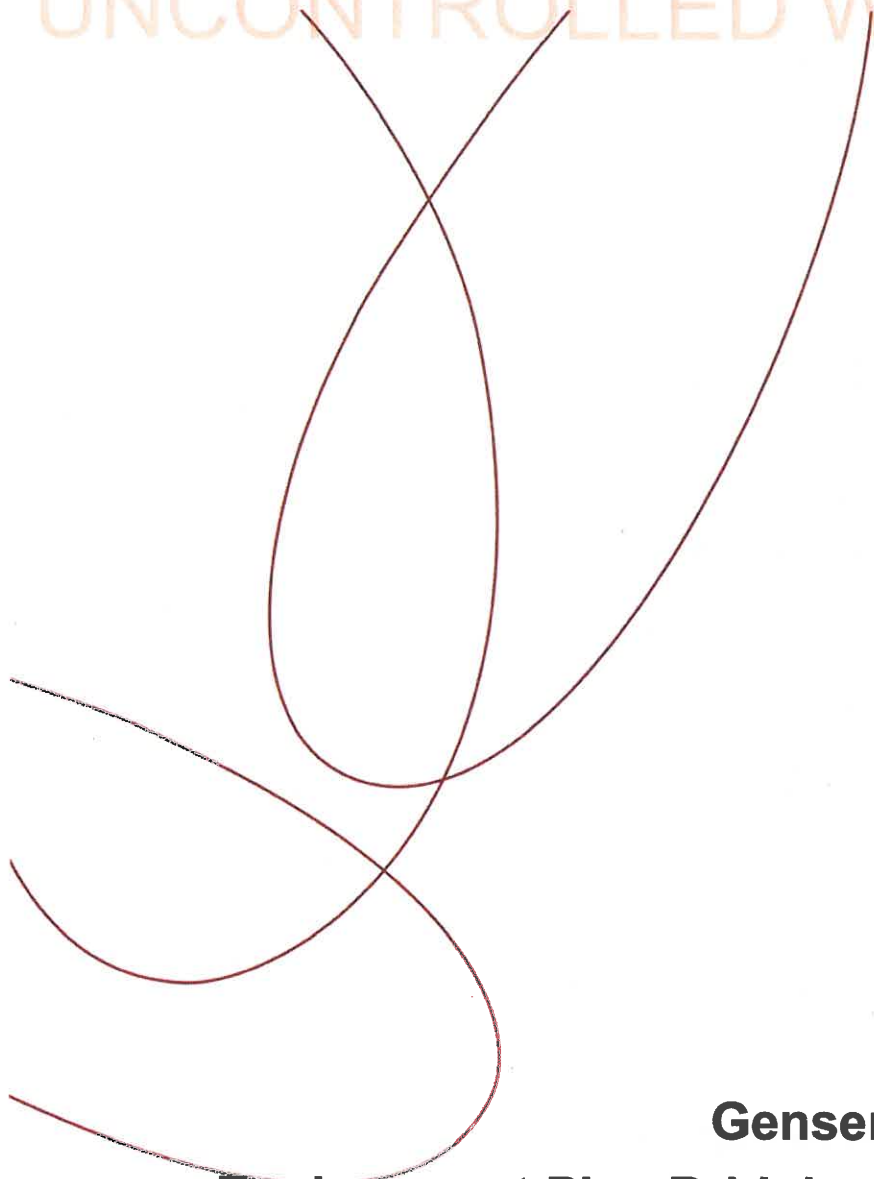


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Generic-1 Exploration Well Environment Plan Bridging Document Summary

Drilling and Completions

Date: November 2011

Status: FINAL

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TABLE OF CONTENTS

- 1. INTRODUCTION3
- 2. DESCRIPTION OF THE ACTION3
- 3. DESCRIPTION OF THE RECEIVING ENVIRONMENT5
 - 3.1 Physical Environment5
 - 3.2 Biological Environment5
 - 3.3 Socio-Economic Environment5
- 4. ENVIRONMENTAL HAZARDS6
- 5. SUMMARY OF MANAGEMENT APPROACH.....6
- 6. CONSULTATION9
- 7. CONTACT DETAILS9

LIST OF FIGURES

- Figure 2-1: Drilling location map for Genseric-1 Exploration Well..... 4

LIST OF TABLES

- Table 2-1: Co-ordinates, Water Depth and Timing (GDA 94, MGA zone 50). 3
- Table 5-1. Key Management Objectives and Commitments for NWS Program Related Activities.. 7

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1. INTRODUCTION

Woodside Energy Ltd (Woodside) proposes to drill the Genseric-1 Exploration Well on the North West Shelf (NWS) in license area WA-434-P, using the *Maersk Discoverer*, a semi-submersible, and dynamically positioned (DP) drill rig, operated by *Maersk Drilling, Australia*. Drilling activities are planned to commence in November 2011 and to continue through until December 2011.

The Genseric-1 Exploration Well is part of Woodside's ongoing exploration drilling program on the NWS. An environmental risk assessment for the proposed Genseric-1 Exploration Well drilling activities identified that environmental risks and their management were adequately addressed in the *NWS Drilling and Completions Environment Plan, Revision 5 (NWS EP)*, accepted by the Department of Mines and Petroleum (DMP) in August 2009 under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

Woodside subsequently submitted to DMP the *Genseric-1 Exploration Well Environment Plan Bridging Document (EPBD)* as a bridging EP to the *NWS EP*, to describe the well specific details (well location, rig to be used, fluid systems, cuttings volumes and cuttings disposal methods) which was subsequently accepted by the DMP in November 2011.

This document serves as a summary of the accepted *Genseric-1 Exploration Well EPBD* and *NWS EP*.

2. DESCRIPTION OF THE ACTION

The Genseric-1 Exploration Well is located in permit area WA-434-P (Figure 2-1) and is approximately 537 km from Karratha, 461 km from Gardie, 299 km from Ningaloo Marine Park and 326 km from Murion Island Marine Management Area.

The Genseric-1 Exploration Well will be drilled with a water based drilling fluid system, as detailed in the *Genseric-1 Exploration Well EPBD*. On completion of drilling and evaluation logs, the Genseric-1 Exploration Well will be permanently plugged and abandoned and the subsea wellheads removed.

Table 2-1 summarises the Genseric-1 Exploration Well details including surface coordinates, water depth, permit area and timing for the proposed well. This schedule is subject to change due to operational requirements and external influences such as cyclones.

Table 2-1: Co-ordinates, Water Depth and Timing (GDA 94, MGA zone 50).

Water Depth (m LAT)	Longitude	Latitude	Permit Area	Timing
1880	111° 45' 53.000" E	19° 54' 44.137" S	WA-434-P	Q4 2011

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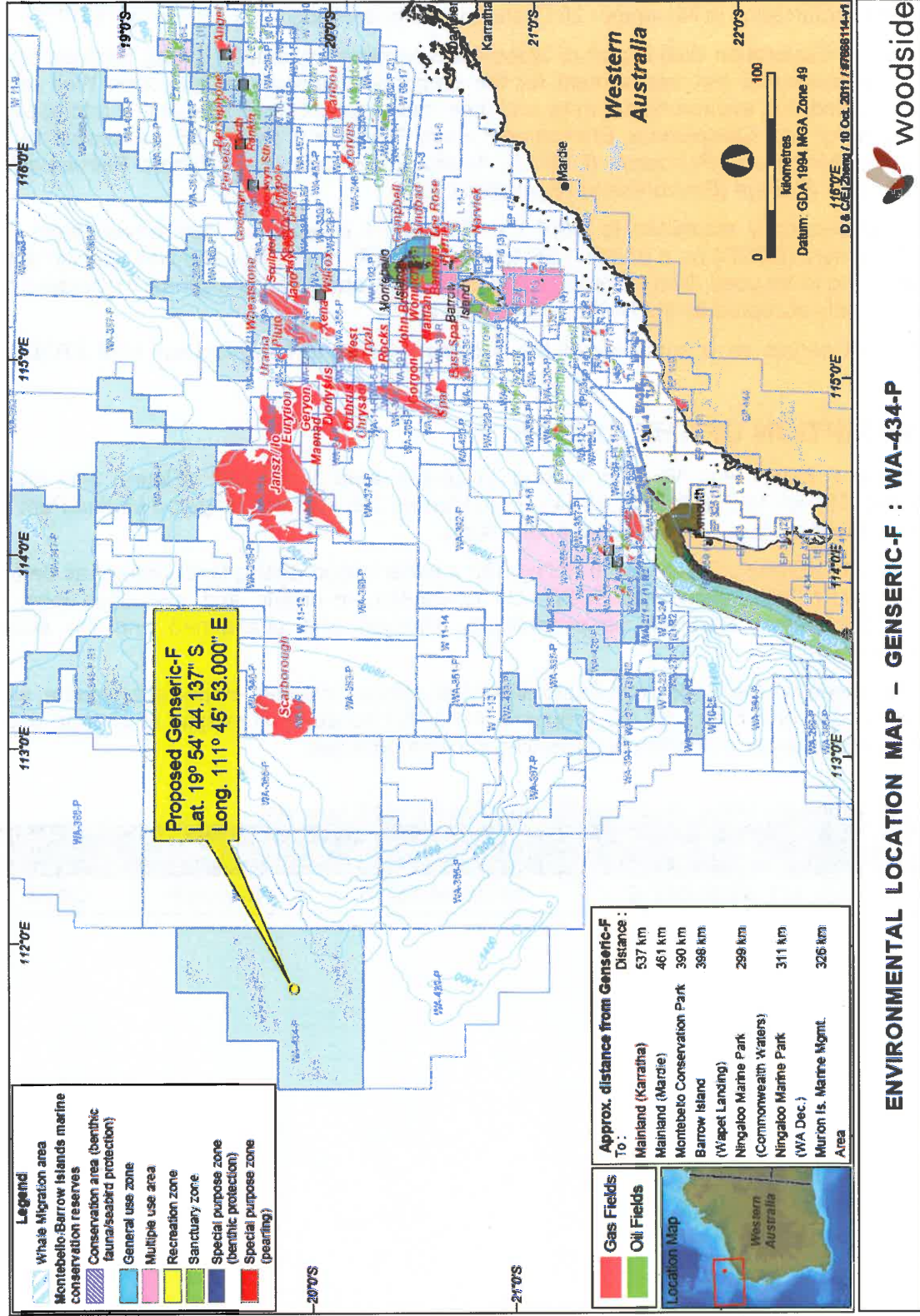


Figure 2-1: Drilling location map for Genseric-1 Exploration Well

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3. DESCRIPTION OF THE RECEIVING ENVIRONMENT

3.1 Physical Environment

The Genseric-1 Exploration Well is located on the continental shelf in approximately 1 880 m water depth. The site is typical of the NWS continental shelf being generally characterised as deep (>5 m) soft, silty sediments which become softer and finer with increasing depth. There are significant banks (shelf inclines) in the region including the Rankin Bank and Glomar Shoal which are not located near the well site.

The Genseric-1 Exploration Well Site is located in the southern portion of the monsoonal belt and experiences marked seasonal patterns. Wind directions are predominantly from the south-east and north-east during April to September with an average wind speed of 5 – 6 knots. During October to March the prevailing wind direction is from the south-west, west and north-west and the average wind speeds are less than 10 knots. Tropical cyclones occur in the area, typically three to four times per year, most commonly between December and April. Swells of up to 2 m can be expected year round, with April being the calmest month, and January and June the roughest. Wave direction predominantly follows wind direction (east south-east in winter, west south-west in summer), except during cyclone or storm conditions.

3.2 Biological Environment

The Genseric- 1 Exploration Well, located in 1 880 m water depth, is typical of deep water benthic habitats found in the NWS region which are dominated by soft sediments. Benthic habitat sampling of soft sediments on the NWS have identified that they typically support a low abundance but high diversity invertebrate fauna population, largely comprising burrowing polychaete worms (Phylum Annelida) and crustaceans (Phylum Crustacea). Echinoderms, bivalves and molluscs also contribute significantly to the faunal composition of the area.

There are five species of turtle protected under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* that have been recorded in the NWS region; including flatback, leatherback, green, hawksbill and loggerhead turtles. With the exception of leatherback turtles all the turtle species are recorded as nesting in the region.

There are 25 species of cetaceans listed under the *EPBC Act* as potentially occurring in the NWS region. Two of these species are listed as threatened under the *EPBC Act* including the humpback whale, listed as vulnerable/migratory and the pygmy blue whale listed as endangered/migratory. Both species occur in the NWS region during annual migrations between southern feeding and northern breeding areas.

Humpback whales migrate through the NWS region between June and October. The northern migration route occurs offshore and generally follows the edge of the continental to the calving grounds in the Kimberley. The southern migration, which includes migrating cows and their calves, tends to follow a more inshore migration route that passes close to the Dampier Archipelago and Montebello Islands.

Pygmy blue whales are known to migrate through the NWS region between southern feeding and unknown breeding areas north of Australia. Pulses of pygmy blue whales have been recorded (acoustic monitoring of whale calls) passing Scott Reef south-bound (November and December) and north-bound (June and July) and passing the North West Cape (May and June). Blue whales have also been reported to feed in the NWS region in the Kangaroo Trough located over 100 km east of Genseric-1 Exploration Well location.

3.3 Socio-Economic Environment

The Genseric-1 Exploration Well (WA-434-P permit area) is located outside of known nearshore commercial fisheries (eg. prawn fisheries) operating between the North West Cape and Port

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Hedland. The well is also too far offshore to be accessed for recreational fishing and tourism activities.

There are also no known sites of Aboriginal or Non-Aboriginal cultural or heritage significance within the licence area.

The Genseric-1 Exploration Well is not located near any existing or proposed marine conservation reserves or sensitive marine environments. The closest are the Ninagloo Marine Park approximately 299 km to the south-east and the Montebellos Marine Park and Barrow Island Marine Park/Marine Management Area approximately 380 km to the east.

4. ENVIRONMENTAL HAZARDS

An environmental risk assessment was conducted for general drilling activities in the NWS and is detailed in the NWS EP. The risk assessment process indicated that the potential impacts arising from drilling activities can be categorised as either having a low or medium risk level. There were no impacts identified above a medium risk level.

The Genseric-1 Exploration Well is located in deep offshore waters and does not include any critical habitat for cetaceans or turtles (i.e. feeding, breeding, resting and restricted migratory pathways).

While the timing of the Generic-1 Exploration Well occurs during turtle nesting in the region, the site is located over 300 km to the nearest nesting beaches and it is likely that only a low density of turtles may transit through the area on route to and from shallow coastal waters.

The timing of the Genseric-1 Exploration Well occurs outside of the humpback whale migration but occurs during a time when pygmy blue whales may occur in the region, however at very low densities. Any potential impacts are not considered significant and are likely to be limited to potential short-term and localised displacement of a low number of individuals. To ensure minimal impact on whales in the area, support vessels will maintain a 300 m separation distance, where safe to do so, from any whales sighted, as per Part 8 of the *EPBC Regulations 2000*.

The Genseric-1 Exploration Well is considered to be a routine drilling activity and the risk of a major hydrocarbon spill is assessed as medium and is considered to be adequately addressed in the NWS EP. The NWS EP addresses a number of worst case spill scenarios relevant to the drilling activities that may be undertaken. It is unlikely that a significant hydrocarbon spill to the ocean would occur during drilling activities that would impact sensitive environmental receptors (e.g. coral reefs) given the mitigation barriers/measures in place, the spill scenarios modelled, the distance offshore from sensitive environments and oil spill management arrangements and procedures outlined in the accepted Woodside Western Australia and Dampier Sub-Basin Oil Spill Contingency Plan (OSCP) (ERP-3210).

5. SUMMARY OF MANAGEMENT APPROACH

Woodside's environmental management strategies and procedures to be used during drilling activities include responsibilities, training and inductions, reporting frameworks, mitigation and response activities and monitoring and auditing procedures. Commitments associated with these will be used to reduce environmental risk to As Low As Reasonably Practicable (ALARP).

The key management objectives and commitments to be applied to the Genseric-1 Exploration Well are summarised in Table 5-1 below.

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Table 5-1. Key Management Objectives and Commitments for NWS Program Related Activities.

Objectives	Commitments
Seabed Disturbance	
Minimise disturbance to benthic habitat community	<ul style="list-style-type: none"> • <i>Maersk Discoverer</i> will use dynamic positioning and will not be required to anchor.
Drill Mud and Cuttings	
Minimise localised reduction in water quality, smothering of benthic fauna, and decreased light attenuation due to increased turbidity.	<ul style="list-style-type: none"> • Water based mud (WBM) to be used (fluids assessed as non-toxic to slightly toxic) • Bulk Transfer Procedure in place for vessel to rig bulk transfers
Marine Pollution from Routine Discharges	
Minimise potential acute and chronic toxicity effect on marine organisms, effects to water quality and indirect effects to marine fauna both in the water column and on the seabed.	<ul style="list-style-type: none"> • Waste water discharges to meet legislative requirements. • Drilling fluids to be used and discharged to the ocean are assessed as non-toxic to slightly toxic (including cementing fluids and fluorescein dyes)
Waste Management	
Minimise impact on the marine environment from waste disposal.	<ul style="list-style-type: none"> • D&C Waste Management Plan in place, detailing wastes generated and disposal requirements. • All sewage and putrescible wastes to be managed and disposed of in accordance with MARPOL 73/78. • All other solid, liquid and hazardous wastes to be incinerated or compacted (if possible) and stored in designated areas and sent ashore for recycling, disposal or treatment.
Invasive Marine Species Management	
Minimise the risk of introduction and establishment of Invasive Marine Species (IMS) in sensitive and shallow water environments.	<ul style="list-style-type: none"> • Adherence to the Australian Quarantine and Inspection Service's (AQIS) Australian Ballast Water Management Requirements. • IMS Risk Assessments completed and any relevant management measures applied commensurate with the assessed risk as required.
Disturbance to Marine Fauna	
<i>Noise:</i> Minimise potential physiological effects or disruption to behaviour patterns of marine fauna due to sound energy associated with the rig, support vessel and helicopter operations.	<ul style="list-style-type: none"> • Support vessel and helicopter interactions with cetaceans to comply with Part 8 of the EPBC Regulations 2000.
<i>Recording of Marine Mammals:</i> Add to the data on marine mammals in the North West Shelf area	<ul style="list-style-type: none"> • All sightings of marine mammals to be recorded and reports sent to the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) periodically.

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Objectives	Commitments
Atmospheric Emissions	
Minimise atmospheric emissions.	<ul style="list-style-type: none"> • Use of low sulphur fuel, where it is available, to minimise emissions from combustible sources. • Compliance with MARPOL 73/78 Annex VI requirements.
Marine Pollution from Non-Routine Discharges	
Minimise potential chronic / acute toxicity effect on marine organisms.	<ul style="list-style-type: none"> • Compliance with MARPOL 73/78 requirements • Oil spills (on the rig/vessel) managed according to a Shipboard Oil Pollution Emergency Plan (SOPEP). • Oil spills (to ocean) managed according to Woodside Dampier Sub-Basin Oil Spill Contingency Plan (ERP-3210). • Adherence to Woodside's well integrity standards and blow-out preventer in place. • Adherence to bulk transfer procedures. • Fuel transfer hoses to have dry-break couplings and floats • Fuels, oil and chemicals will be stored with secondary containment. • Spill Response bin/kits located in close proximity to storage areas and adequately stocked. •
Cyclone Response	
Minimise the impact on benthic habitats and reduced potential occurrence of hydrocarbon spills.	<ul style="list-style-type: none"> • Implement all measures in Woodside's Cyclone Response Procedures and the drilling contractor's Cyclone Emergency Response Plan. • Secure the well by isolating any significant hydrocarbon zones and disconnecting from the well, preventing communication of any hydrocarbon fluids in the well to the surface.
Socio-Economic	
Minimise potential impact on socio-economic values	<ul style="list-style-type: none"> • Adherence to standard maritime safety procedures (Auscoast Warnings via Australian Maritime Safety Authority (AMSA) where appropriate). • Compliance with AMSA administered marine safety regulations and marine notification requirements. • Pre-drilling notification/consultation with stakeholders, as required. • Notification of activity details as required to relevant stakeholders prior to commencement of each survey. • Adherence with Rig Quality and Safety Management procedures.
Environmental Management Plan	

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Objectives	Commitments
Woodside and contractor personnel understand and comply with the environmental objectives, standards and commitments within the Generic EPBD and NWS EP.	<ul style="list-style-type: none"> All Woodside and contractor personnel undertake an environmental induction. Copy of Generic EPBD and NWS EP on board rigs.
Rig contractor's HSE Management system covers applicable requirements of the Generic EPBD and NWS EP.	<ul style="list-style-type: none"> Review of rig contractor's HSE management system to ensure it covers applicable requirements of the Program EP.
Environmental inspections to be carried out according to the requirements of the Generic EPBD and NWS EP.	<ul style="list-style-type: none"> Environmental Commitments Summary provided to the rig(s). Audits to ensure compliance with commitments in the Generic EPBD and NWS EP are to be undertaken as per the D&C Audit Schedule.
All environmental incidents are reported in accordance with the requirements of the Generic EPBD and NWS EP, Woodside and legislative requirements.	<ul style="list-style-type: none"> Environmental incidents recorded and reported according to the requirements of the Generic EPBD and NWS EP, Woodside Standard Event Reporting and Investigation.
A review of the operation conducted at the end of the program.	<ul style="list-style-type: none"> Review of the environmental performance of the operation conducted at the end of Program activities.

6. CONSULTATION

Woodside has an extensive history undertaking drilling and completions activities on the North West Shelf. Over this time, Woodside has developed a sound understanding of potential stakeholder concerns that may arise during drilling activities and has implemented appropriate management strategies in the NWS EP to address key environmental aspects.

To ensure Woodside's understanding of potential stakeholder concerns remains current, stakeholder consultation for drilling activities includes the following:

- Consultation, as appropriate, with key stakeholders during the preparation of the Generic-1 Exploration Well EPBD to identify and manage specific environmental issues.
- Distribution of electronic notification to a broader stakeholder group prior to the commencement of the activity.

7. CONTACT DETAILS

For further information about the Generic-1 exploration well, please contact:

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