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DEPA Industrial Division  
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Ref. hebec  
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Att. Arthur van Dalen

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## **Permit for use of chemicals for P&A activities at Ravn Platform**

With reference to § 3 of the Danish “*Order on discharge into the sea of substances and materials from offshore oil and gas facilities and on monitoring in the sea around the facilities*” Bek. No. 571 of May 23, 2023, DEPA hereby grants permission to use the chemicals as applied for the plug and abandonment operations of the Ravn installation wells.

### **Background**

Wintershall Noordzee BV (Wintershall) has by mail dated August 21, 2023 to the Danish Environmental Protection Agency (DEDPA) and subsequently by mail on October 2, 2023 with further information, applied for the use of chemicals for the plug and abandonment operations of the Ravn installation wells. The application of chemicals is scheduled to take place early 2024.

The list of chemicals is provided in Annex I to this permit. A total of 33 chemicals will be used for the operation. Twenty four of the chemicals are classified as green, seven are classified as yellow and two are classified as red.

Except for a rig wash product (Tristar ECO Rig Wash HD-E) and a jacking grease product (Statoil Multidope) *none* of the remaining applied chemicals will be discharged to the sea. This is informed by Wintershall by mail dated August 21, 2023 and confirmed by mail dated October 2, 2023.

### **DEPA Comments**

DEPA has checked the eco toxicological features of the chemicals and agree to the assessments of the classification sent by Wintershall.

DEPA has asked for clarification, that the chemicals will not be released to the sea after use. Wintershall has by mail dated October 2, 2023 elaborated that the operation takes place at a depth 1500 meter under sea surface and chemicals are contained below the 13 3/8” casing shoe by a 1500m seawater column, a bridge and cement plug, that are watertight and a cement retainer and cement plug. There is no force to push the fluid out of the well and the fluid density is heavier than seawater.

According to Annex I point 3 c of the Danish “*Order on discharge into the sea....*” DEPA has sought clarification whether the two red chemicals (D600G GASBLOK\*Gas-Migration Control Additive and GASBLOK\* LT D500) are the best choice, in terms of technical, safety and environmental perspective compared to other chemicals with similar function but with better environmental profile.

Wintershall has by mail dated October 2, 2023 responded, that the two red chemicals are the only and best choice to mitigate the gas migration below the 13 3/8" casing shoe. The two chemicals are mixed (significantly diluted) with the cement and permanently remain in the cement at the 13 3/8" casing shoe when the cement is hardened. The two chemicals in the cement plugs are under 1500m of seawater in the well and below a cement retainer and surface cement plug below sea floor. The previously used chemicals with similar functions and better environmental profile did not work.

Finally, DEPA has sought clarification on the fate of the two chemicals - rig wash product (Tristar ECO Rig Wash HD-E) and the jacking grease product (Statoil Multidope) as they will be discharged to the sea.

Wintershall has further, by the mail on October 2, 2023 elaborated - with reference to the EIA for the abandonment of the wells at RAVN - that the rig wash chemicals are significantly diluted before being discharged to the sea and pre-screened as a green substance (PLONOR) and therefore the impact is insignificant.

It is informed, that the impact regarding the discharge of the jacking grease is short term (within hours) and the magnitude of the impact is marginal, it is assessed, that the impact of discharge on pelagic organisms is negligible.

Based on the above information, DEPA assess, that with a view to the classification of the rig wash product as green (PLONOR) the discharge of the product is unlikely to have any significant impact on the marine environment. DEPA further assesses that the jacking grease will have only marginal - if not negligible - impact on the marine environment, given the amount and the short-term use.

#### **Assessment of impact on the Natura 2000 site**

According to the EIA for the Ravn wells closure project, discharge of the chemicals – Rig Wash and Jacking grease – the maximum distance for an impact will be <250 meter from the discharge point. DEPA assesses that the environmental impact from the use of the chemicals at the Ravn wells closure project has very little or no effect on the Natura 2000 site (Dogger Banke) which is located in a distance of 15 km from the Ravn field.

Wintershall is to be informed, that the use of chemicals is required to be reported to DEPA for the agency's obligation for annual reporting to OSPAR. Hence, use of chemical in early 2024 will have to be reported to DEPA latest by 1. March 2025.

Best regards

Henrik Bechmann Nielsen  
DEPA – Industry Division

*CC – Danish Energy Agency, att. Laura Strøm Magner*

## Annex I

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