Proposed Environmental Risks and Controls of the Carpentaria Pilot Project

Environmental Factor	Environmental Objective	Potential Impacts and Risks	Controls
Hydrological processes Inland water environmental quality	• Protect the hydrological regimes of groundwater and surface water so that environmental values, including ecological health, land uses and the welfare and amenity of people, are maintained. • Protect the quality of groundwater and surface water so that environmental values, including ecological health, land uses and the welfare and amenity of people, are maintained.	• It is unlikely that groundwater extraction for the Carpentaria Pilot Project (CPP) will reduce water availability to other users, including the environment. • It is unlikely that the CPP will contaminate aquifers and surface water.	• All groundwater extraction will be licensed under the Water Act (NT) and considering extraction impacts on other users, including the environment. • All groundwater use will be monitored and reported to the Regulator quarterly. • A spill management plan will be in place covering on-site fluid storage and transport. • Baseline groundwater quality will be established at each CPP well pad. • Water quality will be monitored in on-site water bores, with the results sent to the Regulator and made publicly available. • Only water-based drilling fluids will be used. • Gas wells will be constructed with multiple engineered cement and steel barriers protecting aquifers. • Aquifers will be monitored at the well pad during Hydraulic Fracturing activities, and the results will be sent to the Regulator. • No PBT chemicals potentially harmful to human health to be used in the Project
Inland water environmental quality	• Protect the quality of groundwater and surface water so that environmental values, including ecological health, land uses and the welfare and amenity of people, are maintained	• It is unlikely that the CPP will reduce surface water availability to other users. • It is unlikely that the CPP will contaminate surface water bodies from the offsite release of sediment or contaminants.	• No surface water will be used for CPP activities. • Well pads and facilities will be preferentially located above the modelled 1-in-100-year flood levels. • Well pads and facilities will be constructed and operated with erosion and sediment control devices. • Wastewater will be stored and treated in engineered tanks fitted with secondary containment and leak detection. • Drilling by-products will be stored in lined earthen sumps. • The freeboard for all open-topped wastewater treatment tanks and drilling sumps will be maintained over the local wet season to contain a 1-in-1,000-year storm event. • No PBT chemicals potentially harmful to human health to be used in the Project
Air quality	• Protect air quality and minimise emissions and their impact so that environmental values are maintained.	• The impact on habitable dwellings, pastoral activities, flora and fauna from dust is likely to be minimal.	• Well pads, facilities, and access tracks are located away from sensitive receptors, such as habitable dwellings. • Dust suppression will be used on access tracks and other worksites during peak activities to minimise dust emissions.

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Atmospheric process	• Minimise greenhouse gas emissions to support the NT Government's goal of achieving net zero greenhouse gas emissions by 2050.	• The CPP multi-year appraisal program would ordinarily require a material amount of gas to be flared or vented to the environment.	• The Petroleum Act 1984 includes provisions allowing the recovery of gas that would otherwise be flared in an appraisal project. Recovery of appraisal gas is subject to approval by the Minister. Imperial proposes to seek Ministerial approval and the consent of traditional Aboriginal owners in consultation with the Northern Land Council to send the appraisal gas from the wells to the project compressor station via a buried gas gathering network for sale. • A Methane Emissions Plan outlining controls and monitoring for the CPP will be implemented.
Landforms	• Conserve the variety and integrity of distinctive physical landforms.	• The CPP is unlikely to impact distinctive physical landforms.	• Due to the CPP site selection process, potentially sensitive landforms are avoided. • Site specific erosion and sediment controls for proposed land disturbance areas have been developed
Coastal processes environmental quality Marine ecosystems	• Protect the geophysical and hydrological processes that shape coastal morphology so that the environmental values of the coast are maintained. • Protect the quality and productivity of water, sediment and biota so that environmental values are maintained. • Protect marine habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	• The CPP is unlikely to impact coastal processes, marine environmental quality, and marine ecosystems.	• Due to the location of the CPP, no specific controls are required to reduce the impact on coastal processes, marine environmental quality, and marine ecosystems.
Culture and heritage	• Protect culture and heritage.	• It is not expected that CPP activities will cause any physical damage to culture and heritage.	• Imperial will consult with traditional Aboriginal owners on all CPP activities. • Imperial will have an APPA authority certificate for all CPP activities. • An archeological inspection will be carried out on all planned disturbance areas before CPP's first disturbance works. • Traditional Aboriginal owner Cultural Monitors will be on-site during CPP's first disturbance works.

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Terrestrial environmental quality	• Protect the quality and integrity of land and soils to support and maintain environmental values.	• It is not expected that CPP activities will significantly impact the quality and integrity of land and soil due to contamination by wastewater, chemicals or fuels or from erosion and sedimentation.	• Well pads, facilities, access tracks, and flowline right of ways will be located with consideration of the NT Land Clearing Guidelines. • Well pads and facilities will be constructed and operated with erosion and sediment control devices. • Wastewater will be stored and treated in engineered tanks fitted with secondary containment and leak detection. • The freeboard for all open-topped wastewater treatment tanks and drilling sumps will be maintained over the local wet season to contain a 1-in-1,000-year storm event. • Specific integrity monitoring of isolation and containment controls for each aspect of the Activity identified in relevant Management Plans and Risk Assessment • A Rehabilitation Plan will be implemented, and CPP sites will be progressively rehabilitated when no longer required.
Terrestrial ecosystems	• Protect terrestrial habitats to maintain environmental values, including biodiversity, ecological integrity, and ecological functioning.	• It is not expected that CPP activities will significantly impact terrestrial habitats by excessive land clearing, landscape fragmentation, or the destruction of areas of high conservation value. • The risk and impact from the introduction or spread of weeds is considered possible, given the existing presence of weeds at the site and in the vicinity. • It is not expected that the CPP will cause an uncontrolled bushfire impacting pastoral infrastructure, environmental habitat and fauna, impacts on culturally- significant sites, public infrastructure and community lands.	• Well pads, facilities, access tracks, and flowline right of ways will be located with consideration of the NT Land Clearing Guidelines. • An ecological site inspection will be carried out to guide the CPP well pad, facility, access track, and flowline right-of-way site selection to minimise impact on terrestrial habitats. • A pre-disturbance weed inspection will be carried out for all CPP sites, followed by annual weed inspections and treatment programs as required. • Well pads and facilities will be constructed and operated with fire breaks. • A fire tender will be on-site during CPP's first disturbance activities. • A Bushfire Management Plan outlining fire response strategies and emergency contact protocols for the CPP will be implemented. • A Weed Management Plan outlining biosecurity strategies and monitoring for the CPP will be implemented. • Machinery, equipment, and loads are to be free from weeds and pests on entry. • A speed limit of 60kph will be implemented on CPP access tracks, and nighttime traffic movements minimised where possible. • Dust suppression will be used on access tracks and worksites during peak activities to minimise dust creation. • A Rehabilitation Plan will be implemented, and CPP sites will be progressively rehabilitated when no longer required.

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Community and economy	• Enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians.	• The CPP, it is unlikely to negatively impact the amenity and benefit of current and future generations of Territorians. • The CPP, it is not envisaged that it will impact local community recreational and cultural opportunities. • It is not envisaged that the CPP will negatively impact the employment opportunities of the local community, the availability or pricing of local housing, or local police and/or emergency services resources.	• The CPP is anticipated to increase employment opportunities directly and via contracting companies supporting construction and appraisal activities. • Imperial will utilise temporary camps for most of the CPP's short-term and ongoing activities, with no intended use of local housing. • Imperial will consult with traditional Aboriginal owners on all CPP activities. • CPP activities and facilities are unlikely to be visible from the Carpentaria highway other than localised light glow at night. • Most materials, equipment and personnel travelling to and from the CPP will utilise the Carpentaria Highway, which is currently being upgraded as part of the Northern Territory Gas Industry Roads Upgrades project. • Imperial will have medical support staff on-site during the facilities' establishment phase of the CPP. • A Stakeholder Engagement Plan for the CPP will continue to be implemented
Human health	• Protect the health of the Northern Territory population.	• It is unlikely that the CPP will adversely impact the health of local Territorians.	• A speed limit of 60kph will be implemented on CPP access tracks and nighttime traffic movements minimized where possible. • Dust suppression will be used on access tracks and other worksites during peak activities to minimise dust emissions. • The CPP will comply with relevant health and safety regulations.