Pacific Northwest
NATIONAL LABORATORY

PNNL-30613

GENII Examples 5 and 11

Detailed Instructions

October 2020

JA Bamberger
BA Napier

Prepared for the U.S. Nuclear Regulatory Commission
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Richland, Washington 99354

Abstract

The GENII computer code was developed for the Environmental Protection Agency (EPA) at Pacific Northwest National Laboratory (PNNL) to incorporate the internal dosimetry models recommended by the International Commission on Radiological Protection (ICRP) and the radiological risk estimating procedures of Federal Guidance Report 13 into updated versions of existing environmental pathway analysis models. The resulting environmental dosimetry computer codes are compiled in the GENII Environmental Dosimetry System. The GENII system was developed to provide a state-of-the-art, technically peer-reviewed, documented set of programs for calculating radiation dose and risk from radionuclides released to the environment.

This document provides detailed instructions for setting up and running GENII Example 5 (genii_05.gid) and GENII Example 11 (genii_11.gid).

Summary

The GENII computer code was developed for the Environmental Protection Agency (EPA) at Pacific Northwest National Laboratory (PNNL) to incorporate the internal dosimetry models recommended by the International Commission on Radiological Protection (ICRP) and the radiological risk estimating procedures of Federal Guidance Report 13 into updated versions of existing environmental pathway analysis models. The resulting environmental dosimetry computer codes are compiled in the GENII Environmental Dosimetry System. The GENII system was developed to provide a state-of-the-art, technically peer-reviewed, documented set of programs for calculating radiation dose and risk from radionuclides released to the environment.

This document provides detailed instructions for setting up and running GENII Example 5 (genii_05.gid) and GENII Example 11 (genii_11.gid).

Acronyms and Abbreviations

CEDE Committed effective dose equivalent
EPA Environmental Protection Agency
ICRP International Commission on Radiological Protection
PNNL Pacific Northwest National Laboratory

Contents

1.0 Introduction

The GENII computer code was developed for the Environmental Protection Agency (EPA) at Pacific Northwest National Laboratory (PNNL) to incorporate the internal dosimetry models recommended by the International Commission on Radiological Protection (ICRP) and the radiological risk estimating procedures of Federal Guidance Report 13 into updated versions of existing environmental pathway analysis models. The resulting environmental dosimetry computer codes are compiled in the GENII Environmental Dosimetry System. The GENII system was developed to provide a state-of-the-art, technically peer-reviewed, documented set of programs for calculating radiation dose and risk from radionuclides released to the environment. Although the codes were initially developed at Hanford in 1988, they were designed with the flexibility to accommodate input parameters for a wide variety of generic sites.

The GENII Version 2 code has been documented in the following publications:

Napier BA. 2012. GENII Version 2 Users' Guide. PNNL-14583, Rev. 4, Pacific Northwest National Laboratory, Richland, Washington.

Napier BA, DL Strenge, JV Ramsdell, Jr, PW Eslinger, C Fosmier. 2012. GENII Version 2 Software Design Document. PNNL-14584, Rev. 4, Pacific Northwest National Laboratory, Richland, Washington.

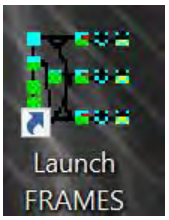
Snyder SF, CI Arimescu, BA Napier, TR Hay. 2013. Recommended Parameter Values for GENII Modeling of Radionuclides in Routine Air and Water Releases. PNNL-21950, Pacific Northwest National Laboratory, Richland, Washington.

This document provides instructions for setting up a model in Section 2 and detailed step-by-step instructions for setting up Example 5 in Section 3.

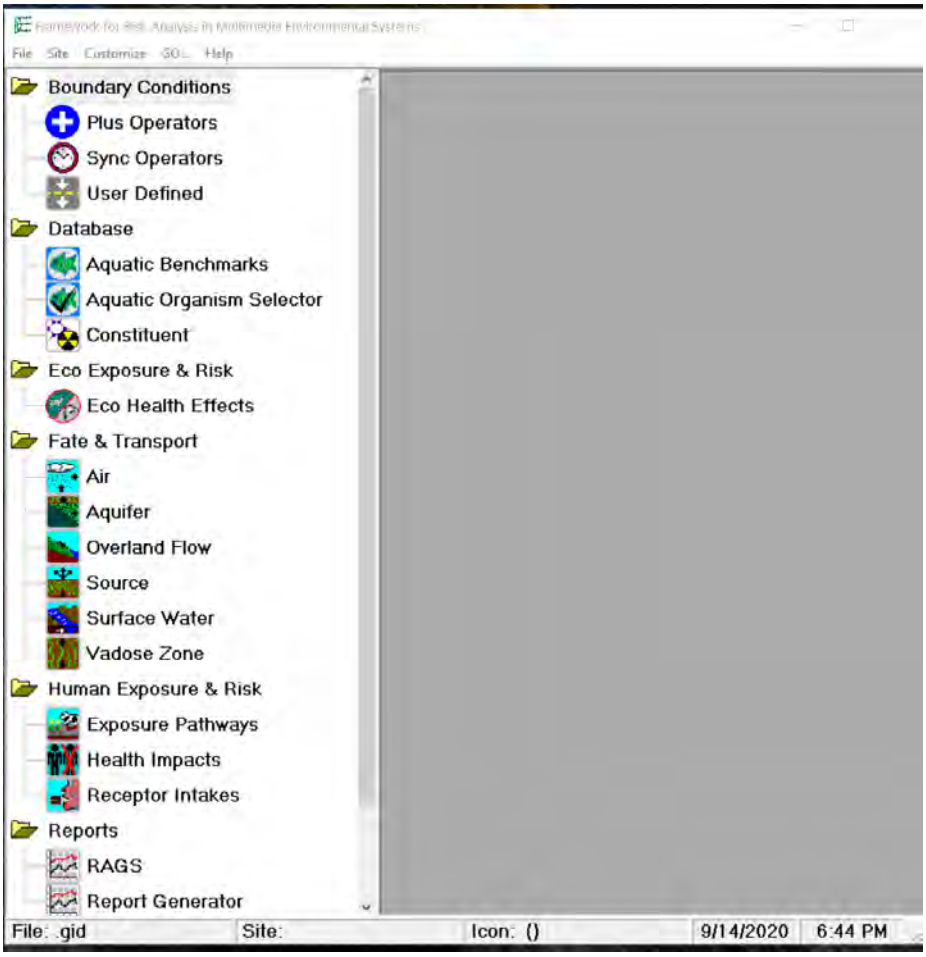
2.0 GENII Setup

2.1 Starting and Customizing

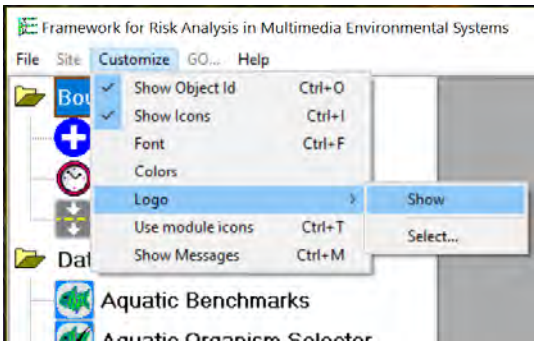
Start FRAMES system. Double click on the FRAMES icon on the desk top.



The GENII Program opens as shown below.

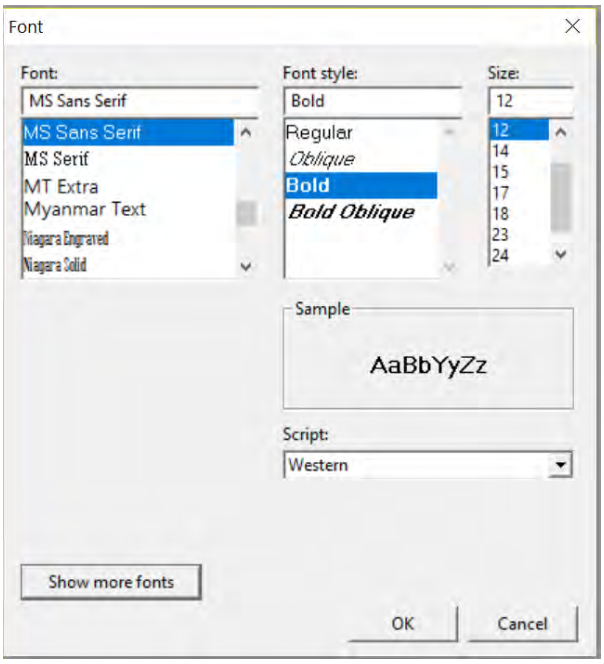


Customize the program computer screen display. The first two items Show Object Id and Show Icons are usually checked.

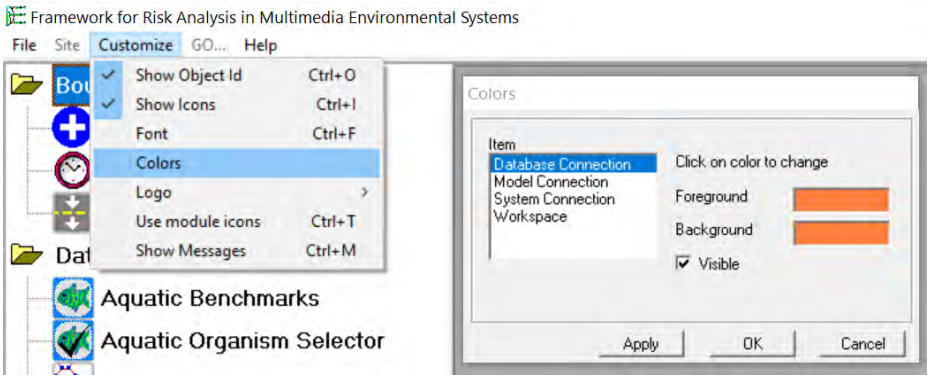


If Show Icons is not checked the icons to the left of each heading are removed.

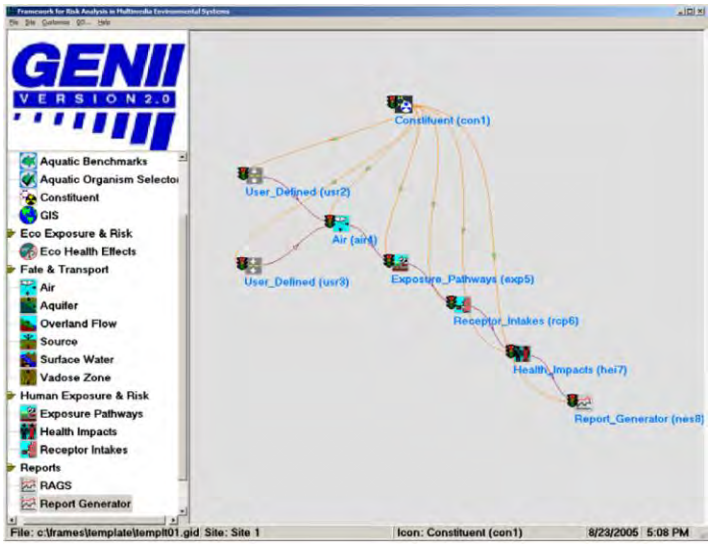
The Font selected is MS Sans Serif Bold 12 point.



Colors provides four options: Database Connection, Model Connection, System Connection, Workspace.

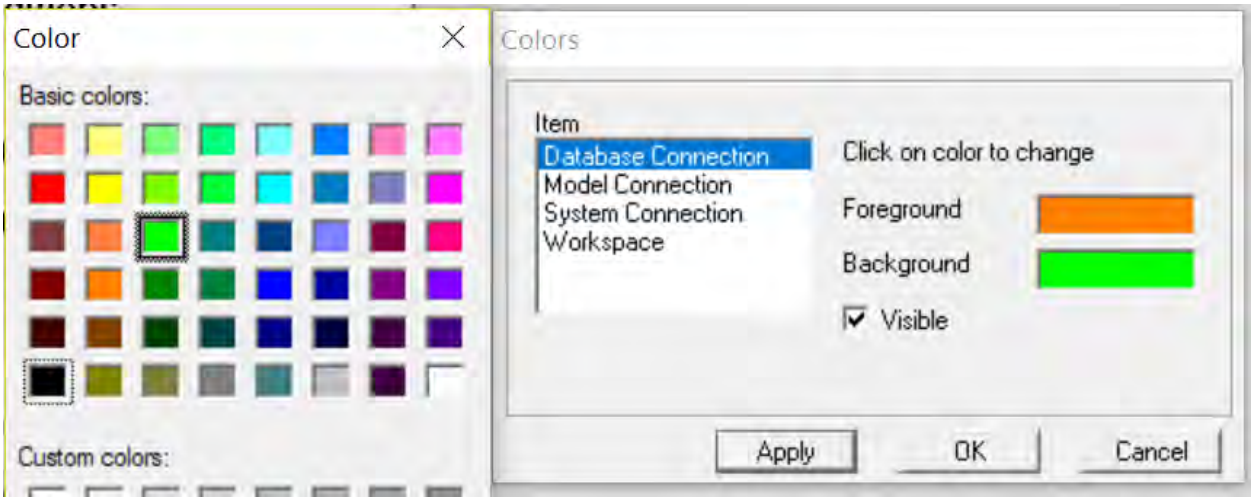


To match the Color Selections shown in Getting Started with GENII Version 2 Figure on page 4 shown below select colors as shown below.

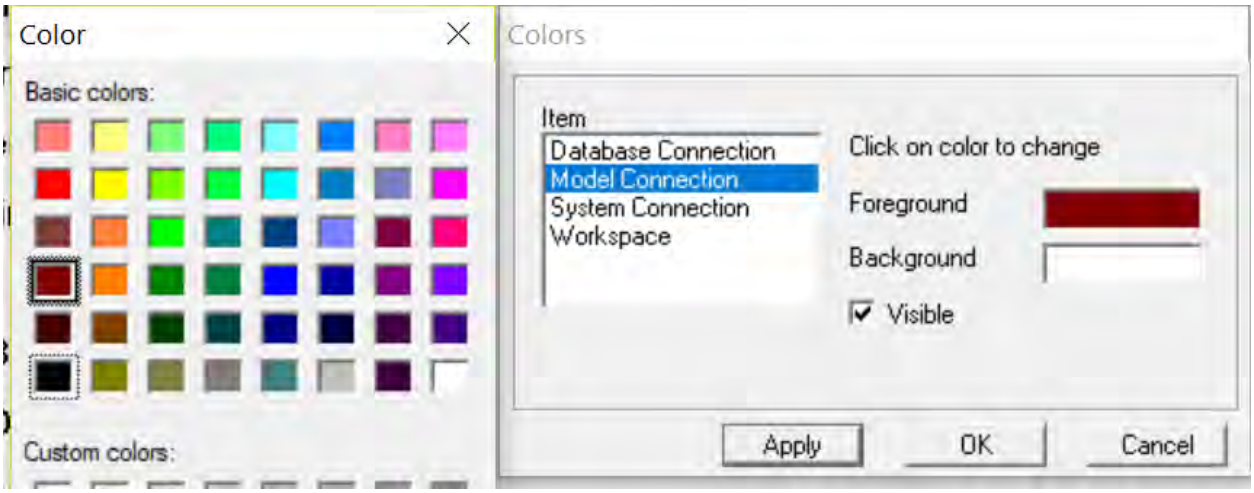


After selecting the color, select Apply to transfer the color to the display. Then click OK to close the item.

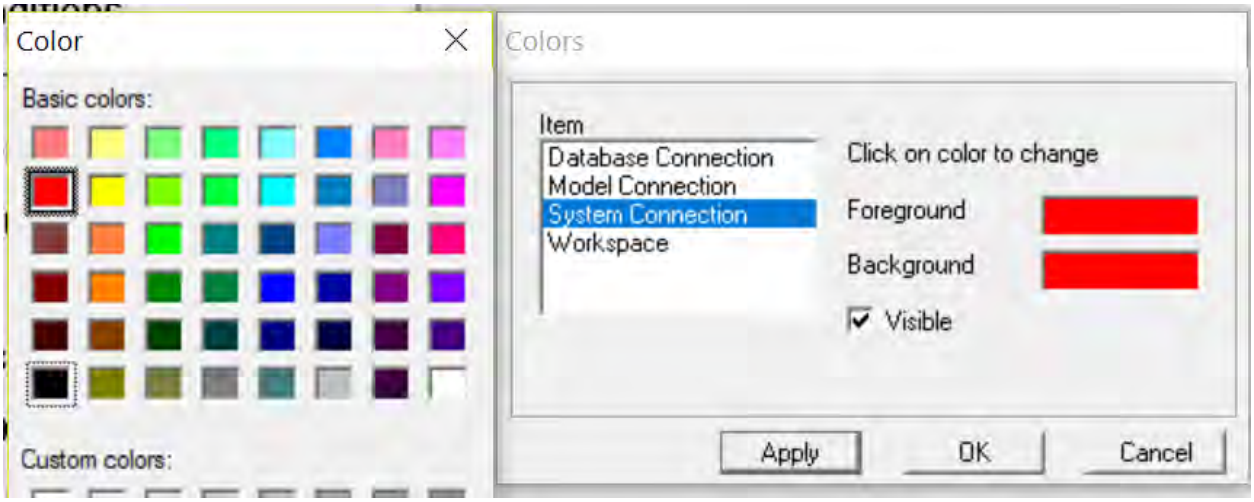
Database Connection. Select Apply to select the color and OK to transfer the color to the screen. The Foreground color is orange in the third row, second column. The Background color is green in the third row, third column. Checking ✓ Visible shows the connection lines and arrows.



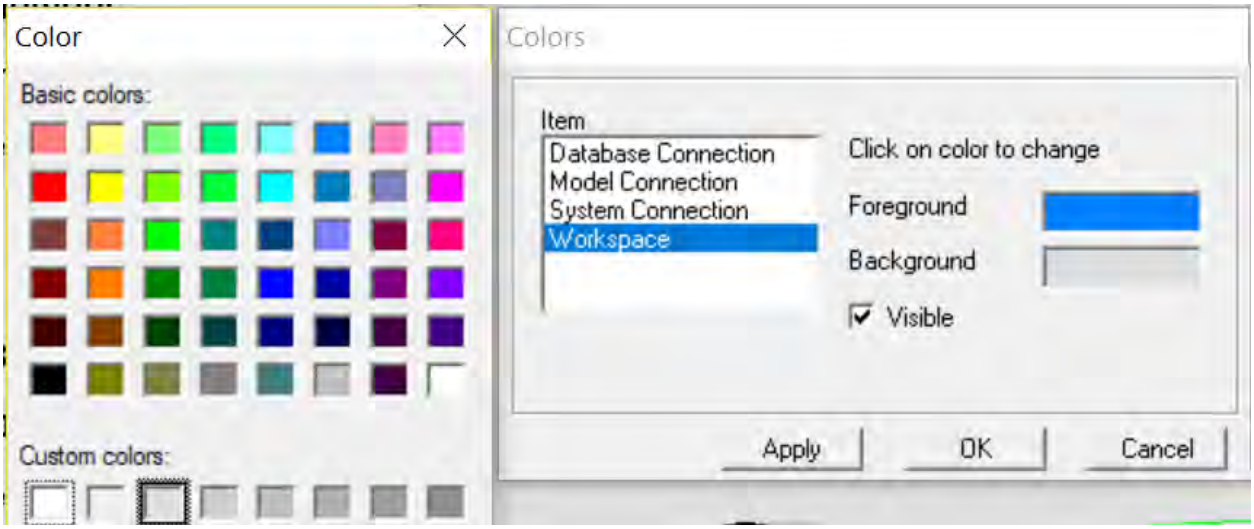
Model Connection. The Foreground color is brown in the fourth row first column. The Background color is white in the sixth row eighth column. Checking ✓ Visible shows the brown model connection lines and arrows.



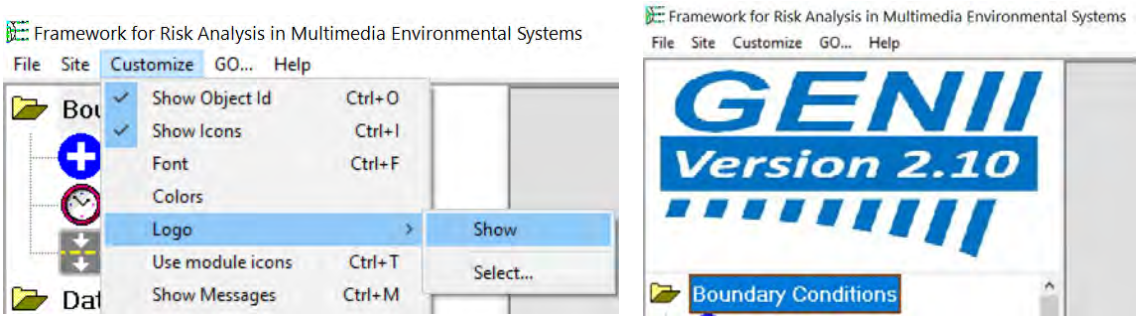
System Connection. The Foreground and Background colors are both red in the second column first row.



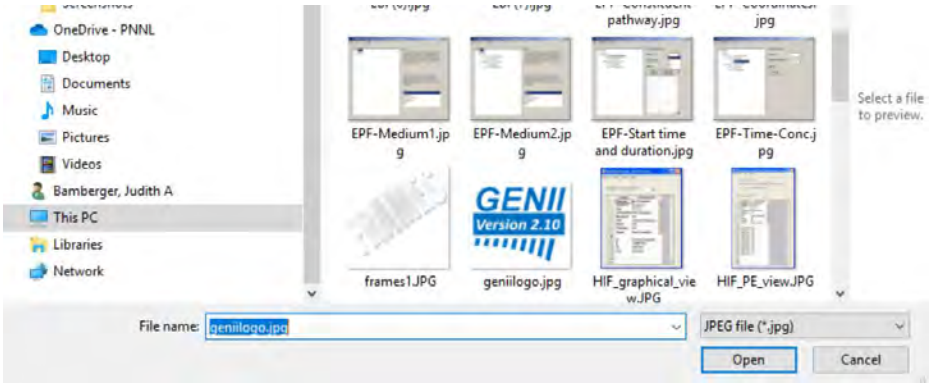
Workspace. The Foreground color is blue in the first row, sixth column and is the text color. The Background is Custom Colors light gray in the third column. Checking ✓ Visible shows the text labels on the display. To remove the labels, uncheck the visible box.



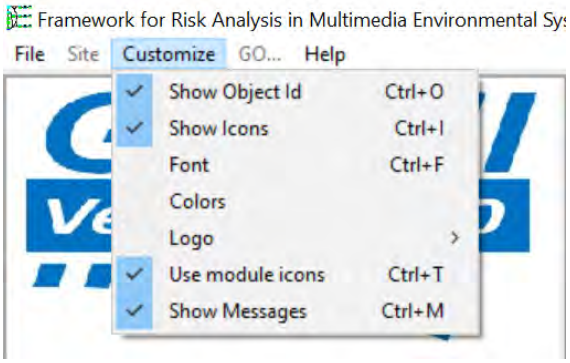
Logo. Select Show to show the GENII Version 2.10 logo at the top of the display.



Logo. Choose Select to add a custom logo at the top of the display. Select opens a window. Select geniilogo.jpg for the GENII 2.10 logo.

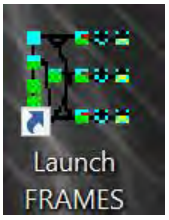


Other topics include Use module icons and Show Messages. If Show Messages is selected, then a message window opens at the bottom of the screen.

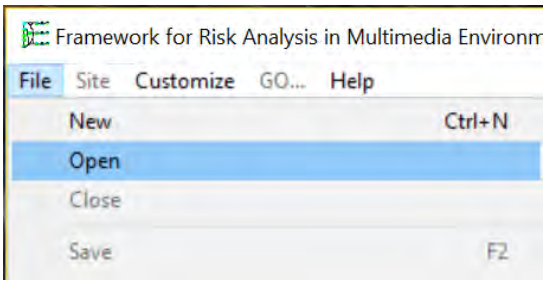


2.2 Setting Up a Calculation using Templates

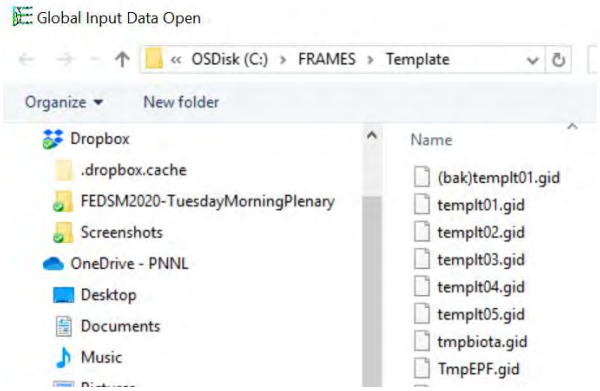
Start FRAMES system. Double click on the FRAMES icon on the desk top.



Left click on File\Open command sequence at the upper left corner of the FRAMES screen.

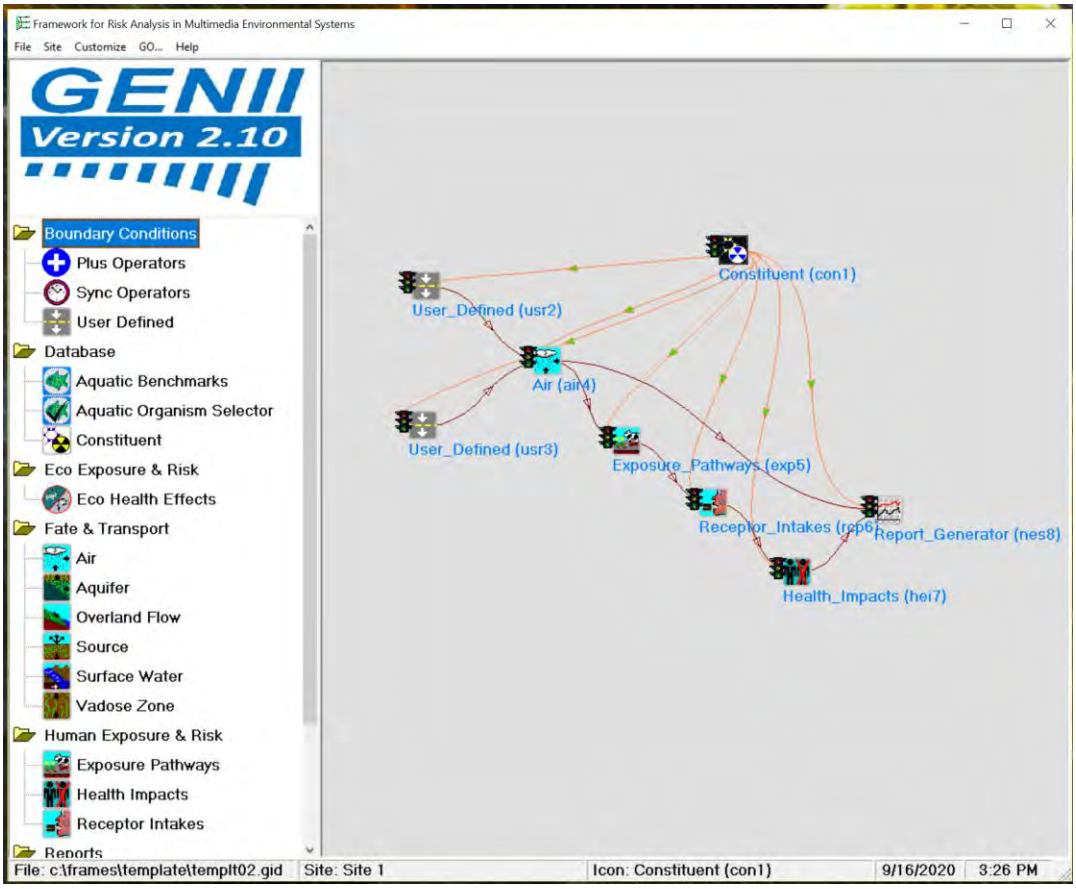


The selection list of templates opens that are located in the FRAMES>Templates folder.



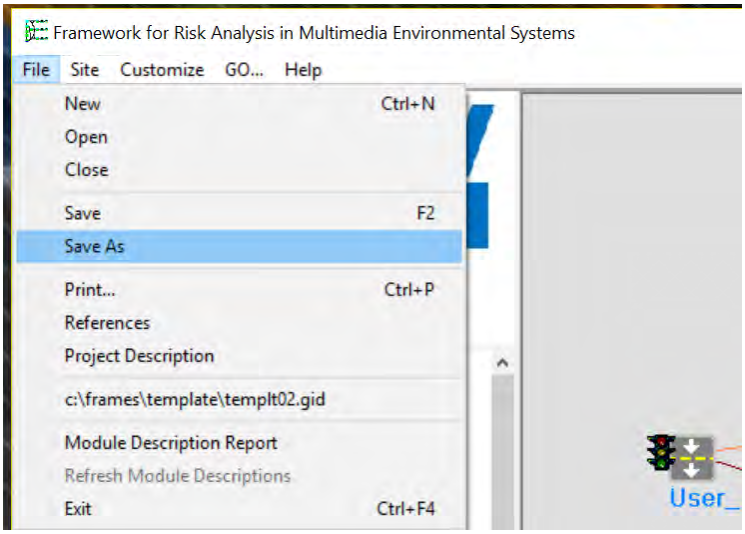
Select a template (templt02.gid in this example) by highlighting it and selecting Open. The selected template will appear in the FRAMES screen. All module connections and model

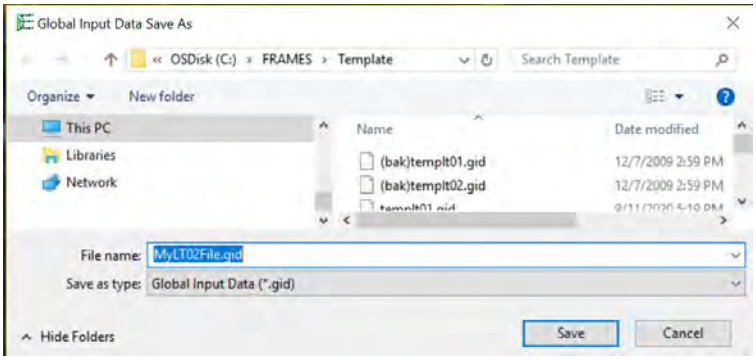
selections are now made. This is indicated on the screen as a series of icons, connected with colored lines as shown below.



This is the GENII 2.10 templt02.gid.

Save the file using the FRAMES File Save As Command using a file name and directory of your choice.




Global Input Data Save As
OSDisk (C:) › FRAMES › Template
Search Template
Organize
New folder
This PC
Libraries
Network
Name
Date modified
(bak)templt01.gid
12/7/2009 2:59 PM
(bak)templt02.gid
12/7/2009 2:59 PM
File name:
MyLT02File.gid
Save as type:
Global Input Data (*.gid)
Hide Folders
Save
Cancel

3.0 Examples

Step by step instructions follow for setting up Example 5 (genii_05.gid) followed by a brief summary of Example 11 (genii_11.gid).

Examples are located in the GENII directory (c:\FRAMES\Examples)

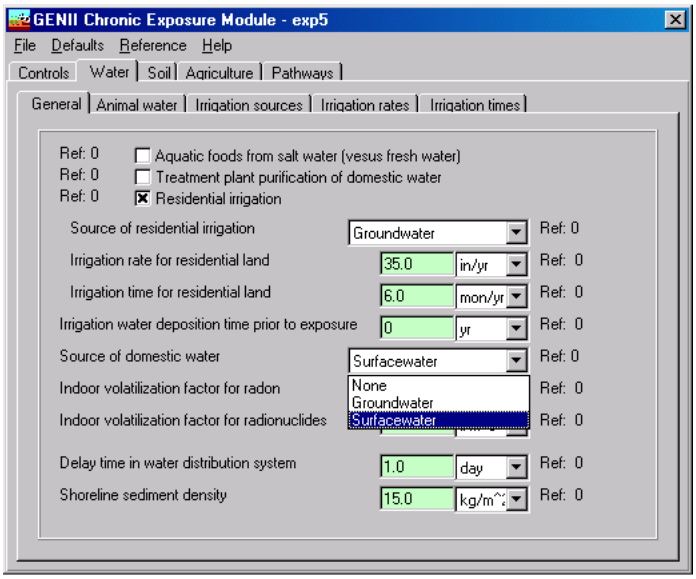
3.1 Example 5

Example 5 is concisely summarized below.

Example	Description	Complexity
GENII_05.GID	Three sources (air, surface water, and groundwater) with user-defined nuclide concentrations cause exposures through animal products, crops, and aquatic food ingestion, as well as inhalation and external exposure. Irrigation is included.	Complex

The following summary is provided in GENII Version 2 Users' Guide (Napier 2012).

> **"GENII_05:** This example scenario is derived from the template TmpKnown, for which air, surface water, and groundwater concentrations of radioactive contaminants are known. For this example, the radionuclide ^{131}I is selected, and the decay progeny ^{131m}Xe is automatically added. The three known environmental media, air (via the ATO Air Module), surface water (via the WCF Surface Water-dissolved module), and groundwater (via the WCF Groundwater-dissolved module) are selected. For the air, the iodine is described as being in particulate form using the Flux Types button and known air concentrations, and total annual deposition rates are entered. For the two water concentration modules, a short time history of water contamination is entered. The GENII Chronic Exposure module is used to estimate concentrations of ^{131}I in food crops from depositions from air and water. Sources of water for home consumption, irrigation, and farm animal use must be selected from the Water/General and Water/Irrigation Sources tabs, as shown:

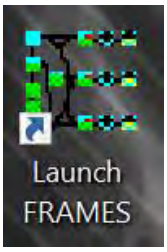


One age group (defined to be 0-70 years in this example) is selected in the GENII Receptor Intakes module and consumption rates are input. The GENII Health Impacts module is

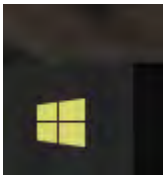
selected, with the ICRP-26/30 option. Radiation dose is selected. The dose may be viewed by using the right-click and View/Print model output selection. Because three source media have been used, the output summaries are provided for all."

To open Example 5 using the stored example either

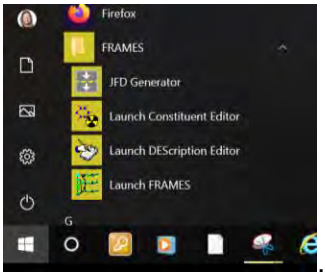
1) Double click on the Icon Launch Frames or



2) Left click on the windows icon in the lower left of the screen

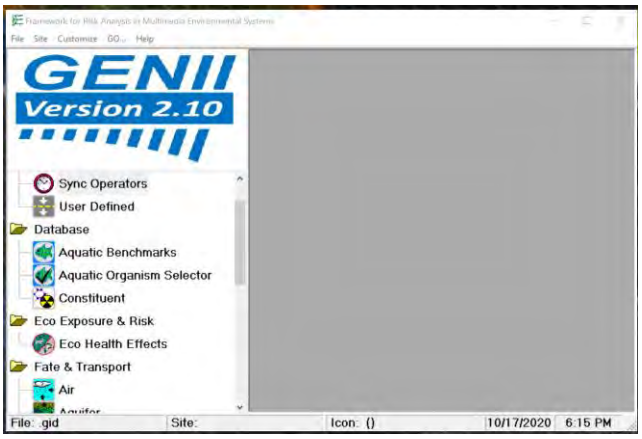


and select the Launch FRAMES icon as shown in the drop-down menu under FRAMES.

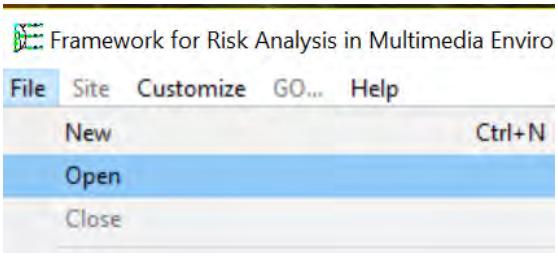


. Or

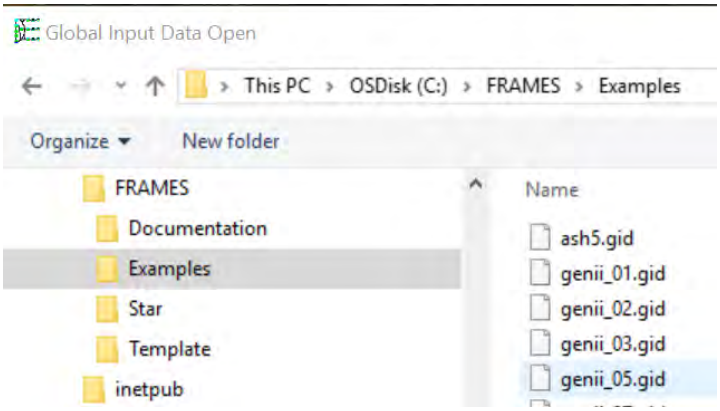
3) Run \FRAMEX\FUI.exe (FUI stands for Frames User interface). The FRAMES Program opens.



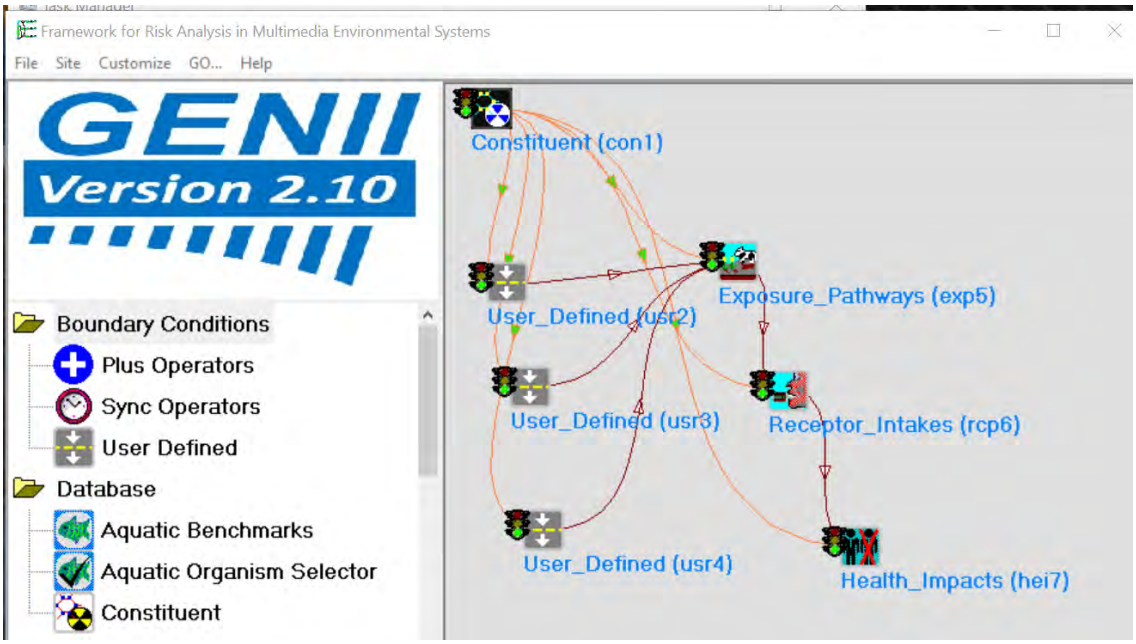
To open the completed Example 5, select File > Open,



then select FRAMES\Examples\genii_05.gid to open the completed example 5.



The completed Example 5 is shown below



The example consists of seven icons arranged in a single “conceptual model”.

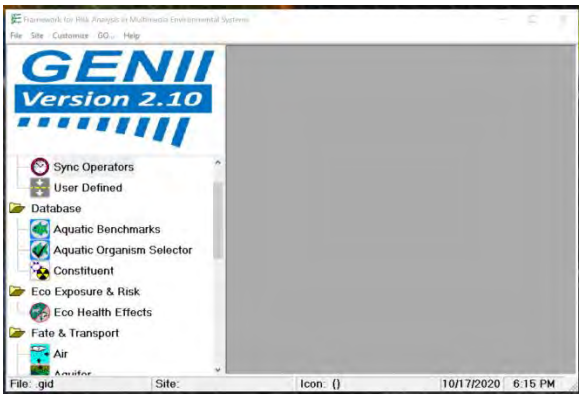
- Database
    - Constituent (con1)
- Boundary Conditions
    - User_Defined (usr2)
    - User_Defined (usr3)
    - User_Defined (usr4)
- Human Exposure & Risk
    - Exposure_Pathways (exp5)
    - Receptor_Intakes (rcp6)
- Human Exposure & Risk (hei7)

Each of the icons has a name in parenthesis followed by a number; for example (con1). The example is built starting with the icon numbered 1, and each icon is added in succession ending with icon 7. The example will be constructed in the following steps:

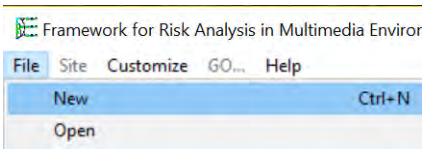
1) Open the program, open a new case, and name the site.
2) Add the icons to the display in a logical order and displayed so that the icons can be connected while being able to see the connections and read the icon names.
3) Add the connections between the icons. Each line has an arrow showing the direction of the connection.
4) Select the models for each step (Add General Information to the model).
5) Add User Input to the models.
6) Run the model.

3.1.1 Getting Started with Example 5

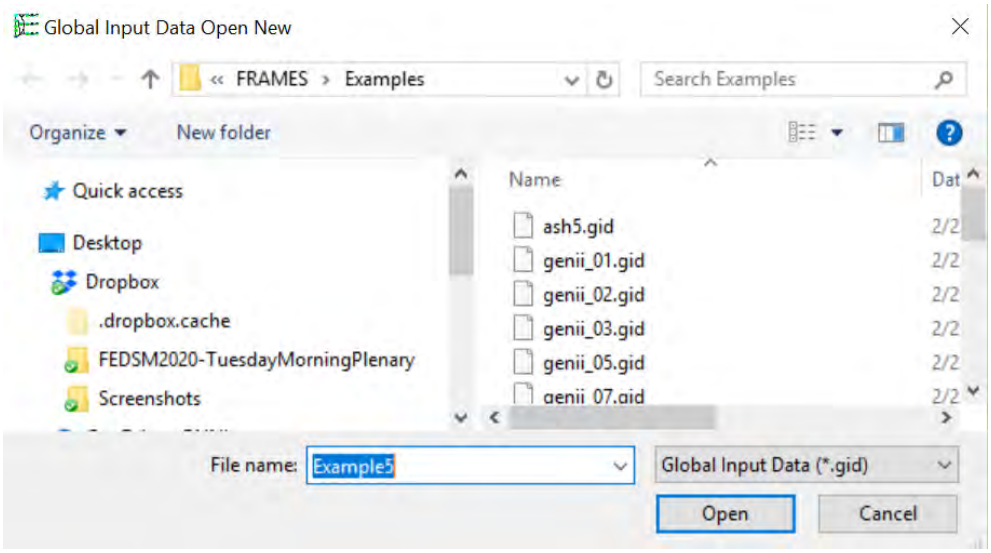
From the open FRAMES program screen open a new file.



Select File > New.



The following window opens, and a File name is requested. Name this file Example5. Note the file name must contain eight characters or less. Note, this file is now stored in the Frames > Examples sub folder. You may save the file in a folder of your choice.



The program requests a site name. Multiple conceptual models may be saved in the same *.gid file by using Sites; only one conceptual model will be used in this example. The suggested Site name is Site 1. You may name the site 1 as done here or select a name of your choice. After you have named the site select OK.

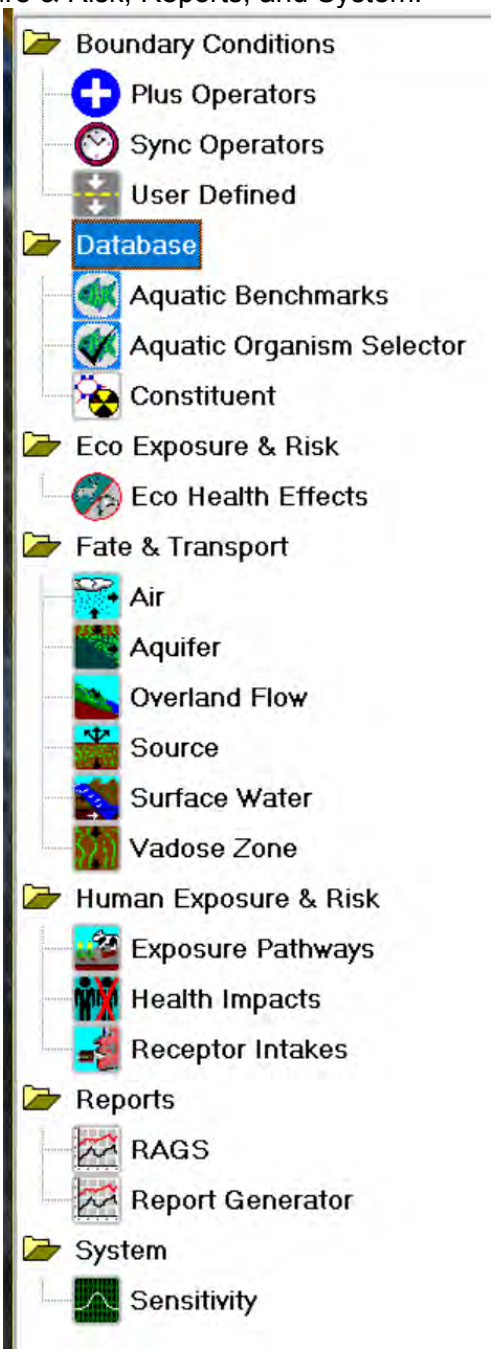
Note that at the bottom of the screen in the second box from the left the site is named Site: Site 1.

Also note at the bottom of the screen the file location File: is listed in the left box. The Site: name is listed in the second box. The Icon: is listed in the third box. The date is listed in the fourth box. The time is listed in the fifth box.

3.1.2 Add Icons to Example 5

This procedure will add the seven icons (model types) sequentially to the model.

Start building the model using the tool icons shown on the left of the display. These items are grouped as Boundary Conditions, Database, Eco Exposure & Risk, Fate & Transport, Human Exposure & Risk, Reports, and System.

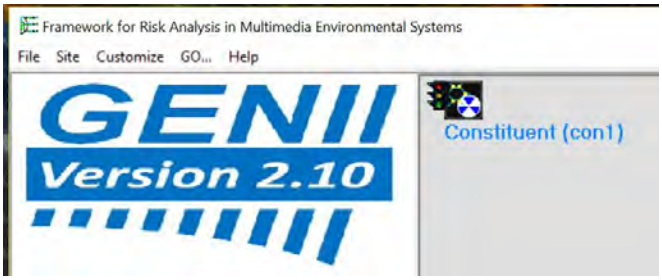


3.1.2.1 Icon 1 Constituent (con1) - Database

Icon 1: From the list of modules on the left of the window, add a Constituent Database to the center top of the display. Three data bases are provided: Aquatic Benchmarks, Aquatic Organism Selector and Constituent. Select Constituent for this example.

Right click on Constituent: There are two choices: Add 'Constituent' to site or Change 'Constituent' icon. *Note, double clicking on the icon will also add it to the site*.

Select Add 'Constituent' to site. The icon shows up in the upper left corner of the screen. It is labeled Constituent (con1); the one signifies it is the first icon added to the model.

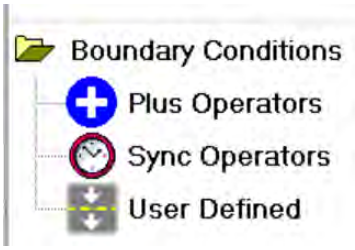


The icon name shows up in the 3rd box at the bottom of the display.

Move the icon slightly to the right of the screen near the top by clicking on the icon and dragging it with the mouse. By moving the icon, a space is available for the next icon to populate.

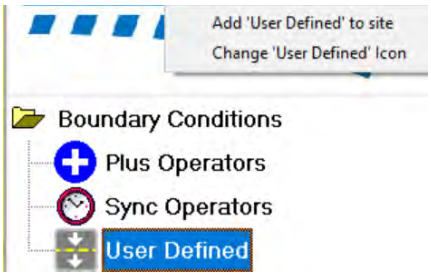
3.1.2.2 Icons 2, 3, and 4 User Defined (usr2), (usr3), and (usr4) – Boundary Conditions

Icons 2, 3, and 4: Add three Boundary Conditions to the upper left of the display, one below the other. Three Boundary Conditions are provided: Plus Operators, Sync Operators and User Defined. Select three User Defined icons for this model.



To add them to the upper left of the display: Right click on User Defined: There are two choices: Add 'User Defined' to site or Change 'User Defined' icon.

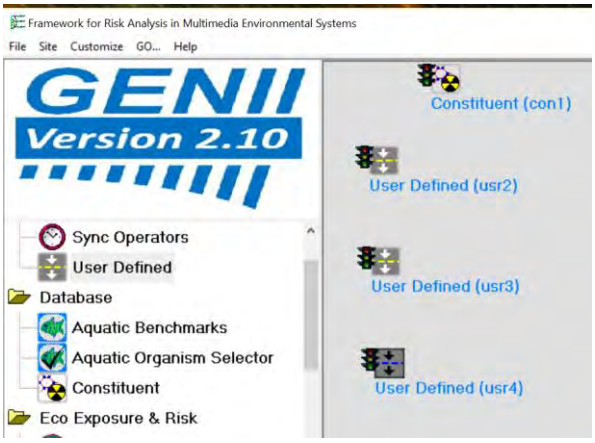
Select Add 'User Defined' to site.



The icon shows up in the upper left corner of the screen. It is labeled User Defined (usr2); the two signifies it is the second icon added to the display.

Move the icon to the left of the screen slightly below (con1) by clicking on the icon and dragging it with the mouse.

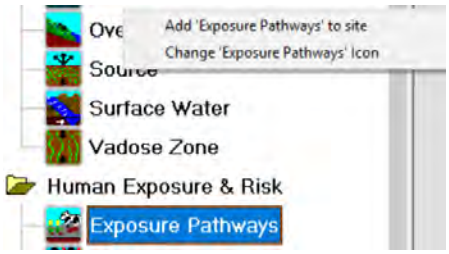
Following the steps above add a second and a third User Defined Icons. Place them beneath the first User Defined Icon. They are labeled User Defined (usr3) and User Defined (usr4) on the display.



3.1.2.3 Icon 5 Exposure Pathways (exp5) – Human Exposure & Risk

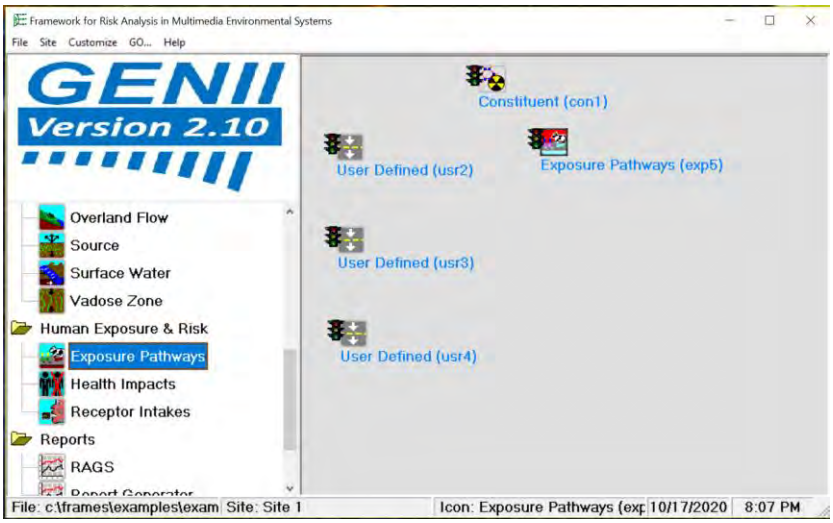
Icon 5: Add Human Exposure & Risk to the model. Three items are provided: Exposure Pathways, Health Impacts, and Receptor Intakes. To add Exposure Pathways to the model:

Right click on Exposure Pathways. There are two choices: Add 'Exposure Pathways' to site and Change 'Exposure Pathways' Icon. Select Add 'Exposure Pathways' to site. The Exposure Pathways icon shows up in the upper left corner of the screen. It is shown in red. Note the prior icon has changed arrow colors from black to white.



It is labeled Exposure Pathways (exp5); the five signifies it is the fifth icon added to the display. Position the 'Exposure Pathways' icon below and diagonally to the right of Constituent (con1).

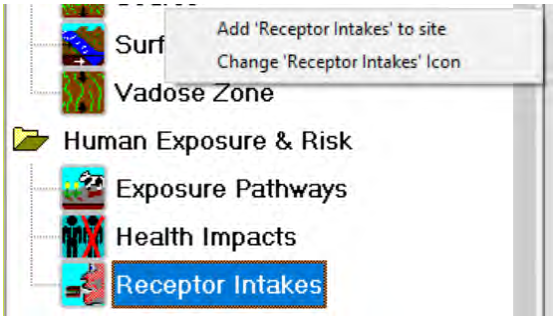
Note the color of the icon. The colors of the last to be input icon are reversed from that shown in the icon list. When another icon is added, the color of the prior icon reverts to that shown in the icon list.



3.1.2.4 Icon 6 Receptor Intakes (rcp6) – Human Exposure & Risk

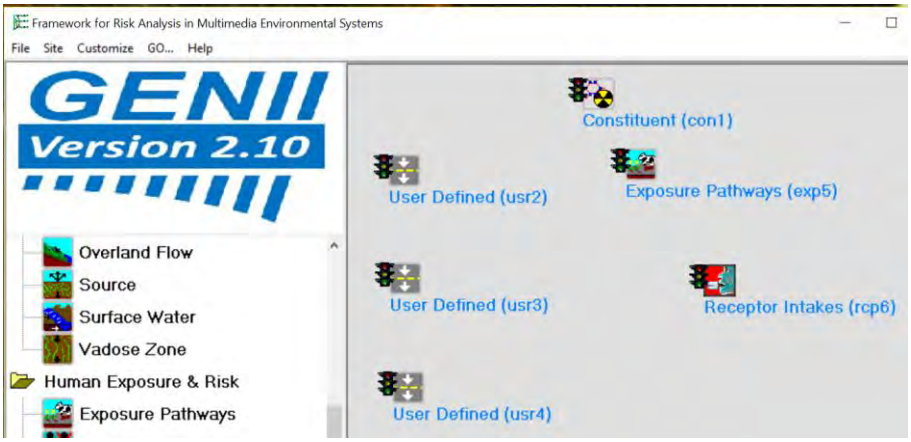
Icon 6: Add another Human Exposure & Risk Icon for Receptor Intakes.

Right click on Receptor Intakes. There are two choices: Add 'Receptor Intakes' to site and Change 'Receptor Intakes' Icon. Select Add 'Receptor Intakes' to site.



The 'Receptor Intakes' icon is added in the upper left corner of the screen and is red.

Move the icon diagonally to the right and below the Exposure Pathways icon by clicking on the icon and dragging it with the mouse.

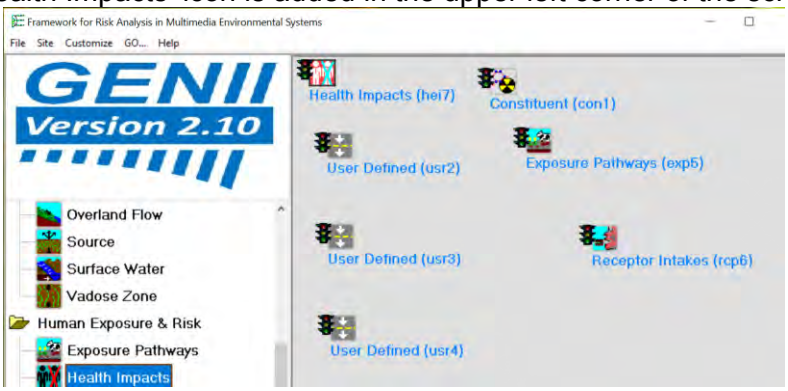


3.1.2.5 Icon 7 Health Impacts (hei7) – Human Exposure & Risk

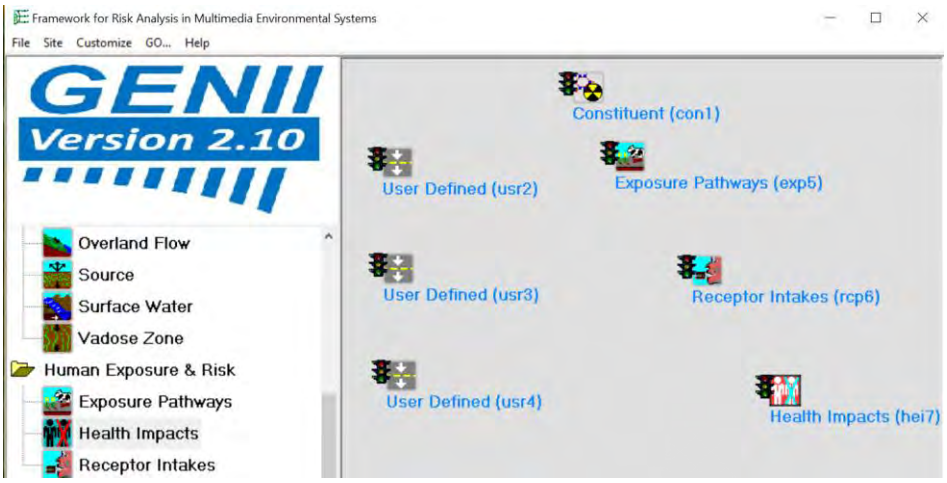
Icon 7: Add another Human Exposure & Risk Icon for Health Impacts.

Right click on Health Impacts. There are two choices: Add 'Health Impacts' to site and Change 'Health Impacts' Icon. Select Add 'Health Impacts' to site.

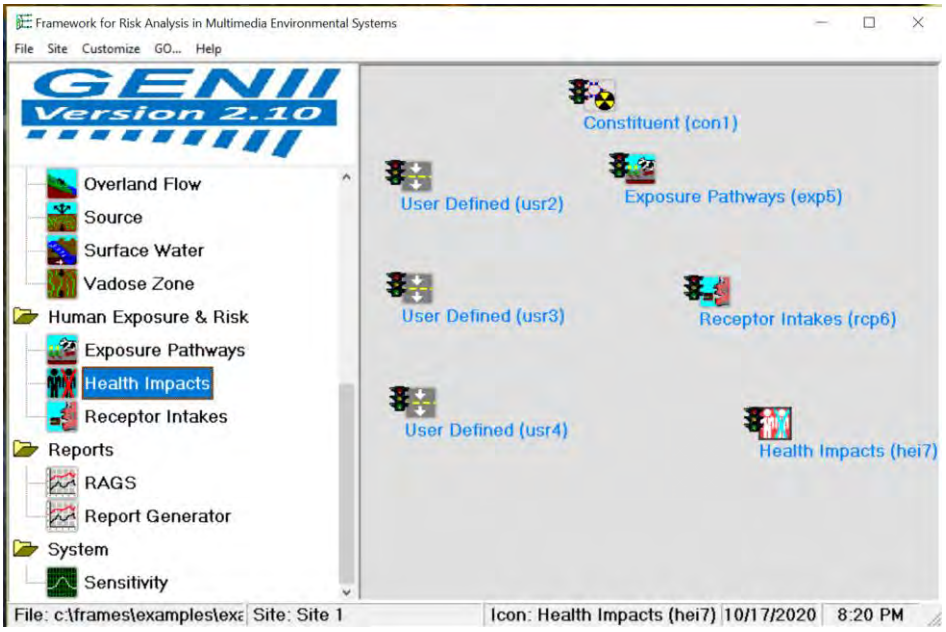
The 'Health Impacts' icon is added in the upper left corner of the screen and is red.



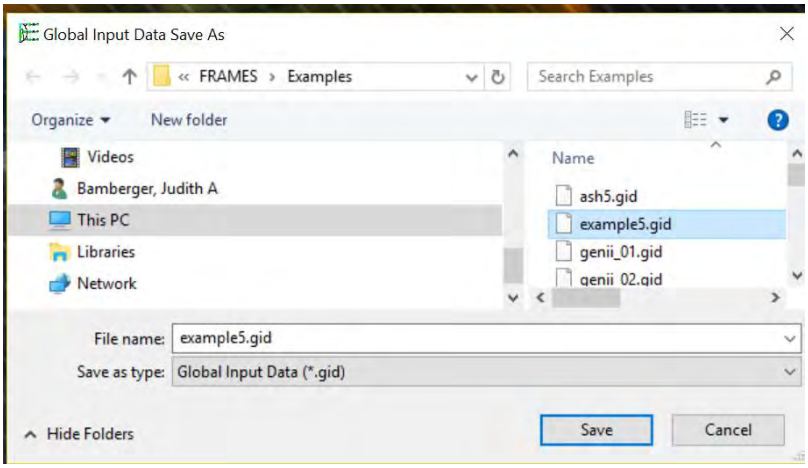
Move the icon down and diagonally to the right of the Receptor Intakes icon by clicking on the icon and dragging it with the mouse.



This step completes the addition of icons to the screen. The model consists of 7 icons arranged as shown below.

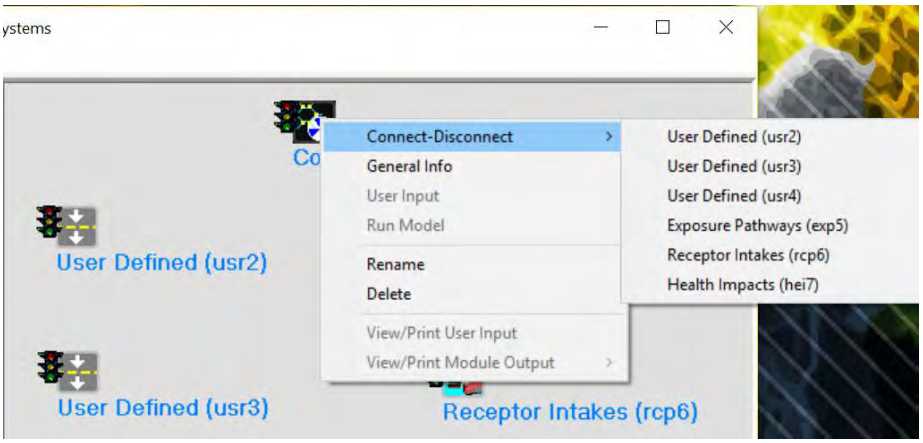


Save the file as: Example5.gid in the Frames > Examples directory or in another directory of your choice.

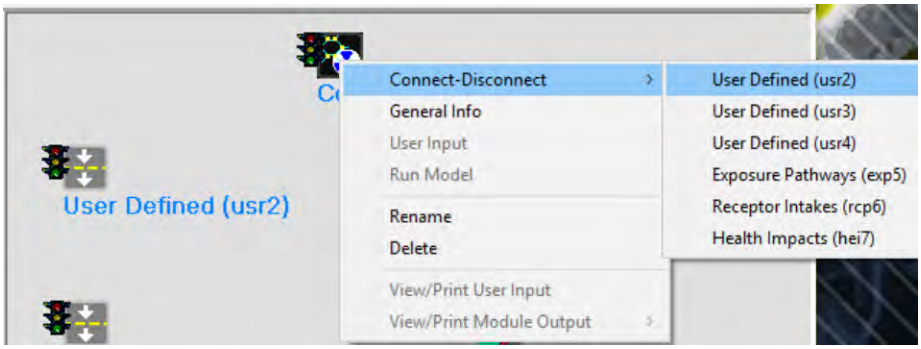


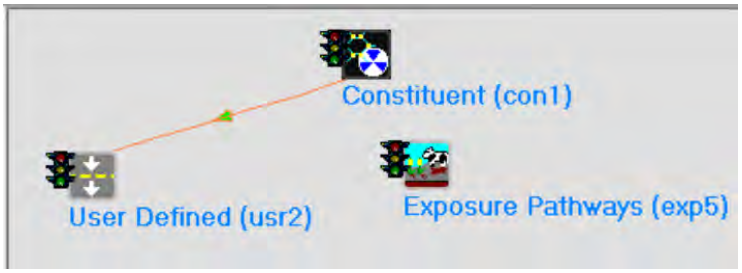
3.1.3 Add Connections to Example 5

Icon 1: To add connections between the icons start with Constituent (con1) icon. Right click on the icon and select Connect-Disconnect. A window opens showing all of the icons to be connected. Note that the icon names are numbered sequentially in the order they were added to the model.



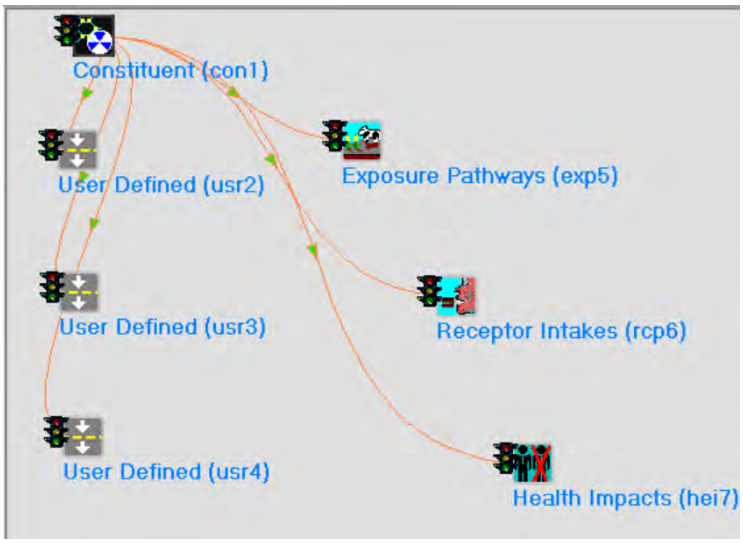
Select User Defined (usr2) as the first connection.





Notice that the line connecting the two icons is shown in orange and the green arrow in the middle of the line shows the direction of the connection from (con1) to (usr2).

The constituent data base must be connected to each icon. Sequentially right click on Constituent (con1) and connect to each icon. The result shows Constituent (con1) connections to each icon. Notice that Constituent (con1) has been moved slightly to the left to show the connections more clearly with less overlap.



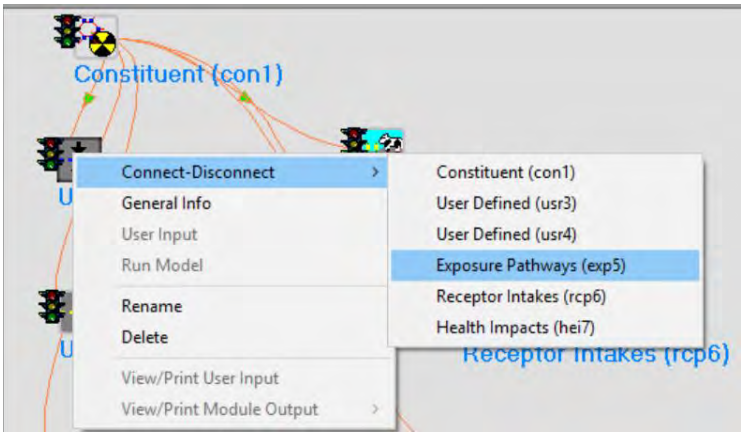
The next step is to connect the user defined icons to the Exposure Pathways (exp5).

Icon2: Right click on User Defined (usr2) and connect to Exposure Pathways (exp5).

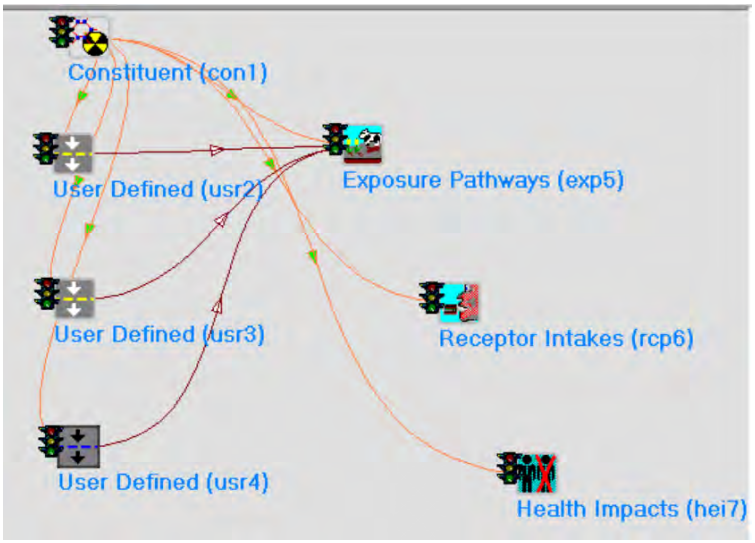
Icon3: Right click on User Defined (usr3) and connect to Exposure Pathways (exp5).

Icon 4: Right click on User Defined (usr4) and connect to Exposure Pathways (exp5).

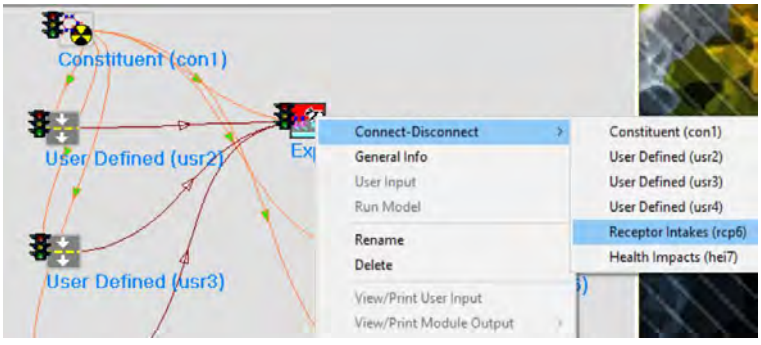
Note that it is also possible to connect icons by placing the cursor on the starting icon, holding down the shift key and left mouse button simultaneously, and dragging from the starting icon to the icon to be connected to it. The connecting lines may be disconnected following the same procedure(s).



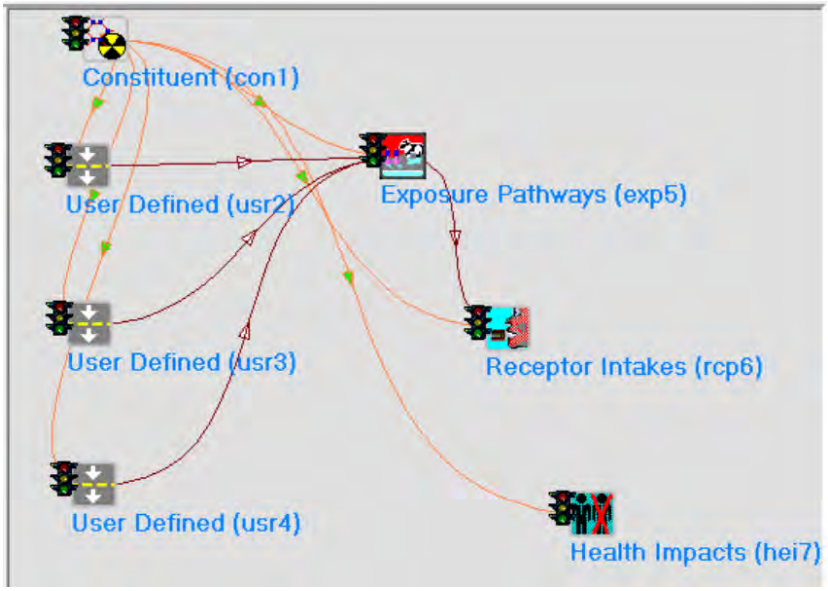
The connections are shown as a brown arrow from each User Defined to Exposure Pathways (exp5).



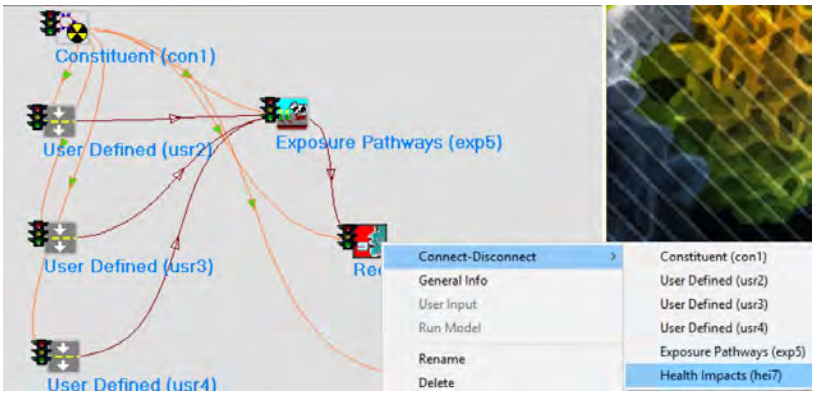
Icon 5: The next step is to connect Exposure Pathways (exp5) to Receptor Intakes (rcp6) by right clicking on Exposure Pathways (exp5) and selecting Receptor Intakes (rcp6).



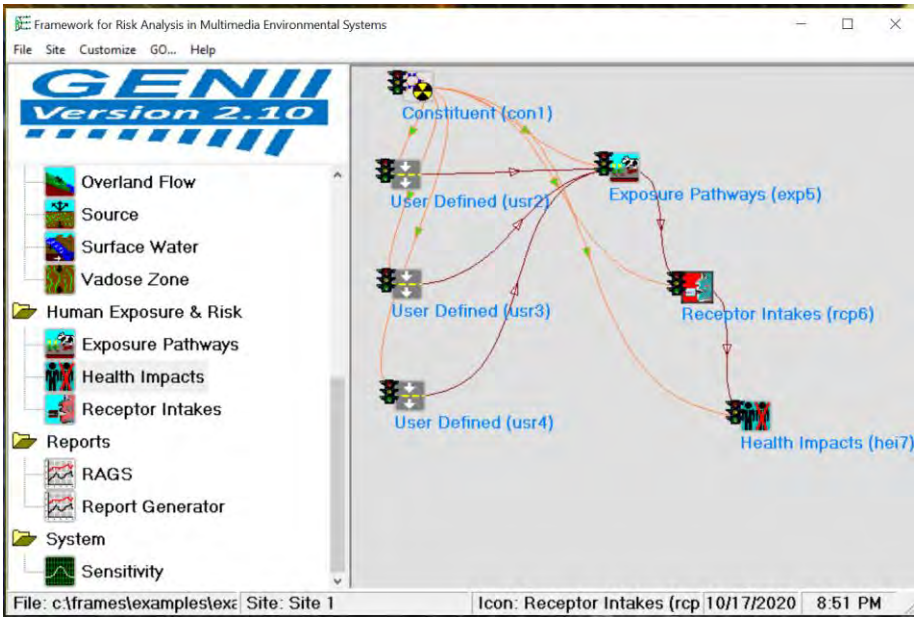
The connection is shown as a brown arrow from Exposure Pathways (exp5) to Receptor Intakes (rcp6).



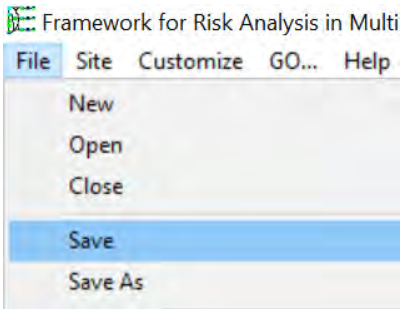
Icon 6: The next step is to connect Receptor Intakes (rcp6) to Health Impacts (hei7) by right clicking on Receptor Intakes (rcp6) and selecting Health Impacts (hei7).



The connection is shown as a brown arrow from Receptor Intakes (rcp6) to Health Impacts (hei7). The resulting wholly connected model is shown below.



Save the model by selecting File along the top ribbon and then selecting Save.

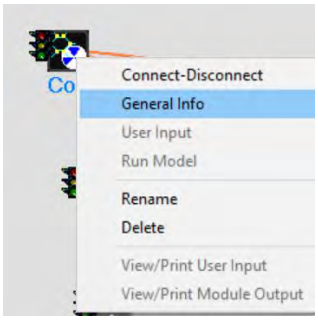


3.1.4 Add General Information (select models) to Example 5

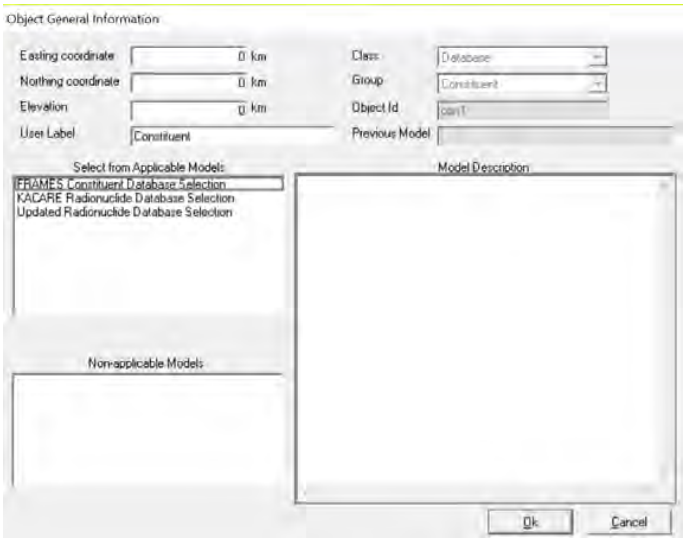
This procedure will select models for each of the seven icons sequentially. The information will be added via General Info.

3.1.4.1 General Information for Icon 1 Constituent (con1) - Database

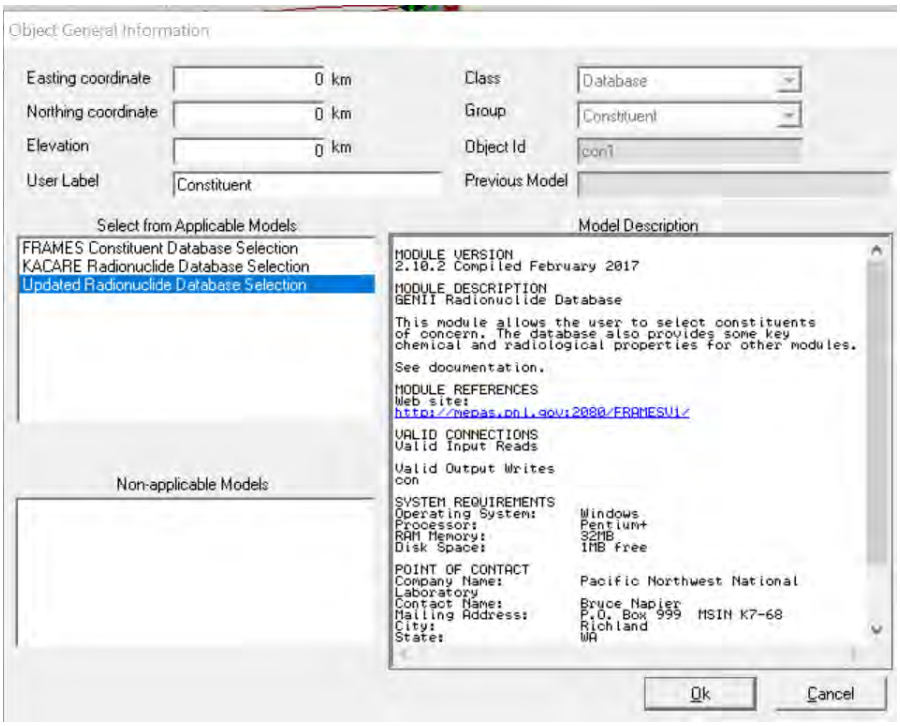
Icon 1: Right click on Constituent (con1) and the following window opens. Select General Info.



The following Object General Information window opens.



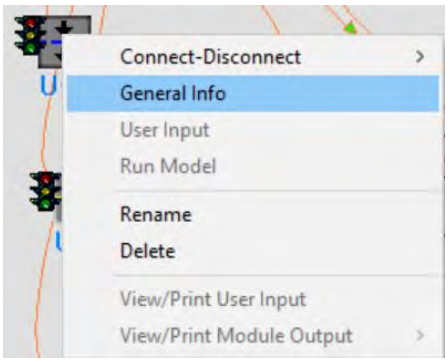
Under Select from Applicable Models three options are provided: FRAMES Constituent Database Selection, KACARE Radionuclide Database Selection, and Updated Radionuclide Database Selection. Select the third model: Updated Radionuclide Database Selection. The Model Description is shown in the window to the right. Select Ok.



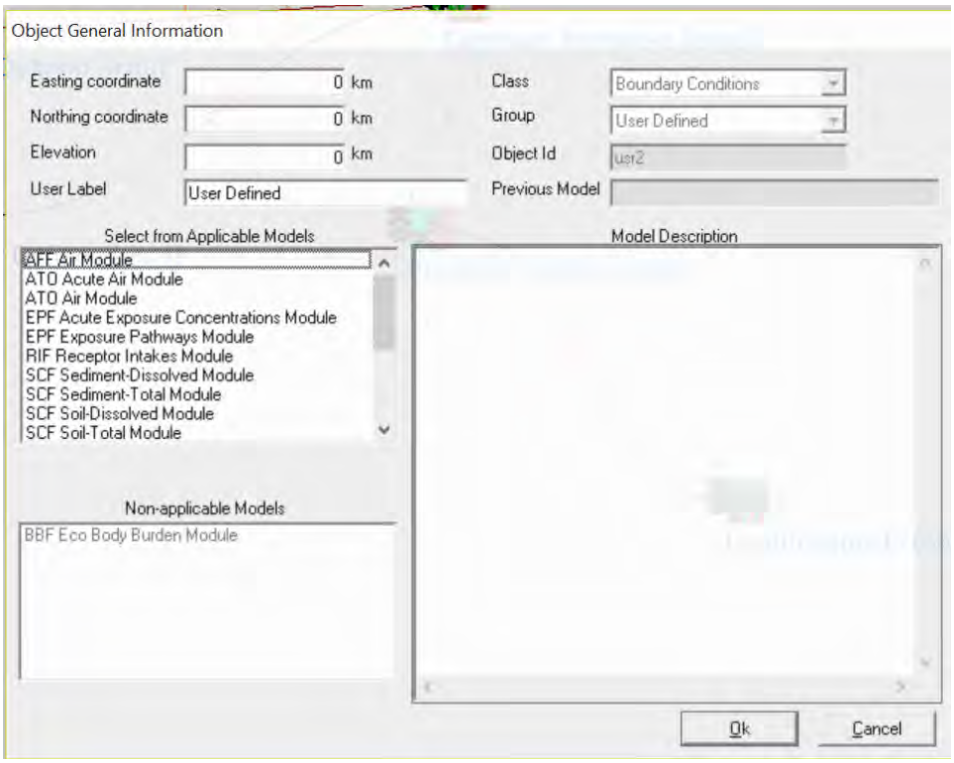
After selecting Ok, the model window closes and the icon Constituent (con1) now shows a red light in the “traffic signal”.

3.1.4.2 General Information for Icon 2 User Defined (usr2) – Boundary Conditions

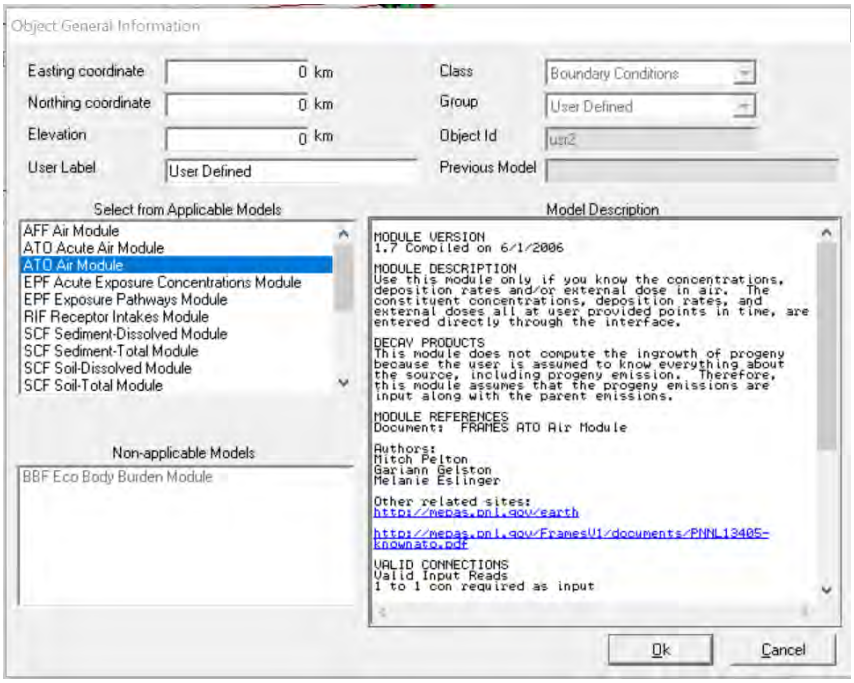
Icon 2: Right click on User Defined (usr2) and the following window opens. Select General Info.



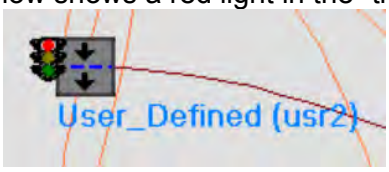
The following window Object General Information Opens. A list of models is provided in the Select from Applicable Models window. Not all models are shown below.



For this example, select the third applicable model listed: ATO Air Module. Upon selection the Model Description populates the window to the right. Select Ok to use this model.

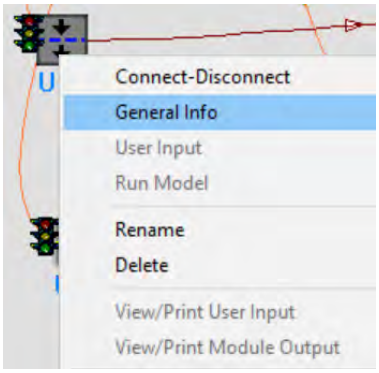


After selecting Ok, the Object General Information window closes, and the icon User Defined (usr2) now shows a red light in the “traffic signal”.

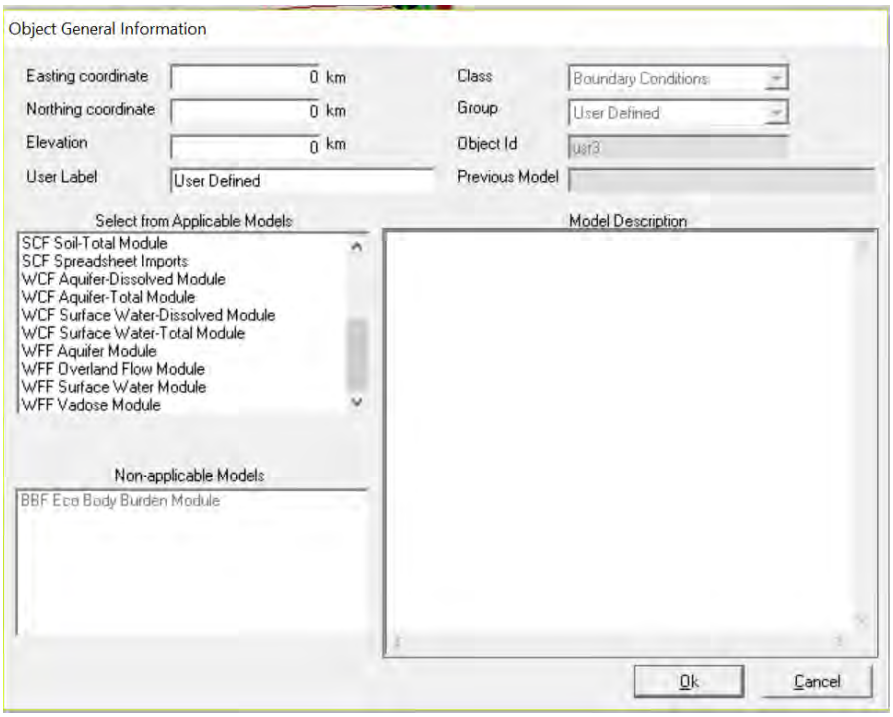


3.1.4.3 General Information for Icon 3 User Defined (usr3) – Boundary Conditions

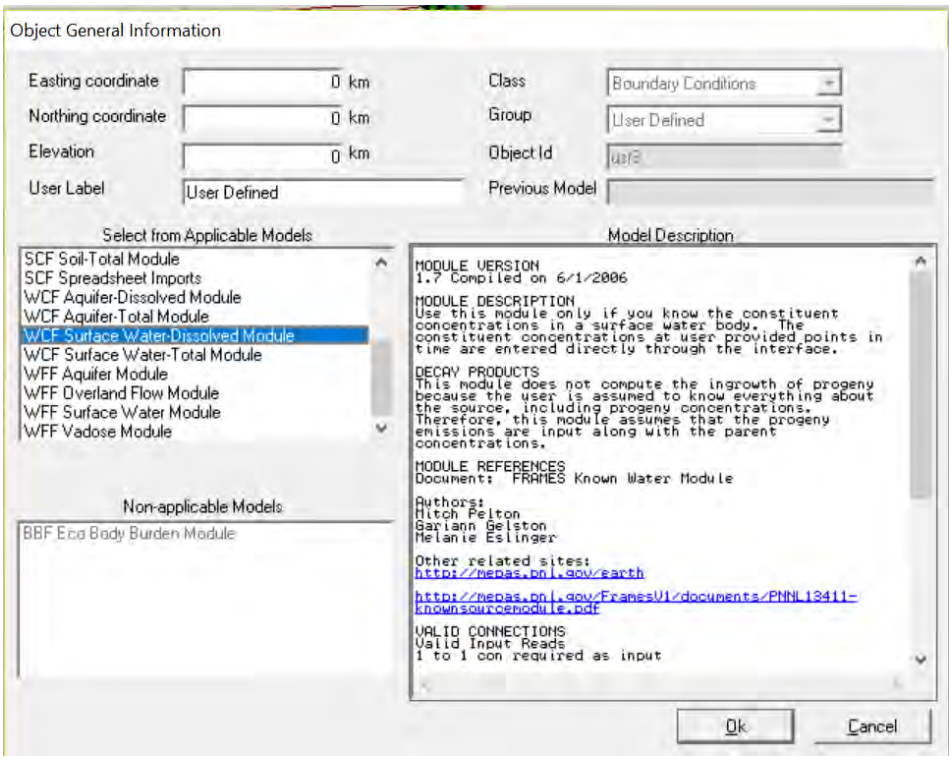
Icon 3: Right click on User Defined (usr3) and the following window opens. Select General Info.



The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Scroll down the list to see additional models.



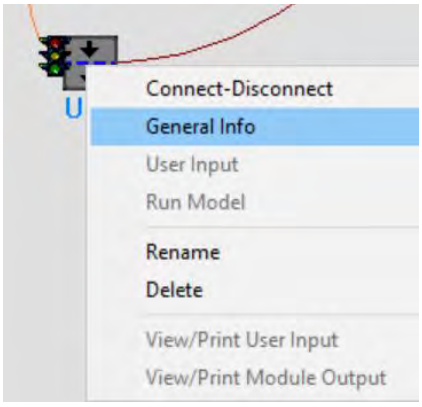
For this example, select the sixth model from the bottom: WCF Surface Water-Dissolved Module. Upon selection the Model Description populates the window to the right. Select Ok to use this model.



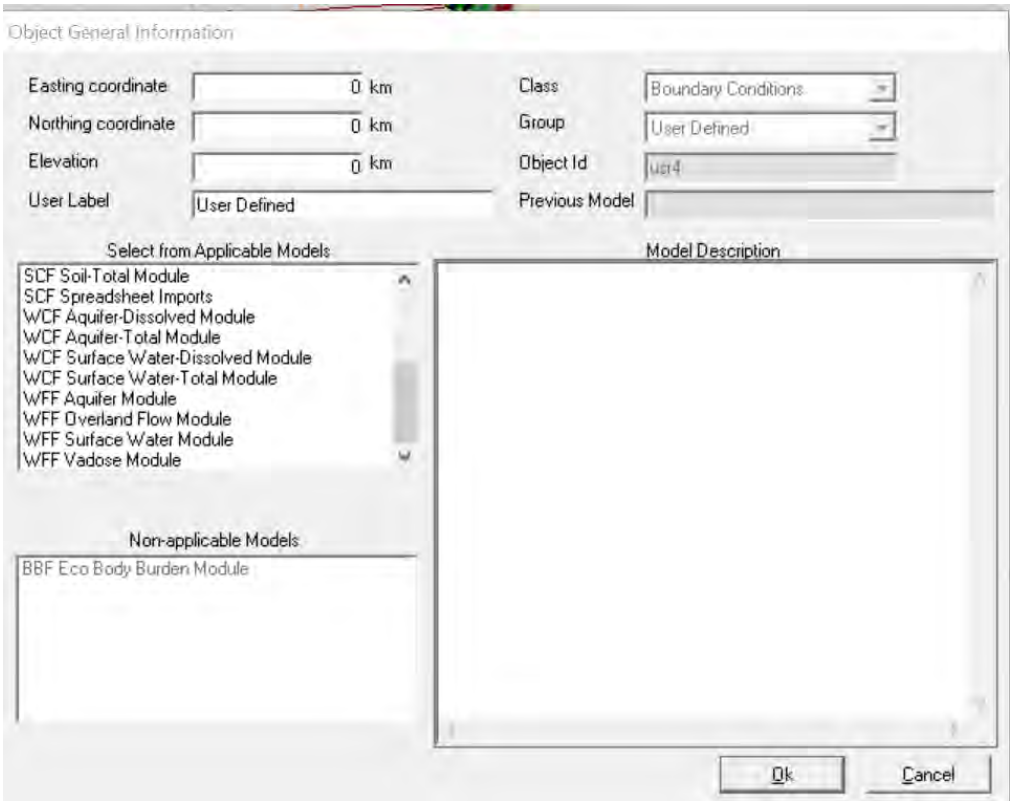
After selecting Ok, the Object General Information window closes, and the icon User Defined (usr3) now shows a red light in the “traffic signal”.

3.1.4.4 General Information for Icon 4 User Defined (usr4) – Boundary Conditions

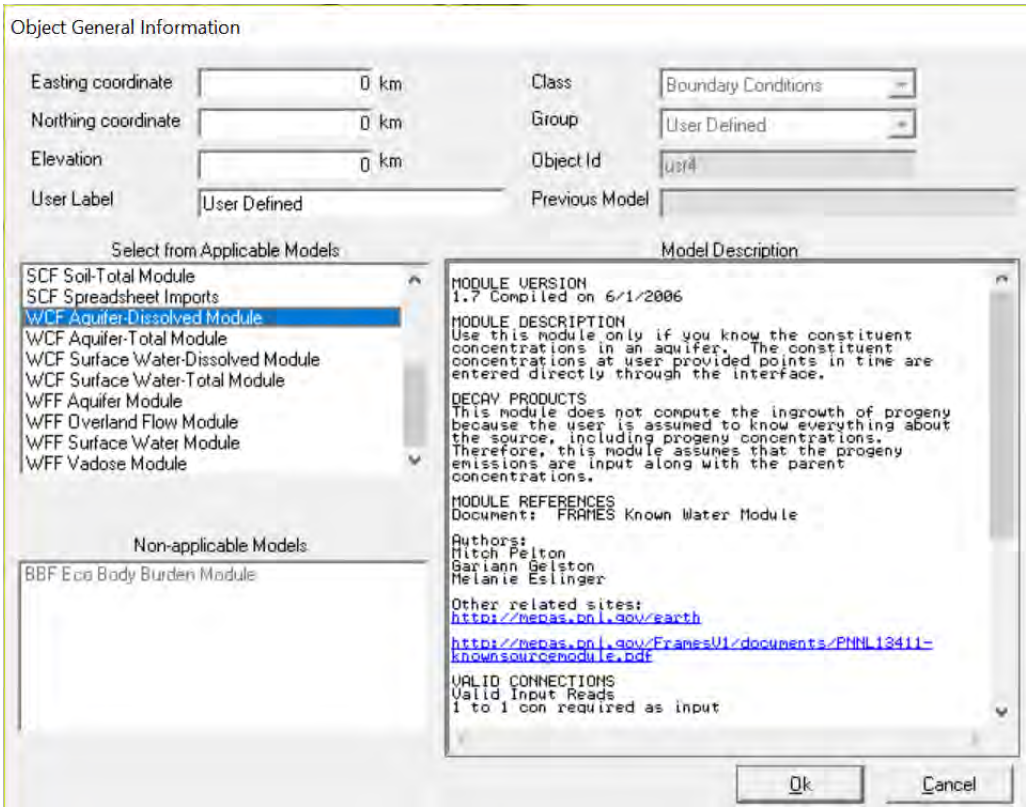
Icon 4: Right click on User Defined (usr4) and the following window opens. Select General Info.



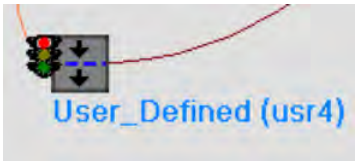
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Scroll down the list to see additional models.



For this example, select the eighth model from the bottom: WCF Aquifer-Dissolved Module. Upon selection the Model Description populates the window to the right. Select Ok to use this model.

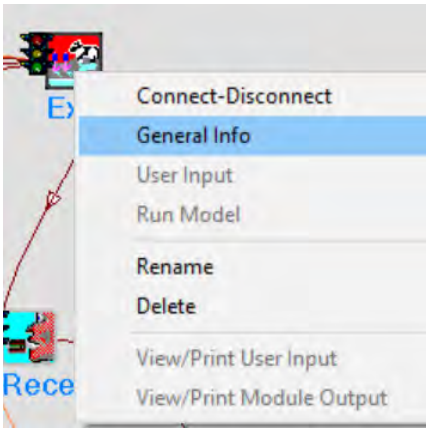


After selecting Ok, the Object General Information window closes, and the icon User Defined (us4) now shows a red light in the “traffic signal”.

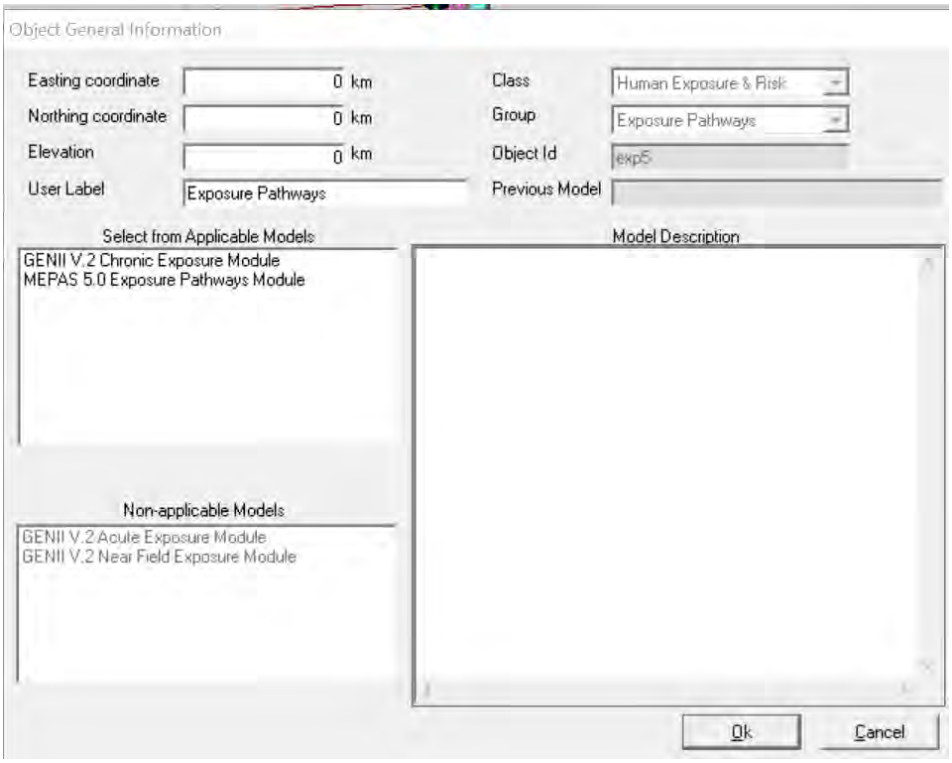


3.1.4.5 General Information for Icon 5 Exposure Pathways (exp5) – Human Exposure & Risk

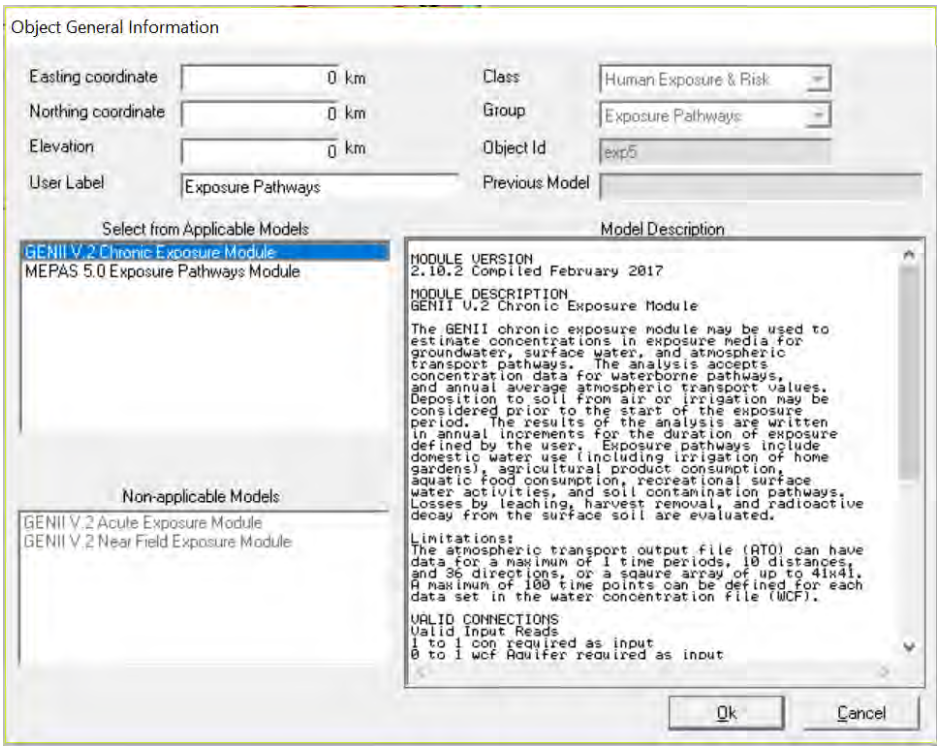
Icon 5: Right click on Exposure Pathways (exp5) and the following window opens. Select General Info.



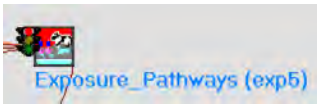
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window.



For this example, select the first model: GENII V.2 Chronic Exposure Module. Upon selection the Model Description populates the window to the right. Select Ok to use this model.

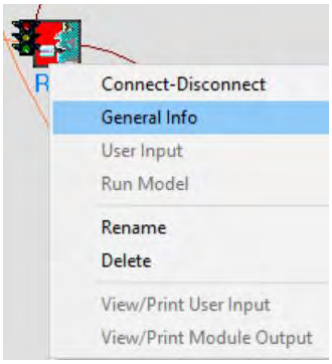


After selecting Ok, the Object General Information window closes and the icon Exposure Pathways (exp5) now shows a red light in the “traffic signal”.

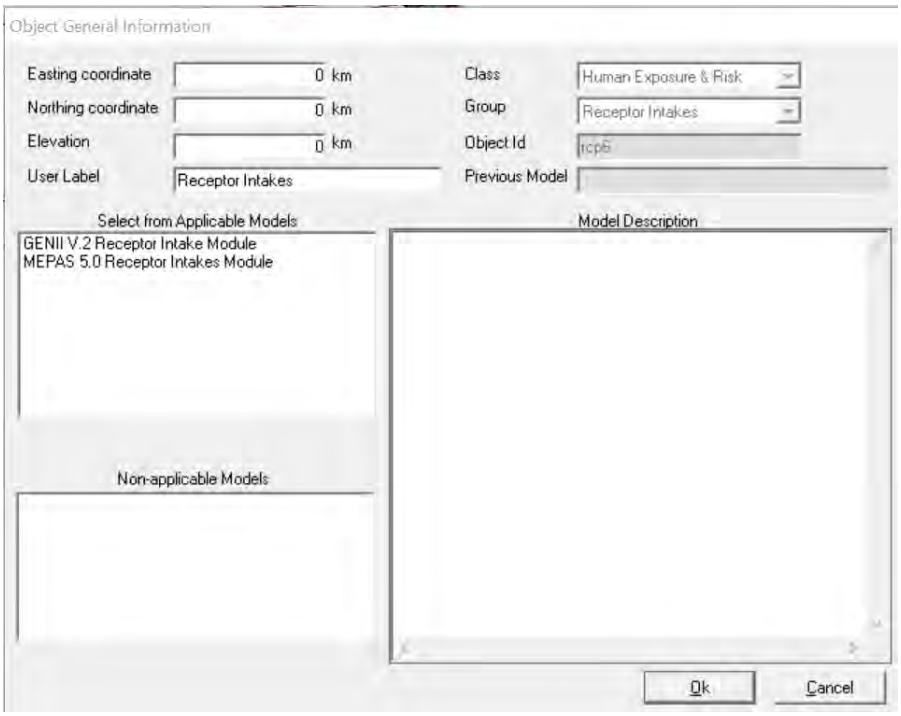


3.1.4.6 General Information for Icon 6 Receptor Intakes (rcp6) – Human Exposure & Risk

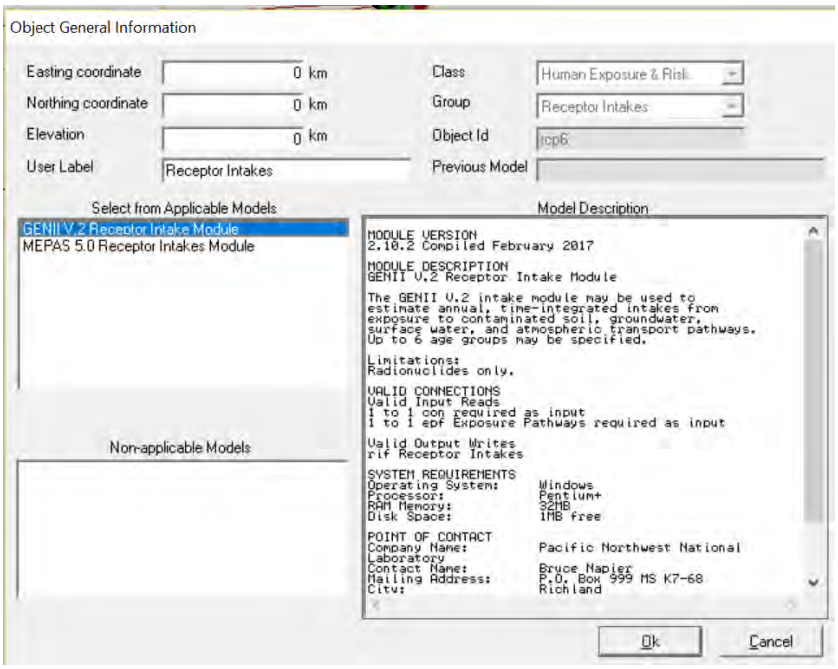
Icon 6: Right click on Receptor Intakes (rcp6) and the following window opens. Select General Info.



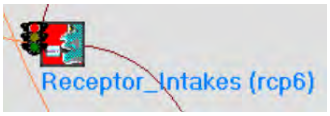
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window.



For this example, select the first model: GENII V.2 Receptor Intake Module. Upon selection the Model Description populates the window to the right. Select Ok to use this model.

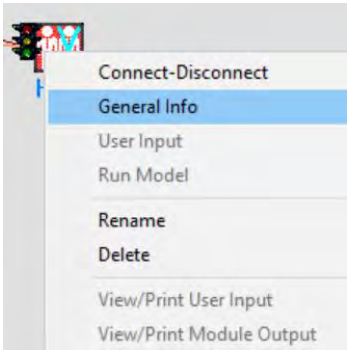


After selecting Ok, the Object General Information window closes and the icon Receptor Intakes (rcp6) now shows a red light in the “traffic signal”.

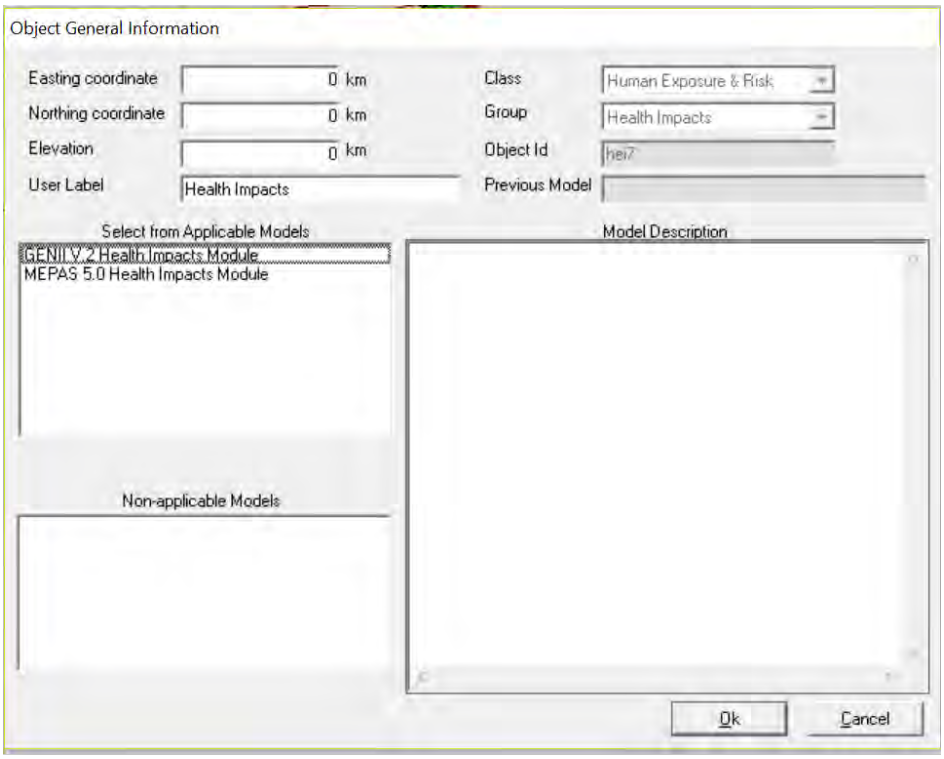


3.1.4.7 General Information for Icon 7 Health Impacts (hei7) – Human Exposure & Risk

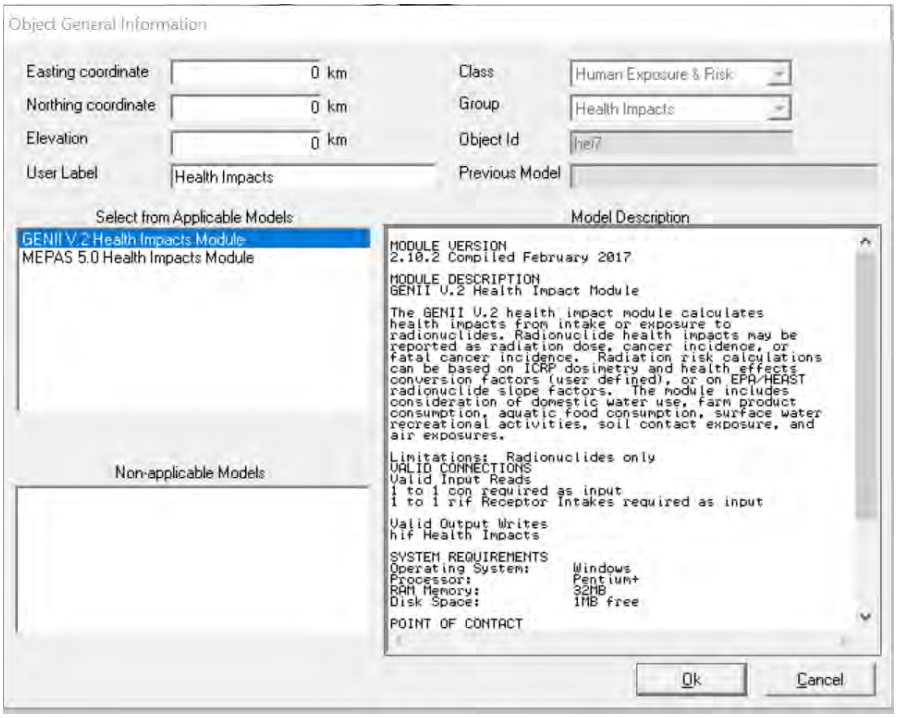
Icon 7: Right click on Health Impacts (hei7) and the following window opens. Select General Info.



The following window Object General Information Opens. A list of models is provided in the Select from Applicable Models window.



For this example, select the first model: GENII V.2 Health Impacts Module. Upon selection the Model Description populates the window to the right. Select Ok to use this model.



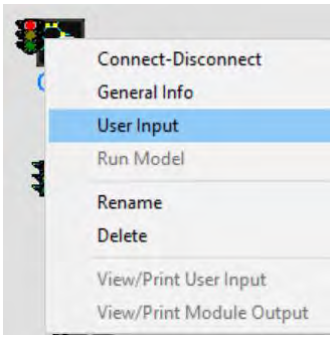
After selecting Ok, the Object General Information window closes, and the icon Health Impacts (hei7) now shows a red light in the “traffic signal”.

3.1.5 Add User Input to Example 5

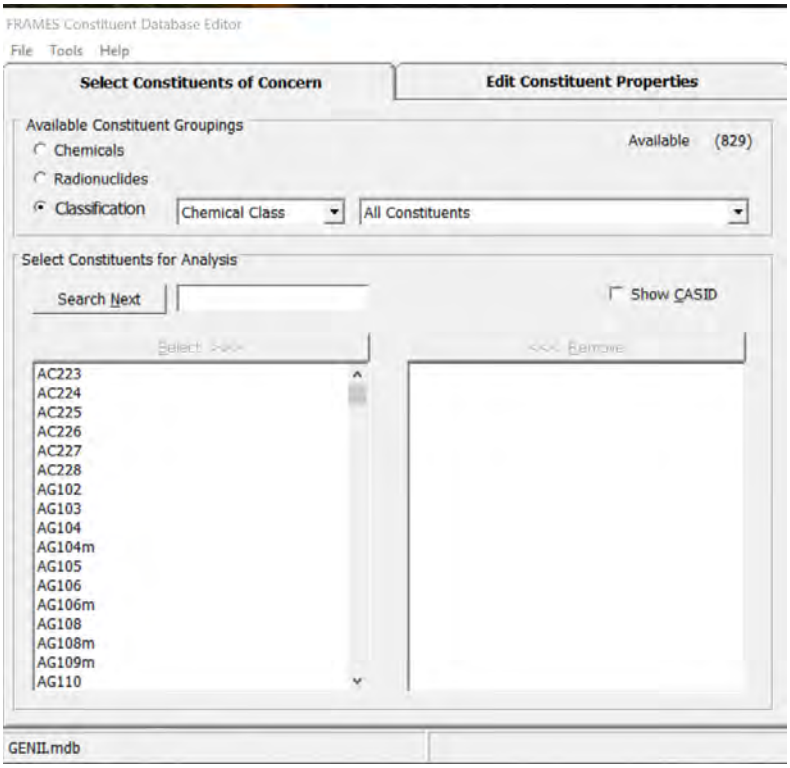
This section will describe entering data for each of the models.

3.1.5.1 User Input for Icon 1 Constituent (con1) - Database

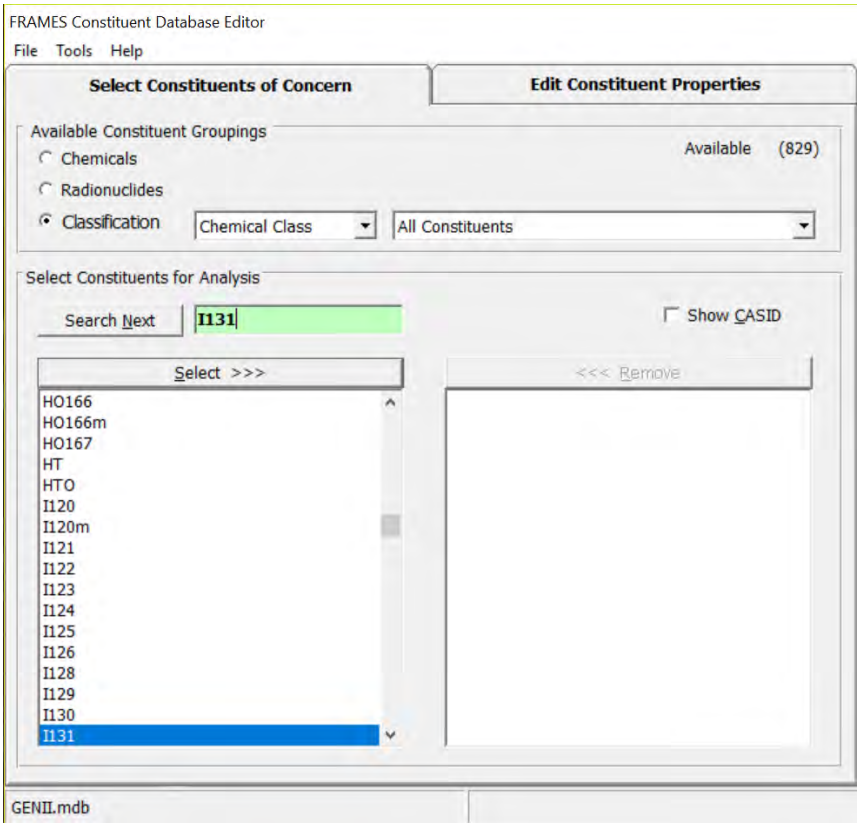
Icon 1: Right click on Constituent (con1) and the following window opens. Select User Input.



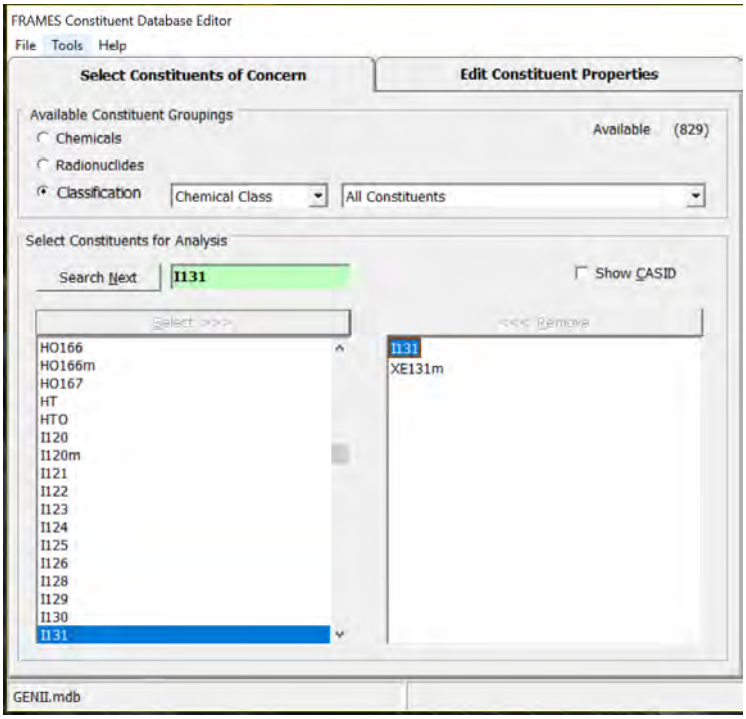
The following window opens and is displaying Select Constituents of Concern:



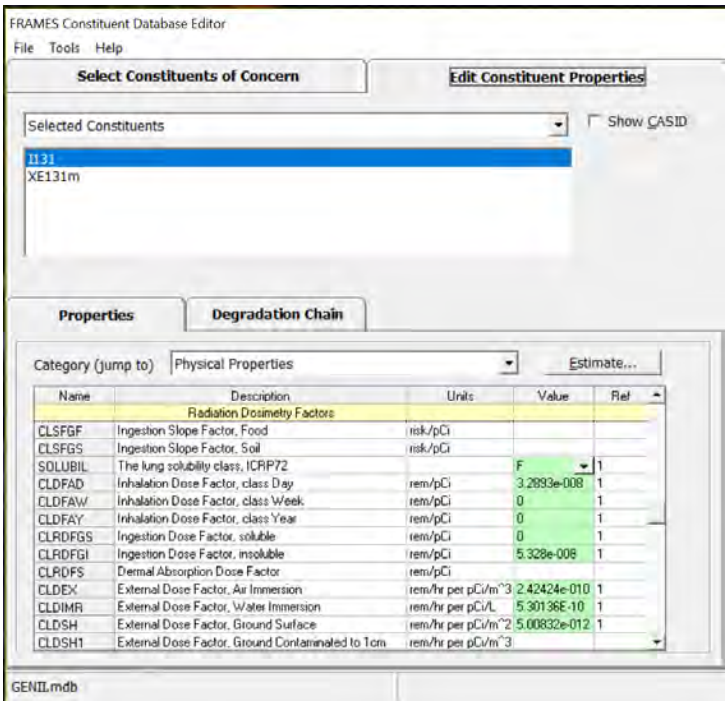
Under Select Constituents for Analysis add ^{131}I as I131 to the box to the right of Search Next. The background of I131 turns green and I131 is highlighted in blue in the list below.



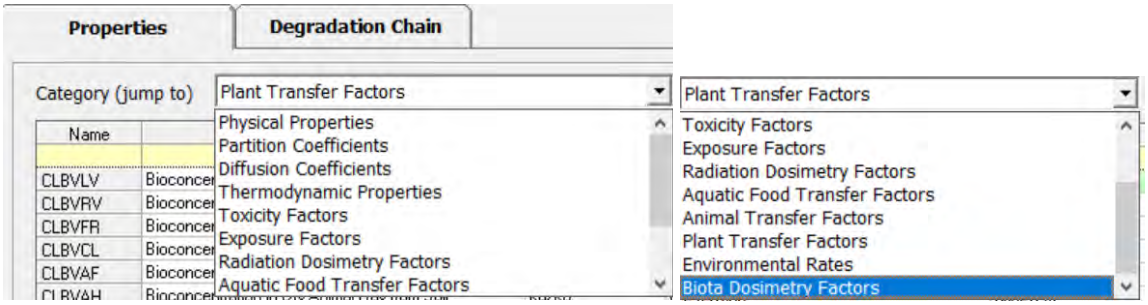
Click on Select >>> and I131 and XE131m are added to the window on the right; note that any decay progeny of a selected radionuclide are automatically added and should not be removed.



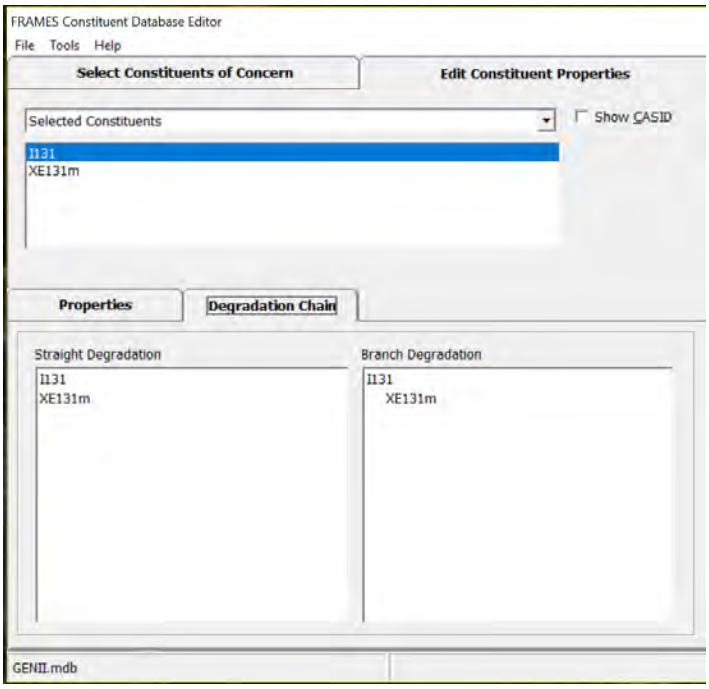
Select tab Edit Constituent Properties. The two Selected Constituents I131 and XE131m are shown in the window. Under tab Properties the heading Category (jump to) shows Physical Properties. Values shown with a green background are prepopulated based on the selection of I131 and XE131m. An example is shown below.



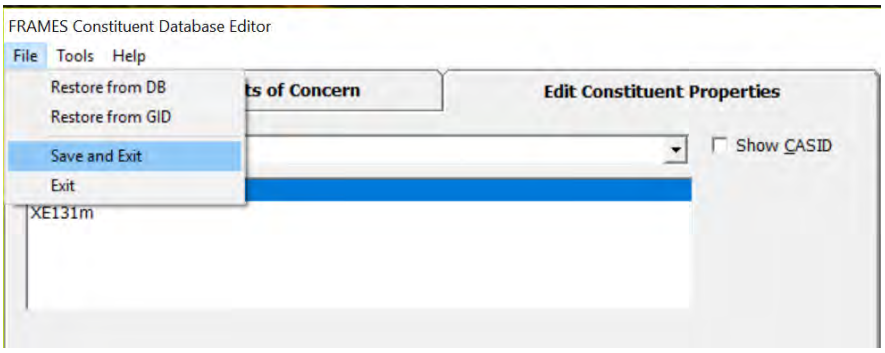
Category (jump to) includes many categories of data as shown below that are prepopulated.



Selecting Degradation Chain under tab Edit Constituent Properties shows the two selected constituents. They are listed under Straight Degradation and Branch Degradation.



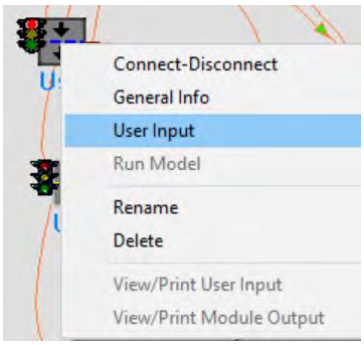
To select the data, go to File and select Save and Exit.



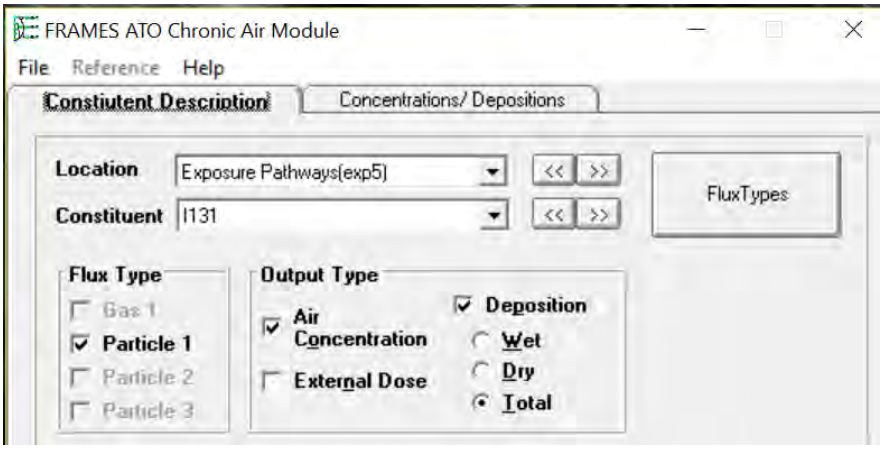
After selecting Save and Exit the window closes. Observe that the Constituent (con1) traffic signal has switched from red to green.

3.1.5.2 User Input for Icon 2 User Defined (usr2) – Boundary Conditions

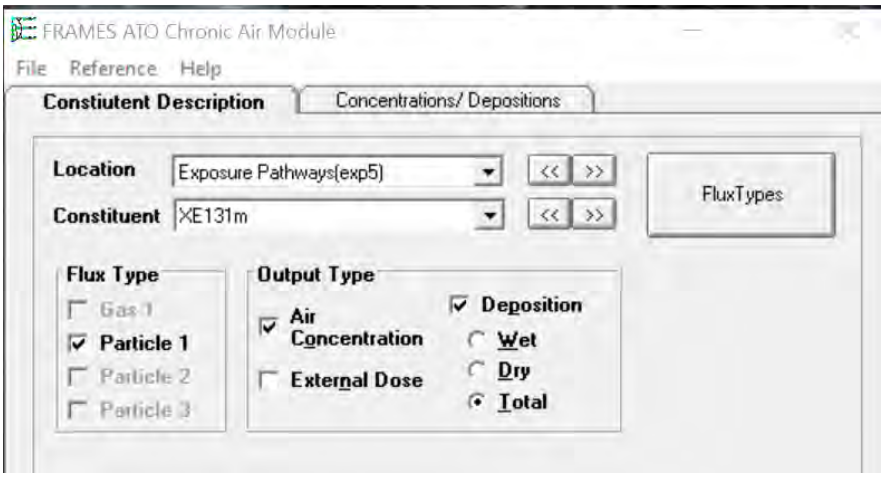
Icon 2: Right click on User Defined (usr2) and the following window opens. Select User Input.



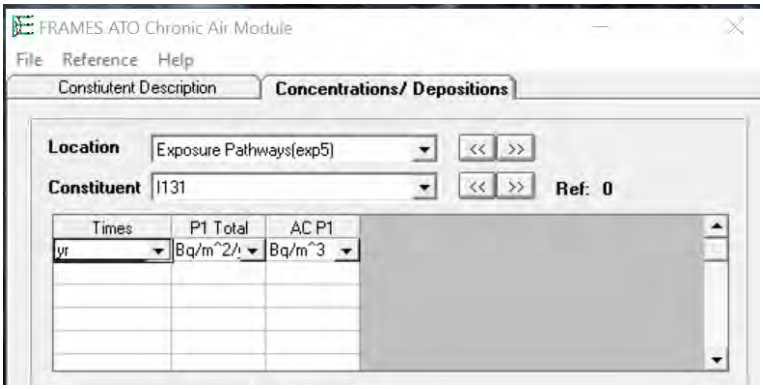
The FRAMES ATO Chronic Air Module window opens showing tab Constituent Description.



Items selected are Location Exposure Pathways (exp5), Constituent I131. Flux Type Particle 1 is checked. Output Type Air Concentration is checked. Deposition is checked and Total is selected. Only one location is available to select. Using the dropdown arrow select XE131m under Constituent. The same data is shown for this constituent.



Select tab Concentrations/ Depositions, and the following window opens.

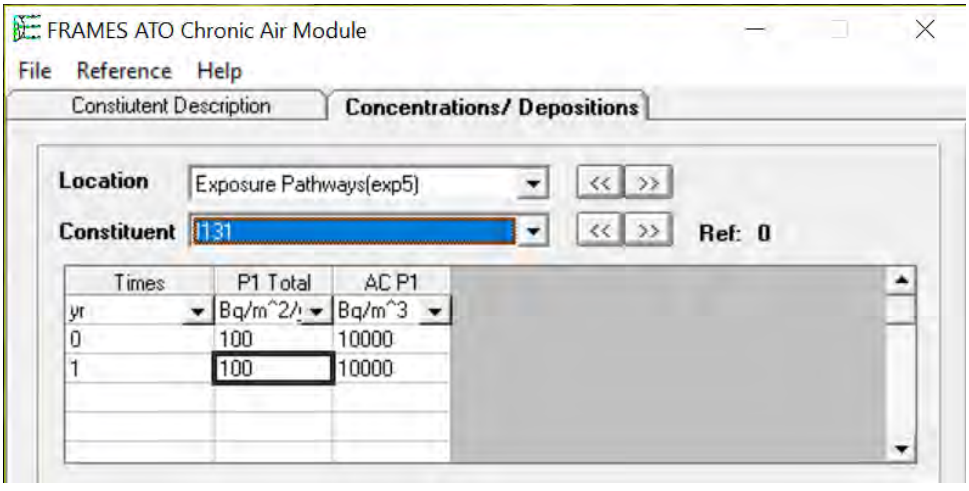


It is necessary to add a start and end time, P1 Total (total atmospheric deposition rate) and AC P1 (air concentration) data for Constituent I131 and for Constituent XE131m.

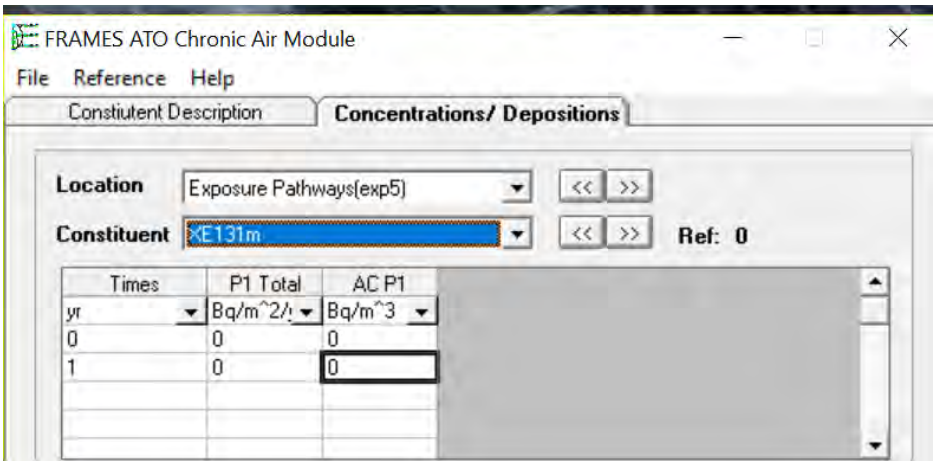
Enter the following data

Constituent	Times	P1 Total	AC P1
--	yr	Bq/m^2/yr	Bq/m^3
I131	0	100	10000
I131	1	100	10000
XE131m	0	0	0
XE131m	1	0	0

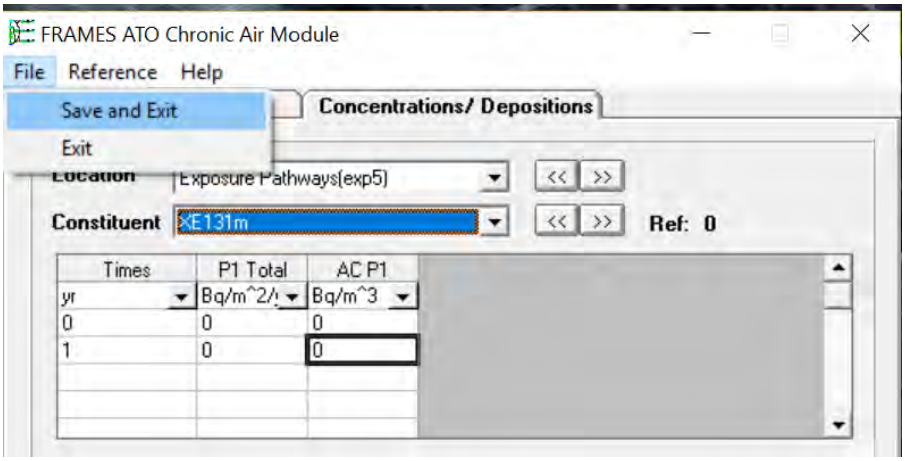
For I131



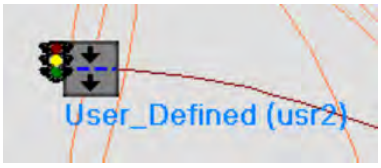
Using the drop down select Constituent XE131m and enter the data.



Select File Save and Exit

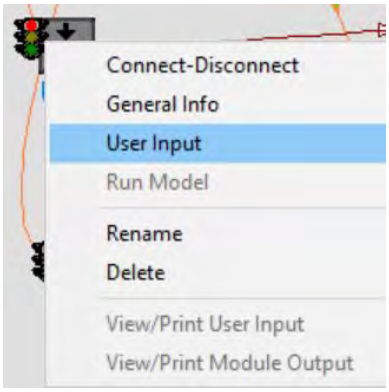


After selecting Save and Exit, the FRAMES ATO Chronic Air Module window closes. Observe the icon User Defined (usr2) traffic signal switched from red to yellow.

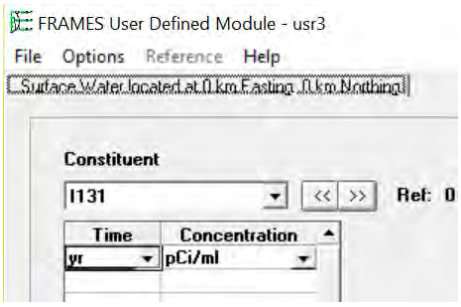


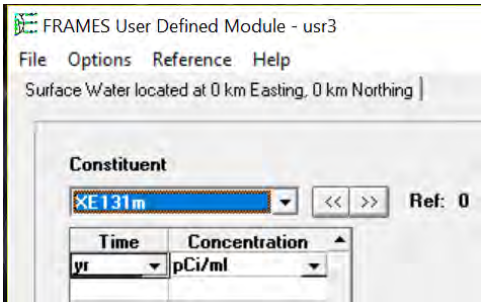
3.1.5.3 User Input for Icon 3 User Defined (usr3) – Boundary Conditions

Icon 3: Right click on User Defined (usr3) and the following window opens. Select User Input.



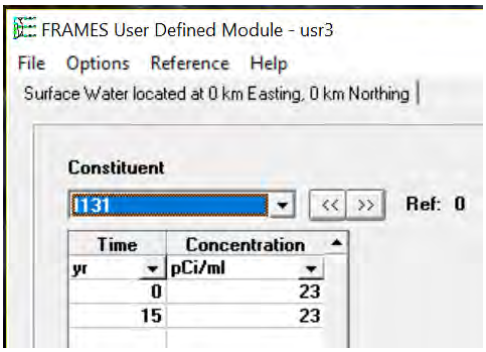
The FRAMES User Defined Module – usr3 opens showing Constituent. I131 is shown. Using the drop-down arrow to switch to show XE131m. Both are shown below.

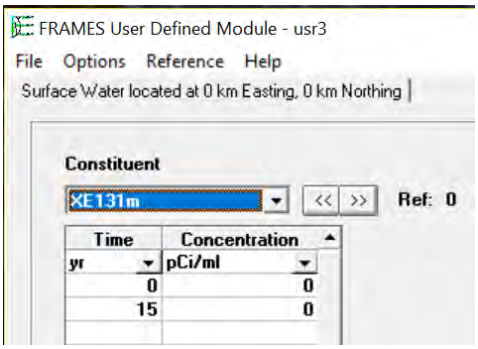




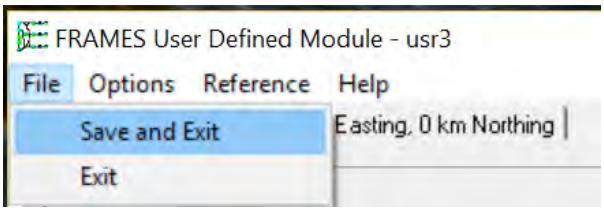
Enter the following data

I131	I131	XE131m	XE131m
Time	Concentration	Time	Concentration
yr	pCi/ml	yr	pCi/ml
0	23	0	0
15	23	15	0

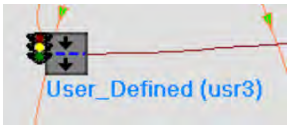




To save the data select File Save and Exit.

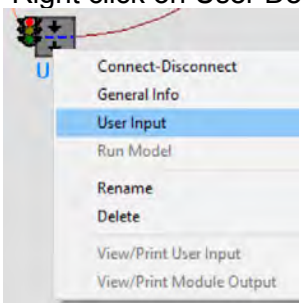


After selecting Save and Exit, the FRAMES User Defined Module – usr3 closes. The icon User Defined (usr3) traffic signal switched from red to yellow.

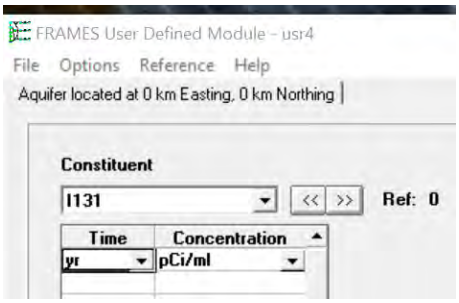


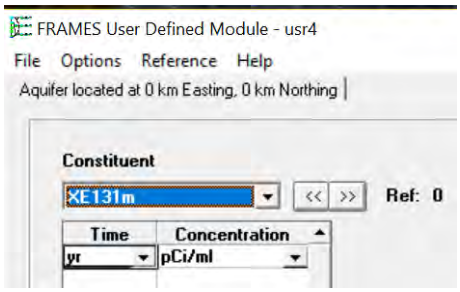
3.1.5.4 User Input for Icon 4 User Defined (usr4) – Boundary Conditions

Icon 4: Right click on User Defined (usr4) and the following window opens. Select User Input.



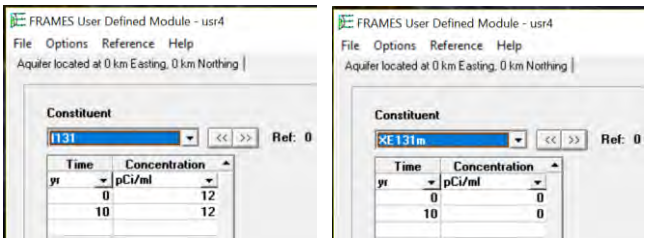
The FRAMES User Defined Module – usr4 opens showing Constituent. I131 is shown. Using the drop-down arrow to switch to show XE131m. Both are shown below.



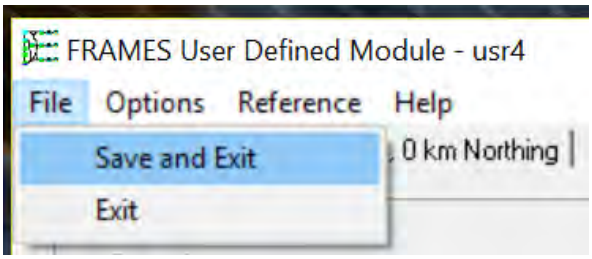


Enter the following data

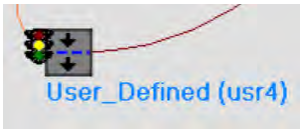
I131	I131	XE131m	XE131m
Time	Concentration	Time	Concentration
yr	pCi/ml	yr	pCi/ml
0	12	0	0
10	12	10	0



To save the data select File Save and Exit.

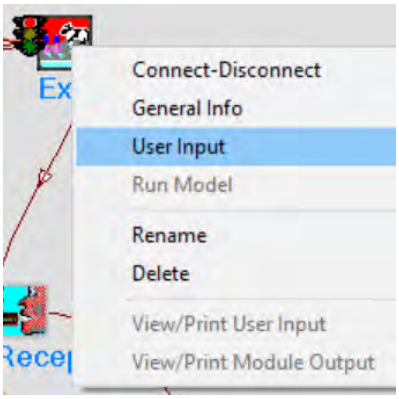


After selecting Save and Exit, the FRAMES User Defined Module – usr4 closes. Observe the icon User Defined (usr4) traffic signal switched from red to yellow.

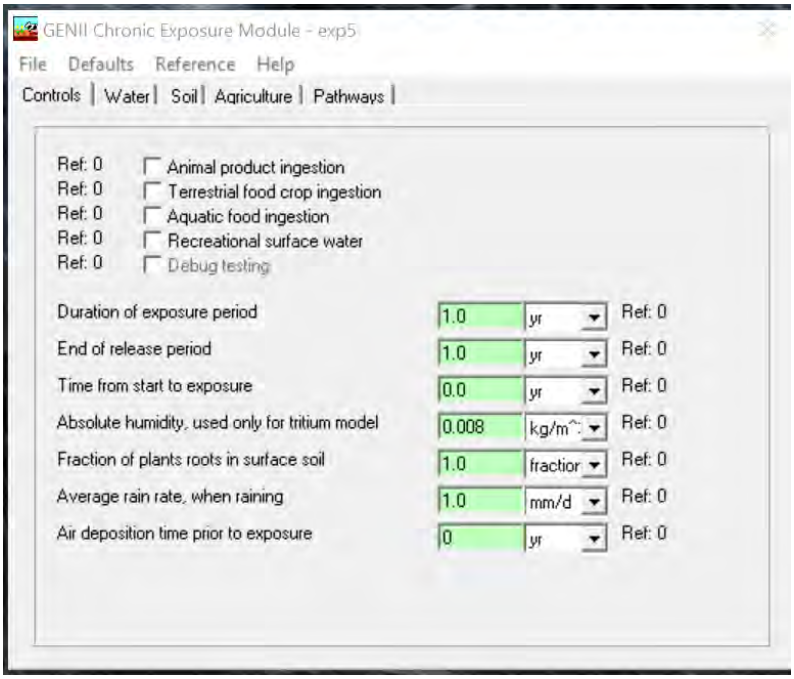


3.1.5.5 User Input for Icon 5 Exposure Pathways (exp5) – Human Exposure & Risk

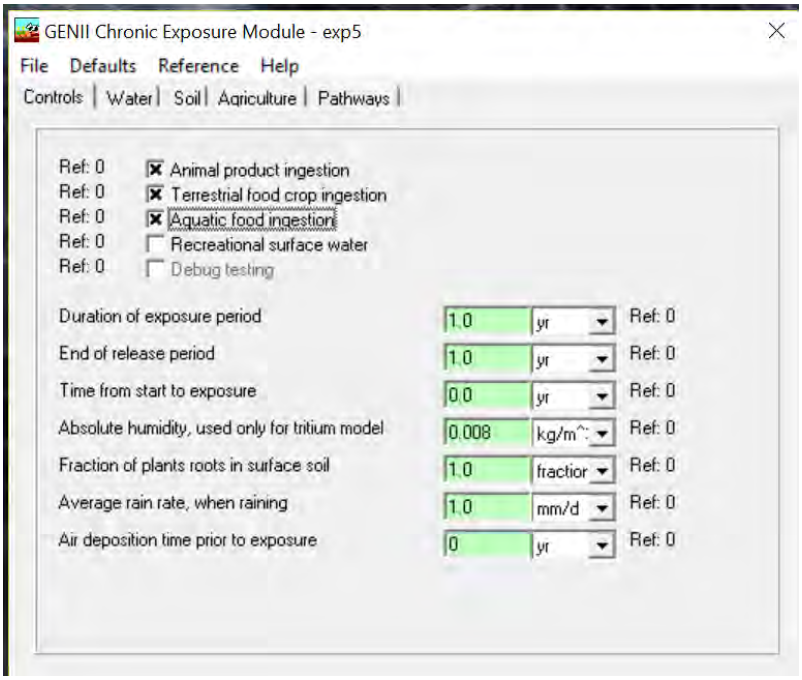
Icon 5: Right click on Exposure Pathways (exp5) and the following window opens. Select User Input.



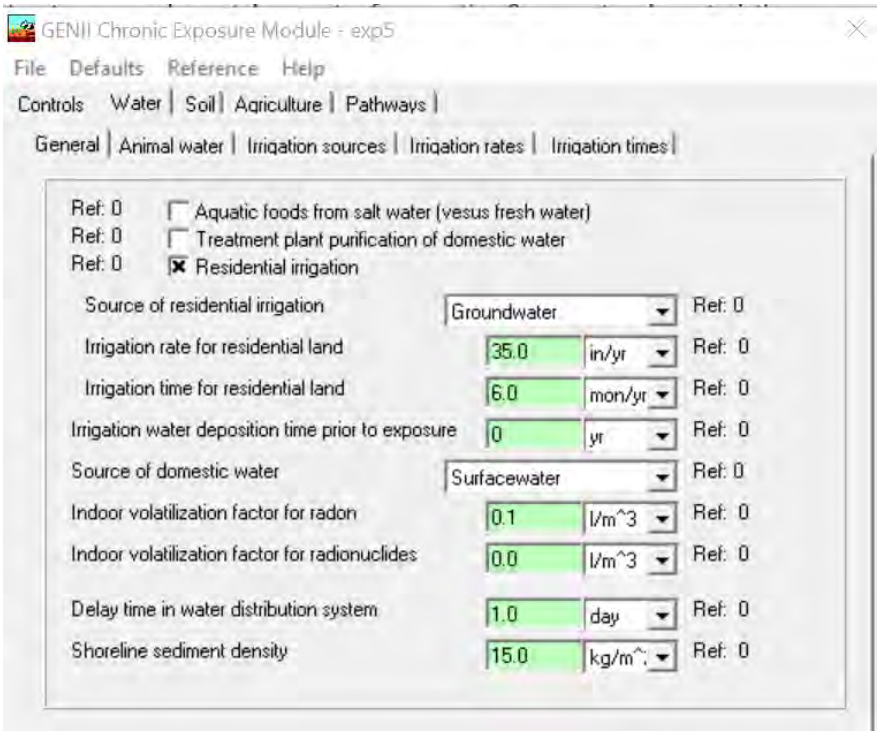
The GENII Chronic Exposure Module – exp5 opens.



For this model in the Controls tab select the first three: Animal product ingestion, Terrestrial food crop ingestion, and Aquatic food ingestion.

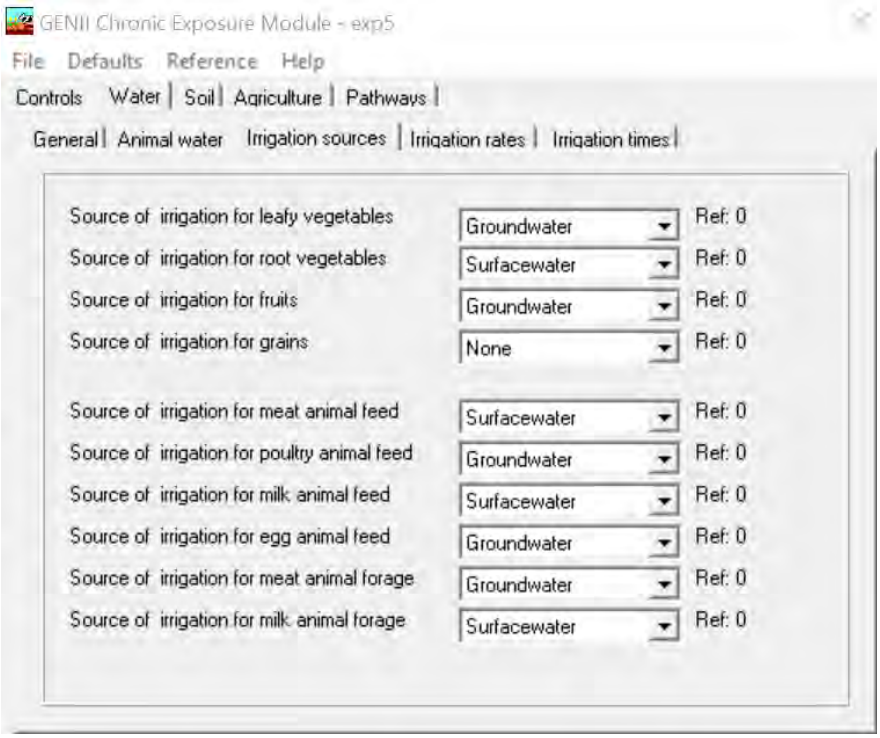


In the Water tab, General tab select Residential irrigation. For the Source of residential irrigation select Groundwater. For the Source of domestic water select Surfacewater.



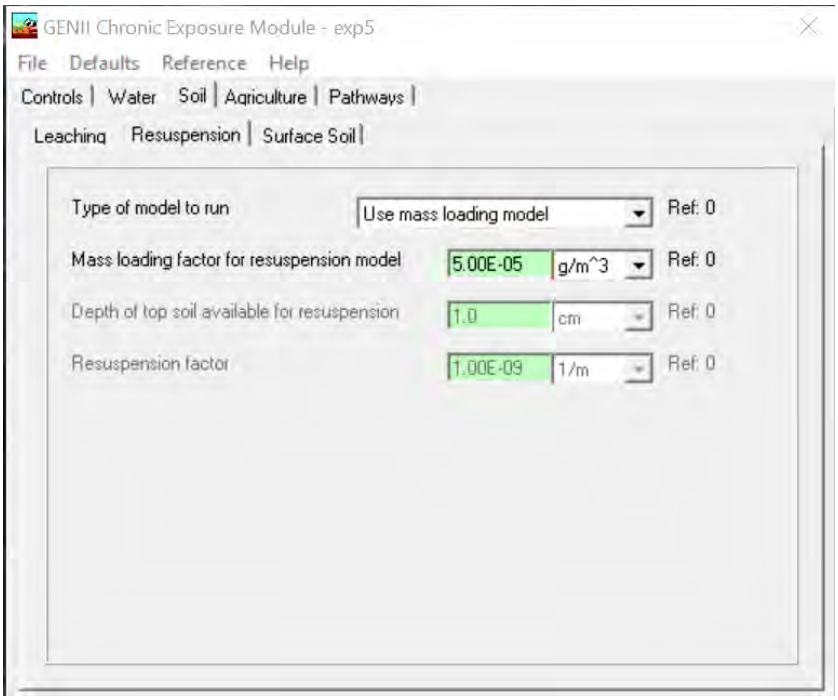
In the Water tab: Animal water no change;

In the Water tab: Irrigation sources, ground water is selected for leafy vegetables, fruits, poultry animal feed, egg animal feed, and meat animal forage; surface water is selected for root vegetables, meat animal feed, milk animal feed, and milk animal forage; none is selected for grains as shown below:

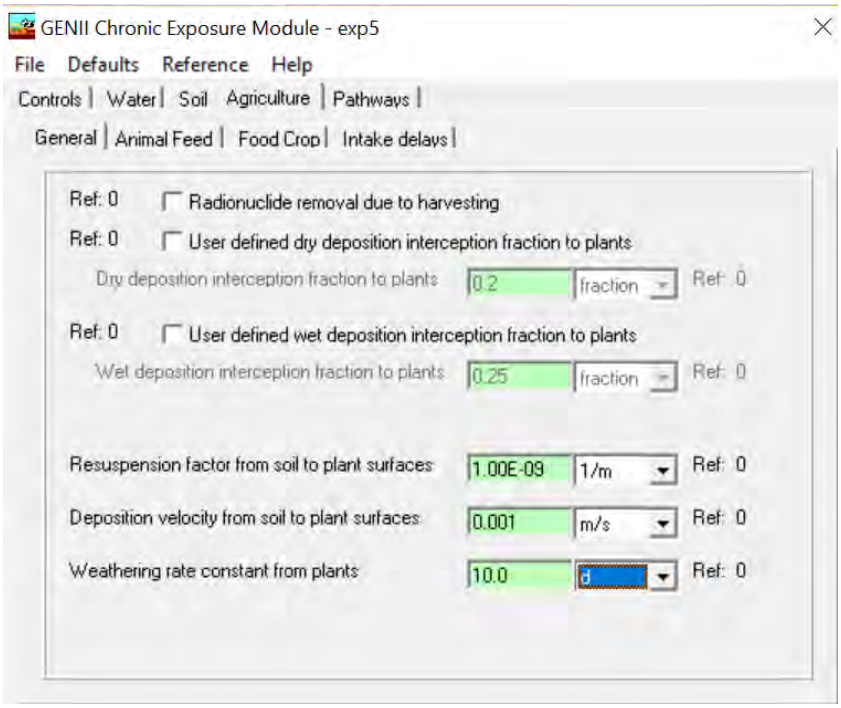


In the Water tab: irrigation rates no change; irrigation times no change.

In the Soil tab: Leaching no change; surface soil no change. In the Soil tab, Resuspension select Use mass loading model.

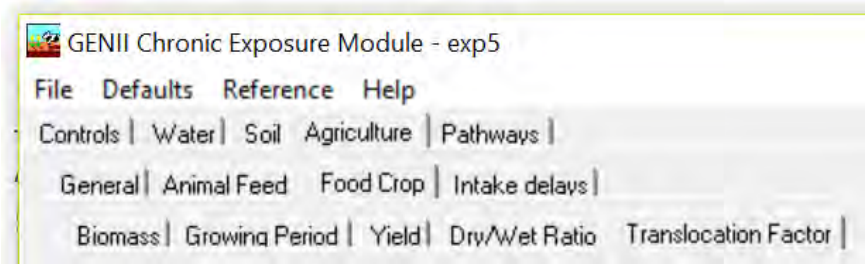


In the Agriculture tab, General tab remove check for Radionuclide removal due to harvesting with the resulting window as shown below.

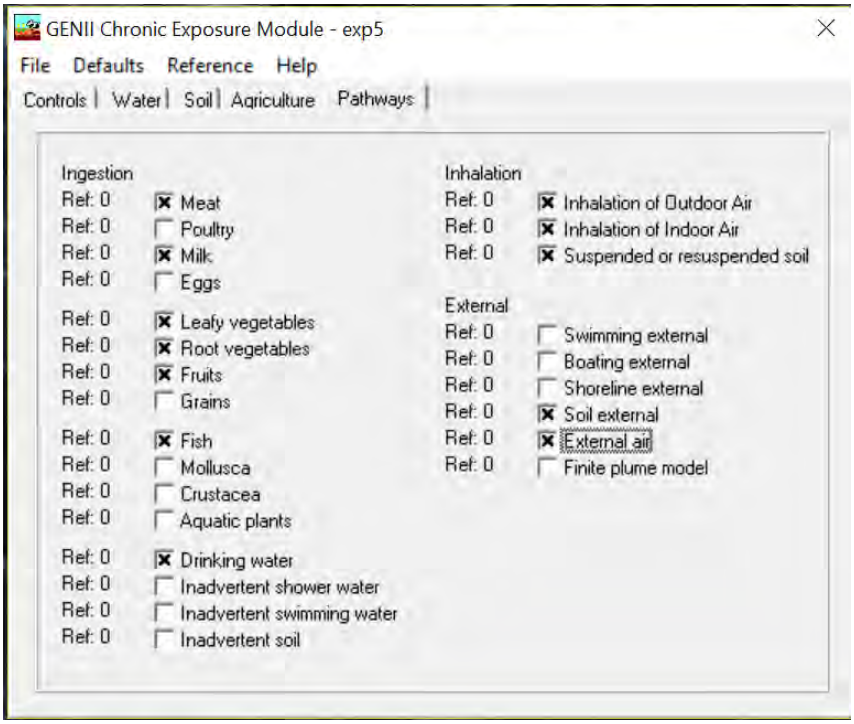


In the Agriculture tab: Animal feed has the following sub tabs: Biomass, Consumption, Storage Time, Diet Fraction, Growing Period, Yield, Dry/Wet Ratio, Translocation Factor, and Soil Intake. No change to all sub tabs.

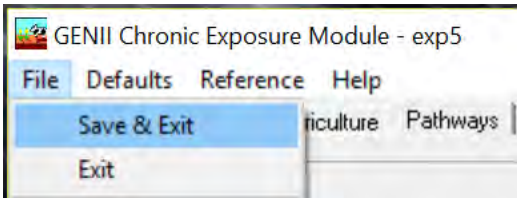
In the Agriculture tab: Food Crop has the following sub tabs: Biomass, Growing Period, Yield, Dry/Wet Ratio, and Translocation Factor. No change to all sub tabs.



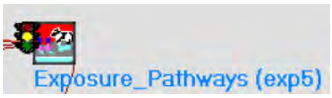
In the Pathways tab: Ingestion select Meat, Milk, Leafy vegetables, Root vegetables, Fruits, Fish, and Drinking water; Inhalation select: Inhalation of Outdoor Air, Inhalation of Indoor Air, and Suspended or resuspended soil; External select: Soil external, and External air as shown below.



To save the data select File Save and Exit.

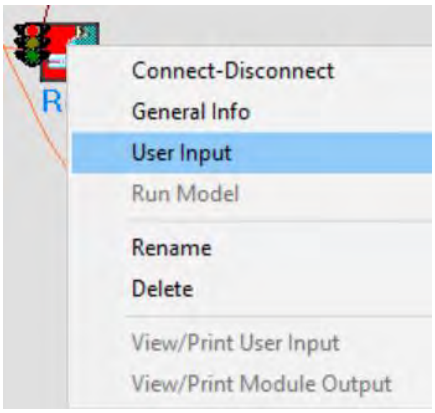


After selecting Save and Exit, the GENII Chronic Exposure Module – exp5 closes. Observe the icon Exposure Pathways (exp5) traffic signal switched from red to yellow.

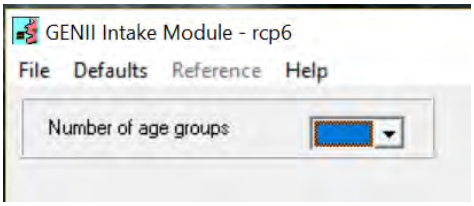


3.1.5.6 User Input for Icon 6 Receptor Intakes (rcp6) – Human Exposure & Risk

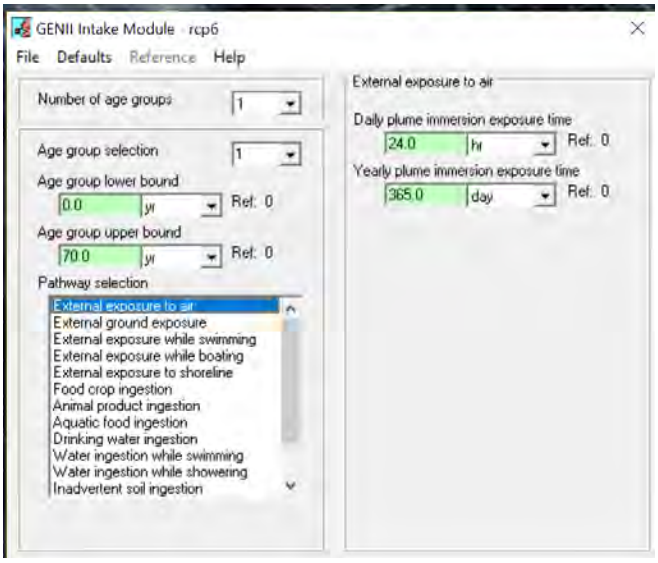
Right click on Receptor Intakes (rcp6) and the following window opens. Select User Input.



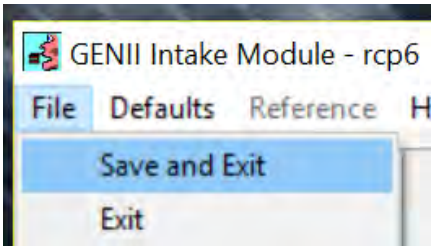
The GENII Intake Module – rcp6 opens.



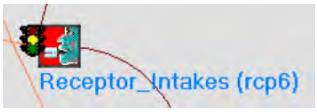
For this model enter 1 in Number of age groups. The window populates as shown.



To save the data select File Save and Exit.

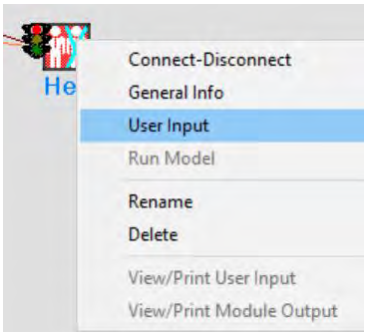


After selecting Save and Exit, the GENII Intake Module – Receptor Intakes (rcp6) closes. Observe the Receptor Intakes (rcp6) traffic signal switched from red to yellow.

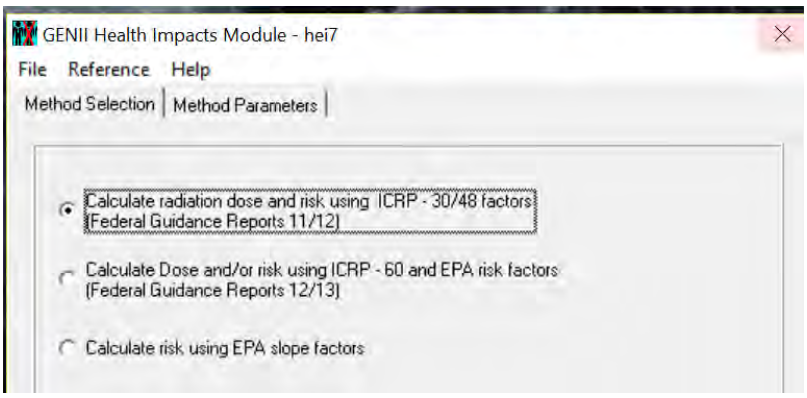


3.1.5.7 User Input for Icon 7 Health Impacts (hei7) – Human Exposure & Risk

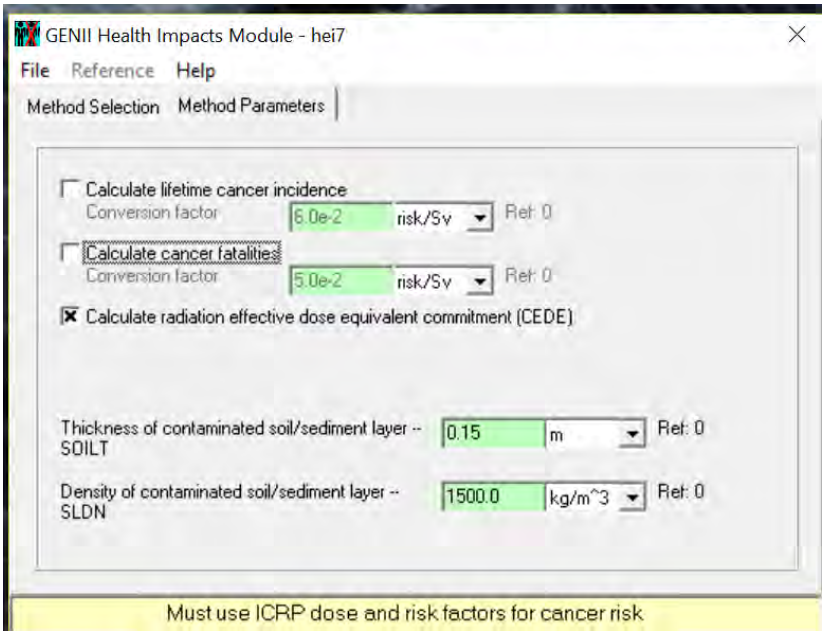
Icon 7: Right click on Health Impacts (hei7) and the following window opens. Select User Input.



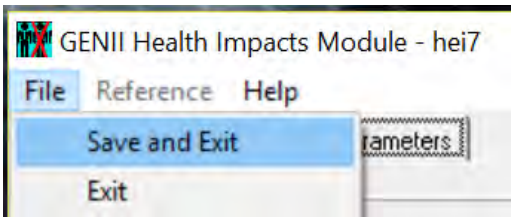
The GENII Health Impacts Module – hei7 opens.



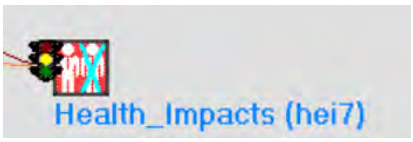
For this model there are no changes to the Method Selection tab. For the Method Parameters tab select Calculate radiation effective dose equivalent commitment (CEDE). Note the yellow clarification below the module.



To save the data select File Save and Exit.

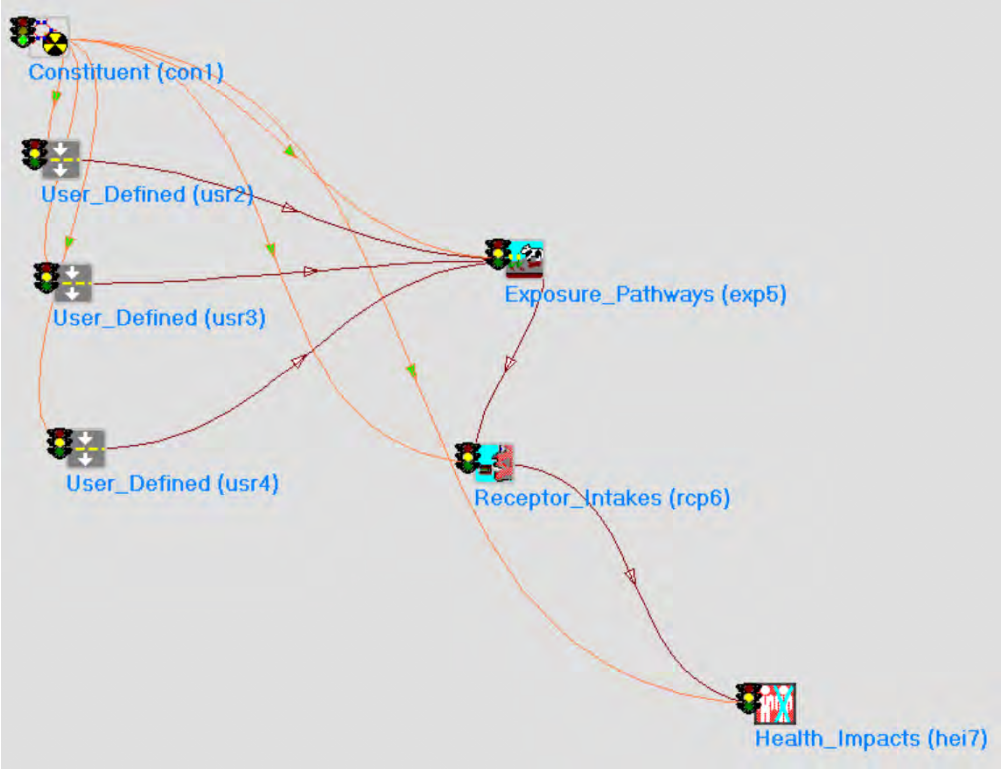


After selecting Save and Exit, the GENII Health Impacts Module – hei7 closes. Observe the icon Health Impacts (hei7) traffic signal switched from red to yellow.



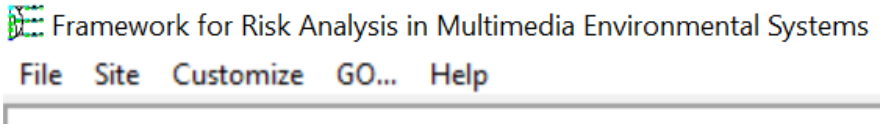
3.1.5.8 User Input Summary

Note that the model icon traffic signals are yellow after this step (the Constituent Database signal will be green).



3.1.6 Running Example 5

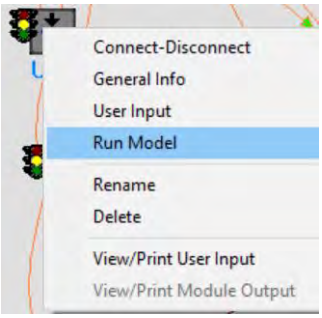
There are two ways to run examples: running the entire model or running each individual icon in sequence. The entire model sequence may be run automatically by selecting GO at the top ribbon.



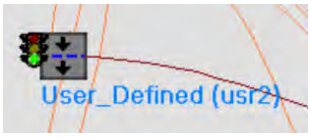
The sequence approach is shown below.

3.1.6.1 Running Icon 2 User Defined (usr2) – Boundary Conditions and Examining the Results

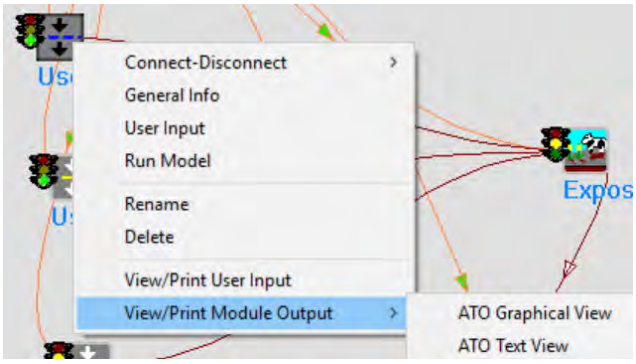
Icon 2: Right click on User Defined (usr2) and the following window opens. Select Run Model.



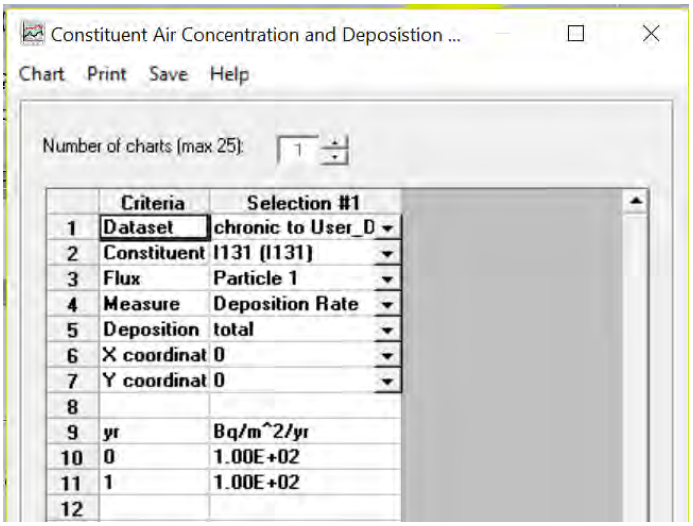
The model runs and the window closes. Observe the icon User Defined (usr2) traffic signal switched from yellow to green.



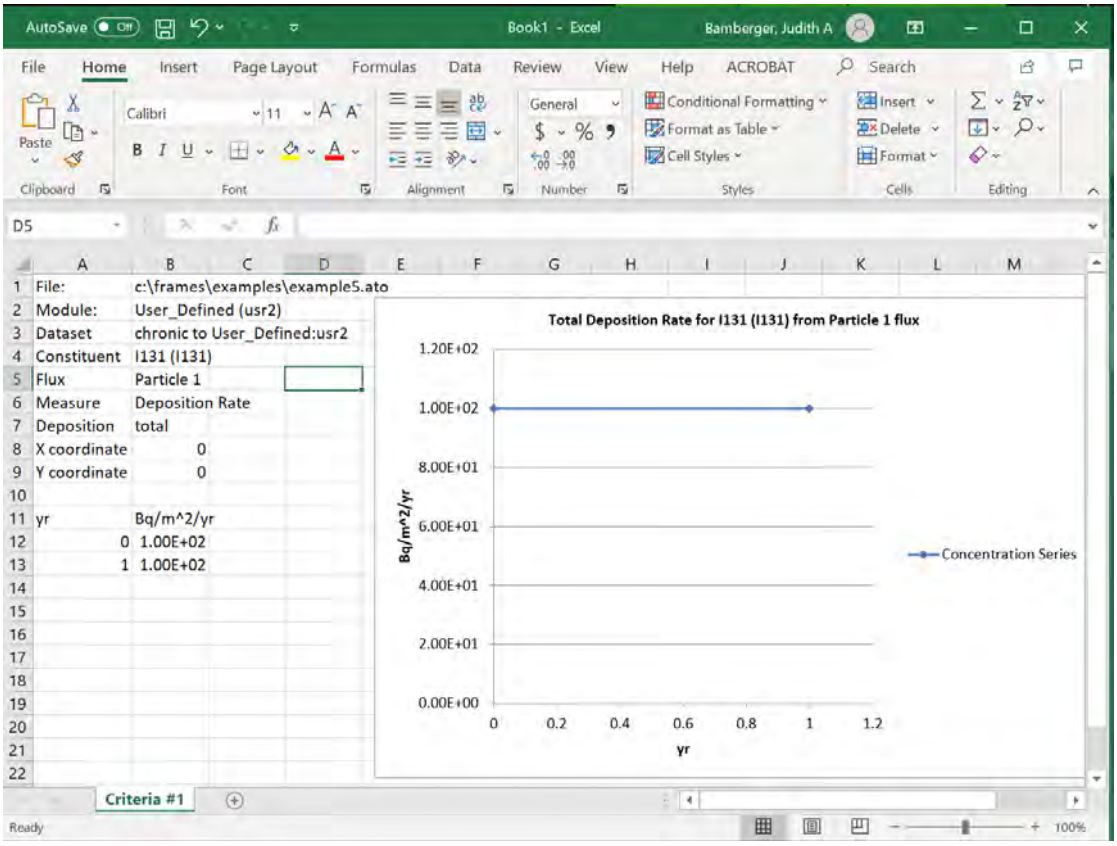
To view the model results right click on User Defined (usr2) and the following window opens. Select View/Print Module Output. There are two options: ATP Graphical View and ATO Text View.



Select ATP Graphical View and the following window Constituent Air Concentration and Deposition – Time Series opens.

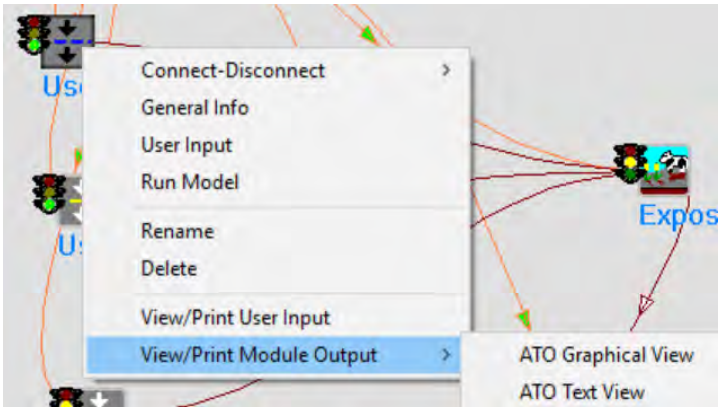


Select Chart in the upper ribbon. The following excel spreadsheet and chart open.



Select Print to print the file. Select Save to save the file. Select X in the upper right corner to close the window.

Right click on User Defined (usr2) and the following window opens. Select View/Print Module Output. There are two options ATO Graphical View and ATO Text View.

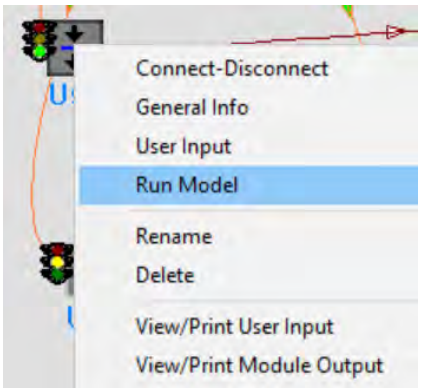


Select ATO Text View and the following window Viewing File (c:\frames\Examples\Exmple5.ato) Section (usr2) opens.

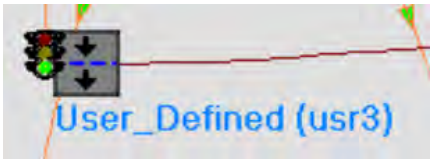
Select Print to print the file. Select Done or X in the upper right corner to close the window.

3.1.6.2 Running Icon 3 User Defined (usr3) – Boundary Conditions and Examining the Results

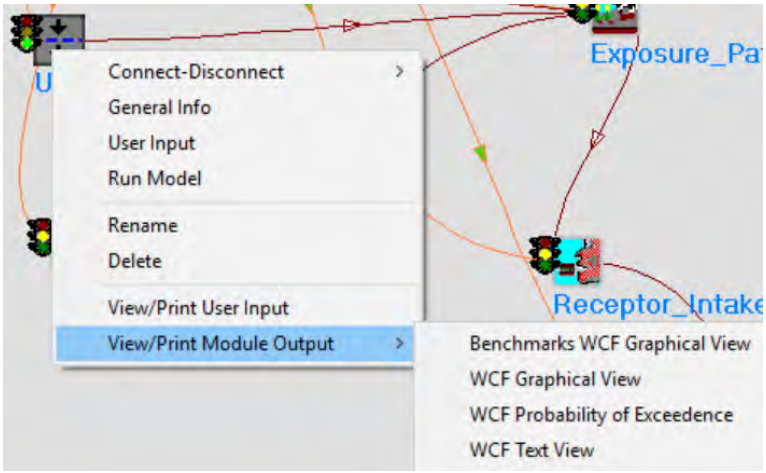
Icon 3: Right click on User Defined (usr3) and the following window opens. Select Run Model.



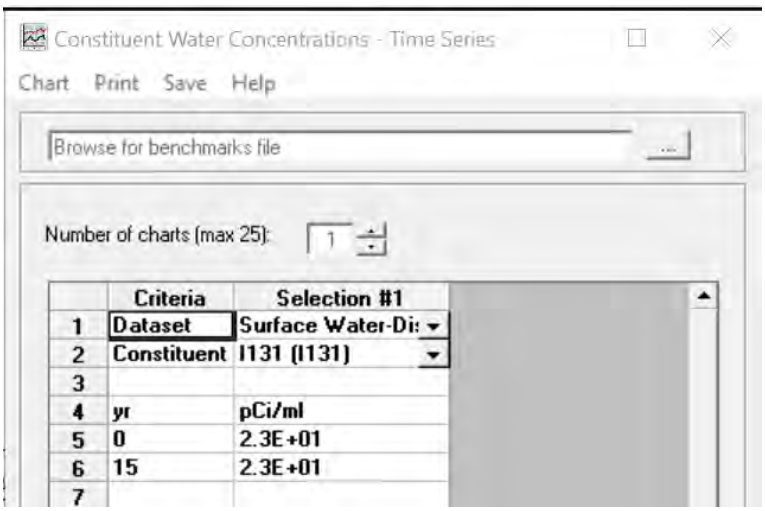
The model runs and the window closes. Observe the icon User Defined (usr3) traffic signal switched from yellow to green.



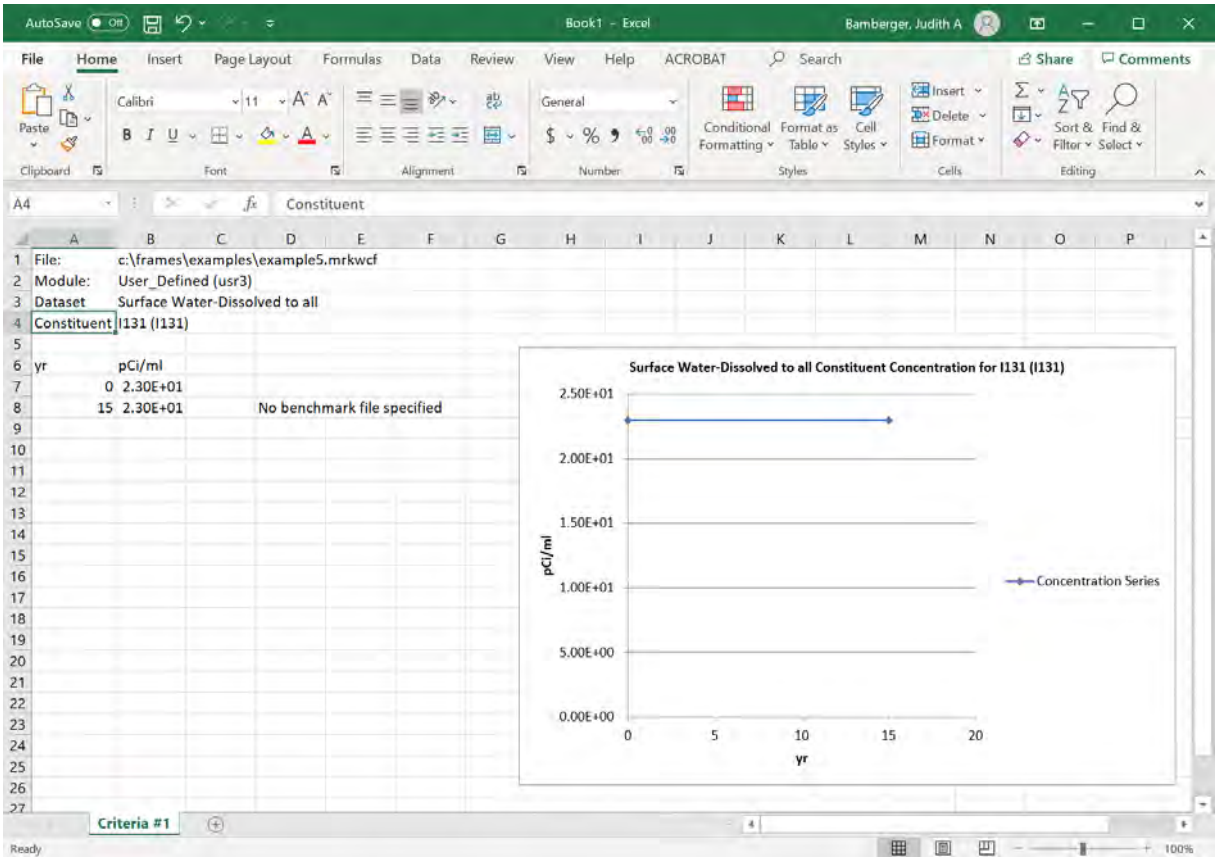
To view the model results right click on User Defined (usr3) and the following window opens. Select View/Print Module Output. There are four options Benchmarks WCF Graphical view, WCF Graphical View, WCF Probability of Exceedence, WCF Text View. The outputs from each of these options are shown sequentially below.



Select Benchmarks WCF Graphical View and the following window Constituent Water Concentrations – Time Series opens. *Note for this example selecting WCF Graphical View opens the same window and links to the same excel file as shown below.*

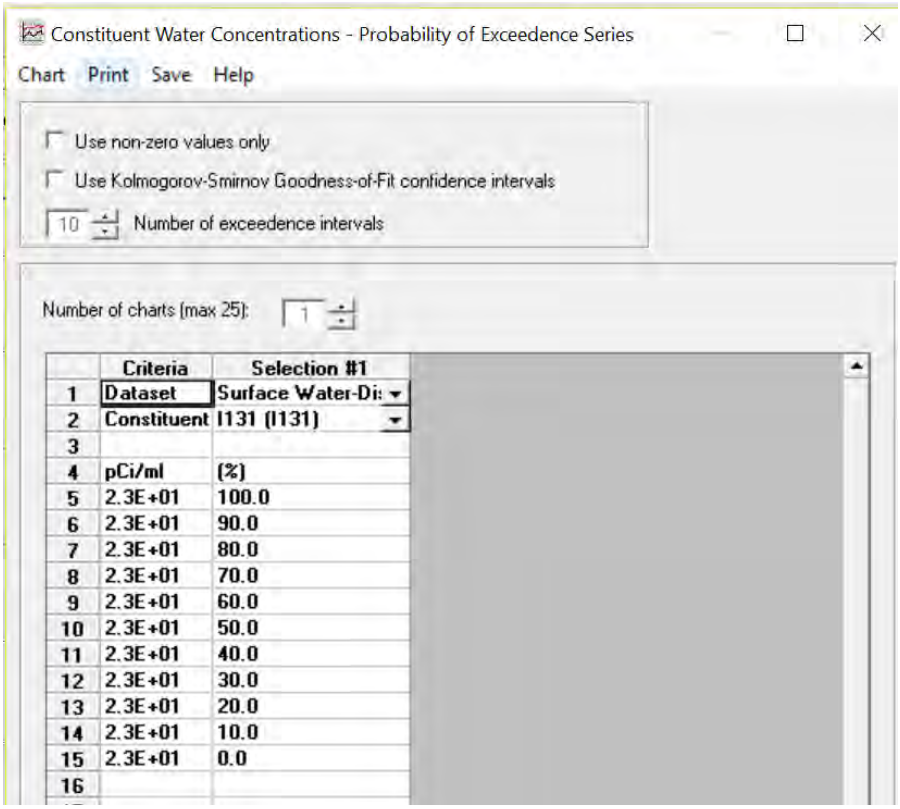


Select Chart in the upper ribbon. The following excel spreadsheet and chart open.

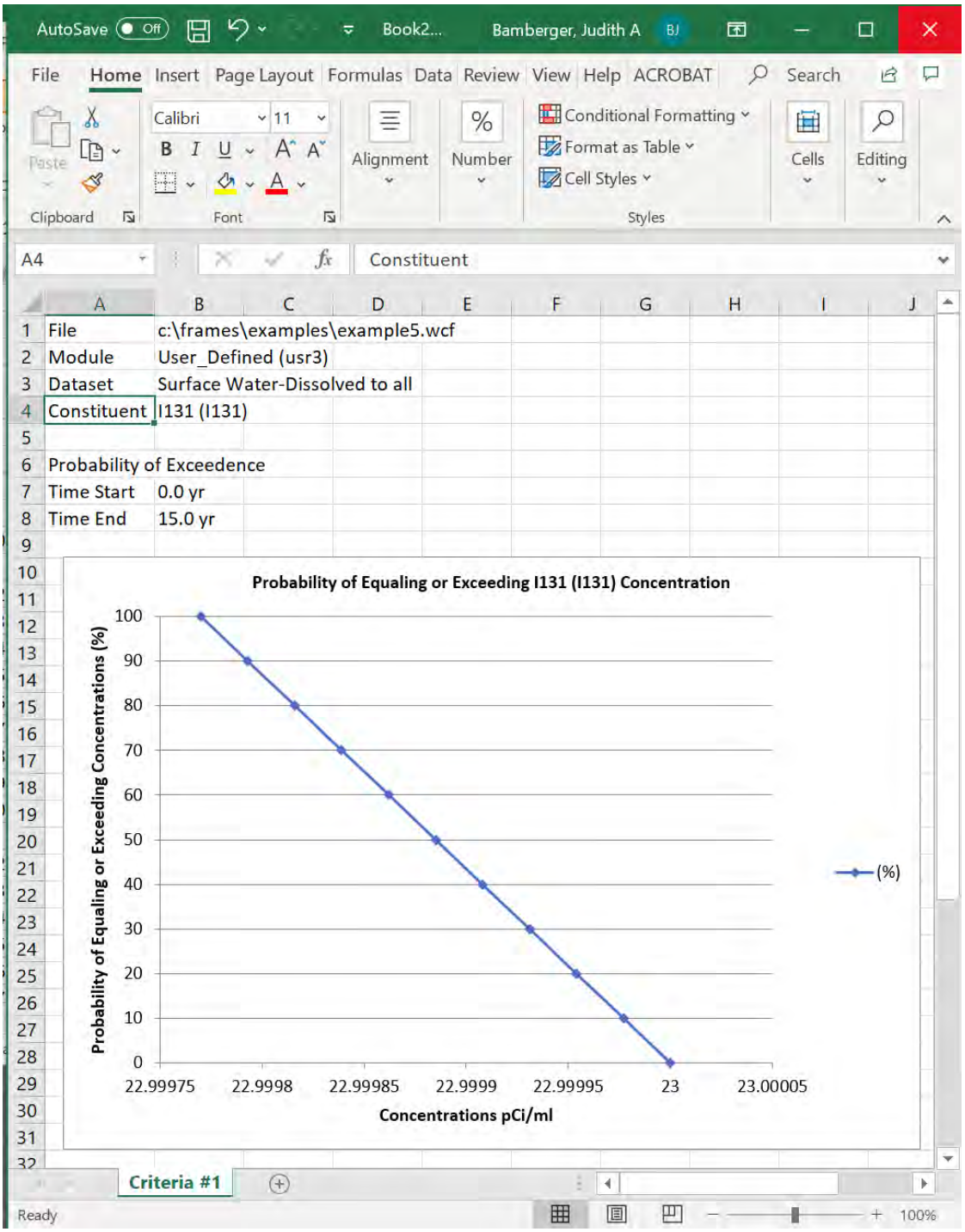


Select Print to print the file. Selecting Save to save the file. Select X in the upper right corner to close the window.

Select WCF Probability of Exceedence and the following window Constituent Water Concentrations – Probability of Exceedence Series opens.

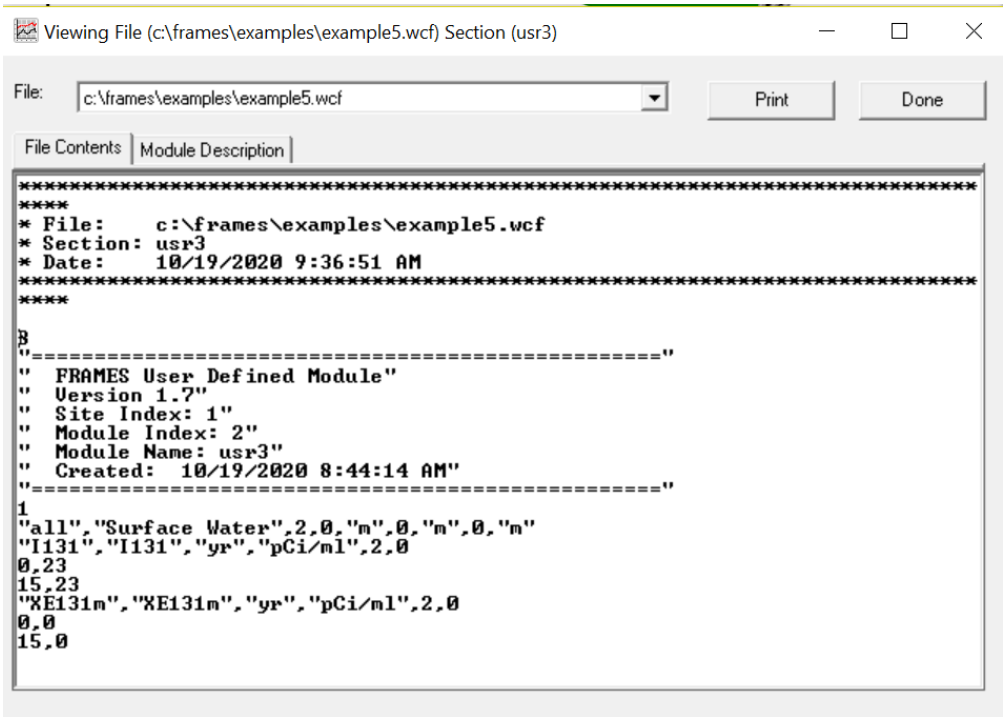


Select Chart in the upper ribbon. The following excel spreadsheet and chart open.



Select Print to print the file. Selecting Save to save the file. Select X in the upper right corner to close the window.

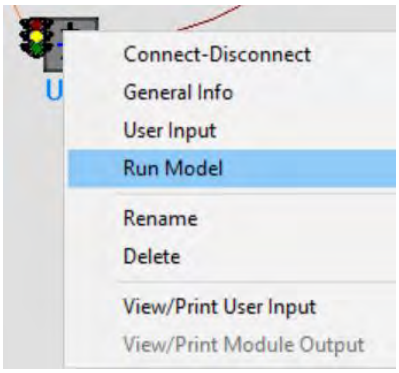
Select WCF Text View and the following window opens.



Select Print to print the file. Select Done or X in the upper right corner to close the window.

3.1.6.3 Running Icon 4 User Defined (usr4) – Boundary Conditions and Examining the Results

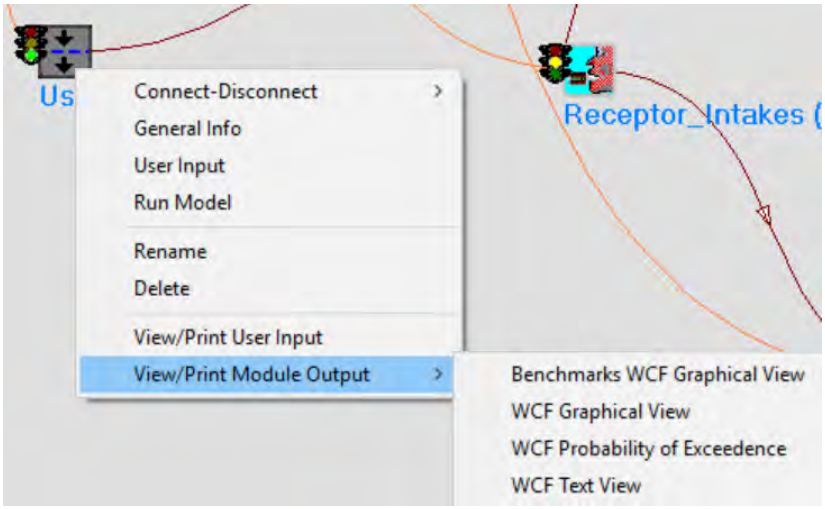
Icon 4: Right click on User Defined (usr4) and the following window opens. Select Run Model.



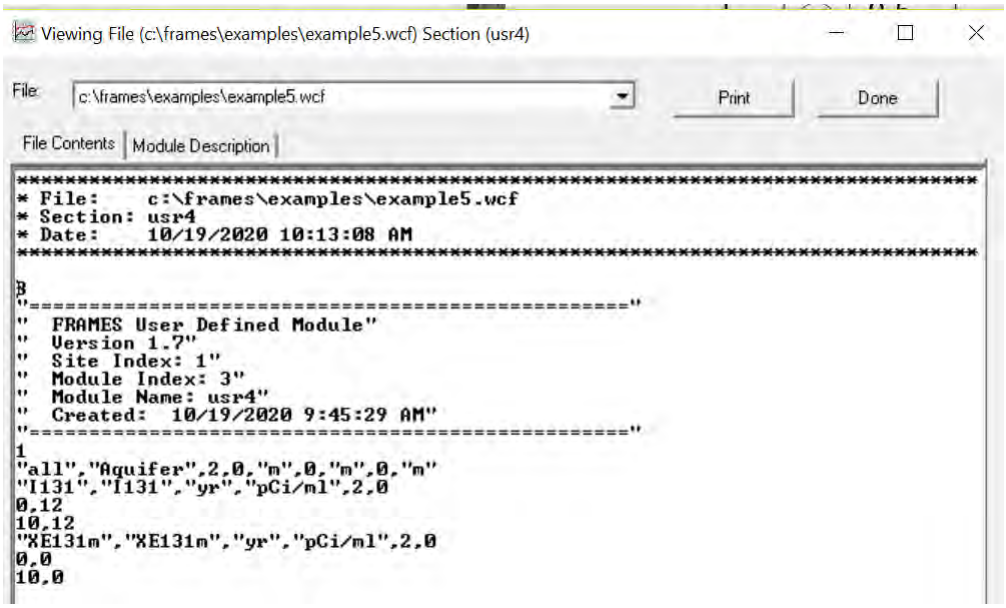
The model runs and the window closes. Observe the icon User Defined (usr4) traffic signal switched from yellow to green.

To view the model results right click on User Defined (usr4) and the following window opens. Select View/Print Module Output. There are four options Benchmarks WCF Graphical view, WCF Graphical View, WCF Probability of Exceedence, WCF Text View. The WCF Text view

output is shown sequentially below. For examples of other outputs see output from Icon 3 in the prior section.



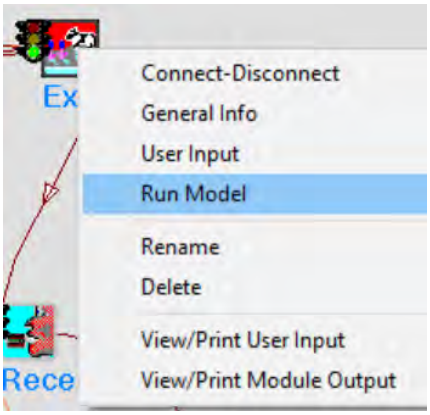
Select WCF Text View and the following window opens.



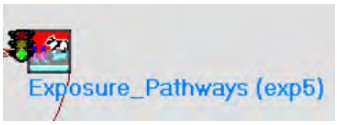
Select Print to print the file. Select Done or X in the upper right corner to close the window.

3.1.6.4 Running Icon 5 Exposure Pathways (exp5) – Human Exposure & Risk Text View Results

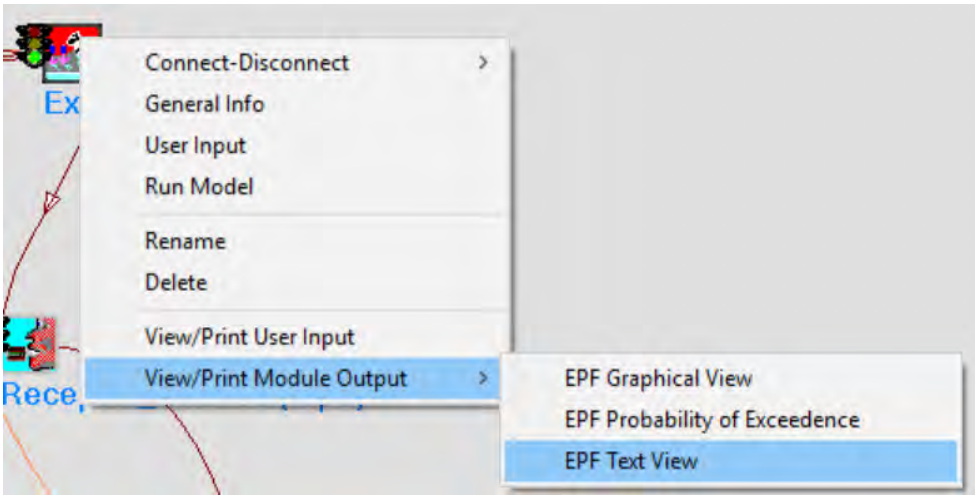
Icon 5: Right click on Exposure Pathways (exp5) and the following window opens. Select Run Model.



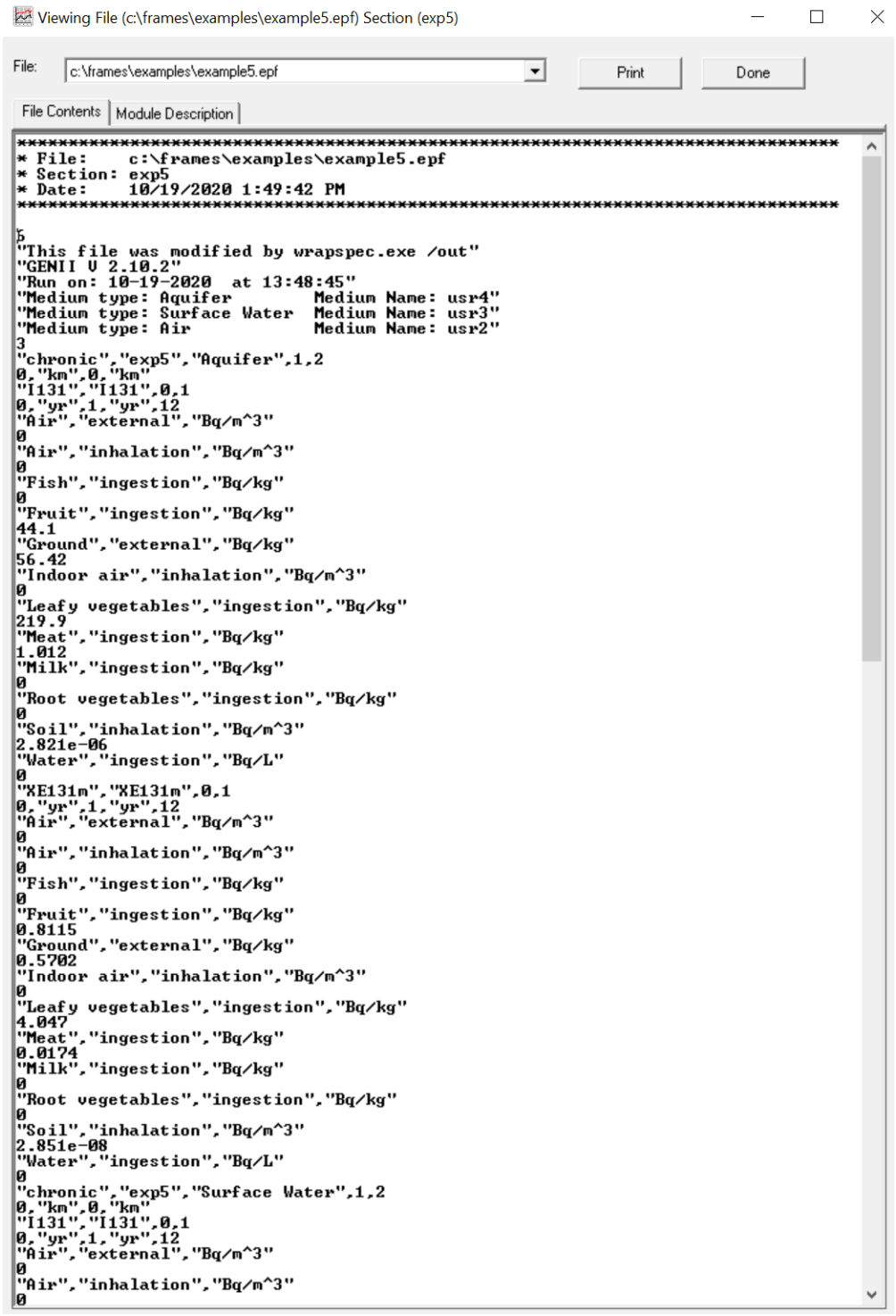
The model runs and the window closes. Observe the icon Exposure Pathways (exp5) traffic signal is green.



To view the model results right click on Exposure Pathways (exp5) and the following window opens. Select View/Print Module Output. There are three options EPF Graphical View, EPF Probability of Exceedence, EPF Text View. The EPF Text view output is shown sequentially below. For examples of other outputs see output from Running Icon 3 above.



Select EPF Text View and the following window opens. The file is long and is shown in three segments.



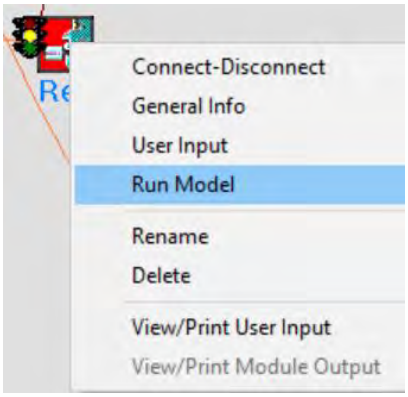

```
**********************************************************************************
* File:    c:\frames\examples\example5.epf
* Section: exp5
* Date:    10/19/2020 1:49:42 PM
**********************************************************************************

5
"This file was modified by wrapspec.exe /out"
"GENII V 2.10.2"
"Run on: 10-19-2020  at 13:48:45"
"Medium type: Aquifer         Medium Name: usr4"
"Medium type: Surface Water   Medium Name: usr3"
"Medium type: Air             Medium Name: usr2"
3
"chronic","exp5","Aquifer",1,2
0,"km",0,"km"
"I131","I131",0,1
0,"yr",1,"yr",12
"Air","external","Bq/m^3"
0
"Air","inhalation","Bq/m^3"
0
"Fish","ingestion","Bq/kg"
0
"Fruit","ingestion","Bq/kg"
44.1
"Ground","external","Bq/kg"
56.42
"Indoor air","inhalation","Bq/m^3"
0
"Leafy vegetables","ingestion","Bq/kg"
219.9
"Meat","ingestion","Bq/kg"
1.012
"Milk","ingestion","Bq/kg"
0
"Root vegetables","ingestion","Bq/kg"
0
"Soil","inhalation","Bq/m^3"
2.821e-06
"Water","ingestion","Bq/L"
0
"XE131m","XE131m",0,1
0,"yr",1,"yr",12
"Air","external","Bq/m^3"
0
"Air","inhalation","Bq/m^3"
0
"Fish","ingestion","Bq/kg"
0
"Fruit","ingestion","Bq/kg"
0.8115
"Ground","external","Bq/kg"
0.5702
"Indoor air","inhalation","Bq/m^3"
0
"Leafy vegetables","ingestion","Bq/kg"
4.047
"Meat","ingestion","Bq/kg"
0.0174
"Milk","ingestion","Bq/kg"
0
"Root vegetables","ingestion","Bq/kg"
0
"Soil","inhalation","Bq/m^3"
2.851e-08
"Water","ingestion","Bq/L"
0
"chronic","exp5","Surface Water",1,2
0,"km",0,"km"
"I131","I131",0,1
0,"yr",1,"yr",12
"Air","external","Bq/m^3"
0
"Air","inhalation","Bq/m^3"
0
```


Viewing File (c:\frames\examples\example5.epf) Section (exp5)
File:
c:\frames\examples\example5.epf
Print
Done
File Contents
Module Description
"Air","inhalation","Bq/m^3"
0
"Fish","ingestion","Bq/kg"
31230
"Fruit","ingestion","Bq/kg"
0
"Ground","external","Bq/kg"
0
"Indoor air","inhalation","Bq/m^3"
0
"Leafy vegetables","ingestion","Bq/kg"
0
"Meat","ingestion","Bq/kg"
303.2
"Milk","ingestion","Bq/kg"
1275
"Root vegetables","ingestion","Bq/kg"
85.46
"Soil","inhalation","Bq/m^3"
0
"Water","ingestion","Bq/L"
780.7
"XE131m","XE131m",0.1
0,"yr",1,"yr",12
"Air","external","Bq/m^3"
0
"Air","inhalation","Bq/m^3"
0
"Fish","ingestion","Bq/kg"
20.31
"Fruit","ingestion","Bq/kg"
0
"Ground","external","Bq/kg"
0
"Indoor air","inhalation","Bq/m^3"
0
"Leafy vegetables","ingestion","Bq/kg"
0
"Meat","ingestion","Bq/kg"
5.212
"Milk","ingestion","Bq/kg"
1.682
"Root vegetables","ingestion","Bq/kg"
1.571
"Soil","inhalation","Bq/m^3"
0
"Water","ingestion","Bq/L"
0.5076
"chronic","exp5","Air",1,2
0,"km",0,"km"
"I131","I131",0.1
0,"yr",1,"yr",10
"Air","external","Bq/m^3"
10000
"Air","inhalation","Bq/m^3"
10000
"Fruit","ingestion","Bq/kg"
0.0156
"Ground","external","Bq/kg"
0.0143
"Indoor air","inhalation","Bq/m^3"
10000
"Leafy vegetables","ingestion","Bq/kg"
0.116
"Meat","ingestion","Bq/kg"
0.000264
"Milk","ingestion","Bq/kg"
0.21
"Root vegetables","ingestion","Bq/kg"
0.0201
"Soil","inhalation","Bq/m^3"
7.15e-10
"XE131m","XE131m",0.1
0,"yr",1,"yr",10
"Air","external","Bq/m^3"
0

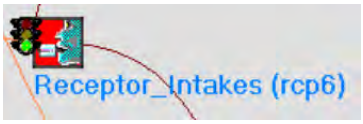
Select Print to print the file. Select Done or X in the upper right corner to close the window.

3.1.6.5 Running Icon 6 Receptor Intakes (rcp6) – Human Exposure & Risk Text View Results

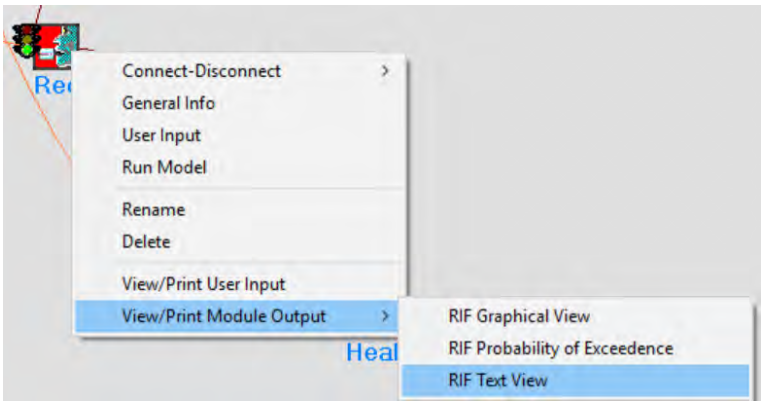
Icon 6: Right click on Receptor Intakes (rcp6) and the following window opens. Select Run Model.



The model runs and the window closes. Observe the icon Receptor Intakes (rcp6) traffic signal is green.



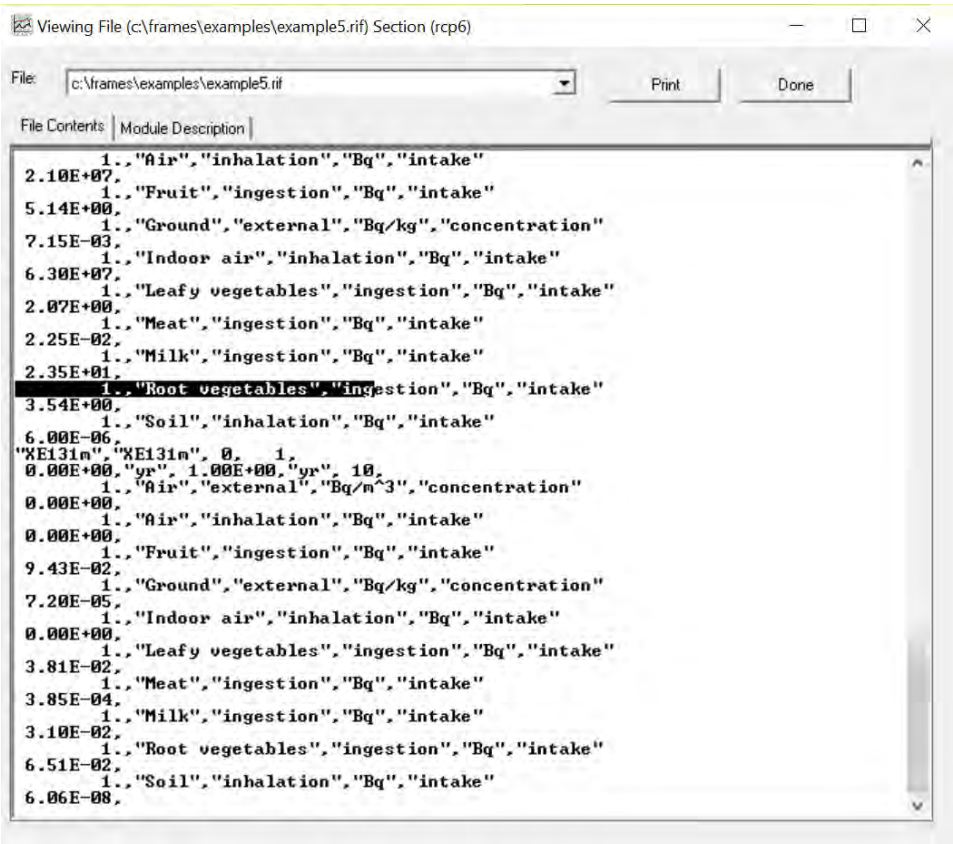
To view the model results right click on Receptor Intakes (rcp6) and the following window opens. Select View/Print Module Output. There are three options: RIF Graphical View, RIF Probability of Exceedence, RIF Text View. The RIF Text view output is shown sequentially below. For examples of other outputs see output from Icon 3 above.



Select RIF Text View and the following window opens. The file is long and is shown in three segments.


```
* File:    c:\frames\examples\example5.rif
* Section: rcp6
* Date:    10/19/2020 1:57:26 PM
********************************************************************************

  4,
 This receptor has data for  1 exposure sources.
 Exposure source  1, is exp5
 GENII VER 2.10.2
Run on: 10-19-2020  at 13:57:05
  3,
"chronic","exp5","Aquifer",  1, 1, 2,
      0.0,"km",      0.0,"km",
   0.,   70.,
"I131","I131", 0,   1,
 0.00E+00,"yr", 1.00E+00,"yr", 12,
        1.,"Air","external","Bq/m^3","concentration"
 0.00E+00,
        1.,"Air","inhalation","Bq","intake"
 0.00E+00,
        1.,"Fish","ingestion","Bq","intake"
 0.00E+00,
        1.,"Fruit","ingestion","Bq","intake"
 1.45E+04,
        1.,"Ground","external","Bq/kg","concentration"
 2.82E+01,
        1.,"Indoor air","inhalation","Bq","intake"
 0.00E+00,
        1.,"Leafy vegetables","ingestion","Bq","intake"
 3.93E+03,
        1.,"Meat","ingestion","Bq","intake"
 8.61E+01,
        1.,"Milk","ingestion","Bq","intake"
 0.00E+00,
        1.,"Root vegetables","ingestion","Bq","intake"
 0.00E+00,
        1.,"Soil","inhalation","Bq","intake"
 2.37E-02,
        1.,"Water","ingestion","Bq","intake"
 0.00E+00,
"XE131m","XE131m", 0,   1,
 0.00E+00,"yr", 1.00E+00,"yr", 12,
        1.,"Air","external","Bq/m^3","concentration"
 0.00E+00,
        1.,"Air","inhalation","Bq","intake"
 0.00E+00,
        1.,"Fish","ingestion","Bq","intake"
 0.00E+00,
        1.,"Fruit","ingestion","Bq","intake"
 2.67E+02,
        1.,"Ground","external","Bq/kg","concentration"
 2.85E-01,
        1.,"Indoor air","inhalation","Bq","intake"
 0.00E+00,
        1.,"Leafy vegetables","ingestion","Bq","intake"
 7.24E+01,
        1.,"Meat","ingestion","Bq","intake"
 1.48E+00,
        1.,"Milk","ingestion","Bq","intake"
 0.00E+00,
        1.,"Root vegetables","ingestion","Bq","intake"
 0.00E+00,
        1.,"Soil","inhalation","Bq","intake"
 2.39E-04,
        1.,"Water","ingestion","Bq","intake"
 0.00E+00,
"chronic","exp5","Surface Water",  1, 1, 2,
      0.0,"km",      0.0,"km",
   0.,   70.,
"I131","I131", 0,   1,
 0.00E+00,"yr", 1.00E+00,"yr", 12,
        1.,"Air","external","Bq/m^3","concentration"
 0.00E+00,
        1.,"Air","inhalation","Bq","intake"
 0.00E+00,
```

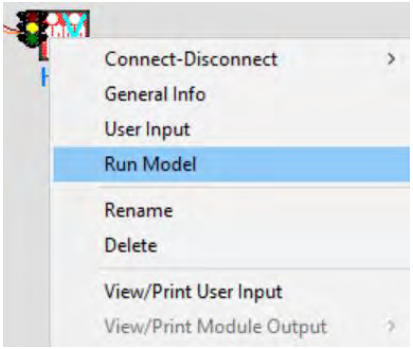

Viewing File (c:\frames\examples\example5.rif) Section (rcp6)
File:
c:\frames\examples\example5.rif
Print
Done
File Contents
Module Description
1.,"Air","inhalation","Bq","intake"
0.00E+00,
1.,"Fish","ingestion","Bq","intake"
1.25E+06,
1.,"Fruit","ingestion","Bq","intake"
0.00E+00,
1.,"Ground","external","Bq/kg","concentration"
0.00E+00,
1.,"Indoor air","inhalation","Bq","intake"
0.00E+00,
1.,"Leafy vegetables","ingestion","Bq","intake"
0.00E+00,
1.,"Meat","ingestion","Bq","intake"
2.58E+04,
1.,"Milk","ingestion","Bq","intake"
1.43E+05,
1.,"Root vegetables","ingestion","Bq","intake"
1.50E+04,
1.,"Soil","inhalation","Bq","intake"
0.00E+00,
1.,"Water","ingestion","Bq","intake"
5.70E+05,
"XE131m","XE131m", 0, 1,
0.00E+00,"yr", 1.00E+00,"yr", 12,
1.,"Air","external","Bq/m^3","concentration"
0.00E+00,
1.,"Air","inhalation","Bq","intake"
0.00E+00,
1.,"Fish","ingestion","Bq","intake"
8.15E+02,
1.,"Fruit","ingestion","Bq","intake"
0.00E+00,
1.,"Ground","external","Bq/kg","concentration"
0.00E+00,
1.,"Indoor air","inhalation","Bq","intake"
0.00E+00,
1.,"Leafy vegetables","ingestion","Bq","intake"
0.00E+00,
1.,"Meat","ingestion","Bq","intake"
4.43E+02,
1.,"Milk","ingestion","Bq","intake"
1.88E+02,
1.,"Root vegetables","ingestion","Bq","intake"
2.76E+02,
1.,"Soil","inhalation","Bq","intake"
0.00E+00,
1.,"Water","ingestion","Bq","intake"
3.71E+02,
"chronic","exp5","Air", 1, 1, 2,
0.0,"km", 0.0,"km",
0., 70.,
"I131","I131", 0, 1,
0.00E+00,"yr", 1.00E+00,"yr", 10,
1.,"Air","external","Bq/m^3","concentration"
9.99E+03,
1.,"Air","inhalation","Bq","intake"
2.10E+07,



Select Print to print the file. Select Done or X in the upper right corner to close the window.

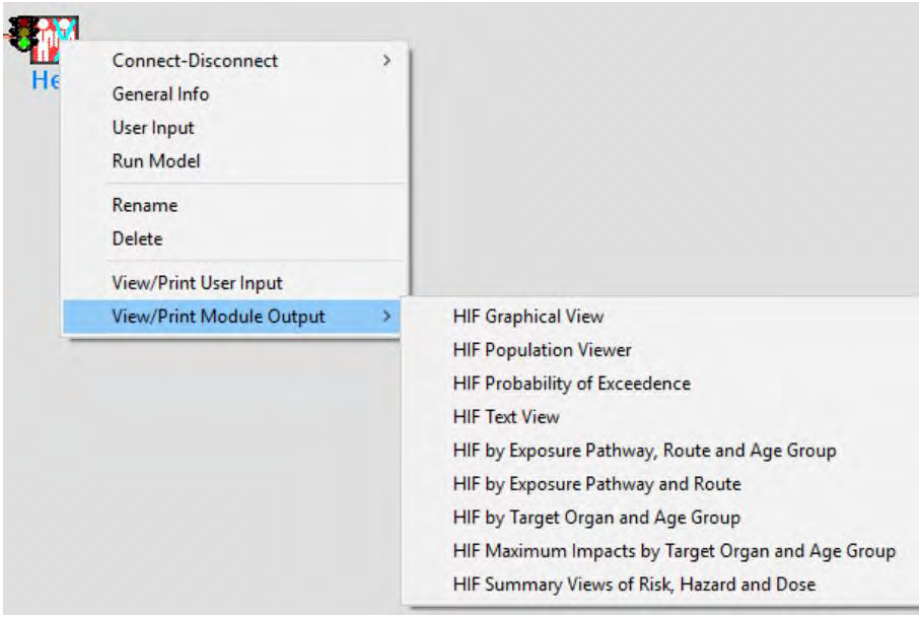
3.1.6.6 Running Icon 7 Health Impacts (hei7) – Human Exposure & Risk Text View Results

Icon7: Right click on Health Impacts (hei7) and the following window opens. Select Run Model.

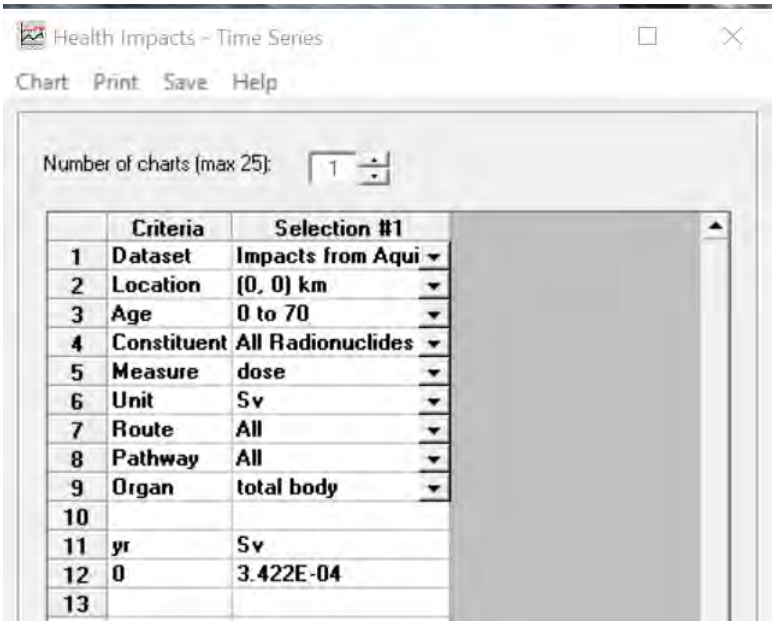


The model runs and the window closes. Observe the icon Health Impacts (hei7) traffic signal is green.

To view the model results right click on Health Impacts (hei7) and the following window opens. Select View/Print Module Output. There are nine options HIF Graphical View, HIF Population Viewer, HIF Probability of Exceedence, HIF Text View. HIF by Exposure Pathway, Route, and Age Group, HIF by Exposure Pathway and Route, HIF by Target Organ and Age Group, HIF Maximum Impacts by Target Organ and Age Group, HIF Summary Views of Risk, Hazard and Dose. Three outputs are shown below: HIF Graphical View, HIF Text View, and HIF Summary Views of Risk, Hazard and Dose.



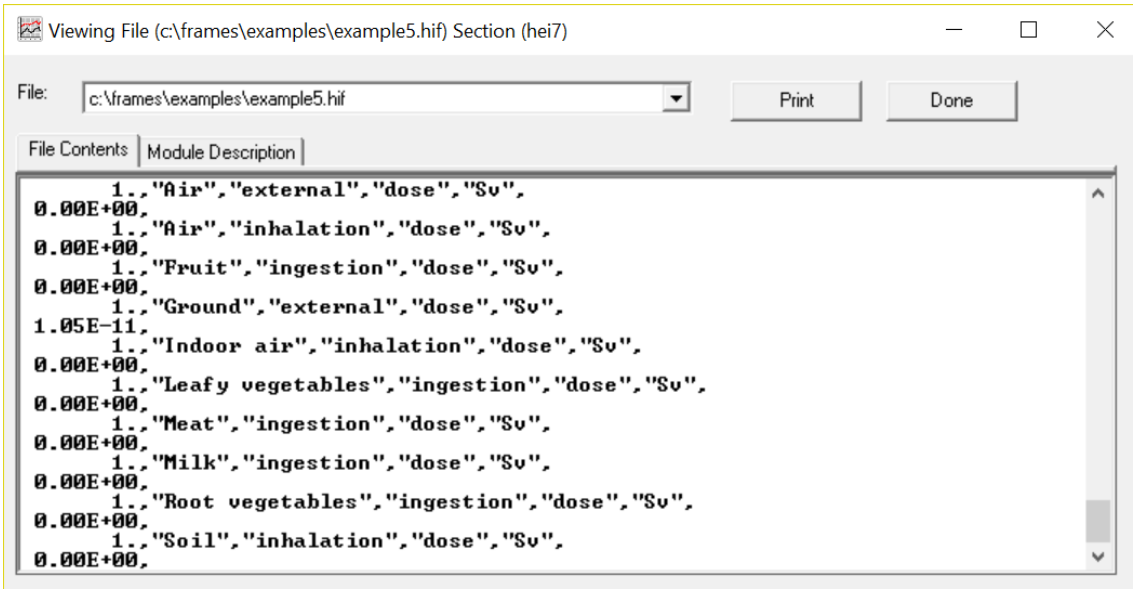
Select HIF Graphical View and the following window Health Impacts – Time Series opens. In Time Series Change Item 9 Organ from All to total body (or effective dose if available-***never use All***).



Select Print to print the file. Select Done or X in the upper right corner to close the window.

Select Benchmarks HIF Text View and the following window Health Impacts – Time Series opens. The output file is shown in three parts.

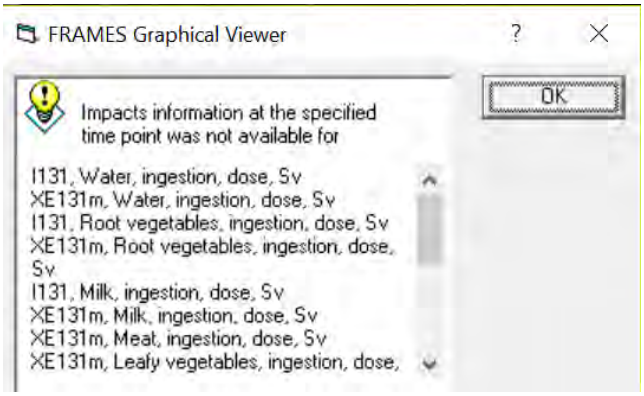

```
        1.,"Water","ingestion","dose","Sv",
 0.00E+00,
"chronic","exp5","Surface Water",  1, 1,  2,  1,  1,
"all sites",
"total body",
        0.0,"km",       0.0,"km",
    0.,  70.,"yr",
"I131","I131", 0,   1,
 0.000E+00,"yr", 1.000E+00,"yr", 12,
        1.,"Air","external","dose","Sv",
 0.00E+00,
        1.,"Air","inhalation","dose","Sv",
 0.00E+00,
        1.,"Fish","ingestion","dose","Sv",
 1.80E-02,
        1.,"Fruit","ingestion","dose","Sv",
 0.00E+00,
        1.,"Ground","external","dose","Sv",
 0.00E+00,
        1.,"Indoor air","inhalation","dose","Sv",
 0.00E+00,
        1.,"Leafy vegetables","ingestion","dose","Sv",
 0.00E+00,
        1.,"Meat","ingestion","dose","Sv",
 3.72E-04,
        1.,"Milk","ingestion","dose","Sv",
 2.06E-03,
        1.,"Root vegetables","ingestion","dose","Sv",
 2.16E-04,
        1.,"Soil","inhalation","dose","Sv",
 0.00E+00,
        1.,"Water","ingestion","dose","Sv",
 8.21E-03,
"XE131m","XE131m", 0,   1,
 0.000E+00,"yr", 1.000E+00,"yr", 12,
        1.,"Air","external","dose","Sv",
 0.00E+00,
        1.,"Air","inhalation","dose","Sv",
 0.00E+00,
        1.,"Fish","ingestion","dose","Sv",
 0.00E+00,
        1.,"Fruit","ingestion","dose","Sv",
 0.00E+00,
        1.,"Ground","external","dose","Sv",
 0.00E+00,
        1.,"Indoor air","inhalation","dose","Sv",
 0.00E+00,
        1.,"Leafy vegetables","ingestion","dose","Sv",
 0.00E+00,
        1.,"Meat","ingestion","dose","Sv",
 0.00E+00,
        1.,"Milk","ingestion","dose","Sv",
 0.00E+00,
        1.,"Root vegetables","ingestion","dose","Sv",
 0.00E+00,
        1.,"Soil","inhalation","dose","Sv",
 0.00E+00,
        1.,"Water","ingestion","dose","Sv",
 0.00E+00,
"chronic","exp5","Air",  1, 1,  2,  1,  1,
"all sites",
"total body",
        0.0,"km",       0.0,"km",
    0.,  70.,"yr",
"I131","I131", 0,   1,
 0.000E+00,"yr", 1.000E+00,"yr", 10,
        1.,"Air","external","dose","Sv",
 5.74E-03,
        1.,"Air","inhalation","dose","Sv",
 1.87E-01,
```

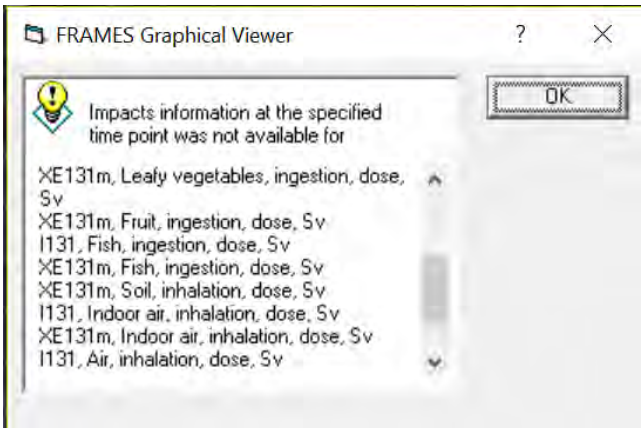


Select Print to print the file. Select Done or X in the upper right corner to close the window.

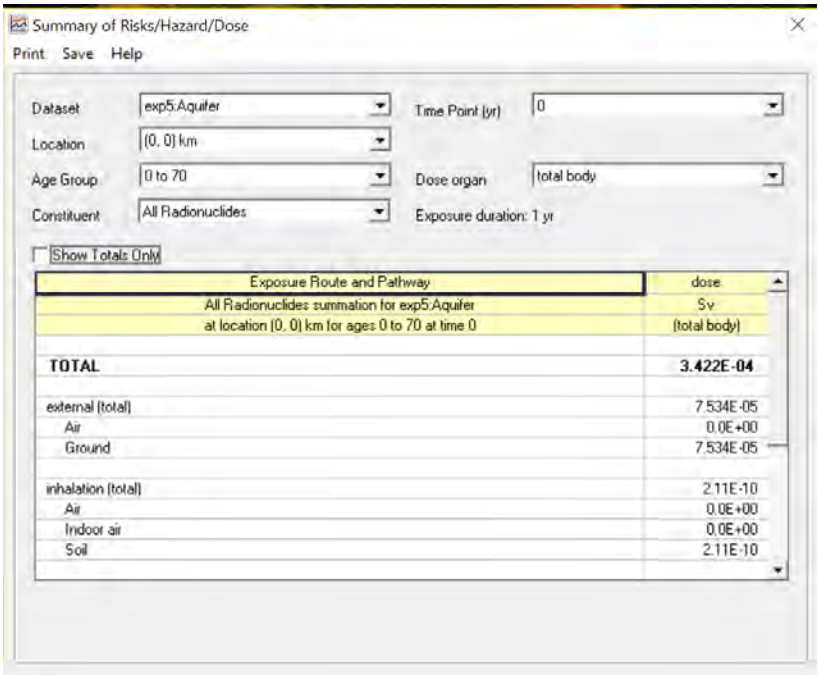
Select Benchmarks HIF Summary Views of Risk, Hazard, and Dose of Text View and the following window HIF Summary Views of Risk, Hazard and Dose.

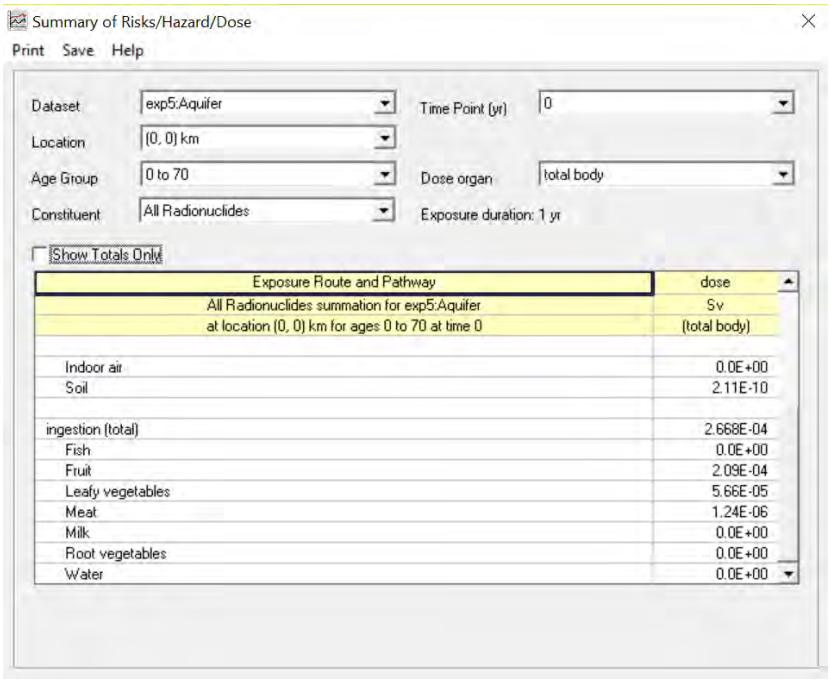
This screen opens first and identifies that some outputs are zero. Select OK to proceed.





After selecting OK the following window Summary of Risks/Hazard/Dose opens. For this case, the doses are reported for each source (groundwater, surface water, and air). The output file for the aquifer source is shown in two parts.



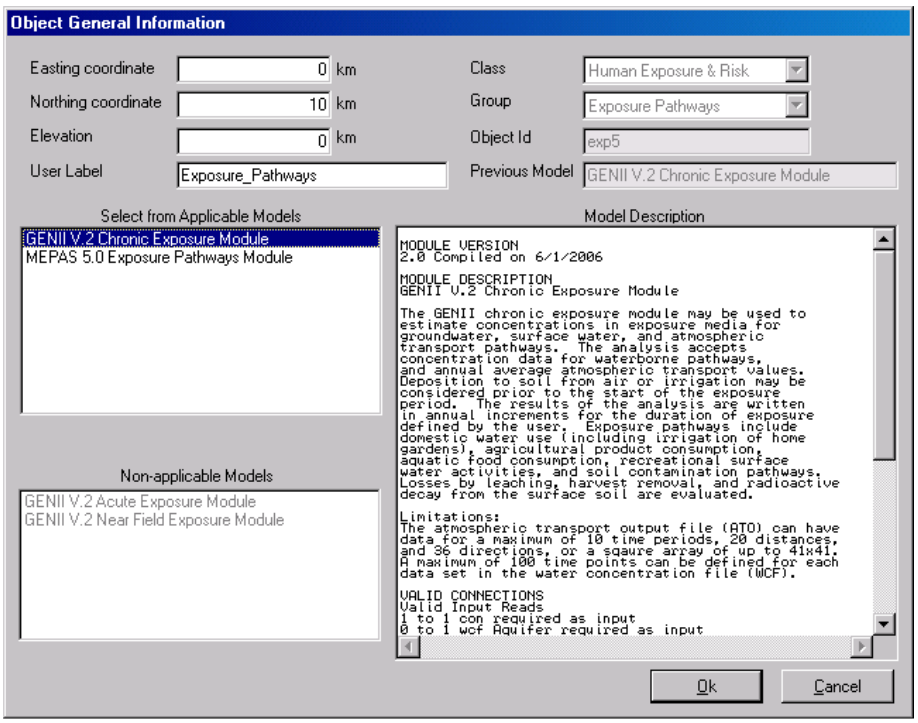


This completes the explanation of how to set up and run genii_05.gid, called Example5.gid in this document.

3.2 Example 11

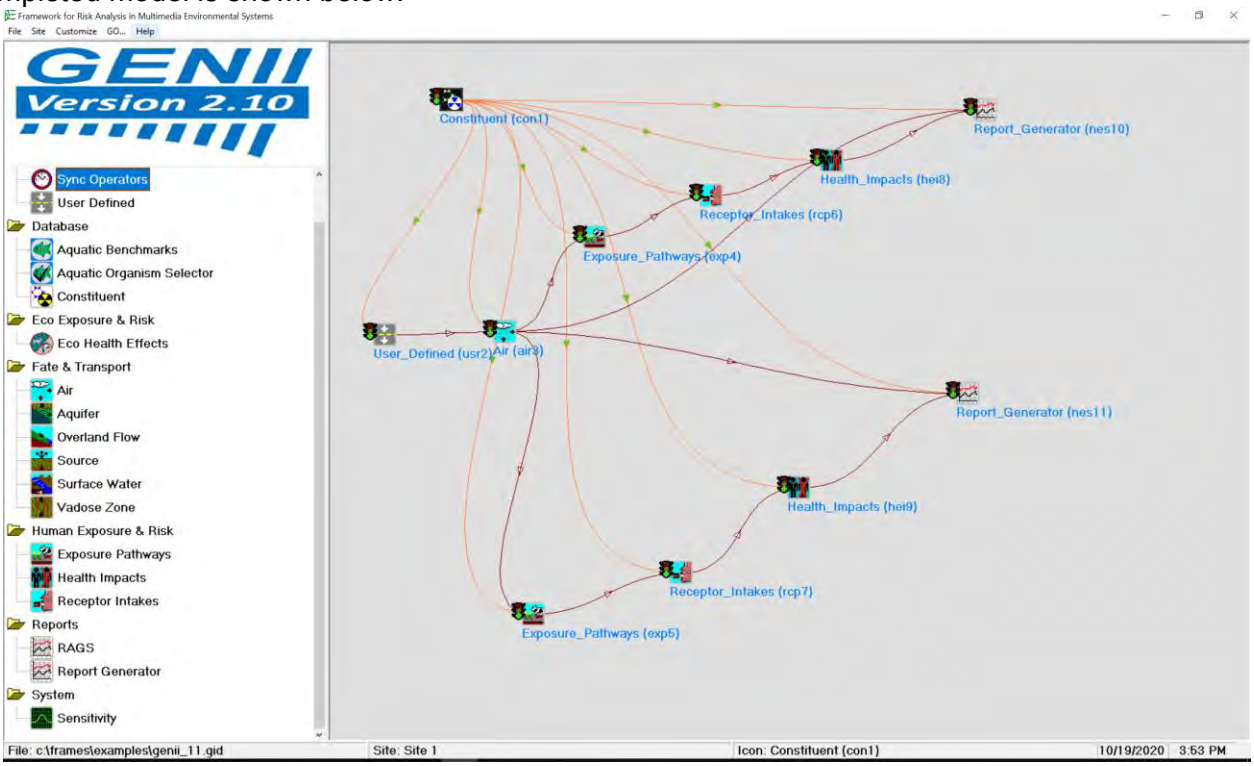
Example 11 is concisely summarized below. The following summary is provided in GENII Version 2 Users' Guide (Napier 2012).

"GENII_11: This complex example is a typical use of the FRAMES/GENII system to evaluate chronic releases of radionuclides from a facility into the atmosphere. In this example, the upper branch (derived from the template Templt01) represents the dose estimation to a large-area grid with a distributed population. The lower branch is a detailed evaluation of the dose to an individual at the maximally-exposed location. In this example, the noble gas ^{41}Ar, ^{129}I treated as a particulate source, and HTO vapor are modeled. The AFF Air Module is used to input the release rates of the radionuclides and the physical description of the releasing source facility (a low building with a 60-meter stack). The GENII Chronic Plume model is used to estimate the atmospheric dispersion. The upper branch of the calculation then accepts the entire grid of atmospheric dispersion results and calculates environmental concentrations with the GENII Chronic Exposure Module. These are used in the GENII Receptor Intakes module in the upper branch to generate a grid of intakes for average individuals by location and pathway, which are then used in the GENII Health Impacts module to estimate doses using the ICRP-26/30 dose conversion factors. A population file is input to the GENII Report Generator to develop a table of population doses. On the lower branch, a single location is selected for more analysis. The selection of the location is determined when the icon is defined, using the right-click/General Info command. This opens the selection menu. The location is defined using the Northing and Easting inputs: an input of (0,0) tells the system to run the default full grid, but any other input defines a specific location with respect to the center of the atmospheric dispersion grid. This is shown as:

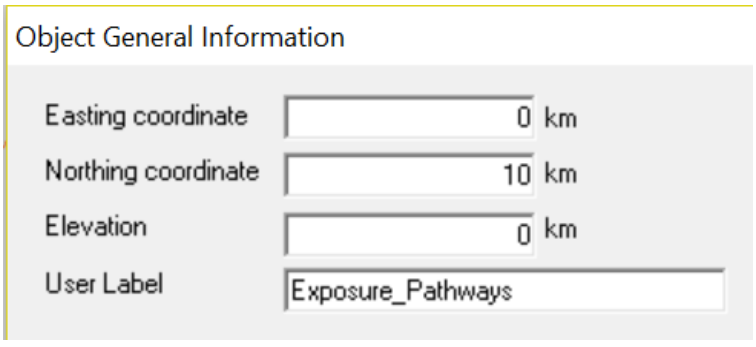


The lower branch of the calculation uses the single point atmospheric dispersion results and calculates environmental concentrations with the GENII Chronic Exposure Module. These are used in the GENII Receptor Intakes module in the lower branch to generate intakes for a maximally-exposed individual by pathway, which are then used in the GENII Health Impacts module to estimate doses using the ICRP-60/72 dose conversion factors. The GENII Report Generator summarizes the individual results."

The completed model is shown below.



This model features calculations at a specific location identified by the Easting and Northing coordinate identified in Exposure Pathways under General Information.



3.2.1 Getting Started with Example 11

Detailed step-by-step instructions for starting GENII are provided for Example 5 in 3.1.1.

Adding icons is explained in detail for Example 5 in 3.1.2. Follow these instructions to add icons based on the details for the 11 icons for Example 11.

Adding connections is explained in detail for Example 5 in 3.1.3. Follow these instructions to add icons based on the details for the connections for Example 11 shown in the model above.

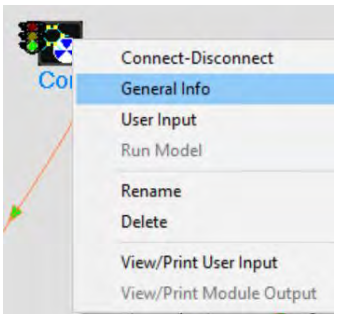
When icons and connections are added the model should look as shown above in 3.2. Constituent 1 will connect to the upper scenario of User Defined (usr2), Air (air3), Exposure Pathways (exp4), Receptor Intakes (rcp6), Health Impacts (hei8), and Report Generator (nes10) and will connect to the lower scenario of User Defined (usr2), Air (air3), Exposure Pathways (exp5), Receptor Intakes (rcp7), Health Impacts (hei9) and Report Generator (nes11). Note that User Defined (usr2) and Air (air3) participate in both the upper and lower scenarios.

3.2.2 Add General Information to Example 11

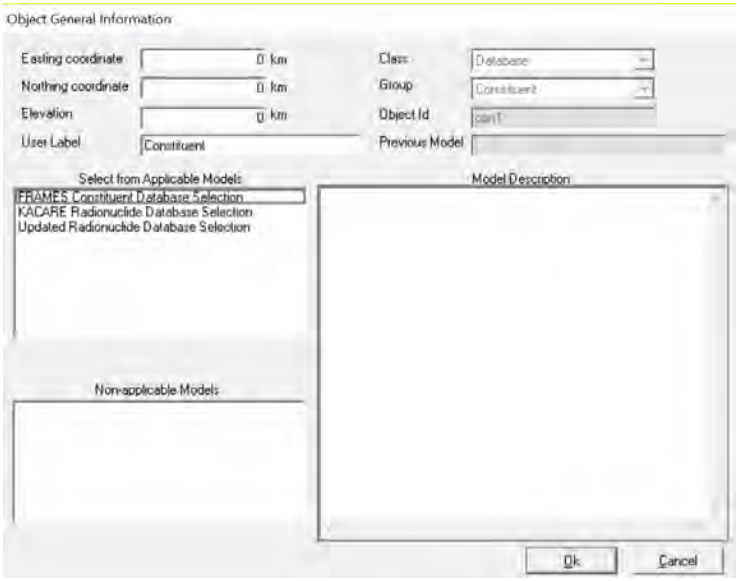
This procedure will select models for each of the eleven icons sequentially. The information will be added via General Info.

3.2.2.1 General Information for Icon 1 Constituent (con1) - Database

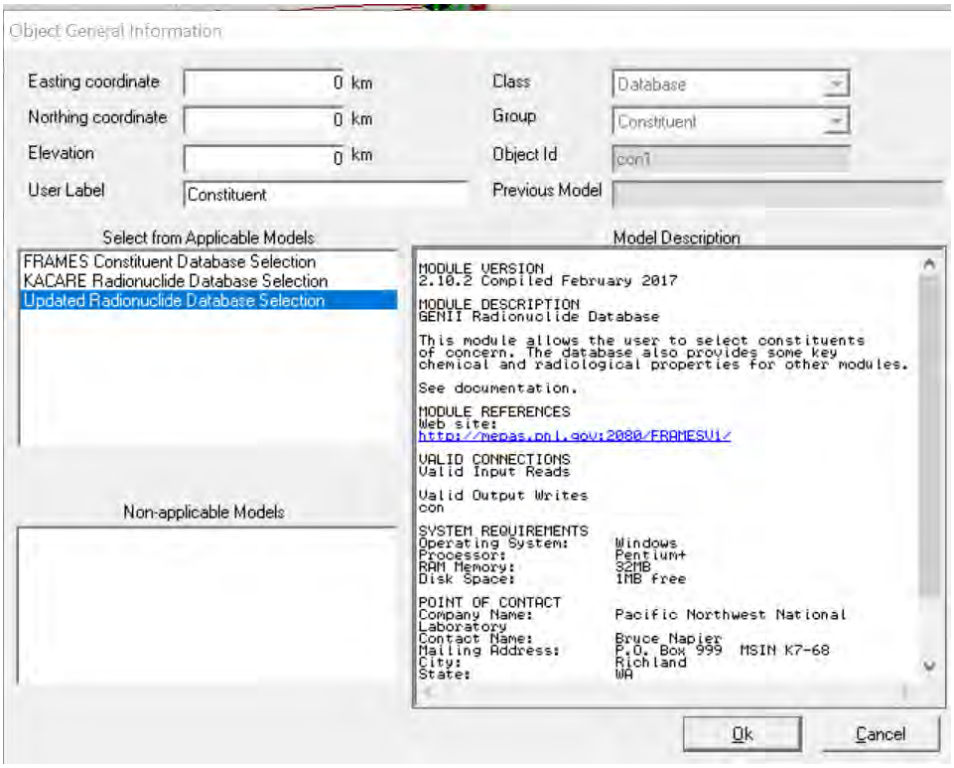
Icon 1: Right click on Constituent (con1) and the following window opens. Select General Info.



The following Object General Information window opens.



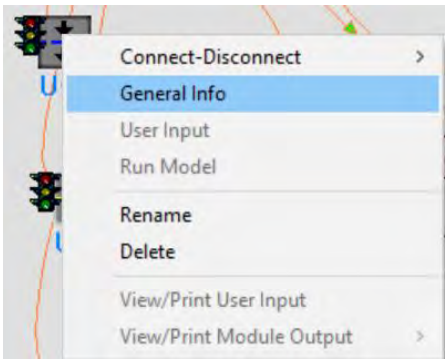
Under Select from Applicable Models three options are provided: FRAMES Constituent Database Selection, KACARE Radionuclide Database Selection, and Updated Radionuclide Database Selection. Select the third model: Updated Radionuclide Database Selection. The Model Description is shown in the window to the right. Select Ok.



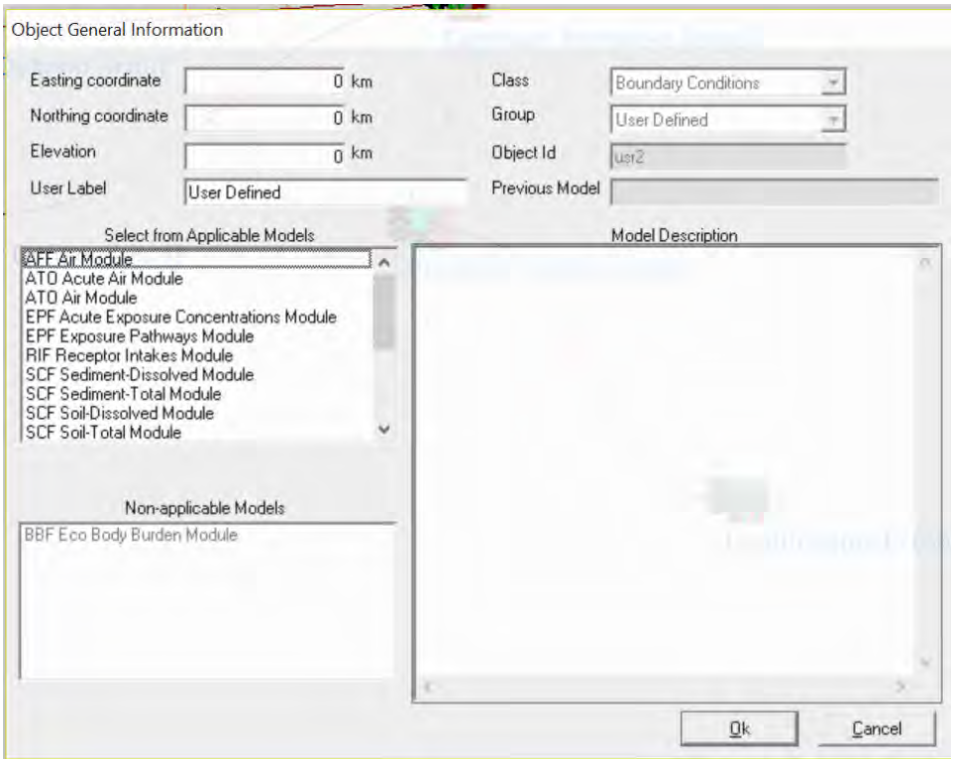
After selecting Ok, the model window closes and the icon Constituent (con1) now shows a red light in the “traffic signal”.

3.2.2.2 General Information for Icon 2 User Defined (usr2) – Boundary Conditions

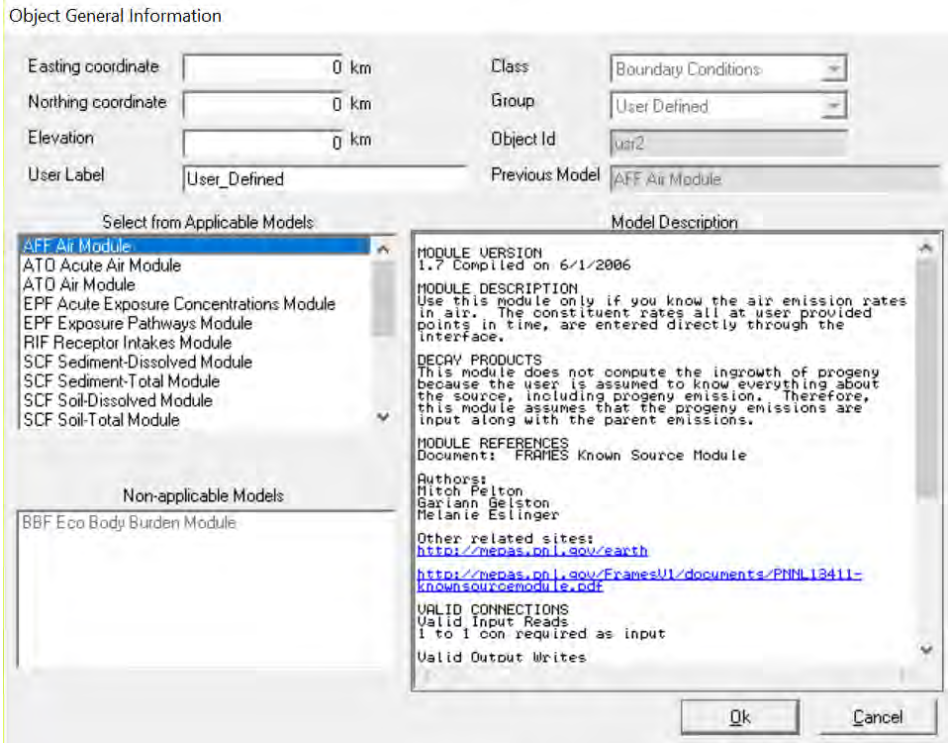
Icon 2: Right click on User Defined (usr2) and the following window opens. Select General Info.



The following window Object General Information Opens. A list of models is provided in the Select from Applicable Models window. Not all models are shown below.



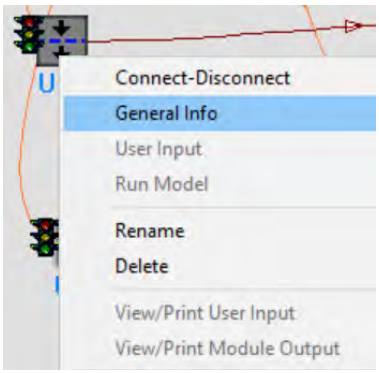
For this example, select the first model listed: AFF Air Module. Upon selection the Model Description populates the window to the right. Select Ok to use this model.



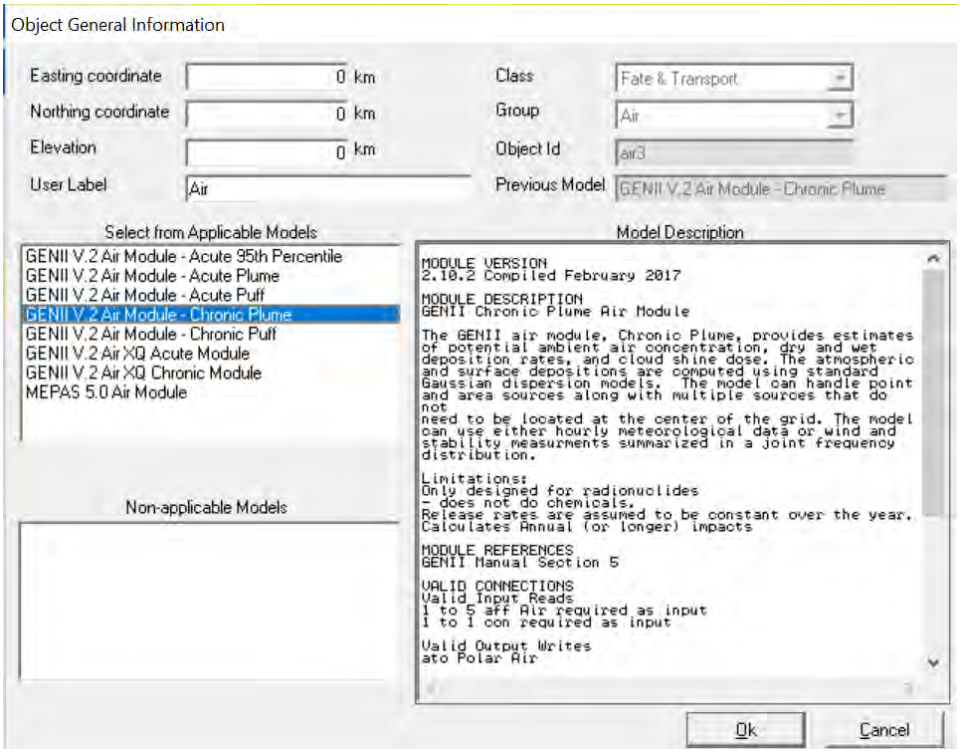
After selecting Ok, the Object General Information window closes, and the icon User Defined (usr2) now shows a red light in the “traffic signal”.

3.2.2.3 General Information for Icon 3 Air (air3) – Fate & Transport

Icon 3: Right click on Air (air3) and the following window opens. Select General Info.



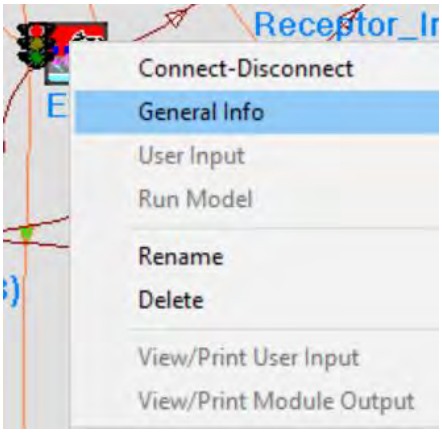
The Object General Information window opens. A list of models is provided in the Select from Applicable Models window. Select the fourth model: GENII V.2 Air Module – Chronic Plume; the Model Description window populates with model details.



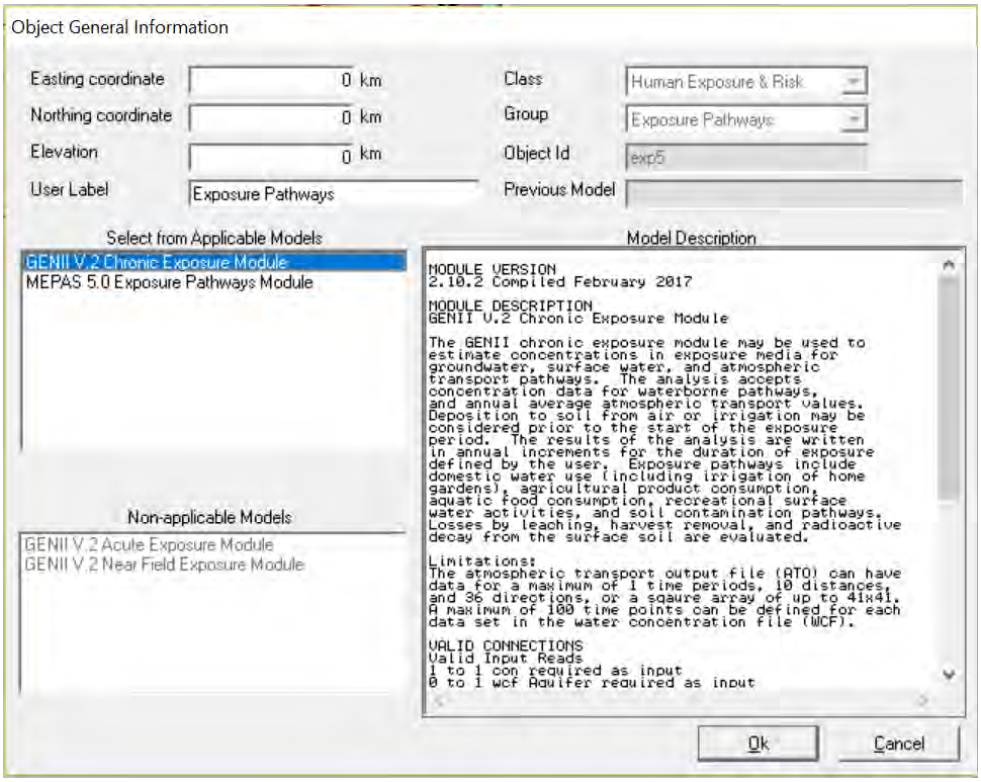
Select Ok; the Object General Information window closes, and the icon Air (air3) now shows a red light in the “traffic signal”.

3.2.2.4 General Information for Icon 4 Exposure Pathways (exp4) – Human Exposure & Risk

Icon 4: Right click on Exposure Pathways (exp4) and the following window opens. Select General Info.



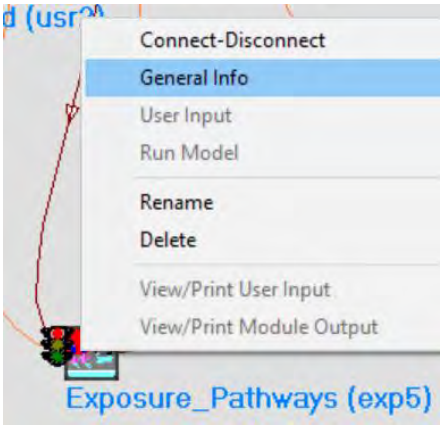
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Select the first model: GENII V.2 Chronic Exposure Module. Upon selection the Model Description populates the window to the right.



Select Ok; the Object General Information window closes, and the icon Exposure Pathways (exp4) now shows a red light in the "traffic signal". *Note that the Northing and Easting are both zero – this is a signal to the model to use **all** locations on the atmospheric dispersion grid.*

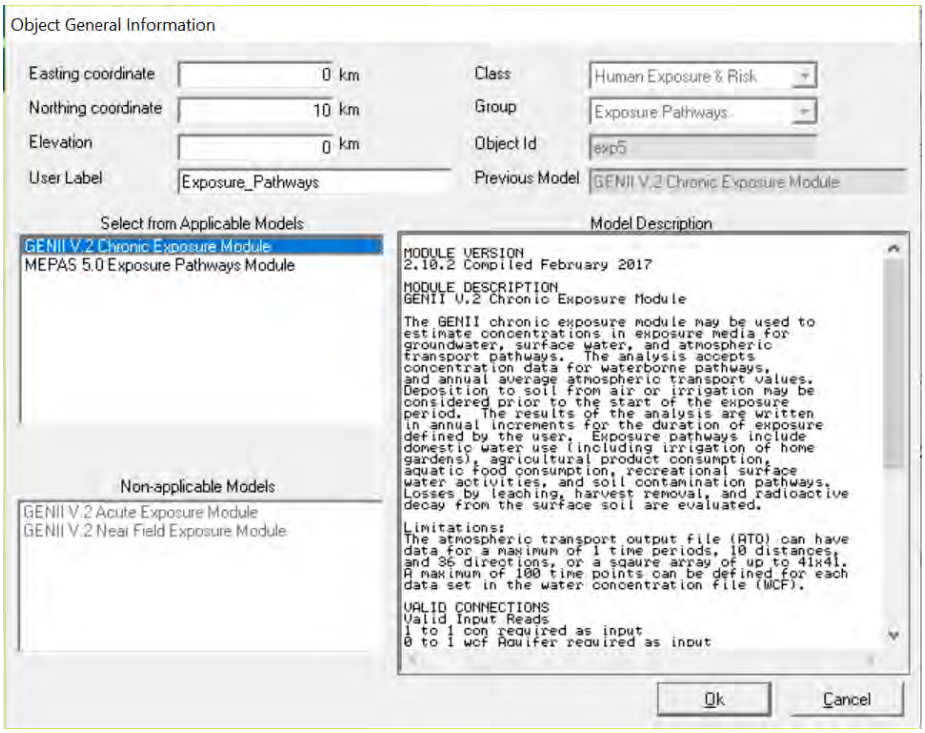
3.2.2.5 General Information for Icon 5 Exposure Pathways (exp5) – Human Exposure & Risk

Icon 5: Right click on Exposure Pathways (exp5) and the following window opens. Select General Info.



The following window Object General Information opens. Notice in this example the Northing coordinate is 10 km. *GENII will take the nearest grid point to this location and make calculations at only this location*.

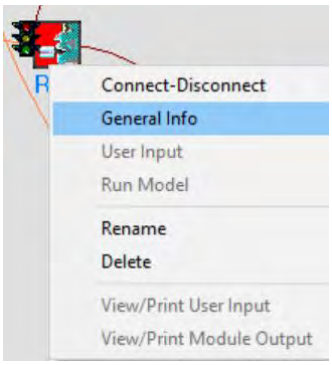
A list of models is provided in the Select from Applicable Models window. Select the first model: GENII V.2 Chronic Exposure Module. Upon selection the Model Description populates the window to the right.



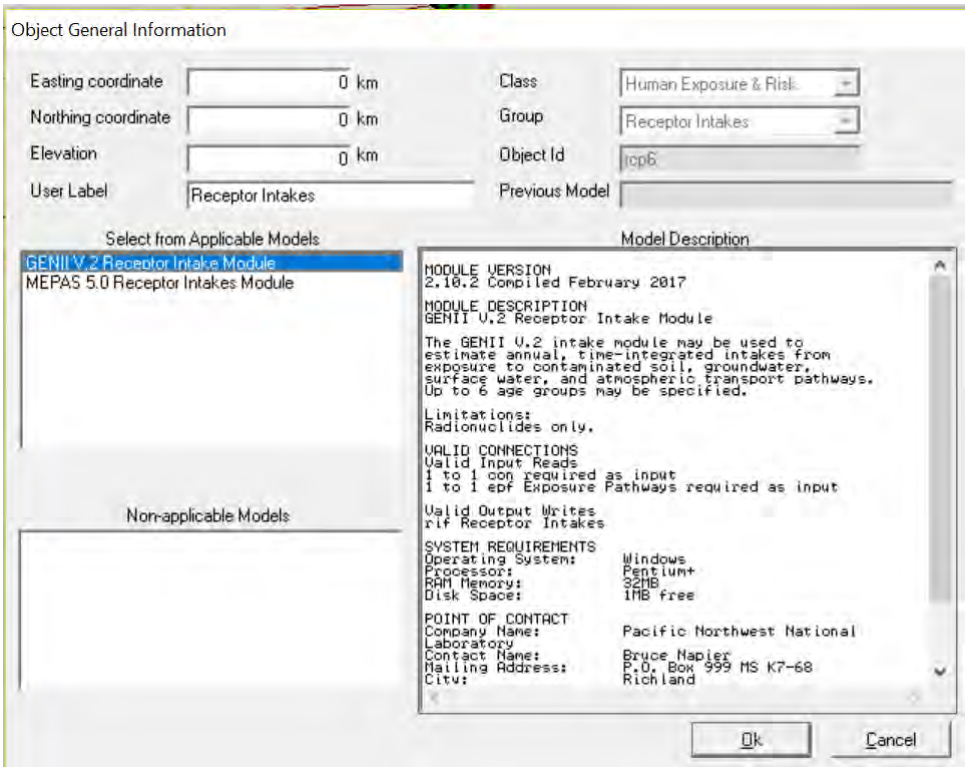
Select Ok; the Object General Information window closes, and the icon Exposure Pathways (exp5) now shows a red light in the “traffic signal”.

3.2.2.6 General Information for Icon 6 Receptor Intakes (rcp6) – Human Exposure & Risk

Icon 6: Right click on Receptor Intakes (rcp6) and the following window opens. Select General Info.



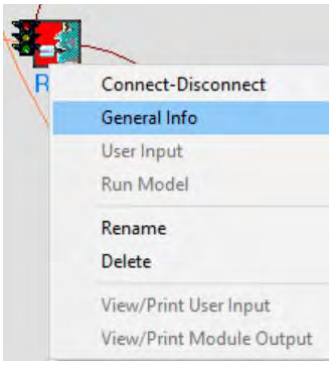
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Select the first model: GENII V.2 Receptor Intake Module. Upon selection the Model Description populates the window to the right.



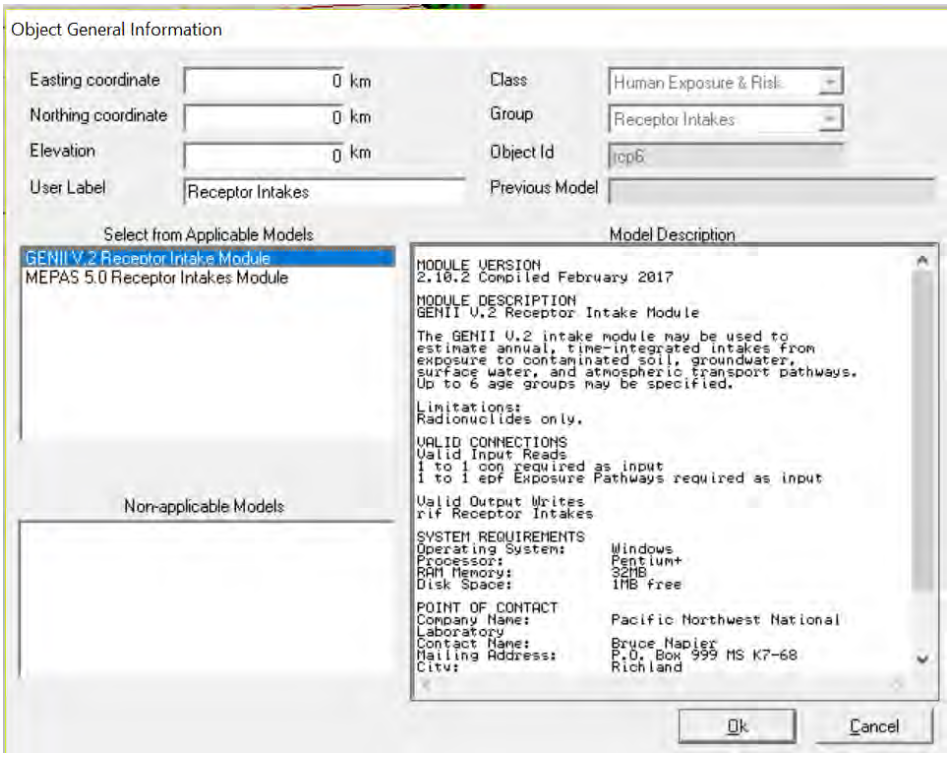
Select Ok; the Object General Information window closes, and the icon Receptor Intake (rcp6) now shows a red light in the “traffic signal”.

3.2.2.7 General Information for Icon 7 Receptor Intakes (rcp7) – Human Exposure & Risk

Icon 7: Right click on Receptor Intakes (rcp7) and the following window opens. Select General Info.



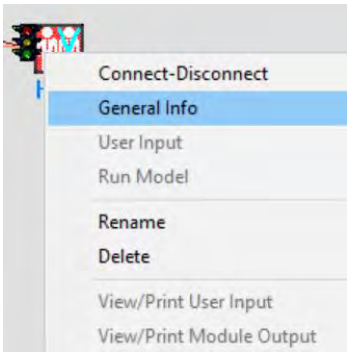
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Select the first model: GENII V.2 Receptor Intake Module. Upon selection the Model Description populates the window to the right.



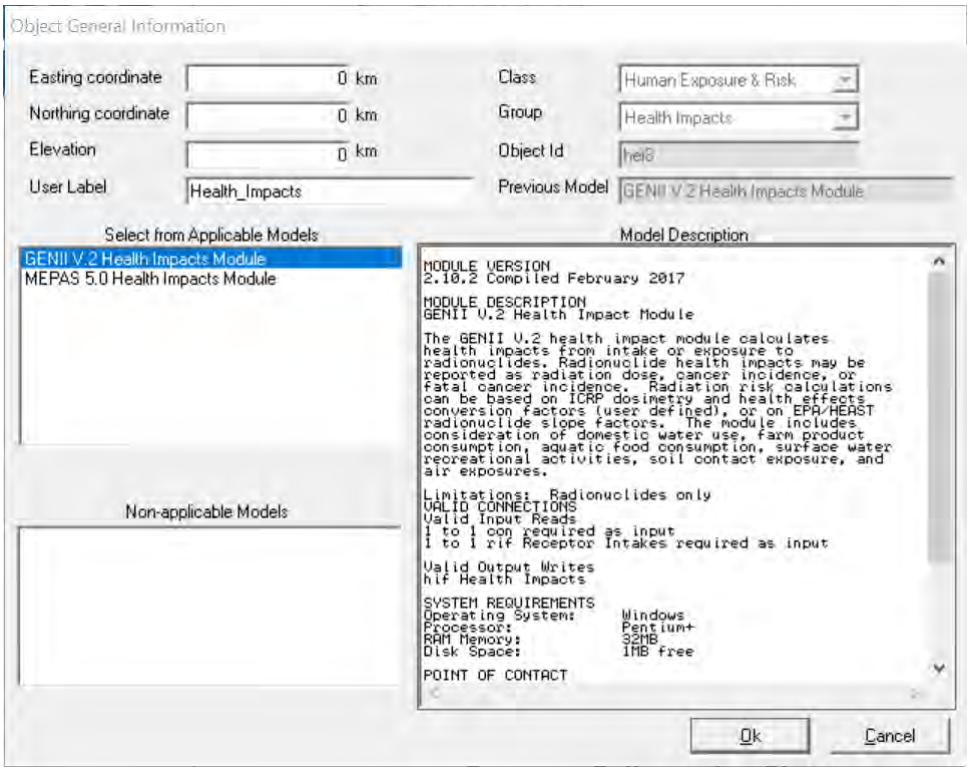
Select Ok; the Object General Information window closes, and the icon Receptor Intake (rcp7) now shows a red light in the “traffic signal”.

3.2.2.8 General Information for Icon 8 Health Impacts (hei8) – Human Exposure & Risk

Icon 8: Right click on Health Impacts (hei8) and the following window opens. Select General Info.



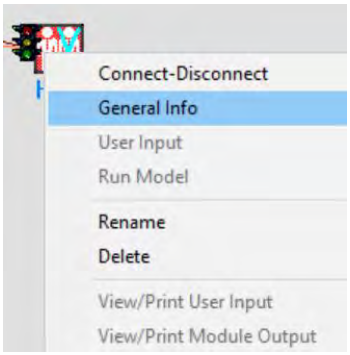
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Select the first model: GENII V.2 Health Impacts Module. Upon selection the Model Description populates the window to the right.



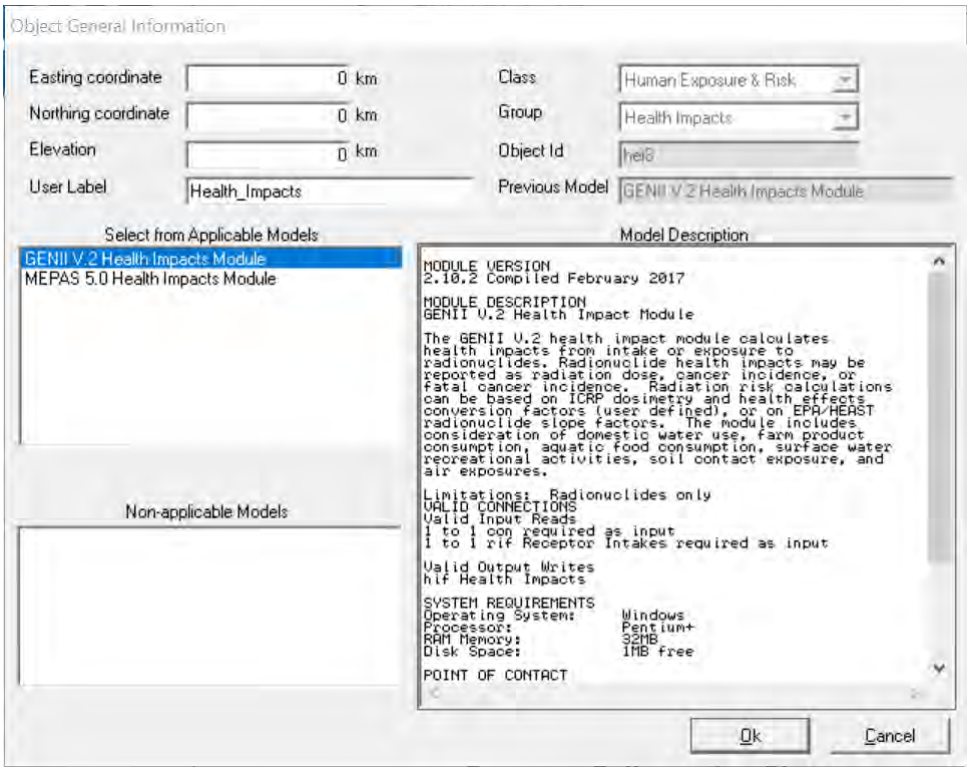
Select Ok; the Object General Information window closes, and the icon Health Impacts (hei8) now shows a red light in the “traffic signal”.

3.2.2.9 General Information for Icon 9 Health Impacts (hei9) – Human Exposure & Risk

Icon 9: Right click on Health Impacts (hei9) and the following window opens. Select General Info.



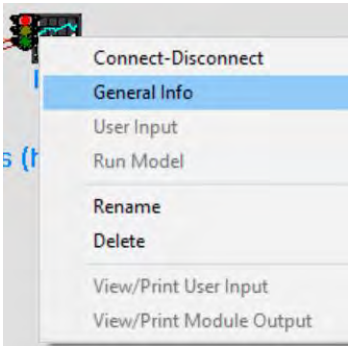
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Select the first model: GENII V.2 Health Impacts Module. Upon selection the Model Description populates the window to the right.



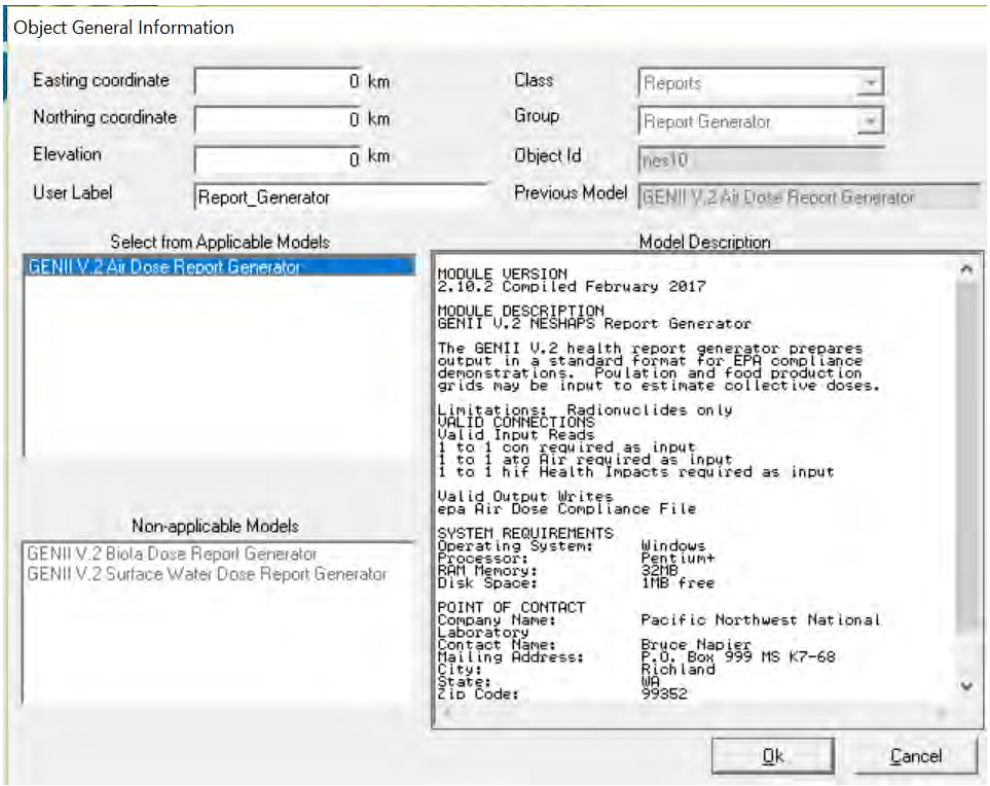
Select Ok; the Object General Information window closes, and the icon Health impacts (hei9) now shows a red light in the “traffic signal”.

3.2.2.10 General Information for Icon 10 Report Generator (nes10) – Reports

Icon 10: Right click on Report Generator (nes10) and the following window opens. Select General Info.



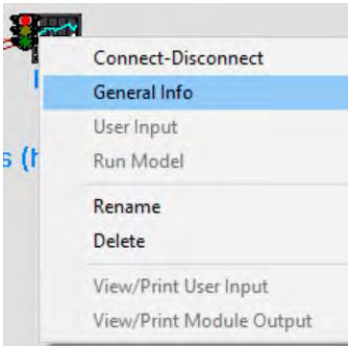
The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Select the first model: GENII V.2 Health Impacts Module. Upon selection the Model Description populates the window to the right.



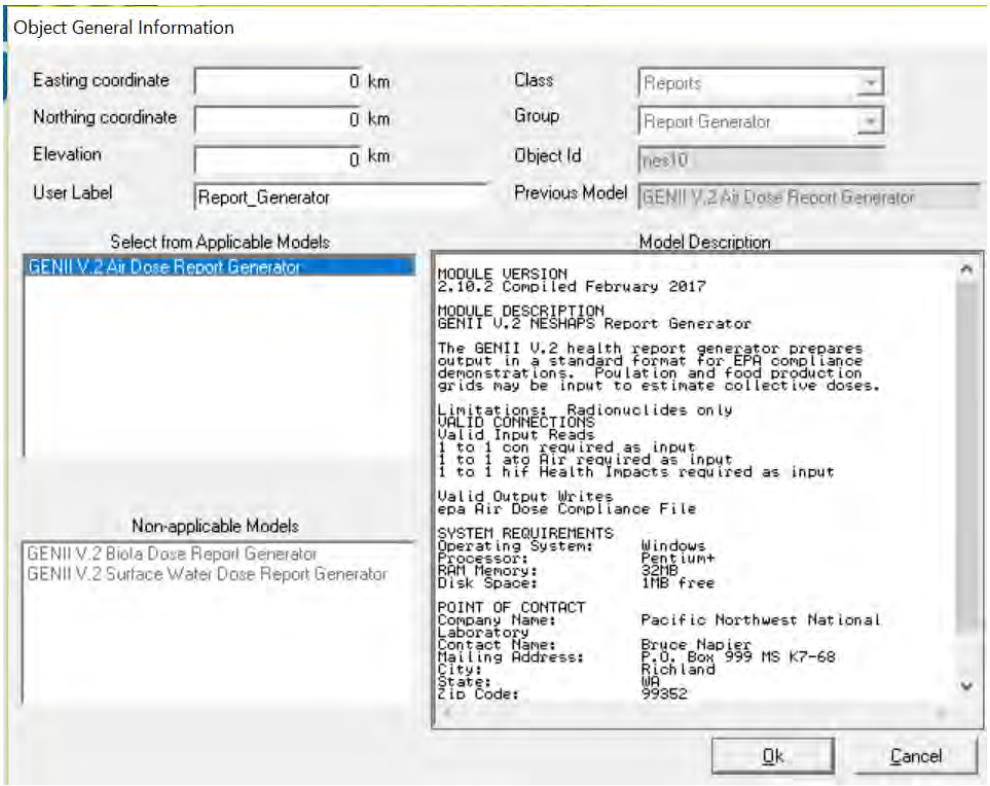
Select Ok; the Object General Information window closes, and the icon Report Generator (nes10) now shows a red light in the “traffic signal”.

3.2.2.11 General Information for Icon 11 Report Generator (nes11) – Reports

Icon 11: Right click on Report Generator (nes11) and the following window opens. Select General Info.



The following window Object General Information opens. A list of models is provided in the Select from Applicable Models window. Select the first model: GENII V.2 Health Impacts Module. Upon selection the Model Description populates the window to the right.



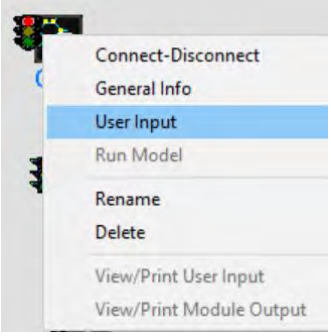
Select Ok; the Object General Information window closes, and the icon Report Generator (nes11) now shows a red light in the “traffic signal”.

3.2.3 Add User Input to Example 11

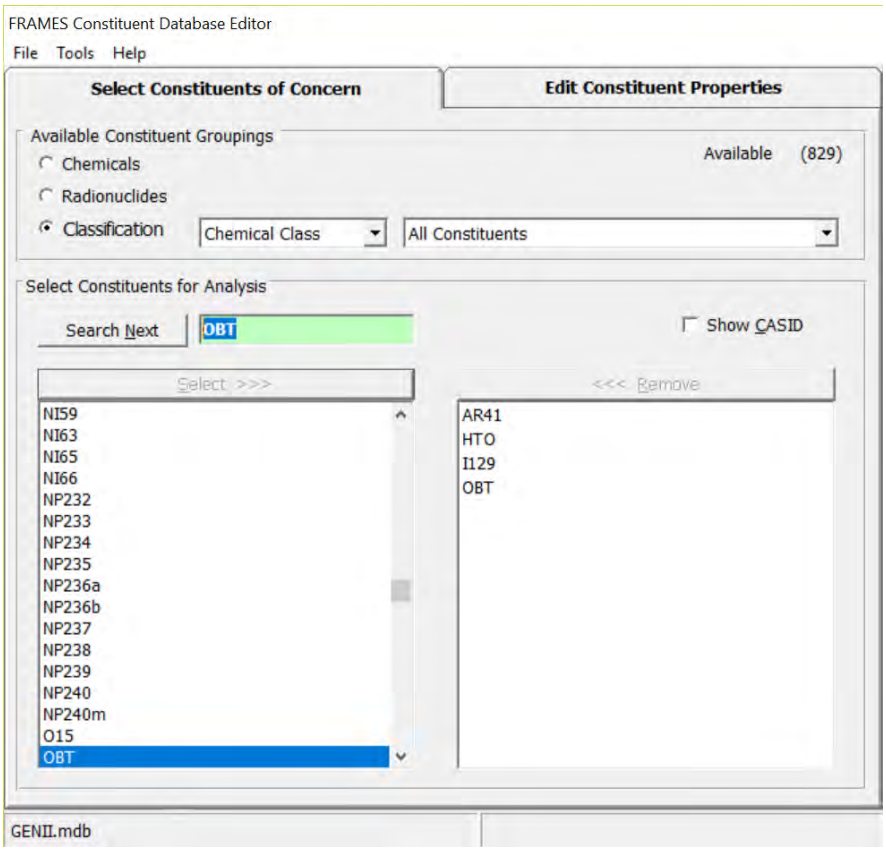
This section will describe entering data for each of the models.

3.2.3.1 User Input for Icon 1 Constituent (con1) - Database

Icon 1: Right click on Constituent (con1) and the following window opens. Select User Input.



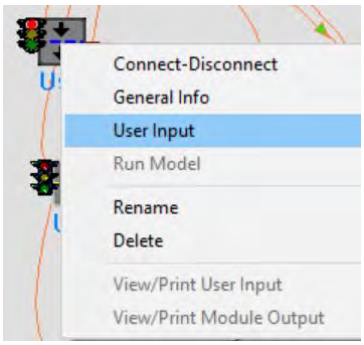
The following window opens and is displaying the tab Select Constituents of Concern: Under Select Constituents for Analysis add ^{41}A, tritiated water, ^{129}I and organically bound tritium as AR41, HTO, I129 and OBT to the box to the right of Search Next. (Note that OBT is added automatically with the tritium.) The background of item turns green and is highlighted in blue in the list below. In the tab Edit Constituent Properties default parameters for these constituents are shown and are used in this example. No changes are made to items under Edit Constituent Properties.



After selecting Save and Exit the window closes. Observe that the Constituent (con1) traffic signal has switched from red to yellow.

3.2.3.2 User Input for Icon 2 User Defined (usr2) – Boundary Conditions

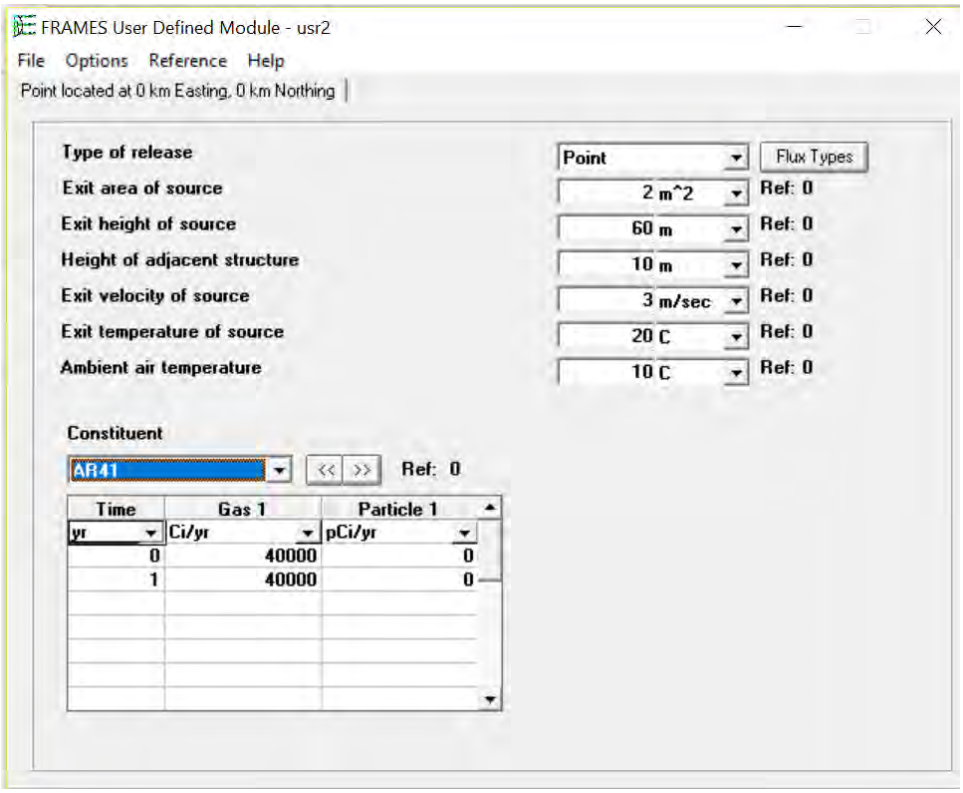
Icon 2: Right click on User Defined (usr2) and the following window opens. Select User Input.



The FRAMES User Defined Module – usr2 opens showing tab Point located at 0 km Easting, 0 km Northing. Select the following items to describe the release.

Item	Value	Units
Type of release	Point	--
Exit area of source	2	m^2
Exit height of source	60	m
Height of adjacent structure	10	m
Exit velocity of source	3	m/s
Exit temperature of source	20	C
Ambient air temperature	10	C

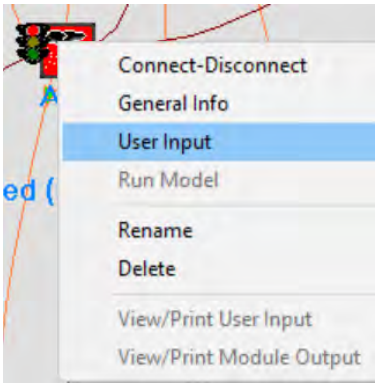
Constituent	Time	Gas 1	Particle
--	yr	Ci/yr	pCi/yr
AR41	0	40000	0
AR41	1	40000	0
--	yr	Ci/da	pCi/yr
HTO	0	23	0
HTO	1	23	0
--	yr	pCi/yr	Ci/yr
I129	0	0	500000
I129	1	0	500000
--	yr	pCi/yr	pCi/yr
OBT	0	0	0
OBT	1	0	0



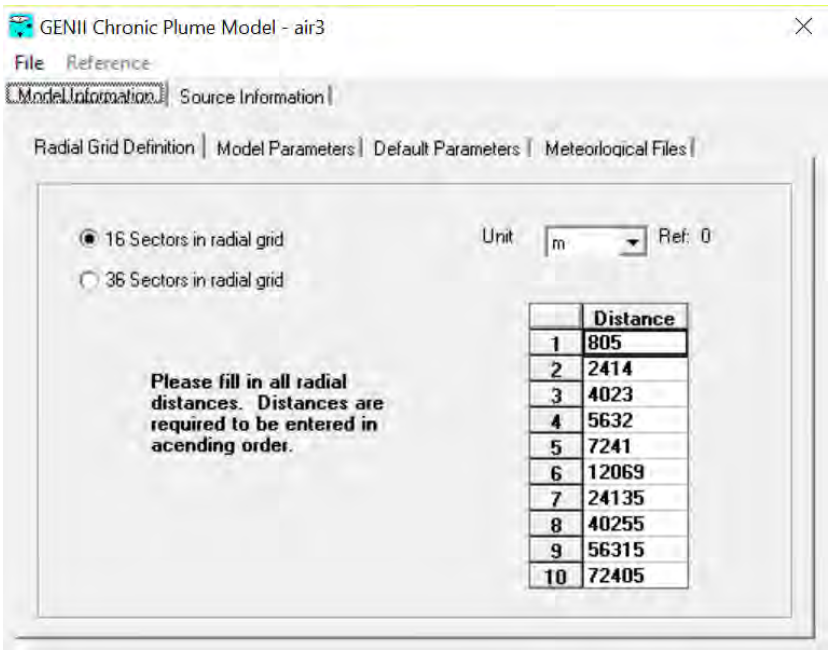
Select File Save and Exit. After selecting Save and Exit, the FRAMES User Defined Module – usr2 window closes. Observe the icon User Defined (usr2) traffic signal switched from red to yellow.

3.2.3.3 User Input for Icon 3 Air (air3) – Fate & Transport

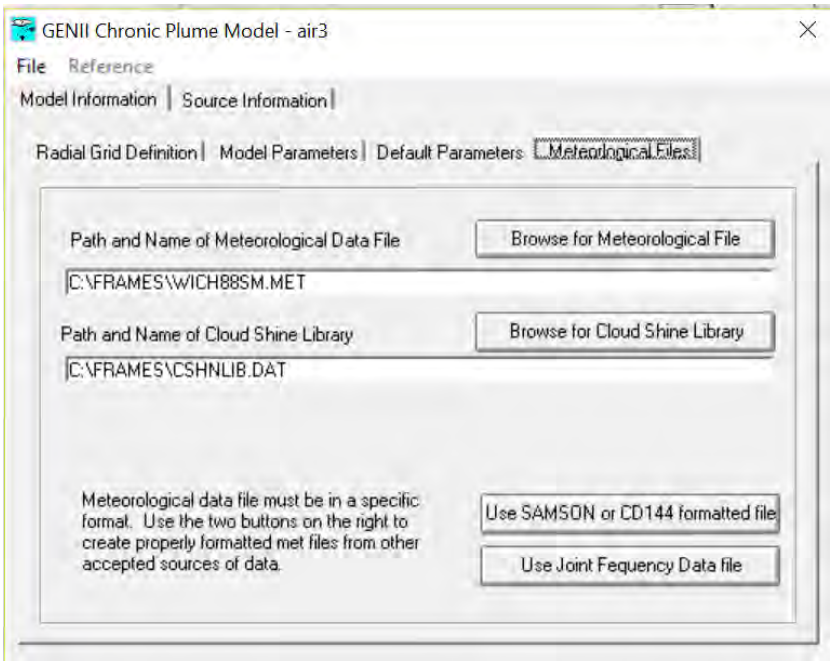
Icon 3: Right click on Air (air3) and the following window opens. Select User Input.



The FRAMES GENII Chronic Plume Model - air3 opens showing tab Model Information and subtab Radial Grid Definition. This data must be entered. (The values in this example are distances of 0.5 miles, 1.5 miles, 2.5 miles, etc., expressed in meters.)



For subtab model Parameters select Brigg's Open Country for the Sigma Parameterization Usage. For subtab Default Parameters default parameters populate and are shown in green. For subtab Meteorological Files select as shown below. You may need to update the Meteorological Data File to WICH88SM.MET.

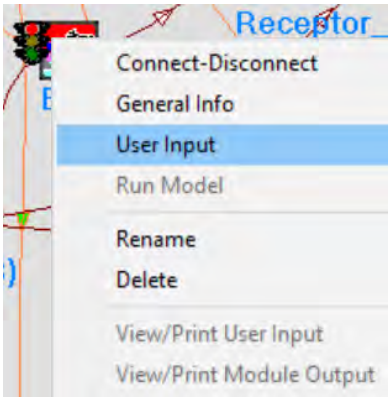


For tab Source Information check Do Plume Rise.

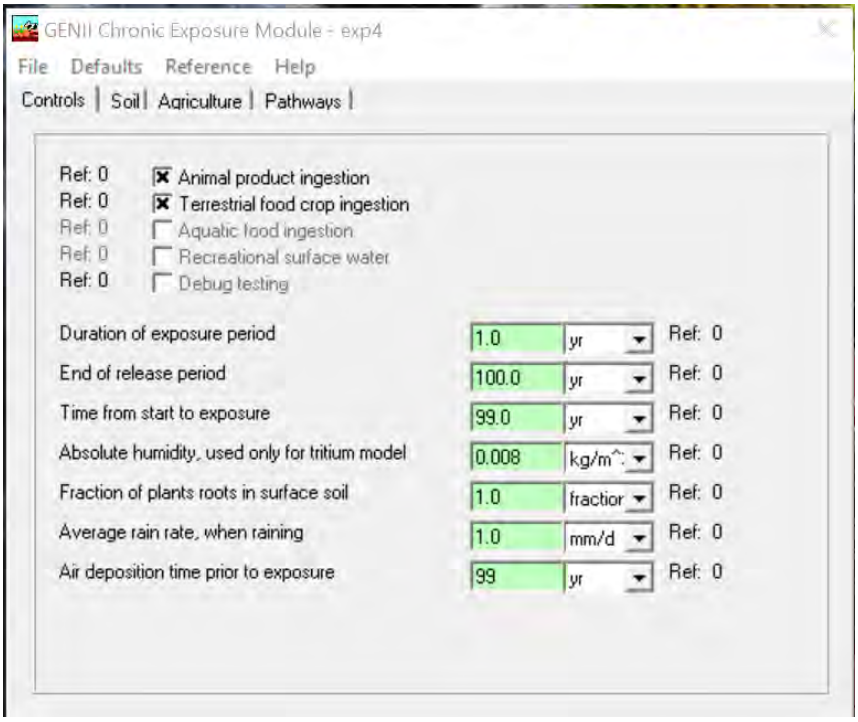
To save the data select File Save and Exit. After selecting Save and Exit, the Genii Chronic Plume Model - air3 closes. The icon Air (air3) traffic signal switched from red to yellow.

3.2.3.4 User Input for Icon 4 Exposure Pathways (exp4) – Human Exposure & Risk

Icon 4: Right click on Exposure Pathways (exp4) and the following window opens. Select User Input.



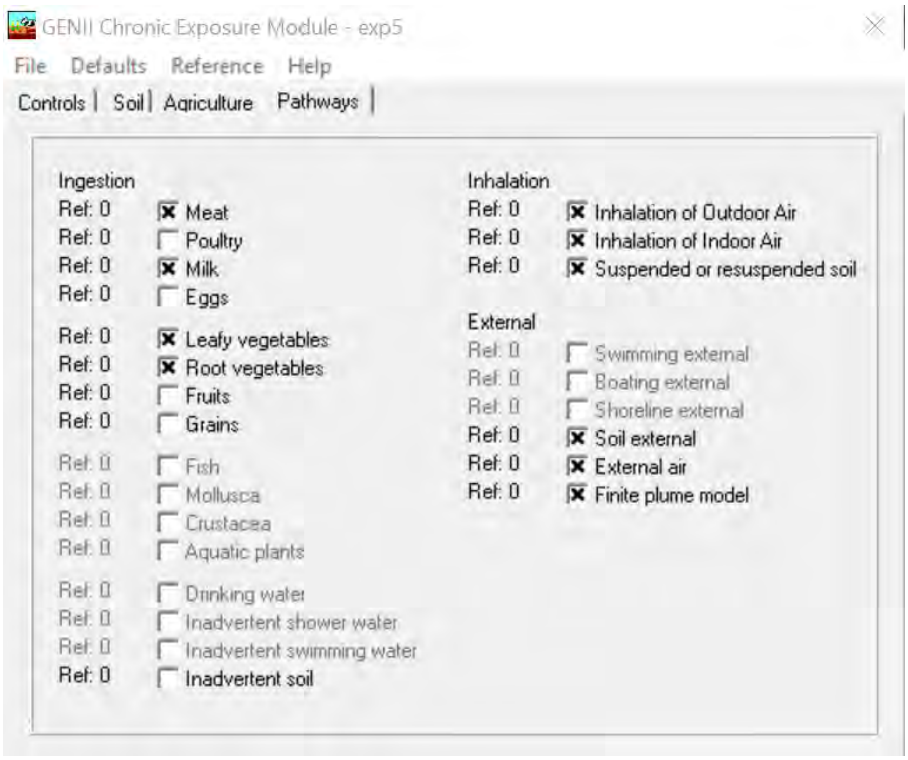
The GENII Chronic Exposure Module – exp4 opens showing Tab Controls. In Controls check the first two items: Animal product ingestion and Terrestrial food crop ingestion. Values shown in green are prepopulated default values.



For tab Soil: subtab Leaching Type of leach rate constant select GENII Default leach rates; subtab Resuspension Type of model to run select No Resuspension Model; subtab Surface Soil default values are prepopulated.

For tab Agriculture: subtab General no boxes are checked, and default values are prepopulated; subtab Animal Feed: all subtabs are prepopulated; subtab Food Crop: all subtabs are prepopulated; subtab Intake delays: all subtabs are prepopulated.

For tab Pathways under Ingestion select: Meat, Milk, Leafy vegetables and Root vegetables; under Inhalation select Inhalation of Outdoor Air, Inhalation of Indoor Air, and Suspended or resuspended soil; under External select: Soil external, External air, and Finite plume model as shown below.



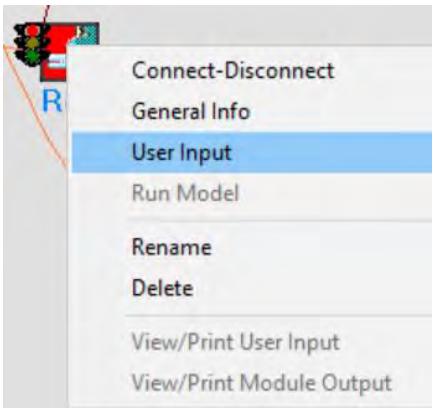
To save the data select File Save and Exit. After selecting Save and Exit, the Genii Chronic Exposure Model – exp4 closes. The icon Exposure Pathways (exp4) traffic signal switched from red to yellow.

3.2.3.5 User Input for Icon 5 Exposure Pathways (exp5) – Human Exposure & Risk

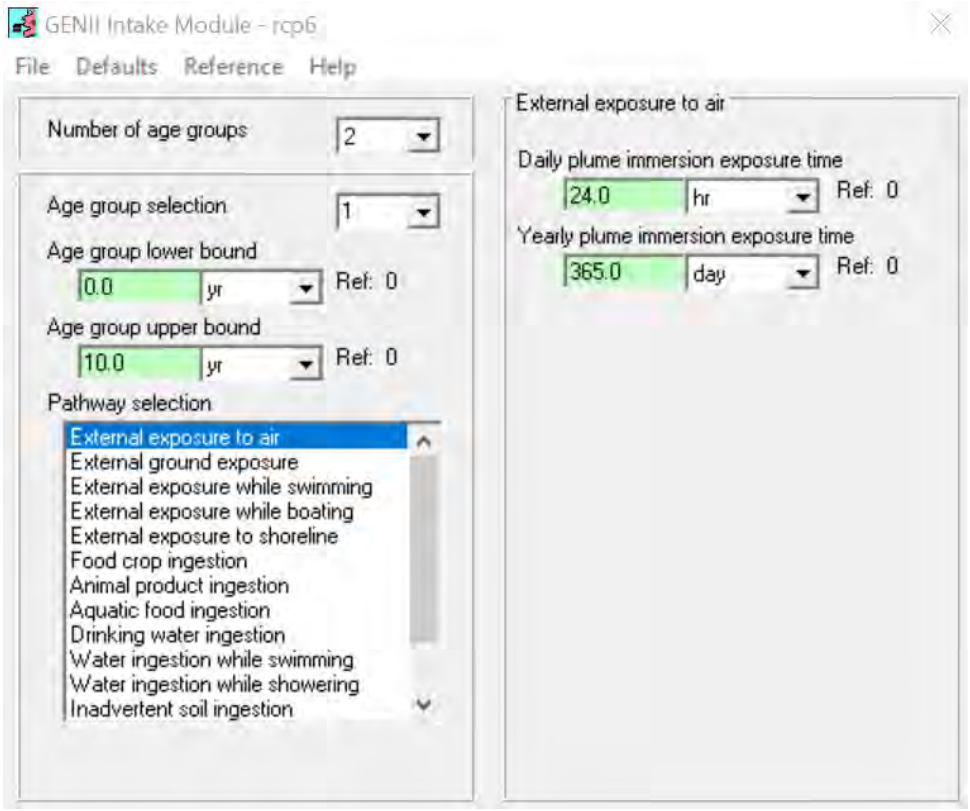
Icon 5: Complete the steps for Icon 4 above. The selections are the same for Icon 5.

3.2.3.6 User Input for Icon 6 Receptor Intakes (rcp6) – Human Exposure & Risk

Right click on Receptor Intakes (rcp6) and the following window opens. Select User Input.



The GENII Intake Module – rcp6 opens. Enter Number of age groups: 2; Age group selection 1; and Pathway selection: External exposure to air. Default values are shown in green.



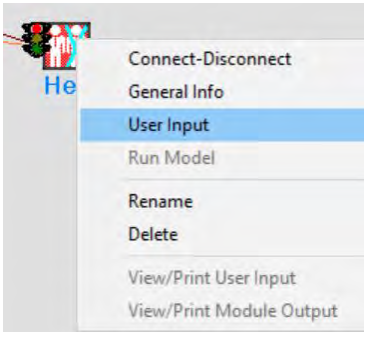
To save the data select File Save and Exit. After selecting Save and Exit, the GENII Intake Module – Receptor Intakes (rcp6) closes. Observe the Receptor Intakes (rcp6) traffic signal switched from red to yellow.

3.2.3.7 User Input for Icon 7 Receptor Intakes (rcp7) – Human Exposure & Risk

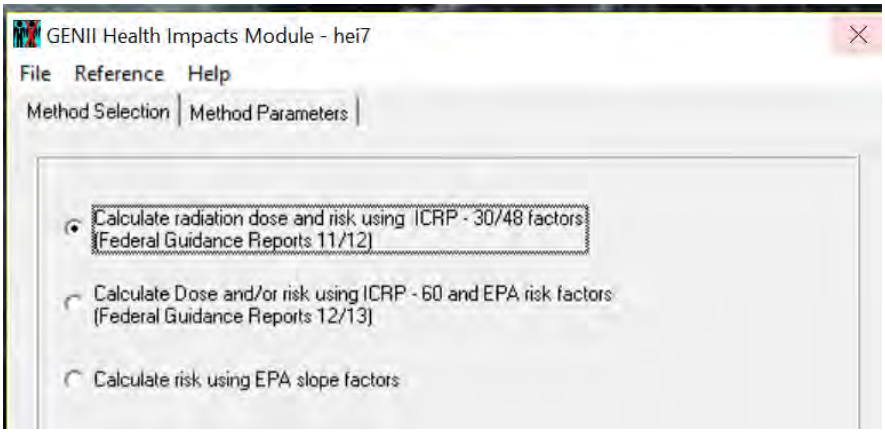
Icon 7: Complete the steps for Icon 6 above. The selections are the same for Icon 7.

3.2.3.8 User Input for Icon 8 Health Impacts (hei8)

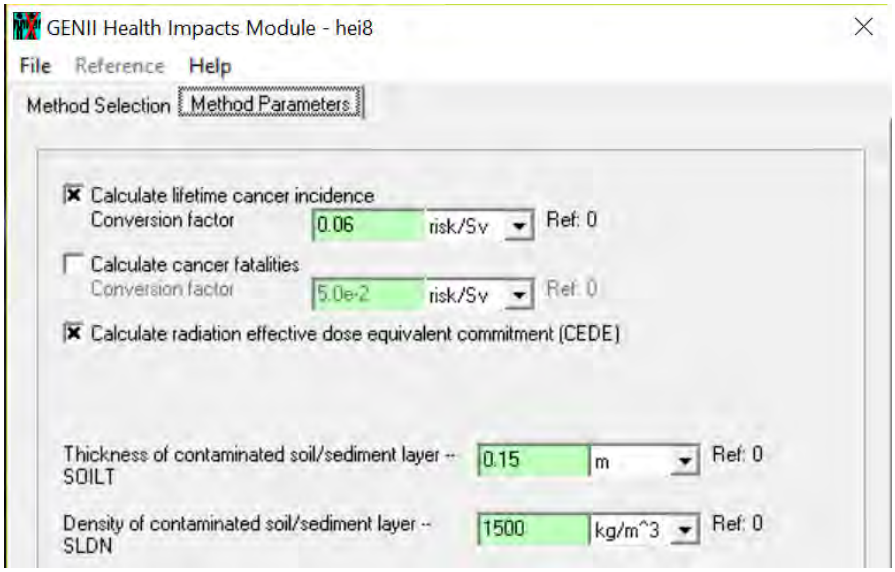
Icon 8: Right click on Health Impacts (hei8) and the following window opens. Select User Input.



The GENII Health Impacts Module – hei8 opens. In the Method Select tab select: Calculate radiation dose and risk using ICRP - 30/48 factors (Federal Guidance Reports 11/12).



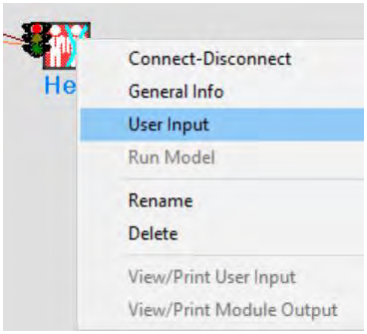
For the Method Parameters tab select: Calculate lifetime cancer incidence and Calculate radiation effective dose equivalent commitment (CEDE).



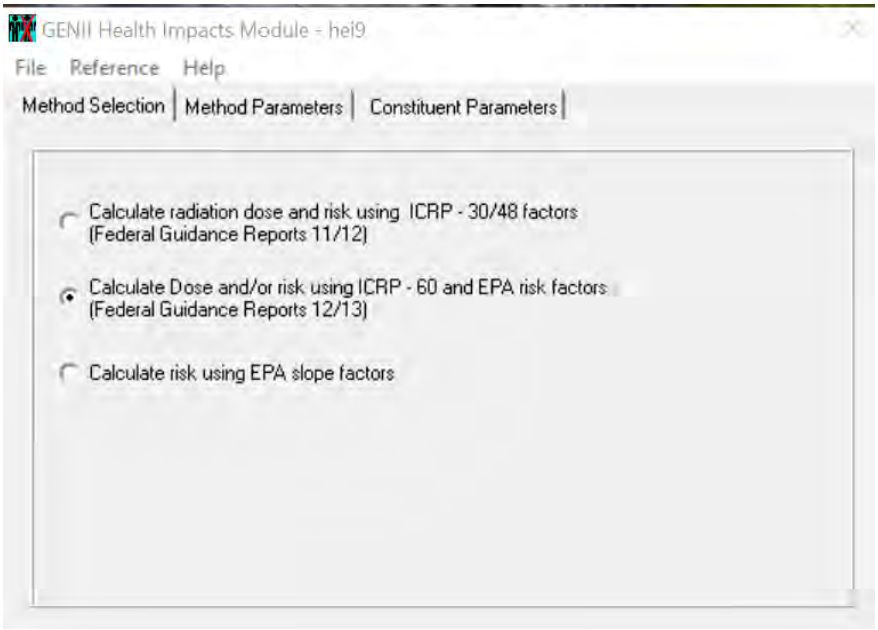
To save the data select File Save and Exit. After selecting Save and Exit, the GENII Health Impacts Module – hei8 closes. Observe the icon Health Impacts (hei8) traffic signal switched from red to yellow.

3.2.3.9 User Input for Icon 9 Health Impacts (hei9)

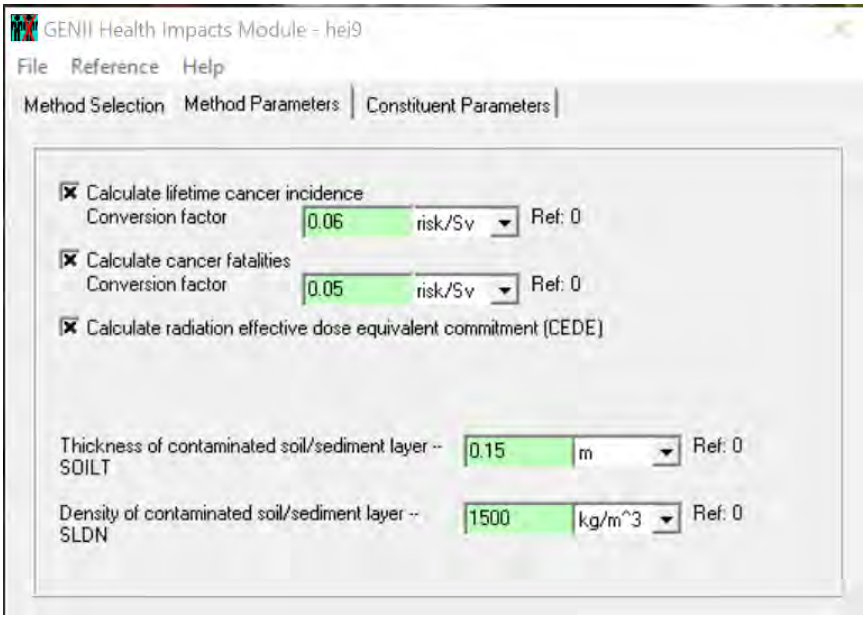
Icon 9: Right click on Health Impacts (hei9) and the following window opens. Select User Input.



The GENII Health Impacts Module – hei9 opens. In the Method Select tab select: Calculate Dose and/or risk using ICRP – 60 and EPA risk factors (Federal Guidance Reports 12/13).

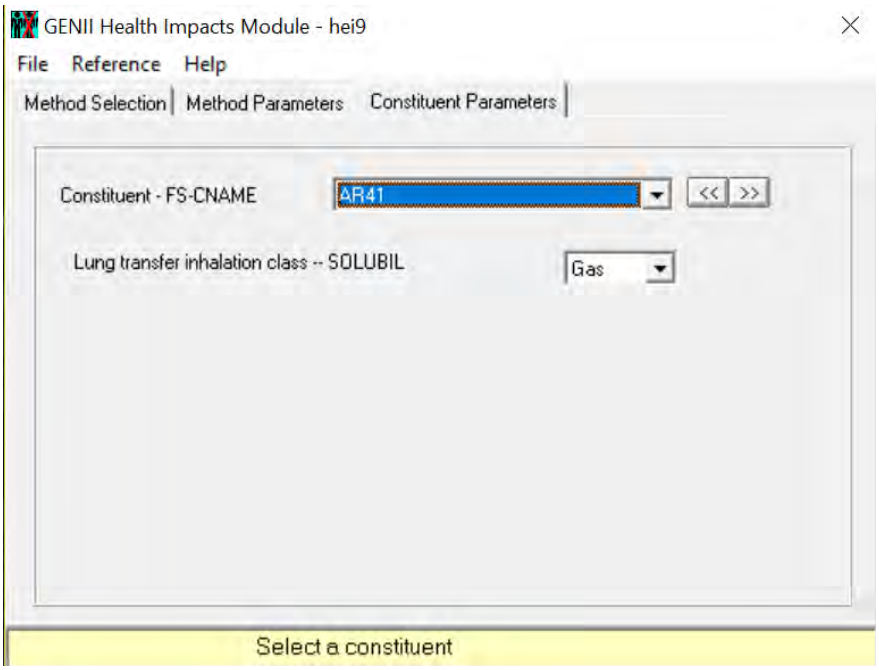


For the Method Parameters tab select: Calculate lifetime cancer incidence, Calculate cancer fatalities, and Calculate radiation effective dose equivalent commitment (CEDE).



For Constituent Parameters tab add data as shown below for each constituent. Observe the guidance in yellow below the table.

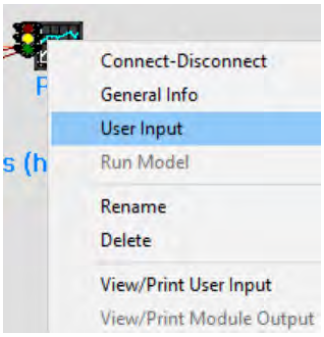
Constituent	Lung transfer inhalation class - SOLUBIL
AR41	Gas
HTO	Vapor
I129	Fast
OBT	Vapor



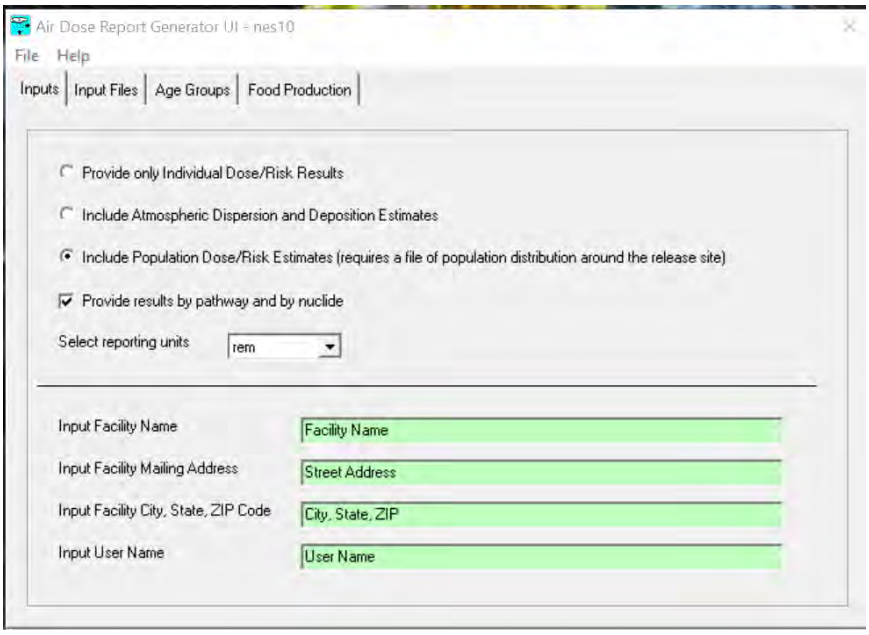
To save the data select File Save and Exit. After selecting Save and Exit, the GENII Health Impacts Module – hei9 closes. Observe the icon Health Impacts (hei9) traffic signal switched from red to yellow.

3.2.3.10 User Input for Icon 10 Report Generator (nes10)

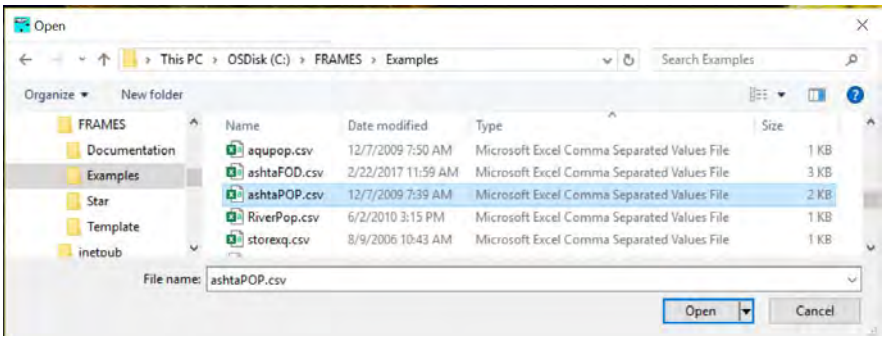
Icon 10: Right click on Generator (nes10) and the following window opens. Select User Input.

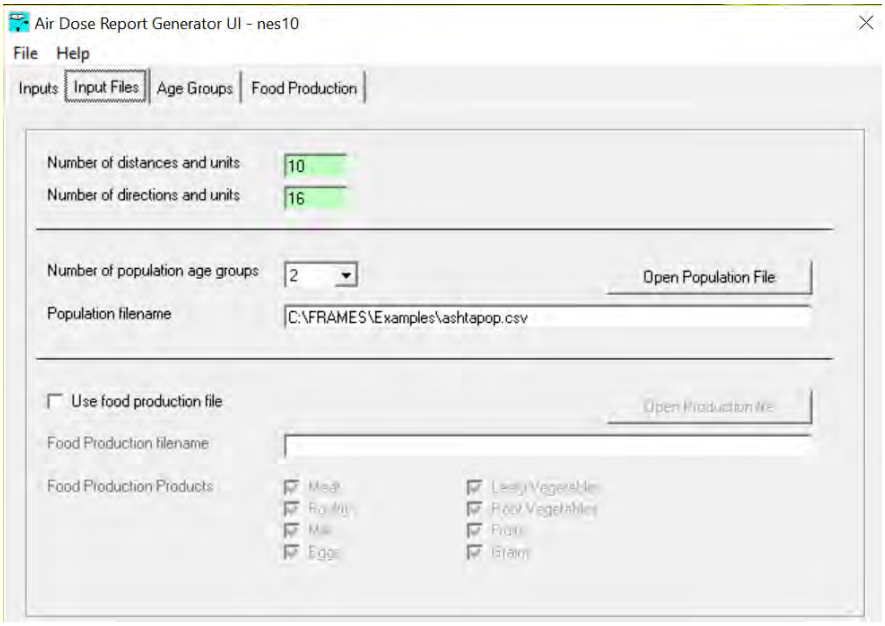


The Air Dose Report Generator UI – nes10 opens. In the Inputs tab select: Include Population Dose/Risk Estimates (requires a file of population distribution around the release site); Provide results by pathway and by nuclide; and Select reporting units: rem. Users may fill in Input Facility items shown in green.



For Input File tab the green items are prepopulated. The number of population age groups must match that provided in Receptor Intakes (rcp6). The population file name is selected from the c:\FRAMES\Examples directory.



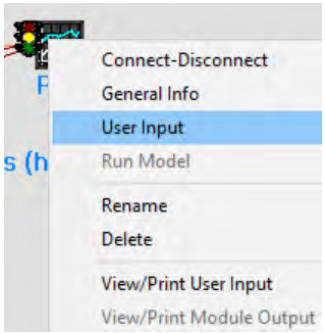


The Age Groups tab is populated from the Population file entered in the Input Files tab. The Food Production tab is not populated because the Use food production file box on the Input Files tab is not checked.

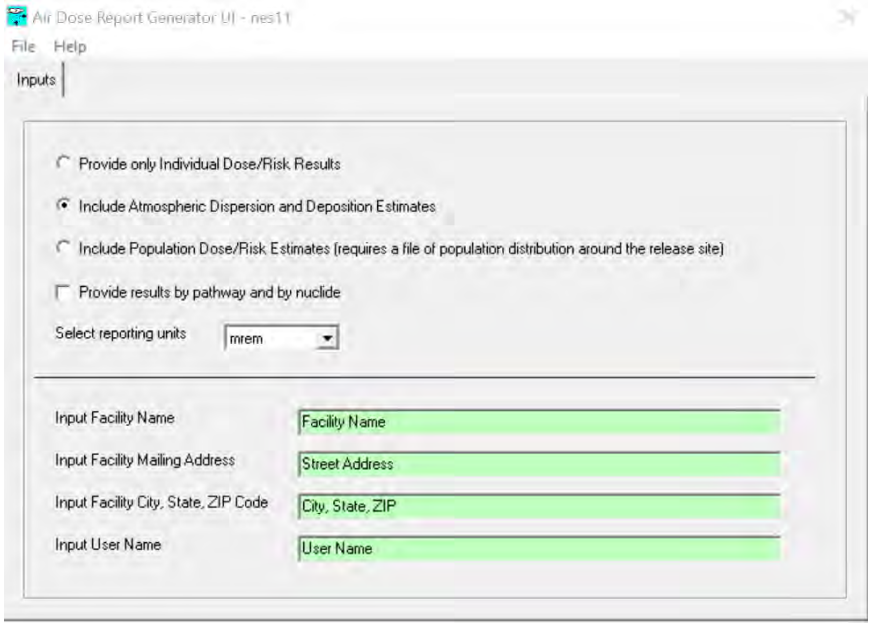
To save the data select File Save and Exit. After selecting Save and Exit, the Air Dose Report Generator UI – nes10 closes. Observe the Report Generator (nes10) traffic signal switched from red to yellow.

3.2.3.11 User Input for Icon 11 Report Generator (nes11)

Icon 11: Right click on Report Generator (nes11) and the following window opens. Select User Input.



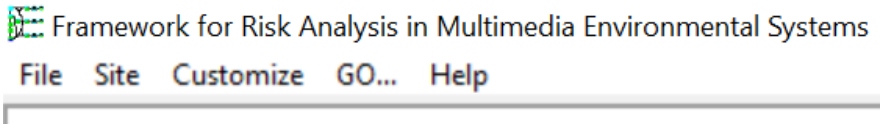
The Air Dose Report Generator UI – nes11 opens. In the Inputs tab select: Include Atmospheric Dispersion and Deposition Estimates. Select reporting units: mrem. Users may fill in input Facility items shown in green.



To save the data select File Save and Exit. After selecting Save and Exit, the Air Dose Report Generator UI – nes11 closes. Observe the Report Generator (nes11) traffic signal switched from red to yellow.

3.2.4 Running Example 11

There are two ways to run examples: running the entire model or running each individual icon in sequence. The entire model sequence may be run automatically by selecting GO at the top ribbon.



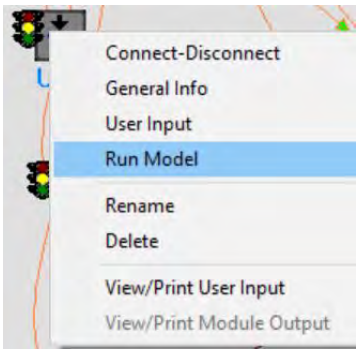
The sequence approach is shown below.

The steps for running the model and examining the results are shown in detail for Icon 2. The text view result is then shown.

For the remaining icons Icon 3 through Icon 11 the same procedure is followed for running the model as shown in 3.2.4.1. For Icon 3 through Icon 11 only the text view results are shown.

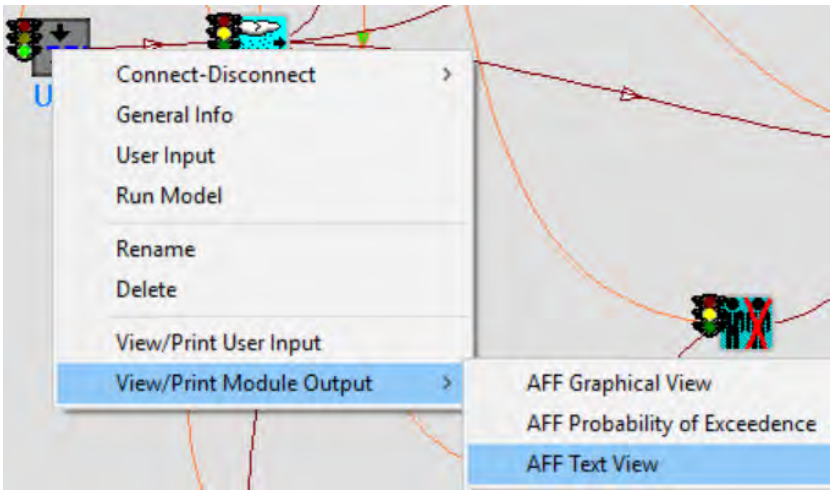
3.2.4.1 Running Icon 2 User Defined (usr2) – Boundary Conditions and Examining the Results

Icon 2: Right click on User Defined (usr2) and the following window opens. Select Run Model.

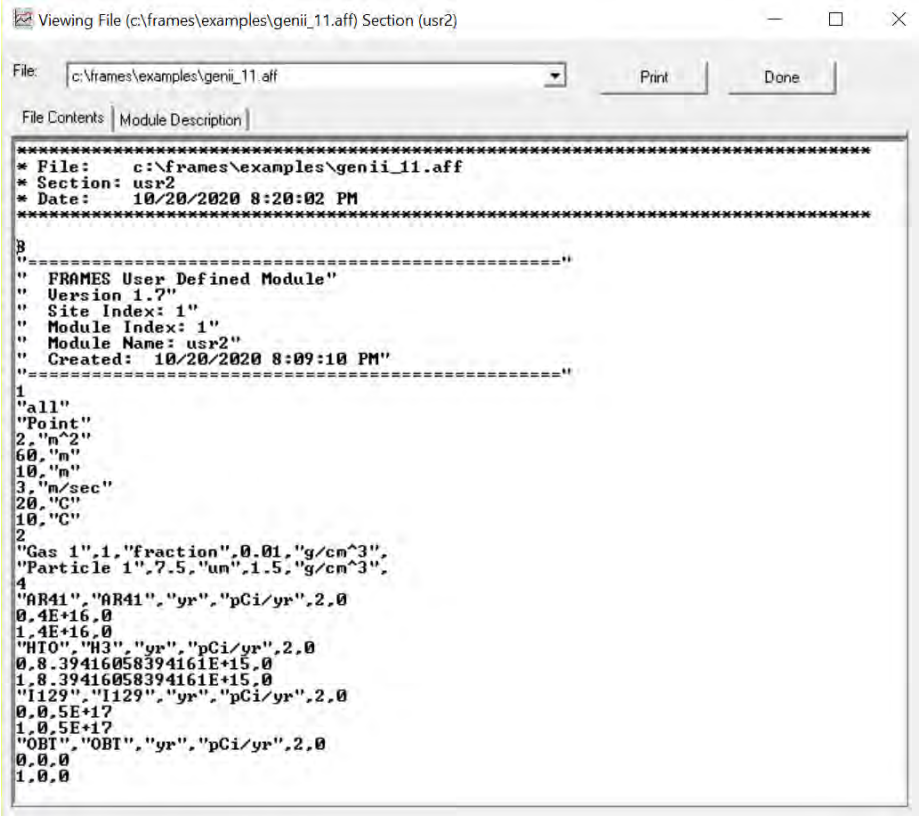


The model runs and the window closes. Observe the icon User Defined (usr2) traffic signal switched from yellow to green.

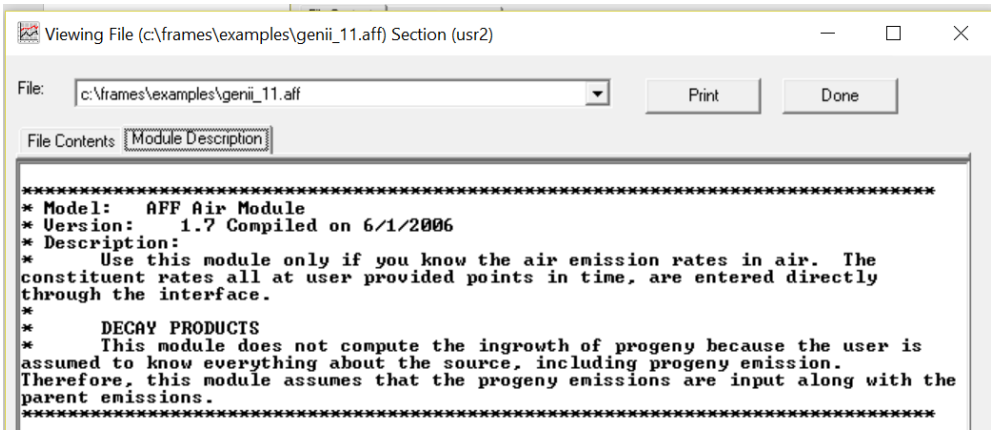
To view the model results right click on User Defined (usr2) and the following window opens. Select View/Print Module Output. There are three options: ATP Graphical View, ATP Probability of Exceedence, and ATO Text View.



The ATF Text View output is shown below.



The Module Description tab is shown below.



Select Print to print the file. Select Done or X in the upper right corner to close the window.

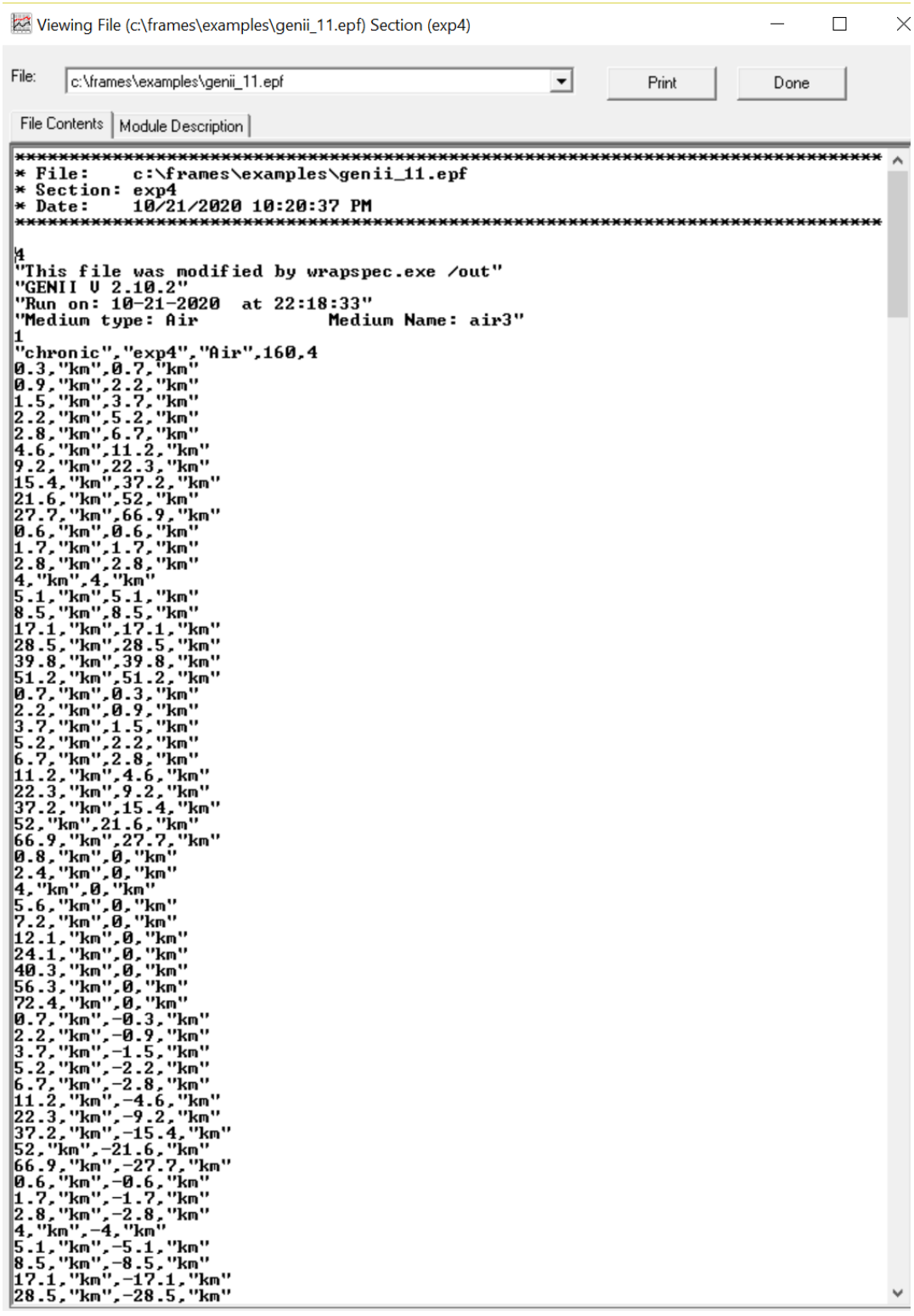
3.2.4.2 Icon 3 Air (air3) Fate & Transport ATO Text View Results

For this icon the first page of output is shown.


```
**********************************************************************************
* File:    c:\frames\examples\genii_11.ato
* Section: air3
* Date:    10/21/2020 10:15:35 PM
**********************************************************************************

?
"This file was modified by wrapspec.exe /out"
"============================================================="
"GENII Chronic Plume Model Version 2.10.2"
"Run Performed: 21/10/2020 22:12:25. 3"
"Output Filename:"
"Meteorological File used: C:\FRAMES\WICH88SM.MET"
"============================================================="
1
1,"air3"
"All 1",7.5,"um",1.5,"g/cm^3"
"chronic","polar","grid",4
"Argon-41","AR41",1,0
1,"yr",4
"Air Concentration","All 1","","Bq/m^3",10,"m",16,"deg"
805,2414,4023,5632,7241,12070,24140,40260,56320,72400
22.5,7.433,3.852,2.157,1.42,1.019,0.5008,0.1881,0.07694,0.04051,0.02339
45,4.498,2.165,1.212,0.8024,0.578,0.2883,0.1095,0.04359,0.02247,0.01272
67.5,3.353,1.549,0.8909,0.6042,0.4455,0.2316,0.09681,0.03749,0.0186,0.01028
90,1.24,0.597,0.3523,0.2441,0.1824,0.09757,0.0398,0.01577,0.007939,0.004448
112.5,3.196,1.527,0.8876,0.605,0.446,0.2335,0.1099,0.0418,0.02051,0.01119
135,3.207,1.538,0.8743,0.5873,0.428,0.2202,0.09234,0.03706,0.01903,0.01075
157.5,3.008,1.661,0.9545,0.6352,0.4542,0.227,0.08418,0.03444,0.01826,0.01051
180,7.805,3.999,2.234,1.465,1.038,0.5092,0.1912,0.07578,0.03894,0.02205
202.5,5.417,2.726,1.486,0.9511,0.6653,0.3136,0.1063,0.04269,0.02229,0.01277
225,4.251,2.26,1.261,0.8223,0.5881,0.2868,0.1225,0.04646,0.02273,0.01252
247.5,4.264,2.256,1.281,0.8392,0.6015,0.2988,0.122,0.04651,0.02302,0.01268
270,2.315,1.153,0.6439,0.4185,0.2998,0.1488,0.06027,0.02245,0.01085,0.005836
292.5,3.7,2.025,1.151,0.7487,0.5331,0.2643,0.09717,0.03748,0.01883,0.01037
315,3.285,1.839,1.066,0.7065,0.5044,0.2543,0.09672,0.03843,0.01981,0.01111
337.5,5.002,3.004,1.738,1.154,0.8229,0.4122,0.1466,0.06143,0.03326,0.01922
360,13.97,8.004,4.616,3.078,2.203,1.099,0.4057,0.1692,0.09077,0.05258
"Deposition Rate","All 1","dry","(Bq/m^2)/s",10,"m",16,"deg"
805,2414,4023,5632,7241,12070,24140,40260,56320,72400
22.5,0,0,0,0,0,0,0,0,0
45,0,0,0,0,0,0,0,0,0
67.5,0,0,0,0,0,0,0,0,0
90,0,0,0,0,0,0,0,0,0
112.5,0,0,0,0,0,0,0,0,0
135,0,0,0,0,0,0,0,0,0
157.5,0,0,0,0,0,0,0,0,0
180,0,0,0,0,0,0,0,0,0
202.5,0,0,0,0,0,0,0,0,0
225,0,0,0,0,0,0,0,0,0
247.5,0,0,0,0,0,0,0,0,0
270,0,0,0,0,0,0,0,0,0
292.5,0,0,0,0,0,0,0,0,0
315,0,0,0,0,0,0,0,0,0
337.5,0,0,0,0,0,0,0,0,0
360,0,0,0,0,0,0,0,0,0
"Deposition Rate","All 1","wet","(Bq/m^2)/s",10,"m",16,"deg"
805,2414,4023,5632,7241,12070,24140,40260,56320,72400
22.5,0,0,0,0,0,0,0,0,0
45,0,0,0,0,0,0,0,0,0
67.5,0,0,0,0,0,0,0,0,0
90,0,0,0,0,0,0,0,0,0
112.5,0,0,0,0,0,0,0,0,0
135,0,0,0,0,0,0,0,0,0
157.5,0,0,0,0,0,0,0,0,0
180,0,0,0,0,0,0,0,0,0
202.5,0,0,0,0,0,0,0,0,0
225,0,0,0,0,0,0,0,0,0
247.5,0,0,0,0,0,0,0,0,0
270,0,0,0,0,0,0,0,0,0
292.5,0,0,0,0,0,0,0,0,0
315,0,0,0,0,0,0,0,0,0
337.5,0,0,0,0,0,0,0,0,0
360,0,0,0,0,0,0,0,0,0
```

3.2.4.3 Icon 4 Exposure Pathways (exp4) Human Exposure & Risk EPF Text View Results

For this icon the first page of output is shown.

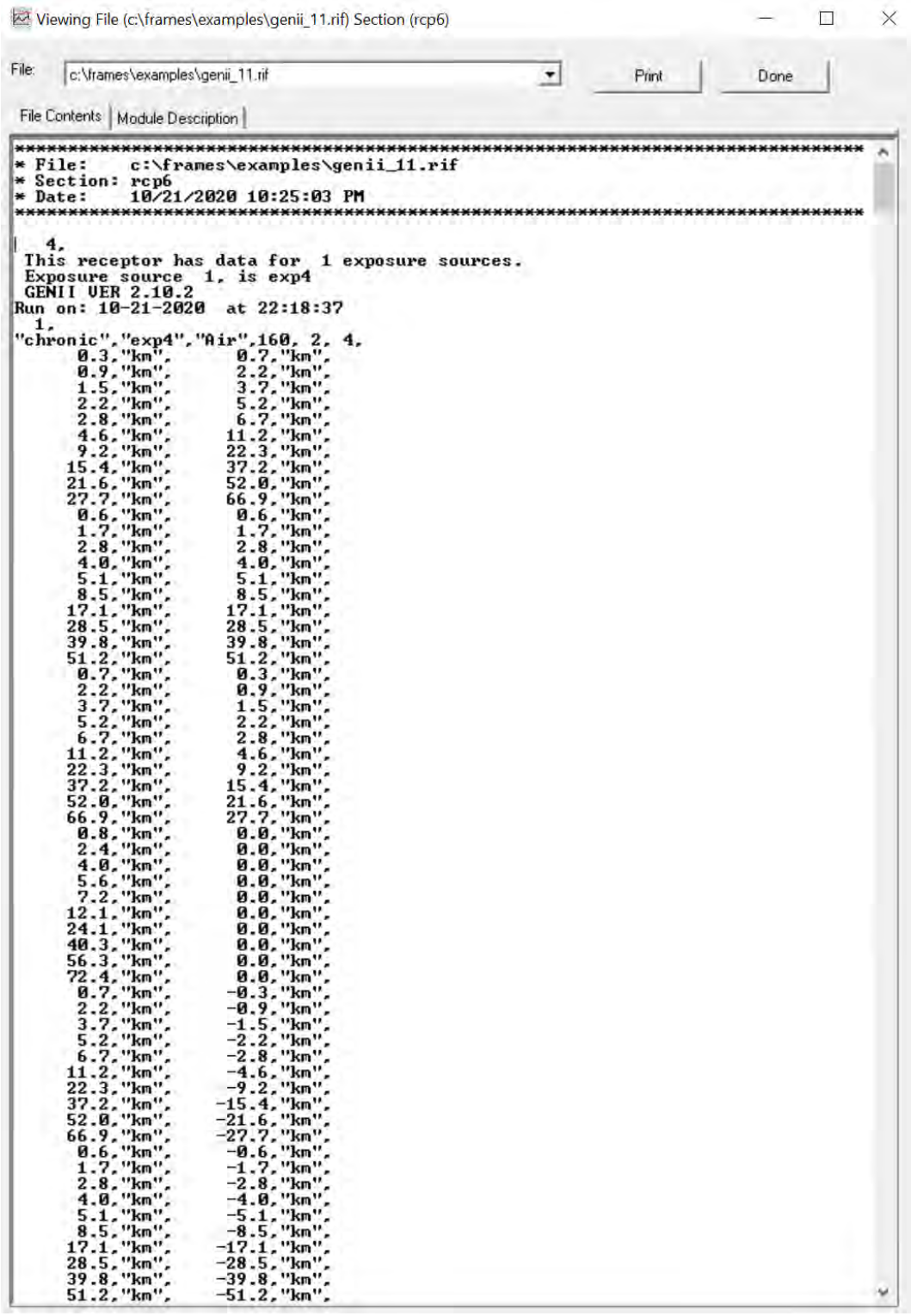


3.2.4.4 Icon 5 Exposure Pathways (exp5) Human Exposure & Risk EPF Text View Results

For this icon the first page of output is shown.

3.2.4.5 Icon 6 Receptor Intake (rcp6) – Human Exposure & Risk RIF Text View Results

For this icon the first page of output is shown.




```
**********************************************************************************
* File:    c:\frames\examples\genii_11.rif
* Section: rcp6
* Date:    10/21/2020 10:25:03 PM
**********************************************************************************

  4,
 This receptor has data for  1 exposure sources.
 Exposure source  1, is exp4
 GENII VER 2.10.2
Run on: 10-21-2020  at 22:18:37
  1,
"chronic","exp4","Air",160, 2, 4,
      0.3,"km",      0.7,"km",
      0.9,"km",      2.2,"km",
      1.5,"km",      3.7,"km",
      2.2,"km",      5.2,"km",
      2.8,"km",      6.7,"km",
      4.6,"km",     11.2,"km",
      9.2,"km",     22.3,"km",
     15.4,"km",     37.2,"km",
     21.6,"km",     52.0,"km",
     27.7,"km",     66.9,"km",
      0.6,"km",      0.6,"km",
      1.7,"km",      1.7,"km",
      2.8,"km",      2.8,"km",
      4.0,"km",      4.0,"km",
      5.1,"km",      5.1,"km",
      8.5,"km",      8.5,"km",
     17.1,"km",     17.1,"km",
     28.5,"km",     28.5,"km",
     39.8,"km",     39.8,"km",
     51.2,"km",     51.2,"km",
      0.7,"km",      0.3,"km",
      2.2,"km",      0.9,"km",
      3.7,"km",      1.5,"km",
      5.2,"km",      2.2,"km",
      6.7,"km",      2.8,"km",
     11.2,"km",      4.6,"km",
     22.3,"km",      9.2,"km",
     37.2,"km",     15.4,"km",
     52.0,"km",     21.6,"km",
     66.9,"km",     27.7,"km",
      0.8,"km",      0.0,"km",
      2.4,"km",      0.0,"km",
      4.0,"km",      0.0,"km",
      5.6,"km",      0.0,"km",
      7.2,"km",      0.0,"km",
     12.1,"km",      0.0,"km",
     24.1,"km",      0.0,"km",
     40.3,"km",      0.0,"km",
     56.3,"km",      0.0,"km",
     72.4,"km",      0.0,"km",
      0.7,"km",     -0.3,"km",
      2.2,"km",     -0.9,"km",
      3.7,"km",     -1.5,"km",
      5.2,"km",     -2.2,"km",
      6.7,"km",     -2.8,"km",
     11.2,"km",     -4.6,"km",
     22.3,"km",     -9.2,"km",
     37.2,"km",    -15.4,"km",
     52.0,"km",    -21.6,"km",
     66.9,"km",    -27.7,"km",
      0.6,"km",     -0.6,"km",
      1.7,"km",     -1.7,"km",
      2.8,"km",     -2.8,"km",
      4.0,"km",     -4.0,"km",
      5.1,"km",     -5.1,"km",
      8.5,"km",     -8.5,"km",
     17.1,"km",    -17.1,"km",
     28.5,"km",    -28.5,"km",
     39.8,"km",    -39.8,"km",
     51.2,"km",    -51.2,"km",
```

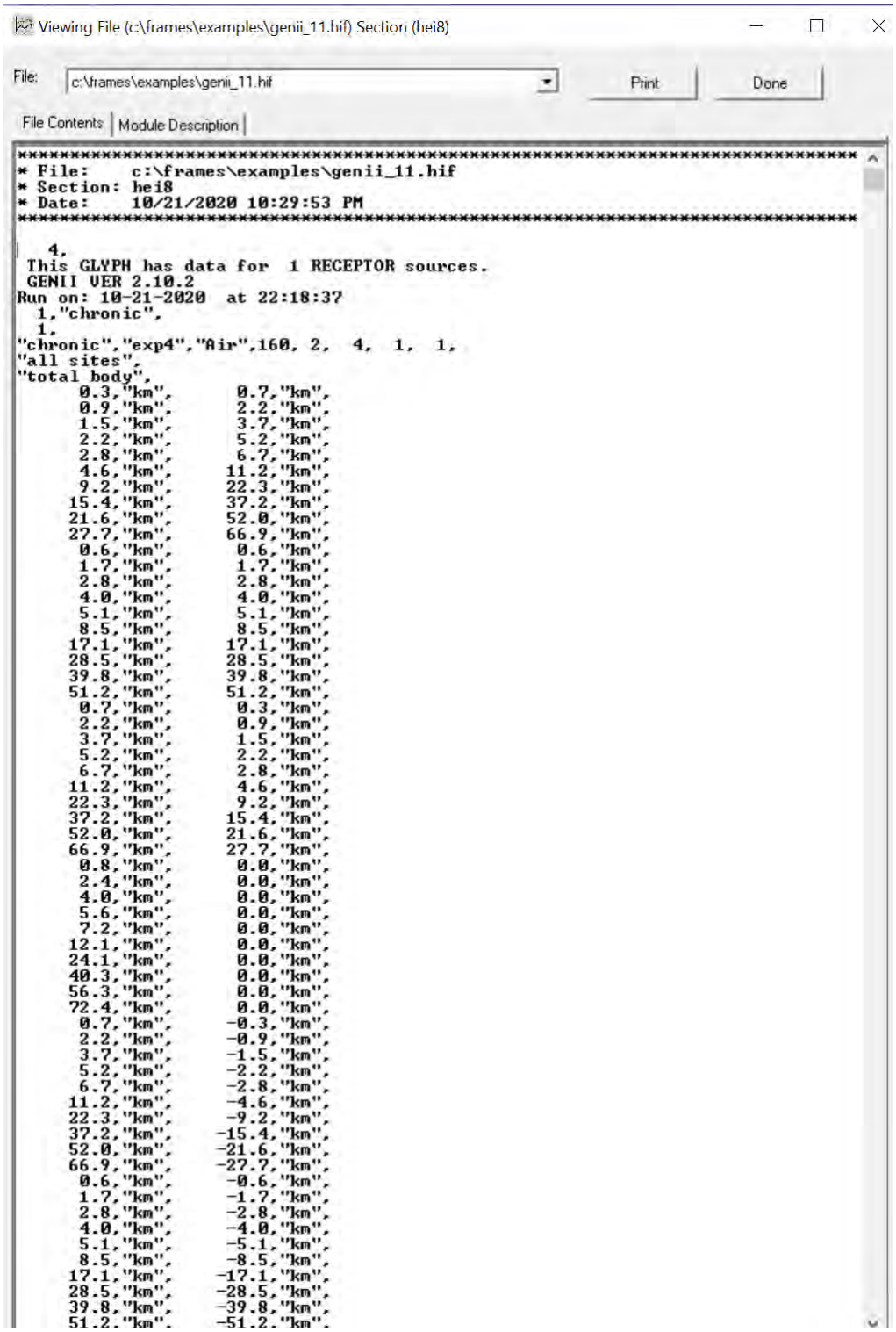
3.2.4.6 Icon 7 Receptor Intake (rcp7) – Human Exposure & Risk RIF Text View Results

For this icon the first page of output is shown.


```
**********************************************************************************
* File:    c:\frames\examples\genii_11.rif
* Section: rcp7
* Date:    10/21/2020 10:28:14 PM
**********************************************************************************

   4,
 This receptor has data for  1 exposure sources.
 Exposure source  1, is exp5
 GENII VER 2.10.2
Run on: 10-21-2020  at 22:18:41
   1,
"chronic","exp5","Air",  1, 2, 4,
       0.0,"km",      10.0,"km",
    0.,    10.,
"AR41","AR41", 0,   1,
 9.90E+01,"yr", 1.00E+00,"yr",  9,
         1.,"Air","external","Sv","radiation dose"
 1.48E-06,
         1.,"Air","inhalation","Bq","intake"
 2.31E+03,
         1.,"Ground","external","Bq/kg","concentration"
 0.00E+00,
         1.,"Indoor air","inhalation","Bq","intake"
 6.93E+03,
         1.,"Leafy vegetables","ingestion","Bq","intake"
 0.00E+00,
         1.,"Meat","ingestion","Bq","intake"
 0.00E+00,
         1.,"Milk","ingestion","Bq","intake"
 0.00E+00,
         1.,"Root vegetables","ingestion","Bq","intake"
 0.00E+00,
         1.,"Soil","inhalation","Bq","intake"
 0.00E+00,
"H3","H3", 0,   1,
 9.90E+01,"yr", 1.00E+00,"yr",  9,
         1.,"Air","external","Sv","radiation dose"
 0.00E+00,
         1.,"Air","inhalation","Bq","intake"
 5.52E+02,
         1.,"Ground","external","Bq/kg","concentration"
 0.00E+00,
         1.,"Indoor air","inhalation","Bq","intake"
 1.66E+03,
         1.,"Leafy vegetables","ingestion","Bq","intake"
 4.78E+02,
         1.,"Meat","ingestion","Bq","intake"
 8.67E+02,
         1.,"Milk","ingestion","Bq","intake"
 1.26E+03,
         1.,"Root vegetables","ingestion","Bq","intake"
 3.80E+03,
         1.,"Soil","inhalation","Bq","intake"
 0.00E+00,
"I129","I129", 0,   1,
 9.90E+01,"yr", 1.00E+00,"yr",  9,
         1.,"Air","external","Sv","radiation dose"
 1.13E-07,
         1.,"Air","inhalation","Bq","intake"
 2.98E+04,
         1.,"Ground","external","Bq/kg","concentration"
 5.10E+05,
         1.,"Indoor air","inhalation","Bq","intake"
 8.94E+04,
         1.,"Leafy vegetables","ingestion","Bq","intake"
 7.82E+05,
         1.,"Meat","ingestion","Bq","intake"
 3.49E+07,
         1.,"Milk","ingestion","Bq","intake"
 4.13E+06,
         1.,"Root vegetables","ingestion","Bq","intake"
 2.66E+06,
         1.,"Soil","inhalation","Bq","intake"
 0.00E+00,
```

3.2.4.7 Icon 8 Health Impacts (hei8) – Human Exposure & Risk HIF Text View Results

For this icon only the first page of results is shown.



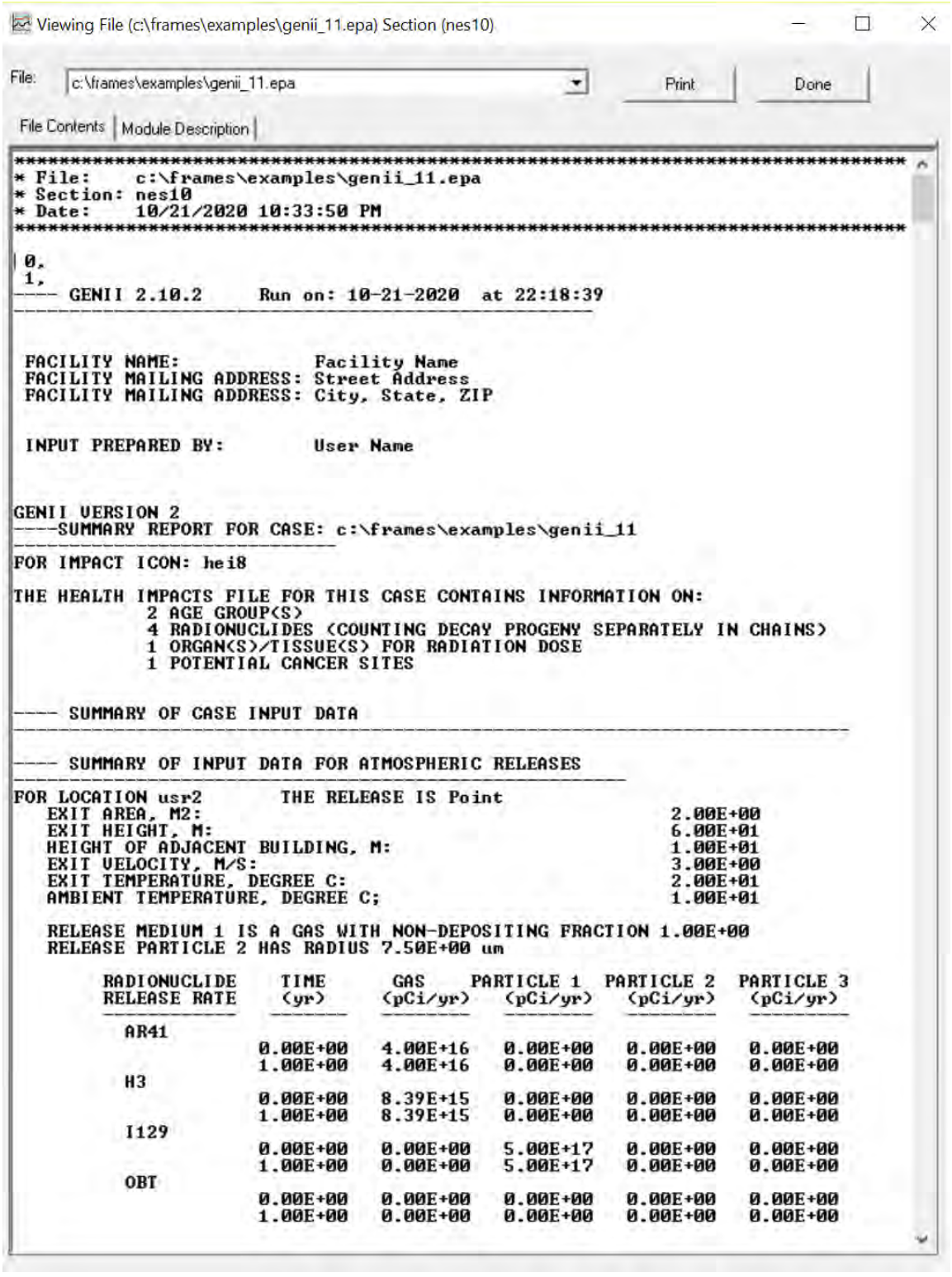

```
**********************************************************************************
* File:    c:\frames\examples\genii_11.hif
* Section: hei8
* Date:    10/21/2020 10:29:53 PM
**********************************************************************************

  4,
 This GLYPH has data for  1 RECEPTOR sources.
 GENII VER 2.10.2
Run on: 10-21-2020  at 22:18:37
  1,"chronic",
  1,
"chronic","exp4","Air",160, 2,  4,  1,  1,
"all sites",
"total body",
      0.3,"km",      0.7,"km",
      0.9,"km",      2.2,"km",
      1.5,"km",      3.7,"km",
      2.2,"km",      5.2,"km",
      2.8,"km",      6.7,"km",
      4.6,"km",     11.2,"km",
      9.2,"km",     22.3,"km",
     15.4,"km",     37.2,"km",
     21.6,"km",     52.0,"km",
     27.7,"km",     66.9,"km",
      0.6,"km",      0.6,"km",
      1.7,"km",      1.7,"km",
      2.8,"km",      2.8,"km",
      4.0,"km",      4.0,"km",
      5.1,"km",      5.1,"km",
      8.5,"km",      8.5,"km",
     17.1,"km",     17.1,"km",
     28.5,"km",     28.5,"km",
     39.8,"km",     39.8,"km",
     51.2,"km",     51.2,"km",
      0.7,"km",      0.3,"km",
      2.2,"km",      0.9,"km",
      3.7,"km",      1.5,"km",
      5.2,"km",      2.2,"km",
      6.7,"km",      2.8,"km",
     11.2,"km",      4.6,"km",
     22.3,"km",      9.2,"km",
     37.2,"km",     15.4,"km",
     52.0,"km",     21.6,"km",
     66.9,"km",     27.7,"km",
      0.8,"km",      0.0,"km",
      2.4,"km",      0.0,"km",
      4.0,"km",      0.0,"km",
      5.6,"km",      0.0,"km",
      7.2,"km",      0.0,"km",
     12.1,"km",      0.0,"km",
     24.1,"km",      0.0,"km",
     40.3,"km",      0.0,"km",
     56.3,"km",      0.0,"km",
     72.4,"km",      0.0,"km",
      0.7,"km",     -0.3,"km",
      2.2,"km",     -0.9,"km",
      3.7,"km",     -1.5,"km",
      5.2,"km",     -2.2,"km",
      6.7,"km",     -2.8,"km",
     11.2,"km",     -4.6,"km",
     22.3,"km",     -9.2,"km",
     37.2,"km",    -15.4,"km",
     52.0,"km",    -21.6,"km",
     66.9,"km",    -27.7,"km",
      0.6,"km",     -0.6,"km",
      1.7,"km",     -1.7,"km",
      2.8,"km",     -2.8,"km",
      4.0,"km",     -4.0,"km",
      5.1,"km",     -5.1,"km",
      8.5,"km",     -8.5,"km",
     17.1,"km",    -17.1,"km",
     28.5,"km",    -28.5,"km",
     39.8,"km",    -39.8,"km",
     51.2,"km",    -51.2,"km",
```

3.2.4.8 Icon 9 Health Impacts (hei9) – Human Exposure & Risk HIF Text View Results

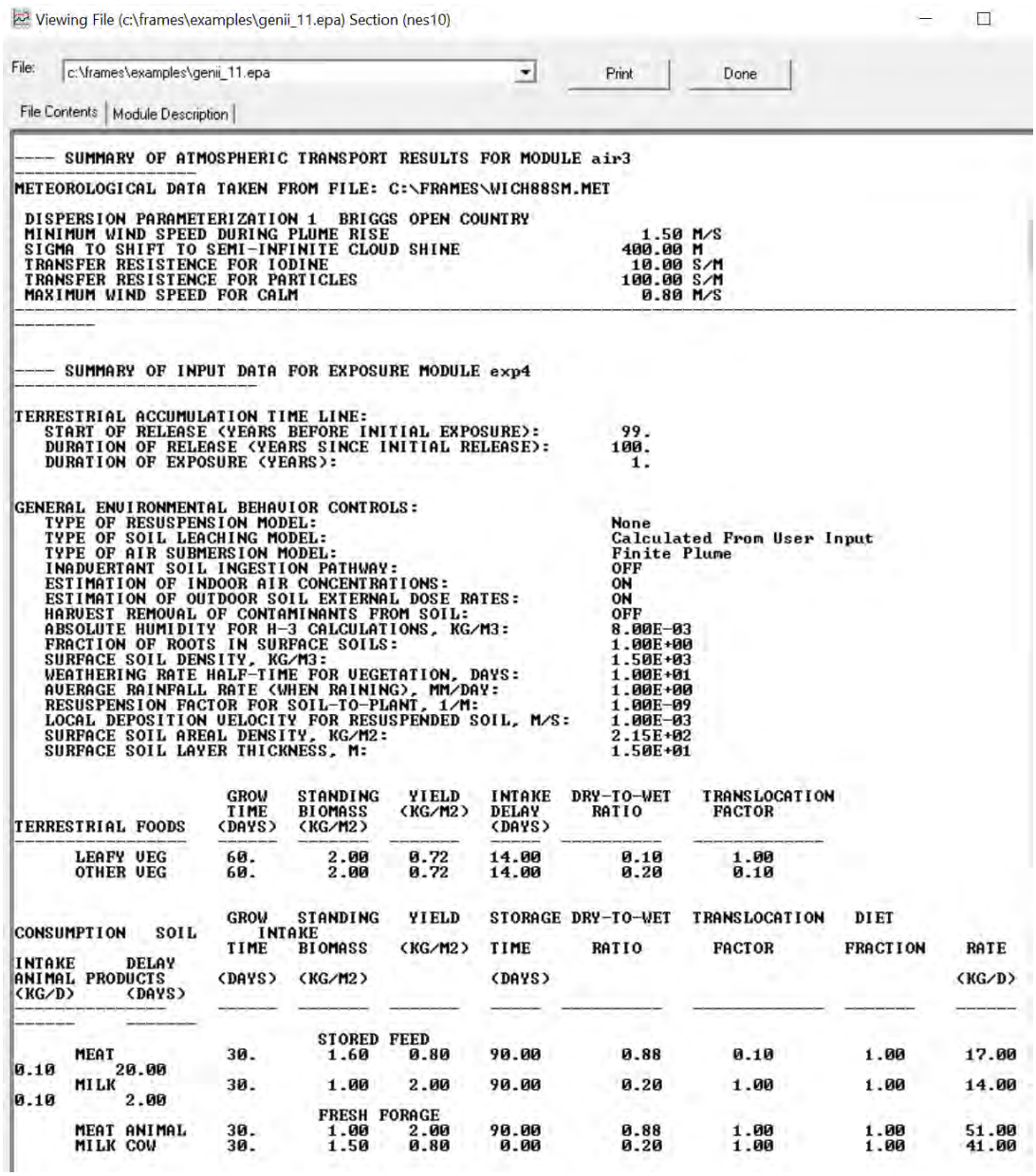
For this icon only the first page of results is shown.


```
**********************************************************************************
* File:    c:\frames\examples\genii_11.hif
* Section: hei9
* Date:    10/21/2020 10:31:04 PM
**********************************************************************************

   4,
 This GLYPH has data for  1 RECEPTOR sources.
 GENII VER 2.10.2
Run on: 10-21-2020  at 22:18:42
  1,"chronic",
  1,
"chronic","exp5","Air",  1, 2,  4, 15, 24,
"Esophagus","Stomach","Colon","Liver","Lung","Bone","Skin","Breast","Ovary","Blad
der","Kidneys","Thyroid","Leukemia","Residual","Total",
"Adrenals","Bld Wall","B Surface","Brain","Breasts","Esophagus","St Wall","SI
Wall","ULI Wall","LLI
Wall","Kidneys","Liver","Lungs","Muscle","Ovaries","Pancreas","R
Marrow","Skin","Spleen","Testes","Thymus","Thyroid","Uterus","Effective",
       0.0,"km",      10.0,"km",
   0.,   10.,"yr",
"AR41","AR41",  0,   1,
 9.900E+01,"yr", 1.000E+00,"yr", 27,
       1.,"Air","external","risk","cancer incidence",
 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08,
8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08, 8.88E-08,
       1.,"Air","external","risk","cancer fatalities",
 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08,
7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08, 7.40E-08,
       1.,"Air","external","dose","Sv",
 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06,
1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06,
1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06, 1.48E-06,
       1.,"Air","inhalation","risk","cancer incidence",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Air","inhalation","risk","cancer fatalities",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Air","inhalation","dose","Sv",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Ground","external","risk","cancer incidence",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Ground","external","risk","cancer fatalities",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Ground","external","dose","Sv",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Indoor air","inhalation","risk","cancer incidence",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Indoor air","inhalation","risk","cancer fatalities",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Indoor air","inhalation","dose","Sv",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Leafy vegetables","ingestion","risk","cancer incidence",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Leafy vegetables","ingestion","risk","cancer fatalities",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Leafy vegetables","ingestion","dose","Sv",
 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00, 0.00E+00,
       1.,"Meat","ingestion","risk","cancer incidence",
```

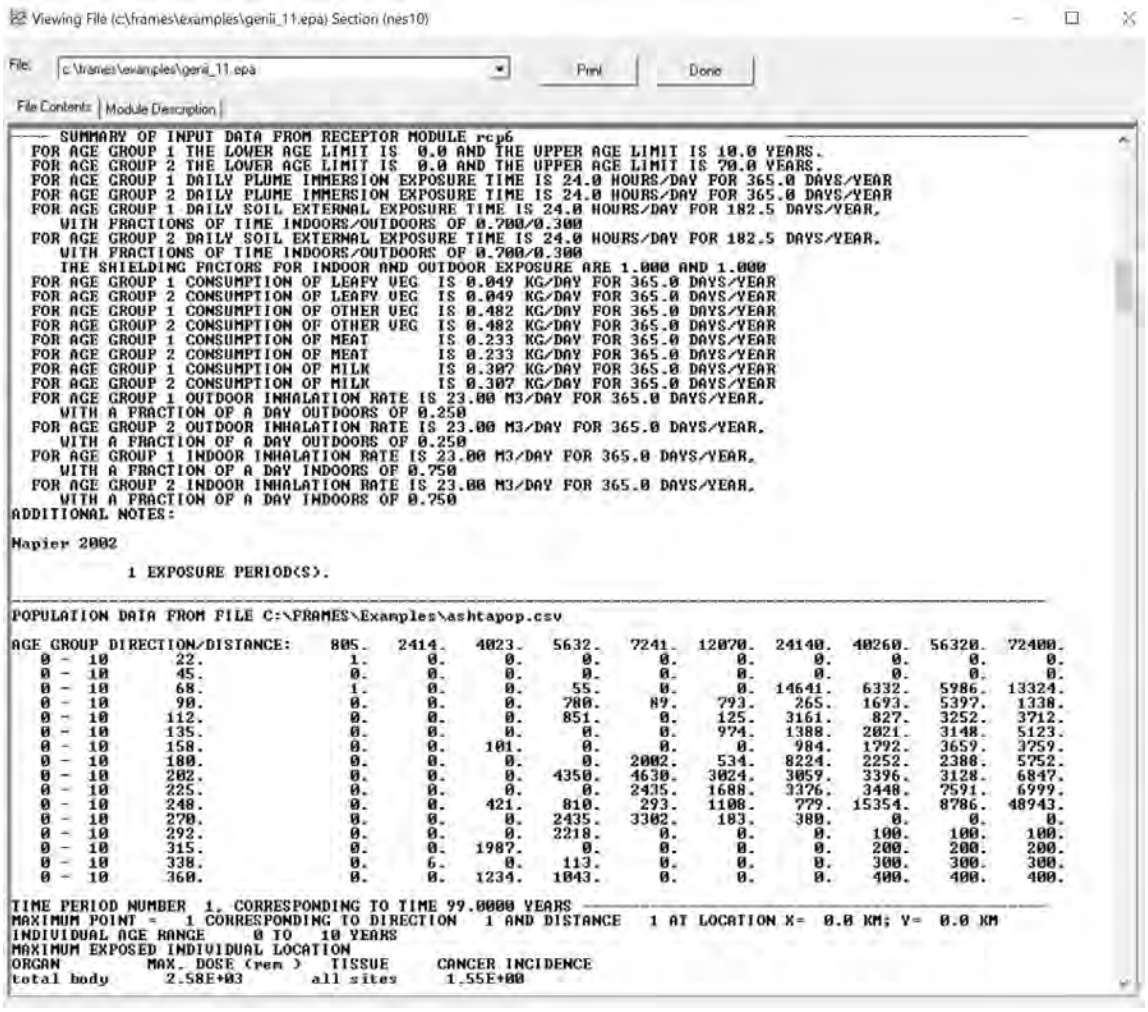
3.2.4.9 Icon 10 Report Generator (nes10) –Reports EPA Text View Results



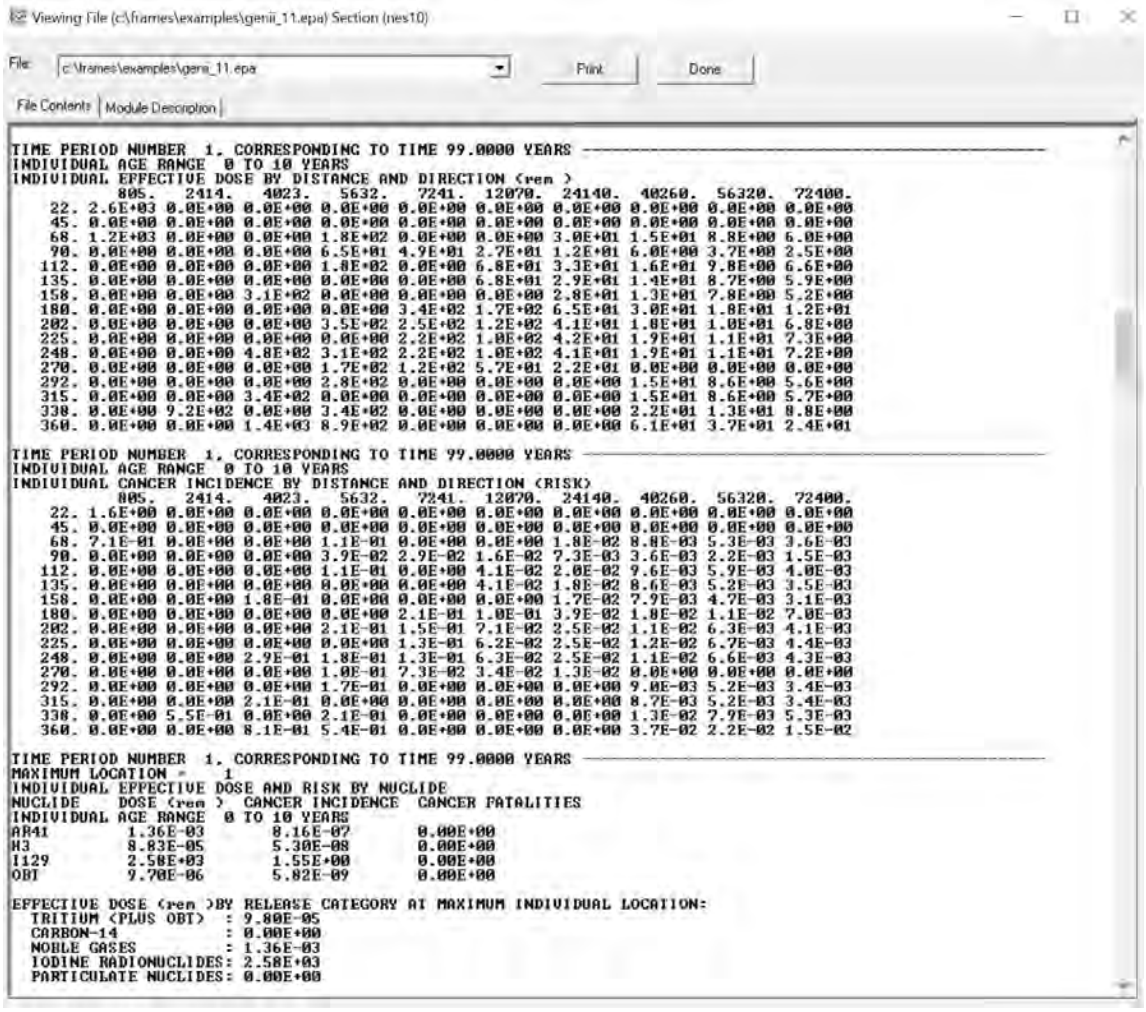

```
**********************************************************************************
* File:    c:\frames\examples\genii_11.epa
* Section: nes10
* Date:    10/21/2020 10:33:50 PM
**********************************************************************************

 0,
 1,
---- GENII 2.10.2     Run on: 10-21-2020  at 22:18:39
--------------------------------------------------


 FACILITY NAME:             Facility Name
 FACILITY MAILING ADDRESS: Street Address
 FACILITY MAILING ADDRESS: City, State, ZIP

 INPUT PREPARED BY:         User Name


GENII VERSION 2
----SUMMARY REPORT FOR CASE: c:\frames\examples\genii_11
-------------------------------
FOR IMPACT ICON: hei8

THE HEALTH IMPACTS FILE FOR THIS CASE CONTAINS INFORMATION ON:
            2 AGE GROUP(S)
            4 RADIONUCLIDES (COUNTING DECAY PROGENY SEPARATELY IN CHAINS)
            1 ORGAN(S)/TISSUE(S) FOR RADIATION DOSE
            1 POTENTIAL CANCER SITES


---- SUMMARY OF CASE INPUT DATA
--------------------------------------------------------------------------------

---- SUMMARY OF INPUT DATA FOR ATMOSPHERIC RELEASES
--------------------------------------------------

FOR LOCATION usr2       THE RELEASE IS Point
   EXIT AREA, M2:                                          2.00E+00
   EXIT HEIGHT, M:                                         6.00E+01
   HEIGHT OF ADJACENT BUILDING, M:                         1.00E+01
   EXIT VELOCITY, M/S:                                     3.00E+00
   EXIT TEMPERATURE, DEGREE C:                             2.00E+01
   AMBIENT TEMPERATURE, DEGREE C;                          1.00E+01

   RELEASE MEDIUM 1 IS A GAS WITH NON-DEPOSITING FRACTION 1.00E+00
   RELEASE PARTICLE 2 HAS RADIUS 7.50E+00 um

      RADIONUCLIDE    TIME      GAS     PARTICLE 1  PARTICLE 2  PARTICLE 3
      RELEASE RATE    (yr)    (pCi/yr)   (pCi/yr)    (pCi/yr)    (pCi/yr)
      ------------    ------  --------   --------    --------    --------
        AR41
                    0.00E+00  4.00E+16   0.00E+00    0.00E+00    0.00E+00
                    1.00E+00  4.00E+16   0.00E+00    0.00E+00    0.00E+00
        H3
                    0.00E+00  8.39E+15   0.00E+00    0.00E+00    0.00E+00
                    1.00E+00  8.39E+15   0.00E+00    0.00E+00    0.00E+00
        I129
                    0.00E+00  0.00E+00   5.00E+17    0.00E+00    0.00E+00
                    1.00E+00  0.00E+00   5.00E+17    0.00E+00    0.00E+00
        OBT
                    0.00E+00  0.00E+00   0.00E+00    0.00E+00    0.00E+00
                    1.00E+00  0.00E+00   0.00E+00    0.00E+00    0.00E+00
```



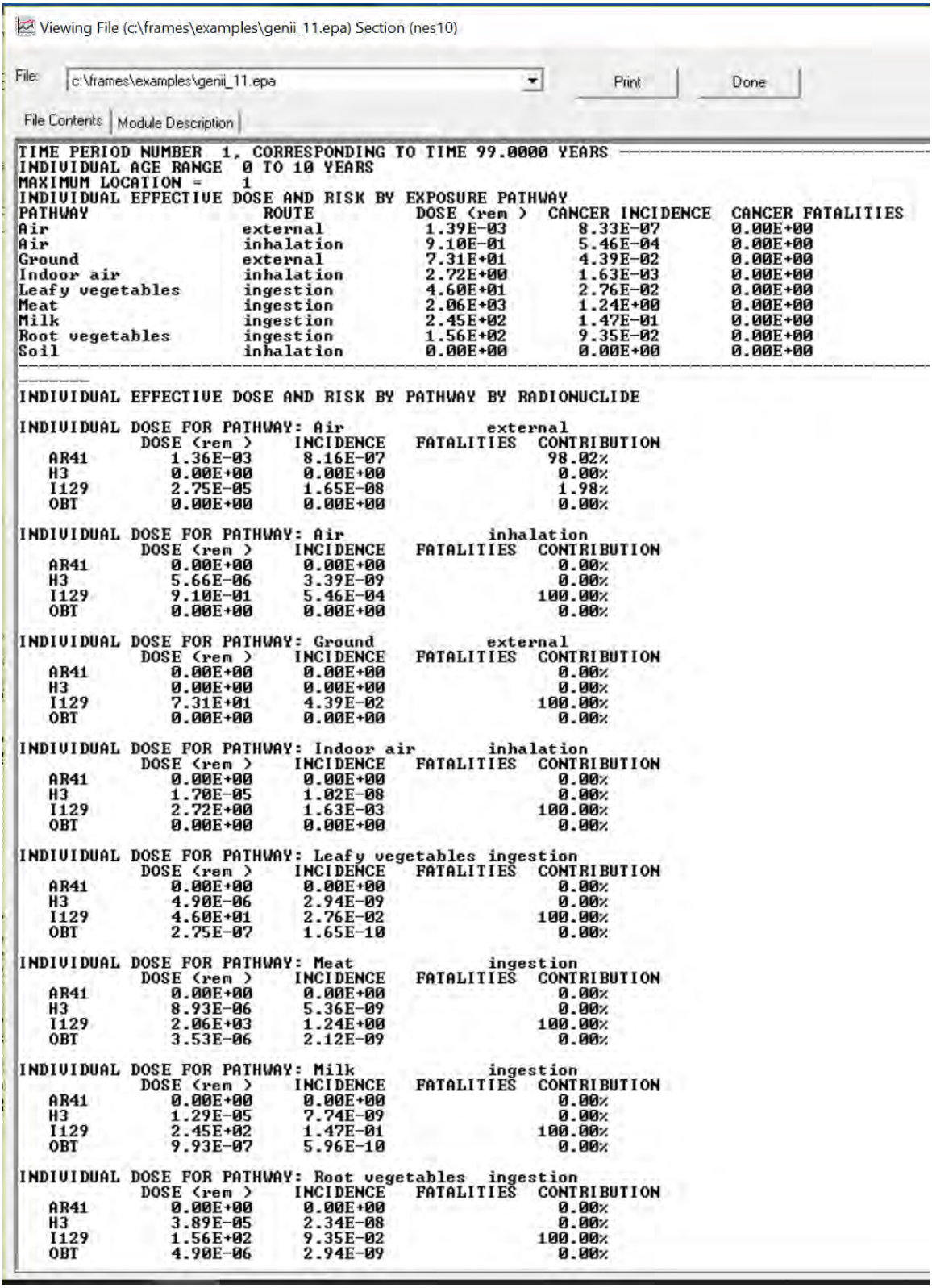

```
---- SUMMARY OF ATMOSPHERIC TRANSPORT RESULTS FOR MODULE air3
-------------------
METEOROLOGICAL DATA TAKEN FROM FILE: C:\FRAMES\WICH88SM.MET

 DISPERSION PARAMETERIZATION 1  BRIGGS OPEN COUNTRY
 MINIMUM WIND SPEED DURING PLUME RISE                    1.50 M/S
 SIGMA TO SHIFT TO SEMI-INFINITE CLOUD SHINE            400.00 M
 TRANSFER RESISTENCE FOR IODINE                          10.00 S/M
 TRANSFER RESISTENCE FOR PARTICLES                      100.00 S/M
 MAXIMUM WIND SPEED FOR CALM                              0.80 M/S
--------------------------------------------------------------------------------
--------


---- SUMMARY OF INPUT DATA FOR EXPOSURE MODULE exp4
--------------------------

TERRESTRIAL ACCUMULATION TIME LINE:
   START OF RELEASE (YEARS BEFORE INITIAL EXPOSURE):       99.
   DURATION OF RELEASE (YEARS SINCE INITIAL RELEASE):     100.
   DURATION OF EXPOSURE (YEARS):                            1.

GENERAL ENVIRONMENTAL BEHAVIOR CONTROLS:
   TYPE OF RESUSPENSION MODEL:                          None
   TYPE OF SOIL LEACHING MODEL:                         Calculated From User Input
   TYPE OF AIR SUBMERSION MODEL:                        Finite Plume
   INADVERTANT SOIL INGESTION PATHWAY:                  OFF
   ESTIMATION OF INDOOR AIR CONCENTRATIONS:             ON
   ESTIMATION OF OUTDOOR SOIL EXTERNAL DOSE RATES:      ON
   HARVEST REMOVAL OF CONTAMINANTS FROM SOIL:           OFF
   ABSOLUTE HUMIDITY FOR H-3 CALCULATIONS, KG/M3:       8.00E-03
   FRACTION OF ROOTS IN SURFACE SOILS:                  1.00E+00
   SURFACE SOIL DENSITY, KG/M3:                         1.50E+03
   WEATHERING RATE HALF-TIME FOR VEGETATION, DAYS:      1.00E+01
   AVERAGE RAINFALL RATE (WHEN RAINING), MM/DAY:        1.00E+00
   RESUSPENSION FACTOR FOR SOIL-TO-PLANT, 1/M:          1.00E-09
   LOCAL DEPOSITION VELOCITY FOR RESUSPENDED SOIL, M/S: 1.00E-03
   SURFACE SOIL AREAL DENSITY, KG/M2:                   2.15E+02
   SURFACE SOIL LAYER THICKNESS, M:                     1.50E+01

                        GROW    STANDING   YIELD   INTAKE  DRY-TO-WET   TRANSLOCATION
                        TIME    BIOMASS    (KG/M2) DELAY     RATIO        FACTOR
TERRESTRIAL FOODS       (DAYS)  (KG/M2)            (DAYS)
----------------------  ------  ---------  ------  ------  -----------  -------------
      LEAFY VEG         60.       2.00     0.72    14.00       0.10         1.00
      OTHER VEG         60.       2.00     0.72    14.00       0.20         0.10

                        GROW    STANDING   YIELD   STORAGE DRY-TO-WET  TRANSLOCATION   DIET
CONSUMPTION   SOIL        INTAKE
                        TIME    BIOMASS    (KG/M2) TIME      RATIO       FACTOR        FRACTION    RATE
INTAKE     DELAY
ANIMAL PRODUCTS         (DAYS)  (KG/M2)            (DAYS)                                          (KG/D)
(KG/D)     (DAYS)
----------------------  ------  ---------  ------  ------  -----------  -------------  --------    ------
------     -------
                              STORED FEED
      MEAT                30.       1.60     0.80    90.00       0.88         0.10         1.00       17.00
0.10         20.00
      MILK                30.       1.00     2.00    90.00       0.20         1.00         1.00       14.00
0.10          2.00
                              FRESH FORAGE
      MEAT ANIMAL         30.       1.00     2.00    90.00       0.88         1.00         1.00       51.00
      MILK COW            30.       1.50     0.80     0.00       0.20         1.00         1.00       41.00
```




```
---- SUMMARY OF INPUT DATA FROM RECEPTOR MODULE rcp6
  FOR AGE GROUP 1 THE LOWER AGE LIMIT IS  0.0 AND THE UPPER AGE LIMIT IS 10.0 YEARS.
  FOR AGE GROUP 2 THE LOWER AGE LIMIT IS  0.0 AND THE UPPER AGE LIMIT IS 70.0 YEARS.
  FOR AGE GROUP 1 DAILY PLUME IMMERSION EXPOSURE TIME IS 24.0 HOURS/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 DAILY PLUME IMMERSION EXPOSURE TIME IS 24.0 HOURS/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 DAILY SOIL EXTERNAL EXPOSURE TIME IS 24.0 HOURS/DAY FOR 182.5 DAYS/YEAR,
     WITH FRACTIONS OF TIME INDOORS/OUTDOORS OF 0.700/0.300
  FOR AGE GROUP 2 DAILY SOIL EXTERNAL EXPOSURE TIME IS 24.0 HOURS/DAY FOR 182.5 DAYS/YEAR.
     WITH FRACTIONS OF TIME INDOORS/OUTDOORS OF 0.700/0.300
     THE SHIELDING FACTORS FOR INDOOR AND OUTDOOR EXPOSURE ARE 1.000 AND 1.000
  FOR AGE GROUP 1 CONSUMPTION OF LEAFY VEG  IS 0.049 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 CONSUMPTION OF LEAFY VEG  IS 0.049 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 CONSUMPTION OF OTHER VEG  IS 0.482 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 CONSUMPTION OF OTHER VEG  IS 0.482 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 CONSUMPTION OF MEAT       IS 0.233 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 CONSUMPTION OF MEAT       IS 0.233 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 CONSUMPTION OF MILK       IS 0.307 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 CONSUMPTION OF MILK       IS 0.307 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 OUTDOOR INHALATION RATE IS 23.00 M3/DAY FOR 365.0 DAYS/YEAR,
     WITH A FRACTION OF A DAY OUTDOORS OF 0.250
  FOR AGE GROUP 2 OUTDOOR INHALATION RATE IS 23.00 M3/DAY FOR 365.0 DAYS/YEAR,
     WITH A FRACTION OF A DAY OUTDOORS OF 0.250
  FOR AGE GROUP 1 INDOOR INHALATION RATE IS 23.00 M3/DAY FOR 365.0 DAYS/YEAR,
     WITH A FRACTION OF A DAY INDOORS OF 0.750
  FOR AGE GROUP 2 INDOOR INHALATION RATE IS 23.00 M3/DAY FOR 365.0 DAYS/YEAR,
     WITH A FRACTION OF A DAY INDOORS OF 0.750
ADDITIONAL NOTES:

Napier 2002

           1 EXPOSURE PERIOD(S).

POPULATION DATA FROM FILE C:\FRAMES\Examples\ashtapop.csv

AGE GROUP DIRECTION/DISTANCE:    805.   2414.   4023.   5632.   7241.  12070.  24140.  40260.  56320.  72400.
   0 -  10       22.             1.      0.      0.      0.      0.      0.      0.      0.      0.      0.
   0 -  10       45.             0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
   0 -  10       68.             1.      0.      0.     55.      0.      0.   14641.   6332.   5986.  13324.
   0 -  10       90.             0.      0.      0.    780.     89.    793.    265.   1693.   5397.   1338.
   0 -  10      112.             0.      0.      0.    851.      0.    125.   3161.    827.   3252.   3712.
   0 -  10      135.             0.      0.      0.      0.      0.    974.   1388.   2021.   3148.   5123.
   0 -  10      158.             0.      0.    101.      0.      0.      0.    984.   1792.   3659.   3759.
   0 -  10      180.             0.      0.      0.      0.   2002.    534.   8224.   2252.   2388.   5752.
   0 -  10      202.             0.      0.      0.   4350.   4630.   3024.   3059.   3396.   3128.   6847.
   0 -  10      225.             0.      0.      0.      0.   2435.   1688.   3376.   3448.   7591.   6999.
   0 -  10      248.             0.      0.    421.    810.    293.   1108.    779.  15354.   8786.  48943.
   0 -  10      270.             0.      0.      0.   2435.   3302.    183.    380.      0.      0.      0.
   0 -  10      292.             0.      0.      0.   2218.      0.      0.      0.    100.    100.    100.
   0 -  10      315.             0.      0.   1987.      0.      0.      0.      0.    200.    200.    200.
   0 -  10      338.             0.      6.      0.    113.      0.      0.      0.    300.    300.    300.
   0 -  10      360.             0.      0.   1234.   1043.      0.      0.      0.    400.    400.    400.

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
MAXIMUM POINT =   1 CORRESPONDING TO DIRECTION   1 AND DISTANCE   1 AT LOCATION X=  0.0 KM; Y=  0.0 KM
INDIVIDUAL AGE RANGE     0 TO   10 YEARS
MAXIMUM EXPOSED INDIVIDUAL LOCATION
ORGAN          MAX. DOSE (rem )   TISSUE     CANCER INCIDENCE
total body      2.58E+03       all sites     1.55E+00
```




```
TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------------------------------------
INDIVIDUAL AGE RANGE  0 TO 10 YEARS
INDIVIDUAL EFFECTIVE DOSE BY DISTANCE AND DIRECTION (rem )
          805.   2414.   4023.   5632.   7241.  12070.  24140.  40260.  56320.  72400.
    22. 2.6E+03 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    45. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    68. 1.2E+03 0.0E+00 0.0E+00 1.8E+02 0.0E+00 0.0E+00 3.0E+01 1.5E+01 8.8E+00 6.0E+00
    90. 0.0E+00 0.0E+00 0.0E+00 6.5E+01 4.9E+01 2.7E+01 1.2E+01 6.0E+00 3.7E+00 2.5E+00
   112. 0.0E+00 0.0E+00 0.0E+00 1.8E+02 0.0E+00 6.8E+01 3.3E+01 1.6E+01 9.8E+00 6.6E+00
   135. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 6.8E+01 2.9E+01 1.4E+01 8.7E+00 5.9E+00
   158. 0.0E+00 0.0E+00 3.1E+02 0.0E+00 0.0E+00 0.0E+00 2.8E+01 1.3E+01 7.8E+00 5.2E+00
   180. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 3.4E+02 1.7E+02 6.5E+01 3.0E+01 1.8E+01 1.2E+01
   202. 0.0E+00 0.0E+00 0.0E+00 3.5E+02 2.5E+02 1.2E+02 4.1E+01 1.8E+01 1.0E+01 6.8E+00
   225. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 2.2E+02 1.0E+02 4.2E+01 1.9E+01 1.1E+01 7.3E+00
   248. 0.0E+00 0.0E+00 4.8E+02 3.1E+02 2.2E+02 1.0E+02 4.1E+01 1.9E+01 1.1E+01 7.2E+00
   270. 0.0E+00 0.0E+00 0.0E+00 1.7E+02 1.2E+02 5.7E+01 2.2E+01 0.0E+00 0.0E+00 0.0E+00
   292. 0.0E+00 0.0E+00 0.0E+00 2.8E+02 0.0E+00 0.0E+00 0.0E+00 1.5E+01 8.6E+00 5.6E+00
   315. 0.0E+00 0.0E+00 3.4E+02 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.5E+01 8.6E+00 5.7E+00
   338. 0.0E+00 9.2E+02 0.0E+00 3.4E+02 0.0E+00 0.0E+00 0.0E+00 2.2E+01 1.3E+01 8.8E+00
   360. 0.0E+00 0.0E+00 1.4E+03 8.9E+02 0.0E+00 0.0E+00 0.0E+00 6.1E+01 3.7E+01 2.4E+01

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------------------------------------
INDIVIDUAL AGE RANGE  0 TO 10 YEARS
INDIVIDUAL CANCER INCIDENCE BY DISTANCE AND DIRECTION (RISK)
          805.   2414.   4023.   5632.   7241.  12070.  24140.  40260.  56320.  72400.
    22. 1.6E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    45. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    68. 7.1E-01 0.0E+00 0.0E+00 1.1E-01 0.0E+00 0.0E+00 1.8E-02 8.8E-03 5.3E-03 3.6E-03
    90. 0.0E+00 0.0E+00 0.0E+00 3.9E-02 2.9E-02 1.6E-02 7.3E-03 3.6E-03 2.2E-03 1.5E-03
   112. 0.0E+00 0.0E+00 0.0E+00 1.1E-01 0.0E+00 4.1E-02 2.0E-02 9.6E-03 5.9E-03 4.0E-03
   135. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 4.1E-02 1.8E-02 8.6E-03 5.2E-03 3.5E-03
   158. 0.0E+00 0.0E+00 1.8E-01 0.0E+00 0.0E+00 0.0E+00 1.7E-02 7.7E-03 4.7E-03 3.1E-03
   180. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 2.1E-01 1.0E-01 3.9E-02 1.8E-02 1.1E-02 7.0E-03
   202. 0.0E+00 0.0E+00 0.0E+00 2.1E-01 1.5E-01 7.1E-02 2.5E-02 1.1E-02 6.3E-03 4.1E-03
   225. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.3E-01 6.2E-02 2.5E-02 1.2E-02 6.7E-03 4.4E-03
   248. 0.0E+00 0.0E+00 2.9E-01 1.8E-01 1.3E-01 6.3E-02 2.5E-02 1.1E-02 6.6E-03 4.3E-03
   270. 0.0E+00 0.0E+00 0.0E+00 1.0E-01 7.3E-02 3.4E-02 1.3E-02 0.0E+00 0.0E+00 0.0E+00
   292. 0.0E+00 0.0E+00 0.0E+00 1.7E-01 0.0E+00 0.0E+00 0.0E+00 9.0E-03 5.2E-03 3.4E-03
   315. 0.0E+00 0.0E+00 2.1E-01 0.0E+00 0.0E+00 0.0E+00 0.0E+00 8.7E-03 5.2E-03 3.4E-03
   338. 0.0E+00 5.5E-01 0.0E+00 2.1E-01 0.0E+00 0.0E+00 0.0E+00 1.3E-02 7.9E-03 5.3E-03
   360. 0.0E+00 0.0E+00 8.1E-01 5.4E-01 0.0E+00 0.0E+00 0.0E+00 3.7E-02 2.2E-02 1.5E-02

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------------------------------------
MAXIMUM LOCATION =  1
INDIVIDUAL EFFECTIVE DOSE AND RISK BY NUCLIDE
NUCLIDE    DOSE (rem )  CANCER INCIDENCE  CANCER FATALITIES
INDIVIDUAL AGE RANGE  0 TO 10 YEARS
AR41         1.36E-03       8.16E-07       0.00E+00
H3           8.83E-05       5.30E-08       0.00E+00
I129         2.58E+03       1.55E+00       0.00E+00
OBT          9.70E-06       5.82E-09       0.00E+00

EFFECTIVE DOSE (rem )BY RELEASE CATEGORY AT MAXIMUM INDIVIDUAL LOCATION:
  TRITIUM (PLUS OBT)  : 9.80E-05
  CARBON-14           : 0.00E+00
  NOBLE GASES         : 1.36E-03
  IODINE RADIONUCLIDES: 2.58E+03
  PARTICULATE NUCLIDES: 0.00E+00
```



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File: c:\frames\examples\genii_11.epa Print Done

File Contents | Module Description

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TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ----------------------------------------
INDIVIDUAL AGE RANGE  0 TO 10 YEARS
MAXIMUM LOCATION =    1
INDIVIDUAL EFFECTIVE DOSE AND RISK BY EXPOSURE PATHWAY
PATHWAY                 ROUTE           DOSE (rem )   CANCER INCIDENCE   CANCER FATALITIES
Air                     external         1.39E-03       8.33E-07          0.00E+00
Air                     inhalation       9.10E-01       5.46E-04          0.00E+00
Ground                  external         7.31E+01       4.39E-02          0.00E+00
Indoor air              inhalation       2.72E+00       1.63E-03          0.00E+00
Leafy vegetables        ingestion        4.60E+01       2.76E-02          0.00E+00
Meat                    ingestion        2.06E+03       1.24E+00          0.00E+00
Milk                    ingestion        2.45E+02       1.47E-01          0.00E+00
Root vegetables         ingestion        1.56E+02       9.35E-02          0.00E+00
Soil                    inhalation       0.00E+00       0.00E+00          0.00E+00
-------------------------------------------------------------------------------------------------
-------
INDIVIDUAL EFFECTIVE DOSE AND RISK BY PATHWAY BY RADIONUCLIDE

INDIVIDUAL DOSE FOR PATHWAY: Air                external
            DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41        1.36E-03     8.16E-07                98.02%
   H3          0.00E+00     0.00E+00                 0.00%
   I129        2.75E-05     1.65E-08                 1.98%
   OBT         0.00E+00     0.00E+00                 0.00%

INDIVIDUAL DOSE FOR PATHWAY: Air                inhalation
            DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41        0.00E+00     0.00E+00                 0.00%
   H3          5.66E-06     3.39E-09                 0.00%
   I129        9.10E-01     5.46E-04               100.00%
   OBT         0.00E+00     0.00E+00                 0.00%

INDIVIDUAL DOSE FOR PATHWAY: Ground              external
            DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41        0.00E+00     0.00E+00                 0.00%
   H3          0.00E+00     0.00E+00                 0.00%
   I129        7.31E+01     4.39E-02               100.00%
   OBT         0.00E+00     0.00E+00                 0.00%

INDIVIDUAL DOSE FOR PATHWAY: Indoor air          inhalation
            DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41        0.00E+00     0.00E+00                 0.00%
   H3          1.70E-05     1.02E-08                 0.00%
   I129        2.72E+00     1.63E-03               100.00%
   OBT         0.00E+00     0.00E+00                 0.00%

INDIVIDUAL DOSE FOR PATHWAY: Leafy vegetables ingestion
            DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41        0.00E+00     0.00E+00                 0.00%
   H3          4.90E-06     2.94E-09                 0.00%
   I129        4.60E+01     2.76E-02               100.00%
   OBT         2.75E-07     1.65E-10                 0.00%

INDIVIDUAL DOSE FOR PATHWAY: Meat                ingestion
            DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41        0.00E+00     0.00E+00                 0.00%
   H3          8.93E-06     5.36E-09                 0.00%
   I129        2.06E+03     1.24E+00               100.00%
   OBT         3.53E-06     2.12E-09                 0.00%

INDIVIDUAL DOSE FOR PATHWAY: Milk                ingestion
            DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41        0.00E+00     0.00E+00                 0.00%
   H3          1.29E-05     7.74E-09                 0.00%
   I129        2.45E+02     1.47E-01               100.00%
   OBT         9.93E-07     5.96E-10                 0.00%

INDIVIDUAL DOSE FOR PATHWAY: Root vegetables  ingestion
            DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41        0.00E+00     0.00E+00                 0.00%
   H3          3.89E-05     2.34E-08                 0.00%
   I129        1.56E+02     9.35E-02               100.00%
   OBT         4.90E-06     2.94E-09                 0.00%
```

Viewing File (c:\frames\examples\genii_11.epa) Section (nes10)

File: c:\frames\examples\genii_11.epa Print Done

File Contents | Module Description

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INDIVIDUAL DOSE FOR PATHWAY: Soil              inhalation
            DOSE (rem )     INCIDENCE    FATALITIES   CONTRIBUTION
   AR41        0.00E+00      0.00E+00                    0.00%
   H3          0.00E+00      0.00E+00                    0.00%
   I129        0.00E+00      0.00E+00                    0.00%
   OBT         0.00E+00      0.00E+00                    0.00%

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------
POPULATION AGE RANGE     0   10 YEARS
ORGAN       DOSE (Person-rem)   TISSUE     CANCER INCIDENCE
total body      1.35E+07       all sites     8.13E+03

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------
POPULATION GROUP AGE RANGE  0 TO 10 YEARS
POPULATION EFFECTIVE DOSE BY DISTANCE AND DIRECTION (Person-rem)
           805.    2414.    4023.    5632.    7241.   12070.   24140.   40260.   56320.   72400.
    22. 2.6E+03 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    45. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    68. 1.2E+03 0.0E+00 0.0E+00 1.0E+04 0.0E+00 0.0E+00 4.4E+05 9.2E+04 5.3E+04 7.9E+04
    90. 0.0E+00 0.0E+00 0.0E+00 5.0E+04 4.3E+03 2.1E+04 3.2E+03 1.0E+04 2.0E+04 3.3E+03
   112. 0.0E+00 0.0E+00 0.0E+00 1.5E+05 0.0E+00 8.5E+03 1.0E+05 1.3E+04 3.2E+04 2.4E+04
   135. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 6.6E+04 4.1E+04 2.9E+04 2.7E+04 3.0E+04
   158. 0.0E+00 0.0E+00 3.1E+04 0.0E+00 0.0E+00 0.0E+00 2.8E+04 2.4E+04 2.9E+04 1.9E+04
   180. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 6.9E+05 9.0E+04 5.3E+05 6.8E+04 4.2E+04 6.7E+04
   202. 0.0E+00 0.0E+00 0.0E+00 1.5E+06 1.1E+06 3.6E+05 1.3E+05 6.2E+04 3.3E+04 4.7E+04
   225. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 5.3E+05 1.8E+05 1.4E+05 6.6E+04 8.5E+04 5.1E+04
   248. 0.0E+00 0.0E+00 2.0E+05 2.5E+05 6.4E+04 1.2E+05 3.2E+04 2.9E+05 9.6E+04 3.5E+05
   270. 0.0E+00 0.0E+00 0.0E+00 4.2E+05 4.0E+05 1.1E+04 8.2E+03 0.0E+00 0.0E+00 0.0E+00
   292. 0.0E+00 0.0E+00 0.0E+00 6.3E+05 0.0E+00 0.0E+00 0.0E+00 1.5E+03 8.6E+02 5.6E+02
   315. 0.0E+00 0.0E+00 6.8E+05 0.0E+00 0.0E+00 0.0E+00 0.0E+00 2.9E+03 1.7E+03 1.1E+03
   338. 0.0E+00 5.5E+03 0.0E+00 3.9E+04 0.0E+00 0.0E+00 0.0E+00 6.7E+03 4.0E+03 2.6E+03
   360. 0.0E+00 0.0E+00 1.7E+06 9.3E+05 0.0E+00 0.0E+00 0.0E+00 2.4E+04 1.5E+04 9.7E+03

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------
POPULATION GROUP AGE RANGE  0 TO 10 YEARS
POPULATION CANCER INCIDENCE BY DISTANCE AND DIRECTION (RISK)
           805.    2414.    4023.    5632.    7241.   12070.   24140.   40260.   56320.   72400.
    22. 1.6E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    45. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    68. 7.1E-01 0.0E+00 0.0E+00 6.0E+00 0.0E+00 0.0E+00 2.7E+02 5.6E+01 3.2E+01 4.8E+01
    90. 0.0E+00 0.0E+00 0.0E+00 3.0E+01 2.6E+00 1.3E+01 1.9E+00 6.1E+00 1.2E+01 2.0E+00
   112. 0.0E+00 0.0E+00 0.0E+00 9.1E+01 0.0E+00 5.1E+00 6.2E+01 7.9E+00 1.9E+01 1.5E+01
   135. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 3.9E+01 2.4E+01 1.7E+01 1.6E+01 1.8E+01
   158. 0.0E+00 0.0E+00 1.9E+01 0.0E+00 0.0E+00 0.0E+00 1.7E+01 1.4E+01 1.7E+01 1.2E+01
   180. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 4.1E+02 5.4E+01 3.2E+02 4.1E+01 2.5E+01 4.0E+01
   202. 0.0E+00 0.0E+00 0.0E+00 9.1E+02 6.8E+02 2.1E+02 7.6E+01 3.7E+01 2.0E+01 2.8E+01
   225. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 3.2E+02 1.1E+02 8.5E+01 4.0E+01 5.1E+01 3.1E+01
   248. 0.0E+00 0.0E+00 1.2E+02 1.5E+02 3.8E+01 6.9E+01 1.9E+01 1.7E+02 5.8E+01 2.1E+02
   270. 0.0E+00 0.0E+00 0.0E+00 2.5E+02 2.4E+02 6.3E+00 4.9E+00 0.0E+00 0.0E+00 0.0E+00
   292. 0.0E+00 0.0E+00 0.0E+00 3.8E+02 0.0E+00 0.0E+00 0.0E+00 9.0E-01 5.2E-01 3.4E-01
   315. 0.0E+00 0.0E+00 4.1E+02 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.7E+00 1.0E+00 6.9E-01
   338. 0.0E+00 3.3E+00 0.0E+00 2.3E+01 0.0E+00 0.0E+00 0.0E+00 4.0E+00 2.4E+00 1.6E+00
   360. 0.0E+00 0.0E+00 1.0E+03 5.6E+02 0.0E+00 0.0E+00 0.0E+00 1.5E+01 8.8E+00 5.8E+00

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------
POPULATION GROUP AGE RANGE  0 TO 10 YEARS
POPULATION EFFECTIVE DOSE AND RISK BY NUCLIDE
NUCLIDE     DOSE (Prem)  CANCER INCIDENCE  CANCER FATALITIES
AR41         5.25E+00       3.15E-03        0.00E+00
H3           6.11E-01       3.67E-04        0.00E+00
I129         1.35E+07       8.13E+03        0.00E+00
OBT          6.70E-02       4.02E-05        0.00E+00

POPULATION EFFECTIVE DOSE (Person-rem)BY RELEASE CATEGORY:
  TRITIUM (PLUS OBT)  : 6.78E-01
  CARBON-14           : 0.00E+00
  NOBLE GASES         : 5.25E+00
  IODINE RADIONUCLIDES: 1.35E+07
  PARTICULATE NUCLIDES: 0.00E+00
```

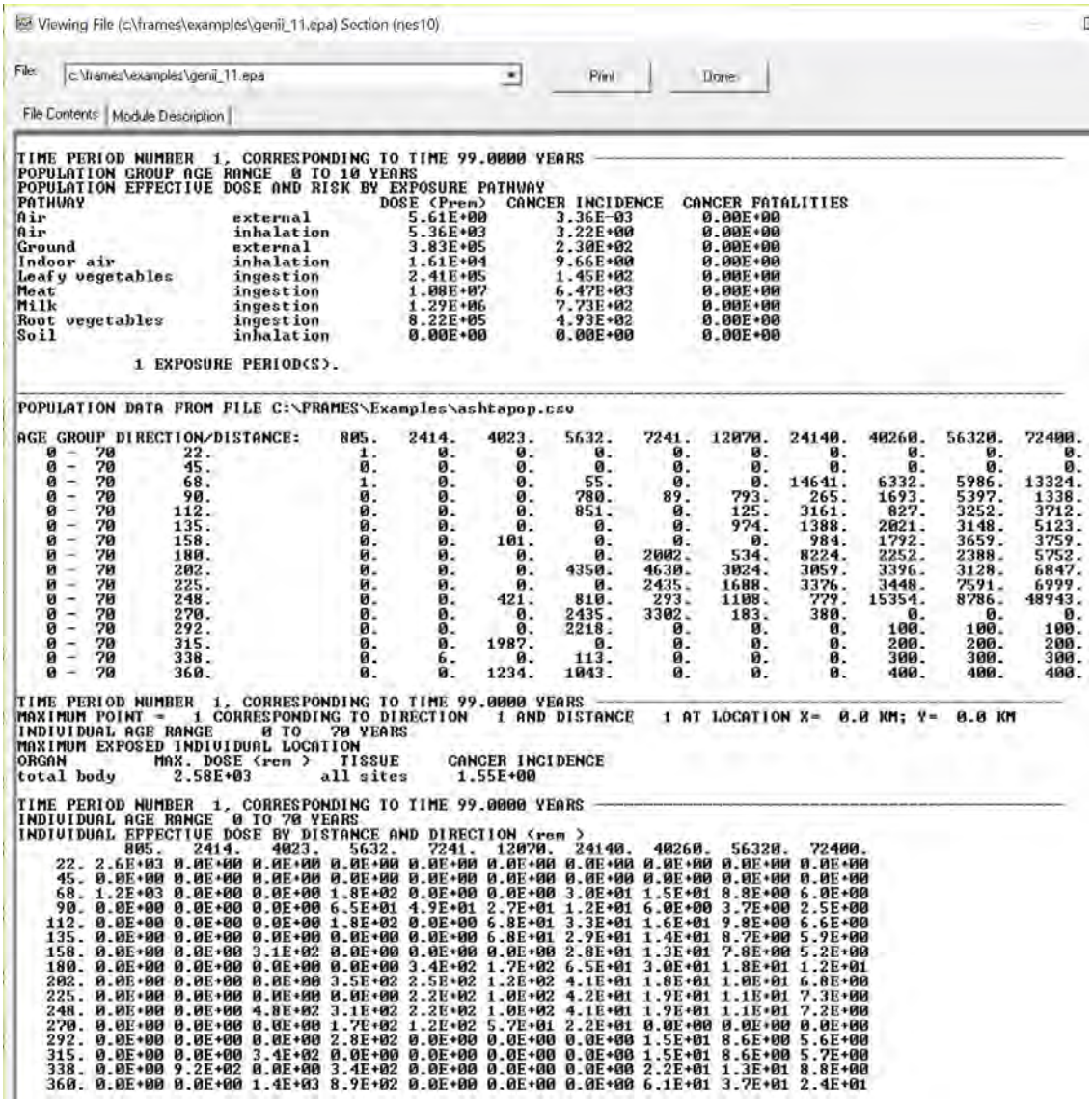

Viewing File (c:\frames\examples\genii_11.epa) Section (nes10)

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File Contents | Module Description

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TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
POPULATION GROUP AGE RANGE  0 TO 10 YEARS
POPULATION EFFECTIVE DOSE AND RISK BY EXPOSURE PATHWAY
PATHWAY                          DOSE (Prem)  CANCER INCIDENCE  CANCER FATALITIES
Air                  external      5.61E+00       3.36E-03          0.00E+00
Air                  inhalation    5.36E+03       3.22E+00          0.00E+00
Ground               external      3.83E+05       2.30E+02          0.00E+00
Indoor air           inhalation    1.61E+04       9.66E+00          0.00E+00
Leafy vegetables     ingestion     2.41E+05       1.45E+02          0.00E+00
Meat                 ingestion     1.08E+07       6.47E+03          0.00E+00
Milk                 ingestion     1.29E+06       7.73E+02          0.00E+00
Root vegetables      ingestion     8.22E+05       4.93E+02          0.00E+00
Soil                 inhalation    0.00E+00       0.00E+00          0.00E+00

          1 EXPOSURE PERIOD(S).

POPULATION DATA FROM FILE C:\FRAMES\Examples\ashtapop.csv

AGE GROUP DIRECTION/DISTANCE:    805.   2414.   4023.   5632.   7241.  12070.  24140.  40260.  56320.  72400.
   0 -  70       22.              1.      0.      0.      0.      0.      0.      0.      0.      0.      0.
   0 -  70       45.              0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
   0 -  70       68.              1.      0.      0.     55.      0.      0.  14641.   6332.   5986.  13324.
   0 -  70       90.              0.      0.      0.    780.     89.    793.    265.   1693.   5397.   1338.
   0 -  70      112.              0.      0.      0.    851.      0.    125.   3161.    827.   3252.   3712.
   0 -  70      135.              0.      0.      0.      0.      0.    974.   1388.   2021.   3148.   5123.
   0 -  70      158.              0.      0.    101.      0.      0.      0.    984.   1792.   3659.   3759.
   0 -  70      180.              0.      0.      0.      0.   2002.    534.   8224.   2252.   2388.   5752.
   0 -  70      202.              0.      0.      0.   4350.   4630.   3024.   3059.   3396.   3128.   6847.
   0 -  70      225.              0.      0.      0.      0.   2435.   1688.   3376.   3448.   7591.   6999.
   0 -  70      248.              0.      0.    421.    810.    293.   1108.    779.  15354.   8786.  48943.
   0 -  70      270.              0.      0.      0.   2435.   3302.    183.    380.      0.      0.      0.
   0 -  70      292.              0.      0.      0.   2218.      0.      0.      0.    100.    100.    100.
   0 -  70      315.              0.      0.   1987.      0.      0.      0.      0.    200.    200.    200.
   0 -  70      338.              0.      6.      0.    113.      0.      0.      0.    300.    300.    300.
   0 -  70      360.              0.      0.   1234.   1043.      0.      0.      0.    400.    400.    400.

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
MAXIMUM POINT =   1 CORRESPONDING TO DIRECTION   1 AND DISTANCE   1 AT LOCATION X=  0.0 KM; Y=  0.0 KM
INDIVIDUAL AGE RANGE     0 TO   70 YEARS
MAXIMUM EXPOSED INDIVIDUAL LOCATION
ORGAN          MAX. DOSE (rem )    TISSUE      CANCER INCIDENCE
total body       2.58E+03        all sites       1.55E+00

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
INDIVIDUAL AGE RANGE  0 TO 70 YEARS
INDIVIDUAL EFFECTIVE DOSE BY DISTANCE AND DIRECTION (rem )
            805.   2414.   4023.   5632.   7241.  12070.  24140.  40260.  56320.  72400.
    22. 2.6E+03 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    45. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    68. 1.2E+03 0.0E+00 0.0E+00 1.8E+02 0.0E+00 0.0E+00 3.0E+01 1.5E+01 8.8E+00 6.0E+00
    90. 0.0E+00 0.0E+00 0.0E+00 6.5E+01 4.9E+01 2.7E+01 1.2E+01 6.0E+00 3.7E+00 2.5E+00
   112. 0.0E+00 0.0E+00 0.0E+00 1.8E+02 0.0E+00 6.8E+01 3.3E+01 1.6E+01 9.8E+00 6.6E+00
   135. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 6.8E+01 2.9E+01 1.4E+01 8.7E+00 5.9E+00
   158. 0.0E+00 0.0E+00 3.1E+02 0.0E+00 0.0E+00 0.0E+00 2.8E+01 1.3E+01 7.8E+00 5.2E+00
   180. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 3.4E+02 1.7E+02 6.5E+01 3.0E+01 1.8E+01 1.2E+01
   202. 0.0E+00 0.0E+00 0.0E+00 3.5E+02 2.5E+02 1.2E+02 4.1E+01 1.8E+01 1.0E+01 6.8E+00
   225. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 2.2E+02 1.0E+02 4.2E+01 1.9E+01 1.1E+01 7.3E+00
   248. 0.0E+00 0.0E+00 4.8E+02 3.1E+02 2.2E+02 1.0E+02 4.1E+01 1.9E+01 1.1E+01 7.2E+00
   270. 0.0E+00 0.0E+00 0.0E+00 1.7E+02 1.2E+02 5.7E+01 2.2E+01 0.0E+00 0.0E+00 0.0E+00
   292. 0.0E+00 0.0E+00 0.0E+00 2.8E+02 0.0E+00 0.0E+00 0.0E+00 1.5E+01 8.6E+00 5.6E+00
   315. 0.0E+00 0.0E+00 3.4E+02 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.5E+01 8.6E+00 5.7E+00
   338. 0.0E+00 9.2E+02 0.0E+00 3.4E+02 0.0E+00 0.0E+00 0.0E+00 2.2E+01 1.3E+01 8.8E+00
   360. 0.0E+00 0.0E+00 1.4E+03 8.9E+02 0.0E+00 0.0E+00 0.0E+00 6.1E+01 3.7E+01 2.4E+01
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Viewing File (c:\frames\examples\genii_11.epa) Section (nes10)

File: c:\frames\examples\genii_11.epa Print Done

File Contents | Module Description

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TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------
INDIVIDUAL AGE RANGE  0 TO 70 YEARS
INDIVIDUAL CANCER INCIDENCE BY DISTANCE AND DIRECTION (RISK)
           805.   2414.   4023.   5632.   7241.  12070.  24140.  40260.  56320.  72400.
    22. 1.6E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    45. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    68. 7.1E-01 0.0E+00 0.0E+00 1.1E-01 0.0E+00 0.0E+00 1.8E-02 8.8E-03 5.3E-03 3.6E-03
    90. 0.0E+00 0.0E+00 0.0E+00 3.9E-02 2.9E-02 1.6E-02 7.3E-03 3.6E-03 2.2E-03 1.5E-03
   112. 0.0E+00 0.0E+00 0.0E+00 1.1E-01 0.0E+00 4.1E-02 2.0E-02 9.6E-03 5.9E-03 4.0E-03
   135. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 4.1E-02 1.8E-02 8.6E-03 5.2E-03 3.5E-03
   158. 0.0E+00 0.0E+00 1.8E-01 0.0E+00 0.0E+00 0.0E+00 1.7E-02 7.9E-03 4.7E-03 3.1E-03
   180. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 2.1E-01 1.0E-01 3.9E-02 1.8E-02 1.1E-02 7.0E-03
   202. 0.0E+00 0.0E+00 0.0E+00 2.1E-01 1.5E-01 7.1E-02 2.5E-02 1.1E-02 6.3E-03 4.1E-03
   225. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.3E-01 6.2E-02 2.5E-02 1.2E-02 6.7E-03 4.4E-03
   248. 0.0E+00 0.0E+00 2.9E-01 1.8E-01 1.3E-01 6.3E-02 2.5E-02 1.1E-02 6.6E-03 4.3E-03
   270. 0.0E+00 0.0E+00 0.0E+00 1.0E-01 7.3E-02 3.4E-02 1.3E-02 0.0E+00 0.0E+00 0.0E+00
   292. 0.0E+00 0.0E+00 0.0E+00 1.7E-01 0.0E+00 0.0E+00 0.0E+00 9.0E-03 5.2E-03 3.4E-03
   315. 0.0E+00 0.0E+00 2.1E-01 0.0E+00 0.0E+00 0.0E+00 0.0E+00 8.7E-03 5.2E-03 3.4E-03
   338. 0.0E+00 5.5E-01 0.0E+00 2.1E-01 0.0E+00 0.0E+00 0.0E+00 1.3E-02 7.9E-03 5.3E-03
   360. 0.0E+00 0.0E+00 8.1E-01 5.4E-01 0.0E+00 0.0E+00 0.0E+00 3.7E-02 2.2E-02 1.5E-02

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------
MAXIMUM LOCATION =     1
INDIVIDUAL EFFECTIVE DOSE AND RISK BY NUCLIDE
NUCLIDE     DOSE (rem )  CANCER INCIDENCE  CANCER FATALITIES
INDIVIDUAL AGE RANGE  0 TO 70 YEARS
AR41         1.36E-03       8.16E-07       0.00E+00
H3           8.83E-05       5.30E-08       0.00E+00
I129         2.58E+03       1.55E+00       0.00E+00
OBT          9.70E-06       5.82E-09       0.00E+00

EFFECTIVE DOSE (rem )BY RELEASE CATEGORY AT MAXIMUM INDIVIDUAL LOCATION:
  TRITIUM (PLUS OBT)   : 9.80E-05
  CARBON-14            : 0.00E+00
  NOBLE GASES          : 1.36E-03
  IODINE RADIONUCLIDES: 2.58E+03
  PARTICULATE NUCLIDES: 0.00E+00


TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ------------------------------
INDIVIDUAL AGE RANGE  0 TO 70 YEARS
MAXIMUM LOCATION =     1
INDIVIDUAL EFFECTIVE DOSE AND RISK BY EXPOSURE PATHWAY
PATHWAY                ROUTE          DOSE (rem )  CANCER INCIDENCE  CANCER FATALITIES
Air                    external        1.39E-03       8.33E-07       0.00E+00
Air                    inhalation      9.10E-01       5.46E-04       0.00E+00
Ground                 external        7.31E+01       4.39E-02       0.00E+00
Indoor air             inhalation      2.72E+00       1.63E-03       0.00E+00
Leafy vegetables       ingestion       4.60E+01       2.76E-02       0.00E+00
Meat                   ingestion       2.06E+03       1.24E+00       0.00E+00
Milk                   ingestion       2.45E+02       1.47E-01       0.00E+00
Root vegetables        ingestion       1.56E+02       9.35E-02       0.00E+00
Soil                   inhalation      0.00E+00       0.00E+00       0.00E+00
-------------------------------------------------------------------------------------------
-------
INDIVIDUAL EFFECTIVE DOSE AND RISK BY PATHWAY BY RADIONUCLIDE

INDIVIDUAL DOSE FOR PATHWAY: Air              external
           DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41       1.36E-03     8.16E-07                98.02%
   H3         0.00E+00     0.00E+00                 0.00%
   I129       2.75E-05     1.65E-08                 1.98%
   OBT        0.00E+00     0.00E+00                 0.00%

INDIVIDUAL DOSE FOR PATHWAY: Air              inhalation
           DOSE (rem )    INCIDENCE   FATALITIES  CONTRIBUTION
   AR41       0.00E+00     0.00E+00                 0.00%
   H3         5.66E-06     3.39E-09                 0.00%
   I129       9.10E-01     5.46E-04               100.00%
   OBT        0.00E+00     0.00E+00                 0.00%
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Viewing File (c:\frames\examples\genii_11.epa) Section (nes10)

File: c:\frames\examples\genii_11.epa Print Done

File Contents | Module Description

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INDIVIDUAL DOSE FOR PATHWAY: Ground              external
            DOSE (rem )     INCIDENCE    FATALITIES  CONTRIBUTION
   AR41         0.00E+00      0.00E+00                   0.00%
   H3           0.00E+00      0.00E+00                   0.00%
   I129         7.31E+01      4.39E-02                 100.00%
   OBT          0.00E+00      0.00E+00                   0.00%

INDIVIDUAL DOSE FOR PATHWAY: Indoor air          inhalation
            DOSE (rem )     INCIDENCE    FATALITIES  CONTRIBUTION
   AR41         0.00E+00      0.00E+00                   0.00%
   H3           1.70E-05      1.02E-08                   0.00%
   I129         2.72E+00      1.63E-03                 100.00%
   OBT          0.00E+00      0.00E+00                   0.00%

INDIVIDUAL DOSE FOR PATHWAY: Leafy vegetables ingestion
            DOSE (rem )     INCIDENCE    FATALITIES  CONTRIBUTION
   AR41         0.00E+00      0.00E+00                   0.00%
   H3           4.90E-06      2.94E-09                   0.00%
   I129         4.60E+01      2.76E-02                 100.00%
   OBT          2.75E-07      1.65E-10                   0.00%

INDIVIDUAL DOSE FOR PATHWAY: Meat                ingestion
            DOSE (rem )     INCIDENCE    FATALITIES  CONTRIBUTION
   AR41         0.00E+00      0.00E+00                   0.00%
   H3           8.93E-06      5.36E-09                   0.00%
   I129         2.06E+03      1.24E+00                 100.00%
   OBT          3.53E-06      2.12E-09                   0.00%

INDIVIDUAL DOSE FOR PATHWAY: Milk                ingestion
            DOSE (rem )     INCIDENCE    FATALITIES  CONTRIBUTION
   AR41         0.00E+00      0.00E+00                   0.00%
   H3           1.29E-05      7.74E-09                   0.00%
   I129         2.45E+02      1.47E-01                 100.00%
   OBT          9.93E-07      5.96E-10                   0.00%

INDIVIDUAL DOSE FOR PATHWAY: Root vegetables  ingestion
            DOSE (rem )     INCIDENCE    FATALITIES  CONTRIBUTION
   AR41         0.00E+00      0.00E+00                   0.00%
   H3           3.89E-05      2.34E-08                   0.00%
   I129         1.56E+02      9.35E-02                 100.00%
   OBT          4.90E-06      2.94E-09                   0.00%

INDIVIDUAL DOSE FOR PATHWAY: Soil                inhalation
            DOSE (rem )     INCIDENCE    FATALITIES  CONTRIBUTION
   AR41         0.00E+00      0.00E+00                   0.00%
   H3           0.00E+00      0.00E+00                   0.00%
   I129         0.00E+00      0.00E+00                   0.00%
   OBT          0.00E+00      0.00E+00                   0.00%

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ----------------------------
POPULATION AGE RANGE     0   70 YEARS
ORGAN       DOSE (Person-rem)   TISSUE     CANCER INCIDENCE
total body      1.35E+07       all sites     8.13E+03

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ----------------------------
POPULATION GROUP AGE RANGE  0 TO 70 YEARS
POPULATION EFFECTIVE DOSE BY DISTANCE AND DIRECTION (Person-rem)
           805.    2414.    4023.    5632.    7241.   12070.   24140.   40260.   56320.   72400.
    22. 2.6E+03 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    45. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
    68. 1.2E+03 0.0E+00 0.0E+00 1.0E+04 0.0E+00 0.0E+00 4.4E+05 9.2E+04 5.3E+04 7.9E+04
    90. 0.0E+00 0.0E+00 0.0E+00 5.0E+04 4.3E+03 2.1E+04 3.2E+03 1.0E+04 2.0E+04 3.3E+03
   112. 0.0E+00 0.0E+00 0.0E+00 1.5E+05 0.0E+00 8.5E+03 1.0E+05 1.3E+04 3.2E+04 2.4E+04
   135. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 6.6E+04 4.1E+04 2.9E+04 2.7E+04 3.0E+04
   158. 0.0E+00 0.0E+00 3.1E+04 0.0E+00 0.0E+00 0.0E+00 2.8E+04 2.4E+04 2.9E+04 1.9E+04
   180. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 6.9E+05 9.0E+04 5.3E+05 6.8E+04 4.2E+04 6.7E+04
   202. 0.0E+00 0.0E+00 0.0E+00 1.5E+06 1.1E+06 3.6E+05 1.3E+05 6.2E+04 3.3E+04 4.7E+04
   225. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 5.3E+05 1.8E+05 1.4E+05 6.6E+04 8.5E+04 5.1E+04
   248. 0.0E+00 0.0E+00 2.0E+05 2.5E+05 6.4E+04 1.2E+05 3.2E+04 2.9E+05 9.6E+04 3.5E+05
   270. 0.0E+00 0.0E+00 0.0E+00 4.2E+05 4.0E+05 1.1E+04 8.2E+03 0.0E+00 0.0E+00 0.0E+00
   292. 0.0E+00 0.0E+00 0.0E+00 6.3E+05 0.0E+00 0.0E+00 0.0E+00 1.5E+03 8.6E+02 5.6E+02
   315. 0.0E+00 0.0E+00 6.8E+05 0.0E+00 0.0E+00 0.0E+00 0.0E+00 2.9E+03 1.7E+03 1.1E+03
   338. 0.0E+00 5.5E+03 0.0E+00 3.9E+04 0.0E+00 0.0E+00 0.0E+00 6.7E+03 4.0E+03 2.6E+03
   360. 0.0E+00 0.0E+00 1.7E+06 9.3E+05 0.0E+00 0.0E+00 0.0E+00 2.4E+04 1.5E+04 9.7E+03
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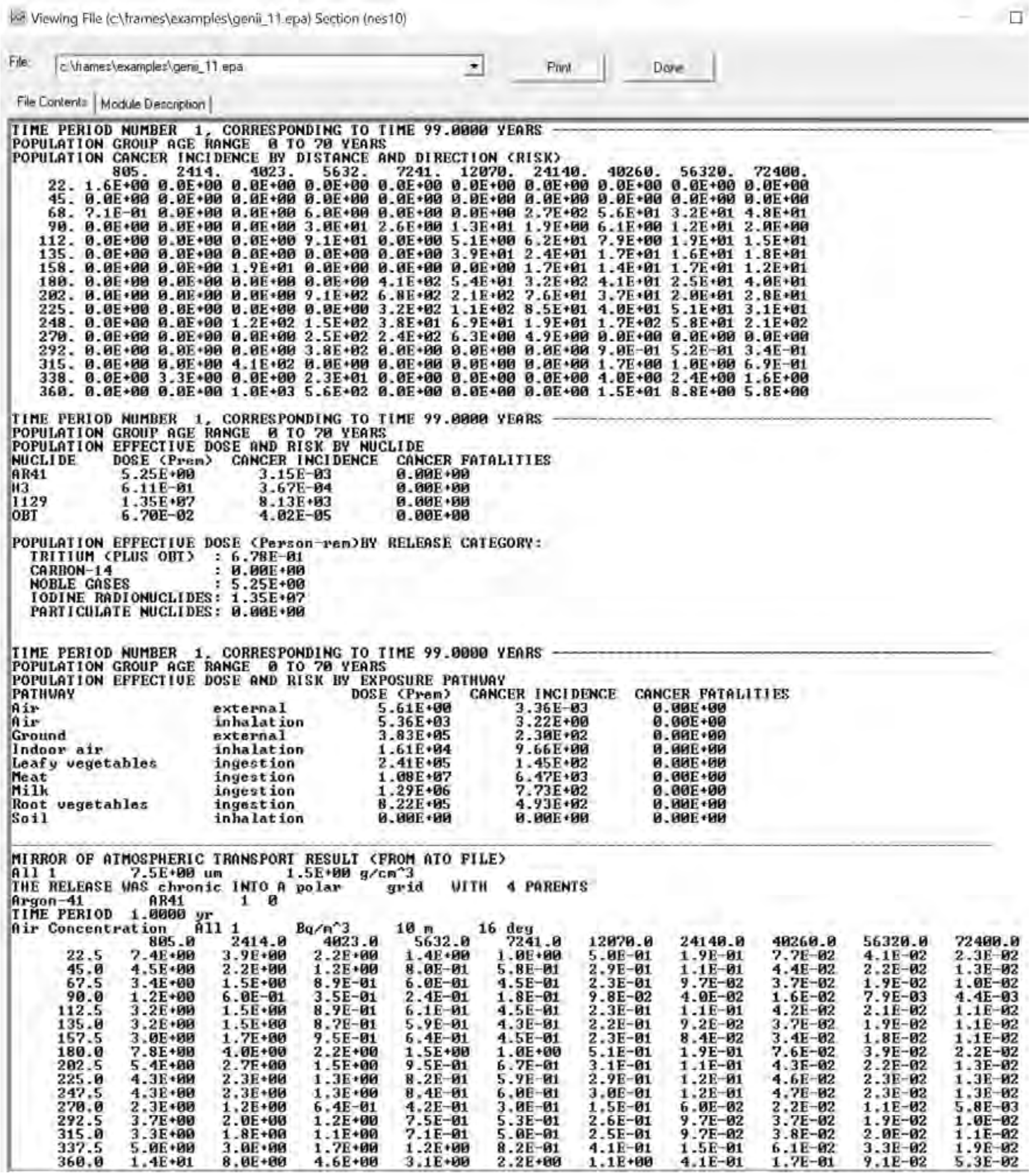

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Viewing File (c:\frames\examples\genii_11.epa) Section (nes10)
File: c:\frames\examples\genii_11.epa    Print    Done
File Contents | Module Description |

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
POPULATION GROUP AGE RANGE  0 TO 70 YEARS
POPULATION CANCER INCIDENCE BY DISTANCE AND DIRECTION (RISK)
          805.    2414.    4023.    5632.    7241.   12070.   24140.   40260.   56320.   72400.
   22. 1.6E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
   45. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00
   68. 7.1E-01 0.0E+00 0.0E+00 6.0E+00 0.0E+00 0.0E+00 2.7E+02 5.6E+01 3.2E+01 4.8E+01
   90. 0.0E+00 0.0E+00 0.0E+00 3.0E+01 2.6E+00 1.3E+01 1.9E+00 6.1E+00 1.2E+01 2.0E+00
  112. 0.0E+00 0.0E+00 0.0E+00 9.1E+01 0.0E+00 5.1E+00 6.2E+01 7.9E+00 1.9E+01 1.5E+01
  135. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 3.9E+01 2.4E+01 1.7E+01 1.6E+01 1.8E+01
  158. 0.0E+00 0.0E+00 1.9E+01 0.0E+00 0.0E+00 0.0E+00 1.7E+01 1.4E+01 1.7E+01 1.2E+01
  180. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 4.1E+02 5.4E+01 3.2E+02 4.1E+01 2.5E+01 4.0E+01
  202. 0.0E+00 0.0E+00 0.0E+00 9.1E+02 6.8E+02 2.1E+02 7.6E+01 3.7E+01 2.0E+01 2.8E+01
  225. 0.0E+00 0.0E+00 0.0E+00 0.0E+00 3.2E+02 1.1E+02 8.5E+01 4.0E+01 5.1E+01 3.1E+01
  248. 0.0E+00 0.0E+00 1.2E+02 1.5E+02 3.8E+01 6.9E+01 1.9E+01 1.7E+02 5.8E+01 2.1E+02
  270. 0.0E+00 0.0E+00 0.0E+00 2.5E+02 2.4E+02 6.3E+00 4.9E+00 0.0E+00 0.0E+00 0.0E+00
  292. 0.0E+00 0.0E+00 0.0E+00 3.8E+02 0.0E+00 0.0E+00 0.0E+00 9.0E-01 5.2E-01 3.4E-01
  315. 0.0E+00 0.0E+00 4.1E+02 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.7E+00 1.0E+00 6.9E-01
  338. 0.0E+00 3.3E+00 0.0E+00 2.3E+01 0.0E+00 0.0E+00 0.0E+00 4.0E+00 2.4E+00 1.6E+00
  360. 0.0E+00 0.0E+00 1.0E+03 5.6E+02 0.0E+00 0.0E+00 0.0E+00 1.5E+01 8.8E+00 5.8E+00

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
POPULATION GROUP AGE RANGE  0 TO 70 YEARS
POPULATION EFFECTIVE DOSE AND RISK BY NUCLIDE
NUCLIDE    DOSE (Prem)  CANCER INCIDENCE  CANCER FATALITIES
AR41        5.25E+00        3.15E-03        0.00E+00
H3          6.11E-01        3.67E-04        0.00E+00
I129        1.35E+07        8.13E+03        0.00E+00
OBT         6.70E-02        4.02E-05        0.00E+00

POPULATION EFFECTIVE DOSE (Person-rem)BY RELEASE CATEGORY:
  TRITIUM (PLUS OBT)  : 6.78E-01
  CARBON-14           : 0.00E+00
  NOBLE GASES         : 5.25E+00
  IODINE RADIONUCLIDES: 1.35E+07
  PARTICULATE NUCLIDES: 0.00E+00


TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
POPULATION GROUP AGE RANGE  0 TO 70 YEARS
POPULATION EFFECTIVE DOSE AND RISK BY EXPOSURE PATHWAY
PATHWAY                                DOSE (Prem)  CANCER INCIDENCE  CANCER FATALITIES
Air                   external           5.61E+00       3.36E-03         0.00E+00
Air                   inhalation         5.36E+03       3.22E+00         0.00E+00
Ground                external           3.83E+05       2.30E+02         0.00E+00
Indoor air            inhalation         1.61E+04       9.66E+00         0.00E+00
Leafy vegetables      ingestion          2.41E+05       1.45E+02         0.00E+00
Meat                  ingestion          1.08E+07       6.47E+03         0.00E+00
Milk                  ingestion          1.29E+06       7.73E+02         0.00E+00
Root vegetables       ingestion          8.22E+05       4.93E+02         0.00E+00
Soil                  inhalation         0.00E+00       0.00E+00         0.00E+00

MIRROR OF ATMOSPHERIC TRANSPORT RESULT (FROM ATO FILE)
All 1       7.5E+00 um       1.5E+00 g/cm^3
THE RELEASE WAS chronic INTO A polar     grid    WITH  4 PARENTS
Argon-41        AR41       1  0
TIME PERIOD  1.0000 yr
Air Concentration    All 1       Bq/m^3     10 m     16 deg
             805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
    22.5   7.4E+00    3.9E+00    2.2E+00    1.4E+00    1.0E+00    5.0E-01    1.9E-01    7.7E-02    4.1E-02    2.3E-02
    45.0   4.5E+00    2.2E+00    1.2E+00    8.0E-01    5.8E-01    2.9E-01    1.1E-01    4.4E-02    2.2E-02    1.3E-02
    67.5   3.4E+00    1.5E+00    8.9E-01    6.0E-01    4.5E-01    2.3E-01    9.7E-02    3.7E-02    1.9E-02    1.0E-02
    90.0   1.2E+00    6.0E-01    3.5E-01    2.4E-01    1.8E-01    9.8E-02    4.0E-02    1.6E-02    7.9E-03    4.4E-03
   112.5   3.2E+00    1.5E+00    8.9E-01    6.1E-01    4.5E-01    2.3E-01    1.1E-01    4.2E-02    2.1E-02    1.1E-02
   135.0   3.2E+00    1.5E+00    8.7E-01    5.9E-01    4.3E-01    2.2E-01    9.2E-02    3.7E-02    1.9E-02    1.1E-02
   157.5   3.0E+00    1.7E+00    9.5E-01    6.4E-01    4.5E-01    2.3E-01    8.4E-02    3.4E-02    1.8E-02    1.1E-02
   180.0   7.8E+00    4.0E+00    2.2E+00    1.5E+00    1.0E+00    5.1E-01    1.9E-01    7.6E-02    3.9E-02    2.2E-02
   202.5   5.4E+00    2.7E+00    1.5E+00    9.5E-01    6.7E-01    3.1E-01    1.1E-01    4.3E-02    2.2E-02    1.3E-02
   225.0   4.3E+00    2.3E+00    1.3E+00    8.2E-01    5.9E-01    2.9E-01    1.2E-01    4.6E-02    2.3E-02    1.3E-02
   247.5   4.3E+00    2.3E+00    1.3E+00    8.4E-01    6.0E-01    3.0E-01    1.2E-01    4.7E-02    2.3E-02    1.3E-02
   270.0   2.3E+00    1.2E+00    6.4E-01    4.2E-01    3.0E-01    1.5E-01    6.0E-02    2.2E-02    1.1E-02    5.8E-03
   292.5   3.7E+00    2.0E+00    1.2E+00    7.5E-01    5.3E-01    2.6E-01    9.7E-02    3.7E-02    1.9E-02    1.0E-02
   315.0   3.3E+00    1.8E+00    1.1E+00    7.1E-01    5.0E-01    2.5E-01    9.7E-02    3.8E-02    2.0E-02    1.1E-02
   337.5   5.0E+00    3.0E+00    1.7E+00    1.2E+00    8.2E-01    4.1E-01    1.5E-01    6.1E-02    3.3E-02    1.9E-02
   360.0   1.4E+01    8.0E+00    4.6E+00    3.1E+00    2.2E+00    1.1E+00    4.1E-01    1.7E-01    9.1E-02    5.3E-02
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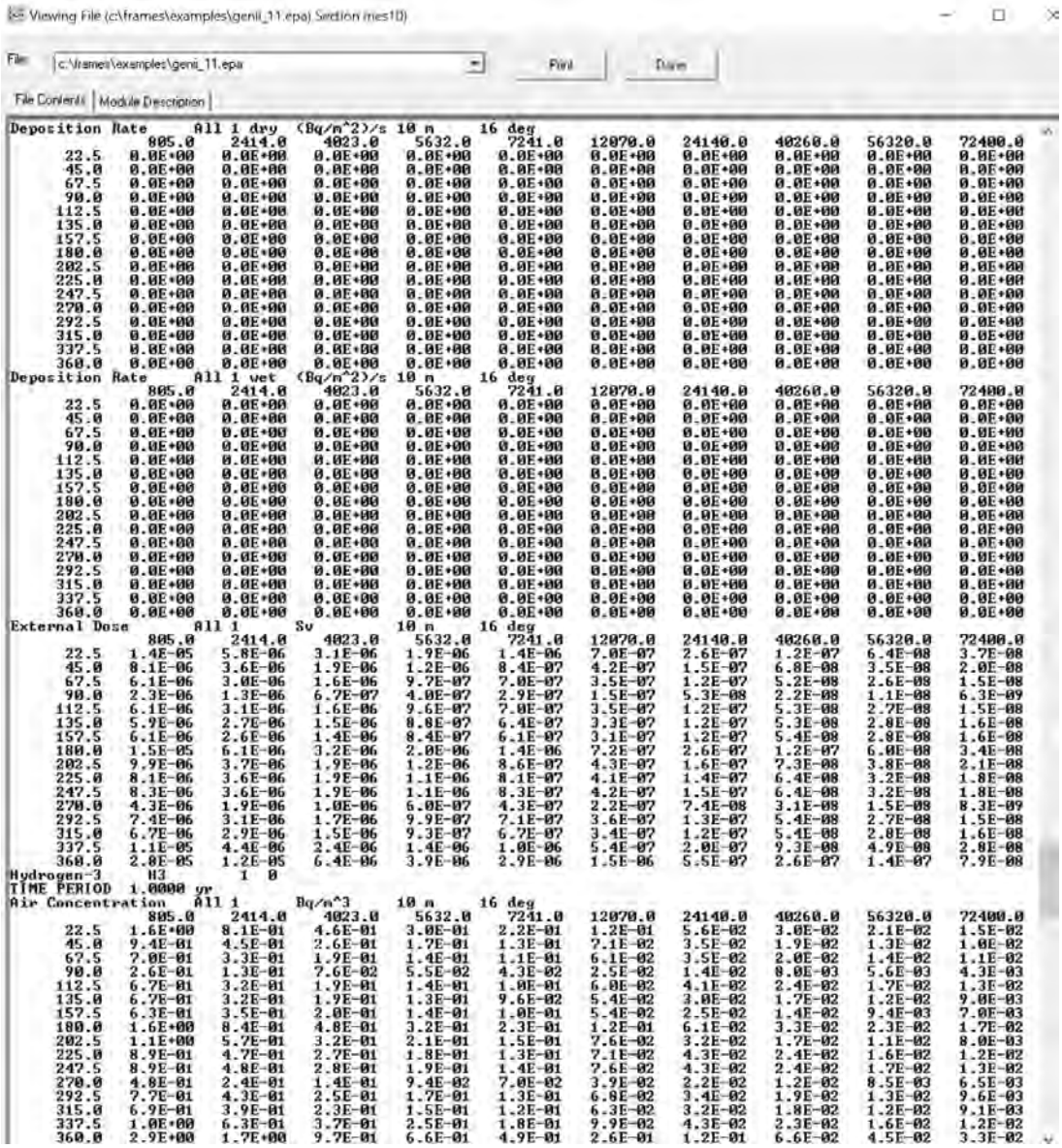


Viewing File (c:\frames\examples\genii_11.epa) Section (nies10)

File: c:\frames\examples\genii_11.epa — Print — Done

File Contents | Module Description

Deposition Rate All 1 dry (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

Deposition Rate All 1 wet (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

External Dose All 1 Sv 10 m 16 deg

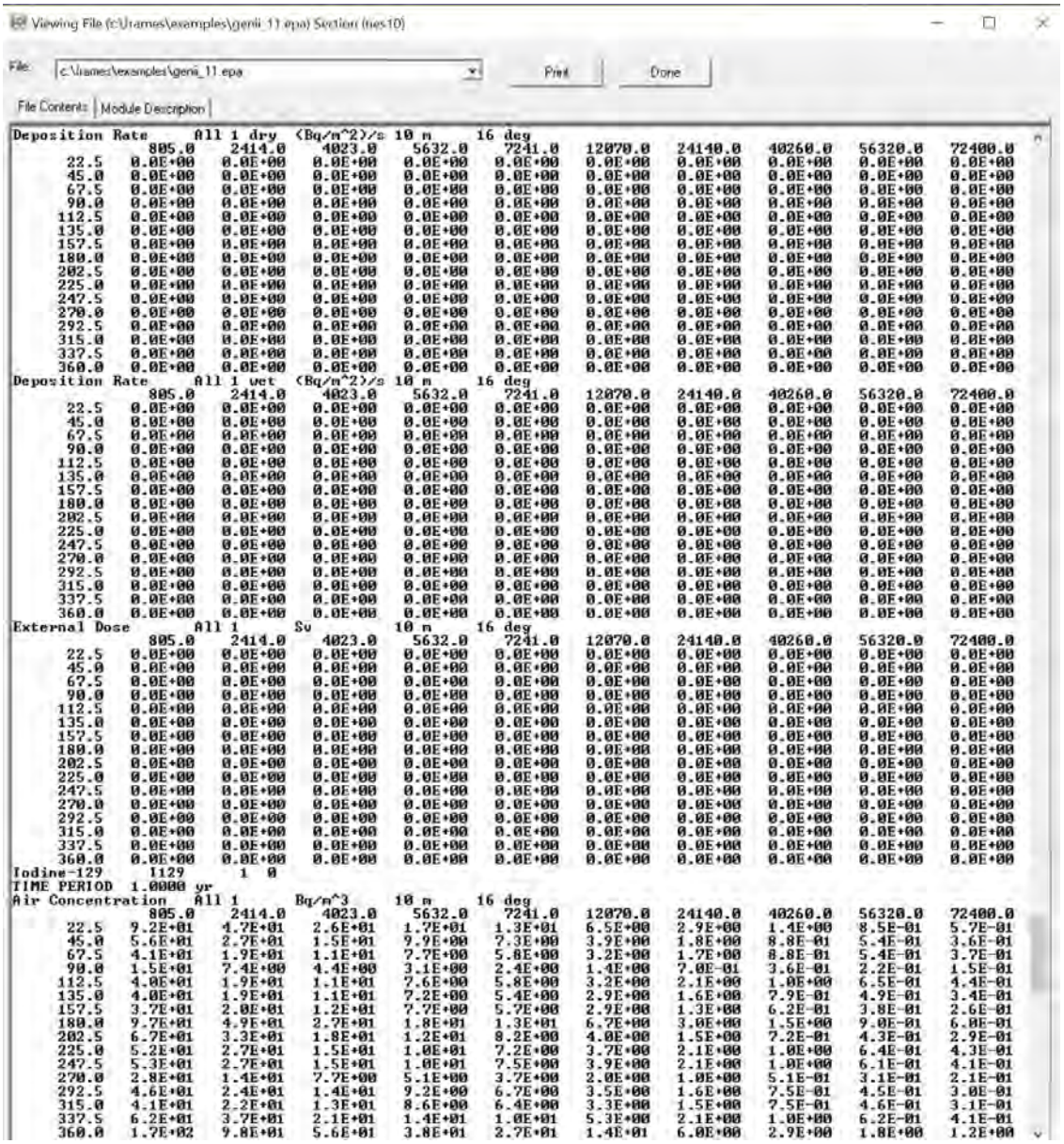
	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	1.4E-05	5.8E-06	3.1E-06	1.9E-06	1.4E-06	7.0E-07	2.6E-07	1.2E-07	6.4E-08	3.7E-08
45.0	8.1E-06	3.6E-06	1.9E-06	1.2E-06	8.4E-07	4.2E-07	1.5E-07	6.8E-08	3.5E-08	2.0E-08
67.5	6.1E-06	3.0E-06	1.6E-06	9.7E-07	7.0E-07	3.5E-07	1.2E-07	5.2E-08	2.6E-08	1.5E-08
90.0	2.3E-06	1.3E-06	6.7E-07	4.0E-07	2.9E-07	1.5E-07	5.3E-08	2.2E-08	1.1E-08	6.3E-09
112.5	6.1E-06	3.1E-06	1.6E-06	9.6E-07	7.0E-07	3.5E-07	1.2E-07	5.3E-08	2.7E-08	1.5E-08
135.0	5.9E-06	2.7E-06	1.5E-06	8.8E-07	6.4E-07	3.3E-07	1.2E-07	5.3E-08	2.8E-08	1.6E-08
157.5	6.1E-06	2.6E-06	1.4E-06	8.4E-07	6.1E-07	3.1E-07	1.2E-07	5.4E-08	2.8E-08	1.6E-08
180.0	1.5E-05	6.1E-06	3.2E-06	2.0E-06	1.4E-06	7.2E-07	2.6E-07	1.2E-07	6.0E-08	3.4E-08
202.5	9.9E-06	3.7E-06	1.9E-06	1.2E-06	8.6E-07	4.3E-07	1.6E-07	7.3E-08	3.8E-08	2.1E-08
225.0	8.1E-06	3.6E-06	1.9E-06	1.1E-06	8.1E-07	4.1E-07	1.4E-07	6.4E-08	3.2E-08	1.8E-08
247.5	8.3E-06	3.6E-06	1.9E-06	1.1E-06	8.3E-07	4.2E-07	1.5E-07	6.4E-08	3.2E-08	1.8E-08
270.0	4.3E-06	1.9E-06	1.0E-06	6.0E-07	4.3E-07	2.2E-07	7.4E-08	3.1E-08	1.5E-08	8.3E-09
292.5	7.4E-06	3.1E-06	1.7E-06	9.9E-07	7.1E-07	3.6E-07	1.3E-07	5.4E-08	2.7E-08	1.5E-08
315.0	6.7E-06	2.9E-06	1.5E-06	9.3E-07	6.7E-07	3.4E-07	1.2E-07	5.4E-08	2.8E-08	1.6E-08
337.5	1.1E-05	4.4E-06	2.4E-06	1.4E-06	1.0E-06	5.4E-07	2.0E-07	9.3E-08	4.9E-08	2.8E-08
360.0	2.8E-05	1.2E-05	6.4E-06	3.9E-06	2.9E-06	1.5E-06	5.5E-07	2.6E-07	1.4E-07	7.9E-08

Hydrogen-3 H3 1 0

TIME PERIOD 1.0000 yr

Air Concentration All 1 Bq/m^3 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	1.6E+00	8.1E-01	4.6E-01	3.0E-01	2.2E-01	1.2E-01	5.6E-02	3.0E-02	2.1E-02	1.5E-02
45.0	9.4E-01	4.5E-01	2.6E-01	1.7E-01	1.3E-01	7.1E-02	3.5E-02	1.9E-02	1.3E-02	1.0E-02
67.5	7.0E-01	3.3E-01	1.9E-01	1.4E-01	1.1E-01	6.1E-02	3.5E-02	2.0E-02	1.4E-02	1.1E-02
90.0	2.6E-01	1.3E-01	7.6E-02	5.5E-02	4.3E-02	2.5E-02	1.4E-02	8.0E-03	5.6E-03	4.3E-03
112.5	6.7E-01	3.2E-01	1.9E-01	1.4E-01	1.0E-01	6.0E-02	4.1E-02	2.4E-02	1.7E-02	1.3E-02
135.0	6.7E-01	3.2E-01	1.9E-01	1.3E-01	9.6E-02	5.4E-02	3.0E-02	1.7E-02	1.2E-02	9.0E-03
157.5	6.3E-01	3.5E-01	2.0E-01	1.4E-01	1.0E-01	5.4E-02	2.5E-02	1.4E-02	9.4E-03	7.0E-03
180.0	1.6E+00	8.4E-01	4.8E-01	3.2E-01	2.3E-01	1.2E-01	6.1E-02	3.3E-02	2.3E-02	1.7E-02
202.5	1.1E+00	5.7E-01	3.2E-01	2.1E-01	1.5E-01	7.6E-02	3.2E-02	1.7E-02	1.1E-02	8.0E-03
225.0	8.9E-01	4.7E-01	2.7E-01	1.8E-01	1.3E-01	7.1E-02	4.3E-02	2.4E-02	1.6E-02	1.2E-02
247.5	8.9E-01	4.8E-01	2.8E-01	1.9E-01	1.4E-01	7.6E-02	4.3E-02	2.4E-02	1.7E-02	1.3E-02
270.0	4.8E-01	2.4E-01	1.4E-01	9.4E-02	7.0E-02	3.9E-02	2.2E-02	1.2E-02	8.5E-03	6.5E-03
292.5	7.7E-01	4.3E-01	2.5E-01	1.7E-01	1.3E-01	6.8E-02	3.4E-02	1.9E-02	1.3E-02	9.6E-03
315.0	6.9E-01	3.9E-01	2.3E-01	1.5E-01	1.2E-01	6.3E-02	3.2E-02	1.8E-02	1.2E-02	9.1E-03
337.5	1.0E+00	6.3E-01	3.7E-01	2.5E-01	1.8E-01	9.9E-02	4.3E-02	2.3E-02	1.6E-02	1.2E-02
360.0	2.9E+00	1.7E+00	9.7E-01	6.6E-01	4.9E-01	2.6E-01	1.2E-01	6.6E-02	4.5E-02	3.3E-02

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Deposition Rate     All 1 dry  (Bq/m^2)/s 10 m     16 deg
                805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
      22.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      45.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      67.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      90.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     112.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     135.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     157.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     180.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     202.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     225.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     247.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     270.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     292.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     315.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     337.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     360.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
Deposition Rate     All 1 wet  (Bq/m^2)/s 10 m     16 deg
                805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
      22.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      45.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      67.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      90.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     112.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     135.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     157.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     180.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     202.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     225.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     247.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     270.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     292.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     315.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     337.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     360.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
External Dose       All 1      Sv         10 m     16 deg
                805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
      22.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      45.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      67.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      90.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     112.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     135.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     157.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     180.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     202.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     225.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     247.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     270.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     292.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     315.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     337.5  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
     360.0  0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
Iodine-129     1129       1  0
TIME PERIOD  1.0000 yr
Air Concentration   All 1      Bq/m^3     10 m     16 deg
                805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
      22.5  9.2E+01    4.7E+01    2.6E+01    1.7E+01    1.3E+01    6.5E+00    2.9E+00    1.4E+00    8.5E-01    5.7E-01
      45.0  5.6E+01    2.7E+01    1.5E+01    9.9E+00    7.3E+00    3.9E+00    1.8E+00    8.8E-01    5.4E-01    3.6E-01
      67.5  4.1E+01    1.9E+01    1.1E+01    7.7E+00    5.8E+00    3.2E+00    1.7E+00    8.8E-01    5.4E-01    3.7E-01
      90.0  1.5E+01    7.4E+00    4.4E+00    3.1E+00    2.4E+00    1.4E+00    7.0E-01    3.6E-01    2.2E-01    1.5E-01
     112.5  4.0E+01    1.9E+01    1.1E+01    7.6E+00    5.8E+00    3.2E+00    2.1E+00    1.0E+00    6.5E-01    4.4E-01
     135.0  4.0E+01    1.9E+01    1.1E+01    7.2E+00    5.4E+00    2.9E+00    1.6E+00    7.9E-01    4.9E-01    3.4E-01
     157.5  3.7E+01    2.0E+01    1.2E+01    7.7E+00    5.7E+00    2.9E+00    1.3E+00    6.2E-01    3.8E-01    2.6E-01
     180.0  9.7E+01    4.9E+01    2.7E+01    1.8E+01    1.3E+01    6.7E+00    3.0E+00    1.5E+00    9.0E-01    6.0E-01
     202.5  6.7E+01    3.3E+01    1.8E+01    1.2E+01    8.2E+00    4.0E+00    1.5E+00    7.2E-01    4.3E-01    2.9E-01
     225.0  5.2E+01    2.7E+01    1.5E+01    1.0E+01    7.2E+00    3.7E+00    2.1E+00    1.0E+00    6.4E-01    4.3E-01
     247.5  5.3E+01    2.7E+01    1.5E+01    1.0E+01    7.5E+00    3.9E+00    2.1E+00    1.0E+00    6.1E-01    4.1E-01
     270.0  2.8E+01    1.4E+01    7.7E+00    5.1E+00    3.7E+00    2.0E+00    1.0E+00    5.1E-01    3.1E-01    2.1E-01
     292.5  4.6E+01    2.4E+01    1.4E+01    9.2E+00    6.7E+00    3.5E+00    1.6E+00    7.5E-01    4.5E-01    3.0E-01
     315.0  4.1E+01    2.2E+01    1.3E+01    8.6E+00    6.4E+00    3.3E+00    1.5E+00    7.5E-01    4.6E-01    3.1E-01
     337.5  6.2E+01    3.7E+01    2.1E+01    1.4E+01    1.0E+01    5.3E+00    2.1E+00    1.0E+00    6.2E-01    4.1E-01
     360.0  1.7E+02    9.8E+01    5.6E+01    3.8E+01    2.7E+01    1.4E+01    6.0E+00    2.9E+00    1.8E+00    1.2E+00
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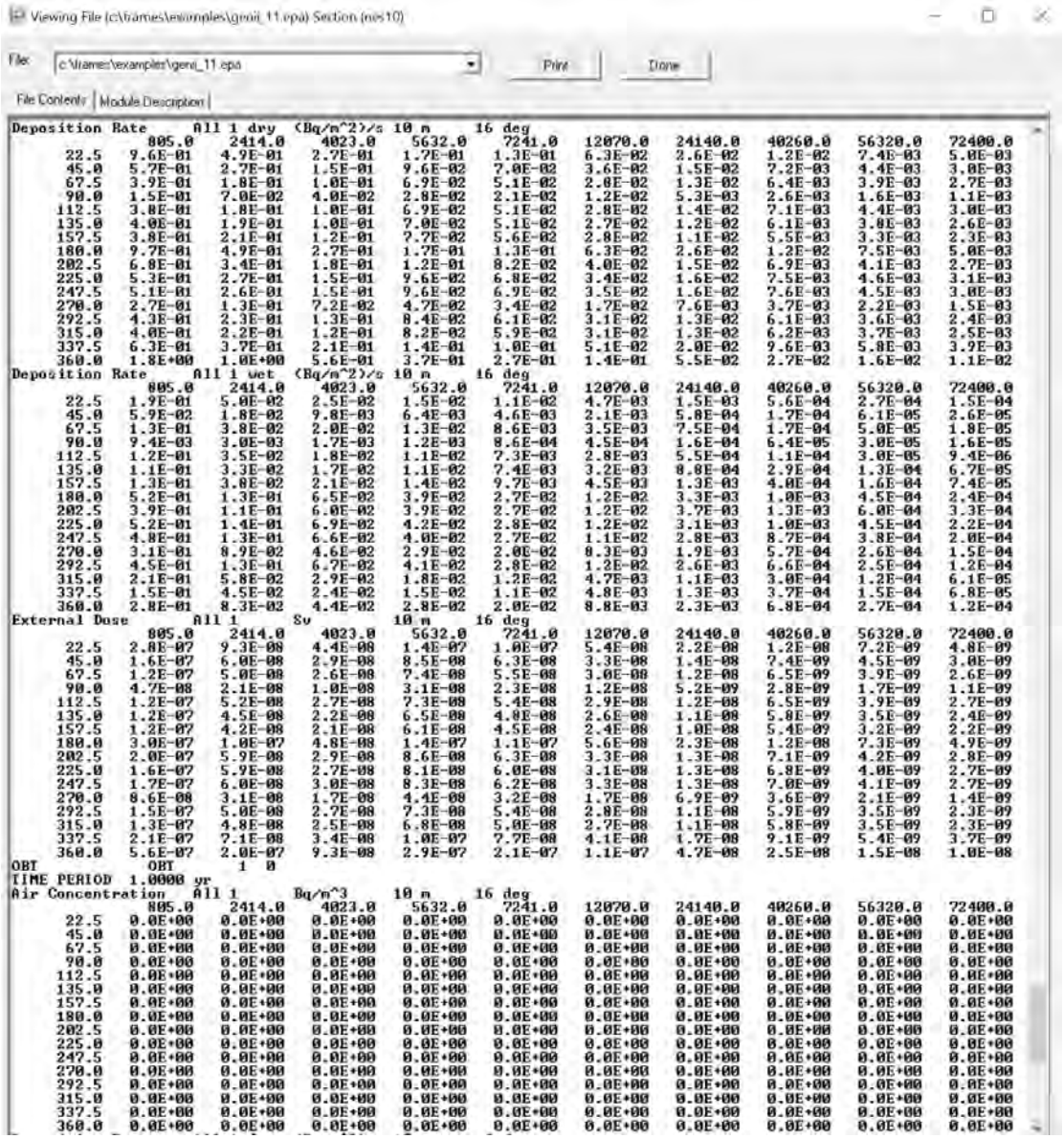


Viewing File (c:\trames\examples\geni_11.epa) Section (nes10)

File: c:\trames\examples\geni_11.epa | Print | Done

File Contents | Module Description

Deposition Rate All 1 dry (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	9.6E-01	4.9E-01	2.7E-01	1.7E-01	1.3E-01	6.3E-02	2.6E-02	1.2E-02	7.4E-03	5.0E-03
45.0	5.7E-01	2.7E-01	1.5E-01	9.6E-02	7.0E-02	3.6E-02	1.5E-02	7.2E-03	4.4E-03	3.0E-03
67.5	3.9E-01	1.8E-01	1.0E-01	6.9E-02	5.1E-02	2.0E-02	1.3E-02	6.4E-03	3.9E-03	2.7E-03
90.0	1.5E-01	7.0E-02	4.0E-02	2.8E-02	2.1E-02	1.2E-02	5.3E-03	2.6E-03	1.6E-03	1.1E-03
112.5	3.8E-01	1.8E-01	1.0E-01	6.9E-02	5.1E-02	2.8E-02	1.4E-02	7.1E-03	4.4E-03	3.0E-03
135.0	4.0E-01	1.9E-01	1.0E-01	7.0E-02	5.1E-02	2.7E-02	1.2E-02	6.1E-03	3.8E-03	2.6E-03
157.5	3.8E-01	2.1E-01	1.2E-01	7.7E-02	5.6E-02	2.8E-02	1.1E-02	5.5E-03	3.3E-03	2.3E-03
180.0	9.7E-01	4.9E-01	2.7E-01	1.7E-01	1.3E-01	6.3E-02	2.6E-02	1.2E-02	7.5E-03	5.0E-03
202.5	6.8E-01	3.4E-01	1.8E-01	1.2E-01	8.2E-02	4.0E-02	1.5E-02	6.9E-03	4.1E-03	2.7E-03
225.0	5.3E-01	2.7E-01	1.5E-01	9.6E-02	6.8E-02	3.4E-02	1.6E-02	7.5E-03	4.6E-03	3.1E-03
247.5	5.1E-01	2.6E-01	1.5E-01	9.6E-02	6.9E-02	3.5E-02	1.6E-02	7.6E-03	4.5E-03	3.0E-03
270.0	2.7E-01	1.3E-01	7.2E-02	4.7E-02	3.4E-02	1.7E-02	7.6E-03	3.7E-03	2.2E-03	1.5E-03
292.5	4.3E-01	2.3E-01	1.3E-01	8.4E-02	6.1E-02	3.1E-02	1.3E-02	6.1E-03	3.6E-03	2.4E-03
315.0	4.0E-01	2.2E-01	1.2E-01	8.2E-02	5.9E-02	3.1E-02	1.3E-02	6.2E-03	3.7E-03	2.5E-03
337.5	6.3E-01	3.7E-01	2.1E-01	1.4E-01	1.0E-01	5.1E-02	2.0E-02	9.6E-03	5.8E-03	3.9E-03
360.0	1.8E+00	1.0E+00	5.6E-01	3.7E-01	2.7E-01	1.4E-01	5.5E-02	2.7E-02	1.6E-02	1.1E-02

Deposition Rate All 1 wet (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	1.9E-01	5.0E-02	2.5E-02	1.5E-02	1.1E-02	4.7E-03	1.5E-03	5.6E-04	2.7E-04	1.5E-04
45.0	5.9E-02	1.8E-02	9.8E-03	6.4E-03	4.6E-03	2.1E-03	5.8E-04	1.7E-04	6.1E-05	2.6E-05
67.5	1.3E-01	3.8E-02	2.0E-02	1.3E-02	8.6E-03	3.5E-03	7.5E-04	1.7E-04	5.0E-05	1.8E-05
90.0	9.4E-03	3.0E-03	1.7E-03	1.2E-03	8.6E-04	4.5E-04	1.6E-04	6.4E-05	3.0E-05	1.6E-05
112.5	1.2E-01	3.5E-02	1.8E-02	1.1E-02	7.3E-03	2.8E-03	5.5E-04	1.1E-04	3.0E-05	9.4E-06
135.0	1.1E-01	3.3E-02	1.7E-02	1.1E-02	7.4E-03	3.2E-03	8.8E-04	2.9E-04	1.3E-04	6.7E-05
157.5	1.3E-01	3.8E-02	2.1E-02	1.4E-02	9.7E-03	4.5E-03	1.3E-03	4.0E-04	1.6E-04	7.4E-05
180.0	5.2E-01	1.3E-01	6.5E-02	3.9E-02	2.7E-02	1.2E-02	3.3E-03	1.0E-03	4.5E-04	2.4E-04
202.5	3.9E-01	1.1E-01	6.0E-02	3.9E-02	2.7E-02	1.2E-02	3.7E-03	1.3E-03	6.0E-04	3.3E-04
225.0	5.2E-01	1.4E-01	6.9E-02	4.2E-02	2.8E-02	1.2E-02	3.1E-03	1.0E-03	4.5E-04	2.2E-04
247.5	4.8E-01	1.3E-01	6.6E-02	4.0E-02	2.7E-02	1.1E-02	2.8E-03	8.7E-04	3.8E-04	2.0E-04
270.0	3.1E-01	8.9E-02	4.6E-02	2.9E-02	2.0E-02	8.3E-03	1.9E-03	5.7E-04	2.6E-04	1.5E-04
292.5	4.5E-01	1.3E-01	6.7E-02	4.1E-02	2.8E-02	1.2E-02	2.6E-03	6.6E-04	2.5E-04	1.2E-04
315.0	2.1E-01	5.8E-02	2.9E-02	1.8E-02	1.2E-02	4.7E-03	1.1E-03	3.0E-04	1.2E-04	6.1E-05
337.5	1.5E-01	4.5E-02	2.4E-02	1.5E-02	1.1E-02	4.8E-03	1.3E-03	3.7E-04	1.5E-04	6.8E-05
360.0	2.8E-01	8.3E-02	4.4E-02	2.8E-02	2.0E-02	8.8E-03	2.3E-03	6.8E-04	2.7E-04	1.2E-04

External Dose All 1 Sv 10 m 16 deg

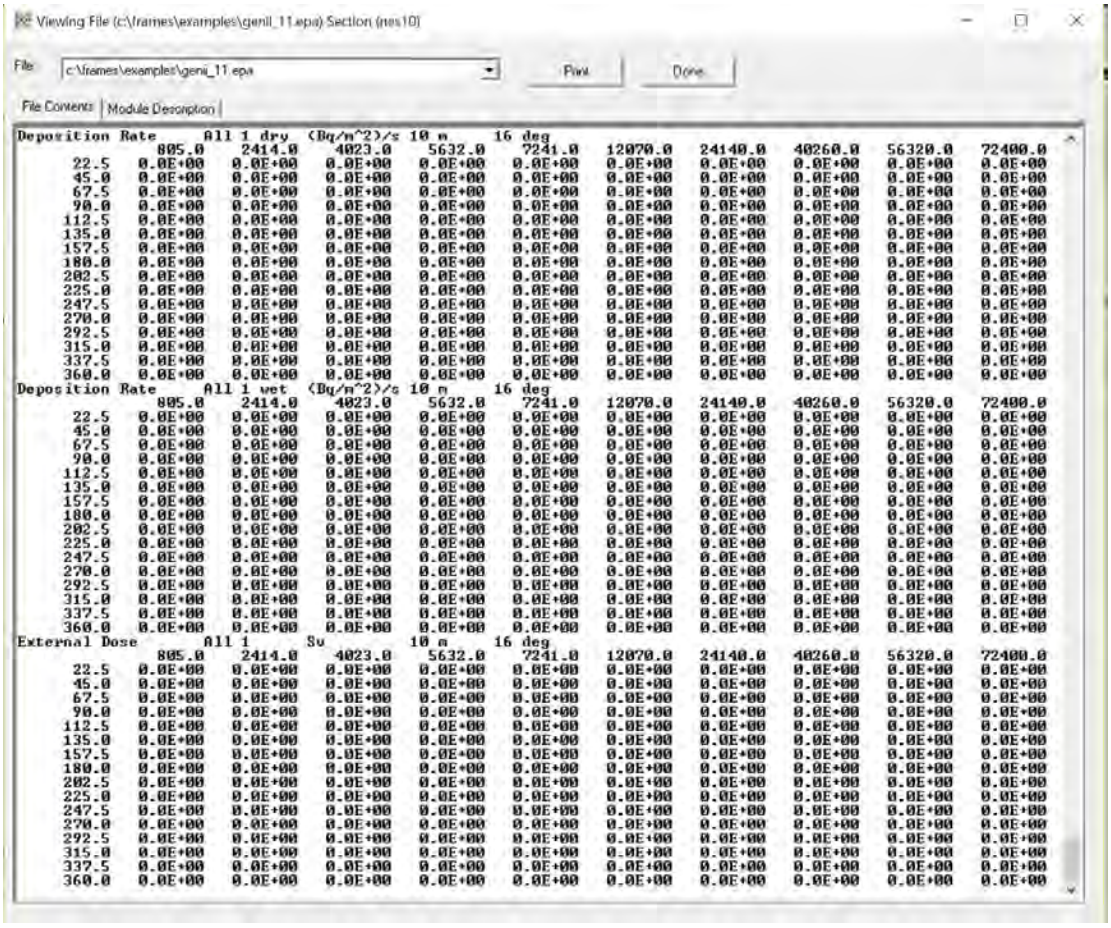
	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	2.8E-07	9.3E-08	4.4E-08	1.4E-07	1.0E-07	5.4E-08	2.2E-08	1.2E-08	7.2E-09	4.8E-09
45.0	1.6E-07	6.0E-08	2.9E-08	8.5E-08	6.3E-08	3.3E-08	1.4E-08	7.4E-09	4.5E-09	3.0E-09
67.5	1.2E-07	5.0E-08	2.6E-08	7.4E-08	5.5E-08	3.0E-08	1.2E-08	6.5E-09	3.9E-09	2.6E-09
90.0	4.7E-08	2.1E-08	1.0E-08	3.1E-08	2.3E-08	1.2E-08	5.2E-09	2.8E-09	1.7E-09	1.1E-09
112.5	1.2E-07	5.2E-08	2.7E-08	7.3E-08	5.4E-08	2.9E-08	1.2E-08	6.5E-09	3.9E-09	2.7E-09
135.0	1.2E-07	4.5E-08	2.2E-08	6.5E-08	4.8E-08	2.6E-08	1.1E-08	5.8E-09	3.5E-09	2.4E-09
157.5	1.2E-07	4.2E-08	2.1E-08	6.1E-08	4.5E-08	2.4E-08	1.0E-08	5.4E-09	3.2E-09	2.2E-09
180.0	3.0E-07	1.0E-07	4.8E-08	1.4E-07	1.1E-07	5.6E-08	2.3E-08	1.2E-08	7.3E-09	4.9E-09
202.5	2.0E-07	5.9E-08	2.9E-08	8.6E-08	6.3E-08	3.3E-08	1.3E-08	7.1E-09	4.2E-09	2.8E-09
225.0	1.6E-07	5.9E-08	2.7E-08	8.1E-08	6.0E-08	3.1E-08	1.3E-08	6.8E-09	4.0E-09	2.7E-09
247.5	1.7E-07	6.0E-08	3.0E-08	8.3E-08	6.2E-08	3.3E-08	1.3E-08	7.0E-09	4.1E-09	2.7E-09
270.0	8.6E-08	3.1E-08	1.7E-08	4.4E-08	3.2E-08	1.7E-08	6.9E-09	3.6E-09	2.1E-09	1.4E-09
292.5	1.5E-07	5.0E-08	2.7E-08	7.3E-08	5.4E-08	2.8E-08	1.1E-08	5.9E-09	3.5E-09	2.3E-09
315.0	1.3E-07	4.8E-08	2.5E-08	6.8E-08	5.0E-08	2.7E-08	1.1E-08	5.8E-09	3.5E-09	2.3E-09
337.5	2.1E-07	7.1E-08	3.4E-08	1.0E-07	7.7E-08	4.1E-08	1.7E-08	9.1E-09	5.4E-09	3.7E-09
360.0	5.6E-07	2.0E-07	9.3E-08	2.9E-07	2.1E-07	1.1E-07	4.7E-08	2.5E-08	1.5E-08	1.0E-08

OBT OBT 1 0

TIME PERIOD 1.0000 yr

Air Concentration All 1 Bq/m^3 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00



Deposition Rate All 1 dry (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

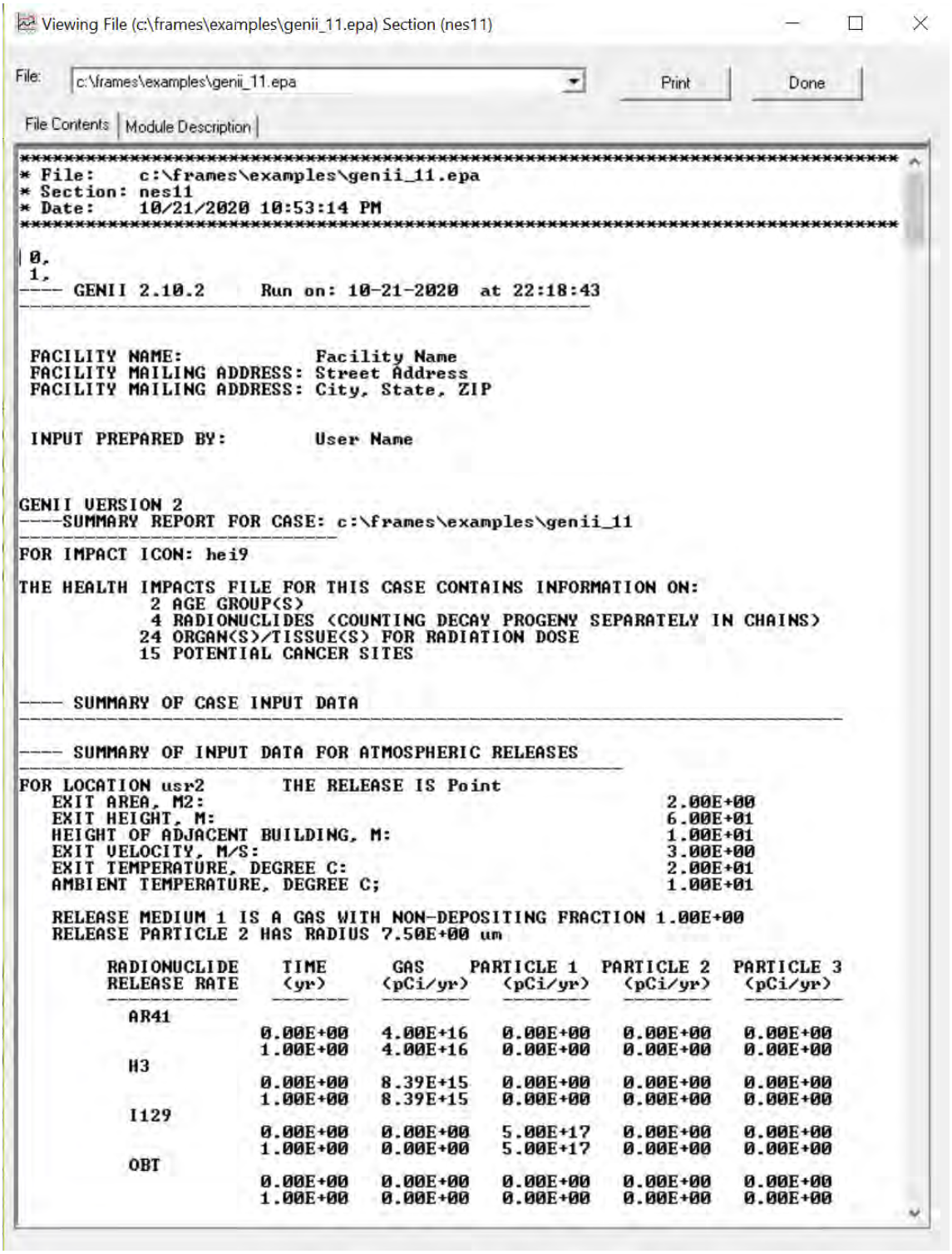
Deposition Rate All 1 wet (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

External Dose All 1 Sv 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

3.2.4.10 Icon 11 Report Generator (nes11) –Reports EPA Text View Results

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********************************************************************************
* File:    c:\frames\examples\genii_11.epa
* Section: nes11
* Date:    10/21/2020 10:53:14 PM
********************************************************************************

 0,
 1,
---- GENII 2.10.2     Run on: 10-21-2020  at 22:18:43
--------------------------------------------------


 FACILITY NAME:            Facility Name
 FACILITY MAILING ADDRESS: Street Address
 FACILITY MAILING ADDRESS: City, State, ZIP

 INPUT PREPARED BY:        User Name


GENII VERSION 2
----SUMMARY REPORT FOR CASE: c:\frames\examples\genii_11
------------------------------
FOR IMPACT ICON: hei9

THE HEALTH IMPACTS FILE FOR THIS CASE CONTAINS INFORMATION ON:
           2 AGE GROUP(S)
           4 RADIONUCLIDES (COUNTING DECAY PROGENY SEPARATELY IN CHAINS)
          24 ORGAN(S)/TISSUE(S) FOR RADIATION DOSE
          15 POTENTIAL CANCER SITES


---- SUMMARY OF CASE INPUT DATA
--------------------------------------------------------------------------------

---- SUMMARY OF INPUT DATA FOR ATMOSPHERIC RELEASES
--------------------------------------------------

FOR LOCATION usr2       THE RELEASE IS Point
   EXIT AREA, M2:                                          2.00E+00
   EXIT HEIGHT, M:                                         6.00E+01
   HEIGHT OF ADJACENT BUILDING, M:                         1.00E+01
   EXIT VELOCITY, M/S:                                     3.00E+00
   EXIT TEMPERATURE, DEGREE C:                             2.00E+01
   AMBIENT TEMPERATURE, DEGREE C;                          1.00E+01

   RELEASE MEDIUM 1 IS A GAS WITH NON-DEPOSITING FRACTION 1.00E+00
   RELEASE PARTICLE 2 HAS RADIUS 7.50E+00 um

      RADIONUCLIDE    TIME      GAS     PARTICLE 1  PARTICLE 2  PARTICLE 3
      RELEASE RATE    (yr)    (pCi/yr)   (pCi/yr)    (pCi/yr)    (pCi/yr)
      ------------    ------  --------   ---------   ---------   ---------
        AR41
                      0.00E+00  4.00E+16   0.00E+00    0.00E+00    0.00E+00
                      1.00E+00  4.00E+16   0.00E+00    0.00E+00    0.00E+00
        H3
                      0.00E+00  8.39E+15   0.00E+00    0.00E+00    0.00E+00
                      1.00E+00  8.39E+15   0.00E+00    0.00E+00    0.00E+00
        I129
                      0.00E+00  0.00E+00   5.00E+17    0.00E+00    0.00E+00
                      1.00E+00  0.00E+00   5.00E+17    0.00E+00    0.00E+00
        OBT
                      0.00E+00  0.00E+00   0.00E+00    0.00E+00    0.00E+00
                      1.00E+00  0.00E+00   0.00E+00    0.00E+00    0.00E+00
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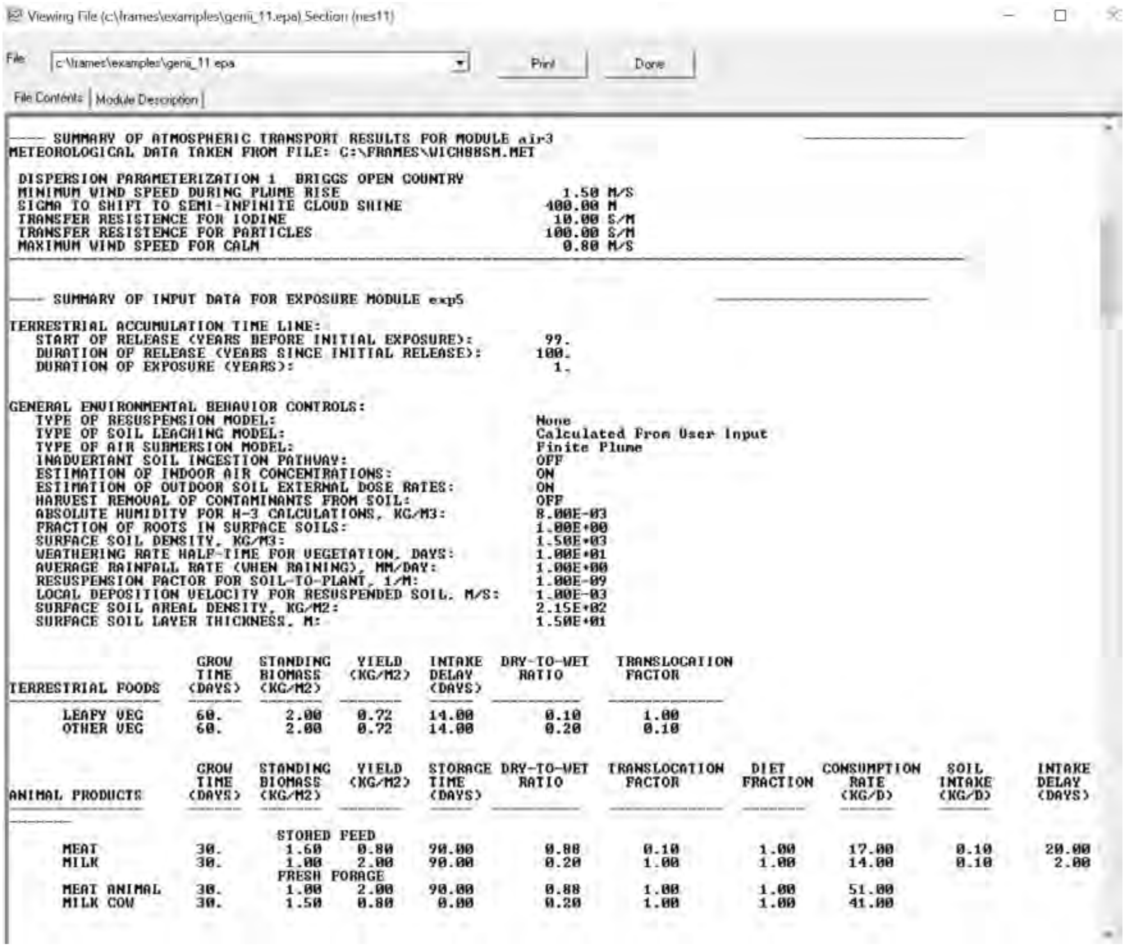

Viewing File (c:\frames\examples\genii_11.epa) Section (nes11)

File: c:\frames\examples\genii_11.epa   Print   Done

File Contents | Module Description

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---- SUMMARY OF ATMOSPHERIC TRANSPORT RESULTS FOR MODULE air3
METEOROLOGICAL DATA TAKEN FROM FILE: C:\FRAMES\WICH88SM.MET

 DISPERSION PARAMETERIZATION 1  BRIGGS OPEN COUNTRY
 MINIMUM WIND SPEED DURING PLUME RISE                      1.50 M/S
 SIGMA TO SHIFT TO SEMI-INFINITE CLOUD SHINE             400.00 M
 TRANSFER RESISTENCE FOR IODINE                           10.00 S/M
 TRANSFER RESISTENCE FOR PARTICLES                       100.00 S/M
 MAXIMUM WIND SPEED FOR CALM                               0.80 M/S

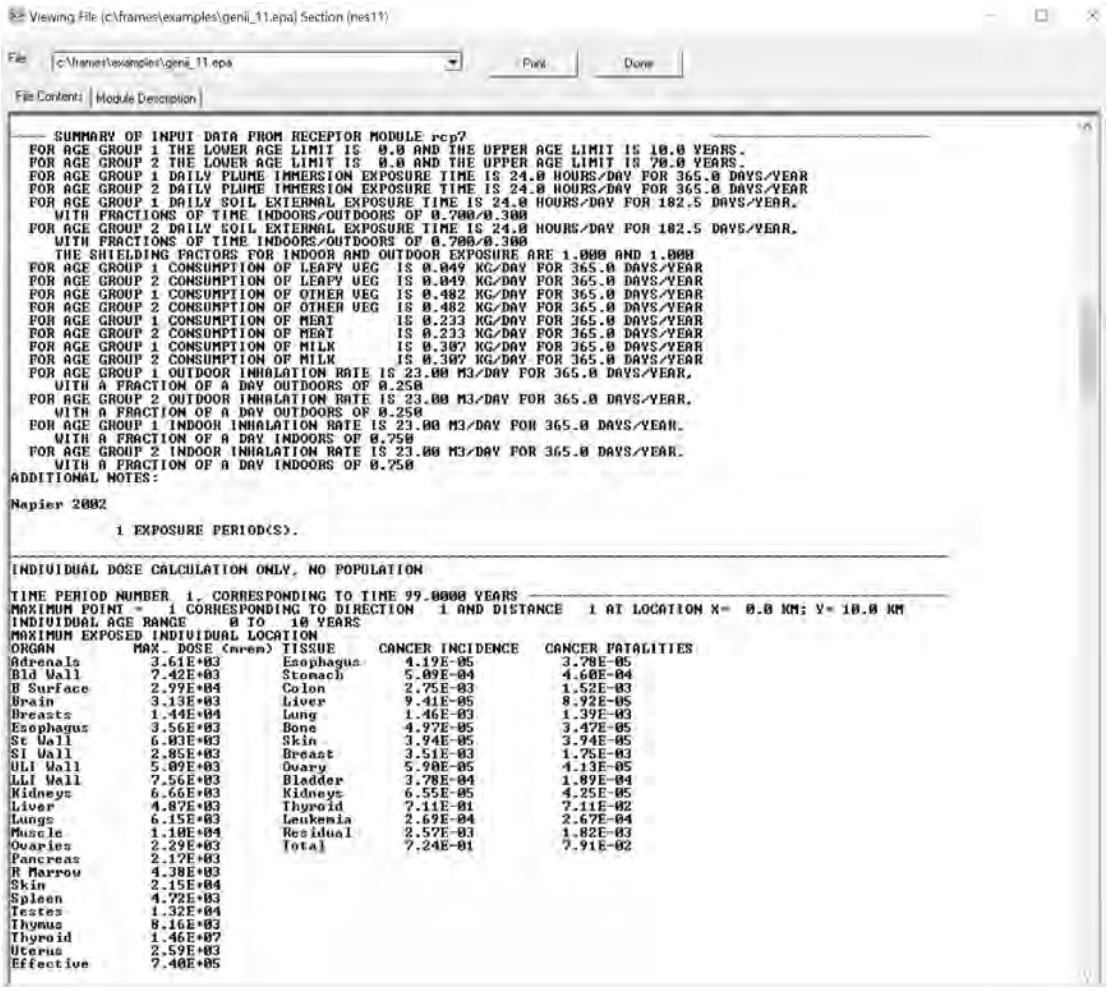
---- SUMMARY OF INPUT DATA FOR EXPOSURE MODULE exp5

TERRESTRIAL ACCUMULATION TIME LINE:
   START OF RELEASE (YEARS BEFORE INITIAL EXPOSURE):       99.
   DURATION OF RELEASE (YEARS SINCE INITIAL RELEASE):     100.
   DURATION OF EXPOSURE (YEARS):                            1.

GENERAL ENVIRONMENTAL BEHAVIOR CONTROLS:
   TYPE OF RESUSPENSION MODEL:                            None
   TYPE OF SOIL LEACHING MODEL:                           Calculated From User Input
   TYPE OF AIR SUBMERSION MODEL:                          Finite Plume
   INADVERTANT SOIL INGESTION PATHWAY:                    OFF
   ESTIMATION OF INDOOR AIR CONCENTRATIONS:               ON
   ESTIMATION OF OUTDOOR SOIL EXTERNAL DOSE RATES:        ON
   HARVEST REMOVAL OF CONTAMINANTS FROM SOIL:             OFF
   ABSOLUTE HUMIDITY FOR H-3 CALCULATIONS, KG/M3:         8.00E-03
   FRACTION OF ROOTS IN SURFACE SOILS:                    1.00E+00
   SURFACE SOIL DENSITY, KG/M3:                           1.50E+03
   WEATHERING RATE HALF-TIME FOR VEGETATION, DAYS:        1.00E+01
   AVERAGE RAINFALL RATE (WHEN RAINING), MM/DAY:          1.00E+00
   RESUSPENSION FACTOR FOR SOIL-TO-PLANT, 1/M:            1.00E-09
   LOCAL DEPOSITION VELOCITY FOR RESUSPENDED SOIL, M/S:   1.00E-03
   SURFACE SOIL AREAL DENSITY, KG/M2:                     2.15E+02
   SURFACE SOIL LAYER THICKNESS, M:                       1.50E+01
```

TERRESTRIAL FOODS	GROW TIME (DAYS)	STANDING BIOMASS (KG/M2)	YIELD (KG/M2)	INTAKE DELAY (DAYS)	DRY-TO-WET RATIO	TRANSLOCATION FACTOR
LEAFY VEG	60.	2.00	0.72	14.00	0.10	1.00
OTHER VEG	60.	2.00	0.72	14.00	0.20	0.10

ANIMAL PRODUCTS	GROW TIME (DAYS)	STANDING BIOMASS (KG/M2)	YIELD (KG/M2)	STORAGE TIME (DAYS)	DRY-TO-WET RATIO	TRANSLOCATION FACTOR	DIET FRACTION	CONSUMPTION RATE (KG/D)	SOIL INTAKE (KG/D)	INTAKE DELAY (DAYS)
		STORED FEED								
MEAT	30.	1.60	0.80	90.00	0.88	0.10	1.00	17.00	0.10	20.00
MILK	30.	1.00	2.00	90.00	0.20	1.00	1.00	14.00	0.10	2.00
		FRESH FORAGE								
MEAT ANIMAL	30.	1.00	2.00	90.00	0.88	1.00	1.00	51.00		
MILK COW	30.	1.50	0.80	0.00	0.20	1.00	1.00	41.00		



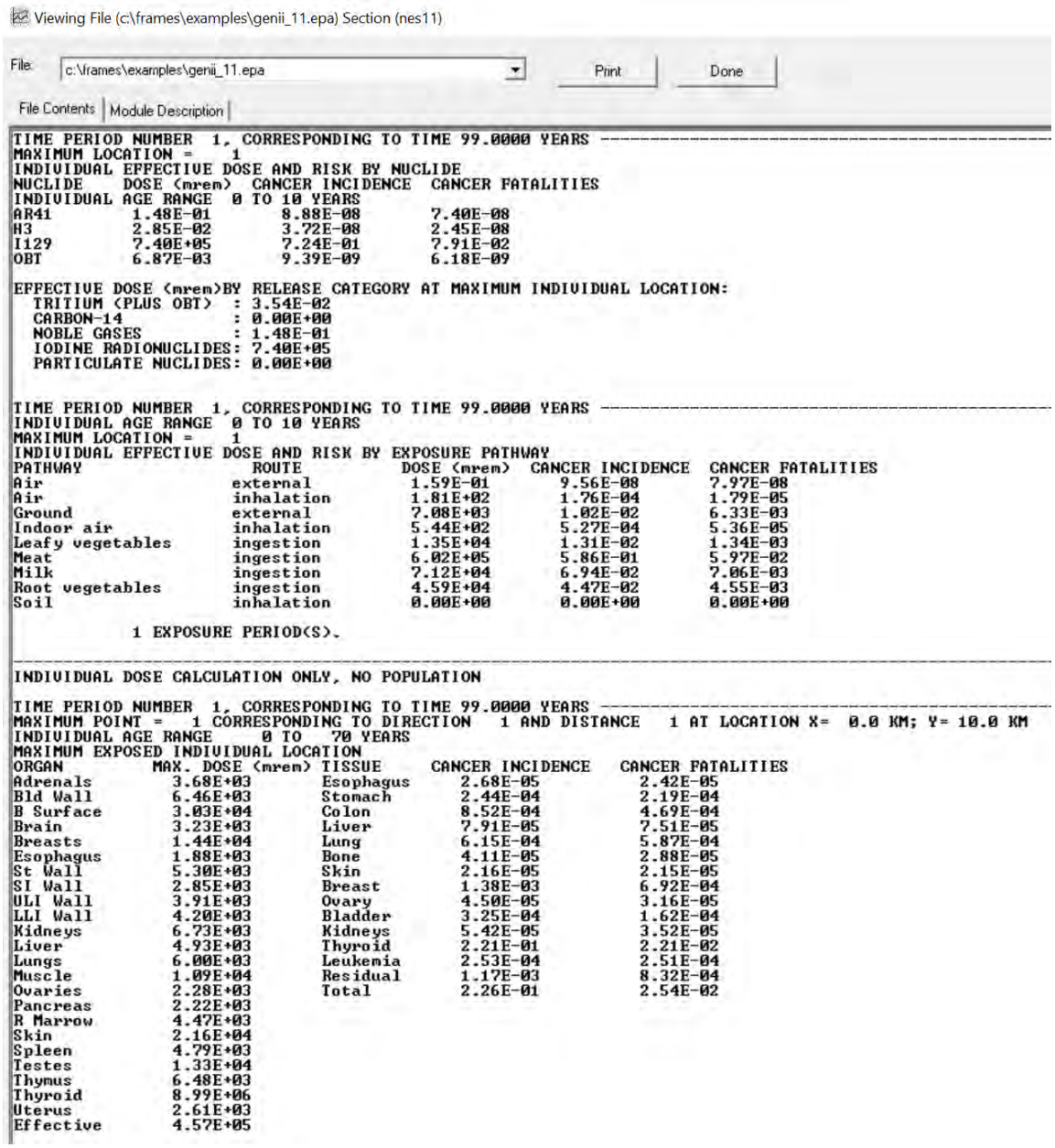

```
--- SUMMARY OF INPUT DATA FROM RECEPTOR MODULE rcp7
  FOR AGE GROUP 1 THE LOWER AGE LIMIT IS  0.0 AND THE UPPER AGE LIMIT IS 10.0 YEARS.
  FOR AGE GROUP 2 THE LOWER AGE LIMIT IS  0.0 AND THE UPPER AGE LIMIT IS 70.0 YEARS.
  FOR AGE GROUP 1 DAILY PLUME IMMERSION EXPOSURE TIME IS 24.0 HOURS/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 DAILY PLUME IMMERSION EXPOSURE TIME IS 24.0 HOURS/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 DAILY SOIL EXTERNAL EXPOSURE TIME IS 24.0 HOURS/DAY FOR 182.5 DAYS/YEAR.
     WITH FRACTIONS OF TIME INDOORS/OUTDOORS OF 0.700/0.300
  FOR AGE GROUP 2 DAILY SOIL EXTERNAL EXPOSURE TIME IS 24.0 HOURS/DAY FOR 182.5 DAYS/YEAR.
     WITH FRACTIONS OF TIME INDOORS/OUTDOORS OF 0.700/0.300
     THE SHIELDING FACTORS FOR INDOOR AND OUTDOOR EXPOSURE ARE 1.000 AND 1.000
  FOR AGE GROUP 1 CONSUMPTION OF LEAFY VEG  IS 0.049 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 CONSUMPTION OF LEAFY VEG  IS 0.049 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 CONSUMPTION OF OTHER VEG  IS 0.482 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 CONSUMPTION OF OTHER VEG  IS 0.482 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 CONSUMPTION OF MEAT       IS 0.233 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 CONSUMPTION OF MEAT       IS 0.233 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 CONSUMPTION OF MILK       IS 0.307 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 2 CONSUMPTION OF MILK       IS 0.307 KG/DAY FOR 365.0 DAYS/YEAR
  FOR AGE GROUP 1 OUTDOOR INHALATION RATE IS 23.00 M3/DAY FOR 365.0 DAYS/YEAR.
     WITH A FRACTION OF A DAY OUTDOORS OF 0.250
  FOR AGE GROUP 2 OUTDOOR INHALATION RATE IS 23.00 M3/DAY FOR 365.0 DAYS/YEAR.
     WITH A FRACTION OF A DAY OUTDOORS OF 0.250
  FOR AGE GROUP 1 INDOOR INHALATION RATE IS 23.00 M3/DAY FOR 365.0 DAYS/YEAR.
     WITH A FRACTION OF A DAY INDOORS OF 0.750
  FOR AGE GROUP 2 INDOOR INHALATION RATE IS 23.00 M3/DAY FOR 365.0 DAYS/YEAR.
     WITH A FRACTION OF A DAY INDOORS OF 0.750
ADDITIONAL NOTES:

Napier 2002

           1 EXPOSURE PERIOD(S).

-------------------------------------------------------------------------------
INDIVIDUAL DOSE CALCULATION ONLY, NO POPULATION

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ---------------------
MAXIMUM POINT =  1 CORRESPONDING TO DIRECTION   1 AND DISTANCE   1 AT LOCATION X=  0.0 KM; Y= 10.0 KM
INDIVIDUAL AGE RANGE     0 TO   10 YEARS
MAXIMUM EXPOSED INDIVIDUAL LOCATION
ORGAN          MAX. DOSE (mrem) TISSUE     CANCER INCIDENCE   CANCER FATALITIES
Adrenals          3.61E+03      Esophagus      4.19E-05          3.78E-05
Bld Wall          7.42E+03      Stomach        5.09E-04          4.60E-04
B Surface         2.99E+04      Colon          2.75E-03          1.52E-03
Brain             3.13E+03      Liver          9.41E-05          8.92E-05
Breasts           1.44E+04      Lung           1.46E-03          1.39E-03
Esophagus         3.56E+03      Bone           4.97E-05          3.47E-05
St Wall           6.03E+03      Skin           3.94E-05          3.94E-05
SI Wall           2.85E+03      Breast         3.51E-03          1.75E-03
ULI Wall          5.09E+03      Ovary          5.90E-05          4.13E-05
LLI Wall          7.56E+03      Bladder        3.78E-04          1.89E-04
Kidneys           6.66E+03      Kidneys        6.55E-05          4.25E-05
Liver             4.87E+03      Thyroid        7.11E-01          7.11E-02
Lungs             6.15E+03      Leukemia       2.69E-04          2.67E-04
Muscle            1.10E+04      Residual       2.57E-03          1.82E-03
Ovaries           2.29E+03      Total          7.24E-01          7.91E-02
Pancreas          2.12E+03
R Marrow          4.38E+03
Skin              2.15E+04
Spleen            4.72E+03
Testes            1.32E+04
Thymus            8.16E+03
Thyroid           1.46E+07
Uterus            2.59E+03
Effective         7.40E+05
```



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File: c:\frames\examples\genii_11.epa Print Done

File Contents | Module Description

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TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ----------------------------------------------
MAXIMUM LOCATION =    1
INDIVIDUAL EFFECTIVE DOSE AND RISK BY NUCLIDE
NUCLIDE    DOSE (mrem)  CANCER INCIDENCE  CANCER FATALITIES
INDIVIDUAL AGE RANGE  0 TO 10 YEARS
AR41         1.48E-01       8.88E-08       7.40E-08
H3           2.85E-02       3.72E-08       2.45E-08
I129         7.40E+05       7.24E-01       7.91E-02
OBT          6.87E-03       9.39E-09       6.18E-09

EFFECTIVE DOSE (mrem)BY RELEASE CATEGORY AT MAXIMUM INDIVIDUAL LOCATION:
  TRITIUM (PLUS OBT)  : 3.54E-02
  CARBON-14           : 0.00E+00
  NOBLE GASES         : 1.48E-01
  IODINE RADIONUCLIDES: 7.40E+05
  PARTICULATE NUCLIDES: 0.00E+00


TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ----------------------------------------------
INDIVIDUAL AGE RANGE  0 TO 10 YEARS
MAXIMUM LOCATION =    1
INDIVIDUAL EFFECTIVE DOSE AND RISK BY EXPOSURE PATHWAY
PATHWAY                ROUTE          DOSE (mrem)  CANCER INCIDENCE  CANCER FATALITIES
Air                    external        1.59E-01       9.56E-08       7.97E-08
Air                    inhalation      1.81E+02       1.76E-04       1.79E-05
Ground                 external        7.08E+03       1.02E-02       6.33E-03
Indoor air             inhalation      5.44E+02       5.27E-04       5.36E-05
Leafy vegetables       ingestion       1.35E+04       1.31E-02       1.34E-03
Meat                   ingestion       6.02E+05       5.86E-01       5.97E-02
Milk                   ingestion       7.12E+04       6.94E-02       7.06E-03
Root vegetables        ingestion       4.59E+04       4.47E-02       4.55E-03
Soil                   inhalation      0.00E+00       0.00E+00       0.00E+00

            1 EXPOSURE PERIOD(S).

--------------------------------------------------------------------------------
INDIVIDUAL DOSE CALCULATION ONLY, NO POPULATION

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS ----------------------------------------------
MAXIMUM POINT =   1 CORRESPONDING TO DIRECTION   1 AND DISTANCE   1 AT LOCATION X=  0.0 KM; Y= 10.0 KM
INDIVIDUAL AGE RANGE     0 TO   70 YEARS
MAXIMUM EXPOSED INDIVIDUAL LOCATION
ORGAN          MAX. DOSE (mrem) TISSUE     CANCER INCIDENCE   CANCER FATALITIES
Adrenals          3.68E+03      Esophagus      2.68E-05          2.42E-05
Bld Wall          6.46E+03      Stomach        2.44E-04          2.19E-04
B Surface         3.03E+04      Colon          8.52E-04          4.69E-04
Brain             3.23E+03      Liver          7.91E-05          7.51E-05
Breasts           1.44E+04      Lung           6.15E-04          5.87E-04
Esophagus         1.88E+03      Bone           4.11E-05          2.88E-05
St Wall           5.30E+03      Skin           2.16E-05          2.15E-05
SI Wall           2.85E+03      Breast         1.38E-03          6.92E-04
ULI Wall          3.91E+03      Ovary          4.50E-05          3.16E-05
LLI Wall          4.20E+03      Bladder        3.25E-04          1.62E-04
Kidneys           6.73E+03      Kidneys        5.42E-05          3.52E-05
Liver             4.93E+03      Thyroid        2.21E-01          2.21E-02
Lungs             6.00E+03      Leukemia       2.53E-04          2.51E-04
Muscle            1.09E+04      Residual       1.17E-03          8.32E-04
Ovaries           2.28E+03      Total          2.26E-01          2.54E-02
Pancreas          2.22E+03
R Marrow          4.47E+03
Skin              2.16E+04
Spleen            4.79E+03
Testes            1.33E+04
Thymus            6.48E+03
Thyroid           8.99E+06
Uterus            2.61E+03
Effective         4.57E+05
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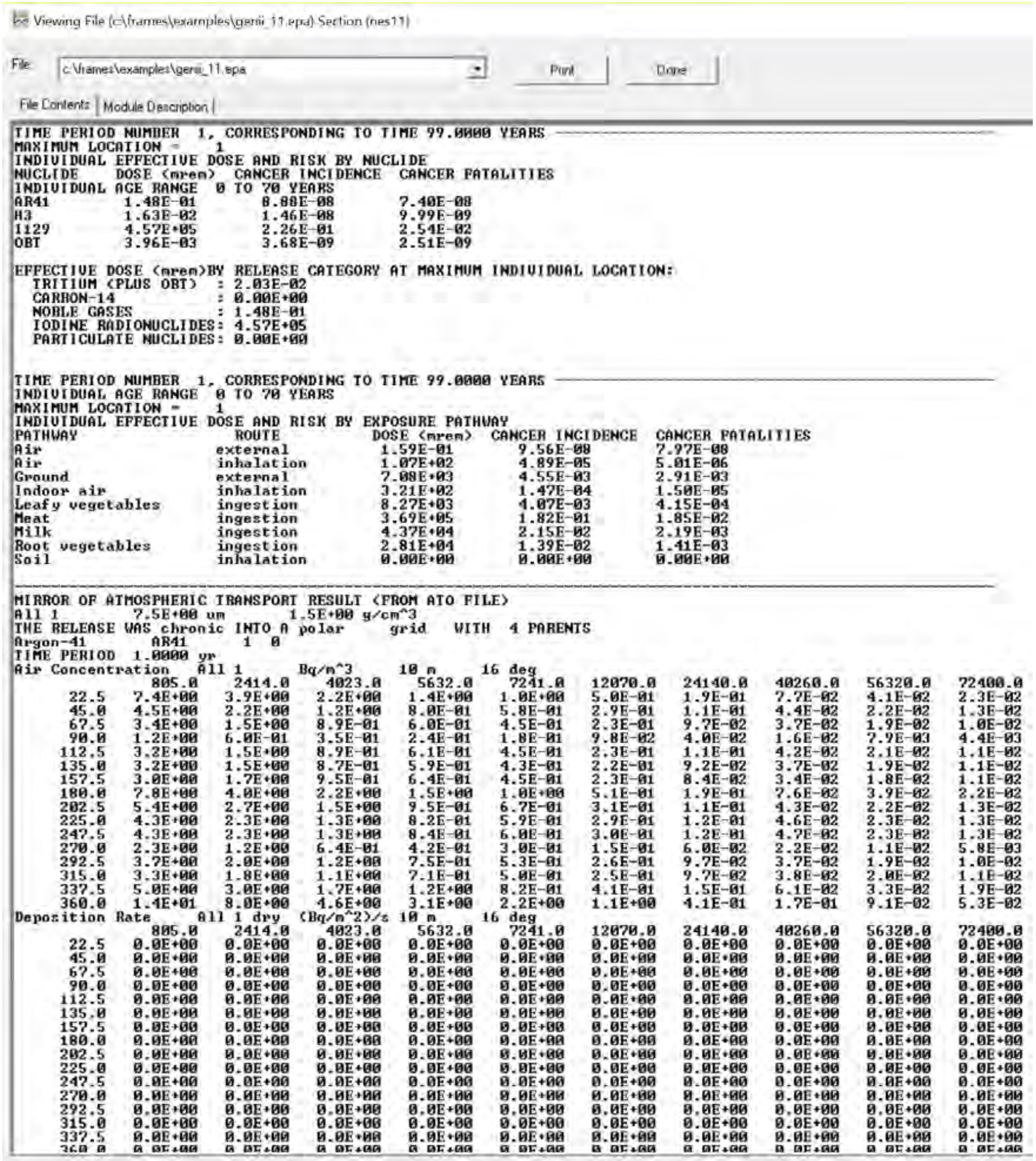

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File: c:\frames\examples\genii_11.epa     Print     Done
File Contents | Module Description |

TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
MAXIMUM LOCATION =    1
INDIVIDUAL EFFECTIVE DOSE AND RISK BY NUCLIDE
NUCLIDE     DOSE (mrem)  CANCER INCIDENCE  CANCER FATALITIES
INDIVIDUAL AGE RANGE  0 TO 70 YEARS
AR41         1.48E-01        8.88E-08       7.40E-08
H3           1.63E-02        1.46E-08       9.99E-09
I129         4.57E+05        2.26E-01       2.54E-02
OBT          3.96E-03        3.68E-09       2.51E-09

EFFECTIVE DOSE (mrem)BY RELEASE CATEGORY AT MAXIMUM INDIVIDUAL LOCATION:
  TRITIUM (PLUS OBT)   : 2.03E-02
  CARBON-14            : 0.00E+00
  NOBLE GASES          : 1.48E-01
  IODINE RADIONUCLIDES: 4.57E+05
  PARTICULATE NUCLIDES: 0.00E+00


TIME PERIOD NUMBER  1, CORRESPONDING TO TIME 99.0000 YEARS
INDIVIDUAL AGE RANGE  0 TO 70 YEARS
MAXIMUM LOCATION =    1
INDIVIDUAL EFFECTIVE DOSE AND RISK BY EXPOSURE PATHWAY
PATHWAY                ROUTE          DOSE (mrem)  CANCER INCIDENCE  CANCER FATALITIES
Air                    external        1.59E-01       9.56E-08       7.97E-08
Air                    inhalation      1.07E+02       4.89E-05       5.01E-06
Ground                 external        7.08E+03       4.55E-03       2.91E-03
Indoor air             inhalation      3.21E+02       1.47E-04       1.50E-05
Leafy vegetables       ingestion       8.27E+03       4.07E-03       4.15E-04
Meat                   ingestion       3.69E+05       1.82E-01       1.85E-02
Milk                   ingestion       4.37E+04       2.15E-02       2.19E-03
Root vegetables        ingestion       2.81E+04       1.39E-02       1.41E-03
Soil                   inhalation      0.00E+00       0.00E+00       0.00E+00

MIRROR OF ATMOSPHERIC TRANSPORT RESULT (FROM ATO FILE)
All 1        7.5E+00 um        1.5E+00 g/cm^3
THE RELEASE WAS chronic INTO A polar     grid   WITH  4 PARENTS
Argon-41        AR41       1  0
TIME PERIOD  1.0000 yr
Air Concentration    All 1       Bq/m^3     10 m      16 deg
             805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
     22.5  7.4E+00   3.9E+00   2.2E+00   1.4E+00   1.0E+00   5.0E-01   1.9E-01   7.7E-02   4.1E-02   2.3E-02
     45.0  4.5E+00   2.2E+00   1.2E+00   8.0E-01   5.8E-01   2.9E-01   1.1E-01   4.4E-02   2.2E-02   1.3E-02
     67.5  3.4E+00   1.5E+00   8.9E-01   6.0E-01   4.5E-01   2.3E-01   9.7E-02   3.7E-02   1.9E-02   1.0E-02
     90.0  1.2E+00   6.0E-01   3.5E-01   2.4E-01   1.8E-01   9.8E-02   4.0E-02   1.6E-02   7.9E-03   4.4E-03
    112.5  3.2E+00   1.5E+00   8.9E-01   6.1E-01   4.5E-01   2.3E-01   1.1E-01   4.2E-02   2.1E-02   1.1E-02
    135.0  3.2E+00   1.5E+00   8.7E-01   5.9E-01   4.3E-01   2.2E-01   9.2E-02   3.7E-02   1.9E-02   1.1E-02
    157.5  3.0E+00   1.7E+00   9.5E-01   6.4E-01   4.5E-01   2.3E-01   8.4E-02   3.4E-02   1.8E-02   1.1E-02
    180.0  7.8E+00   4.0E+00   2.2E+00   1.5E+00   1.0E+00   5.1E-01   1.9E-01   7.6E-02   3.9E-02   2.2E-02
    202.5  5.4E+00   2.7E+00   1.5E+00   9.5E-01   6.7E-01   3.1E-01   1.1E-01   4.3E-02   2.2E-02   1.3E-02
    225.0  4.3E+00   2.3E+00   1.3E+00   8.2E-01   5.9E-01   2.9E-01   1.2E-01   4.6E-02   2.3E-02   1.3E-02
    247.5  4.3E+00   2.3E+00   1.3E+00   8.4E-01   6.0E-01   3.0E-01   1.2E-01   4.7E-02   2.3E-02   1.3E-02
    270.0  2.3E+00   1.2E+00   6.4E-01   4.2E-01   3.0E-01   1.5E-01   6.0E-02   2.2E-02   1.1E-02   5.8E-03
    292.5  3.7E+00   2.0E+00   1.2E+00   7.5E-01   5.3E-01   2.6E-01   9.7E-02   3.7E-02   1.9E-02   1.0E-02
    315.0  3.3E+00   1.8E+00   1.1E+00   7.1E-01   5.0E-01   2.5E-01   9.7E-02   3.8E-02   2.0E-02   1.1E-02
    337.5  5.0E+00   3.0E+00   1.7E+00   1.2E+00   8.2E-01   4.1E-01   1.5E-01   6.1E-02   3.3E-02   1.9E-02
    360.0  1.4E+01   8.0E+00   4.6E+00   3.1E+00   2.2E+00   1.1E+00   4.1E-01   1.7E-01   9.1E-02   5.3E-02
Deposition Rate      All 1 dry  (Bq/m^2)/s 10 m      16 deg
             805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
     22.5  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
     45.0  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
     67.5  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
     90.0  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    112.5  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    135.0  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    157.5  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    180.0  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    202.5  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    225.0  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    247.5  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    270.0  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    292.5  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    315.0  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    337.5  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
    360.0  0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00   0.0E+00
```

Viewing File (c:\frames\examples\genii_11.epa) Section (nes11)

File: c:\frames\examples\genii_11.epa Print Done

File Contents | Module Description

```
Deposition Rate     All 1 wet  (Bq/m^2)/s 10 m     16 deg
              805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
       22.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
       45.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
       67.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
       90.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      112.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      135.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      157.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      180.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      202.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      225.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      247.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      270.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      292.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      315.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      337.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      360.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
External Dose       All 1      Sv      10 m     16 deg
              805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
       22.5 1.4E-05    5.8E-06    3.1E-06    1.9E-06    1.4E-06    7.0E-07    2.6E-07    1.2E-07    6.4E-08    3.7E-08
       45.0 8.1E-06    3.6E-06    1.9E-06    1.2E-06    8.4E-07    4.2E-07    1.5E-07    6.8E-08    3.5E-08    2.0E-08
       67.5 6.1E-06    3.0E-06    1.6E-06    9.7E-07    7.0E-07    3.5E-07    1.2E-07    5.2E-08    2.6E-08    1.5E-08
       90.0 2.3E-06    1.3E-06    6.7E-07    4.0E-07    2.9E-07    1.5E-07    5.3E-08    2.2E-08    1.1E-08    6.3E-09
      112.5 6.1E-06    3.1E-06    1.6E-06    9.6E-07    7.0E-07    3.5E-07    1.2E-07    5.3E-08    2.7E-08    1.5E-08
      135.0 5.9E-06    2.7E-06    1.5E-06    8.8E-07    6.4E-07    3.3E-07    1.2E-07    5.3E-08    2.8E-08    1.6E-08
      157.5 6.1E-06    2.6E-06    1.4E-06    8.4E-07    6.1E-07    3.1E-07    1.2E-07    5.4E-08    2.8E-08    1.6E-08
      180.0 1.5E-05    6.1E-06    3.2E-06    2.0E-06    1.4E-06    7.2E-07    2.6E-07    1.2E-07    6.0E-08    3.4E-08
      202.5 9.9E-06    3.7E-06    1.9E-06    1.2E-06    8.6E-07    4.3E-07    1.6E-07    7.3E-08    3.8E-08    2.1E-08
      225.0 8.1E-06    3.6E-06    1.9E-06    1.1E-06    8.1E-07    4.1E-07    1.4E-07    6.4E-08    3.2E-08    1.8E-08
      247.5 8.3E-06    3.6E-06    1.9E-06    1.1E-06    8.3E-07    4.2E-07    1.5E-07    6.4E-08    3.2E-08    1.8E-08
      270.0 4.3E-06    1.9E-06    1.0E-06    6.0E-07    4.3E-07    2.2E-07    7.4E-08    3.1E-08    1.5E-08    8.3E-09
      292.5 7.4E-06    3.1E-06    1.7E-06    9.9E-07    7.1E-07    3.6E-07    1.3E-07    5.4E-08    2.7E-08    1.5E-08
      315.0 6.7E-06    2.9E-06    1.5E-06    9.3E-07    6.7E-07    3.4E-07    1.2E-07    5.4E-08    2.8E-08    1.6E-08
      337.5 1.1E-05    4.4E-06    2.4E-06    1.4E-06    1.0E-06    5.4E-07    2.0E-07    9.3E-08    4.9E-08    2.8E-08
      360.0 2.8E-05    1.2E-05    6.4E-06    3.9E-06    2.9E-06    1.5E-06    5.5E-07    2.6E-07    1.4E-07    7.9E-08
Hydrogen-3      H3        1  0
TIME PERIOD  1.0000 yr
Air Concentration   All 1      Bq/m^3      10 m     16 deg
              805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
       22.5 1.6E+00    8.1E-01    4.6E-01    3.0E-01    2.2E-01    1.2E-01    5.6E-02    3.0E-02    2.1E-02    1.5E-02
       45.0 9.4E-01    4.5E-01    2.6E-01    1.7E-01    1.3E-01    7.1E-02    3.5E-02    1.9E-02    1.3E-02    1.0E-02
       67.5 7.0E-01    3.3E-01    1.9E-01    1.4E-01    1.1E-01    6.1E-02    3.5E-02    2.0E-02    1.4E-02    1.1E-02
       90.0 2.6E-01    1.3E-01    7.6E-02    5.5E-02    4.3E-02    2.5E-02    1.4E-02    8.0E-03    5.6E-03    4.3E-03
      112.5 6.7E-01    3.2E-01    1.9E-01    1.4E-01    1.0E-01    6.0E-02    4.1E-02    2.4E-02    1.7E-02    1.3E-02
      135.0 6.7E-01    3.2E-01    1.9E-01    1.3E-01    9.6E-02    5.4E-02    3.0E-02    1.7E-02    1.2E-02    9.0E-03
      157.5 6.3E-01    3.5E-01    2.0E-01    1.4E-01    1.0E-01    5.4E-02    2.5E-02    1.4E-02    9.4E-03    7.0E-03
      180.0 1.6E+00    8.4E-01    4.8E-01    3.2E-01    2.3E-01    1.2E-01    6.1E-02    3.3E-02    2.3E-02    1.7E-02
      202.5 1.1E+00    5.7E-01    3.2E-01    2.1E-01    1.5E-01    7.6E-02    3.2E-02    1.7E-02    1.1E-02    8.0E-03
      225.0 8.9E-01    4.7E-01    2.7E-01    1.8E-01    1.3E-01    7.1E-02    4.3E-02    2.4E-02    1.6E-02    1.2E-02
      247.5 8.9E-01    4.8E-01    2.8E-01    1.9E-01    1.4E-01    7.6E-02    4.3E-02    2.4E-02    1.7E-02    1.3E-02
      270.0 4.8E-01    2.4E-01    1.4E-01    9.4E-02    7.0E-02    3.9E-02    2.2E-02    1.2E-02    8.5E-03    6.5E-03
      292.5 7.7E-01    4.3E-01    2.5E-01    1.7E-01    1.3E-01    6.8E-02    3.4E-02    1.9E-02    1.3E-02    9.6E-03
      315.0 6.9E-01    3.9E-01    2.3E-01    1.5E-01    1.2E-01    6.3E-02    3.2E-02    1.8E-02    1.2E-02    9.1E-03
      337.5 1.0E+00    6.3E-01    3.7E-01    2.5E-01    1.8E-01    9.9E-02    4.3E-02    2.3E-02    1.6E-02    1.2E-02
      360.0 2.9E+00    1.7E+00    9.7E-01    6.6E-01    4.9E-01    2.6E-01    1.2E-01    6.6E-02    4.5E-02    3.3E-02
Deposition Rate     All 1 dry  (Bq/m^2)/s 10 m     16 deg
              805.0     2414.0     4023.0     5632.0     7241.0    12070.0    24140.0    40260.0    56320.0    72400.0
       22.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
       45.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
       67.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
       90.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      112.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      135.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      157.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      180.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      202.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      225.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      247.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      270.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      292.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      315.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      337.5 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
      360.0 0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00    0.0E+00
```

Viewing File (c:\frames\examples\genii_11.epa) Section (nes11)

File: c:\frames\examples\genii_11.epa Print Done

File Contents | Module Description

Deposition Rate All 1 wet (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

External Dose All 1 Sv 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

Iodine-129 I129 1 0

TIME PERIOD 1.0000 yr

Air Concentration All 1 Bq/m^3 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	9.2E+01	4.7E+01	2.6E+01	1.7E+01	1.3E+01	6.5E+00	2.9E+00	1.4E+00	8.5E-01	5.7E-01
45.0	5.6E+01	2.7E+01	1.5E+01	9.9E+00	7.3E+00	3.9E+00	1.8E+00	8.8E-01	5.4E-01	3.6E-01
67.5	4.1E+01	1.9E+01	1.1E+01	7.7E+00	5.8E+00	3.2E+00	1.7E+00	8.8E-01	5.4E-01	3.7E-01
90.0	1.5E+01	7.4E+00	4.4E+00	3.1E+00	2.4E+00	1.4E+00	7.0E-01	3.6E-01	2.2E-01	1.5E-01
112.5	4.0E+01	1.9E+01	1.1E+01	7.6E+00	5.8E+00	3.2E+00	2.1E+00	1.0E+00	6.5E-01	4.4E-01
135.0	4.0E+01	1.9E+01	1.1E+01	7.2E+00	5.4E+00	2.9E+00	1.6E+00	7.7E-01	4.9E-01	3.4E-01
157.5	3.7E+01	2.0E+01	1.2E+01	7.7E+00	5.7E+00	2.9E+00	1.3E+00	6.2E-01	3.8E-01	2.6E-01
180.0	9.7E+01	4.9E+01	2.7E+01	1.8E+01	1.3E+01	6.7E+00	3.0E+00	1.5E+00	9.0E-01	6.0E-01
202.5	6.7E+01	3.3E+01	1.8E+01	1.2E+01	8.2E+00	4.0E+00	1.5E+00	7.2E-01	4.3E-01	2.9E-01
225.0	5.2E+01	2.7E+01	1.5E+01	1.0E+01	7.2E+00	3.7E+00	2.1E+00	1.0E+00	6.4E-01	4.3E-01
247.5	5.3E+01	2.7E+01	1.5E+01	1.0E+01	7.5E+00	3.9E+00	2.1E+00	1.0E+00	6.1E-01	4.1E-01
270.0	2.8E+01	1.4E+01	7.7E+00	5.1E+00	3.7E+00	2.0E+00	1.0E+00	5.1E-01	3.1E-01	2.1E-01
292.5	4.6E+01	2.4E+01	1.4E+01	9.2E+00	6.7E+00	3.5E+00	1.6E+00	7.5E-01	4.5E-01	3.0E-01
315.0	4.1E+01	2.2E+01	1.3E+01	8.6E+00	6.4E+00	3.3E+00	1.5E+00	7.5E-01	4.6E-01	3.1E-01
337.5	6.2E+01	3.7E+01	2.1E+01	1.4E+01	1.0E+01	5.3E+00	2.1E+00	1.0E+00	6.2E-01	4.1E-01
360.0	1.7E+02	9.8E+01	5.6E+01	3.8E+01	2.7E+01	1.4E+01	6.0E+00	2.9E+00	1.8E+00	1.2E+00

Deposition Rate All 1 dry (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	9.6E-01	4.9E-01	2.7E-01	1.7E-01	1.3E-01	6.3E-02	2.6E-02	1.2E-02	7.4E-03	5.0E-03
45.0	5.7E-01	2.7E-01	1.5E-01	9.6E-02	7.0E-02	3.6E-02	1.5E-02	7.2E-03	4.4E-03	3.0E-03
67.5	3.9E-01	1.8E-01	1.0E-01	6.9E-02	5.1E-02	2.8E-02	1.3E-02	6.4E-03	3.9E-03	2.7E-03
90.0	1.5E-01	7.0E-02	4.0E-02	2.8E-02	2.1E-02	1.2E-02	5.3E-03	2.6E-03	1.6E-03	1.1E-03
112.5	3.8E-01	1.8E-01	1.0E-01	6.9E-02	5.1E-02	2.8E-02	1.4E-02	7.1E-03	4.4E-03	3.0E-03
135.0	4.0E-01	1.9E-01	1.0E-01	7.0E-02	5.1E-02	2.7E-02	1.2E-02	6.1E-03	3.8E-03	2.6E-03
157.5	3.8E-01	2.1E-01	1.2E-01	7.7E-02	5.6E-02	2.8E-02	1.1E-02	5.5E-03	3.3E-03	2.3E-03
180.0	9.7E-01	4.9E-01	2.7E-01	1.7E-01	1.3E-01	6.3E-02	2.6E-02	1.2E-02	7.5E-03	5.0E-03
202.5	6.8E-01	3.4E-01	1.8E-01	1.2E-01	8.2E-02	4.0E-02	1.5E-02	6.9E-03	4.1E-03	2.7E-03
225.0	5.3E-01	2.7E-01	1.5E-01	9.6E-02	6.8E-02	3.4E-02	1.6E-02	7.5E-03	4.6E-03	3.1E-03
247.5	5.1E-01	2.6E-01	1.5E-01	9.6E-02	6.9E-02	3.5E-02	1.6E-02	7.6E-03	4.5E-03	3.0E-03
270.0	2.7E-01	1.3E-01	7.2E-02	4.7E-02	3.4E-02	1.7E-02	7.6E-03	3.7E-03	2.2E-03	1.5E-03
292.5	4.3E-01	2.3E-01	1.3E-01	8.4E-02	6.1E-02	3.1E-02	1.3E-02	6.1E-03	3.6E-03	2.4E-03
315.0	4.0E-01	2.2E-01	1.2E-01	8.2E-02	5.9E-02	3.1E-02	1.3E-02	6.2E-03	3.7E-03	2.5E-03
337.5	6.3E-01	3.7E-01	2.1E-01	1.4E-01	1.0E-01	5.1E-02	2.0E-02	9.6E-03	5.8E-03	3.9E-03
360.0	1.8E+00	1.0E+00	5.6E-01	3.7E-01	2.7E-01	1.4E-01	5.5E-02	2.7E-02	1.6E-02	1.1E-02

Viewing File (c:\frames\examples\genii_11.epa) Section (res11)

File: c:\frames\examples\genii_11.epa | Print | Done

File Contents | Module Description

Deposition Rate All 1 wet (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	1.9E-01	5.0E-02	2.5E-02	1.5E-02	1.1E-02	4.7E-03	1.5E-03	5.6E-04	2.7E-04	1.5E-04
45.0	5.9E-02	1.8E-02	9.8E-03	6.4E-03	4.6E-03	2.1E-03	5.8E-04	1.7E-04	6.1E-05	2.6E-05
67.5	1.3E-01	3.8E-02	2.0E-02	1.3E-02	8.6E-03	3.5E-03	7.5E-04	1.7E-04	5.0E-05	1.8E-05
90.0	9.4E-03	3.0E-03	1.7E-03	1.2E-03	8.6E-04	4.5E-04	1.6E-04	6.4E-05	3.0E-05	1.6E-05
112.5	1.2E-01	3.5E-02	1.8E-02	1.1E-02	7.3E-03	2.8E-03	5.5E-04	1.1E-04	3.0E-05	9.4E-06
135.0	1.1E-01	3.3E-02	1.7E-02	1.1E-02	7.4E-03	3.2E-03	8.8E-04	2.9E-04	1.3E-04	6.7E-05
157.5	1.3E-01	3.8E-02	2.1E-02	1.4E-02	9.7E-03	4.5E-03	1.3E-03	4.0E-04	1.6E-04	7.4E-05
180.0	5.2E-01	1.3E-01	6.5E-02	3.9E-02	2.7E-02	1.2E-02	3.3E-03	1.0E-03	4.5E-04	2.4E-04
202.5	3.9E-01	1.1E-01	6.0E-02	3.9E-02	2.7E-02	1.2E-02	3.7E-03	1.3E-03	6.0E-04	3.3E-04
225.0	5.2E-01	1.4E-01	6.9E-02	4.2E-02	2.8E-02	1.2E-02	3.1E-03	1.0E-03	4.5E-04	2.2E-04
247.5	4.8E-01	1.3E-01	6.6E-02	4.0E-02	2.7E-02	1.1E-02	2.8E-03	8.7E-04	3.8E-04	2.0E-04
270.0	3.1E-01	8.9E-02	4.6E-02	2.9E-02	2.0E-02	8.3E-03	1.9E-03	5.7E-04	2.6E-04	1.5E-04
292.5	4.5E-01	1.3E-01	6.7E-02	4.1E-02	2.8E-02	1.2E-02	2.6E-03	6.6E-04	2.5E-04	1.2E-04
315.0	2.1E-01	5.8E-02	2.9E-02	1.8E-02	1.2E-02	4.7E-03	1.1E-03	3.0E-04	1.2E-04	6.1E-05
337.5	1.5E-01	4.5E-02	2.4E-02	1.5E-02	1.1E-02	4.8E-03	1.3E-03	3.7E-04	1.5E-04	6.8E-05
360.0	2.8E-01	8.3E-02	4.4E-02	2.8E-02	2.0E-02	8.8E-03	2.3E-03	6.8E-04	2.7E-04	1.2E-04

External Dose All 1 Sv 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	2.8E-07	9.3E-08	4.4E-08	1.4E-07	1.0E-07	5.4E-08	2.2E-08	1.2E-08	7.2E-09	4.8E-09
45.0	1.6E-07	6.0E-08	2.9E-08	8.5E-08	6.3E-08	3.3E-08	1.4E-08	7.4E-09	4.5E-09	3.0E-09
67.5	1.2E-07	5.0E-08	2.6E-08	7.4E-08	5.5E-08	3.0E-08	1.2E-08	6.5E-09	3.9E-09	2.6E-09
90.0	4.7E-08	2.1E-08	1.0E-08	3.1E-08	2.3E-08	1.2E-08	5.2E-09	2.8E-09	1.7E-09	1.1E-09
112.5	1.2E-07	5.2E-08	2.7E-08	7.3E-08	5.4E-08	2.9E-08	1.2E-08	6.5E-09	3.9E-09	2.7E-09
135.0	1.2E-07	4.5E-08	2.2E-08	6.5E-08	4.8E-08	2.6E-08	1.1E-08	5.8E-09	3.5E-09	2.4E-09
157.5	1.2E-07	4.2E-08	2.1E-08	6.1E-08	4.5E-08	2.4E-08	1.0E-08	5.4E-09	3.2E-09	2.2E-09
180.0	3.0E-07	1.0E-07	4.8E-08	1.4E-07	1.1E-07	5.6E-08	2.3E-08	1.2E-08	7.3E-09	4.9E-09
202.5	2.0E-07	5.9E-08	2.9E-08	8.6E-08	6.3E-08	3.3E-08	1.3E-08	7.1E-09	4.2E-09	2.8E-09
225.0	1.6E-07	5.9E-08	2.7E-08	8.1E-08	6.0E-08	3.1E-08	1.3E-08	6.8E-09	4.0E-09	2.7E-09
247.5	1.7E-07	6.0E-08	3.0E-08	8.3E-08	6.2E-08	3.3E-08	1.3E-08	7.0E-09	4.1E-09	2.7E-09
270.0	8.6E-08	3.1E-08	1.7E-08	4.4E-08	3.2E-08	1.7E-08	6.9E-09	3.6E-09	2.1E-09	1.4E-09
292.5	1.5E-07	5.0E-08	2.7E-08	7.3E-08	5.4E-08	2.8E-08	1.1E-08	5.9E-09	3.5E-09	2.3E-09
315.0	1.3E-07	4.8E-08	2.5E-08	6.8E-08	5.0E-08	2.7E-08	1.1E-08	5.8E-09	3.5E-09	2.3E-09
337.5	2.1E-07	7.1E-08	3.4E-08	1.0E-07	7.7E-08	4.1E-08	1.7E-08	9.1E-09	5.4E-09	3.7E-09
360.0	5.6E-07	2.0E-07	9.3E-08	2.9E-07	2.1E-07	1.1E-07	4.7E-08	2.5E-08	1.5E-08	1.0E-08

OBT OBT 1 0

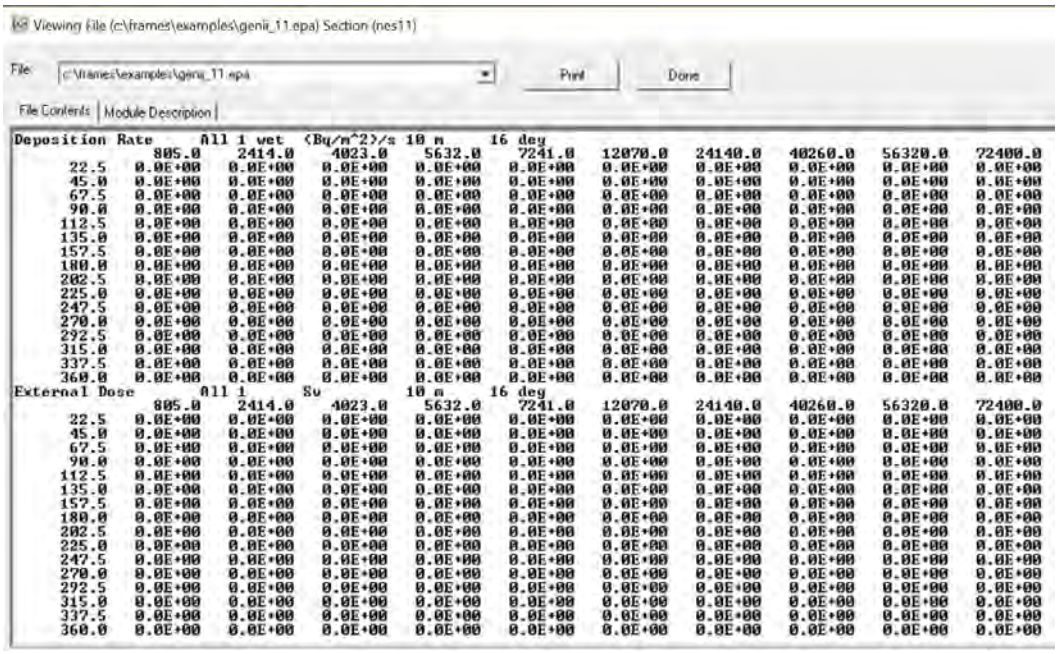
TIME PERIOD 1.0000 yr

Air Concentration All 1 Bq/m^3 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

Deposition Rate All 1 dry (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00



Viewing File (c:\frames\examples\genii_11.epa) Section (nes11)

File: c:\frames\examples\genii_11.epa | Print | Done

File Contents | Module Description

Deposition Rate All 1 wet (Bq/m^2)/s 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

External Dose All 1 Sv 10 m 16 deg

	805.0	2414.0	4023.0	5632.0	7241.0	12070.0	24140.0	40260.0	56320.0	72400.0
22.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
45.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
67.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
90.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
112.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
135.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
157.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
180.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
202.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
225.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
247.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
270.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
292.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
315.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
337.5	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
360.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

4.0 References

Napier BA. 2012. GENII Version 2 Users' Guide. PNNL-14583, Rev. 4. Pacific Northwest National Laboratory, Richland, Washington.

Napier BA, DL Strenge, JV Ramsdell, Jr, PW Eslinger, C Fosmier. 2012. GENII Version 2 Software Design Document. PNNL-14584, Rev. 4, Pacific Northwest National Laboratory, Richland, Washington.

Snyder SF, CI Arimescu, BA Napier, TR Hay. 2013. Recommended Parameter Values for GENII Modeling of Radionuclides in Routine Air and Water Releases. PNNL-21950, Pacific Northwest National Laboratory, Richland, Washington.

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