H1

Welcome to the H1 Software

Version 2.4- Nov 2011

Introduction

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

Important Notes:

With the exception of Annexes E and J 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

Some basic instructions for using the software tool are provided on our web site at: http://environment-agency.resultspage.com/search?p=Qts=ev2w=H1

ENVIRONMENT AGENCY

In conjunction with:

www.ability-software.co.uk

Reference Information

Please complete the following information:

Company Name:	ZF TRW, TRW Ltd
Location:	Pontypool, South Wales
Permit Number:	DP3430LX

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.

Import Utility

Please note that before the import can take place any data that already exists in this copy of the tool will be removed.

Part 1

Introduction to Part 1

Part 1: Describe the Scope and Options

The aim of this part 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 PART 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 Parts 1, 2 and 3 only
○ b)	to conduct a costs/benefits OPTIONS APPRAISAL to determine BAT for selected releases from a facility	Do Parts 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:

To assess the environmental impact of emissions from the Anodise process to demonstrate that the proposed BAT should not cause significant pollution

Scope of Environmental Assessment

List the activities included in the assessment

This should include all the activities in your permit, broken down into the basic process steps, such as: raw materials storage, handling, processing, emission control, waste treatment etc. as appropriate. See H1 for guidance and use the comments box below to provide any additional information.

Number	Activity
1	Handling raw materials
2	Chemical Preparation
3	Rinsing
4	Water treatment
5	Fume extraction and abatement
6	Effluent treatment
7	Handling of spent process fluids
8	Handling of wastes

Comments

Part 2

Introduction to Part 2

Part 2: Emissions Inventory

The aim of this Part 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 Part you will require information on:

- release points and sources of emissions to all media

- 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 PART 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	A9	End Stack	Anodise Process	4	15	145350

Comments: The exhaust stack is 6 m tall ontop of a building 8 m high.

Total Flow is expressed as the maximum discharge volume of the extraction pipework.

Water Discharge Locations

Please define the Final Discharge Locations for Releases to Water

Are there any Water emissions? Yes

Use the 'Add' button below to list all final discharge points.
For releases to sewer, this should be the point of discharge from the sewage treatment works.

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 Lower Estuary or Coastal discharges, seperate Discharge Locations must be added here for each release point.

Number	Description	Final Discharge Category	River/Freshwater Flow Rate*	
1	River Usk at Newport	R	River Flow (m3/s):	30

* For Saltwater discharges (e.g C or LE discharge types) see next

Water Release Points

Please define your Release Points for Releases to Water

Number	Description	Location or Grid Reference	Activity or Activities	Final Discharge Point		Discharge via Sewer?	Mean Effluent Flow m3/s	Effluent Flow Rate (5%
1	S1	Discharge of ETP to Welsh Water Sewer	Discharge from ETP to sewer	1	River Usk at Newport	Yes	0.0015	0.01

Comments: The effluent process is already included within the current permit for the site

Water Emissions Inventory

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

Which type of assessment method are you using?
(See help box & H1 Annex D for information)

Refer to the guidelines in Appendix F of H1 and provide document reference for the assessment here.

Method: Whole Effluent Testing

Reference: WAS - 049

Number	Substance	Meas'ment Method	Operating Mode (if relevant)	Data relating to Long Term effects (EQS - Annual Averages)		Data relating to Short Term effects		Annual Rate	Sewage Treatment Factor	Benchmark
				Conc.	Meas'ment Basis	Conc.	Meas'ment Basis			
				mg/l		**mg/l**		kg/yr		mg/l
1	Chromium III (95%ile)	Periodic*		2	Annual Avg	2		11.52	1	1

Comments: Based on BREF Emission Limits to provide worst case dicharge figures
Calculations of annual rate based on max permit limits and max design flowrate of 2000 litres/hour, 5 days per week and 48 weeks per year

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	Electricity from public supply	indirect emissions	250	2.40	600	0.17	100

Comments: Consumption figures for new process unknown at present.

Figures quoted are for existing similair process

Raw Materials

Please list all Raw Materials Consumed:

Number	Material	Annual Consumption	Units
1	Potable Water	30000	cubic m/year
2	Sulphuric Acid	2	tonnes/year
3	Surtec 131	2	tonnes/year
4	Surtec 471	2	tonnes/year
5	Surtec 650	5	tonnes/year

Comments: The final chemical constitiuents have not yet been fully finalised. Therefore, these are estimated figures based on the current existing anodise process

Waste Inventory

Please list all Waste Streams emitted:

Are there any Waste emissions? Yes

Number	Waste Stream	Mass tonne/yr	Category of Waste	Disposal/Recovery Option
1	Sulphuric Acid Solution	10	hazardous	Biological and Physico-chemical treatme
2	Mixed Caustic Solution	10	hazardous	Biological and Physico-chemical treatme

Comments: These figures are estimates based on current Anodise process waste figures

Part 3

Introduction to Part 3

Part 3: Quantify Impacts

The aim of this Part is to quantify the effects on the environment of the releases listed in the inventory in Part 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 Part 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 Part 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 PART 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?			Justification for omission
Yes	☐	Air	Process guidance Note 4/01(13) Section 3
Yes	☐	Deposition from Air to Land	Process guidance Note 4/01(13) Section 3
Yes	☑	Water	
Yes	☑	Waste	
No	☐	Visual	Process guidance Note 4/01(13) Section 3
Yes	☐	Ozone Creation	Process guidance Note 4/01(13) Section 3
Yes	☐	Global Warming	Process guidance Note 4/01(13) Section 3

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)	Based on tank chemical concentrations and process controls the emissions from this process are expected to be low and well within current benchmark Environmental quality standards. Based on the information provided in Process guidance Note 4/01(13) Section 3, along with the fact that the new anodise process pre-treatment solutions do not contain nitric acid or anything else that might give rise to emissions that need to be controlled.
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?	All waste water from the process is treated by an on site effluent treatment pant and discharged to a foul sewer which is subsequently trwted by Welsh Water at their Ponthir tretment works.
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 ?	It is not expected that the process will produce a visible plume or odour. The only potential external noise source from the process will be from the exhaust fans during operation. It is not expected that there will be any noise issues however, if any are identified during the operation of the process they will be actions to reduce the impact.
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)	There are 3 designated habitats sites within the relevant screening distance of the installion: 1) River Usk (SAC) - it is not anticipated that any air emissions from the installation will have an impact on this habitats site. Likewise water emissions from the installation are discharged to sewer and subsequently treated by Welsh Water before being released to the River Usk. Therefore, it is unlikely that the installation will have an impact on this habitats site. 2) Llandegfedd Reservoir (SSI) - it is not anticipated that any air emissions from the installation will have an impact on this habitats site. Likewise water emissions from the installation are discharged to sewer and subsequently treated by Welsh Water before being released to the River Usk. Therefore,

there are no water discharges to this site, hence it is highly unlikely that the installation will have an impact on this habitats site.
3) Cwmynyscoy Quarry (Local Nature Reserve) - it is not anticipated that any air emissions from the installation will have an impact on this habitats site. Likewise water emissions from the installation are discharged to sewer and subsequently treated by Welsh Water before being released to the River Usk. Therefore, there are no water discharges to this site and also the site is located at a higher altitude than the installation. Hence it is highly unlikely that the installation will have an impact on this habitats site.

Water Impacts

Calculate Process Contributions of Emissions to Water

This table estimates the Process Contribution, calculated after dilution into the relevant surface water type for each emission to water listed in the inventory, according to the release point parameters input earlier. If you have more accurate data obtained through dilution modelling, this may be entered as indicated and will be used instead of the estimated PC.

	Long Term			Short Term		
Substance	EQS	PC	Modelled PC	MAC	PC	Modelled PC
	µg/l	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Chromium III (95%ile) (River Usk at Newport)	4.7	0.1000		32	0.667	

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.

* If you have valid dispersion modelling data available - please enter it here

Comments

Water Impact Screening

Screen out Insignificant Emissions to Water

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.

Substance	Long Term EQS µg/l	Short Term MAC µg/l	Long Term PC µg/l	Long Term % PC of EQS %	Long Term > 4% of EQS?	Short Term PC µg/l	Short Term % PC of MAC %	Short Term > 4% of MAC?
Chromium III (95%ile) (River Usk at Newport)	4.7	32	0.10	2.13	**No**	0.67	2.09	**No**

Comments

Water Impact Modelling Assessment

See guidelines in H1 Annex D and respond to the following

Describe here the justification for whether detailed modelling is, or is not required for any of the releases. Refer to the quidelines in H1 Annex D.	All effluent treated water is discharged to foul sewer and subsequently treated by Ponthir Water station prior to onward release into the River Usk. Ponthir operate under an IPPC permit which provides emission limits from their treatment works.

Describe source of background information:

Describe location of detailed modelling work:

Waste Impact Score Calculation

Number	Waste Stream	Mass	Final treatment or disposal method	(Score)	Waste Type	(Score)	Impact Score
2	Mixed Caustic Solution	10	Biological and Physico-chemical treatmen	12	hazardous	10	1200
1	Sulphuric Acid Solution	10	Biological and Physico-chemical treatmen	12	hazardous	10	1200

Comments

Summary Tables

Print or Preview summary tables:

Choose which summary tables

Water
Waste

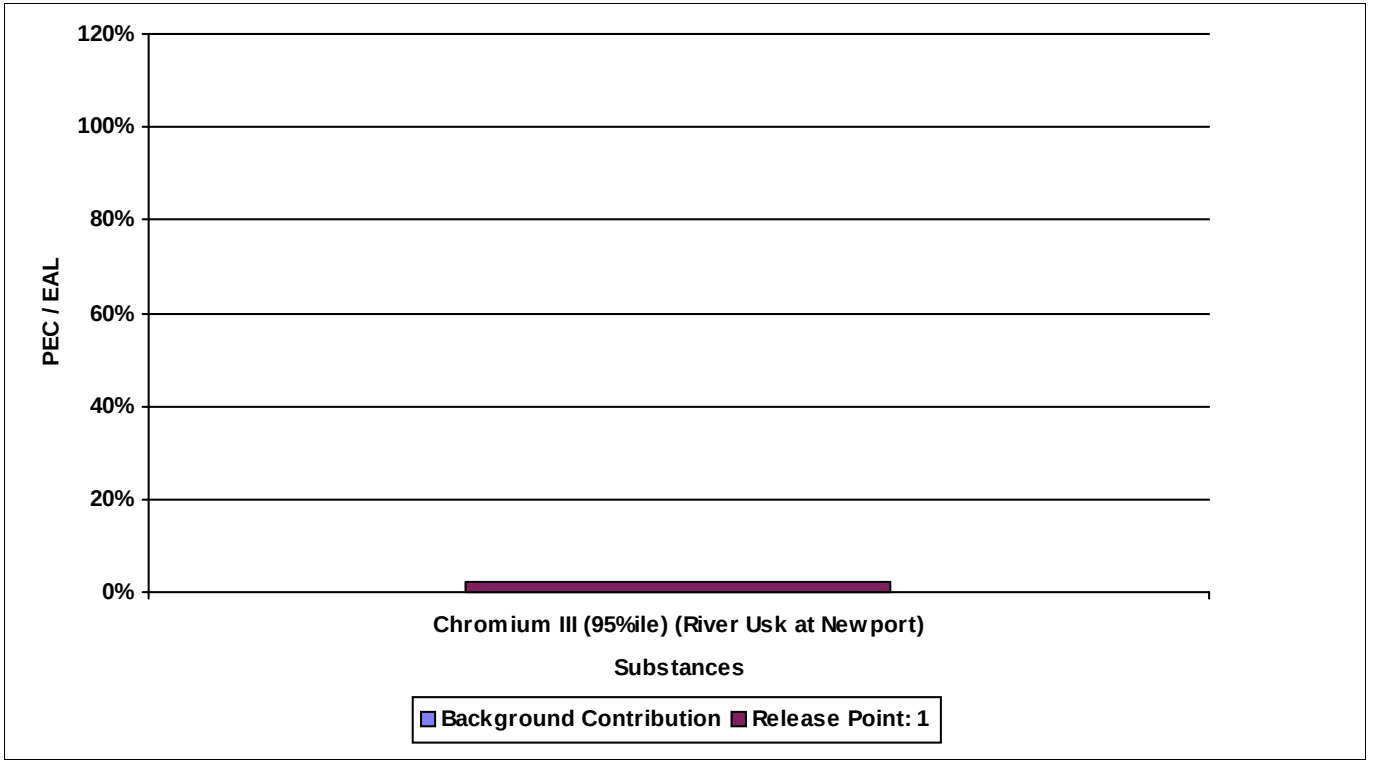
Preview

Print

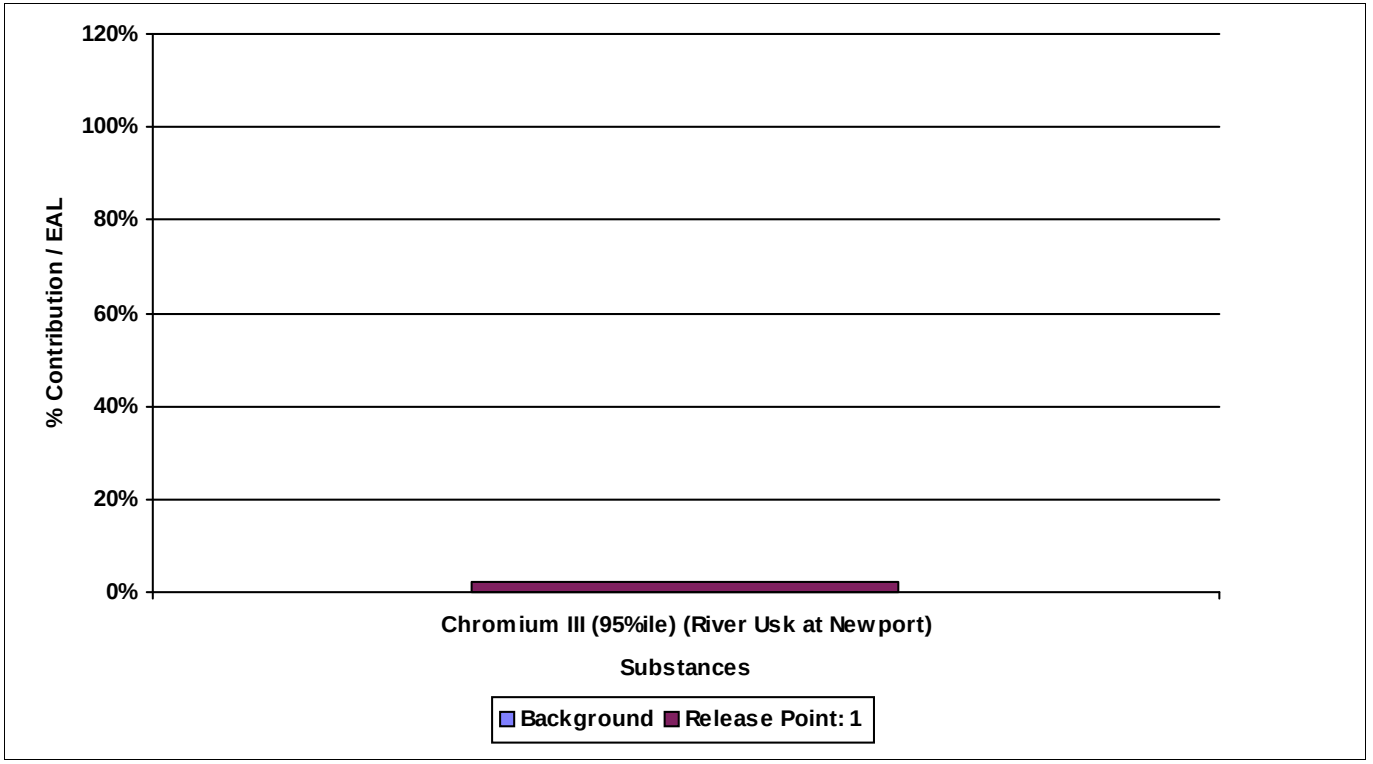
Include

- ○ All Air and Water Substance
- ◉ Air and Water Release Not Screend Out

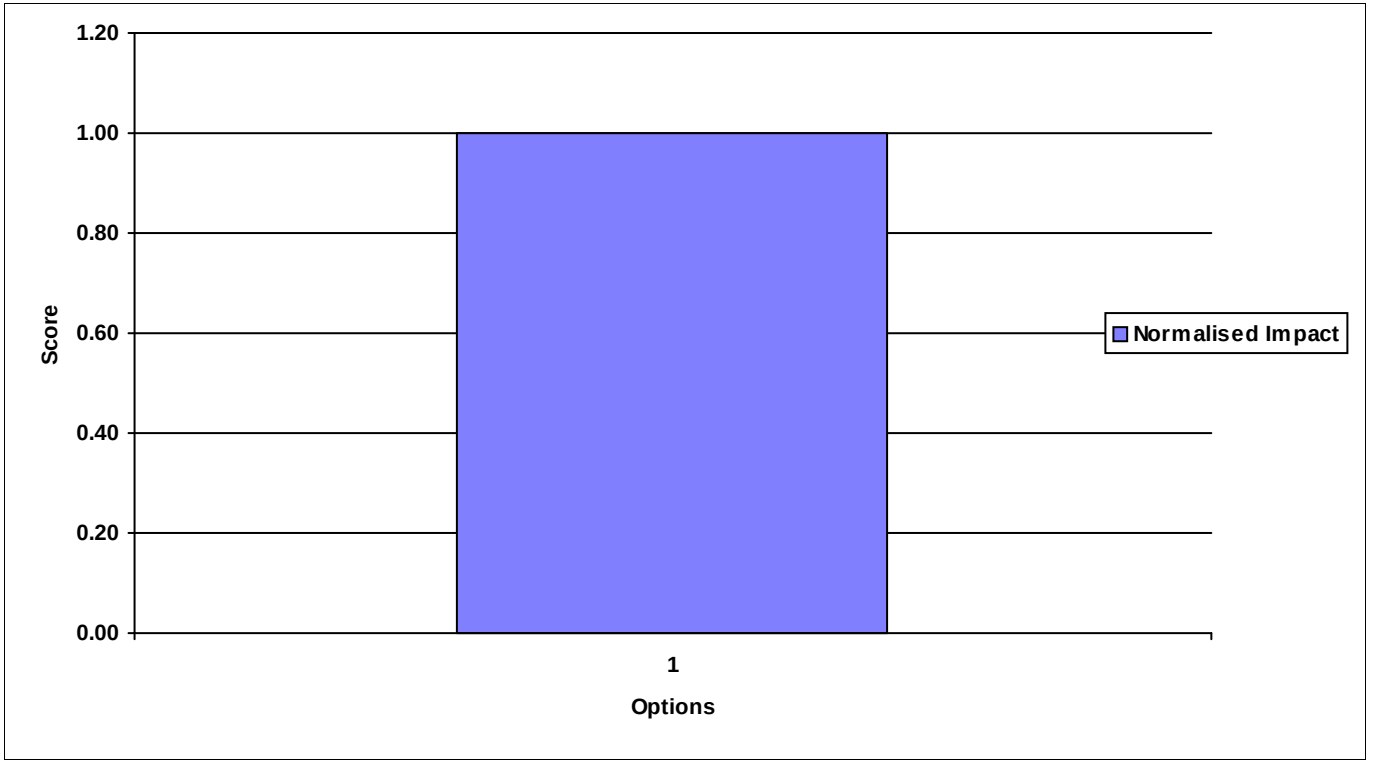
Short Term Water - Substance Comparison



Water Long Term Effects - Comparison by Substance



Waste - Option 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 folllowing

Statutory Emission limit values:	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):	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:	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.