledged that this condition has been met and future surveys are no longer required; correspondence received 8 September 2011 (OEPA2011/000104).</p>
757 as amended by 850:M6.14 Compliance Reporting	<p>Action Within three months following completion of each of the surveys required by conditions 6-12 and 6-13, the proponent shall report the findings of each of the surveys to the OEPA and the Department of Environment and Conservation.</p> <p>Objective To report progress of subsequent surveys.</p> <p>Evidence 1) Findings of Post-Dredging Benthic Marine Habitat Survey initially at least 3 months following completion of marine works, then 2) Within three months following completion of each of the surveys required under condition 6-13.</p>	Post-construction Within three months of dredging completion and annually for a following three years	DEC	CLD The post benthic habitat survey results were submitted to DEC, Department of Fisheries and the OEPA as required by this condition.
757:M7.1 Deepwater Marine Outfall	<p>Action If a marine waste water discharge is required by the proponent, the proponent shall construct the associated infrastructure so that waste water is discharged into water of depth greater than 30 meters outside the Dampier Archipelago, unless otherwise determined by the CEO under Part V of the Act.</p> <p>How A Marine Treated Waste Water Discharge Management Plan will be developed and the appropriate infrastructure constructed to accommodate waste water discharge.</p>	Overall	Minister for Environment	<p>CLD Works Approval W4466/2008/1 for the Pluto LNG Project effluent treatment plant was issued on 3 September 2009 which provides approval to Woodside to construct the effluent treatment plant and a tie-in from this facility to the Water Corporation's Multi-User Brine Reuse Line (MUBRL) for the purpose of disposing of water. The construction of the effluent treatment plant and the tie-in to the MUBRL is complete.</p> <p>Commissioning of the effluent treatment plant was carried out in the 2011-2012 reporting period with discharges to the MUBRL managed in line with the approved Marine Treated Waste Water Discharge Management Plan (Refer 757:M7.2) and effluent treatment commissioning plans approved under Works Approval W4466/2008/1.</p>

	<p>Objective To minimise the environmental impact associated with waste water discharge.</p> <p>Evidence DEC Works Approval - if Marine waste water discharge is required, evidence that waste water discharge structure is discharging into water of depth greater than 30 metres.</p>			<p>A construction compliance document was issued to DEC on 21 March 2011 in line with the Pluto Effluent Treatment Plan Works Approval W4466/2008/1 and DEC provided a compliance statement on 1 April 2011.</p> <p>The effluent treatment plant is Licensed under the Environmental Protection Act 1986, Part V Operating Licence L8752/2013/1 from 1 August 2013. Management of marine discharges continues in line with the framework outlined in the Treated Waste Water Management Plan (Refer to 757:M7.2)</p>
<p>757:M7.2 Deepwater Marine Outfall</p>	<p>Action Prior to construction of the waste water treatment plant or the marine outfall, whichever is the sooner, the proponent, in consultation with the Department of Environment and Conservation, shall prepare a Marine Treated Waste Water Discharge Management Plan to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.</p> <p>How Address the following: 1. determination of the effect of waste water flow rate on the number of dilutions the diffuser is predicted to achieve within the zone of initial dilution at maximum flow rate; 2. setting of environmental values, environmental quality objectives and levels of ecological protection to be achieved around the outfall; 3. identification of a range of feasible and practical management options and the environmental quality indicators and associated "trigger" levels for the implementation of remedial, management and/or preventative actions to protect the water quality and the marine environment based on the guidelines and recommended approaches in ANZECC/ARMCANZ (2000); 4. Whole Effluent Toxicity (WET) testing of waste water, consistent with ANZECC requirements, and addressing the items in schedule 5 (attached); 5. redesign and incorporation of a new diffuser, including timelines, in the event that the WET testing results show that the original waste water diffuser is not achieving sufficient dilutions to meet a high level of ecological protection at the edge of the mixing zone; 6. verification of diffuser performance in terms of achieving the required number of initial dilutions under low energy/calm meteorological and sea-state conditions to achieve a high level of ecosystem protection (99% species protection) at the edge of the approved mixing zone; 7. A monitoring program to permit determination of whether the water quality objectives are being met; and 8. Protocols and schedules for reporting performance against the Environmental Quality Objectives using the environmental quality trigger levels.</p> <p>Objective The objective of this Plan is to ensure that the discharge of treated waste water is managed to achieve simultaneously the following Environmental Quality Objectives as described in the document, Pilbara Coastal Water Quality Consultation Outcomes: Environmental Values and Environmental Quality Objectives (Department of Environment, March 2006): Maintenance of ecosystem integrity with spatially-assigned levels of protection; Maintenance of aquatic life for human consumption assigned to all parts of the marine environment surrounding the ocean outlet; Maintenance of primary contact recreation values assigned to all parts of the marine environment</p>	<p>Design</p>	<p>Minister for Environment EPA, DEC</p>	<p>CLD The Marine Treated Waste Water Discharge Management Plan was approved by the DEC on 18 March 2009 (DEC reference: DEC 4776).</p> <p>Woodside undertook an update to the Treated Waste Water Discharge Management Plan (TWMP) during 2013/2014 (Revision 4) to incorporate minor amendments made based on operating experience (including testing results) during the commissioning and proving phase.</p> <p>Revision 4 of the plan was provided to the OEPA for information on 20 March 2014. Revision 4 remains in line with the management framework and revision process outlined in the approved Revision 3 of the plan, and DWER Operating Licence revisions L8752/2013/1 and L8752/2013/2.</p>

	<p>surrounding the ocean outlet; Maintenance of secondary contact recreation values assigned to all parts of the marine environment surrounding the ocean outlet; Maintenance of aesthetic values assigned to all parts of the marine environment surrounding the ocean outlet; Maintenance of cultural and spiritual values assigned to all parts of the marine environment surrounding the ocean outlet; and Maintenance of Industrial Water Supply.</p> <p>Evidence Marine Treated Waste Water Discharge Management Plan.</p>			
757:M7.3 Deepwater Marine Outfall	<p>Action Implement the Marine Treated Waste Water Discharge Management Plan (MTWDMP) required by condition 7-2.</p> <p>Objective To minimise environmental impacts and apply relevant technology to the project.</p> <p>Evidence Details in Appendix 1 of the ACR.</p>	Operation	Minister for DWER Compliance	<p>C Implementation continued under licensed operation during the reporting period in accordance with the management framework outlined in the MTWDMP.</p> <p>To reflect the most up-to-date information regarding the management of the waste water treatment and disposal facilities implemented during the operational phase, Revision 4 of the MTWDMP was prepared in 2014 to incorporate minor amendments made based on operating experience (including testing results) during the commissioning, proving and operations phases.</p> <p>Revision 4 of the plan was provided to the OEPA for information on 20 March 2014. Revision 4 remains in line with the management framework and revision process outlined in the approved Revision 3 of the plan, and DWER Operating Licence revision L8752/2013/2.</p>
757:M7.4 Deepwater Marine Outfall	<p>Action Make the MTWDMP required by condition 7-2 publicly available.</p> <p>How MTWMP to be made available in accordance with OEPA Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012.</p> <p>Objective To ensure the public is kept informed.</p> <p>Evidence Management Plan available on the Woodside website or upon request.</p>	Construction Construction	Minister for Environment	<p>C The MTWDMP (Rev 4) is publicly available on the Woodside website: https://www.woodside.com.au/our-business/pluto-lng/pluto-lng-environmental-compliance-reporting</p> <p>Any future revisions to the plan will also be published on the Woodside website.</p>
757:M7.5 Deepwater Marine Outfall	<p>Action Prior to submitting a Works Approval application for the waste water treatment plant 1. characterise in detail the physical and chemical composition and flow rates of all waste water streams within the site and, using the toxicity of mixtures principles, predict the theoretical toxicity of the combined waste water after treatment; 2. Determine, for all contaminants and nutrients, the total annual loads of contaminants and nutrients in the waste water discharge exiting the site; and 3. Determine, for normal and worst-case conditions, the concentrations of contaminants and nutrients (for agreed averaging periods) in the waste water discharge exiting the site.</p> <p>Objective To minimise the environmental impact associated with waste water discharge.</p> <p>Evidence Approval from DEC of MTWDMP.</p>	Design Prior to submitting a Works Approval application for the waste water treatment plant	Minister for Environment	<p>CLD These aspects were covered in the MTWDMP, which was approved by the DEC on 18 March 2009 (DEC reference: DEC 4776). OEPA approved the revised Marine Treated Waste Water Discharge Management Plan (2011) on 1 July 2011.</p>
757:M7.6 Deepwater Marine Outfall	<p>Action Prior to submitting a Works Approval application for the waste water treatment plant, demonstrate that the waste water discharge will meet "best practicable technology" and waste minimisation principles for contaminants and nutrients.</p> <p>How A review of current Best Environmental Practice (BEP) will be conducted to ensure that the most up to date technology is being utilised. This review will be outlined in</p>	Design Prior to submitting a Works Approval Application for the Waste water Treatment Plant.	Minister for Environment	<p>CLD These aspects were covered in the MTWDMP, which was approved by the DEC on 18 March 2009 (DEC reference: DEC 4776). OEPA approved the revised Treated Waste Water Management Plan (2011) on 1 July 2011.</p>

	<p>the MTWDMP.</p> <p>Objective To demonstrate best practice in waste water treatment and discharge.</p> <p>Evidence Approval from DEC of MTWDMP, Works Approval granted from DEC.</p>			
757:M7.7:1 Deepwater Marine Outfall	<p>Action Prior to submitting a Works Approval application for the waste water treatment plant, design, and subsequently operate, plant and equipment on the site such that: 1. the contaminant concentrations in the waste water effluent from the site, just prior to entry to the waste water discharge system, meet (in order of preference): the ANZECC/ARMCANZ (2000) 99% species protection level; or the ANZECC/ARMCANZ (2000) 99% species protection level at the edge of an approved mixing zone; 2. The concentrations of contaminants in the waste water effluent which can potentially bio-accumulate/bio-concentrate meet the ANZECC/ARMCANZ (2000) 80% species protection trigger levels just prior to entry into the waste water discharge system; and 3. Mass balances and inventories of toxicants can be maintained throughout the life of the plant so that their fate can be traced.</p> <p>How The proponent shall demonstrate that the proposed discharge meets the Ministerial Condition 7-7 via modelling. This will be outlined in the MTWDMP.</p> <p>Objective To minimise the environmental impact associated with waste water discharge.</p> <p>Evidence Approval from DEC of MTWDMP.</p>	Design	DEC	<p>CLD</p> <p>These aspects were covered in the MTWDMP, which was approved by the DEC on 18 March 2009 (DEC reference: DEC 4776). OEPA approved the revised Marine Treated Waste Water Discharge Management Plan (2011) on 1 July 2011.</p>
757:M7.7:2 Deepwater Marine Outfall	<p>Action Operate the waste water Treatment Plant such that: 1. the contaminant concentrations in the waste water effluent from the site, just prior to entry to the waste water discharge system, meet (in order of preference): the ANZECC/ARMCANZ (2000) 99% species protection level; or the ANZECC/ARMCANZ (2000) 99% species protection level at the edge of an approved mixing zone; 2. The concentrations of contaminants in the waste water effluent which can potentially bio-accumulate/bio-concentrate meet the ANZECC/ARMCANZ (2000) 80% species protection trigger levels just prior to entry into the waste water discharge system; and 3. Mass balances and inventories of toxicants can be maintained throughout the life of the plant so that their fate can be traced.</p> <p>Evidence Details in Appendix 1 of the ACR.</p>	Operation	DWER Compliance	<p>C</p> <p>Discharges to the MUBRL commenced in October 2011. Monitoring during start-up and commissioning and proving phase was conducted as detailed in Section 6.1 of Revision 4 of the MTWDMP.</p> <p>The TWMP (Ref 757:M7.2) outlines the operational monitoring, management framework, and contingency measures to meet the Environmental Quality Objectives defined by the Minister in Ministerial Statement No.757.</p> <p>To reflect the most up to date information regarding the management of the waste water treatment and disposal facilities implemented during the operational phase, Revision 4 of the TWMP was prepared in 2014 to incorporate minor amendments made based on operating experience (including testing arrangements and results) during the commissioning, proving and operations phases.</p> <p>Revision 4 of the plan was provided to the OEPA for information on 20 March 2014. Revision 4 remains in line with the management framework and revision process outlined in the approved Revision 3 of the plan, and DWER Operating Licence revision L8752/2013/2.</p> <p>The MTWDMP was implemented under licensed operation during the reporting period. Monitoring and reporting was undertaken in accordance with the DWER Operating Licence revision L8752/2013/2.</p>
757:M7.8 Compliance Reporting	<p>Action Within three months following commissioning and stabilising of plant operations, conduct an analysis of effluent properties and contaminant concentrations, to an analytical limit of reporting agreed by the Department of Environment and Conservation, demonstrating that they are</p>	Operation Within three months following commissioning	DEC	<p>CLD</p> <p>Woodside provided the Pluto Effluent Treatment Plant (ETP) Commissioning Closeout Report to the DEC on 5 April 2013. The report was prepared in accordance with the reporting commitments outlined in Table 5.1 of the DEC approved Pluto LNG Project ETP Commissioning Plan (Commissioning Plan), and Section 7.1 of the Pluto LNG Project Treated Waste Water</p>

	<p>substantially consistent with predictions.</p> <p>How A Report will be prepared on the analysis of effluent properties and contaminant concentrations in consultation with DEC.</p> <p>Objective To demonstrate that Woodside waste water concentrations are substantially consistent with predictions.</p> <p>Evidence Effluent characterisation report.</p>			<p>Marine Discharge Management Plan. Commissioning closeout reporting and Licence application supporting documentation informed the licensing process through the DER. The DWER Operating Licence L8752/2013/1 was issued 1 August 2013.</p>
757:M7.9 Deepwater Marine Outfall	<p>Action Develop a Contingency Waste Water Management Plan which considers alternate options for waste water disposal in the event that the Environmental Quality Objectives are not met as determined through Whole Effluent Toxicity testing, diffuser performance monitoring or environmental quality monitoring, to the requirements of the Minister for the Environment.</p> <p>How Alternative waste management plan will be designed.</p> <p>Objective To anticipate impacts and manage those which are unforeseen.</p> <p>Evidence Contingency Waste Water Management Plan.</p>	Construction During Construction	Minister for Environment	<p>CLD The framework for the Contingency Waste Water Management Plan was included within the Marine Treated Waste Water Discharge Management Plan, which was approved by the DEC on 18 March 2009 (DEC reference: DEC 4776). Additional detail has been provided in the 2011 revision to the Marine Treated Waste Water Discharge Management Plan approved by the OEPA on 1 July 2011. Commissioning discharges and contingencies, prior to WET testing and subsequent effluent treatment plant Licensing, were covered under the effluent treatment plant commissioning plan required as a condition of Works Approval W4466/2008/1 and approved by DEC.</p> <p>Minor revisions to contingency measures have been provided in an update to the Treated Waste Water Management Plan. The update reflects on the most up to date information regarding the management of the waste water treatment and disposal facilities implemented during the operational phase, Revision 4 of the Treated Waste water Management Plan was prepared to incorporate minor amendments made based on operating experience (including testing results) during the commissioning, proving and operations phases.</p>
757:M7.10 Deepwater Marine Outfall	<p>Action In the event that the treatment plant malfunctions or goes off-line, the proponent shall include within the Contingency Waste Water Management Plan required by condition 7-9 alternative options for waste water disposal to the timing and other requirements of the Minister for the Environment.</p> <p>How Practices will be changed to the methods of the Contingency Waste Water Management Plan.</p> <p>Objective Preparation for contingency events.</p> <p>Evidence Contingency Waste Water Management Plan.</p>	Construction During Construction	Minister for Environment	<p>CLD The Contingency Waste Water Management Plan forms part of the Marine Treated Waste Water Discharge Management Plan.</p>
757:M7.11 Deepwater Marine Outfall	<p>Action In the event that the Environmental Quality Objectives are not being met, the proponent shall implement the Contingency Waste water Management Plan required by condition 7-9.</p> <p>How Action will be taken from Contingency Waste water Management Plan.</p> <p>Objective Preparation for contingency events.</p> <p>Evidence Pluto LNG Project Ministerial Statement 757 Compliance Report - Report on alternate action to the DEC.</p>	Operation	Minister for Environment	<p>NR The Environmental Quality Objectives were met in accordance with the MTWDMP, and DWER Operating Licence revision L8752/2013/2 for the reporting period.</p>
757:M7.12 Deepwater Marine Outfall	<p>Action Review and revise the Contingency Waste water Management Plan required by condition 7-9, as and when directed by the CEO.</p> <p>Objective Preparation for contingency events.</p> <p>Evidence Revised Contingency Waste water Management Plan (if required).</p>	Operation	DWER Compliance	<p>NR No direction was received by Woodside to review and revise the Contingency Waste Water Management Plan in the reporting period.</p>

757:M7.13 Deepwater Marine Outfall	<p>Action Make any revisions of the Contingency Waste water Management Plan, as required by condition 7-12, publicly available in a manner approved by the CEO.</p> <p>How Revisions of the Contingency Waste water Management Plan to be made available in accordance with OEPA Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012.</p> <p>Objective To ensure that the public is kept informed.</p> <p>Evidence Management Plan available on the Woodside website or upon request.</p>	Operation Ongoing	DWER Compliance	<p>C The Contingency Waste Water Management Plan forms part of the Marine Waste Water Management Plan and is publicly available on the Woodside website: https://www.woodside.com.au/our-business/pluto-lng/pluto-lng-environmental-compliance-reporting Any future revisions to the plan will also be published on the Woodside website.</p>
757:M8.1 Marine Quarantine	<p>Action Prior to commencement of dredging, prepare and implement a Marine Quarantine Management Plan, to the requirements of the Minister for the Environment.</p> <p>Objective To prevent marine pest introduction to the waters adjacent to the proposal.</p> <p>Evidence Marine Quarantine Management Plan developed in consultation with DoF and DEC.</p>	Design Before dredging	Minister for Environment EPA	<p>CLD The Marine Quarantine Management Plan for the Construction Phase was approved on 21 November 2007.</p> <p>This plan was implemented for all dredge vessels and dredging related vessels and equipment associated with the Pluto LNG Project during the dredging program, which ceased on 21 May 2010.</p> <p>Refer to 757:M8:3 for details of quarantine management during operations.</p>
757:M8.2 Marine Quarantine	<p>Action Within 48 hours following entry of dredging equipment and/or other vessels associated with dredging into the Port of Dampier, the proponent shall: 1. for vessels originating from Ports outside of State waters, arrange for an inspection and clearance by an appropriately qualified marine scientist; 2. for vessels originating from Ports within State waters, provide evidence of; a) the vessel being fully cleaned of fouling organisms and sediments immediately prior to departure for the Port of Dampier; or b) inspection of the vessel at the point of departure for the Port of Dampier immediately prior to departure; or c) a risk assessment based on the history of the vessel, its characteristics and use during the implementation of the proposal, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.</p> <p>Objective To prevent marine pest introduction.</p> <p>Evidence See condition 8-4.</p>	Construction	Minister for Environment DEC	<p>CLD Condition is not applicable during the reporting period as dredging was completed in a previous reporting period on 21 May 2010.</p> <p>ACR 2010 demonstrates that Woodside has conducted Marine Invasive Species Inspections in accordance with this condition.</p>
757:M8.3 Marine Quarantine	<p>Action Prior to commencement of operations develop and implement an appropriate protocol for inspection and clearance of vessels during the operational phase of the proposal.</p> <p>Objective To prevent marine pest introduction.</p> <p>Evidence An Invasive Marine Species Management Plan developed in consultation with and approved by DoF and DEC.</p>	Prior to commencement of Operation	DWER Compliance	<p>CLD for development of protocol, C for implementation Woodside manages marine quarantine during the operation of the Pluto LNG Project using Woodside's Invasive Marine Species Management Plan (IMSMP). Woodside submitted this plan to the DEC on 24 June 2010 with a revision submitted on 12 October 2011.</p> <p>A letter was received from the OEPA 11 January 2012 approving the Woodside IMSMP and its implementation at the Pluto facilities.</p> <p>Further revisions to the plan have been made to meet Commonwealth and State legislation requirements and streamline assessment processes.</p> <p>Implementation of the Management Plan is ongoing. During the reporting period, no introductions of Invasive Marine Species (IMS) were identified in association with Pluto operations.</p>
757:M8.4 Compliance Reporting	<p>Action Prior to the commencement of dredging, the proponent shall report to the Department of Environment and Conservation on the results of the inspection referred to</p>	Design Prior to commencement of	DEC DoF, AQIS	<p>CLD Please refer to 757:M8.2 and 2010 ACR.</p>

	<p>in Condition 8-2.</p> <p>How Inspections of vessels originating from outside of State waters will be reported to DEC within 48h through the process specified in the Marine Quarantine Management Plan.</p> <p>Objective To prevent marine pest introduction.</p> <p>Evidence Inspection report.</p>	dredging		
757:M8.5 Marine Quarantine	<p>Action Manage any sediment or fouling organisms found as a consequence of the inspection required by condition 8-2, to the timing and other requirements of the Minister for the Environment.</p> <p>How The Marine Pest Management Strategy (Contingency) specified in the Marine Quarantine Management Plan will be implemented in the event that a Marine Species of Concern is identified during an arrival inspection.</p> <p>Objective Minimise environmental impacts associated with potential marine pest introduction.</p> <p>Evidence Marine Pest Management Strategy specified in the Marine Quarantine Management Plan approved by DoF and DEC; Communication with DoF and DEC in the event a marine species of concern is identified. Infestation survey plans approved by DoF.</p>	Construction	Minister for Environment DoF	CLD Please refer to 757:M8.2 and 2010 ACR.
757:M8.6 Marine Quarantine	<p>Action If following the completion of dredging and disposal activities, the dredging equipment is to be transferred to another location within Western Australia's territorial waters, undertake an investigation employing an appropriately qualified marine scientist to identify the presence of/the potential for introduced marine pests, to the requirements of the Minister for the Environment.</p> <p>Objective To prevent pest contamination of other Australian Ports.</p> <p>Evidence If required, Investigation reports prepared by a suitably qualified marine scientist for all dredging related vessels and equipment that are to be transferred to another location within WA territorial waters.</p>	Construction	Minister for Environment DoF, AQIS	CLD Please refer to 757:M8.2 and 2010 ACR.
757:M8.7 Compliance Reporting	<p>Action In the event that any introduced marine pests are detected (see condition 8-5), the proponent shall put in place a Marine Pests Management Strategy to ensure that introduced marine pests are not transferred to other locations within Western Australia's territorial waters, to the requirements of the Minister for the Environment. Note: In the preparation of the report required by condition 8-4, and in the development of any actions required by conditions 8-4 to 8-6, the Environmental Protection Authority expects that advice of the following agencies will be obtained: Department of Fisheries; and Australian Quarantine Inspection Service.</p> <p>Objective Minimise environmental impacts associated with potential marine pest introduction to other locations in Western Australia's territorial waters.</p>	Construction	Minister for Environment DoF, AQIS	CLD Please refer to 757:M8.2 and 2010 ACR.

	Evidence If required, Marine Pest Management Strategy specified in the Marine Quarantine Management Plan.			
757:M8.8 Compliance Reporting	Action For the life of the project, notify the Department of Environment and Conservation, the Department of Fisheries and the Dampier Port Authority of any non-indigenous species detected in the waters adjacent to the project within 24 hours following detection. Objective To keep DEC, DPA and DoF informed. Evidence Notification reports of any non-indigenous species detected in waters adjacent to the project	Overall Within 24 hours of detection	DWER, Department of Energy and Environment (DoFE), Pilbara Ports Authority (PPA)	NR No new introduced marine pests have been detected in waters adjacent to the Project by Woodside to date.
757:M8.9:1 Marine Quarantine	Action In the event that non-indigenous species introduced by the proponent are detected during dredging, the proponent shall take immediate action to prevent establishment and proliferation and shall take action to control and eradicate them to the requirements of the Minister for the Environment. Objective To prevent infestation of pest species. Evidence Immediate notifications to DoF, DEC and DPA; Report actions to prevent establishment and proliferation of non-indigenous species and action to control and eradicate them.	Construction	Minister for Environment	CLD No introduced marine pests were detected during the dredging program. Dredging was completed on 21 May 2010.
757:M8.9:2 Marine Quarantine	Action In the event that non-indigenous species introduced by the proponent are detected during operation, the proponent shall take immediate action to prevent establishment and proliferation and shall take action to control and eradicate them to the requirements of the Minister for the Environment. Objective To prevent infestation of pest species. Evidence Immediate notifications to DoF, DEC and DPA. Report actions to prevent establishment and proliferation of non-indigenous species and action to control and eradicate them.	Operation	Minister for Environment	NR No new introduced marine pests have been detected in waters adjacent to the Project by Woodside to date.
757:M9.1 Turtle Management and Monitoring	Action Prepare a Turtle Management Plan. How This Plan shall: 1. identify project-related stressors, causes of environmental impacts and potential consequences for marine turtles (including impact of noise, vibration, light overspill and glow, vessel strike, and changes to coastal processes); and 2. Identify and demonstrate the effectiveness of proposed management measures to mitigate [as defined in Environmental Protection Authority Guidance Statement 9] project-related impacts and consequences for marine turtles. Objective To provide a management framework to enable the proponent to manage the project so as to detect and mitigate as necessary ["mitigate" as defined in Environmental Protection Authority Guidance Statement 9] any impact upon marine turtles from the project and to identify darkness strategies to reduce as far as possible lights or light glow interfering with nesting female turtles and hatchlings. Evidence Sea Turtle Management Plan.	Design Prior to commencement of works	Minister for Environment DEC	C Letter dated 7 November 2008 (DOC68526), confirming that the Sea Turtle Management Plan was originally approved 7 November 2008 (DOC68526), along with the Environmental Specification Lighting revision (2 October 2008), which is included as part of the Sea Turtle Management Plan. The Plan was revised for the operations phase and was submitted on 1 August 2011 to the OEPA for approval. OEPA approval received 30 March 2012. Various updates have since been completed. The latest revision (7) of the Plan was submitted in July 2019 to incorporate proposed future activities associated with Pluto expansion. Following review by the OEPA, feedback has been incorporated and the plan being finalised for resubmission to the OEPA.

757:M9.2 Turtle Management and Monitoring	<p>Action Implement the Turtle Management Plan required by condition 9-1.</p> <p>Objective To mitigate as necessary ["mitigate" as defined in Environmental Protection Authority Guidance Statement 9] any impact upon marine turtles from the project and to identify darkness strategies to reduce as far as possible lights or light glow interfering with nesting female turtles and hatchlings.</p> <p>Evidence Refer to Appendix 1 of the Annual Compliance Report.</p>	Overall	DWER Compliance	<p>C</p> <p>Woodside minimised light emissions while complying with health, security, and safety considerations, by implementing the Pluto Operational Environmental Lighting Specification (OELS) during the reporting period. Compliance against the OELS was verified by carrying out a lighting survey on 8 October 2019. This identified several areas where light emissions could be reduced further. Improvement actions are being tracked.</p> <p>Woodside continued to implement the seasonal sea turtle monitoring program during the 2018/2019 turtle nesting period. Records were maintained and submitted to the Department of Agriculture, Water and Environment (DAWE) on the 24 May 2019.</p> <p>Please refer to Appendix 1 for the status of key management actions in the Sea Turtle Management Plan.</p>
757:M9.3 Turtle Management and Monitoring	<p>Action Make the Turtle Management Plan required by condition 9-1 publicly available in a manner approved by the CEO.</p> <p>How Turtle Management Plan to be made available in accordance with OEPA Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012.</p> <p>Objective To ensure public is kept informed.</p> <p>Evidence Management Plan available on the Woodside website or upon request.</p>	Construction	CEO of DWER	<p>C</p> <p>The latest approved version of the Sea Turtle Management Plan is publicly available on the Woodside website: https://www.woodside.com.au/our-business/pluto-lng/pluto-lng-environmental-compliance-reporting. Any future revisions to the plan will be published on the Woodside website.</p>
757:M9.4 Turtle Management and Monitoring	<p>Action Review the Turtle Management Plan required by condition 9-1 annually to the requirements of the Minister for the Environment.</p> <p>Objective To minimise environmental impacts on turtles.</p> <p>Evidence Report outcomes of review in Annual compliance report.</p>	Overall Annually	Minister for Environment	<p>C</p> <p>The sixth revision of the STMP was developed with input from the Department of Biodiversity and Attractions, and was approved by DWER Compliance branch on 06 September 2018.</p> <p>Revision 7 of the Plan was submitted in July 2019 this revision includes proposed future activities. Following review of the OEPA, feedback was incorporated into revision 8 and revision 9 which is now being finalised for resubmission to the OEPA.</p>
757:M9.5 Compliance Reporting	<p>Action Report any mortality of marine turtles or other threatened or specially protected marine fauna to the Department of Environment and Conservation within 24 hours following observation.</p> <p>Objective To keep DEC informed on project progress and issues.</p> <p>Evidence Incident reports as per Appendix D of the STMP.</p>	Overall Within 24 hours of an incident	DWER Compliance	<p>NR</p> <p>No mortality of marine turtles or other threatened or specially protected marine fauna occurred as a result of the Project in 2019.</p>
757:M10.1 Indigenous Heritage	<p>Action Prior to ground-disturbing activities, prepare, in liaison with the Department of Indigenous Affairs, and submit to the Department of Environment and Conservation, a Cultural Heritage Management Plan.</p> <p>How This Plan shall address: 1. the inclusion of cultural heritage awareness training in the workforce induction; 2. the signposting and fencing of nearby heritage sites to prevent unauthorised access; 3. the monitoring of ground-disturbing activities by an anthropologist/archaeologist and representatives of the Traditional Custodians; and 4. the retrieval and relocation of heritage material which lies within the disturbance footprint in consultation with the Traditional</p>	Design (Prior to ground-disturbing activities) Overall	DEC DIA	<p>CLD</p> <p>Numerous versions of the Pluto Aboriginal Cultural Heritage Management Plan (CHMP) have been prepared to meet requirements throughout the various stages of the Project. Plans such as the <i>Aboriginal Cultural Heritage Management Plan - Pluto LNG Project Construction Phase</i>, <i>Cultural Heritage Management Plan – Industrial Site B</i> and <i>Cultural Heritage Management Plan - Industrial Site A Coastal Dunes</i> have now been superseded by the <i>Pluto LNG Aboriginal Cultural Heritage Management Plan - Commissioning and Operations Phase (XA0000AG1002)</i> issued 15 April 2012.</p> <p>The updated <i>Pluto LNG Aboriginal Cultural Heritage Management Plan - Commissioning and Operations Phase</i> was reviewed by Woodside in consultation with the Traditional Custodian groups and DIA. On 18 December 2012 a letter was received from the DIA (in response to submission of the updated CHMP and Section 18 Site B 2012 Report) stating that “the report meets the requirements of Condition 6 of the Ministers Consent issued on 26 February 2007 for</p>

	<p>Custodians.</p> <p>Objective To minimise impact on cultural heritage.</p> <p>Evidence Cultural Heritage Management Plan. (CHMP) Correspondence seeking Department of Indigenous Affairs advice.</p>			Woodside's Pluto LNG Project on Industrial Site B". Condition 6 of the Consent requires a Cultural Heritage Management Plan.
757:M10.2 Indigenous Heritage	<p>Action Implement the Cultural Heritage Management Plan required by Condition 10-1.</p> <p>How Implementation will take place through inductions and management of access to non-disturbance areas.</p> <p>Objective To prevent unnecessary impacts.</p> <p>Evidence Annual report to the DIA under Section 18 Permit for Site B, outlining if any site/object as been disturbed</p>	Overall	DWER Compliance	<p>C</p> <p>Under Condition 13 of the Minister for Indigenous Affairs' consent under Section 18 of the <i>Aboriginal Heritage Act 1972</i> (WA) Woodside must report to the registrar on the extent to which works have impacted sites or objects located on the land. This commitment is also a requirement in the <i>Pluto LNG Aboriginal Cultural Heritage Management Plan - Commissioning and Operations Phase</i> (Section 7. 'Background'), therefore annual reports under Section 18 consent to the Department of Planning, Lands and Heritage (DPLH) may be used to show effectiveness of implementation of the CHMP.</p> <p>On 9 March 2020 Woodside submitted to the DPLH the Site B 2019 Compliance Report, as required by Condition 13 of the Minister for Indigenous Affairs' consent under Section 18 of the <i>Aboriginal Heritage Act 1972</i> (WA).</p>
757:M10.3 Indigenous Heritage	<p>Action Make the Cultural Heritage Management Plan required by condition 10-1 publicly available.</p> <p>How Cultural Heritage Management Plan to be made available in accordance with OEPA Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012.</p> <p>Objective To ensure that the public is kept informed.</p> <p>Evidence Management Plan available on the Woodside internet site or upon request.</p>	Construction	DWER Compliance	<p>C</p> <p>The Cultural Heritage Management Plan is publicly available on the Woodside website: https://files.woodside/docs/default-source/our-business---documents-and-files/pluto---documents-and-files/pluto-construction-phase-cultural-heritage-management-plan.pdf?sfvrsn=640af3c5_8</p> <p>Any future revisions to the plan will be published on the Woodside website.</p>
757:M11.1 Compliance Reporting	<p>Action Prior to submitting a Works Approval application for the plant, submit a detailed Front End Engineering Design Report demonstrating that the proposed works adopt best practice pollution control measures to minimise emissions from the plant.</p> <p>How This report shall: 1. set out the base emissions rates for major sources for the plant and the design emission targets; and 2. address normal operations, shut-down, start-up, and equipment failure conditions.</p> <p>Objective To ensure best practice is applied to minimising air emissions.</p> <p>Evidence Front End Engineering Design Report.</p>	Design Prior to submitting a Works Approval Application for the plant.	Minister for Environment EPA	<p>CLD</p> <p>Front End Engineering Design Report was submitted to DEC on 31 April 2008. This report demonstrated that the proposed works undertake the best practice pollution control measures, minimising emissions on the plant.</p> <p>A second Front End Engineering Design report demonstrating the adoption of best practice pollution control measures to minimise emissions from the proposed second train was approved by the Minister on 3 January 2020.</p>
757:M11.2 Air Emissions	<p>Action At least three months prior to commencement of operations prepare an Air Quality Management Plan.</p> <p>How This plan shall include: 1. cumulative air quality modelling which uses data from the Front End Engineering Design Report and includes emissions from approved industrial sources at Cape Preston and Barrow Island; 2. proposed targets and standards; 3. an emissions monitoring programme, which includes nitrogen compounds, butene, toluene, ethylene, xylene, ozone, acrylene and hydrogen sulphide emissions from the plant; 4. an ambient air monitoring programme and a nitrogen deposition monitoring programme; and 5. annual reporting.</p>	Construction At least three months prior to the commencement of operations	Minister for Environment	<p>C</p> <p>The Air Quality Management Plan was submitted on 29 September 2010. The plan was approved by the OEPA on 10 October 2011 (EPA reference: A337424: OEPA2010/000682-1).</p> <p>In advance of potential changes to industrial air emissions on the Burrup Peninsula, Woodside voluntarily recommenced ambient air quality monitoring in 2019 to further understand ambient air quality in the region. The program is expected to extend the historical dataset and complement ambient air quality monitoring proposed under the Murujuga Rock Art Strategy.</p> <p>A revised Air Quality Management Plan was submitted on 15 August 2019 and is currently under assessment with the OEPA.</p>

<p>757:M11.3 Air emissions</p>	<p>Evidence Air Quality Management Plan. Action Implement the Air Quality Management Plan required by Condition 11-2. Objective To minimise environmental impacts associated with air emissions. Evidence Refer to Appendix 1 of the Annual Compliance Report.</p>	<p>Operation</p>	<p>DWER Compliance</p>	<p>C Implementation continued under licensed operation during the reporting period in accordance with the management framework outlined in the approved Air Quality Management Plan. Routine monitoring including stack emissions testing continued during the reporting period for the gas turbines and regenerative thermal oxidiser (RTO). Emissions monitoring results, smoke monitoring and RTO operation reporting to the DWER was undertaken in accordance with conditions outlined in the DWER Licence L8752/2013/2. Please refer to Appendix 1 for the status of key management actions in the Air Quality Management Plan.</p>
<p>757:M11.4 Air Emissions</p>	<p>Action Make the Air Quality Management Plan required by condition 11-2 publicly available. How Air Quality Management Plan to be made available in accordance with OEPA Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012. Objective To keep public informed. Evidence Management Plan available on the Woodside internet site or upon request.</p>	<p>Construction</p>	<p>DWER Compliance</p>	<p>C The Air Quality Management Plan is publicly available on the Woodside website: https://www.woodside.com.au/our-business/pluto-lng/pluto-lng-environmental-compliance-reporting. Any future revisions to the plan will also be published on the Woodside website.</p>
<p>757:M12.1 Greenhouse Gas Abatement</p>	<p>Action Develop a Greenhouse Gas Abatement Program (GGAP): to ensure that the plant is designed and operated in a manner which achieves reductions in "greenhouse gas" emissions as far as practicable; to provide for ongoing 'greenhouse gas' emissions reductions over time; to ensure that through the use of best practice, the total net "greenhouse gas" emissions and/or "greenhouse gas" emissions per unit of product from the project are minimised; and to manage "greenhouse gas" emissions in accordance with the Framework Convention on Climate Change 1992, and consistent with the National Greenhouse Strategy. How This Program shall include: 1. calculation of the "greenhouse gas" emissions associated with the proposal, as advised by the Environmental Protection Authority; Note: The current requirements of the Environmental Protection Authority are set out in: Minimising Greenhouse Gas Emissions, Guidance for the Assessment of Environmental Factors, No 12 published by the Environmental Protection Authority (October 2002). This document may be updated or replaced from time to time. 2. Specific measures to minimise the total net "greenhouse gas" emissions and/or the "greenhouse gas" emissions per unit of product associated with the proposal using a combination of "no regrets" and "beyond no regrets" measures; 3. The implementation and ongoing review of "greenhouse gas" offset strategies with such offsets to remain in place for the life of the proposal; 4. Estimation of the "greenhouse gas" efficiency of the project (per unit of product and/or other agreed performance indicators) and comparison with the efficiencies of other comparable projects producing a similar product, both within Australia and overseas. 5.</p>	<p>Design Prior to commencement of construction of plant</p>	<p>Minister for Environment EPA</p>	<p>C This condition was initially met during the 2008 reporting period. A revision to the plan was submitted to OEPA for approval on 22 August 2011. A response from the OEPA on 17 January 2012 stated that "The (revised) Greenhouse Gas Abatement Program satisfies the key components required by Condition 12-1 of Ministerial Statement 757." A revised GGAP was submitted to EPA on 18 September 2019. Comments have been received from OEPA and the program is being finalised for resubmission.</p>

	<p>Implementation of thermal efficiency design and operating goals consistent with the Australian Greenhouse Office Technical Efficiency guidelines in design and operational management. 6. Actions for the monitoring, regular auditing and annual reporting of "greenhouse gas" emissions and emission reduction strategies. 7. a target set by the proponent for the progressive reduction of total net "greenhouse gas" emissions and/or "greenhouse gas" emissions per unit of product and as a percentage of total emissions over time, and annual reporting of progress made in achieving this target. Consideration should be given to the use of renewable energy sources such as solar, wind or hydro power. 8. A program to achieve reduction in "greenhouse gas" emissions, consistent with the target referred to in (7) above. 9. entry, whether on a project-specific basis, company-wide arrangement or within an industrial grouping, as appropriate, into the Commonwealth Government's "Greenhouse Challenge" voluntary cooperative agreement program. Components of the agreement program include: 1. an inventory of emissions; 2. opportunities for abating "greenhouse gas" emissions in the organisation; 3. a "greenhouse gas" mitigation action plan; 4. regular monitoring and reporting of performance; and 5. independent performance verification. 10. Review of practices and available technology; and 11. "Continuous improvement approach" so that advances in technology and potential operational improvements of plant performances are adopted. Note: In (2) above, the following definitions apply: 1. "no regrets" measures are those which can be implemented by a proponent and which are effectively cost-neutral and 2. "beyond no regrets" measures are those which can be implemented by a proponent and which involve additional costs which are not expected to be recovered.</p> <p>Objective To minimise environmental impacts associated with greenhouse gas emissions.</p> <p>Evidence Greenhouse Gas Abatement program.</p>			
<p>757:M12.2 Greenhouse Gas Abatement</p>	<p>Action For the life of the project, the proponent shall provide a greenhouse gas offset package which, as a minimum, offsets the reservoir carbon dioxide released to the atmosphere.</p> <p>Objective To minimise Greenhouse gas emissions.</p> <p>Evidence Formal agreement to provide offsets.</p>	<p>Overall Ongoing</p>	<p>Minister for Environment</p>	<p>C Provision of the approved greenhouse gas offset package continued during 2019, via a contract with CO2 Australia, and the purchase and retirement of voluntary offsets. During the reporting period, a gap was identified between the total reservoir emissions from the Pluto facility, and the sequestered carbon under Woodside's approved greenhouse gas offset package. To make up this shortfall, a total of 1,690,000 voluntary offset market units were purchased and retired in 2019.</p>
<p>757:M12.3 Greenhouse Gas Abatement</p>	<p>Action Implement the Greenhouse Gas Abatement Program required by condition 12-1.</p> <p>Objective To minimise Greenhouse gas emissions.</p> <p>Evidence Refer to Appendix 1 of the ACR.</p>	<p>Construction Ongoing</p>	<p>Minister for Environment</p>	<p>C The GGAP was revised in 2018 and submitted to DWER on 31 July, 2018. The GGAP details the design and operational aspects of the Project related to minimisation of the overall greenhouse footprint, and was active during the reporting period. Progress against individual activities specified in the GGAP is summarised in Appendix 1.</p>
<p>757:M12.4 Greenhouse</p>	<p>Action Prior to commencement of construction of plant, make the GGAP required by condition 12-1 publicly</p>	<p>Design Ongoing</p>	<p>CEO of DWER</p>	<p>C The approved GGAP is publicly available on the Woodside website:</p>

Gas Abatement	<p>available in a manner approved by the CEO.</p> <p>How GGAP to be made available in accordance with OEPA Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012.</p> <p>Objective To keep public informed.</p> <p>Evidence Program available on the Woodside internet site or upon request.</p>			<p>https://www.woodside.com.au/our-business/pluto-lng/pluto-lng-environmental-compliance-reporting.</p> <p>Any future revisions to the plan will also be published on the Woodside website.</p>
757:M13.1 Offsets	<p>Action Implement the offset package set out in Schedule 6 (Ministerial Statement 757) to the requirements of the Minister for the Environment on advice of the Department of Environment and Conservation.</p> <p>Objective To minimise environmental impacts associated with greenhouse gas emissions.</p> <p>Evidence Details contained in ACR.</p>	Overall Ongoing	Minister for Environment DEC	<p>CLD Schedule 6 specifies 7 offset components. Status of each component is as follows:</p> <p>Offset A: Site A Management and Monitoring CLD - A revised <i>Site A Vegetation Management Plan</i> was submitted to the DEC for review and comment on 21 October 2011. The DEC responded on 6 February 2012 that <i>'the revised plan and proposed outcomes have been confirmed as satisfactory by the Department of Environment and Conservation's Pilbara Regional Leader Nature Conservation'</i>.</p> <p>The Site A Vegetation Management Plan is implemented, with weed management and flora survey activities undertaken during the reporting period.</p> <p>Offset B: Rehabilitation/Restoration Outside Lease CLD - A funding agreement was executed between Woodside and the Department of Parks and Wildlife (DPaW) on 16 October 2013, which included concurrence by the DER. The funding agreement supports DPaW's implementation of a program to rehabilitate and restore degraded areas on the Burrup Peninsula, with a focus on the Murujuga National Park and adjacent areas. Woodside received confirmation that it had completed its obligations under Offset B from the Office of the Environmental Protection Authority (OEPA) on 24 March 2014.</p> <p>Offset C: Taxonomic studies of 37 Flora spp CLD – Minister for Environment and Water has confirmed that Woodside has met its obligations and has satisfied the requirements for this Offset.</p> <p>Offset D: Research and Monitoring Dampier Archipelago Marine Park CLD– Minister for Environment and Water has confirmed that Woodside has met its obligations and has satisfied the requirements for this Offset.</p> <p>Offset E: Managing Dredging Impacts CLD – Minister for Environment and Water has confirmed that Woodside has met its obligations and has satisfied the requirements for this Offset.</p> <p>Offset F: Genetic Work To Resolve Taxonomic Uncertainties – <i>Rhagada Sp 12</i>. CLD – Minister for Environment and Water has confirmed that Woodside has met its obligations and has satisfied the requirements for this Offset.</p> <p>Offset G: Ethno-Botanical Study CLD - A letter to the General Manager of the OEPA was sent on the 7 October 2011 to seek closure of this Offset. On 7 February 2012 the OEPA responded with a letter to confirm that the Burrup Peninsula Ethno-Botanical Study (December 2009) <i>'meets the requirements of Schedule 6, Offset G of Statement 757'</i></p>
757:M14.1 Decommissioning	<p>Action Prepare a Preliminary Decommissioning Plan for approval by the CEO, which describes the framework and strategies to ensure that the site is suitable for future land uses, and provides: 1. the rationale for the siting and design of plant and infrastructure as relevant to environmental</p>	Design Prior to submitting a Works Approval application for the plant.	DEC	<p>CLD A revised Preliminary Decommissioning Plan was submitted to the Office of the EPA on 8 January 2010 (PLU/GOV/00429) and subsequently approved on 1 February 2010 (DEC7069-02 - DOC 115002).</p>

	<p>protection; 2. a conceptual description of the final landform at closure; 3. a plan for a care and maintenance phase; and 4. initial plans for the management of noxious materials.</p> <p>Objective To outline a plan for decommissioning.</p> <p>Evidence Preliminary Decommissioning Plan.</p>			
757:M14.2 Decommissioning	<p>Action Submit a Final Decommissioning Plan, for approval of the CEO.</p> <p>How The Final Decommissioning Plan shall set out procedures and measures for: 1. removal or, if appropriate, retention of plant and infrastructure agreed in consultation with relevant stakeholders; 2. rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and 3. identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.</p> <p>Objective To ensure that the site is suitable for future land uses.</p> <p>Evidence Final Decommissioning Plan.</p>	<p>Operation</p> <p>At least 6 months before the date of closure or at a time approved by the CEO</p>	CEO of DWER	<p>NR</p> <p>Final Decommissioning Plan shall be developed closer to decommissioning date.</p>
757:M14.3 Decommissioning	<p>Action Implement the Final Decommissioning Plan required by condition 14-2 until such time as the Minister for the Environment determines, on advice of the CEO, that the proponent's decommissioning responsibilities have been fulfilled.</p> <p>Objective To fulfil decommissioning responsibilities</p> <p>Evidence Close-out report for the Final Decommissioning Plan.</p>	<p>Closure</p> <p>Until such time as the Minister for Environment determines on advice of the CEO that the proponent's decommissioning responsibilities have been fulfilled.</p>	<p>Minister for Environment</p> <p>CEO of DWER</p>	<p>NR</p> <p>Final Decommissioning Plan shall be developed closer to decommissioning date.</p>
757:M14.4 Decommissioning	<p>Action Make the Final Decommissioning Plan required by condition 14-2 publicly available in a manner approved by the CEO.</p> <p>How Final Decommissioning Plan to be made available in accordance with OEPA Post Assessment Guideline for Making Information Publicly Available (PAG 4) published August 2012.</p> <p>Objective To ensure the public is kept informed</p> <p>Evidence Plan available on the Woodside internet site or upon request.</p>	Closure	CEO of DWER	<p>NR</p> <p>Final Decommissioning Plan shall be developed closer to decommissioning date.</p>

APPENDIX 1 – PLUTO LNG MANAGEMENT PLAN KEY ACTIONS

The table below provides evidence of the status of key management actions contained within the Environmental Management Plans and programs required by Ministerial Statement 757.

Key Management Action	Source Ref/ Chap	Status/Evidence 2019
Marine Treated Waste Water Discharge Management Plan (Condition 7-2) (Rev 4, March 2014 - XA0000AH0029)		
Review Management Plan as required – triggers for review may include a significant change to the waste water system, results from WET testing and Water Corporation analysis, change in regulations, or at the request of the OEPA. Minor revisions may be undertaken to ensure the plan remains current. If changes are required to be made to the plan that are material to the risk presented by the operation of the facilities, a revised plan will be provided to the OEPA and DoE for approval. Approval will be obtained prior to implementation of the revised plan and the revised plan will be made publicly available to the prescribed requirements of the CEO of OEPA. Submit revised plan to OEPA and DoE for information or approval.	1.4	C In order for the plan to reflect the most up-to-date information regarding the management of the waste water treatment and disposal facilities during the operational phase, Woodside undertook an update to the Treated Waste Water Discharge Management Plan during 2013/2014 (Revision 4). This version incorporates minor amendments made based on operating experience (including testing results) during the commissioning and proving phase. Revision 4 of the plan was provided to the OEPA for information on 20 March 2014. Revision 4 remains in line with the management framework and revision process outlined in the approved Revision 3 of the plan, and DWER Operating Licence revision L8752/2013/2.
Monitoring during start-up and commissioning of effluent treatment plant as detailed in the <i>Pluto LNG Project Effluent Treatment Plant Commissioning Plan, Woodside Doc. XA0000AR0875</i> approved by the DEC under Works Approval W4466/2008/1.	6.1	CLD Woodside provided the Pluto Effluent Treatment Plant (ETP) Commissioning Closeout Report XA0000RH8753228 to the DEC on 5 April 2013. The report was prepared in accordance with the reporting commitments outlined in Table 5.1 of the DEC approved Pluto LNG Project ETP Commissioning Plan (Commissioning Plan), and Section 7.1 of the Pluto LNG Project Treated Waste Water Marine Discharge Management Plan. Commissioning closeout reporting and Licence application supporting documentation informed the licencing process through the DER. The DWER Operating Licence L8752/2013/1 was issued 1 August 2013.
Ongoing monitoring of water quality as per Table 6.1 of the Management Plan, including installed analysers and field laboratory tests.	6.2	C Monitoring was undertaken in accordance with the Treated Waste Water Discharge Management Plan and DWER Operating Licence L8752/2013/2. Monitoring data is included in DWER licence Annual Environmental Reporting. The 2018-19 Licence period environmental report was provided to DWER during the reporting period.
Amend table 6.1 if required, depending on results from Whole Effluent Toxicity (WET) testing. To be managed as part of Licensing process with DEC.	6.2	C Table 6.1 was amended in Revision 4 of the Treated Waste Water Management Plan to reflect the most up-to-date information regarding the management of the waste water treatment and disposal facilities during the operational phase incorporating minor amendments made based on operating experience (including testing results) during the commissioning and proving phase. Revision 4 of the plan was provided to the OEPA for information on 20 March 2014. Revision 4 remains in line with the management framework and revision process outlined in the approved Revision 3 of the plan, and DWER Operating Licence L8752/2013/2. Results of WET testing conducted in the reporting period have not required further amendments to the TWMP Table 6.1.
Whole Effluent Toxicity (WET) testing to be carried out on treated water from final inspection tanks in accordance with ANZECC/ARMCANZ (2000). Initial WET test to be conducted within three months following commissioning & stabilisation of the ETP as per the <i>Pluto LNG Project Effluent Treatment Plant Commissioning Plan</i> . Ongoing WET testing within 1 month following the anniversary of the initial WET test, annually, or immediately (within 2 months) following any significant, sustained increase in the levels of contaminants of concern within treated waste water.	6.4	CLD for commissioning and stabilisation C for ongoing operations Woodside conducted an eighth suite of WET testing sampling in October 2019. In the absence of any significant increase in the levels of contaminants of concern within treated waste water, there has been no requirement for further testing to be undertaken within the reporting period.
Commissioning Compliance Report to be completed as part of an application for a Part V Licence under the <i>Environmental Protection Act 1986</i> (WA). Reporting will be in accordance with <i>Pluto LNG Project Effluent Treatment Plant Commissioning Plan</i> .	7.1	CLD Woodside provided the Pluto Effluent Treatment Plant (ETP) Commissioning Closeout Report XA0000RH8753228 to the DEC on 5 April 2013. Commissioning closeout reporting and Licence application supporting documentation informed the licencing process through the DER. The DWER Operating Licence L8752/2013/1 was issued 1 August 2013.

Key Management Action	Source Ref/ Chap	Status/Evidence 2019
Operating performance data to be provided to DEC (Manager, Pilbara Region) within an Annual Licence Report.	7.1	C 2018-2019 Operating performance data was included in DWER Annual Environmental Licence Reporting. The 2018-2019 Licence period Annual Environment Report was submitted to DWER on 27 June 2019
Notification of DEC where effluent is discharged to ocean from the MUBRL not in accordance with either the approved discharge specifications or the Contingency Waste water Management Plan (detailed in Section 8).	7.3	NR Effluent was discharged within approved discharge specifications or Contingency Waste water Management Plan during the reporting period.
Implement contingency management options in Section 8.1 of the Management Plan in the event that effluent in the final inspection tanks does not meet the approved discharge specification for whatever reason.	8.1	NR Treated effluent met approved discharge specifications during the reporting period, therefore management options as described in the Contingency Waste water Management Plan were not required to be implemented.
Dredge Impact Management Plan (Condition 6-6)		
Coral Condition Assessments		
Refer to 2010 ACR for details.		CLD Dredging ceased on 21 May 2010. Results were presented in the ACR 2010.
Water Quality and Sediment Condition Assessments		
Refer to 2010 ACR for details.		CLD Dredging ceased on 21 May 2010. Results were presented in the ACR 2010.
BEP Techniques		
Refer to 2010 ACR for details.		CLD Dredging ceased on 21 May 2010. Results were presented in the ACR 2010.
Marine Quarantine Management Plan (Condition 8-1)		
Refer to 2010 ACR for details.		CLD Dredging ceased on 21 May 2010. Results were presented in the ACR 2010.
Sea Turtle Management Plan (Condition 9-2) (Rev 6, August 2018 – XB0005AH0006)		
OS 1 – Implement the existing Pluto Operational Environmental Lighting Specification	Table 8	C Construction of design elements of the Operational Environmental Lighting Specification were completed during the 2012 reporting period following completion of plant construction. During the 2019 annual Pluto turtle lighting survey, carried out to ensure compliance with the Pluto Operational Environmental Lighting Specification, opportunities to improve the management of lighting and reduce the likelihood of impacts were identified. These opportunities are being tracked and progressed.
OS 1 – Audits of lighting during operations against the Operational Lighting Protocol (Environmental Specification Lighting XA0005SH0003) shall be conducted during the first turtle nesting season of operations. Additional audits shall be conducted every 5 years during the operational life of the Pluto Offshore Facility.	Table 8	C An audit of the Pluto LNG Plant lighting to determine compliance with the Pluto Operational Lighting Protocol and a survey of spectral characteristics, intensity and sources of light spill visible from Holden Beach was undertaken by a specialist consultant in October 2017. The next audit will be completed in 2022.
OS 2 – In the event of a hydrocarbon spill, management measures contained within the Nearshore Pipelines Oil Pollution Response Plan and Pluto Facilities Oil Spill Response Plan shall be implemented.	Table 8	NR There were no Pluto offshore/nearshore hydrocarbon spills to sea with the potential to impact on turtles and marine mammals during the reporting period.

Key Management Action	Source Ref/ Chap	Status/Evidence 2019
OS 3 – Water quality to meet ANZECC/ARMCANZ (2000) 99% species protection level. Waste water reuse, and discharge residual waste water.	Table 8	C There were no Pluto waste discharges with the potential to impact on turtles and marine mammals during the reporting period. Marine discharges are managed in accordance with 757:M7.3.
OS 4 – Access to Holden Beach is restricted to key personnel, including staff involved in monitoring programs, security, health and safety, environmental and cultural heritage staff.	Table 8	C Access to Holden Beach through the Woodside lease is protected by a fence which surrounds the Pluto LNG facilities, and restricts access through locked and security controlled gates. Procedural controls are also in place via the Heritage and disturbance footprint approval system (refer to the Cultural Heritage Management Plan for details). To ensure access by key personnel only, a work permit system is also in place. Access to the beach by sea is restricted by a Dampier Port Authority Boating Safety Exclusion Zone: https://www.pilbaraports.com.au/Port-of-Dampier/Community/Recreational-boating
OS 4 – No vehicle access is permitted on Holden Beach.	Table 8	C Access to Holden Beach through the Woodside lease is protected by a fence which surrounds the Pluto LNG facilities, and restricts access through locked and security controlled gates. Procedural controls are also in place via the Heritage and disturbance footprint approval system (refer to the Cultural Heritage Management Plan for details). To ensure access by key personnel only, a work permit system is also in place. Access to the beach by sea is restricted by a Dampier Port Authority Boating Safety Exclusion Zone: https://www.pilbaraports.com.au/Port-of-Dampier/Community/Recreational-boating
OS 5 – Evaluate future timeframes of maintenance dredging to avoid coinciding with turtle nesting and breeding season. Refer to management plan for further actions regarding dredging and soil disposal.	Table 8	NR No dredging or spoil disposal activities during the reporting period.
CS1 – CS5 – Management measures for future construction.	Table 8	NR No significant expansion construction activities occurred during the reporting period.
Monitoring at Holden Beach – to be undertaken for five years from Pluto Foundation Project start-up until 2016 i.e. once a week from 1 st September to 1 May or more frequently if successful nesting event is identified.	5.1	C Sea turtle monitoring at Holden beach continued during the reporting period and monitoring logs were maintained to record activity.
Reporting – Turtle observation data will be compiled by the Woodside onsite Environmental Advisor and reports sent on a yearly basis, within 1 month of the end of the turtle nesting season to the DPAW and DOE. Reporting of any incident that involves the injury or mortality of a sea turtle or marine mammal during construction and operation will be reported – refer to the Management Plan for details.	6.1	C The annual turtle observation data for the 2018/2019 nesting/hatching period was submitted on 24 May 2019. Monitoring results for the 2019/2020 nesting/hatching period will be provided following conclusion of the season. No construction or operation incidents occurred involving injury or mortality of sea turtles or marine mammals.
Air Quality Management Plan (Condition 11-2) (Rev 2, December 2011 – X0000AH0002)		
Complete testing as detailed in the Stack Emissions Test Plan required under Works Approval W4444/2008/1 during plant commissioning. Results from the implementation of this plan to be provided to DEC within a compliance document required under Condition 2 of the Works Approval prior to plant Licensing.	5	CLD Woodside undertook commissioning stack emissions tests to validate performance of installed equipment during November 2012, December 2012, and February 2013. Performance reporting permitted commissioning closeout reporting, validation of design emissions estimates, and an application for an operating licence was submitted to DER (formerly DEC). A Stack Emissions Monitoring Verification Report was provided to the DEC on 7 March 2013.
Point Source Emissions Monitoring on gas turbines and RTO, quarterly in first year and then annually thereafter.	7.1	C Routine monitoring including stack emissions testing was undertaken during the reporting period, with a full suite of tests for gas turbines and the Regenerative Thermal Oxidiser (RTO) conducted in late 2019.

Key Management Action	Source Ref/ Chap	Status/Evidence 2019
Report summarising results of point source emissions from stack sampling to be provided to DEC regional office annually – as required under Part V Licence.	7.1	C Stack sampling results were provided to the DWER in section 6.1 of the Annual Licence Report as required by DWER Operating Licence L8752/2013/2, during the reporting period.
Smoke from flaring produced during operations to be estimated, recorded and reported as required in the Management Plan and Part V Licence once issued.	7.2	C Dark smoke observations were provided to the DWER in section 6.2 of the Annual Licence Report as required by DWER Operating Licence L8752/2013/2, during the reporting period.
Woodside will notify the DEC Regional Manager of regenerative thermal oxidiser (RTO) outages as detailed in the Management Plan, and report these outages in accordance with the Part V Licence once issued.	7.3	C RTO operation reporting to DWER was undertaken in accordance with arrangements outlined in the DWER Operating Licence L8752/2013/2. This consists of quarterly reports, which were submitted to the DWER throughout 2019 and into 2020 or the 2019 reporting period..
Implement the Pluto program of ambient air monitoring	8	NR Woodside received a letter from the OEPA on 2 October 2014 following OEPA review of the 12 Month ambient air program for BTX and PM2.5 confirming that no further monitoring of BTX and PM2.5 is required, and that Woodside are considered compliant with Condition 11-3 for this component of the program. In December 2014, Woodside proposed the cessation of monitoring of NOx and ozone associated with the Pluto LNG Development, and that the ambient air program prepared in accordance with MS757 Ambient Air Monitoring Condition 11-2, point 4 be confirmed as completed. Refer to 757:M11.2 in Table 1 for further information.
All monitoring stations will be checked and maintained as per the Ambient Air Monitoring Programme: Maintenance and Breakdown Response Plan.	8.3	NR No further calibration or maintenance of monitoring stations has been undertaken following the OEPA's endorsement of a pause in the Ambient Air Monitoring Program. Refer to 757:M11.2 in Table 1 for further information.

Key Management Action	Source Ref/ Chap	Status/Evidence 2018
<p>Woodside will implement a nitrogen deposition monitoring programme for a period of 24 months of data collection between end 2011 and end 2013. Monthly samples of TSP and NO₂ will be collected and weekly size resolved particulate samples will be collected at one location for three weeks during the 2012-2013 calendar years.</p> <p>Upon completion of the data collection phase, a report will be prepared and provided to EPA.</p>	9.2	<p>CLD The 24-month Nitrogen Deposition Monitoring Study detailed in the Air Quality Management Plan concluded in the 2014 reporting period, with five of the stations in operation since (or before) June 2012, and the sixth (background) station operating since April 2013.</p> <p>In May 2014, Woodside requested OEPA endorsement of an amendment to the reporting date of the approved Nitrogen Deposition Review Methodology to before 31 December 2014. This amendment was endorsed by the OEPA on 14 May 2014. Analysis of the Nitrogen Deposition monitoring data was undertaken during 2014 by CSIRO, and an independent review report was prepared by Golder Associates.</p> <p>During the period, Woodside provided reports to the OEPA on 30 December 2014 which included data analysis, reporting and independent review findings of the nitrogen deposition monitoring program.</p> <p>These documents demonstrate that risk assessments outlined in approvals documentation are consistent with measured results, and that any nitrogen deposition due to Pluto LNG emissions is insignificant. Woodside proposed the cessation of the monitoring program and that this component of the program prepared in accordance with MS757 Condition 11-2 point 4 be confirmed as Completed.</p> <p>Following submission of two third party reports which reviewed the Air Quality Management Plan NO_x and ozone, and nitrogen deposition monitoring (submitted on 24 and 30 December 2014 respectively), the OEPA on 2 July 2015 endorsed a pause in this monitoring until such a time as OEPA requests that it be recommenced.</p>
<p>Regular review of ongoing emissions monitoring and ambient air monitoring programs. Results will be compared to previously completed sampling and monitoring results and risk/impact assessments.</p> <p>If actual emission levels are found to be significantly higher than predicted, this difference will be communicated concurrent with Part V Licence requirements.</p>	10	<p>C Reviews of operational monitoring results were undertaken and compared against previously completed sampling results and risk/impact assessments. Stack sampling results and analysis was provided to the DWER in section 6.1 of the Annual Licence Report as required by DWER Operating Licence L8752/2013/2, during the reporting period.</p>
<p>Ambient air monitoring review – 12 month review of PM_{2.5} and BTX monitoring data and 24 month review of NO_x and ozone monitoring data using independent peer reviewer.</p> <p>12 month review period 1 Jan 2012 – 31 Dec 2012. 24 month review period 1 Jan 2012 – 31 Dec 2013.</p> <p>Decision to be made on continuation of monitoring following review periods.</p>	10.1	<p>CLD Independent peer review of 12 months of PM_{2.5} and BTX monitoring was completed during 2014 and reported to the OEPA on 31 July 2014.</p> <p>Independent peer review of 24 months of NO_x and ozone monitoring was completed during 2014 and reported to the OEPA on 29 December 2014.</p> <p>Woodside received a letter from the OEPA on 2 October 2014 following OEPA review of the 12 Month ambient air program for BTX and PM_{2.5}. The letter confirmed that no further monitoring of BTX and PM_{2.5} is required, and that Woodside are considered compliant with Condition 11-3 for this component of the program.</p> <p>In December 2014, with consideration of program results, Woodside proposed the cessation of monitoring of NO_x and ozone associated with the Pluto LNG Development, and that the ambient air program prepared in accordance with MS757 Ambient Air Monitoring Condition 11-2, point 4 be confirmed as Completed.</p> <p>Following submission of two third-party reports which reviewed the Air Quality Management Plan NO_x and ozone, and nitrogen deposition monitoring (submitted on 24 and 30 December 2014 respectively), the OEPA on 2 July 2015 endorsed a pause in this monitoring until such a time as OEPA requests that it be recommenced.</p>

Following the 24 month nitrogen deposition monitoring period a review of the data will be conducted.	10.2	<p>CLD Independent peer review of the nitrogen deposition monitoring program was completed during 2014. Woodside provided reports to the OEPA on 30 December 2014 which included data analysis, reporting and independent review findings of the nitrogen deposition monitoring program.</p> <p>These documents demonstrate that risk assessments outlined in approvals documentation are consistent with measured results, and that any nitrogen deposition due to Pluto LNG emissions is insignificant. Woodside proposed the cessation of the monitoring program and that this component of the program prepared in accordance with MS757 Condition 11-2 point 4 be confirmed as Completed.</p> <p>Following submission of two third-party reports which reviewed the Air Quality Management Plan NO_x and ozone, and nitrogen deposition monitoring (submitted on 24 and 30 December 2014 respectively), the OEPA on 2 July 2015 endorsed a pause in this monitoring until such a time as OEPA requests that it be recommenced</p>
Greenhouse Gas Abatement Program (Condition 12-2) (Rev 2, July 2011 – XA0005AH0010)		
Offset reservoir CO ₂ emissions for the life of the project using allocation from the Woodside market abatement portfolio, to meet the environmental approval abatement conditions.	9.1	<p>C A contract with CO2 Australia to bio-sequester carbon dioxide, and the purchase and retirement of voluntary carbon credit units, were in place in the reporting period as the mechanisms by which the Pluto LNG Project will meet offset obligations.</p> <p>Refer to 757:M12.2 in Table 1 for further information.</p>
Reporting in accordance with the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth).	10.4	<p>C Annual reporting to the Clean Energy Regulator under the <i>National Greenhouse and Energy Reporting Act 2007</i> occurred in October 2019.</p>
Greenhouse Gas Improvement Plan Action 1 – Monitor atmospheric emissions, energy consumption and LNG production.	Table 11-1	<p>C Monitoring of atmospheric emissions, energy consumption and LNG production was undertaken during the reporting period. The GGAP outlines how Pluto’s greenhouse gas emissions profile is determined (Section 7), benchmarking against other projects (Section 5), and sets out targets, monitoring, auditing and reporting (Section 10).</p>
Greenhouse Gas Improvement Plan Action 2 – Undertake a Leak Detection and Repair Program.	Table 11-1	<p>CLD A leak detection and repair program was undertaken during November 2013. This supplemented the designed instrumentation and operational leak detection processes. The detection survey was undertaken by a specialist contractor, with identified emissions addressed immediately where practicable, and through maintenance systems with due consideration of safe access, planning, isolation and shutdown requirements.</p>
Greenhouse Gas Improvement Plan Action 3 – Undertake a Flare Gas Recovery Study.	Table 11-1	<p>CLD As part of the facility Energy Efficiency Opportunity (EEO) study undertaken during 2014, investigation included analysis of flaring sources, known vulnerabilities causing flaring, and potential rectification options. These opportunities were raised in the EEO process for screening.</p> <p>One opportunity was the evaluation a flare gas recovery system (FGRS) on the warm-wet flare (initially based on the available 2013 flare flow data).</p> <p>Review of the study in late 2014 identified substantial reduction in continuous flare flows, reducing the feasibility of pursuing a recovery system. Further, potential process safety stability impacts, combined with capital costs, construction safety risks and low value return resulted in the FGRS not being carried for further detailed study.</p>

Greenhouse Gas Improvement Plan Action 4 – Undertake an energy efficiency review of the plant.	Table 11-1	<p>CLD</p> <p>An Energy Efficiency Opportunity Review was undertaken during March 2014, in accordance with the Energy Efficiency Opportunities Act 2006. A suite of background material, trends, prompts and register of existing opportunities was expanded on during the workshop to compile a register of recommended opportunities for further screening.</p> <p>A total of 35 opportunities were presented, grouped for assessment as opportunities for efficiency gains, flaring reduction, and both efficiency and flaring improvement.</p> <p>Analysis of opportunities continues for a number of opportunities in line with Woodside’s Opportunities and Reliability Improvement Process (ORIP) and Management of Change (MOC) processes. Opportunities are identified on an ongoing basis through workshops and engineering continuous improvement.</p> <p>Woodside uses ORIP to support plant optimisation and long-term sustainability. The process includes the use of an electronic database to document issues, vulnerabilities and opportunities to optimise plant reliability and performance. Once suitably assessed in ORIP, project plans are developed and progressed through MOC processes.</p>
Greenhouse Gas Improvement Plan Action 5 – Identify energy efficiency gains and improved greenhouse emissions intensity by integrating systems for future expansion.	Table 11-1	<p>C</p> <p>A revised Greenhouse Gas Abatement Program was submitted to EPA on 18 September 2019. Comments have been received from EOPA and program is being finalised for resubmission.</p>
Greenhouse Gas Improvement Plan Action 6 – Continue to monitor market abatement opportunities.	Table 11-1	<p>C</p> <p>Woodside continues to monitor market greenhouse gas abatement opportunities and continues to assess the applicability of offsets for Pluto LNG emissions as part of broader consideration of emerging federal government greenhouse policy and framework.</p> <p>Refer to 757:M12.2 in Table 1 for further information.</p>
Greenhouse Gas Improvement Plan Action 7 – Review Greenhouse Gas Improvement Plan and incorporate any identified actions.	Table 11-1	<p>CLD</p> <p>The Pluto LNG facility improvement plan targets opportunities to continually optimise reliability, and minimise emissions intensity. This improvement plan is achieved through normal business of monitoring, maintenance execution and the identification, analysis and implementation of plant opportunities in accordance with Woodside’s processes, which provide a “live plan”.</p> <p>The improvement plan was reviewed following the EEO process during 2014. A number of opportunities have been substantially progressed, with numerous improvements implemented during 2014, implementation commenced, or planned for implementation.</p> <p>As part of this analysis and consideration of benchmark performance, a reduction (below baseline of 0.40 tCO₂e/tLNG) emissions intensity of 0.37 tCO₂e/tLNG is defined as a long-term target for periods of stable operation.</p>
Greenhouse Gas Improvement Plan Action 8 – Review and update the Greenhouse Gas Abatement Program.	Table 11-1	<p>C</p> <p>A revised Greenhouse Gas Abatement Program was submitted to EPA on 18 September 2019. Comments have been received from OEPA and the program is being finalised for resubmission.</p>
Woodside Energy Limited Invasive Marine Species Management Plan (Condition 8-3) (Rev 6, June 2018 – A3000AH4345570)		
Risk Assessment Process detailed in Section 4 of the Management Plan is to be applied to all vessels, rigs and immersible equipment under Woodside contract that plan to enter and operate within the identified Invasive Marine Species Management Area (IMSMA), other than those exceptions identified in Section 1.4 of the Management Plan.	4	<p>C</p> <p>The Invasive Marine Species Management Plan is implemented for Pluto vessel operations, including provision of Tankers and Carrier Guidelines during vessel contracting processes. Where required by the plan, risk assessments (VRASS) are carried out for support vessels to prevent the introduction of invasive species.</p>

Ensure that management options following the risk assessment process comply with Section 5.1 of the Management Plan	5	C Management options implemented following the risk assessment process may for example include information confirmation, application of the limit of three entrants into the IMSMA, treatment of vessel internal seawater systems, or inspection.
Preliminary Decommissioning Plan		
Ensure a preliminary decommissioning plan is approved, in accordance with the requirements of condition 14-1.		CLD A revised preliminary decommissioning plan was submitted to DEC for approval on 8 January 2010 and was approved on 1 February 2010.
Final Decommissioning Plan		
Not applicable at this stage. The Final Decommissioning Plan will be developed closer to decommissioning date. Key actions to satisfy this commitment will be identified once plan has been approved.		NR Not required during the 2019 reporting period.