

# **Petroineos Manufacturing Scotland Limited Grangemouth**

**SEPA Initiated Variation**

**Variation Number PPC/A/1013141/CON01/VAR01**

Draft for consultation

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**1 NON TECHNICAL SUMMARY OF DETERMINATION**

Petroineos have requested a change to their operating Permit as follows:

**Extension to Sulphur Derogation Timeline of Seven Months**

The delayed installation of a Sulphur scrubber on the fuel gas system will result in the emission of an estimated maximum additional 100 Tonnes of Sulphur.

SEPA has assessed the request and is minded to approve it due to the technical reasons presented and the context of a much-reduced site-wide Sulphur emission since the original derogation was determined. The worst case additional emission over a seven month period equates to roughly two weeks of daily emissions in 2019 prior to Site restructuring. The daily emission is at around 25% of this level today.

**Housekeeping of permit**

Updates to remove time expired conditions and minor errors.

**Glossary of terms**

|     |   |                           |
|-----|---|---------------------------|
| BAT | - | Best Available Techniques |
| CO  | - | Coordinating Officer      |
| ELV | - | Emission Limit Value      |

**2 EXTERNAL CONSULTATION AND SEPA'S RESPONSE**

*Is Public Consultation Required* - No

*Is PPC Statutory Consultation Required* – No

*Discretionary Consultation* –

**Enhanced SEPA public consultation** – Yes, this document was placed on the PPD website as it involves the extension of the previously agreed timeline for a derogation on Sulphur emissions from the Site.

*'Off-site' Consultation* – N/A

*Transboundary Consultation* – N/A

*Public Participation Consultation* – Yes

**3 ADMINISTRATIVE DETERMINATIONS**

**Determination of the Schedule 1 activity:**

No change

**Determination of the stationary technical unit to be permitted:**

|   |
|---|
| No change   |
| <b>Determination of directly associated activities:</b> |
| No change   |
| <b>Determination of 'site boundary'</b>                 |
| No change   |

## 4 INTRODUCTION AND BACKGROUND

### 4.1 Historical Background to the activity and variation

Petroineos has completed a number of upgrades over the last three years to remove the use of fuel oil and also reconfigured the site to remove two significant units equating to around a third of its former capacity. This variation has been requested to extend the time limit for a final upgrade to the Site fuel gas system to remove Sulphur. This is due to construction delays. SEPA is also taking the opportunity to correct some minor errors and remove out of date Conditions.

### 4.2 Description of activity

Oil refinery with a capacity of 150,000 barrels per day.

### 4.3 Outline details of the Variation applied for

See non-technical summary.

### 4.4 Guidance/directions issued to SEPA by the Scottish Ministers under Reg.60 or 61.

None.

### 4.5 Identification of important and sensitive receptors

See Derogation applications 2018.

## 5 KEY ENVIRONMENTAL ISSUES

### 5.1 Summary of significant environmental impacts

The change requested will affect air emissions only. Sulphur emission improvements will be further delayed, but this is within the context of the Site already exceeding BAT requirements as determined in the 2018 BREF Review.

Other minor changes to the permit will not result in additional emissions.

### 5.2 Implications of the Variation on - Point Sources to Air

#### Further Extension to Sulphur Derogation Timeline of Seven Months

The delayed installation of a Sulphur scrubber on the fuel gas system will result in the emission of a worst case estimate of an additional 100 Tonnes of Sulphur, delaying full compliance with the Sulphur Derogation in Annex I of the Permit. Considerations include:

1. Upgrades and changes on the Site since the BAT Review in 2018 mean that overall SO<sub>x</sub> emissions have fallen from ~4500 Tonnes per year to ~1000 Tonnes per year. This improvement far exceeds the previous BAT estimate of 1798 Tonnes per year for the Site.
2. Two out of the three Sulphur derogations have been complied with / no longer apply due to unit closure. The original Cost Benefit Assessment (CBA) combined all three and the delayed scrubber was the smallest element of the work. This CBA in 2018 concluded that total costs exceeded benefits by £310 million.
3. The extension will lead to a maximum of an additional 100 Tonnes of Sulphur being released over the period (for context Site emissions have fallen from ~12 Tonnes per day to ~3 Tonnes per day).
4. The 2018 CBA spreadsheet is now using outdated cost data.
5. A simplistic assessment using 2023 Sulphur central damage costs comprises:

Sulphur Damage Cost £16,616 / tonne x 100 = £1,661,600

Installation Costs are £1 million.

Disruption costs to bring the project forward for the Site as a whole are ~ £1 million / day. Realistically a full shutdown would not be required, so a figure of £250,000/day has been used.

Installation will take approximately one month so 30 x 250,000 equates to costs of £7.5 million.

Therefore, costs exceed benefits by ~£5.9 million.

SEPA is minded to approve the request due to the technical reasons presented (construction delays) and the context of a much-reduced site-wide Sulphur emission since the original derogation was determined. The additional emission over a seven month period equates to roughly two weeks of daily emissions in 2019 prior to Site restructuring. The daily emission is at around 25% of this level today.

#### **Housekeeping of permit**

Updates to correct minor errors in the Permit and to remove time expired conditions. These have no impact on air emissions.

#### **5.3 Implications of the Variation on - Point Source Emissions to Surface Water and Sewer**

None.

#### **5.4 Implications of the Variation on - Point Source Emissions to Groundwater**

None.

#### **5.5 Implications of the Variation on - Fugitive Emissions to Air**

None.

#### **5.6 Implications of the Variation on - Fugitive Emissions to Water**

None.

#### **5.7 Implications of the Variation on – Odour**

None.

#### **5.8 Implications of the Variation on – Management**

None.

#### **5.9 Implications of the Variation on - Raw Materials**

None.

#### **5.10 Implications of the Variation on - Raw Materials Selection**

|   |                 |     |                 |
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None.

#### **5.11 Implications of the Variation on - Waste Minimisation Requirements**

None.

#### **5.12 Implications of the Variation on - Water Use**

None.

#### **5.13 Implications of the Variation on - Waste Handling**

None.

#### **5.14 Implications of the Variation on - Waste Recovery or Disposal**

None.

#### **5.15 Implications of the Variation on – Energy**

None.

#### **5.16 Implications of the Variation for - Accidents and their Consequences**

None.

#### **5.17 Implications of the Variation for – Noise**

None.

#### **5.18 Implications of the Variation for – Monitoring**

The delay will also impact the project to replace the CEMS units on Site. The existing units will remain operational until they are replaced in Q1 2024.

There will be a one-month period when the CEMS units on site will not be operational as they are replaced to enable accurate readings of S levels going forward. Adequate proxy and extractive monitoring have been proposed during this period and accepted by SEPA.

#### **5.19 Implications of the Variation for – Closure**

None.

#### **5.20 Implications of the Variation for - Site Condition Report (and where relevant the baseline report)**

None.

#### **5.21 Implications of the Variation for - Consideration of BAT**

### **Extension to Sulphur Derogation Timeline of Seven Months**

The upgrade will bring the Site's Sulphur emissions down to the BAT AEL of 35mg/m<sup>3</sup>. Site BAT was fully described for Sulphur during the BREF Review in 2018 and this has already been exceeded on an annual mass basis as described in Section 5.2 above.

### **Housekeeping of permit**

The changes are due to BAT being achieved or minor errors corrected.

**6 OTHER LEGISLATION CONSIDERED**

***Nature Conservation (Scotland) Act 2004 & Conservation (Natural Habitats &c.) Regulations 1994***

**Is there any possibility that the proposal will have any impact on site designated under the above legislation?** No

**Justification:** Emissions have fallen considerably from the Site over the past three years and will not increase as a result of the proposed changes.

**Officer:** DF

**7 ENVIRONMENTAL IMPACT ASSESSMENT AND COMAH**

How has any relevant information obtained or conclusion arrived at pursuant to Articles 5, 6 and 7 of Council Directive 85/337/EEC on the assessment of the effects certain public and private projects on the environment been taken into account?

N/A

How has any information contained within a safety report within the meaning of Regulation 7 (safety report) of the Control of Major Accident Hazards Regulations 1999 been taken into account?

N/A

**Officer:** DF

**8 DETAILS OF PERMIT**

Do you propose placing any non-standard conditions in the Permit? No

Changes made to existing Conditions and Tables only.

Do you propose making changes to existing text, tables or diagrams within the permit? Yes

Outline of change: See VAR01 Schedule.

Details including justification: See Application paperwork and above.

**9 EMISSION LIMIT VALUES OR EQUIVALENT TECHNICAL PARAMETERS/ MEASURES**

Are you dealing with either a permit application, or a permit variation which would involve a review of existing ELVs or equivalent technical parameters? No, ELVs unchanged.

**10 PEER REVIEW**

**Has the determination and draft permit been Peer Reviewed?** Yes

**Name of Peer Reviewer and comments made:** GF

No comments.

**11 FINAL DETERMINATION**

**Issue variation to Permit PPC/A/1013141 VAR01**

Based on the information available at the time of the determination SEPA is satisfied that



- The applicant will be the person who will have control over the operation of the installation.
- The applicant will ensure that the installation plant is operated so as to comply with the conditions of the Permit.

**Officer:** DF

## 12 REFERENCES AND GUIDANCE

Refining of Mineral Oil and Gas BAT Conclusions – October 2014

UK Damage Costs: [AIR QUALITY APPRAISAL: DAMAGE COST GUIDANCE - GOV.UK \(WWW.GOV.UK\)](http://www.gov.uk)