

**Notice of request for more information**

Environmental Permitting (England and Wales)  
Regulations 2016

## Notice requiring further information

To: Richard Livock and Andrew Waterman  
Pembroke Refinery  
Pembroke  
Pembrokeshire  
SA71 5SJ

Application number: PAN-023559 (EPR/YP3930EX/V008)

Natural Resources Wales, in exercise of its powers under paragraph 4 of Part 1 of Schedule 5 of the above Regulations, requires you to provide the information detailed in the attached schedule. The information is required in order to determine your application for a permit, dated 16/11/2023. The information requested should be sent to the following address by 06/09/2024.

Information should be sent to:

Permitting Service  
Natural Resources Wales  
Crown Buildings  
Cathays Park  
Cardiff  
CF10 3NQ

Name	Date
<b>William Wallace</b>	<b>16/08/2024</b>

Authorised on behalf of Natural Resources Wales

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Permitting Service, Natural Resources Wales, Crown Buildings, Cathays Park, Cardiff, CF10 3NQ

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[www.naturalresourceswales.gov.uk](http://www.naturalresourceswales.gov.uk)

Croesewir gohebiaeth yn y Gymraeg a'r Saesneg  
Correspondence welcomed in Welsh and English

## **Schedule**

### **1. Reduction of non methane volatile organic compounds (NMVOCs) using vapour recovery unit (VRU).**

The tonnage of non methane volatile organic compounds (NMVOCs) used in the business as usual (BAU) (in tonnages) is quoted as an annual emission of 1085 tonnes (701 tonnes for turn around years) and for the vapour recovery unit (VRU) 65 tonnes (42 tonnes for turn around years).

The tonnages show in the VRU are 5.99% (94.1% reduction) of the tonnages for BAU (normal year and turn around year).

However BAT 52. States the following: *In order to prevent or reduce VOC emissions to air from loading and unloading operations of volatile liquid hydrocarbon compounds, BAT is to use one or a combination of the techniques given below to achieve a recovery rate of at least 95 %.*

A review of the cost benefit analysis is required to ensure that the tonnages used are correct and in line with the recovery rate of 95% as outlined in BAT 52. On review please provide a resubmission of the cost benefit analysis should it change or a justification for the reduction of 94.1% of the BAU tonnage.

### **2. Greenhouse gas emissions from Business as usual (BAU)**

The cost benefit analysis and report take into account greenhouse gas emissions from the VRU.

However, the report has not considered the greenhouse gas impacts from the emission of NMVOC as a result of business as usual. Can you provide how the impact and costs of global warming potential of the NMVOCs has been factored in.

### **3. Ozone formation in business as usual**

Can you further quantify the amount of ozone produced from the NMVOCs (for both BAU and VRU) and how these have been factored in both the cost benefit analysis and the justification on derogation.

### **4. Other alternatives methods to reduce NMVOCs**

In your report you investigated the use of a thermal oxidiser to reduce NMVOC as an alternative method the techniques in BAT 52 (see annex below) to achieve the BAT-AELS for NMVOCs. Other than the thermal oxidiser and the VRU, are there other alternative solutions (that are a BAT technique or alternative to BAT) that you have either considered and/or

could be considered on site to reduce the emissions of NMVOCs to meet the BAT-AELs in BAT 52.

**Annex Table from BAT conclusion 52. of the [\*BAT conclusions for the refining of mineral oil and gas industries\*](#)**

Technique	Description	Applicability (1)
Vapour recovery by: (i) Condensation (ii) Absorption (iii) Adsorption (iv) Membrane separation (v) Hybrid systems	See Section 1.20.6	Generally applicable to loading/unloading operations where annual throughput is > 5 000 m <sup>3</sup> /yr. Not applicable to loading/unloading operations for sea-going vessels with an annual throughput < 1 million m <sup>3</sup> /yr
( 1) A vapour destruction unit (e.g. by incineration) may be substituted for a vapour recovery unit, if vapour recovery is unsafe or technically impossible because of the volume of return vapour		

**End of schedule**



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