MOTT MACDONALD

Technical Note

H1 Screening Assessment – Queensferry Treatment Centre Air Quality and Screening Assessment

Environment Agency reference:	PAN-017841	**Date: 24/06/2022**	
Prepared by:	Natalia Cunningham	**Checked by:**	Sarah Clinton
Approved by:	Anita Manns		

1 Introduction

As requested in the 'not duly made' PAN-017841 an air emissions risk assessment of emissions to air of relevant substances from the combustion plant has been conducted using the Environment agency's H1 Risk Assessment Tool.

The screening assessment has been carried out for the point source emission points at Queensferry Sludge Treatment Centre: Combined Heat and Power (CHP) plant, one back up diesel generator and three boilers. 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. 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 Air Release Points

Table 2.1: Air Release Points

Air Release Points	Emission Point 1	Emission Point 2	Emission Point 3	Emission Point 4	Emission Point 5
Description	CHP 1	Boiler 1	Boiler 2	Boiler 3	Standby Generator
Site Layout Plan Reference	4	2	2	2	10
NGR Reference	SJ 32340 68288	SJ 32335 68301	SJ 32335 68301	SJ 32335 68301	SJ 32256 68224
Stack Height (m)	1.6	5*	5*	5*	3*
Stack Diameter (mm)	300	150	150	150	300*
Size (MWth)	0.55	0.39	0.39	0.39	0.7

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

Exit Temperature (ºC)	180	117	110	117*	450*
Height of tallest building within 5L[1] (m)	8.8	8.8	8.8	8.8	5*
Effective Height (m)	0	0*	0*	0*	0*
Efflux Velocity (m/s)	8.37*	20.06*	19.70*	20.06*	32.82*
Total Flow (m^3/hr)	2131*	1276*	1253*	1276*	8352*
Operational hours	8500	8500*	8500*	8500*	500*
Operational Mode (%)	97	97*	97*	97*	6*

Note: * Values calculated using external information to provide an estimate, based on professional judgement

Table 2.1 shows the data and values used to undertake the screening assessment, where on-site data was not available this has been indicated in the sections below.

The emission point references identify where each emission point is located, and correspond to the site layout plan in Appendix A.

Operational hours were not provided by Welsh Water for the boilers and generator. It is understood that the boilers run continuously alongside the CHP engine, therefore the operational hours for the CHP have also been applied to the boilers. The generator is for back-up and emergency use only; therefore, it has been assumed that it will run for a maximum of 500 hours per generator which equates to 6% of the year.

The flare has not been included in the assessment as it understood to only run during emergencies, and generally runs for less than 10% of the time.

2.1 Calculations and assumptions

2.1.1 Exit temperatures

A conservative stack temperature for the diesel generator was estimated using expert judgement, and comparison with diesel generators at other similar sites.

2.1.2 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.

Where the stack heights are greater than 3m or greater than the height of the tallest building within 5 times 'L', effective heights for the emission points have been calculated using the methods outlined in the guidance[2].

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

The effective heights for emission points for the four boilers have been calculated using the following formula:

$$Ueff = 1.661 + \left[\frac{Uact}{H} - 1\right]$$

Where:

U*eff* is the effective release height.

H is the height of the tallest building (m) within 5.

U*act* is the actual release height.

It should be noted that for the emission points 2 and 10 (generators and boilers) the heights of buildings and stacks have been estimated. Building heights for the other emission points are confirmed by Welsh Water.

When the actual stack height is more than 2.5 times the building height, the actual stack height has been treated as the effective height of release.

2.1.3 Efflux Velocity and Total Flow calculations

Emission point 4 (CHP) – To calculate the efflux velocity, a total flow of 2131Am^3/hr has been used. This has been derived from a data sheet for a CHP of a similar size, make and model. Technical data sheets were not available for the specific CHP installed at the Site due to the company who produced them now being dissolved.

Emission point 2 (Boilers) – To calculate the efflux velocity, a total flow of 656Nm^3/hr has been used. This has been derived from a technical data sheet for boilers of similar size, make and model. This total flow has been used to calculate the actual volumetric flow rate (Am^3/hr)

Emission point 10 (Generator) – To calculate the efflux velocity, a total flow of 8352Am^3/hr has been used. This has been derived from previous air dispersion modelling for a generator of a similar size, make and model.

The calculations detailed above are based on similar plant and Air Quality specialists' professional judgement and have been calculated in conjunction with information provided by Welsh Water, such as stack diameter, to calculate an estimate and 'worst case' values for efflux velocity.

3 Air Emissions Inventory

Table 3.1: Air Emissions Inventory

Concentration mg/m^3	CHP	Standby Generator	Boilers
NO_x	500	500	250
Carbon Monoxide	1400	-	-
Sulphur dioxide	350	-	200
Total VOCs	1000	-	-

Emission rates were calculated based on minimum compliance with the emission limit values (ELV), identified in document reference B14411-123532-ZZ-XX-NN-ZA-DI1035 ensuring a conservative estimate of emissions to estimate worst-case air quality impacts.

The ELVs for the boilers are derived from the Standard Rules 'SR2021 No 10: anaerobic digestion of non-hazardous sludge at a wastewater treatment works, including the use of the resultant biogas'[3] at 250mg/m^3 for NO_x and 200mg/m^3 for SO_x.

As stated in the Environment Agency's guidance emissions of oxides of nitrogen should be recorded as nitrogen dioxide in the risk assessment (as nitrogen oxide converts to nitrogen dioxide over time):

- for short term PCs and PECs, assume only 50% of emissions of oxides of nitrogen convert to nitrogen dioxide in the environment
- for long term PCs and PECs, assume 100% of emissions of oxides of nitrogen convert to nitrogen dioxide

These conversion rates have been applied during this assessment and the concentrations are outlined in Table 3.2 below.

Table 3.2: Estimates of NO_2 concentrations

	ELV	Short term concentration (50%)	Long term concentration (100%)
NO_x / NO_2	500	250	500
NO_x / NO_2	250	125	250

As per the guidance[5] the conversion factors of 1.34 and 0.59 have been used to calculate estimates for the concentrations of sulphur dioxide for the 15 minute and 24-hour concentrations. These results of these calculations are detailed in Table 3.3 below.

Table 3.3: Estimates of sulphur dioxide concentrations

	ELV	15-minute concentration	24-hour concentration
Sulphur dioxide	350	469	207
Sulphur dioxide	200	268	118

Please note that the H1 tool does not allow for the ELV concentration to change between emissions points. For the screening assessment the ELVs for the CHP (500mg/m^3 for NO_x and 350mg/m^3 for SO_x) was set for all emission points, as demonstrated in Appendix B. It is our understanding the input for the ELV does not change the screening outcome, it is however a technical limitation of the H1 Tool.

3.1 Stage Two Screening

3.1.1 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[4] 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.

[3] https://www.gov.uk/government/publications/sr2021-no-10-anaerobic-digestion-of-non-hazardous-sludge-at-a-waste-water-treatment-works-including-the-use-of-the-resultant-biogas

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

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Table 3.4: Summary of relevant air quality objectives and AAD limit values

Pollutant	Averaging period	Objective / limit value (µg/m³)	Allowance (per calendar year)
For the protection of human health			
Nitrogen dioxide (NO_2)	1-hour	200	18
	Annual	40	–
Sulphur dioxide (SO_2)	24-hour	125	3
	1-hour	350	24
	15-minute	266	35
For the protection of vegetation and ecosystems			
Nitrogen oxides (NO_X)	Annual	30	–
SO_2	Annual	20	–

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.

3.1.2 Environmental Assessment Levels

In addition to the AAD limit values and air quality objectives, the Environment Agency risk assessment guidance[5] provides further assessment criteria in the form of EALs. The EALs cover a wide range of pollutants and specify target values for the protection of conservation areas. Any exceedances of these EALs may result in further action needing to be taken to reduce the impact on the environment. EALs applicable to the assessment (also referred to as critical levels in the context of designated sites) are presented in **Error! Reference source not found.**.

Table 3.5: Summary of relevant EALs/critical levels for the protection of conservation areas

Pollutant	Averaging period	EAL/critical level (µg/m³)
NO_X	24 hours	75
	Annual	30[(a)]
SO_2	Annual	10-20[(b)]

Notes: (a) Numerically synonymous with the annual AAD limit value
(b) 10µg/m³ where lichens or bryophytes are present, 20µg/m³ where they are not present

In addition to these EALs, APIS provides targets for nitrogen and acid deposition for specific habitats and species. These EALs, also known as critical loads, are only available for Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Sites of Special Scientific Interest (SSSI).

3.1.3 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. The Defra background mapping

[5] Environment Agency. (2016) 'Air Emissions Risk Assessment for your Environmental Permit'.

data for local authorities[6] was used to determine the baseline concentrations of NO_x, CO, Benzene and SO_2 already present in the area.

Background concentrations are all well below the relevant EQSs and the closest AQMA is approximately 8km from the Site, therefore it is unlikely that the site will lead to any exceedances:

- NO_2 = 11.46ug/m^3
- CO = 0.3ug/m^3
- Benzene = 0.36ug/m^3
- SO_2 = 4.33ug/m^3

The above background concentrations are the annual mean NO^2 background concentrations for 2022 for national grid reference SJ 32340 68288 and the annual mean for CO, SO2 and benzene concentrations for 2001, the most recent available year.

Figure 3.1: H1 Tool, Air Impact Modelling Stage Two Screening

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	Nitrogen Dioxide	11.46	90.8	318	102	255	Yes	3,354	1,894	Yes
2	Carbon monoxide	0.3	119	-	0	-		3,232	32.4	Yes
3	Benzene	0.36	85.0	1,831	85.4	1,707	Yes	2,309	1,188	Yes
4	Sulphur Dioxide (15 Min Mean)	4.33	-	-	0	-		2,187	850	Yes
5	Sulphur Dioxide (1 Hour Mean)	4.33	-	-	0	-		1,521	446	Yes
6	Sulphur Dioxide (24 Hour Mean)	4.33	-	-	0	-		1,076	925	Yes

As shown in the H1 tool, the emissions to air from the emission sources at Queensferry STC were not screened out during the assessment and, therefore, the assessment tool concluded that further detailed modelling would be required at the Site. The assessment undertaken is reflective of a 'worst-case' scenario at the Site. It should also be noted that the existing engines and boilers have all been operational at the Site for at least 10 years and, therefore, may already be included in the background concentrations used in the assessment.

Figure 2.1 shows the results of the stage two screening from the H1 Tool, which takes into consideration the background concentrations and the relevant EALs.

As previously identified in the bioaerosols risk assessment (doc ref: B14411-123532-ZZ-XX-AS-NA-EI1041) there are multiple sensitive receptors found within 250m of the Site. These receptors are found to be surrounding site in all directions. A small number of sensitive receptors are found to the northwest of the site, downwind of the prevailing wind direction. The shortest distance from the CHP and boilers to the receptors is 125m and 120m respectively. The closest AQMA is located approx. 8km east of the Site.

4 Impacts on relevant ecological receptors

As detailed in the Environmental Risk Assessment (doc ref: B14411-123532-ZZ-XX-AS-NA-RI1037), the protected conservation areas are outlined below.

[6] Background Mapping data for local authorities - 2015 - Defra, UK

The following ecological conservation areas are located within 2km of the site boundary.

- The River Dee Site of Special Scientific Interest (SSSI and SAC) - approximately 200m north of the site boundary; and,
- The Dee Estuary (Ramsar and SPA) - approximately 1100m north-west of the site boundary.

Critical levels sourced from the Air Pollution Information System (APIS)[7] and environmental standards outlined in guidance[8] have been used below. Table 4.1 and Table 4.2 demonstrates the Process Contribution (PC) and Predicted Environmental Concentration (PEC) Queensferry STC do not meet the following criteria to screen out air dispersion modelling:

Protected Conservation Areas: SPAs, SACs, Ramsar sites and SSSI's

- the short-term PC is less than 10% of the short-term environmental standard for protected conservation areas.
- the long-term PC is less than 1% of the long-term environmental standard for protected conservation areas.

Table 4.1: NO_x Critical Levels of designated sites

Designated Site	Short term ES	Long term ES	Queensferry PC as % of ES		Queensferry long term PEC as % of ES
			Short term	Long term	
SPAs, SACs, Ramsar sites and SSSI's	75ug/m^3	30ug/m^3	>10%	>1%	>70%

Table 4.2: SO_2 Critical Levels of designated sites

Designated Site	Long term ES	Queensferry PC as % of ES	Queensferry long term PEC as % of ES
Lichens or bryophytes not present	10ug/m^3	>20%	>70%
Lichens or bryophytes present	20ug/m^3	>20%	>70%

The CHP has been in operation since the 2004, and the boilers were put into operation in 1993, with the generator being put into operation in 1981, therefore, it is likely that any impacts from emissions from the Site on the habitats are already contributing to their condition status.

5 Summary

The application to include the Anaerobic Digestion activity to the permit will not increase the risk posed by air emissions since there will be no changes to the combustion at the Site. 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.

This assessment identifies potential exceedances of the long term and short term EALs for all pollutants at the location of maximum ground level concentrations. However, as the inputs are based on conservative,

[7] http://www.apis.ac.uk/

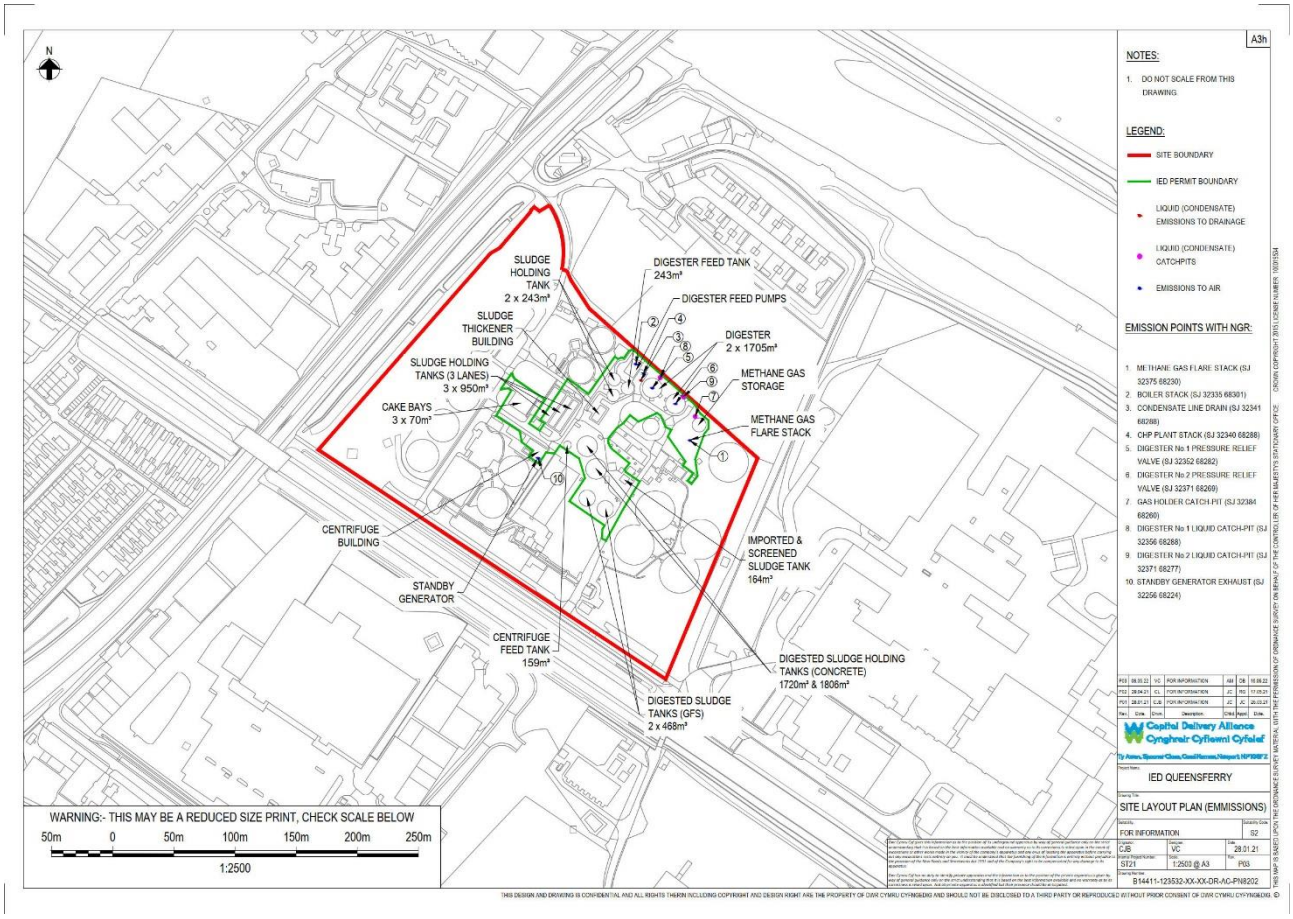
[8] Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)

worst-case assumptions and the background concentrations in the area are currently below the EQS, it is considered unlikely that the Site will lead to an exceedance of any ELV, EQS or EAL.

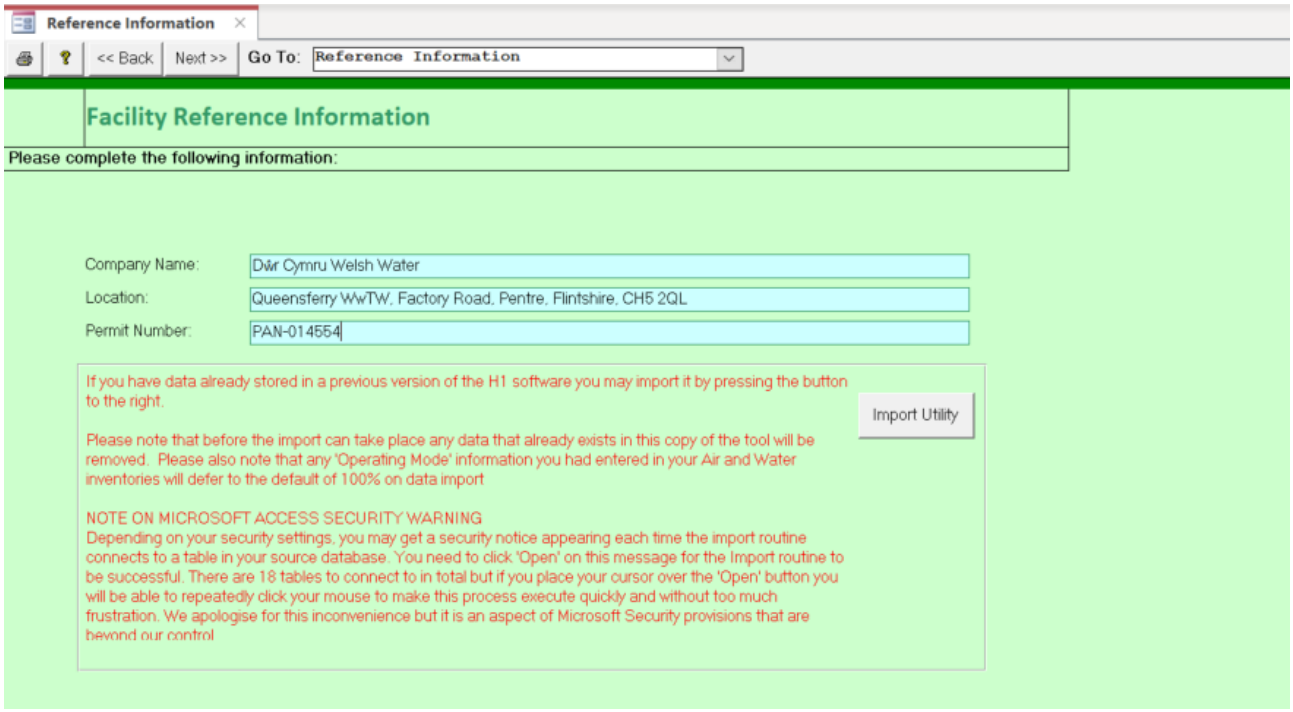
Additionally, it is noted in the H1 Software Tool user guide that predicted ground level concentrations are pessimistic and are, therefore, likely to overestimate actual concentrations. The PC values presented from the H1 output are, therefore, very conservative. The H1 Tool also does not allow changes to the ELV between different emissions points (the boilers ELVs are set lower than the CHPs and generators), this is thought to be a technical limitation to the Tool but does not impact on the screening outcome.

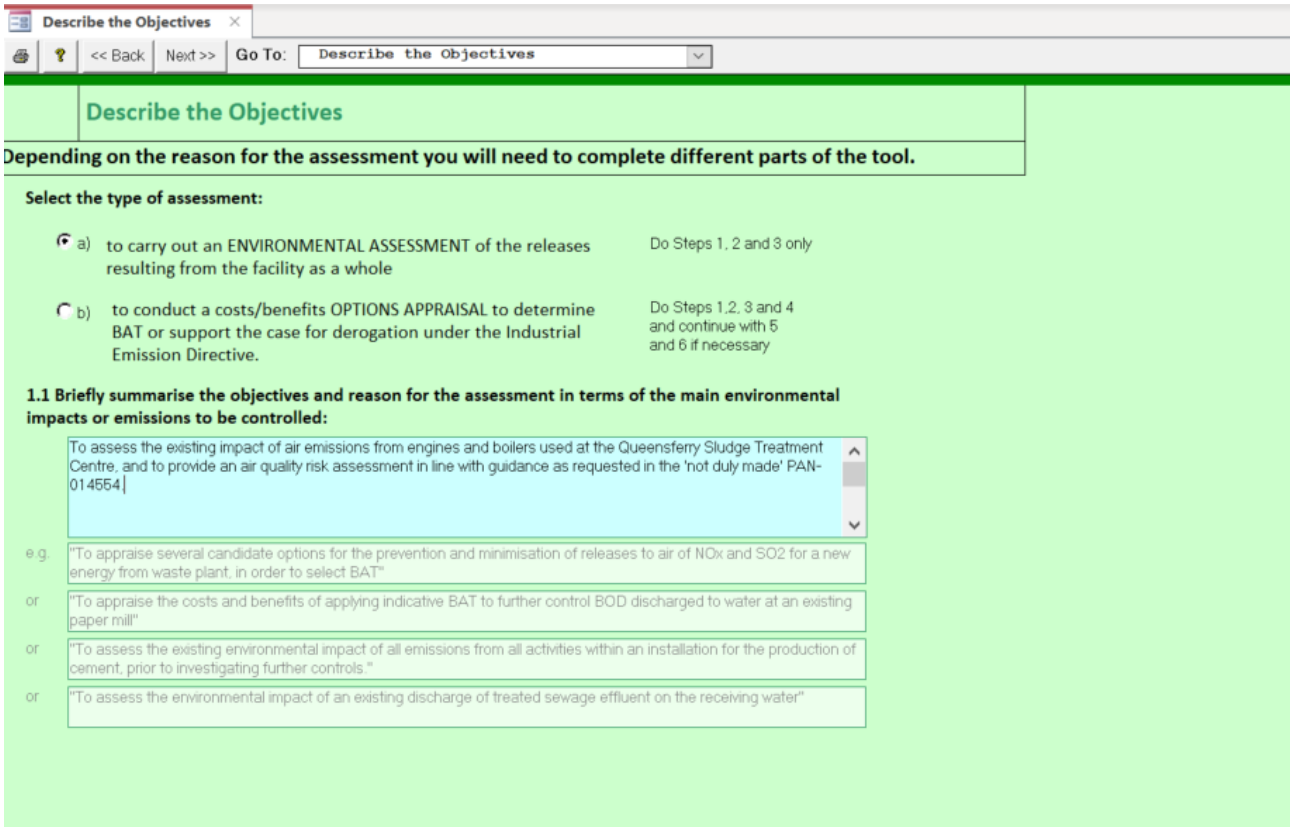
Operation of the generator will be kept to a minimum while the CHP is not in operation (e.g. break down and maintenance). Priority will be given for the CHP and boilers to run 97% of the year, with planned preventative maintenance and repairs as part of operational management at the Site.

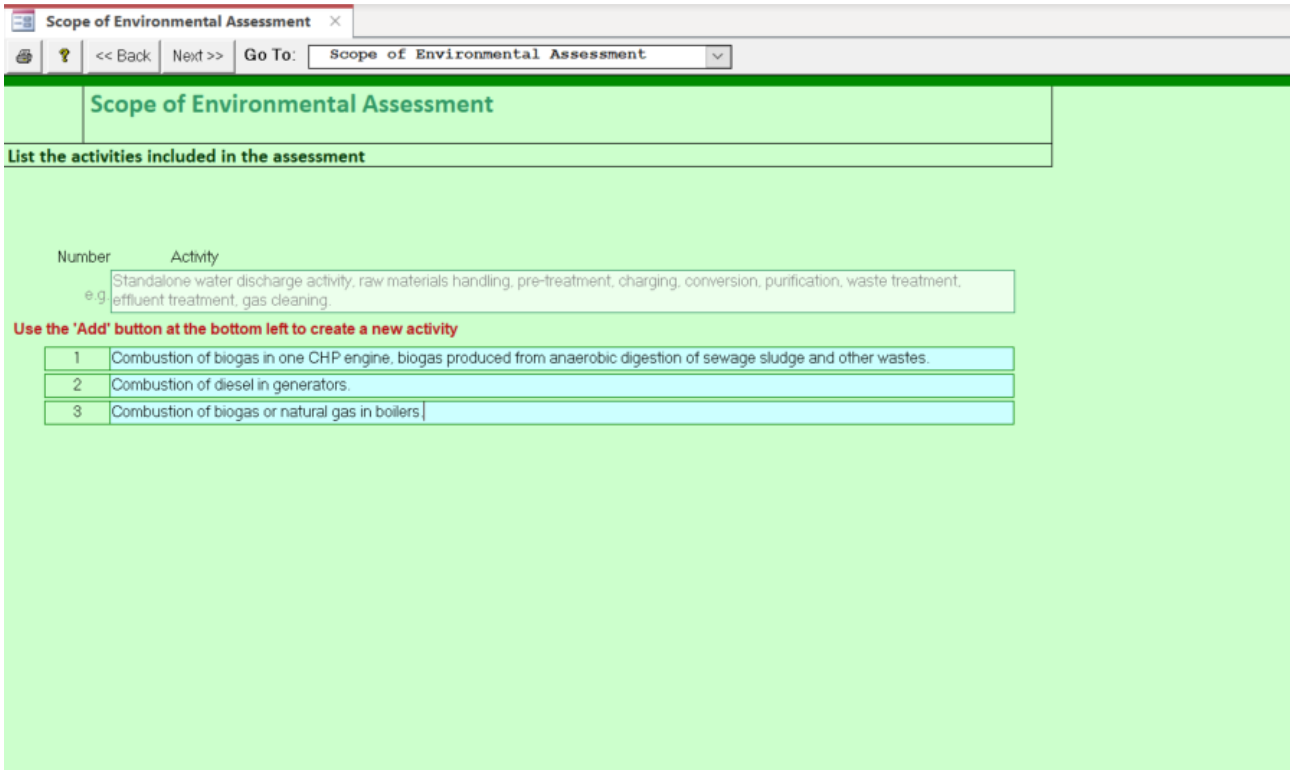
A. Site Layout Plan



B. H1 Screening Tool






Scope of Environmental Assessment
<< Back
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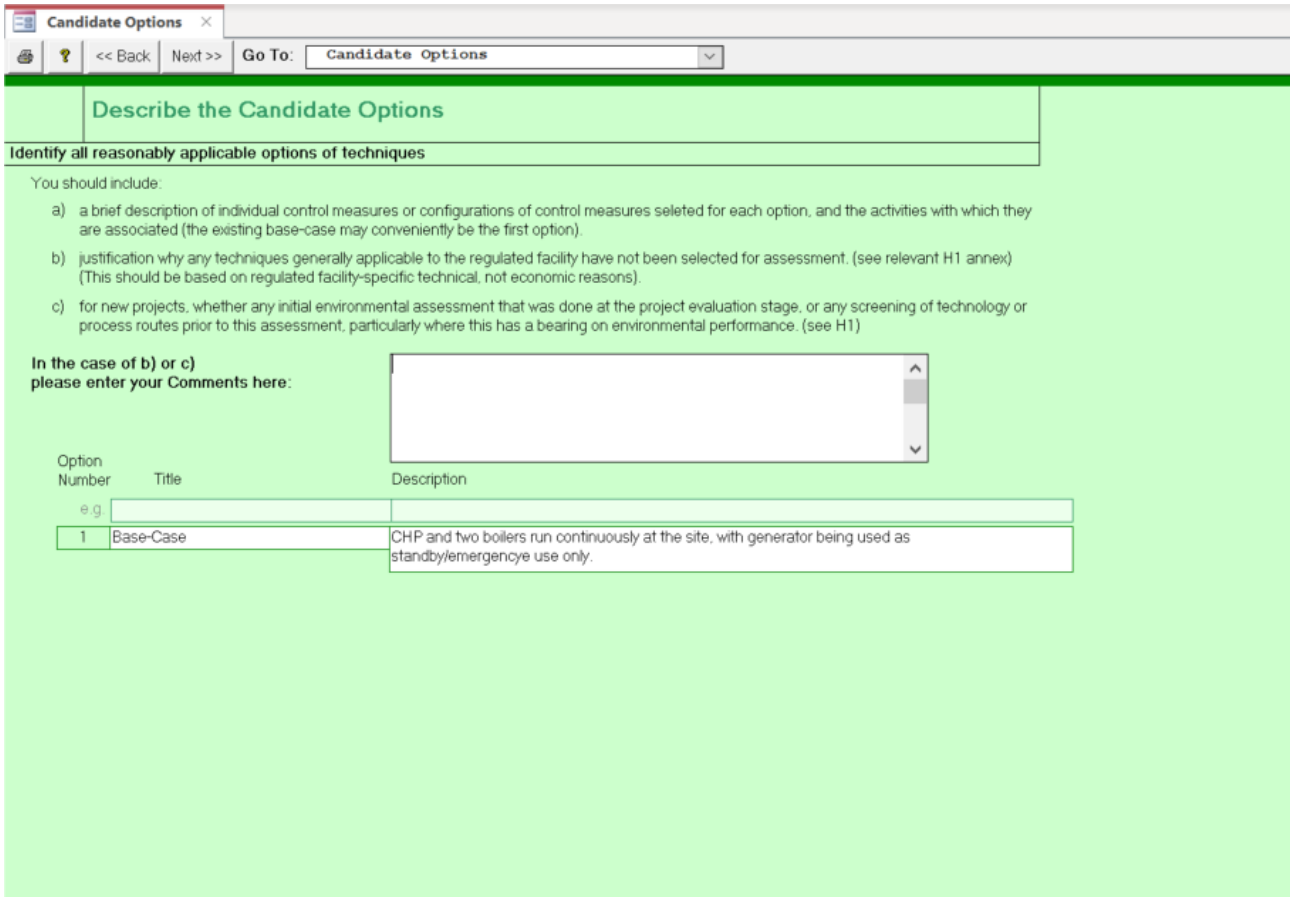
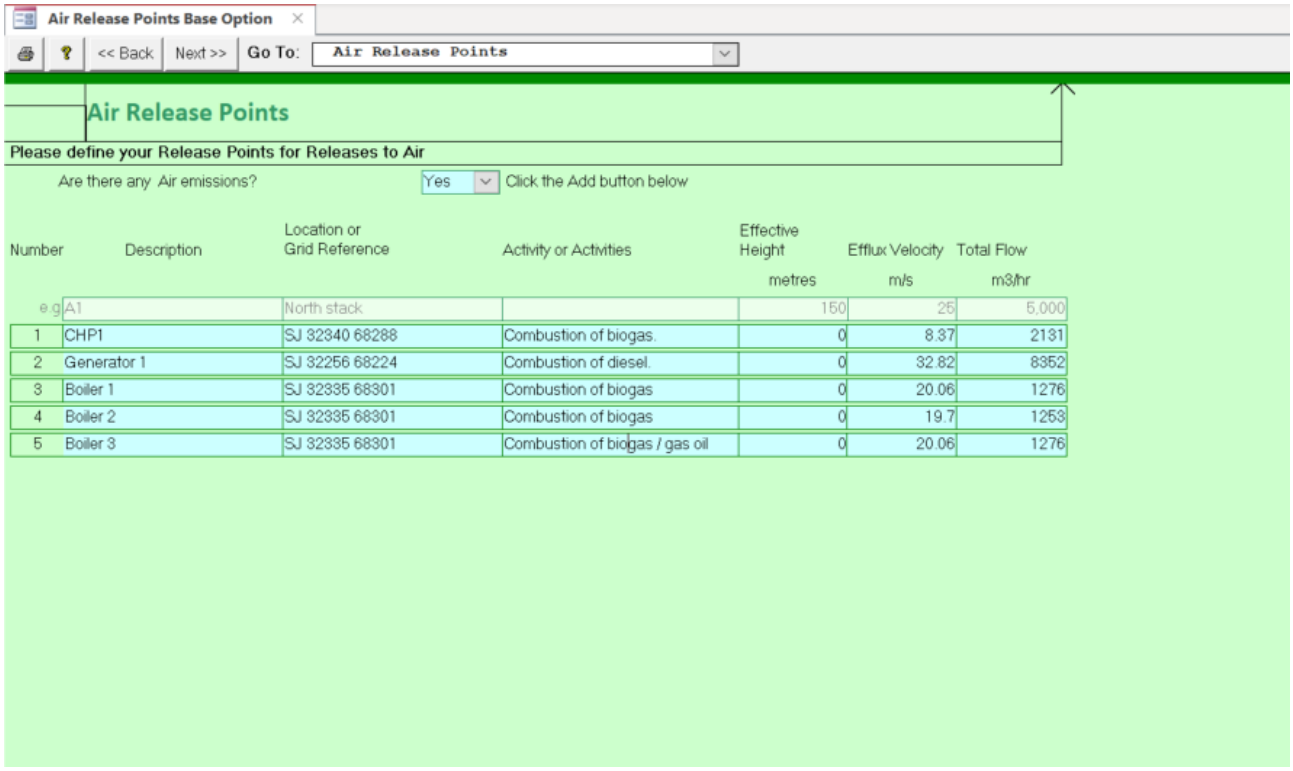
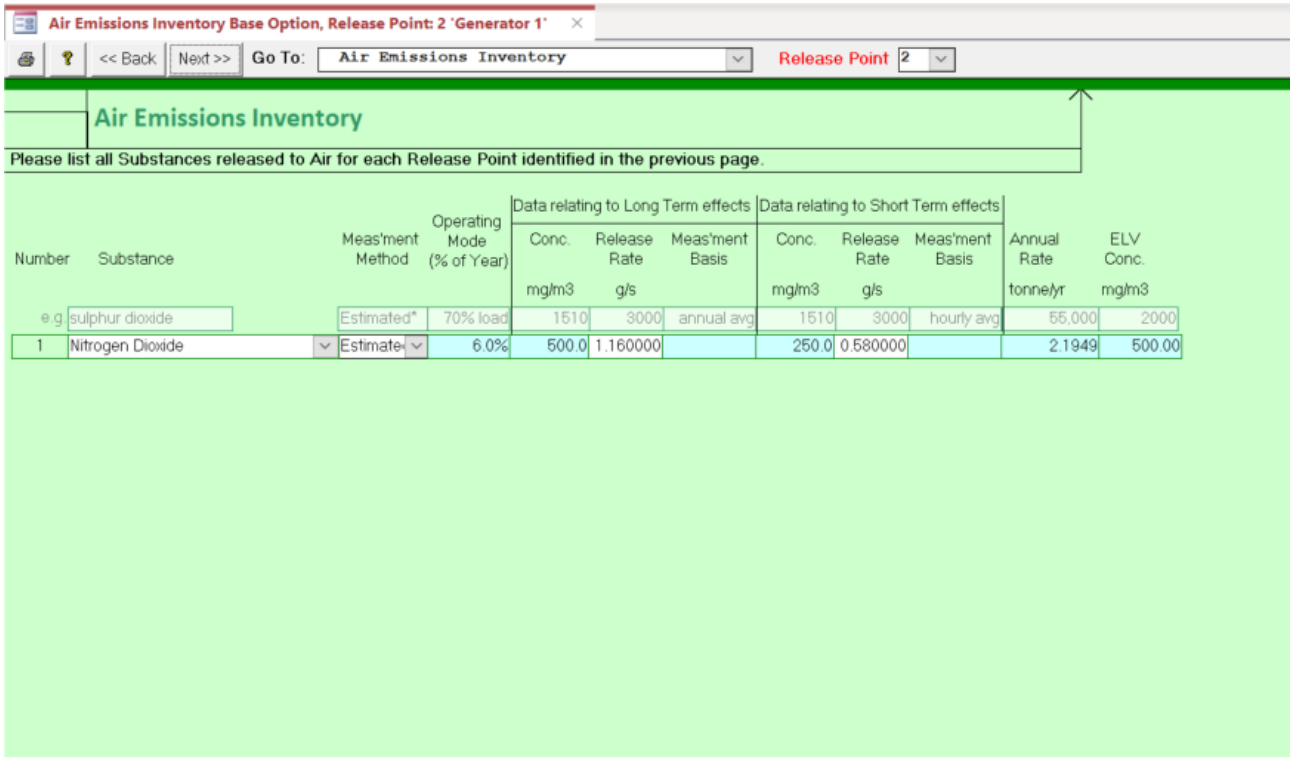
Go To:
Scope of Environmental Assessment
Scope of Environmental Assessment
List the activities included in the assessment
Number
Activity
e.g.
Standalone water discharge activity; raw materials handling, pre-treatment, charging, conversion, purification, waste treatment, effluent treatment, gas cleaning.
Use the 'Add' button at the bottom left to create a new activity
1
Combustion of biogas in one CHP engine, biogas produced from anaerobic digestion of sewage sludge and other wastes.
2
Combustion of diesel in generators.
3
Combustion of biogas or natural gas in boilers.

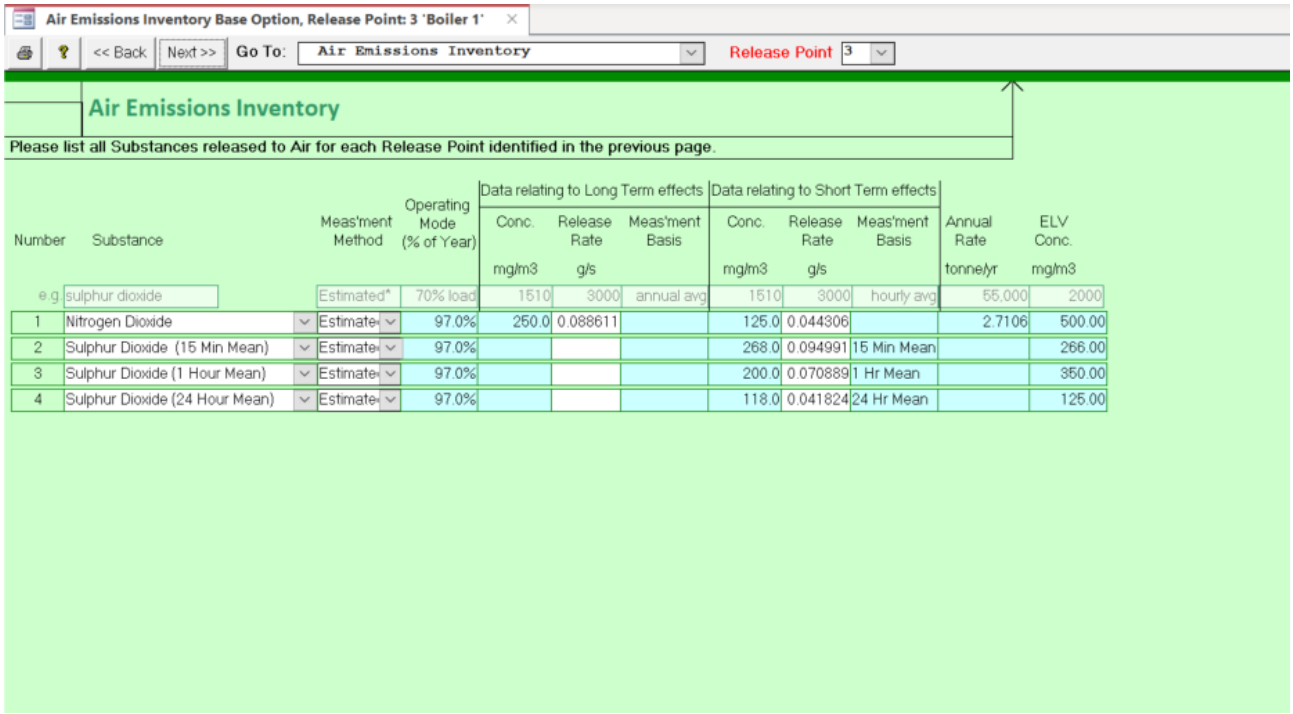

Candidate Options
<< Back
Next >>
Go To:
Candidate Options
Describe the Candidate Options
Identify all reasonably applicable options of techniques
You should include:
a) a brief description of individual control measures or configurations of control measures seleted for each option, and the activities with which they are associated (the existing base-case may conveniently be the first option).
b) justification why any techniques generally applicable to the regulated facility have not been selected for assessment. (see relevant H1 annex) (This should be based on regulated facility-specific technical, not economic reasons).
c) for new projects, whether any initial environmental assessment that was done at the project evaluation stage, or any screening of technology or process routes prior to this assessment, particularly where this has a bearing on environmental performance. (see H1)
In the case of b) or c) please enter your Comments here:
Option Number
Title
Description
e.g.
1
Base-Case
CHP and two boilers run continuously at the site, with generator being used as standby/emergencye use only.



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	CHP1	SJ 32340 68288	Combustion of biogas.	0	8.37	2131
2	Generator 1	SJ 32256 68224	Combustion of diesel.	0	32.82	8352
3	Boiler 1	SJ 32335 68301	Combustion of biogas	0	20.06	1276
4	Boiler 2	SJ 32335 68301	Combustion of biogas	0	19.7	1253
5	Boiler 3	SJ 32335 68301	Combustion of biogas / gas oil	0	20.06	1276



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	Nitrogen Dioxide	Estimate	6.0%	500.0	1.160000		250.0	0.580000		2.1949	500.00



Air Emissions Inventory Base Option, Release Point: 3 'Boiler 1'

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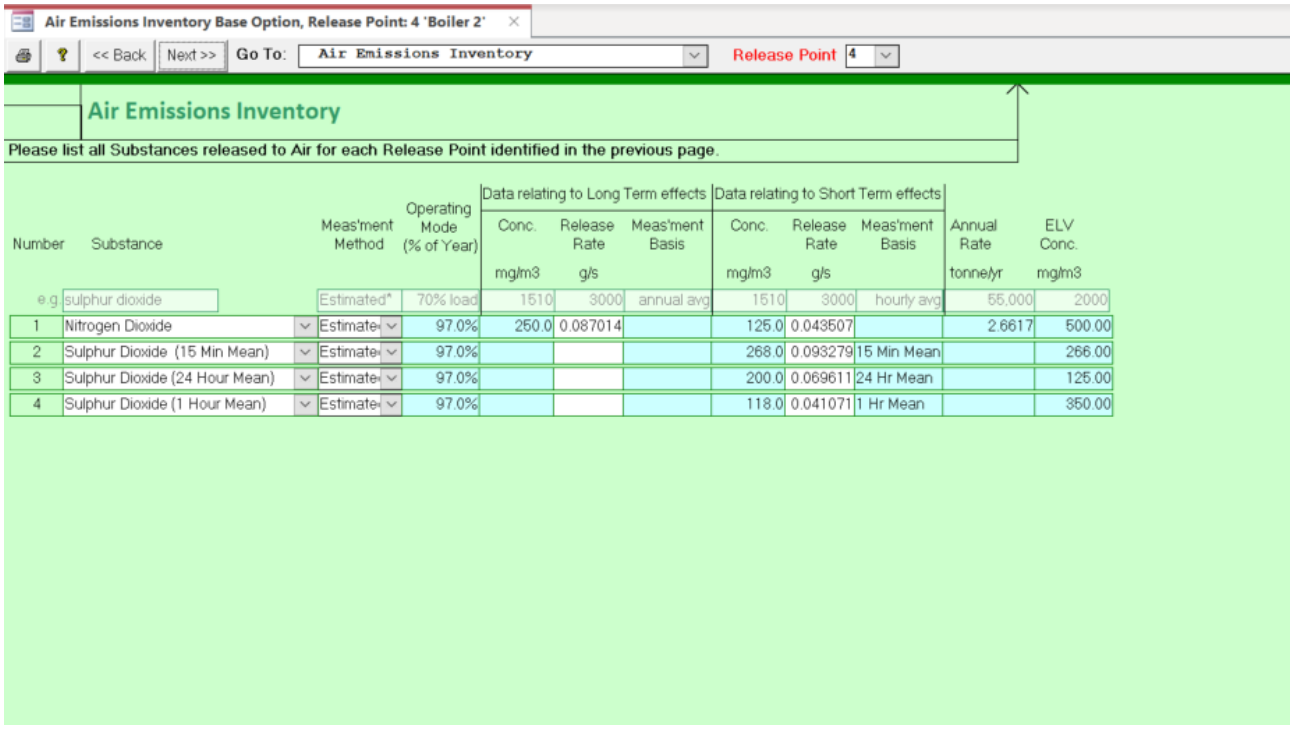
Air Emissions Inventory

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			Data relating to Short Term effects			Annual Rate	ELV Conc.
				Conc. mg/m3	Release Rate g/s	Meas'ment Basis	Conc. mg/m3	Release Rate g/s	Meas'ment Basis	tonne/yr	mg/m3
e.g.	sulphur dioxide	Estimated*	70% load	1510	3000	annual avg	1510	3000	hourly avg	55.000	2000
1	Nitrogen Dioxide	Estimate	97.0%	250.0	0.088611		125.0	0.044306		2.7106	500.00
2	Sulphur Dioxide (15 Min Mean)	Estimate	97.0%				268.0	0.094991	15 Min Mean		266.00
3	Sulphur Dioxide (1 Hour Mean)	Estimate	97.0%				200.0	0.070889	1 Hr Mean		350.00
4	Sulphur Dioxide (24 Hour Mean)	Estimate	97.0%				118.0	0.041824	24 Hr Mean		125.00



Air Emissions Inventory Base Option, Release Point: 4 'Boiler 2'

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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			Data relating to Short Term effects			Annual Rate	ELV Conc.
				Conc. mg/m3	Release Rate g/s	Meas'ment Basis	Conc. mg/m3	Release Rate g/s	Meas'ment Basis	tonne/yr	mg/m3
e.g.	sulphur dioxide	Estimated*	70% load	1510	3000	annual avg	1510	3000	hourly avg	55.000	2000
1	Nitrogen Dioxide	Estimate	97.0%	250.0	0.087014		125.0	0.043507		2.6617	500.00
2	Sulphur Dioxide (15 Min Mean)	Estimate	97.0%				268.0	0.093279	15 Min Mean		266.00
3	Sulphur Dioxide (24 Hour Mean)	Estimate	97.0%				200.0	0.069611	24 Hr Mean		125.00
4	Sulphur Dioxide (1 Hour Mean)	Estimate	97.0%				118.0	0.041071	1 Hr Mean		350.00

Air Emissions Inventory Base Option, Release Point: 5 'Boiler 3'

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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			Data relating to Short Term effects			Annual Rate	ELV Conc.
				Conc. mg/m3	Release Rate g/s	Meas'ment Basis	Conc. mg/m3	Release Rate g/s	Meas'ment Basis	tonne/yr	mg/m3
e.g	sulphur dioxide	Estimated*	70% load	1510	3000	annual avg	1510	3000	hourly avg	55.000	2000
1	Nitrogen Dioxide	Estimate	97.0%	250.0	0.088611		125.0	0.044306		2.7106	500.00
2	Sulphur Dioxide (15 Min Mean)	Estimate	97.0%				268.0	0.094991	15 Min Mean		266.00
3	Sulphur Dioxide (1 Hour Mean)	Estimate	97.0%				200.0	0.070889	1 Hr Mean		350.00
4	Sulphur Dioxide (24 Hour Mean)	Estimate	97.0%				118.0	0.041824	24 Hr Mean		125.00

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 NO2 annual and hourly SO2 annual, 24hr, hourly, and 15minutes

Are there any Local Air Quality Management Plans applicable to releases from the activity?

The nearest AQMQ is approx 8km east of the site.

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

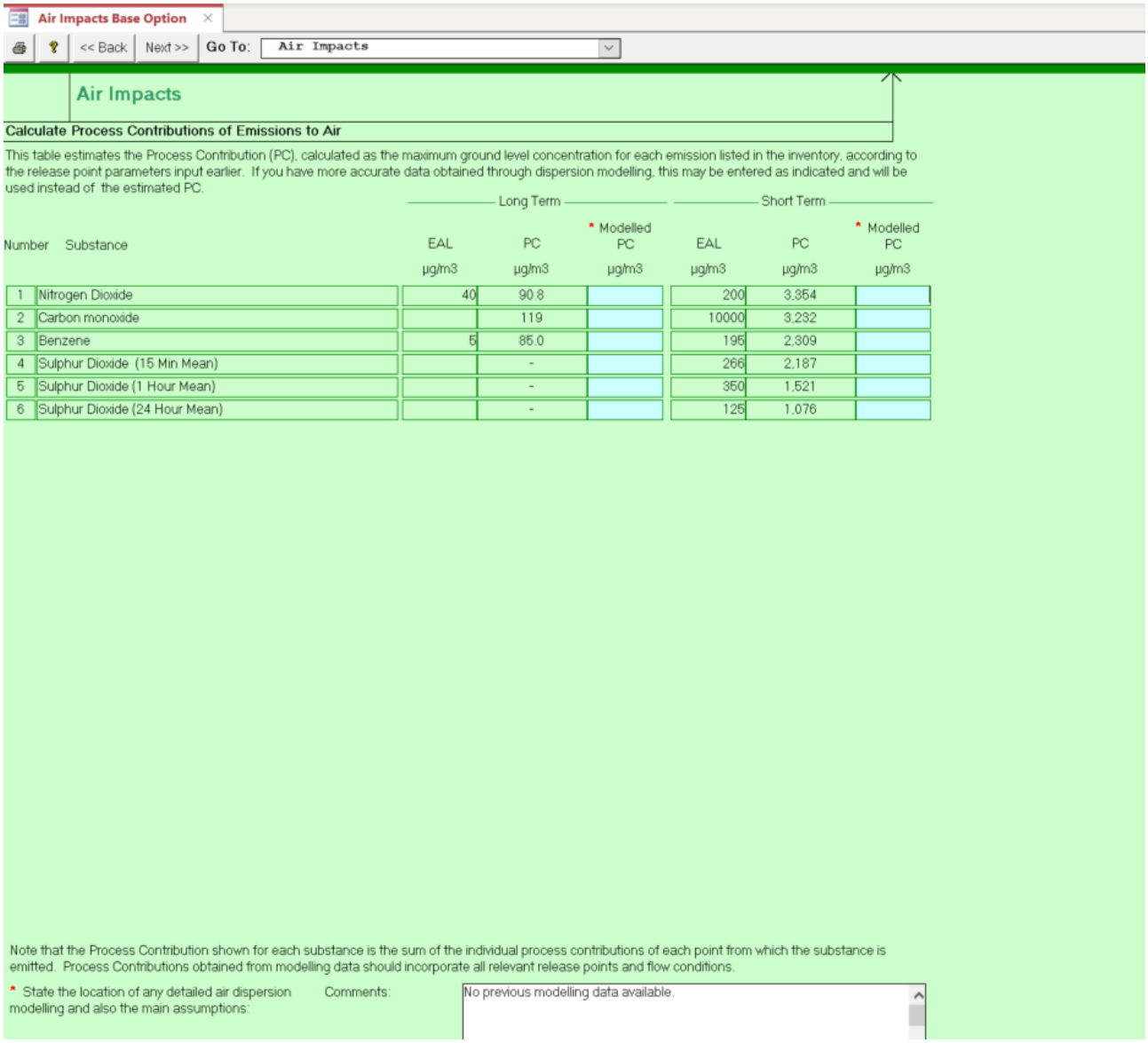
Proximity to Sensitive Receptors

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)

See section 4 of the supporting document for this H1 Screening assessment.


Air Impacts Base Option
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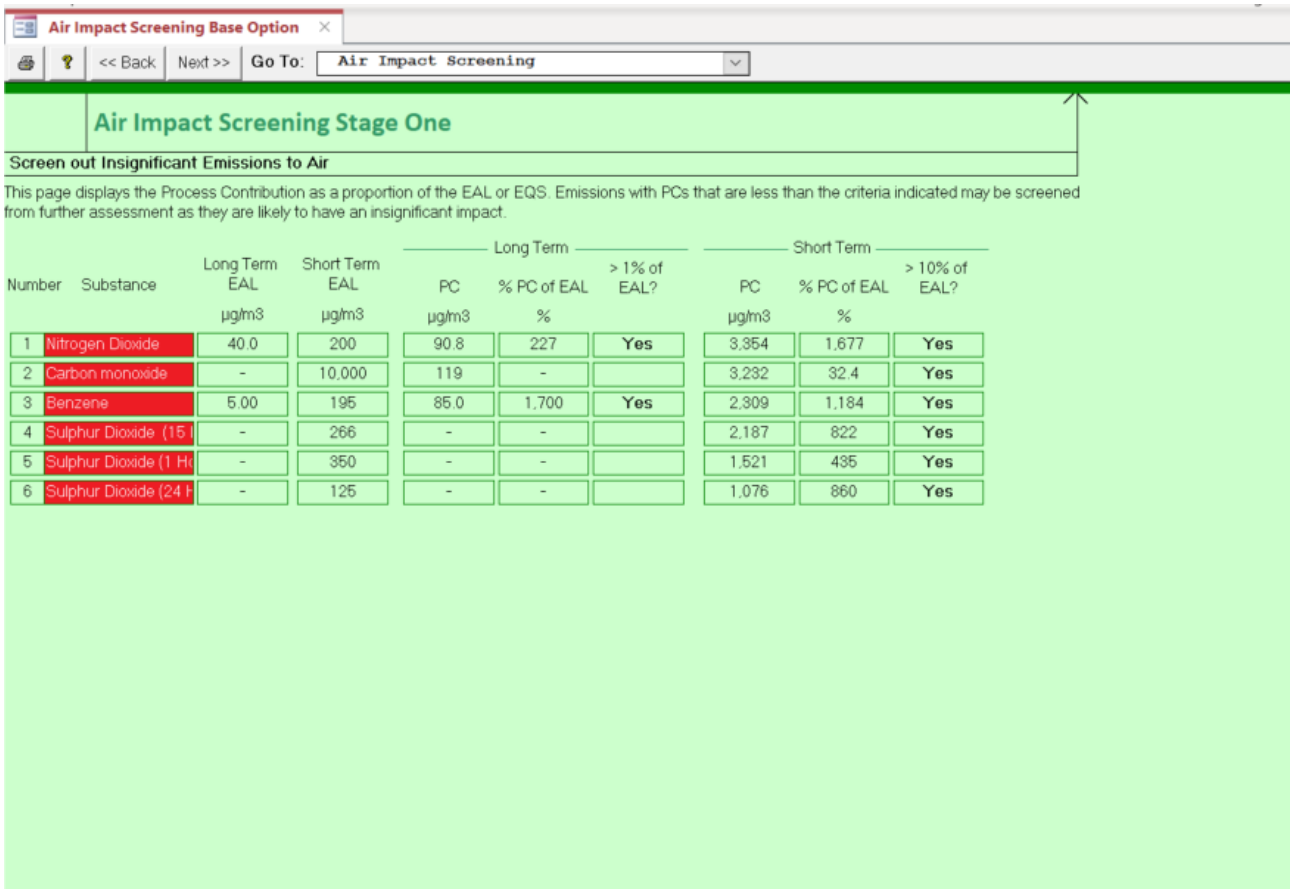
Air Impacts
Calculate Process Contributions of Emissions to Air
This table estimates the Process Contribution (PC), calculated as the maximum ground level concentration for each emission listed in the inventory, according to the release point parameters input earlier. If you have more accurate data obtained 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 Nitrogen Dioxide 40 90.8 200 3,354
2 Carbon monoxide 119 10000 3,232
3 Benzene 5 85.0 195 2,309
4 Sulphur Dioxide (15 Min Mean) - 266 2,187
5 Sulphur Dioxide (1 Hour Mean) - 350 1,521
6 Sulphur Dioxide (24 Hour Mean) - 125 1,076
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:
No previous modelling data available.



Air Impact Screening Base Option

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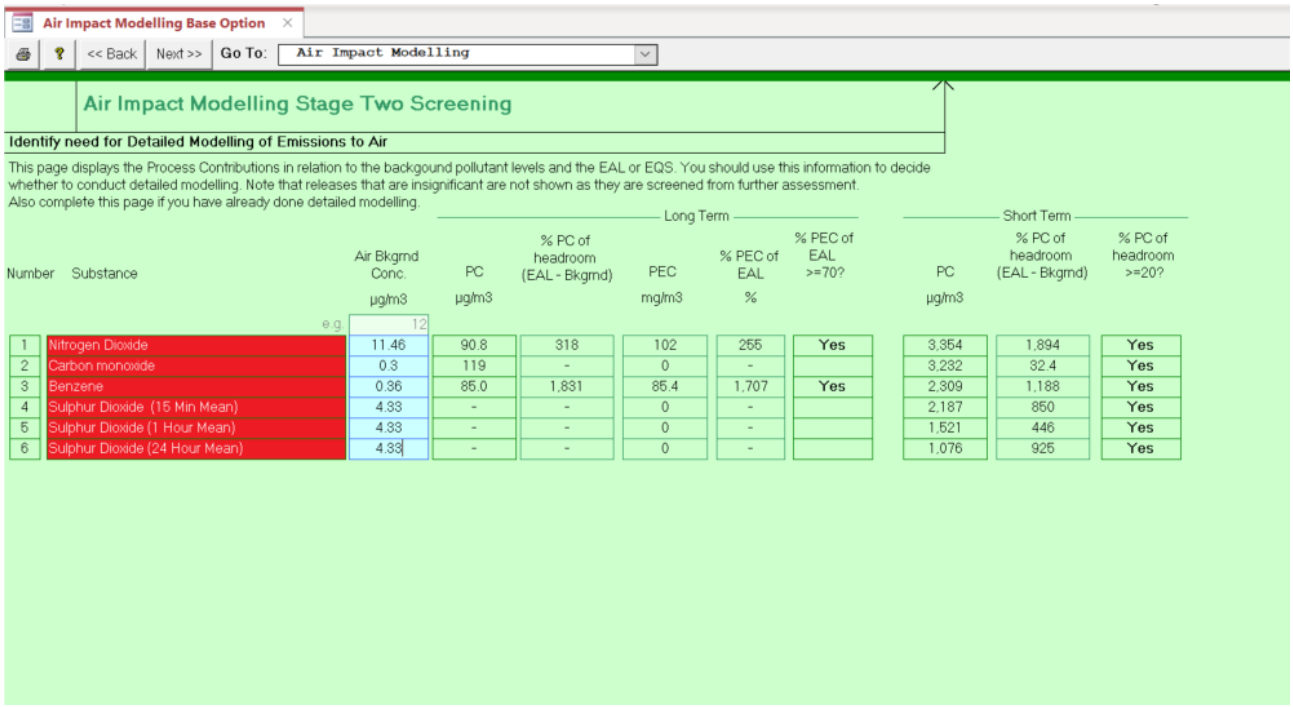
Air Impact Screening Stage One

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	Nitrogen Dioxide	40.0	200	90.8	227	Yes	3,354	1,677	Yes
2	Carbon monoxide	-	10,000	119	-		3,232	32.4	Yes
3	Benzene	5.00	195	85.0	1,700	Yes	2,309	1,184	Yes
4	Sulphur Dioxide (15 I	-	266	-	-		2,187	822	Yes
5	Sulphur Dioxide (1 Hi	-	350	-	-		1,521	435	Yes
6	Sulphur Dioxide (24 H	-	125	-	-		1,076	860	Yes



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	Nitrogen Dioxide	11.46	90.8	318	102	255	Yes	3,354	1,894	Yes
2	Carbon monoxide	0.3	119	-	0	-		3,232	32.4	Yes
3	Benzene	0.36	85.0	1,831	85.4	1,707	Yes	2,309	1,188	Yes
4	Sulphur Dioxide (15 Min Mean)	4.33	-	-	0	-		2,187	850	Yes
5	Sulphur Dioxide (1 Hour Mean)	4.33	-	-	0	-		1,521	446	Yes
6	Sulphur Dioxide (24 Hour Mean)	4.33	-	-	0	-		1,076	925	Yes