MOTT MACDONALD

# Technical Note

H1 Screening Assessment – Howdon Biomethane Upgrade Plant Air Quality and Screening Assessment

| | | | |
|---|---|---|---|
| **Environment Agency reference:** | EPR/KP3394ZE/V006 | **Date:** | 19 December 2022 |
| **Prepared by:** | Hannah Whalley | **Checked by:** | Sarah Foll |
| **Approved by:** | Anita Manns | | |

# 1 Introduction

As requested in the 'Application: EPR/KP3394ZE/V006 - Northumbrian Water Ltd - Howdon STW - Request for further information clarification, dated 24 November 2022' an air emissions risk assessment of emissions to air of relevant substances from the biomethane upgrade plant (BUP) has been conducted using the Environment agency's H1 Risk Assessment Tool.

The screening assessment has been carried out for the emission point at the BUP. This technical note summarises the findings of the assessment, as well as outlining the information which has been inputted into the H1 tool and how these values have been derived.

The purpose of the BUP is to remove carbon dioxide ($CO_2$) to produce biomethane in line with the Quality Protocol specification. Prior to the biogas passing to the BUP it will pass through a filtering system which will remove contaminants such as hydrogen sulphide, and mercaptans.

To complete the assessment, the guidance 'Air emissions risk assessment for your environmental permit'[1] has been used. As stated in guidance, where existing data has not been available, either estimates based on similar operations elsewhere or worst-case estimates have been used to complete the assessment. All assumptions that have been made for these estimates are detailed in this report.

# 2 BUP stack parameters

## 2.1 Overview

Table 2.1 provides the parameters of the BUP that were used to undertake the screening assessment. All of the parameters, with the exception of the effective stack height which was calculated using the method detailed in Section 2.2 below, were provided by Northumbrian Water Limited (NWL). The emission point reference identifies where the emission point is located, and corresponds to the Site layout plan in Appendix A.

[1] https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit

**Table 2.1: BUP stack parameters**

| | |
|---|---|
| **Location** | X 433563.37 Y 566268.81 |
| **Stack height** | 12m |
| **Height of tallest building within 5L (m)[a]** | 15m |
| **Effective stack height** | 0m |
| **Maximum Biogas flow rate to the BUP** | 1900 $Nm^3/h$[b] |
| **Maximum $CO_2$ off-gas rate (with trace contaminates)** | 733.4$Nm^3/h$[b] |
| **Internal diameter** | 0.45m |
| **Efflux velocity** | 16m/s |
| **Exit gas temperature** | Ambient, defined as a product gas temperature of 10-20$^0$C with a standard value of 15$^0$C |
| **Operational hours** | 24 hours a day<br>8300 hours a year (to take in account planned shutdowns) |
| **Operational mode** | 95% |

Notes: [a] See section 2.2.1 for a definition of '5L'. Building heights have been provided by NWL.
[b] Reference conditions = 0.3% O2, 20°C, dry

## 2.2 Calculations and assumptions

### 2.2.1 Effective heights

As per the guidance, the effective height of release has been treated as 0 metres when the emission point is actually released at a point that is either:

- Less than 3 metres above the ground or building on which the stack is located; or
- More than 3 metres above the ground or the building, but less than the height of the tallest building within a distance that's 5 times 'L'.

'L' is the lowest of either

- The height of the building; or
- The greatest width between 2 points at the same height of the building.

In the case of the BUP, the effective height of release has been calculated as 0, due to the emission point being greater than 3m in height above the ground and less than the height of the tallest building within a distance that's 5 times 'L'. The tallest building is considered to be the post digestion sludge tank which has a height of 15m.

### 2.2.2 Pollutant concentrations

Post-commissioning, the emissions anticipated from the BUP stack will typically include:

- $CO_2$
- Methane (slip)
- Traces of:
  - Hydrogen sulphide ($H_2S$)
  - Siloxanes
  - Toluene
  - Xylene

At present there are no benchmarks for emissions of $CO_2$, non-methane volatile organic compounds (nmVOCs), siloxanes and methane from the BUP. There are no Environmental Assessment Levels (EALs) identified for siloxane from the H1 guidance or any other published air quality guidelines Therefore, benzene has been selected as a substitute parameter to represent siloxane, as is advised in Environment Agency

guidance[2] when there are no other alternatives for volatile organic compounds. These concentrations are considered to be the maximum values possible and as such provide a worst-case estimate of concentrations for the assessment.

The following assumed concentrations of residual contaminants in the $CO_2$ off-gas (733.4Nm$^3$/h) have been used in the H1 screening assessment:

- hydrogen sulphide 5mg/Nm$^3$
- benzene (as a surrogate for siloxanes), toluene, xylene 1mg/Nm$^3$ (each)

# 3 Screening Assessment

## 3.1 Assessment Criteria

The following section presents the relevant air quality standards that are applicable to the Site and that the Site will be assessed against. These are collectively described as the Environmental Quality Standards (EQS).

The Environment Agency's risk assessment guidance[3] provides guidelines on Ambient Air Directive (AAD) limit values, UK air quality objectives and environmental assessment levels (EALs) that the impact should be compared against. There are currently no air quality objectives for siloxane, toluene, xylene or hydrogen sulphide, however there is a limit value for benzene, which is presented in Table 3.1 below. There are also EALs for each of the pollutants, which are presented in Table 3.2. The annual limit value and EAL for benzene are the same. Any exceedances of these EQS may result in further action needing to be taken to reduce the impact on the environment.

**Table 3.1: Summary of relevant air quality objectives and AAD limit values**

| Pollutant | Averaging period | Limit value (µg/m³) | Allowance (per calendar year) |
|---|---|---|---|
| Benzene (substituting siloxane) | 1-hour | - | - |
| | Annual | 5 | None |

The limit values apply everywhere with the exception of:

a) Any locations situated within areas where members of the public do not have access and there is no fixed habitation
b) In accordance with Article 2(1), on factory premises or at industrial installations to which all relevant provisions concerning health and safety at work apply
c) On the carriageway of roads, and
d) On the central reservations of roads except where there is normally pedestrian access to the central reservation.

**Table 3.2: Summary of relevant EALs**

| Pollutant | Averaging period | EAL (µg/m³) |
|---|---|---|
| Benzene (substituting siloxane) | 1-hour | 195 |
| | Annual | 5 |
| Toluene | 1-hour | 8000 |
| | Annual | 1910 |

[2] Environment Agency and Defra (2022). Available online at https://www.gov.uk/guidance/air-emissions-risk-assessment-for- your-environmental-permit

[3] Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)

| Pollutant | Averaging period | EAL (µg/m³) |
|---|---|---|
| Xylene | 1-hour | 66200 |
| | Annual | 4410 |
| Hydrogen sulphide | 24-hour | 150 |
| | Annual | 140 |

## 3.2 Background Concentrations

In order to assess the risk of emissions on local air quality it is necessary to add the modelled process contribution (PC) to the concentration of pollutants already present in the air (background concentration). Defra background data was used to determine the baseline concentrations of benzene already present in the area. Background concentrations for toluene, xylene and hydrogen sulphide are not available from Defra or local monitoring, and as such have not been included in this assessment.

The annual mean background concentration for benzene for 2021, the most recent available year, is 0.4ug/m$^3$. As the background concentration is well below the relevant EQS and the closest AQMA is approximately 2.1km from the Site, it is therefore unlikely that the Site will lead to any exceedances.

## 3.3 Stage 1 of Assessment

The outputs from the first stage of the H1 screening assessment are displayed in Table 3.3. The PC for benzene exceeds the Environment Agency's threshold of 1% of the long-term EAL for human health but not for any of the other pollutants (toluene, xylene, hydrogen sulphide). All of the PCs, including benzene, are below the Environment Agency's threshold of 10% of the short-term EAL for human health.

**Table 3.3 First stage of Assessment for the BUP Stack**

| Substance | Emissions rate (g/s) | EAL (µg/m³) | | PC (µg/m³) | | % of EAL | |
|---|---|---|---|---|---|---|---|
| | | Long-term | Short-term | Long-term | Short-term | Long-term | Short-term |
| Benzene (substituting siloxane) | 0.000528 | 5 | 195 | 0.0743 | 2.06 | **1.49** | 1.06 |
| Toluene | 0.000528 | 1,910 | 8,000 | 0.0743 | 2.06 | 0.00389 | 0.0258 |
| Xylene | 0.000528 | 4,410 | 66,200 | 0.0743 | 2.06 | 0.00169 | 0.00311 |
| Hydrogen sulphide | 0.002639 | 140 | 150 | 0.372 | 10.3 | 0.266 | 6.87 |

Note: Exceedances of the Environment Agency threshold is shown in **bold**

## 3.4 Stage 2 of Assessment

As the long-term PC for benzene exceeds the Environment Agency's threshold of 1% of the long-term EAL for human health, the long-term predicted environmental concentration (PEC) for benzene has been calculated by combining the PC and background concentration. As shown in Table 3.4, the long-term PEC is less than 70% of the long-term environmental standards. Therefore, no further assessment of benzene, such as detailed modelling, is required.

$CO_2$, methane, hydrogen sulphide and nmVOCs including siloxanes are also not substances listed in the Environment Agency guidance[4] requiring assessment on potential impacts to designated ecological sites.

[4] Environment Agency and Defra (2022). Available online at https://www.gov.uk/guidance/air-emissions-risk-assessment-for- your-environmental-permit

**Table 3.4 Second Stage of Assessment for the BUP Stack**

| Substance | Background concentration (µg/m³) | PC (µg/m³) | % of headroom (EAL- Background) | PEC (µg/m³) | % of EAL |
|---|---|---|---|---|---|
| | | Long-term | | | |
| Benzene (substituting siloxane) | 0.4 | 0.0743 | 1.62 | 0.475 | 9.49 |

Based on the findings above, it can be concluded the BUP presents an insignificant impact on local air quality. Stack emissions testing will be undertaken post-commissioning to confirm the very low concentrations of trace contaminants in the BUP off-gas emitted to air.

The approaches and relevant operational procedures that will form part of the Environmental Management System (EMS) are considered to adequately address the emissions to air from the BUP. On this basis, an Emissions Management Plan (EMP) for the BUP is not required.

# 4 Summary

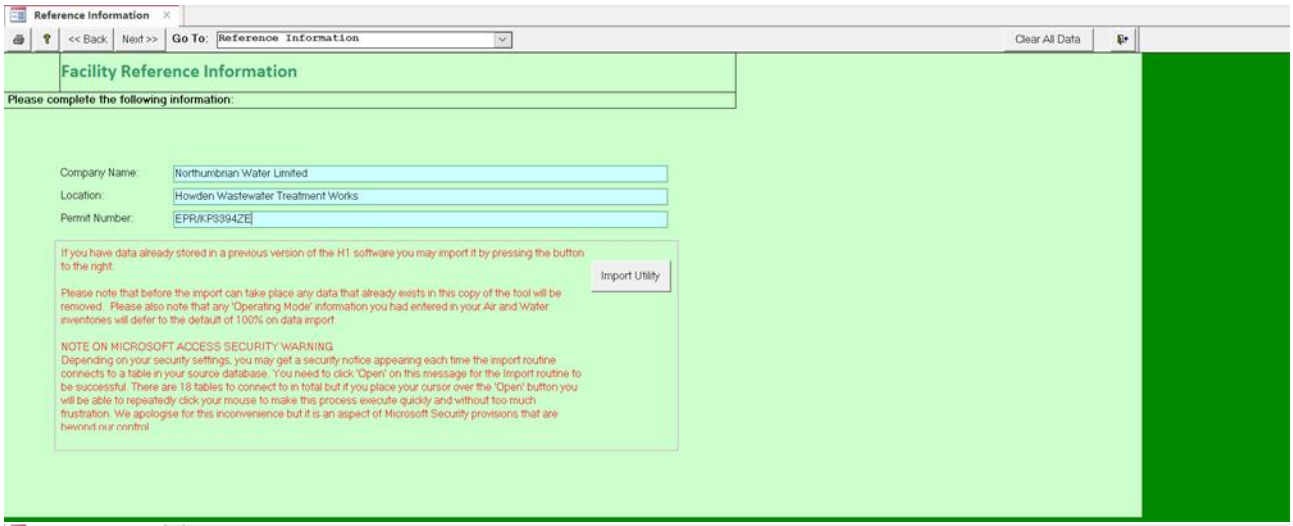
The application to include the BUP to the permit will not increase the risk posed by air emissions as it presents an insignificant impact on local air quality. The H1 screening tool does not account for the distances between the receptors and the emission sources and only presents the maximum predicted pollutant concentrations at any location. Therefore, actual pollutant concentrations are likely to be lower than the predicted outputs of the H1 tool at sensitive receptors, as a result of dispersion over the distance between the emission point and the receptor locations.

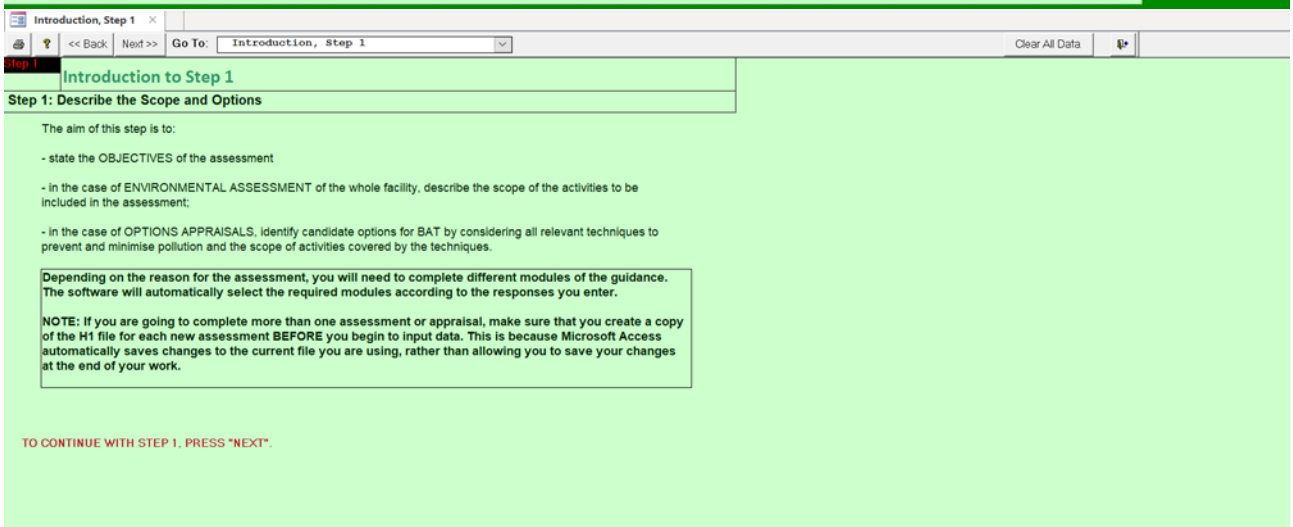
Additionally, it is noted in the H1 Software Tool user guide that predicted ground level concentrations are pessimistic and are, therefore, likely to overestimate actual concentrations. The PC values presented from the H1 output are, therefore, very conservative.

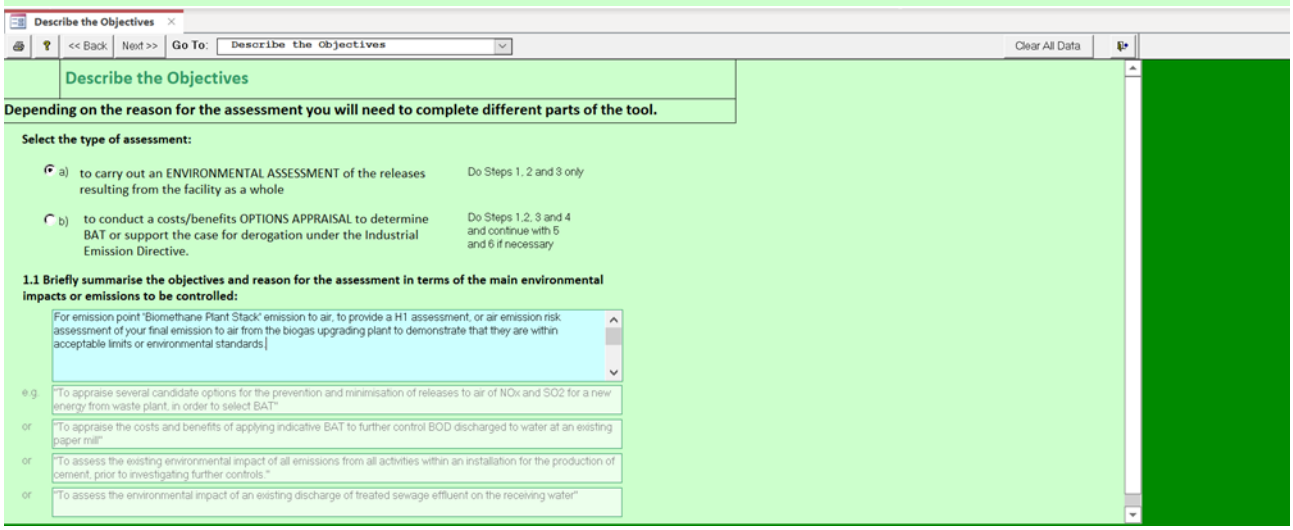
# A. Site Layout Plan

| Emissions Ref | Emissions Points | Asset Ref | Asset | X | Y |
|---|---|---|---|---|---|
| A1 | Advanced anaerobic digester 1: Whessoe valve | 1 | Advanced anaerobic digester 1 | 433580 | 566390 |
| A2 | Advanced anaerobic digester 2: Whessoe valve | 2 | Advanced anaerobic digester 2 | 433604 | 566390 |
| A3 | Advanced anaerobic digester 3: Whessoe valve | 3 | Advanced anaerobic digester 3 | 433629 | 566390 |
| A4 | CHP and boiler stack | 4 | CHP and boiler stack | 433653 | 566338 |
| A5 | CHP engine 1 - Bursting disc (exhaust gas) | 5 | CHP engine 1 | 433629 | 566320 |
| A6 | CHP engine 2 - Bursting disc (exhaust gas) | 6 | CHP engine 2 | 433637 | 566320 |
| A7 | CHP engine 3 - Bursting disc (exhaust gas) | 7 | CHP engine 3 | 433647 | 566320 |
| A8 | Natural gas engine | 8 | Natural gas engine | 433663 | 566321 |
| A9 | Composite boiler 1 - Boiler safety valve, Economiser safety valve and Safety valve | 9 | Composite boiler 1 | 433619 | 566342 |
| A10 | Composite boiler 2 - Boiler safety valve, Economiser safety valve and Safety valve | 10 | Composite boiler 2 | 433631 | 566342 |
| A11 | Composite boiler 3 - Boiler safety valve, Economiser safety valve and Safety valve | 11 | Composite boiler 3 | 433641 | 566342 |
| A12 | Flare stack | 12 | Flare | 433648 | 566360 |
| A13 | Gas bag holder 1 | 13 | Gas bag holder 1 | 433610 | 566360 |
| A14 | Gas bag holder 2 | 14 | Gas bag holder 2 | 433631 | 566359 |
| A15 | AD biofilter | 15 | Biofilter | 433583 | 566331 |
| A16 | Odour control unit 1 | 16 | Odour control unit 1 | 433413 | 566273 |
| A17 | Odour control unit 2 | 17 | Odour control unit 2 | 433588 | 566335 |
| A18 | Odour control unit 3 | 18 | Odour control unit 3 | 433570 | 566256 |
| AA | Inlet works | | | 433670 | 566540 |
| AB | Effluent discharge | | | 433467 | 566519 |
| | | 19 | Biomethane upgrade plant | 433682 | 566283 |
| | | 20 | Cake reception building | 433553 | 566354 |
| | | 21 | Cake Silo | 433613 | 566250 |
| | | 22 | Cake loading area | 433622 | 566251 |
| | | 23 | Screened sludge buffer tank | 433535 | 566308 |
| | | 24 | THP reactors | 433578 | 566351 |
| | | 25 | THP flash tanks | 433579 | 566366 |
| | | 26 | THP pulper | 433578 | 566342 |
| | | 27 | THP buffer tanks (feed silos) 1 | 433556 | 566332 |
| | | 28 | THP buffer tanks (feed silos) 2 | 433548 | 566332 |
| | | 29 | Post digestion storage tank | 433590 | 566315 |
| | | 30 | Dewatering building and Centrifuges (x2) | 433550 | 566311 |
| | | 31 | Final stage dewatering building and Centrifuges (x2) | 433588 | 566259 |
| | | 32 | Back up generator | 433596 | 566368 |
| | | 33 | Fuel oil storage tank | 433621 | 566309 |
| | | 34 | Gas engine lubricant/ Waste oil tank | 433618 | 566307 |
| | | 35 | Strategic sludge storage tank 1 | 433435 | 566266 |
| | | 36 | Strategic sludge storage tank 2 | 433478 | 566267 |
| | | 37 | Strategic sludge storage tank 3 | 433436 | 566223 |
| | | 38 | Strategic sludge storage tank 4 | 433477 | 566222 |
| | | 39 | Water treatment plant (boilers) | 433602 | 566344 |
| | | 40 | Imported sludge reception building | 433523 | 566262 |
| | | 41 | General waste bins (x2) | 433599 | 566290 |
| | | 42 | Screening skip 1 | 433548 | 566307 |
| | | 43 | Screening skip 2 | 433556 | 566307 |
| | | 44 | Drum thickeners | 433428 | 566309 |
| | | 45 | Thickened sludge day tanks (x2) | 433413 | 566309 |
| | | 46 | Grid entry unit | 433681 | 566406 |

# B. H1 Screening Tool



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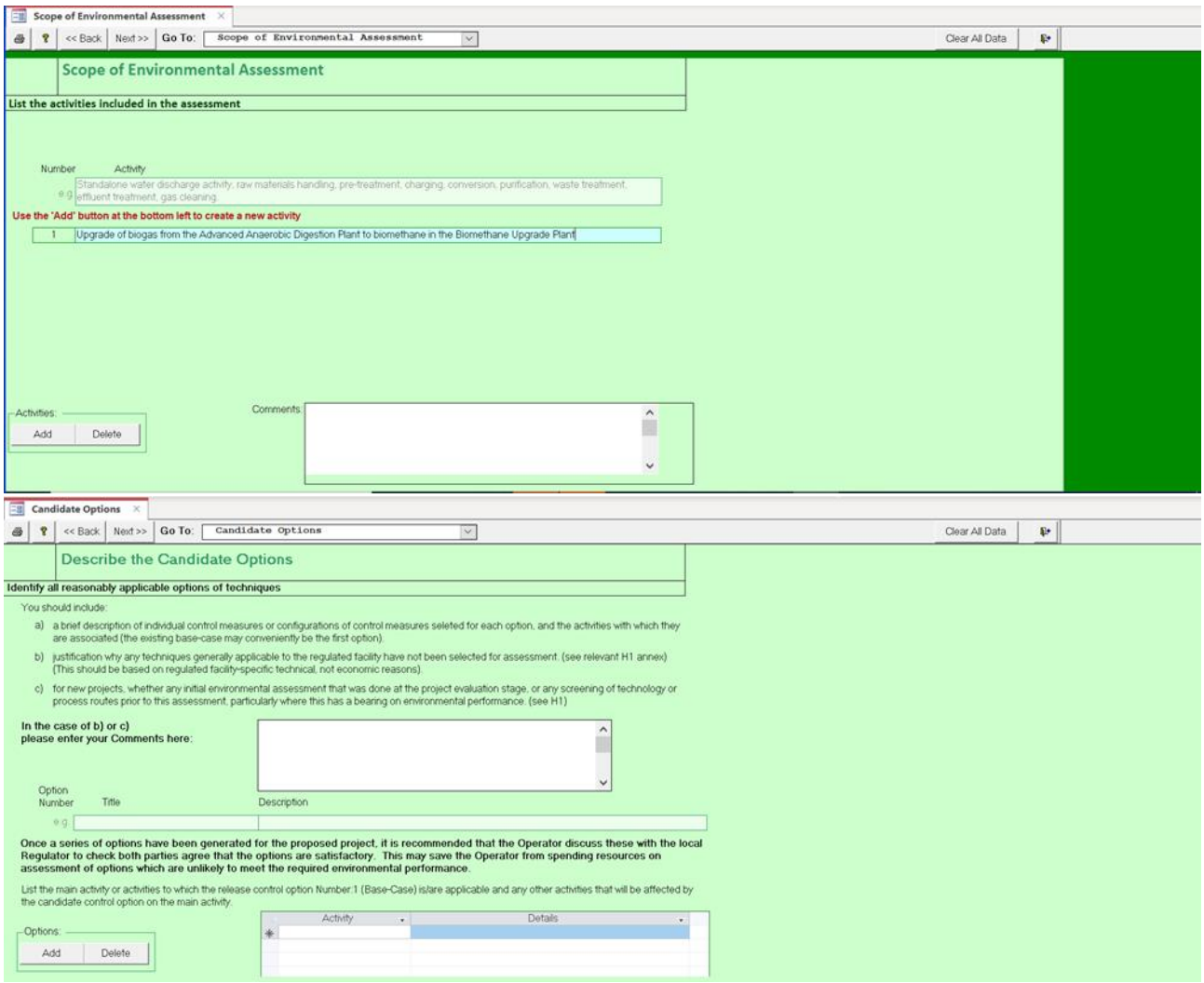
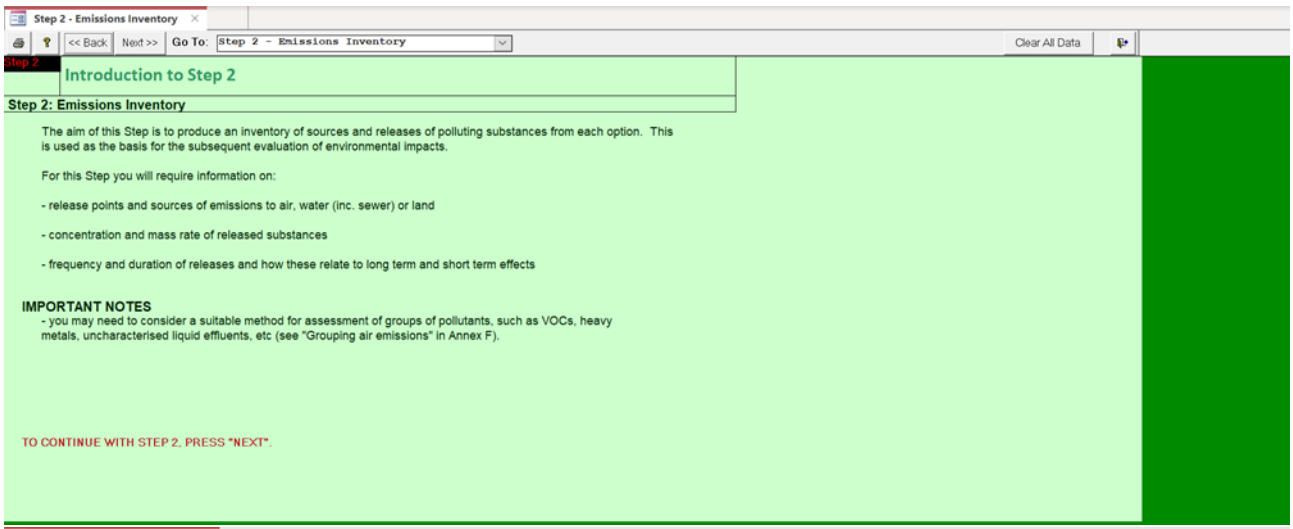
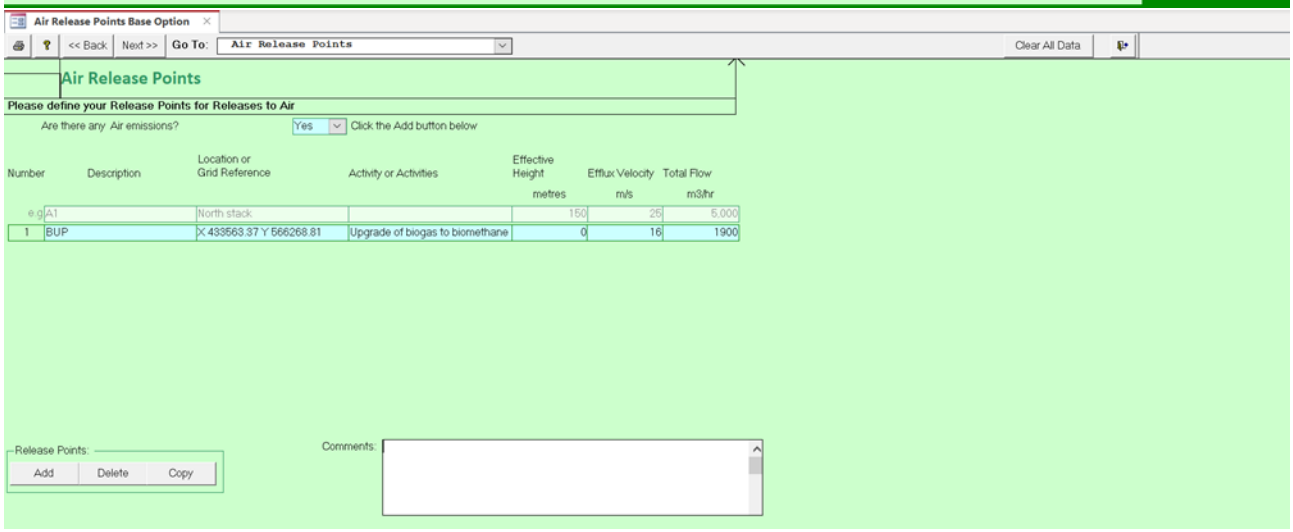



Step 2 - Emissions Inventory
<< Back
Next >>
Go To:
Step 2 - Emissions Inventory
Clear All Data
Step 2
Introduction to Step 2
Step 2: Emissions Inventory
The aim of this Step is to produce an inventory of sources and releases of polluting substances from each option. This is used as the basis for the subsequent evaluation of environmental impacts.
For this Step you will require information on:
- release points and sources of emissions to air, water (inc. sewer) or land
- concentration and mass rate of released substances
- frequency and duration of releases and how these relate to long term and short term effects
IMPORTANT NOTES
- you may need to consider a suitable method for assessment of groups of pollutants, such as VOCs, heavy metals, uncharacterised liquid effluents, etc (see "Grouping air emissions" in Annex F).
TO CONTINUE WITH STEP 2, PRESS "NEXT".


Air Release Points Base Option
<< Back
Next >>
Go To:
Air Release Points
Clear All Data
Air Release Points
Please define your Release Points for Releases to Air
Are there any Air emissions?
Yes
Click the Add button below
Number
Description
Location or Grid Reference
Activity or Activities
Effective Height
metres
Efflux Velocity
m/s
Total Flow
m3/hr
e.g
A1
North stack
150
25
5,000
1
BUP
X 433563.37 Y 566268.81
Upgrade of biogas to biomethane
0
16
1900
Release Points:
Add
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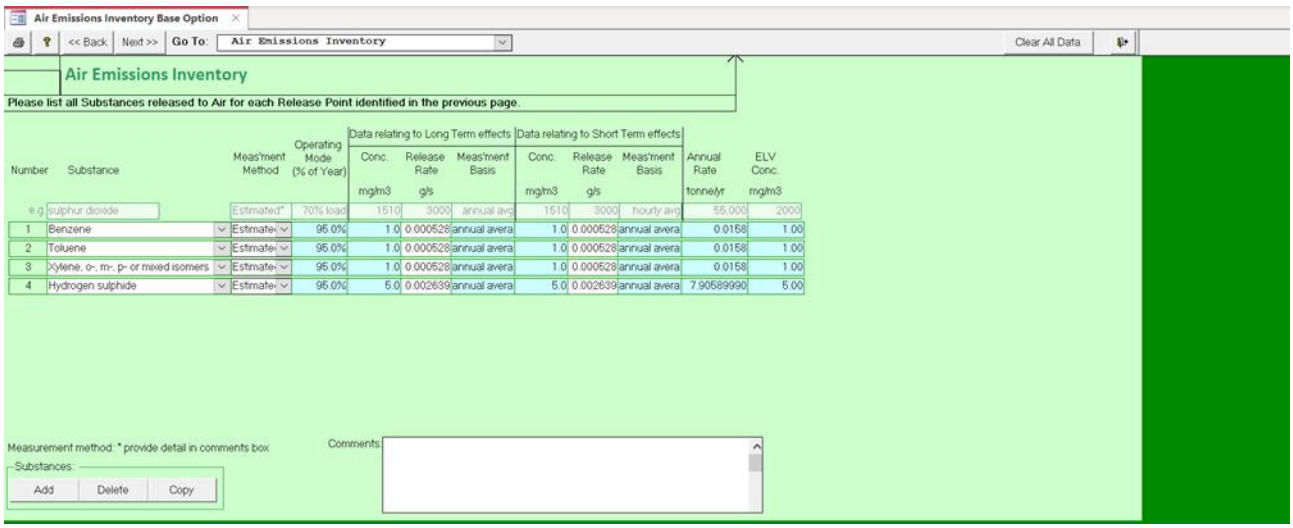
Comments:


Air Emissions Inventory Base Option
<< Back
Next >>
Go To:
Air Emissions Inventory
Clear All Data
Air Emissions Inventory
Please list all Substances released to Air for each Release Point identified in the previous page.
Number
Substance
Meas'ment Method
Operating Mode (% of Year)
Data relating to Long Term effects
Conc.
mg/m3
Release Rate
g/s
Meas'ment Basis
Data relating to Short Term effects
Conc.
mg/m3
Release Rate
g/s
Meas'ment Basis
Annual Rate
tonne/yr
ELV Conc.
mg/m3
e.g
sulphur dioxide
Estimated*
70% load
1510
3000
annual avg
1510
3000
hourly avg
55,000
2000
1
Benzene
Estimate
95.0%
1.0
0.000528
annual avera
1.0
0.000528
annual avera
0.0158
1.00
2
Toluene
Estimate
95.0%
1.0
0.000528
annual avera
1.0
0.000528
annual avera
0.0158
1.00
3
Xylene, o-, m-, p- or mixed isomers
Estimate
95.0%
1.0
0.000528
annual avera
1.0
0.000528
annual avera
0.0158
1.00
4
Hydrogen sulphide
Estimate
95.0%
5.0
0.002639
annual avera
5.0
0.002639
annual avera
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5.00
Measurement method: * provide detail in comments box
Substances:
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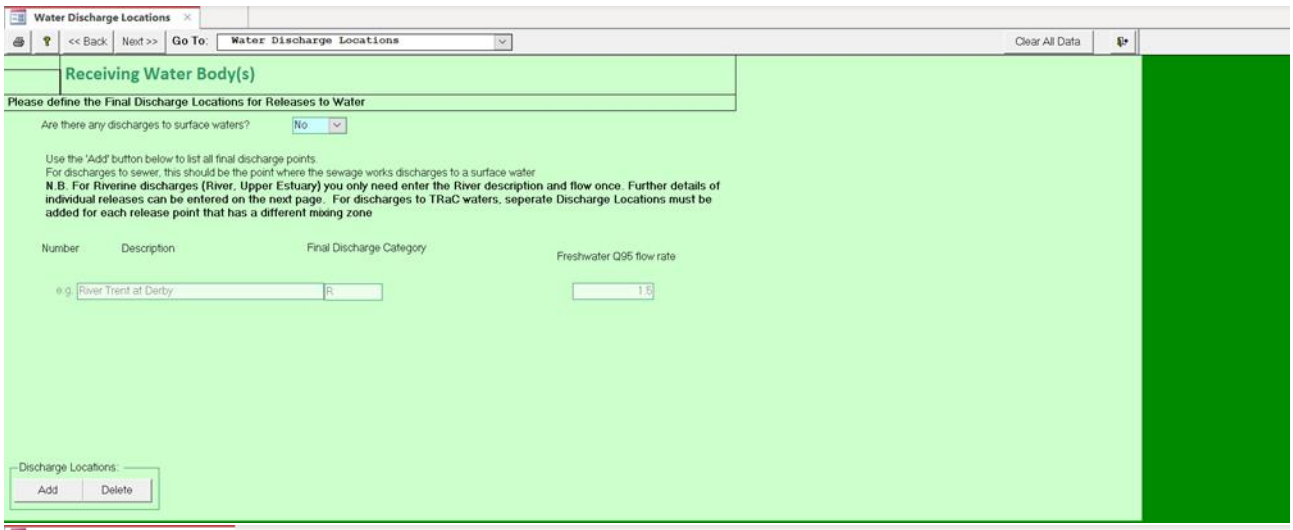
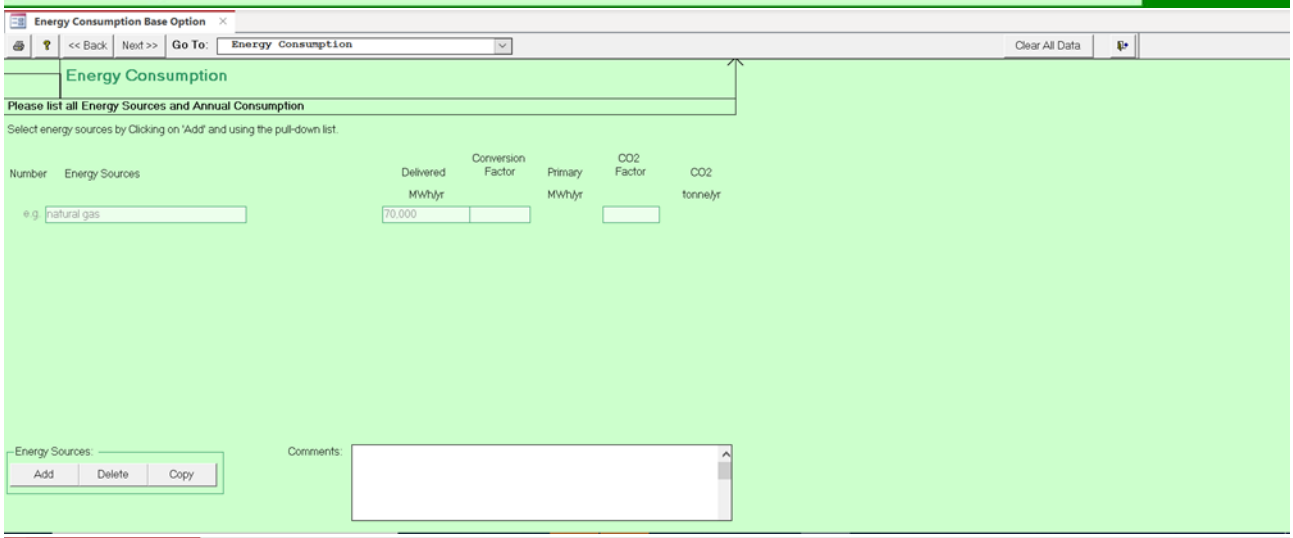
Comments:


Water Discharge Locations
<< Back
Next >>
Go To:
Water Discharge Locations
Clear All Data
Receiving Water Body(s)
Please define the Final Discharge Locations for Releases to Water
Are there any discharges to surface waters?
No
Use the 'Add' button below to list all final discharge points.
For discharges to sewer, this should be the point where the sewage works discharges to a surface water.
N.B. For Riverine discharges (River, Upper Estuary) you only need enter the River description and flow once. Further details of individual releases can be entered on the next page. For discharges to TRaC waters, seperate Discharge Locations must be added for each release point that has a different mixing zone
Number
Description
Final Discharge Category
Freshwater Q95 flow rate
e.g.
River Trent at Derby
R
1.5
Discharge Locations:
Add
Delete


Energy Consumption Base Option
<< Back
Next >>
Go To:
Energy Consumption
Clear All Data
Energy Consumption
Please list all Energy Sources and Annual Consumption
Select energy sources by Clicking on 'Add' and using the pull-down list.
Number
Energy Sources
Delivered
MWh/yr
Conversion Factor
Primary
MWh/yr
CO2 Factor
CO2
tonne/yr
e.g.
natural gas
70,000
Energy Sources:
Add
Delete
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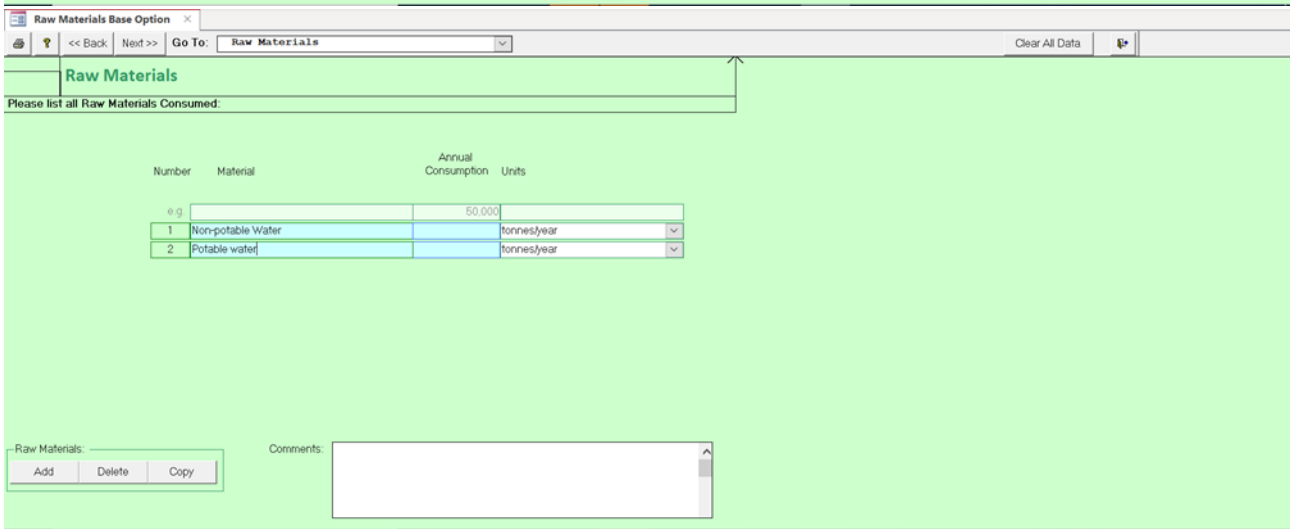
Comments:


Raw Materials Base Option
<< Back
Next >>
Go To:
Raw Materials
Clear All Data
Raw Materials
Please list all Raw Materials Consumed:
Number
Material
Annual Consumption
Units
e.g.
50,000
1
Non-potable Water
tonnes/year
2
Potable water
tonnes/year
Raw Materials:
Add
Delete
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Comments:

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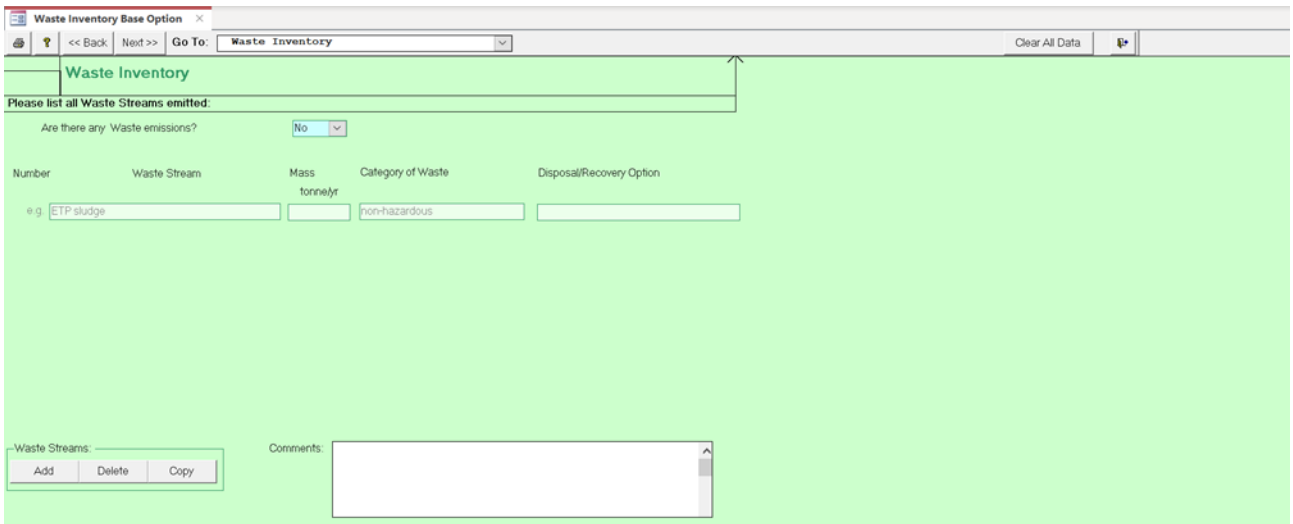
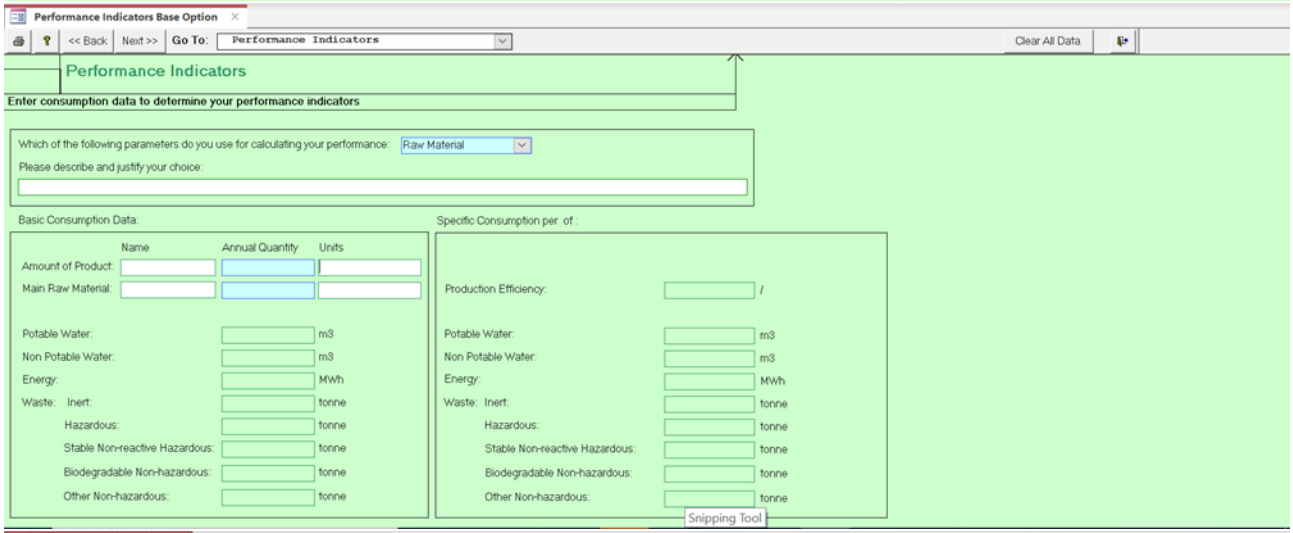
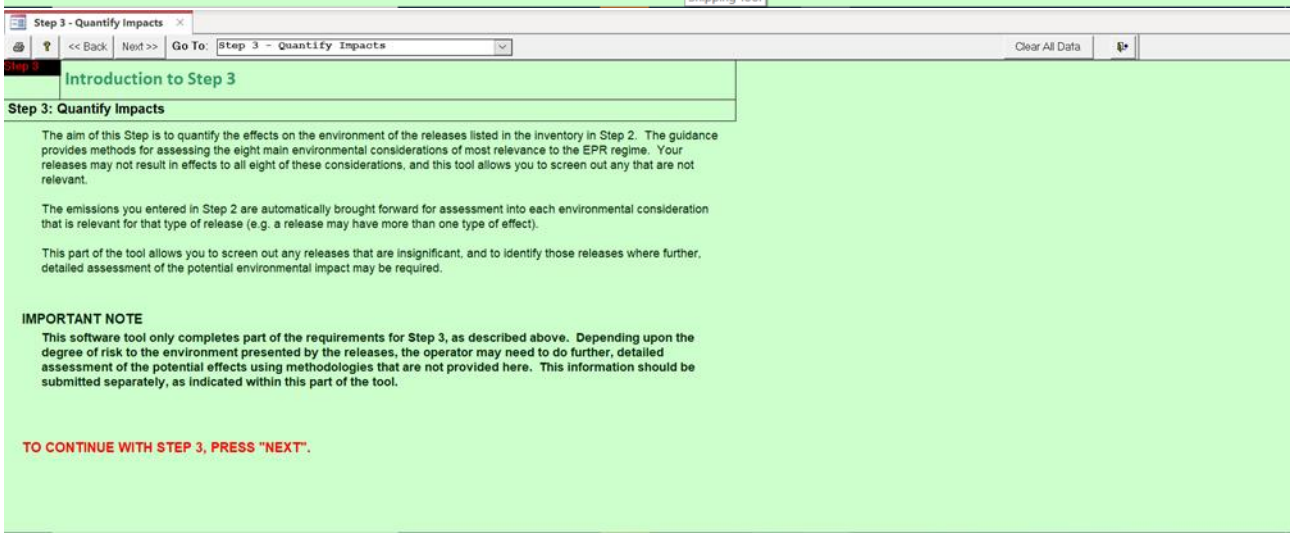
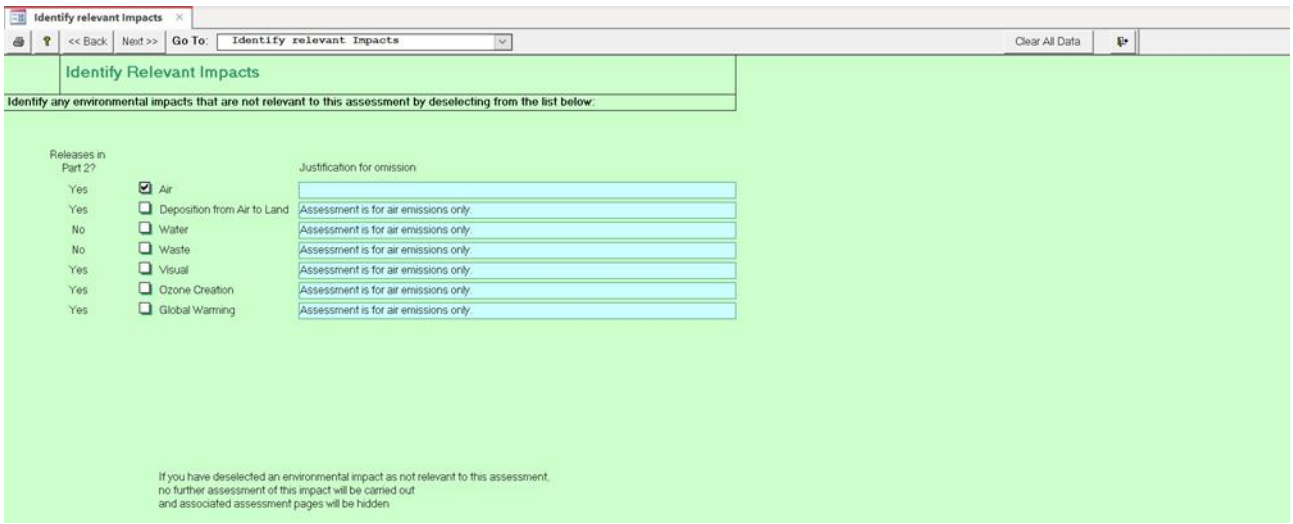




Identify relevant Impacts

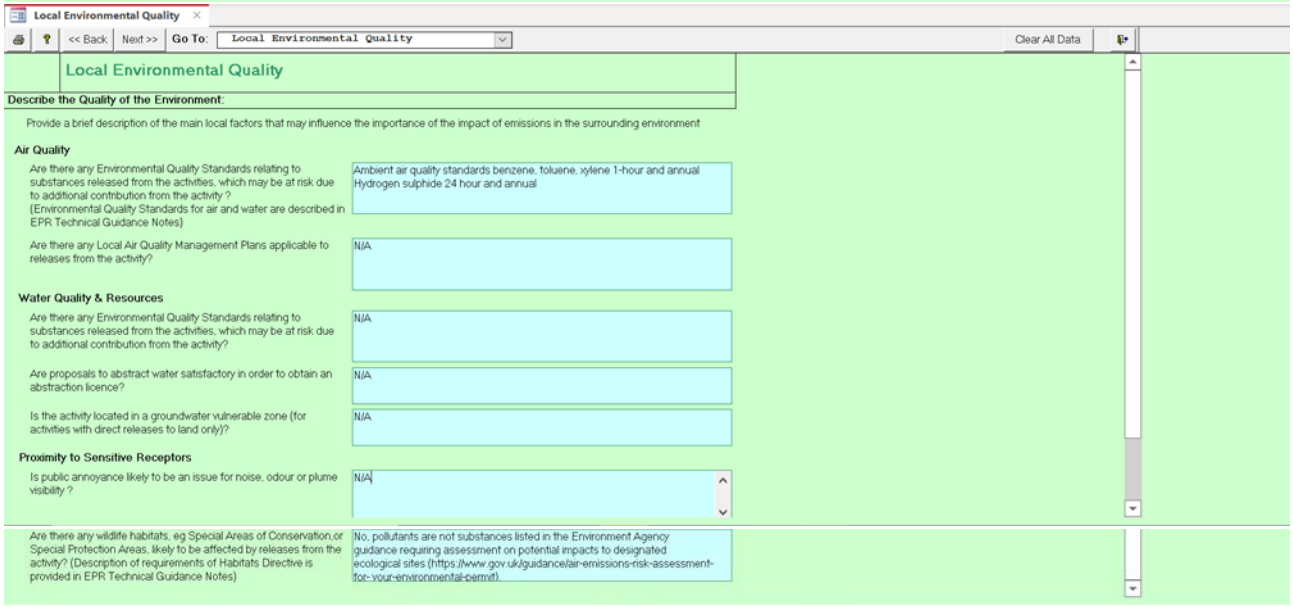
<< Back | Next >> | Go To: Identify relevant Impacts | Clear All Data

## Identify Relevant Impacts

Identify any environmental impacts that are not relevant to this assessment by deselecting from the list below:

| Releases in Part 2? | | Justification for omission |
|---|---|---|
| Yes | ☑ Air | |
| Yes | ☐ Deposition from Air to Land | Assessment is for air emissions only. |
| No | ☐ Water | Assessment is for air emissions only. |
| No | ☐ Waste | Assessment is for air emissions only. |
| Yes | ☐ Visual | Assessment is for air emissions only. |
| Yes | ☐ Ozone Creation | Assessment is for air emissions only. |
| Yes | ☐ Global Warming | Assessment is for air emissions only. |

If you have deselected an environmental impact as not relevant to this assessment, no further assessment of this impact will be carried out and associated assessment pages will be hidden



Local Environmental Quality

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## Local Environmental Quality

**Describe the Quality of the Environment:**

Provide a brief description of the main local factors that may influence the importance of the impact of emissions in the surrounding environment

**Air Quality**

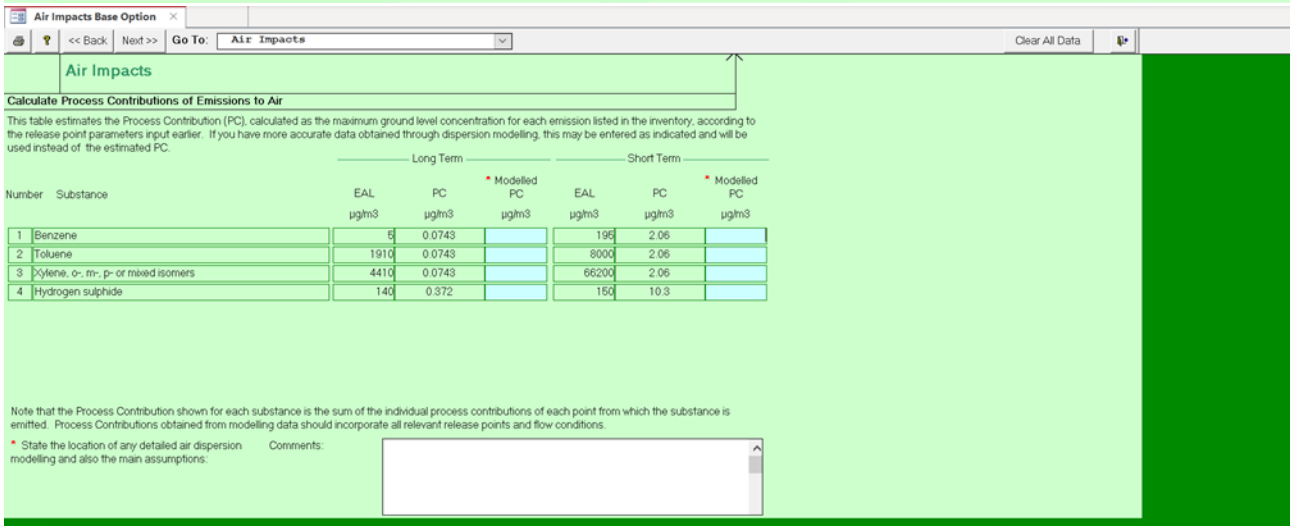
| | |
|---|---|
| Are there any Environmental Quality Standards relating to substances released from the activities, which may be at risk due to additional contribution from the activity ? (Environmental Quality Standards for air and water are described in EPR Technical Guidance Notes) | Ambient air quality standards benzene, toluene, xylene 1-hour and annual Hydrogen sulphide 24 hour and annual |
| Are there any Local Air Quality Management Plans applicable to releases from the activity? | N/A |

**Water Quality & Resources**

| | |
|---|---|
| Are there any Environmental Quality Standards relating to substances released from the activities, which may be at risk due to additional contribution from the activity? | N/A |
| Are proposals to abstract water satisfactory in order to obtain an abstraction licence? | N/A |
| Is the activity located in a groundwater vulnerable zone (for activities with direct releases to land only)? | N/A |

**Proximity to Sensitive Receptors**

| | |
|---|---|
| Is public annoyance likely to be an issue for noise, odour or plume visibility ? | N/A |
| Are there any wildlife habitats, eg Special Areas of Conservation,or Special Protection Areas, likely to be affected by releases from the activity? (Description of requirements of Habitats Directive is provided in EPR Technical Guidance Notes) | No, pollutants are not substances listed in the Environment Agency guidance requiring assessment on potential impacts to designated ecological sites (https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit). |



Air Impacts Base Option

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## Air Impacts

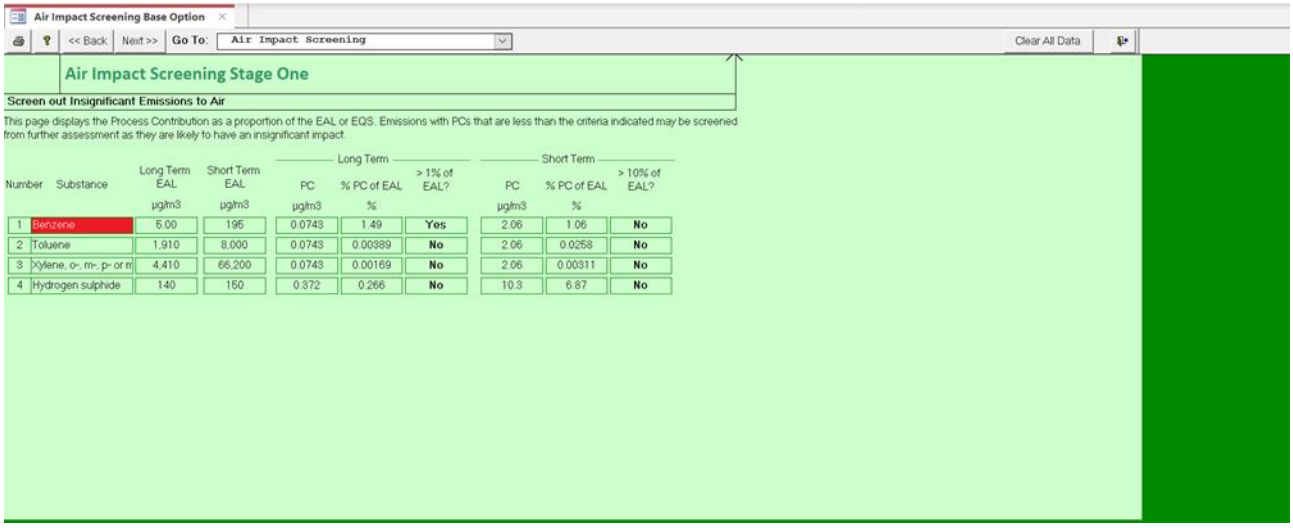
**Calculate Process Contributions of Emissions to Air**

This table estimates the Process Contribution (PC), calculated as the maximum ground level concentration for each emission listed in the inventory, according to the release point parameters input earlier. If you have more accurate data obtained through dispersion modelling, this may be entered as indicated and will be used instead of the estimated PC.

| | | Long Term | | | Short Term | | |
|---|---|---|---|---|---|---|---|
| Number | Substance | EAL µg/m3 | PC µg/m3 | * Modelled PC µg/m3 | EAL µg/m3 | PC µg/m3 | * Modelled PC µg/m3 |
| 1 | Benzene | 5 | 0.0743 | | 195 | 2.06 | |
| 2 | Toluene | 1910 | 0.0743 | | 8000 | 2.06 | |
| 3 | Xylene, o-, m-, p- or mixed isomers | 4410 | 0.0743 | | 66200 | 2.06 | |
| 4 | Hydrogen sulphide | 140 | 0.372 | | 150 | 10.3 | |

Note that the Process Contribution shown for each substance is the sum of the individual process contributions of each point from which the substance is emitted. Process Contributions obtained from modelling data should incorporate all relevant release points and flow conditions.

* State the location of any detailed air dispersion modelling and also the main assumptions: Comments:



Air Impact Screening Base Option

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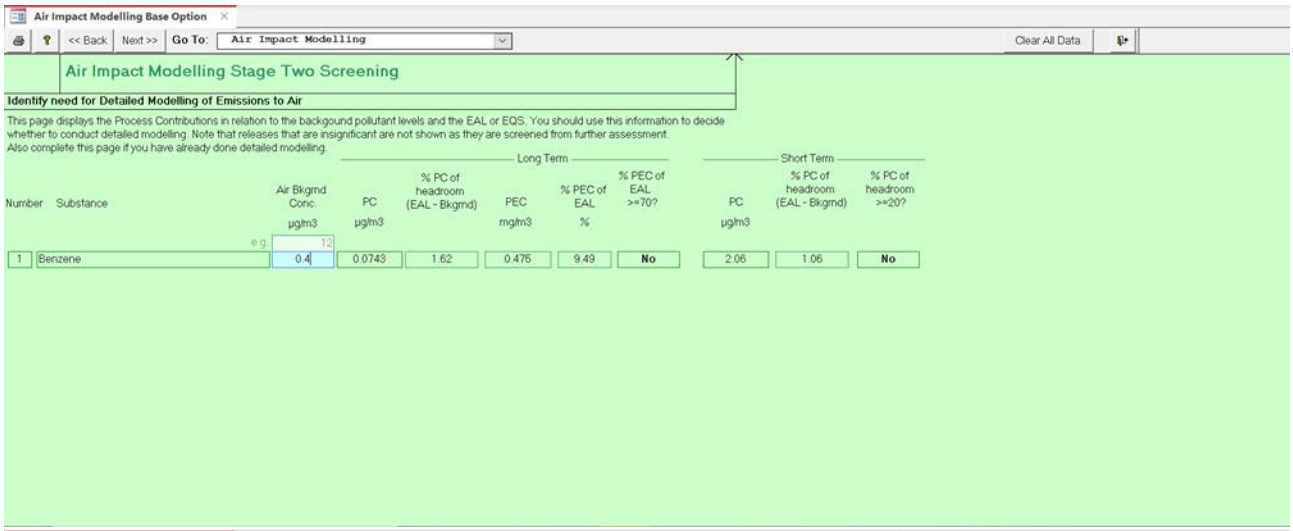
## Air Impact Screening Stage One

**Screen out Insignificant Emissions to Air**

This page displays the Process Contribution as a proportion of the EAL or EQS. Emissions with PCs that are less than the criteria indicated may be screened from further assessment as they are likely to have an insignificant impact.

| Number | Substance | Long Term EAL µg/m3 | Short Term EAL µg/m3 | Long Term PC µg/m3 | Long Term % PC of EAL % | Long Term > 1% of EAL? | Short Term PC µg/m3 | Short Term % PC of EAL % | Short Term > 10% of EAL? |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Benzene | 5.00 | 195 | 0.0743 | 1.49 | Yes | 2.06 | 1.06 | No |
| 2 | Toluene | 1,910 | 8,000 | 0.0743 | 0.00389 | No | 2.06 | 0.0258 | No |
| 3 | Xylene, o-, m-, p- or m | 4,410 | 66,200 | 0.0743 | 0.00169 | No | 2.06 | 0.00311 | No |
| 4 | Hydrogen sulphide | 140 | 150 | 0.372 | 0.266 | No | 10.3 | 6.87 | No |



Air Impact Modelling Base Option

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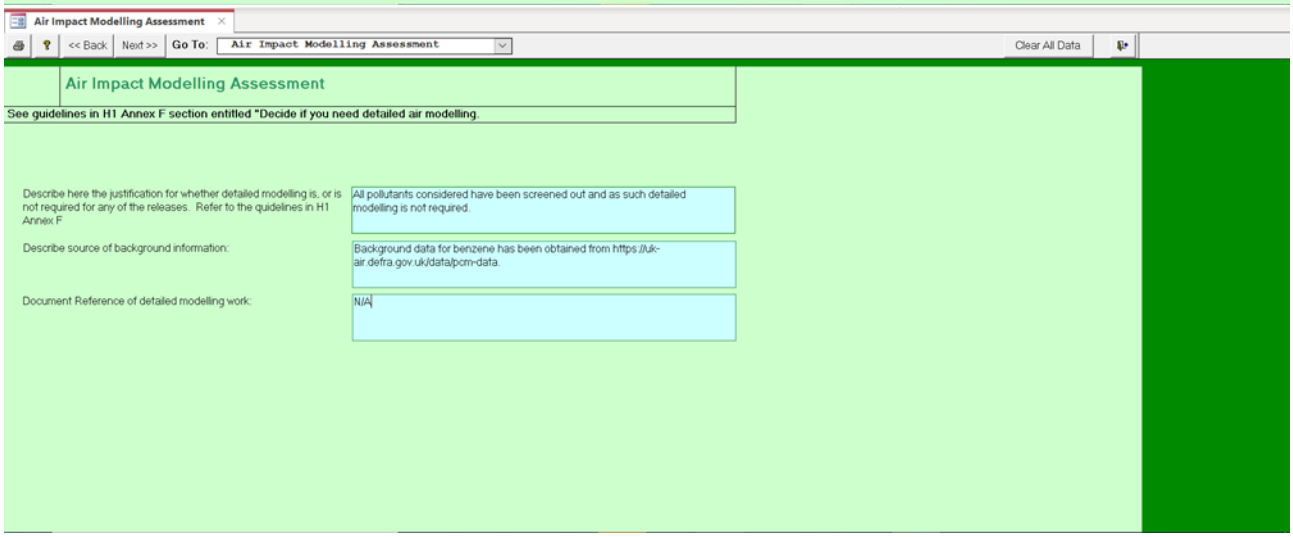
## Air Impact Modelling Stage Two Screening

**Identify need for Detailed Modelling of Emissions to Air**

This page displays the Process Contributions in relation to the backgound pollutant levels and the EAL or EQS. You should use this information to decide whether to conduct detailed modelling. Note that releases that are insignificant are not shown as they are screened from further assessment.
Also complete this page if you have already done detailed modelling.

| Number | Substance | Air Bkgrnd Conc. µg/m3 | Long Term PC µg/m3 | Long Term % PC of headroom (EAL - Bkgrnd) | Long Term PEC mg/m3 | Long Term % PEC of EAL % | Long Term % PEC of EAL >=70? | Short Term PC µg/m3 | Short Term % PC of headroom (EAL - Bkgrnd) | Short Term % PC of headroom >=20? |
|---|---|---|---|---|---|---|---|---|---|---|
| | e.g. | 12 | | | | | | | | |
| 1 | Benzene | 0.4 | 0.0743 | 1.62 | 0.475 | 9.49 | No | 2.06 | 1.06 | No |



Air Impact Modelling Assessment

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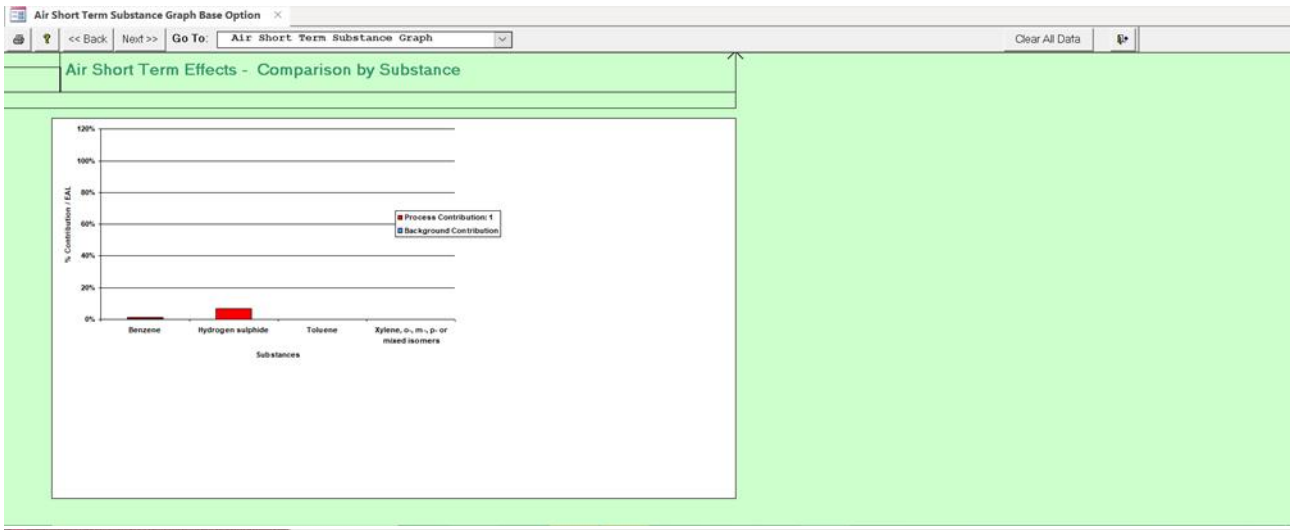
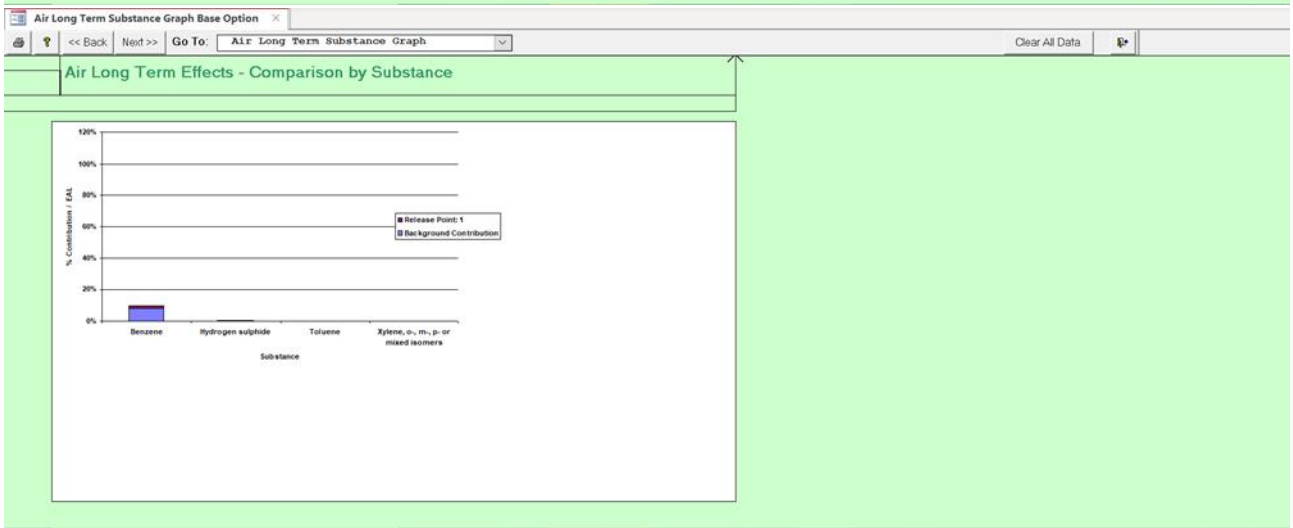
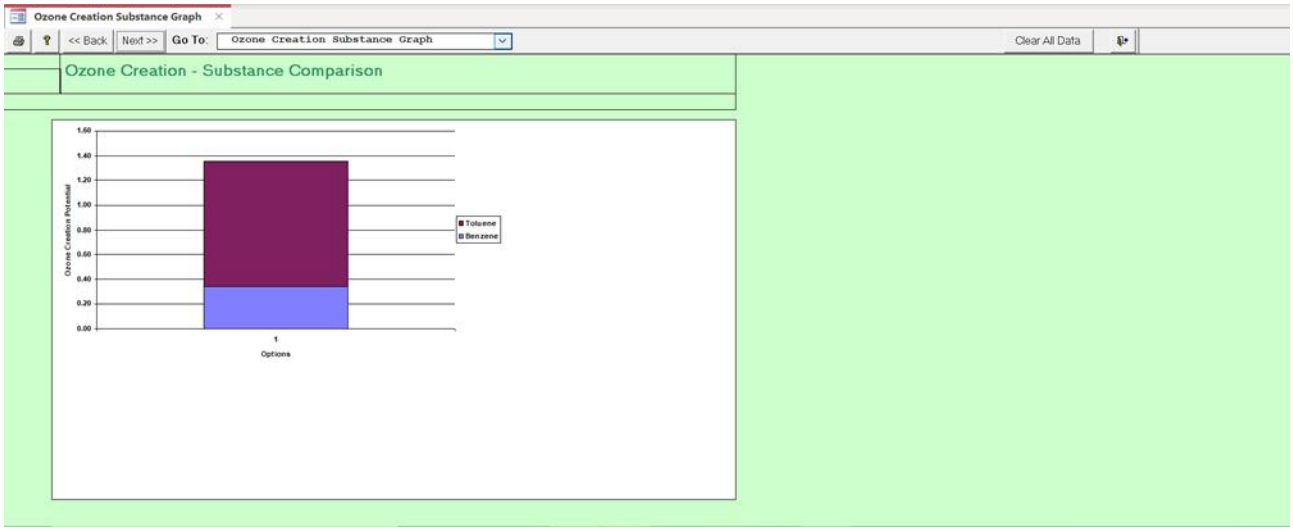
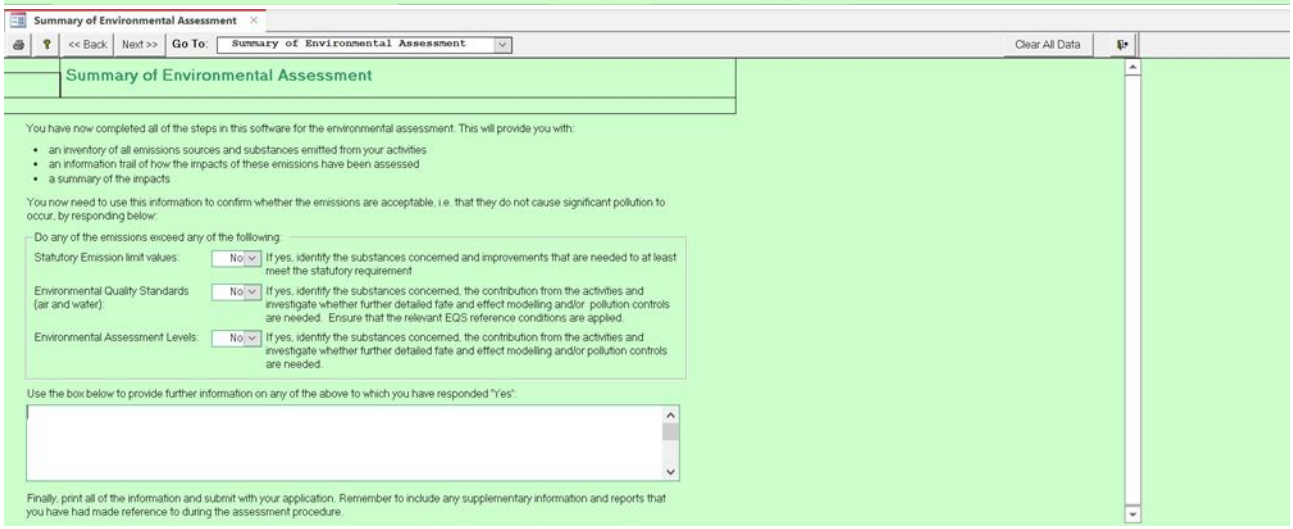
## Air Impact Modelling Assessment

**See guidelines in H1 Annex F section entitled "Decide if you need detailed air modelling.**

| | |
|---|---|
| Describe here the justification for whether detailed modelling is, or is not required for any of the releases. Refer to the guidelines in H1 Annex F | All pollutants considered have been screened out and as such detailed modelling is not required. |
| Describe source of background information: | Background data for benzene has been obtained from https://uk-air.defra.gov.uk/data/pcm-data. |
| Document Reference of detailed modelling work: | N/A |


Air Short Term Substance Graph Base Option
<< Back
Next >>
Go To:
Air Short Term Substance Graph
Clear All Data
Air Short Term Effects - Comparison by Substance
120%
100%
80%
60%
40%
20%
0%
% Contribution / EAL
Process Contribution: 1
Background Contribution
Benzene
Hydrogen sulphide
Toluene
Xylene, o-, m-, p- or mixed isomers
Substances


Air Long Term Substance Graph Base Option
<< Back
Next >>
Go To:
Air Long Term Substance Graph
Clear All Data
Air Long Term Effects - Comparison by Substance
120%
100%
80%
60%
40%
20%
0%
% Contribution / EAL
Release Point: 1
Background Contribution
Benzene
Hydrogen sulphide
Toluene
Xylene, o-, m-, p- or mixed isomers
Substance

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