

H1

Welcome to the H1 Software

Version 2.7.8 - January 2017

If you find the screen fonts in the H1Tool too small to read you can use the Windows zoom feature at any time to magnify the screen by holding down the 'Windows' key and '+' key. To cancel the feature hold down the 'Windows' key and 'Esc' key.

Introduction

This version of the tool accompanies the Horizontal Guidance Note H1 and the eleven supporting technical annexes.

Important Notes:

With the exception of Annex I (Landfill) and Annex J (Groundwater) this software tool can be used to complete risk assessments within the technical annexes which support H1. However, further information may need to be provided in the following areas:

- detailed assessment of fate and effects, where required
- decision-making trails for the comparison and ranking of options

This software provides a general structure for assessing costs and environmental impacts. You may need to decide the best way to apply this structure to fit the nature and pattern of your operation, in particular:

- where load is variable, such as seasonal or demand-led operations
- where a number of processes are conducted at the same time, such as integrated operations
- where a number of products are made, with possible differences in unit operations and release points employed
- where fugitive or potential emergency releases are of particular interest

Information in this database will be used to determine your EPR permit, therefore to get the most from this software tool, you should:

- read the H1 Overview document; to understand the basic principles, module structure and methods
- use the HELP boxes and refer to the H1 guidance as you progress to ensure that the data you input is representative and accurate
- use the comments boxes to clarify assumptions and data sources

This software will also output annual emissions data to an OPRA profile(s), which you can select on the Summary Tables page.

[On line instructions on using this tool and on the H1 Methodology itself are available on Gov.UK \(click here\)](#)

In conjunction with:
www.ability-software.co.uk

Facility Reference Information

Please complete the following information:

Company Name: **Steelstrip Services Ltd t/a Servosteel**
Location: **Dudley, West Midlands, DY1 2HA**
Permit Number: **KP3732PL Substantial variation**

If you have data already stored in a previous version of the H1 software you may import it by pressing the button to the right.

Please note that before the import can take place any data that already exists in this copy of the tool will be removed. Please also note that any 'Operating Mode' information you had entered in your Air and Water inventories will defer to the default of 100% on data import

NOTE ON MICROSOFT ACCESS SECURITY WARNING

Depending on your security settings, you may get a security notice appearing each time the import routine connects to a table in your source database. You need to click 'Open' on this message for the import routine to be successful. There are 18 tables to connect to in total but if you place your cursor over the 'Open' button you will be able to repeatedly click your mouse to make this process execute quickly and without too much frustration. We apologise for this inconvenience but it is an aspect of Microsoft Security provisions that are beyond our control.

Import Utility

Step 1

Introduction to Step 1

Step 1: Describe the Scope and Options

The aim of this step is to:

- state the OBJECTIVES of the assessment
- in the case of ENVIRONMENTAL ASSESSMENT of the whole facility, describe the scope of the activities to be included in the assessment;
- in the case of OPTIONS APPRAISALS, identify candidate options for BAT by considering all relevant techniques to prevent and minimise pollution and the scope of activities covered by the techniques.

Depending on the reason for the assessment, you will need to complete different modules of the guidance. The software will automatically select the required modules according to the responses you enter.

NOTE: If you are going to complete more than one assessment or appraisal, make sure that you create a copy of the H1 file for each new assessment BEFORE you begin to input data. This is because Microsoft Access automatically saves changes to the current file you are using, rather than allowing you to save your changes at the end of your work.

TO CONTINUE WITH STEP 1, PRESS "NEXT".

Describe the Objectives

Depending on the reason for the assessment you will need to complete different parts of the tool.

Select the type of assessment:

- a) to carry out an ENVIRONMENTAL ASSESSMENT of the releases resulting from the facility as a whole Do Steps 1, 2 and 3 only
- b) to conduct a costs/benefits OPTIONS APPRAISAL to determine BAT or support the case for derogation under the Industrial Emission Directive. Do Steps 1,2, 3 and 4 and continue with 5 and 6 if necessary

1.1 Briefly summarise the objectives and reason for the assessment in terms of the main environmental impacts or emissions to be controlled:

The objective is to realise potential missions to air from the new process application of Production of inorganic salts, namely Ferrous Chloride.

Scope of Environmental Assessment

List the activities included in the assessment

Number	Activity
--------	----------

Use the 'Add' button at the bottom left to create a new activity

1	Emissions to air
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Comments

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 selected 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:

From calculations based on original permit operating conditions and subsequent external MCERTS test results, emissions to air were calculated to be very low and under guidance limits

Option Number	Title	Description
1	Base-Case	

Once a series of options have been generated for the proposed project, it is recommended that the Operator discuss these with the local Regulator to check both parties agree that the options are satisfactory. This may save the Operator from spending resources on assessment of options which are unlikely to meet the required environmental performance.

List the main activity or activities to which the release control options are applicable and any other activities that will be affected by the candidate control option on the main activity:

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

Please define your Release Points for Releases to Air

Are there any Air emissions?

Yes

Number	Description	Location or Grid Reference	Activity or Activities	Effective Height metres	Efflux Velocity m/s	Total Flow m3/hr
1	A1	east side of factory	stack emission from abatement scrubber	9.57	12.1	19217

Comments

Air Emissions Inventory

Please list all Substances released to Air for each Release Point identified in the previous page.

Number	Substance	Measurement Method	Operating Mode (% of)	Data relating to Long Term effects		Data relating to Short Term effects			ELV Conc. mg/m3
				Conc. mg/m3	Release Rate g/s	Conc. mg/m3	Release Rate g/s	Measurement Basis	
1	Hydrogen chloride	Estimated*	29.0%	0.7	0.003843				0.0351

Measurement method: * provide detail in comments box

Comments:

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
1	Natural Gas	173	1.00	173	0.19	33
2	Electricity from public supply	77	2.40	185	0.17	31

Comments

Raw Materials

Please list all Raw Materials Consumed:

Number	Material	Annual Consumption	Units
1	Non-potable Water		tonnes/year
2	Potable water	2411	tonnes/year
3	Hydrochloric acid	2154	tonnes/year
4	Steel	622	tonnes/year

Comments

Performance Indicators

Enter consumption data to determine your performance indicators

Which of the following parameters do you use for calculating your performance **Product**

Please describe and justify your choice:

Calculation 1 based on a finished saleable product from chemical chemistry conversion

Basic Consumption Data:

Name	Annual Quantity	Units
Amount of Product: Ferrous Chloride	5,187	Tonne
Main Raw Material: Hydrochloric acid	2,154.00	Tonne
Potable Water:	2,411.00	m3
Non Potable Water:		m3
Energy:	250.00	MWh
Waste: Inert:		tonne
Hazardous:		tonne
Stable Non-reactive Hazardous:		tonne
Biodegradable Non-hazardous:		tonne
Other Non-hazardous:		tonne

Specific Consumption per Tonne of Ferrous Chloride:

Production Efficiency:	2.41	Tonne/Tonne
Potable Water:	0.46	m3
Non Potable Water:		m3
Energy:	0.05	MWh
Waste: Inert:		tonne
Hazardous:		tonne
Stable Non-reactive Hazardous:		tonne
Biodegradable Non-hazardous:		tonne
Other Non-hazardous:		tonne

Introduction to Step 3

Step 3

Step 3: Quantify Impacts

The aim of this Step is to quantify the effects on the environment of the releases listed in the inventory in Step 2. The guidance provides methods for assessing the eight main environmental considerations of most relevance to the EPR regime. Your releases may not result in effects to all eight of these considerations, and this tool allows you to screen out any that are not relevant.

The emissions you entered in Step 2 are automatically brought forward for assessment into each environmental consideration that is relevant for that type of release (e.g. a release may have more than one type of effect).

This part of the tool allows you to screen out any releases that are insignificant, and to identify those releases where further, detailed assessment of the potential environmental impact may be required.

IMPORTANT NOTE

This software tool only completes part of the requirements for Step 3, as described above. Depending upon the degree of risk to the environment presented by the releases, the operator may need to do further, detailed assessment of the potential effects using methodologies that are not provided here. This information should be submitted separately, as indicated within this part of the tool.

TO CONTINUE WITH STEP 3, PRESS "NEXT".

Identify Relevant Impacts

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

Releases in Part 2?

- Yes Air
- Yes Deposition from Air to Land
- No Water
- No Waste
- Yes Visual
- Yes Ozone Creation
- Yes Global Warming

Justification for omission

There is no water release from the process as no rinsing element is conducted

There is no waste wfrom this process as the chemical chemistry conversion is the finished

In colder air temperature the only visual element is a steam plume from the A1 exhaust sta

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

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)

The limit of HCL to air is 10mg/m³. From the original permitted activities sampling results over many years. The calculation from the new process has been based on a worse case scenario of test result and it is still calculated to be of minimal extra emissions far lower than the 10mg/m³ limit.

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

No

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?

No

Are proposals to abstract water satisfactory in order to obtain an abstraction licence?

No

Is the activity located in a groundwater vulnerable zone (for activities with direct releases to land only)?

No

Proximity to Sensitive Receptors

Is public annoyance likely to be an issue for noise, odour or plume visibility?

There is a small potential for public annoyance from odour. There have been a small number of complaints over the lifetime for the original permitted area which have never resulted in any further action other than checks to ensure correct function of all equipment.

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)

Servosteel is located near SSSI, SAC, LNR & LWS, but as the calculations are well below the 10% of short term process, no significant process contributions are thought to effect these areas.

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.

Number	Substance	Long Term			Short Term		
		EAL µg/m3	PC µg/m3	* Modelled PC µg/m3	EAL µg/m3	PC µg/m3	Modelled PC µg/m3
1	Hydrogen chloride		0.0413		750	2.78	

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 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		Short Term		Long Term		Short Term	
		EAL µg/m3	PC µg/m3	EAL µg/m3	PC µg/m3	% PC of EAL %	> 1% of EAL?	% PC of EAL %	> 10% of EAL?
1	Hydrogen chloride	-	0.0413	750	2.78	-		0.371	No

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

Describe source of background information:

Document Reference of detailed modelling work:

Based on the calculated results, it is not thought detailed modelling is required as they are well within 10% of short term figures.

Deposition to Land from Air

With reference to H1 Guidance, describe assessment of deposition below:

Number	Substance	% PC of EAL %	Insignificant?	Decision whether to screen as insignificant Reason (See section "Deposition of air emissions onto land/Screen out insignificant emissions" of Annex F in H1).
1	Hydrogen chloride	-	Yes	Calculated PC is lower than 1% on short term calculations

For those emissions not screened as insignificant, describe the location of any further assessment here:

Global Warming Potential Impacts

Substance	Source	Annual Rate MWh/yr	GWP Value per tonne	Annual GWP
C02 Energy: direct	direct emissions	173.00	1.00	32.87
C02 Energy: indirect	indirect emissions	77.00	1.00	30.68
Total:				63.55

Comments

Summary Tables

Print or Preview summary tables:

Choose which summary tables

Air
 Deposition from Air to Land
 Ozone Creation
 Global Warming

Export to
Excel

Preview

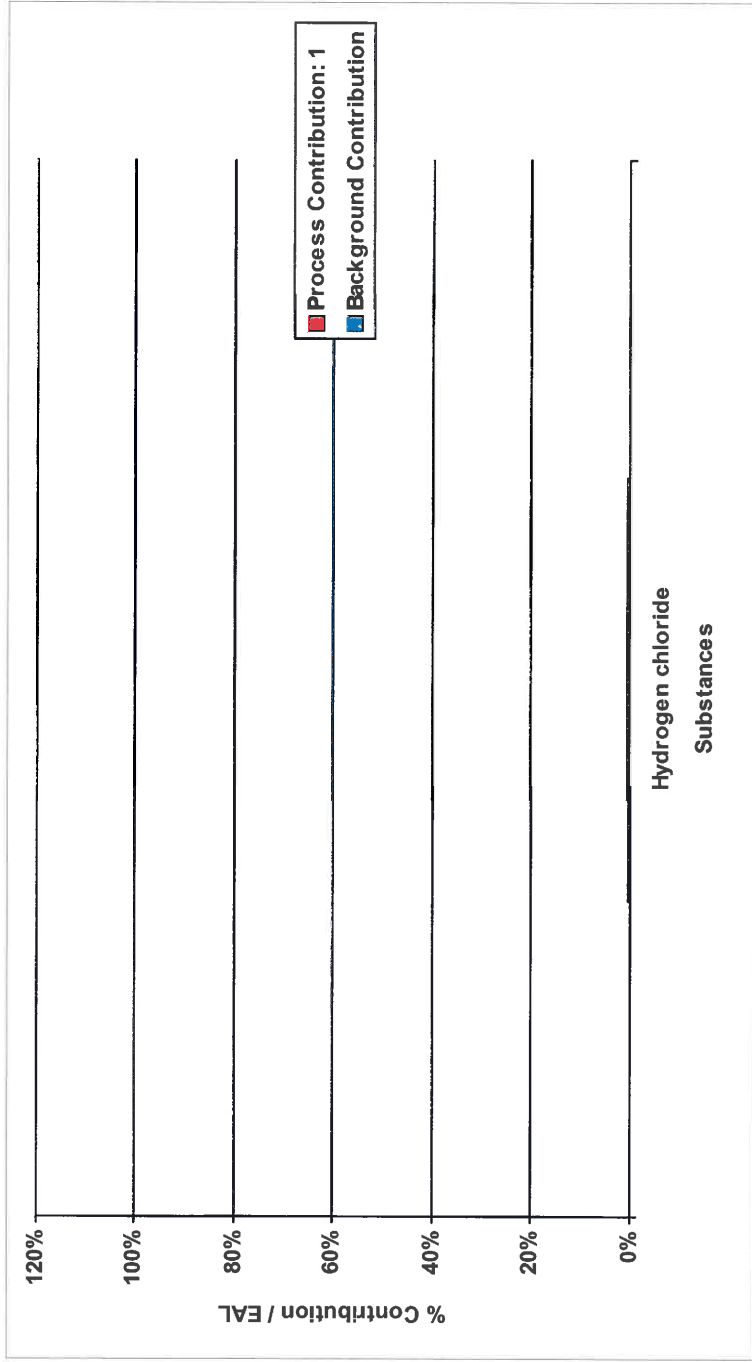
Print

Export Releases
to OPRA Profile

Include

- All Air and Water Substances
 Air and Water Release Not Screened Out

Air Short Term Effects - Comparison by Substance



Air Long Term Effects - Comparison by Substance

No Data Available

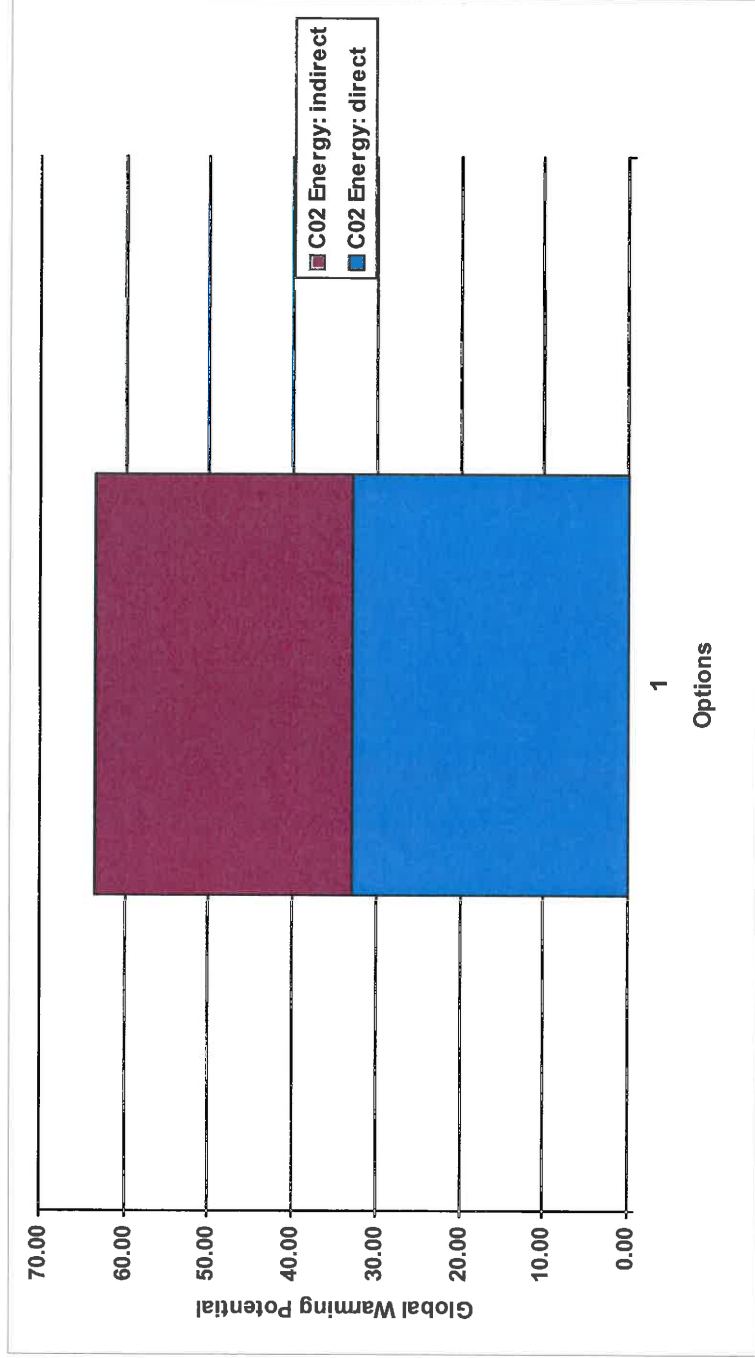
Water Long Term Effects - Total EQ by Option

No Data Available

Ozone Creation - Substance Comparison

No Data Available

Global Warming - Substance Comparison



Summary of Environmental Assessment

You have now completed all of the steps in this software for the environmental assessment. This will provide you with:

- an inventory of all emissions sources and substances emitted from your activities
- an information trail of how the impacts of these emissions have been assessed
- a summary of the impacts

You now need to use this information to confirm whether the emissions are acceptable, i.e. that they do not cause significant pollution to occur, by responding below:

Do any of the emissions exceed any of the following

Statutory Emission limit values:	<input type="checkbox"/> No	If yes, identify the substances concerned and improvements that are needed to at least meet the statutory requirement
Environmental Quality Standards (air and water):	<input type="checkbox"/> No	If yes, identify the substances concerned, the contribution from the activities and investigate whether further detailed fate and effect modelling and/or pollution controls are needed. Ensure that the relevant EQS reference conditions are applied.
Environmental Assessment Levels:	<input type="checkbox"/> No	If yes, identify the substances concerned, the contribution from the activities and investigate whether further detailed fate and effect modelling and/or pollution controls are needed.

Use the box below to provide further information on any of the above to which you have responded 'Yes':

Finally, print all of the information and submit with your application. Remember to include any supplementary information and reports that you have had made reference to during the assessment procedure.

Compare Impacts between Options

The aim of this Step is to compare the overall performance of each option for all of the environmental considerations assessed in Step 3, in order to identify which option represents the lowest impact on the environment as a whole.

IMPORTANT NOTE

Unless the best option is self-evident (i.e. results in the lowest impact for all considerations), you will need to use professional judgement to decide which option is the best overall. This judgement should be made taking into account the considerations described in the H1 guidance notes and may require decisions about the relative importance of environmental considerations. The operator should submit a response to the Regulator that describes how the decision has been made. The following page provides a structure which may be used to summarise the decision-making process.

TO CONTINUE WITH STEP 4, PRESS "NE

Compare the Options

Review the graphs and summary data to rank the options according to environmental impact

Is the best Option self-evident?
i.e. results in the lowest impact in all environmental considerations

Are you going to implement the option that is self-evidently the best?
If yes, no further assessment is necessary and you may end here.

Compare the Options

Review the graphs and summary data to rank the options according to environmental impact

Is the best Option self-evident?
i.e. results in the lowest impact in all environmental considerations

Are you going to implement the option that is self-evidently the best?
If yes, no further assessment is necessary and you may end here.

Resolve Cross Media Conflicts

Environmental Consideration	Importance	Comments / Justification
Releases to Air		
Long Term:		
Short Term:		
Deposition to Land:		
Releases to Water		
Long Term:		
Short Term:		
Visual:		
POCP:		
GWP:		
Disposal of Waste:		

Provide a description of how cross media conflicts have been resolved:

This will require reasoned judgement, with reference to any decisions or assumptions made over the relative importance of different environmental impacts. See H1 for requirements, guidelines and examples to assist in the process. You may submit this information

Location or reference to information on resolution of cross media conflicts:

Present a summary of the final ranking of options in the table below:

Number	Title	Ranking
1	Base-Case	

Summary of Option Appraisal

You have now completed all of the steps in this software for appraisal of BAT.

Finally, print all of the information and submit with your application. Remember to include any supplementary information and reports that you have had made reference to during the assessment procedure.