

MC-W06-9 Survey



2D SEISMIC SURVEY ENVIRONMENT PLAN - SUMMARY

- Rev 0
- 10 November 2006



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1. Introduction

Global Geo Services ASA (GGS) propose to conduct the acquisition of 2D seismic data in Permit Area W06-9, located approximately 250 km north-west of Western Australia.

An Environment Plan (EP) for the 2D marine seismic survey (herein referred to as the MC-W06-9 Survey) was submitted and accepted by the Designated Authority, the Department of Industry and Resources (DoIR) in November 2006. This Summary EP has been prepared in accordance with the Petroleum (Submerged Lands) (Management of Environment) Regulations 1999.

1.1 Proposed Seismic Program and Location

The MC-W06-9 Survey will be conducted within Permit Area W06-9 which is situated in the Northern Carnarvon Basin, approximately 250 km north-west of Dampier in Western Australia. The Permit Area is located on a subsea slope in water depths ranging from 800 m to more than 1,600 m. The seismic survey will have ingress into nearby Permit Area WA-269- P (Woodside concession) and Permit Area W06-10, however data will only be acquired for Permit Area W06-9. GGS have sought permission from the appropriate authority to enter this area during the course of the survey. The approximate survey location coordinates are given in **Table 1**.

Table 1 Survey Coordinates for the MC-W06-9 Survey

	Latitude	Longitude
North-west Corner	18.807426 S	113.786060 E
South-west Corner	19.784721 S	113.786060 E
North-east Corner	18.807426 S	115.468366 E
South-east Corner	19.784721 S	115.468366 E

2. Description of Existing Environment

The Permit Area W06-9 is north of the undeveloped Jansz gas field, where previous investigations have revealed a featureless seabed generally comprised of loose, silty carbonate sands less than 1 mm in diameter with only a small component (<5%) comprised of shell fragments greater than 1 mm diameter (URS 2001).

There are no indications of the presence of distinct seamounts within the survey area. Due to the water depth (up to 1,600 m), low light levels, low nutrient availability and general absence of hard substrates benthic biological productivity (e.g. seagrass, kelp and coral) is expected to be negligible.



A number of whale species have been observed in the Pilbara region, including Bryde's whale (*Balaenoptera edeni*), sperm whales (*Physeter macrocephalus*) and humpback whales (*Megaptera novaeangliae*). The presence of blue whales (*Balaenoptera musculus*) in the area was indicated with recordings by a noise logger on the North West Shelf during December 2006. Various dolphin species also occur in the area.

Humpback whales migrate annually from feeding grounds in the Antarctic to breeding grounds off the Kimberley coast. The migratory paths generally follow the 200 m isobath along the West Australian continental shelf with major resting areas along the way at Exmouth Gulf, Shark Bay and Geographe Bay (Jenner *et al.* 2001; DEH 2006). The timing of the migration varies with factors such as food availability, climate and ocean conditions, but they are generally present in Northern Australian waters between June and September each year. As the survey will be undertaken in November in water depths up to 3000 m, it is highly unlikely that any humpback whales will be in the vicinity of the MC W06-9 Survey.

Sea turtle species such as the green turtle (*Chelonia mydas*), hawksbill turtle (*Eretmochelys imbricata*), flatback turtle (*Natator depressus*) and loggerhead turtle (*Caretta caretta*) may move through the survey area, but there are no known significant turtle habitats in the survey area.

Pelagic species in offshore waters of the North West Shelf include marlin, sailfish, Spanish mackerel, trevally and sharks. Whale sharks (*Rhincodon typus*) aggregate annually at Ningaloo Reef, 200 km south of the survey area, with the main aggregation period being late March to July.

There are no known traditional fisheries in the W06-9 Survey area. This is likely to be due to the deep waters and distance offshore. There are four Commonwealth fisheries that potentially operate in the vicinity of Permit Area W06-9: the Northwest Slope Trawl Fishery, the Western Tuna and Billfish Fishery, the Southern Bluefin Tuna Fishery and the Western Skipjack Fishery (AFMA 2006). Most of the fishing effort in the area is expected to be low. The MC-W06-9 Survey area is situated in water depths of 800 m and below, and the survey will be undertaken over 14 days in November, therefore minor disruption to commercial fishing is possible although not likely.

Shipping routes exist approximately 50 km to the east and west of the survey area, a relatively low number of vessels are observed within the survey area itself (AMSA 2004).

The closest facility to Permit Area W06-9 is the unmanned John Brookes platform which is located approximately 100 km southeast of Permit Area W06-9. The Goodwyn platform is located over 100 km to the west-southwest of Permit Area W06-9.

There are no known heritage sites within the survey area. The nearest marine park (Montebello-Barrow Islands Marine Conservation Reserves) is located 150 km shoreward of the survey area.



There is no known established tourism activity in the survey area. Yachts may utilise the wider region for sailing, but tend to stay much closer to shore.

3. Description of the Action

Global Geo Services ASA (GGS) propose to conduct the acquisition of 1,950 km of 2D seismic data in Permit Area W06-9, located approximately 250 km north-west of Western Australia. The survey will be approximately 14 days duration (conditions permitting) and is planned to take place in November 2006, with completion of the survey by 30th November.

The 2D seismic data will be acquired by the vessel *M/V “Odin Explorer”*, which will tow a standard air gun and hydrophones. The vessel will mobilise and demobilise overseas. The operations plan for the MC-W06-9 Survey involves no crew changes and no re-supplies. The vessel will have enough fuel for the entire survey and will therefore not require any refuelling at sea.

4. Major Environmental Hazards and Controls

A qualitative risk assessment methodology has been adopted for this assessment, based broadly on AS/NZS 4360. The key potential environmental impacts associated with these activities that could represent environmental risk are presented in **Table 2**. Also presented in **Table 2** are key management measures to address these risks.

Table 2 Summary of Environmental Risk Assessment

Activity	Potential Environmental Effects	Likelihood	Consequence	Risk Level	Management Measures
Operation of seismic vessel	Presence of vessels may disturb whale migration	Unlikely	Minor	MODERATE	The survey will occur outside of known humpback whale migration period. Whale watch procedures will be adhered to.
Towing of the air-gun and streamer (geophone) array through the survey area	Disruption to commercial fishing operations	Unlikely	Minor	MODERATE	AMSA and RCC will be notified Standard AusCoast radio warnings are issued to shipping
	Disruption to shipping operations	Unlikely	Minor	MODERATE	Standard maritime safety procedures (radio contact with approaching vessels, display of appropriate navigational beacons and lights) Notification of survey commencement and consultation with petroleum operators.



Activity	Potential Environmental Effects	Likelihood	Consequence	Risk Level	Management Measures
Discharge or 'firing' of the air-guns towards and into the seabed	Sonic disturbance to turtles, whales and dolphins	Unlikely	Minor	MODERATE	<p>Implementation of whale encounter procedures based on the EA Guidelines (September 2001) including visual observations, soft starts, and stop work procedures if whales sighted within 3 km</p> <p>Whale and dolphin sighting reports completed and returned to the Australian Department of Environment and Heritage (DEH)</p> <p>Soft start procedures to warn and scatter other free-swimming fauna (eg turtles)</p>
Ballast Water Exchange	Introduction of exotic marine species resulting in disturbance to natural ecosystem functions	Rare	Major	MODERATE	<p>Ballast water discharge will not be undertaken in Australian Territorial Seas in association with the proposed MC-W06-9 Survey.</p> <p>Ballast Water Handling Log is kept to record events related to ballast water management on-board</p>
Accidental small scale spills (<80 L) of fuel, oil or other hazardous substance spills from the survey vessel	Harm, injury or death of a listed cetacean species due to fuel or oil spill	Unlikely	Major	HIGH	<p>Spill response kits will be located in easily accessible areas on board the vessel.</p> <p>Spill response procedures and personnel responsibilities in place</p>
	Harm, injury or death of a listed turtle species due to fuel or oil spill	Unlikely	Major	HIGH	<p>Procedures comply with MARPOL 73/78 requirements</p> <p>MARPOL Oil Record Book kept up to date</p>
Accidental medium to large scale spills (>80 L) of fuel, oil or other hazardous substance (eg caused by vessel collision or cyclone)	Harm, injury or death of a listed cetacean species due to fuel or oil spill	Rare	Major	MODERATE	<p>No at-sea refuelling for the MC W06-9 Survey</p> <p>Spill response procedures and personnel responsibilities in place</p> <p>Procedures comply with MARPOL 73/78 requirements</p>
	Harm, injury or death of a listed turtle species due to fuel or oil spill	Rare	Major	MODERATE	<p>Any spills >80 L are reported to the relevant Australian regulatory authority</p> <p>Standard maritime safety procedures (radio contact with approaching vessels, display of appropriate navigational beacons and lights)</p>
	Disturbance to intertidal habitats along Barrow Island and the Burrup Peninsula	Rare	Major	MODERATE	<p>Notification of AMSA via the Rescue Co-ordination Centre (RCC) in Canberra in the event of vessel collisions</p> <p>Issuing of standard AusCoast radio warnings to shipping by the RCC in the event of vessel collisions</p>
	Disturbance to reefs by fuel or oil spill	Rare	Major	MODERATE	<p>Weather information will be gathered on a regular basis to avoid large storms or cyclones</p>

5. Summary of Management Approach

In addition to the management measures presented in presented in **Table 2**, GGS has a corporate Health, Safety and Environment (HSE) Policy Statement, HSE plans and requirements. The vessel's procedures comply with International Maritime Organisation (IMO) standards for minimisation of environmental impact.

The survey will be undertaken in accordance with relevant Commonwealth and State legislation, as well as applicable international agreements and conventions. For example, waste management procedures and guidelines comply with the *International Convention for the Prevention of Pollution from Ships, 1973* (commonly known as MARPOL 73/78) and include management measure such as:

- Sewage and food scraps disposal will conform to the requirements of MARPOL Annex IV and will be macerated to a diameter of less than 25 mm, prior to disposal.
- No plastics or plastic products of any kind will be disposed of overboard.

All incidents that have the potential to cause significant effects on the environment will be reported and investigated according to legislative requirements and GGS procedures. The Designated Authority will be notified of all reportable and recordable incidents, according to the requirements of Regulation 26 of the *Petroleum (Submerged Lands) (Management of Environment) Regulations 1999*.

6. Consultation

The following organisations have been contacted to date:

- DoIR;
- Woodside Energy Limited;
- Mobil Exploration;
- Chevron;
- Gascorp (Oilex); and
- Bharat Petroleum.

The Australian Quarantine and Inspection Service (AQIS) and the Australian Customs Service will also be contacted.



7. Contact Details

For further information, please contact

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8. References

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