ENVIRONMENT PLAN SUMMARY
JANSZ-IO DRILLING

ExxonMobil Development

INTRODUCTION

This summary has been submitted to comply with Regulation 11(7)(8) of the Offshore Petroleum and Greenhouse Gas Storage (Environment) (OPGGS(E)) Regulations 1999.

Chevron Australia Pty Ltd (Chevron) is unit operator under the Jansz-Io Unitisation and Unit Operating Agreement (UUOA)[1] and operator under all other related Gorgon Project commercial agreements. Mobil Australia Resources Company Pty Limited (referred to in this document as "ExxonMobil"[2]) is delegated operator responsibility by the parties to the UUOA, including Chevron, for certain Jansz-Io work activities.

ExxonMobil proposes to undertake the Jansz-Io work activities which are comprised of the drilling and completion of the 10 Jansz-Io development wells and the conversion of the Jansz-4 appraisal well to a pressure monitoring well. The ten wells will be drilled and completed from the location of the drill centres, Drill Centre 1 (DC-1) and Drill Centre 2 (DC-2). Five wells will be located at DC-1 and five wells will be located at DC-2.

The Jansz-Io field is being developed under Production Licences WA-36-L, WA-39-L and WA-40-L with the Joint Venture Participants being Chevron Australia Pty Ltd (17.75%), Chevron (TAPL) Pty Ltd (29.583%), Mobil Australia Resources Company Pty Limited (25%), Shell Development (Australia) Proprietary Limited (19.625%), BP Exploration (Alpha) Ltd (5.375%), Osaka Gas Gorgon Pty Ltd (1.25%), Tokyo Gas Gorgon Pty Ltd (1%) and Chubu Electric Power Gorgon Pty Ltd (0.417%).

ExxonMobil will use the Transocean Deepwater Frontier (DWF), a dynamically positioned (DP) drillship to drill the Jansz-Io wells.

Maersk and Farstad will provide the Support Vessels and P&O will provide Fast Supply Intervention Vessel to support the drilling activities.

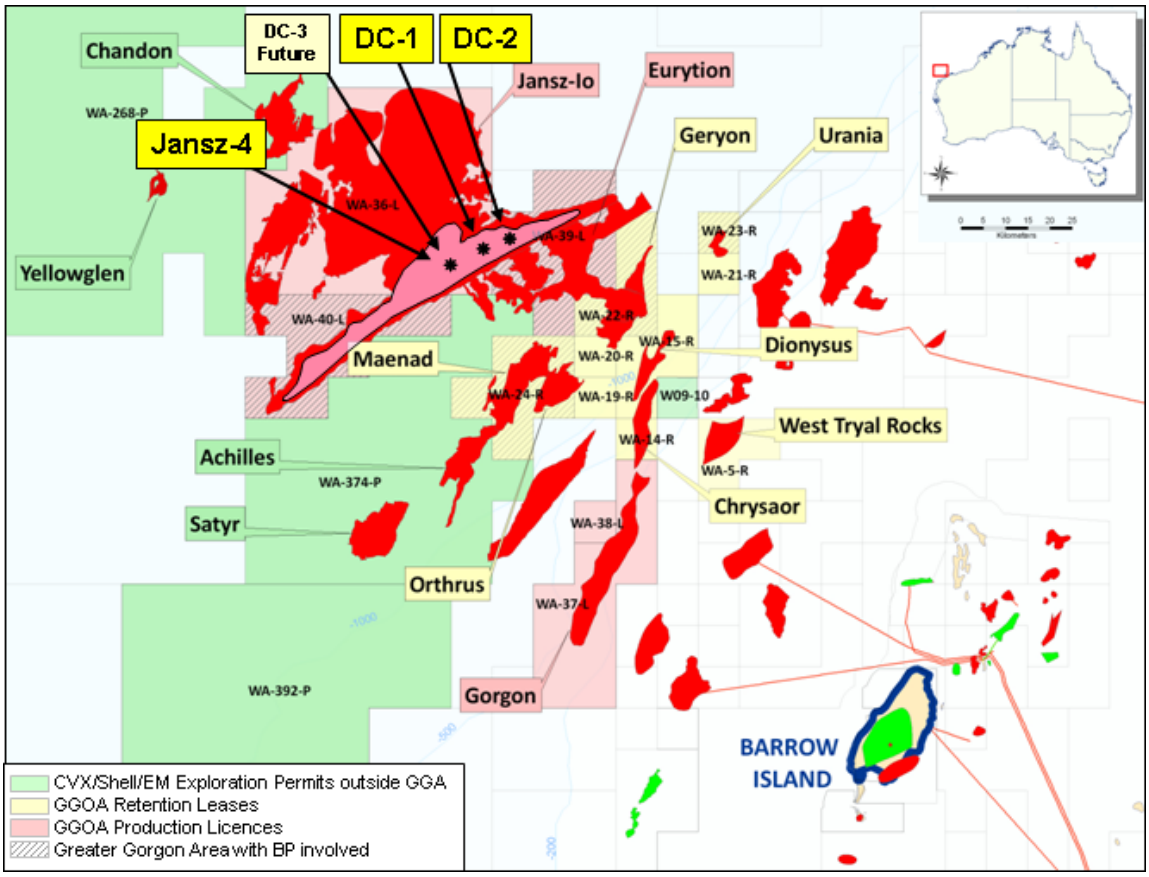
LOCATION

The Jansz-Io field is situated on the western flank of the Kangaroo Syncline, in the Carnarvon Basin on the North West Shelf of Australia. It is 70 km North West of the Gorgon Gas Field, 154 km North West of Barrow Island, 140 km east of the Scarborough Gas Field and 239 km from Dampier, which is the nearest port on the coast of Western Australia. Water depths vary from 1200 to 1400m. Figure 1 shows the location of the field.

[1] The parties to the UUOA are: Chevron Australia Pty Ltd, Chevron (TAPL) Pty Ltd, Mobil Australia Resources Pty Ltd, Shell Development (Australia) Pty Ltd, BP Exploration (Alpha) Pty Limited, Osaka Gas Gorgon Pty Ltd, Tokyo Gas Gorgon Pty Ltd and Chubu Electric Power Australia Pty Ltd.

[2] The term "ExxonMobil" as used in this EP Summary may also refer to Exxon Mobil Corporation, or to one of its affiliates, in addition to Mobil Australia Resources Company Pty Limited and is used merely for convenience and simplicity.

Figure 1: Location of Jansz-Io Field



THE ENVIRONEMNT

Climate and Meteorology

The climate is monsoonal with seasonal winds primarily from the south-southwest during the summer and transitional spring months and rarely from the north-west or north. During winter, the winds typically prevail from the easterly and south-easterly direction and remain rare from the north-west or north. During the transitional autumn and spring months, the winds swing between the summer and winter patterns and southerly winds are quite common

The Bureau of Meteorology records for Barrow Island which is approximately 154km from the Jansz-Io wells show that mean daily maximum summer temperatures range from 33°C to 35°C with the highest maximum temperature recorded 45°C. Mean daily maximum winter temperatures ranges from 25°C to 26°C. Offshore temperatures in the permit area are likely to be less extreme.

Mean monthly rainfall ranges from 12mm to 55mm in summer with the highest mean monthly rainfall of 65mm occurring in June. The highest daily rainfall of 193mm was recorded in the month of December and almost certainly was due to a cyclonic storm.

Bathymetry, Geology and Sedimentation

The Jansz-Io gas field lies beyond the Continental Slope, on the western flank of the Kangaroo Syncline in water depth of approximately 1300m. The water depth of the Jansz-Io wells is approximately 1340m. The seabed is predominately flat and featureless with a gentle slope towards the northeast of less than half a degree at the well locations.

Approximately 1 to 2km northeast and east of the proposed well locations, the basin-ward extent of recent turbidity flows is easily observed. These features have local dips in excess of 5 degrees and relief of up to 10m. Seafloor sediments are very soft, carbonate clays. Near-surface soils consist of approximately 5 m of very soft, sandy clay lying atop a 163 meter thick debris flow made up of carbonate clasts, sands and clays.

Oceanography

Astronomical tides on the NWS are semidiurnal and generally quite large, ranging from 0.95m near Exmouth to more than 3m on the inner shelf near Broome. Maximum spring tide amplitudes range from just over 2m at Exmouth, 2.5m at Onslow, and 4.5m at Dampier to nearly 6m at Port Hedland. The increase in tidal amplitude from south to north is most marked north of the Montebello Islands, where the width of the continental shelf increases significantly

The currents in the Jansz-Io area are dominated by tidal forcing. Local winds and oceanic drift (Leeuwin Current) can be important at times and more so in the upper 200m of the water column.

Maximum non-cyclonic current speeds in upper regions (surface to 100m) will likely range from 0.33 – 0.8 m/sec in the Jansz area. Maximum cyclone current speeds (surface to 100m) may occasionally approach 0.5 – 1.1 m/sec under extreme storm conditions.

The total wave climate is composed of locally generated wind waves, the direction of which follows that of the prevailing winds (South West in summer / South East in winter), and the perennial swell propagating into the area from distant regions to the South West. Southern Ocean storms may generate very long period swell (16 – 21 sec), which arrive in the Jansz-Io area from the South West with typical mean annual amplitude of about 1.5m.

Tropical cyclones and strong synoptic easterly winds over extensive fetches to the North West of the location may generate shorter period swell (6-10 sec), which arrives at the location from East North East. Tropical cyclone swell may attain maximum heights of 5-10m during severe events.

The seawater in the Jansz-Io area is strongly thermally stratified throughout the year and has a permanent and extensive thermal gradient that is the highest from around the 100-220m depth, but will continue to persist too as deep as 500m. The near-surface seawater will attain a maximum temperature of 30 – 31^{o}C by late summer (February – April) and cooling to a minimum 22 – 23^{o}C by late winter (August – October). The temperature difference between surface and the bottom is approximately 27^{o}C in the summer and 19^{o}C in the winter. The seafloor water temperature will remain fairly constant throughout the year at 4^{o} C.

Biological Environment

Benthic fauna in the Jansz-Io region, like other deep areas of the North West Shelf is depauperate, with low abundances, richness and diversity. Infaunal communities in the region appear to be most influenced by water depth and sediment size. Generally there is lower energy in deeper water that can disturb sediments which are usually finer grained sands and silts with varying proportions of mud and shell fragments. This creates habitats suitable for burrowing organisms, particularly polychaete worms and smaller crustaceans.

Absence of hard substrate is considered a limiting factor for the recruitment of epibenthic organisms. Light penetration to the bottom at depths of 1,300m is considered insufficient for the development of plants (sea-grasses and algae) and scleractinian (reef building) corals.

The depauperate benthic fauna in the Jansz region is typical of the low abundances, richness and diversity observed in other deep areas of the North West Shelf. The deep water, fine sediments and associated depauperate fauna occurring around the proposed drill site means that the risk of impacting benthic faunal communities is very low

Corals

The nearest coral reefs are more than 120 km away to the east southeast of the Jansz-Io area at the Montebello Islands. Coral reefs and coral-dominated benthic communities are common in rocky, shallow water areas. The water depth at the Jansz-Io area precludes any significant habitat for coral.

Turtles

Five species of marine turtles or their respective habitats may occur in the region of the Jansz-Io drilling. Given the water depth at the Jansz-Io drilling location (approximately 1340m) it is unlikely that marine turtles will feed in the area, however, as migratory species, they may pass through the area as they migrate from foraging to breeding locations.

Mammals

There are no known areas of importance, either breeding or feeding, for cetaceans around the Jansz-Io region however as all are migratory, they may occasionally be encountered passing through the region. There are two threatened mammal species which may occur in the region of the Jansz-Io drilling. These are Humpback whale (listed as vulnerable) and the Blue whale (listed as endangered).

Other migratory cetaceans of national significance that may be encountered within the Jansz-Io region are the Antarctic Minke and, Dark-shoulder Minke Whale, Bryde's Whale, Killer Whale and the Sperm Whale. These species are not listed as threatened. Of these, there are known habitats in Western Australia for the Bryde's Whale to the north of Shark Bay and near the Abrohlos Islands, the closest of which is over 600km from the Jansz-Io region. Further south in Cape Leeuwin there are known habitats for the Sperm Whales.

Birds

The nearest significant seabird nesting areas to the Jansz-Io location are Barrow and Montebello Islands over 154 km to the east southeast. The seabird assemblage of the Montebello/Barrow islands region comprises at least 67 species, including 25 species of migratory shorebirds and 20 resident shorebirds with key aspects listed below. The foraging range of seabirds is uncertain however given the distance of the Jansz-Io region to any land, if they are found it is unlikely that they will be in significant numbers

Sharks

The Longfin Mako Shark and the Shortfin Mako Shark are the only shark species reported to occur within the Jansz-Io region. These species are widely distributed, highly migratory tropical, oceanic sharks which have extensive habitats

DESCRIPTION OF THE ACTIVITY

At each drill centre, five wells will be drilled out from mudline locations near the manifold to bottom-hole targets contained within a 2.5km radius circle centred on the manifolds. The approximate seafloor coordinates of the wellheads are provided below.

DC-1 Wells – Seafloor Coordinates

DC-1 Manifold – Water Depth 1338m		
	Seafloor Coordinates	
Well	Easting	Northing
Manifold	245 540.00	7 805 895.00
JZ1-1B	245 529.95	7 805 853.58
JZ1-1C	245 501.40	7 805 856.45
JZ1-1D	245 486.28	7 805 885.49
JZ1-1E	245 500.31	7 805 910.53
JZ1-1F	245 499.05	7 805 930.45

DC-2 Wells – Seafloor Coordinates

DC-2 Manifold – Water Depth 1349m		
	Seafloor Coordinates	
Well	Easting	Northing
Manifold	253 210.00	7 809 865.00
JZ1-2A	253 204.45	7 809 918.87
JZ1-2B	253 220.05	7 809 906.42
JZ1-2C	253 248.60	7 809 903.55
JZ1-2D	253 263.71	7 809 874.51
JZ1-2E	253 249.69	7 809 849.47

The ten wells will be drilled and completed. An installation vessel will install the flowline support bases and subsea trees on all wells. The wells will also be flowed back using well test equipment on the Deepwater Frontier. Jansz-Io well construction activities have been planned as a series of batch operations for efficiency, with the rig moving between DC-1 and DC-2 as required. Flexibility in the well construction sequence will be required due to accommodate and manage simultaneous operations (SIMOP), equipment delivery, and other operational considerations.

Drilling Muds

Water Based Muds will be used to drill top hole sections, composed of a combination of seawater and hydrated bentonite sweeps. This system has been widely used in the North West Shelf (NWS). These sections are drilled without a marine riser in place and the returns will be taken to seafloor.

The remainder of the well will be drilled with a low-toxicity Non-Aqueous Drilling Fluid (NADF) that has been previously approved by the regulators for use in offshore Western Australia.

NADF will be used for the following technical reasons:

- Enhances wellbore stability in the inclined open hole sections:
  i. High angle penetrations of reactive Muderong formation;
  ii. Running alternate path technology completion screens through high angle completion interval.
- Reduces the potential that the drill string becomes differentially stuck as the mud weights are increased while the pressured sands are exposed.
- The directional profile of the well will result in higher frictional forces.
- NADF is hydrate inhibitive, should gas enter the wellbore

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Drilling Mud Recovery and Cuttings Drying

Muds will be treated to remove formation solids and will be recycled and recovered and returned to the active mud system while drilling. Drilled cuttings will be continuously discharged overboard after separation from the mud by the process equipment. The quantity of NADF on cuttings discharged to the environment will be minimised by recycling the drilling fluid during operations through solids control equipment installed on-board the Transocean Deepwater Frontier specifically for the Jansz-Io work program. This new equipment consists of six (6) new shale shakers, two (2) cuttings dryers, and three (3) decanting centrifuges

Following treatment with the shale shaker, cuttings dryers and the centrifuges, the NADF retained on cuttings will be less than 10% by weight averaged over each section.

ENVIRONMENTAL RISK ASSESSMENT AND MANAGEMENT

A number of key management actions that ExxonMobil and its drilling contractor will undertake to prevent or reduce the risks of environmental harm are listed below:

Topic	Management Action
Physical presence (disturbance to marine fauna and benthic habitat)	• Location and scheduling of drilling programme to avoid peak humpback migratory periods and pathways. • Use of a dynamically positioned drill rig to avoid anchoring impacts.
Drill muds	• WBM to be used for the upper hole sections, low toxicity NADF to be used for lower hole sections. • Minimise volume disposed by: retention of base drilling mud for the duration of the well; optimisation of the solids control equipment; application of sound drilling mud engineering practices; and good supervision and communication. • Recover bulk NADF for reuse.
Drill cuttings	• Discharge to sea in accordance with normal operating procedures (after drilling mud recovery over shale shakers during NADF usage). NADF ROC<10% by dry weight

Topic	Management Action
Deck wash-down waste	• Ensure absorbents and containers are available on the drill rig to clean up small accumulations of oil and grease around work areas and decks. • Ensure accumulations of oil, grease and other contaminants are collected and removed from the decks prior to any wash-down. Wash-down drainage will be directed to a settling tank to separate any oil from water prior to discharge of the water. Uncontaminated deck water may be discharged directly overboard. • Routinely wash down upper deck using biodegradable detergents.
Sewage and putrescible wastes	• Discharge sewage and putrescible wastes via direct overboard drain after being macerated and pulverised in accordance with OPGGSA regulations, and MARPOL regulations (service vessels). • Ensure proper operation of on-board sewerage treatment plant.
Solid wastes	• Store all solid wastes on board the drill rig, in appropriate containers, for transport ashore where they will be disposed of in full accordance with local and State regulations.
Hazardous wastes	• Store all hazardous wastes on board the drill rig, in appropriate containers, for transport ashore where they will be disposed of in full accordance with local and State regulations.
Ballast water	• Ballasting operations to be undertaken in accordance with AQIS Guidelines.
Refuelling / transfers	• Re-fuel will be undertaken during hours of daylight except in under prior approval (management of change process). • Use transfer hoses with 'dry break' couplings. • Ensure refuelling operations are continuously overseen by the drill rig OIM (or designated replacement). • Ensure that all refuelling activities are undertaken in accordance with ExxonMobil accepted procedures. • Developed and tested Oil Spill Contingency Plan • Record and report all spills to ExxonMobil and > 80 L to DMP.
Spillage of hydrocarbon during well testing	• Direct the early flow to tanks while there is a possibility of drilling mud's contaminating the hydrocarbon and extinguishing the flame. • Evergreen burner used to match the expected gas type. • Ensure that all well testing activities are undertaken in accordance with ExxonMobil accepted procedures.
Well Control	• Minimum of 2 physical barriers in each potential flow path (each physical barrier shall be pressure tested, preferably in the direction of flow. If testing in the direction of flow is not possible, a pressure test from above shall be performed. If pressure testing is not possible, the integrity of the barrier shall be verified through diagnostics and/or analysis of the operation by which the barrier was installed). • 2 x shear rams, deadman system, ROV hot stab and EDS – all tested • Well control procedures • Developed and tested Oil Spill Contingency Plan
Spillage of hydraulic fluids	• Ensure that equipment maintained and that drip pans and bunds are in place. • Record and report all spills to ExxonMobil and > 80 L to DMP.
Atmospheric emissions	• Ensure that all equipment is well maintained and engines are tuned to minimise emissions. • Record all fuel gas usage and gas to flare.

Topic	Management Action
Tank Cleaning	▪ Ensure tank discharges are diluted through the cleaning process (seawater and surfactants). ▪ Evaluate samples to determine suitability for discharge (further dilution conducted to ensure less than 10% residual oil).
Interface Fluids	▪ Management of displacements by containing NADF interfaces on surface, testing oil content and treating as required. ▪ Ensure interfacial fluid(s) are treated to an acceptable level prior to discharge.

Summary of Environmental Risk

The campaign will have a limited localised and temporary impact over the marine area due to the nature of drilling activities. The activities are considered typical of those undertaken by the DWF. No extraordinary aspects, hazards or risks were identified during planning for the campaign. The activities associated with the project are considered unlikely to have a significant effect on the environment for the following reasons:

- Threatened species listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and other marine species may pass through the project area but the operations will not give rise to impacts on habitat, migratory patterns or routes that are critical for their survival.
- The physical footprint of the drilling activities is relatively small and any disturbance that occurs around this footprint is likely to be temporary and localised.
- Environmental management processes and procedures have been formulated in accordance with industry and company standards and will be adhered to throughout the drilling activities.
- Control measures have been put in place to prevent or reduce the risks of environmental harm to a level that is As Low As Reasonably Practicable.

Overall, the campaign represents a small addition to the total number of existing North West Shelf oil and gas activities.

IMPLEMENTATION STRATEGY

This project is being implemented under the umbrella of the ExxonMobil Environmental Policy. Transocean as the drill ship operator will use its Company Management System to implement the strategy on the Deepwater Frontier. The implementation strategy includes the following elements:

- Systems, practices and procedures which incorporate the management actions listed above
- Management of third party contractor services and equipment
- Clear definition of roles and responsibilities
- Training, communications and awareness of environmental commitments and performance standards
- Performance measurement and reporting, including regulatory reporting and incident reporting
- Management of change procedures, including associated updates and approvals of the Environment Plan
- Emergency preparedness and response
- Compliance assessments and audits

CONSULTATION AND CONTACT DETAILS

ExxonMobil maintains an active community consultation programme that includes regular contact with regulators, stakeholders, businesses, community leaders and interested groups. Project-related stakeholder consultation activities completed to date have indicated that the Jansz-Io activities are not expected to have an impact on any known recreational or commercial activities.

All queries related to the Jansz-Io drilling activities should be directed to:

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