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## Consents given under the Petroleum Act 1998 and Reviews under the Assessment of Environmental Effects Regulations 1999

### TotalFinaElf

#### ALWYN FIELD

Pursuant to Regulation 5(8) of the above Regulations, the Secretary of State for Trade and Industry gives notice that, being content that the requirements of the above Regulations have been satisfied, he has, pursuant to Licences P90 & P281, granted a consent to Total Oil Marine plc to the getting of petroleum and the construction of installations in relation to the development of the Alwyn field. The consent for the Alwyn field took effect from 01/01/01 and shall last until 31/12/01.

#### Background

The Alwyn North installation consists of two fixed steel jacket bridge linked platforms. Total are planning to drill up to 7 new wells to improve hydrocarbon recovery from the Triassic Main reservoir and to upgrade existing gas processing system. Six of the seven wells are planned to be drilled from the Alwyn North platform utilising existing facilities.

Two options for the seventh well are presented and assessed in the ES:

- a) drilled remotely via a semi-sub and tied back to North Alwyn A
  - b) drilled from North Alwyn A, requiring a substantial upgrade to drilling facilities.
- No, or very low, (less than 16m<sup>3</sup>/d), produced water rates are expected, with no modifications to the produced water system. Flaring has been shown to be well within platform consents, so any short term flaring of Triassic Main gas should have no discernible impact. No modifications proposed to power generation package.

#### Drilling and Well Completion

Drilling is expected to start in March 1999 with the completion of the development wells by 2002 and a predicted drilling schedule is presented in Fig 3.4 of the ES.

Total have recognised that drilling from Alwyn North will increase hole length and quantity of cuttings. However, it is considered the best option because;

- a) any drill cuttings will be discharged onto existing cuttings pile
- b) eliminate/minimise additional seabed disturbance from installation subsea flowlines
- c) eliminate/minimise general rig emissions/discharges from operating semi-sub in field for duration of drilling.

#### Chemicals

On reviewing comments from SOAEFD, Total confirmed an error in Table 3.2 concerning use of Category C product EC1403A and issued a corrected table. Total also stated the totals within Table 3.3 and conclusion of section 3.1.6, Assessment of Planned Chemical Use, remain valid. The drilling muds are categorised under the revised OCNS. The generic schematic design for the proposed wells is presented in Table 3.4, including section lengths, hole size and cumulative depths, which vary from 5095m to 7722m. Water-based muds are used for upper hole sections, 36", 23½", and 17½", with the 36" section being drilled with seawater. The 12¼" and 8½" sections are to be drilled with SBM, replaced with LTOBM from 2000 onwards. Total state that the majority of group B and C cementing chemicals will only be used in the lower hole sections and the slurries from these sections will not be discharged at the seabed.

#### Mud Cuttings Disposal

Upper hole sections of wells (36") will be drilled riserless and all mud and cuttings disposed at seabed level. With installation of the riser, mud and cuttings for subsequent sections will be returned to the rig, prior to overboard disposal following cleaning. All spent WBM will be discharged directly overboard. For SBM sections, only the small quantity of synthetic mud on the drill cuttings will be discharged to sea and spent synthetic mud will be returned to shore for reprocessing. Total state from 4th Q 1999, no SBM or LTOBM contaminated cuttings will be discharged directly overboard. Any cuttings so contaminated are to be slurrified for cuttings reinjection on Alwyn North installation.

#### Decommissioning

Current estimate of around 2017 and Alwyn North will be decommissioned in accordance with existing guidelines and other applicable legislation at that time. As part of its plans Total have agreed to prepare a BPEO study for submission

to DTI as part of the decommissioning approval process.

The potential options for decommissioning drill cuttings piles are considered in some detail in the ES but given the early stage of the project, comment on the likely fate of the pile is not yet possible.

#### Environmental Sensitivities and Impacts

The activities associated with the project have a range of releases to the environment, not all of equal significance. They have been categorised under two main headings:

- a) Platform related activities
- b) Subsea related activities

To determine the most significant risks requiring detailed assessment and those of lesser significance, Total used an environmental screening methodology to differentiate between risks of differing potential severity. Each potential impact was assessed against pre-established severity criteria, fully defined in Appendix 2.

For platform related activities three issues identified as requiring further assessment:

- a) mud and cuttings discharge
- b) power generation
- c) chemical use and discharge

For subsea related activities, discharges of drill cuttings was identified as requiring further assessment. Drilling all seven wells from the Alwyn North platform will generate an estimated 4645m<sup>3</sup> and 9966 tonnes of drill cuttings to be discharged overboard (95% by volume WBM) onto existing cuttings pile. Cuttings reinjection will be used for SBM or LTOBM. WBM do not exhibit the longer recovery times of oil/synthetic based muds. The possibility of remotely drilling the seventh well is considered and the dispersion of the cuttings modelled. The discharges of WBM and associated cuttings are expected to result in an increase of barium levels of the affected seabed sediments. However because of the cuttings pile already existing, any increase in barium levels is not expected to have a detectable effect on the already disturbed seabed communities.

#### Power Generation

This project will increase the load and thus the efficiency of the existing systems. These are of proven reliability and gas compression trips resulting in flaring will be minimised.

#### Chemical Usage

Total have reassessed chemical use on Alwyn North. Category A chemicals have been completely removed, with one exception. The chemicals discharged to the sea via the produced water system are all group/category E/O except for a corrosion inhibitor. The rapid dilution of produced water and constituents will minimise environmental impacts.

#### **Recommendation**

Overall, the ES is satisfactory and adequately assesses the potential environmental impacts of the proposed development. Recommend that consent for the development is given.