# GEM 2.2.2

Addendum to Manual GEM 1.1.1 Louise Wipfler and John Deneer. February 25, 2016.

July 2015 GEM 1.1.1 was released. On request of the Ministry of Economic Affairs additional refinements were added to the instrument. This document is part of the GEM manual, and describes the features that were added to GEM 2.2.2 as follow up of GEM 1.1.1:

- 1. Option to select emission scenarios, related to the nitrate emission limits in the Netherlands and the management of filter rinsing water
- 2. Option to manage individual application dates, i.e. set a certain timespan between application and discharge.

Model versions of the contributing models in GEM 2.2.2 are:

Module	Version
PEARL	3.1.5
SWAP	3237
SUBSTANCE	1.2.1
TOXSWA	3.3.5
WATERSTROMEN	2.0

Table 1 Names and version numbers of the currently used models in GEM

# 1. Option to select emission scenarios

The Browse Projects menu allows the user to choose an already existing project for use, editing, deletion, or to add a new project. When adding a new project the user may select a Cultivation- assessment type which can be either Soilless or Soil-bound. In GEM 2.2.2, the soilless cultivation assessment type offers a further choice of the nutrient emission reference period (either 2015 – 2017, or 2018 – 2020) and the choice whether or not the calculations should presume the reuse of filter water or not. In the latter case the filter water is presumed to be discharged to surface water. Both options are only offered when selecting a soilless cultivation scenario.

The options are shown in the project screen in the box 'Nutrient emission reference period' (Figure A1).

The effect of choosing either the 2015 – 2017 or the 2018 – 2020 reference period reflects the change in strictness of emission rules for nitrate from 2018 onward. For the earlier period 2015 – 2017 a higher overall volume of emissions is permissible. It is referred to *Scenarios Waterstreams model for GEM 2.2.2.* for further information on the emission scenarios. This document can be downloaded via www.pesticidemodel.eu/qem.

The selection of the nutrient emission reference period is done at project level. When the project contains one or more assessments, the nutrient emission reference period cannot be changed anymore.

	wse Projects					_
D	Caption	Description	CultivationType	CreationDate	ModificationDate	1
1	ExProject1	Example Project 1 soilless culti	Soilless - surface water	22-1-2016 10:13:33	22-1-2016 10:13:33	
2	ExProject2	Example project 2 soil-bound-	Soil-bound - surface water	22-1-2016 10:13:33	22-1-2016 10:13:33	1
3	ExProject3	Example project 3 soil-bound -	Soil-bound - ground water	22-1-2016 10:13:33	22-1-2016 10:13:33	
5	ExProject3_copy	Example project 3 soil-bound -	Soil-bound - ground water	27-1-2016 15:02:43	27-1-2016 15:02:43	1
6	example project	Example Project 1 soilless culti	Soilless - surface water	27-1-2016 15:03:01	27-1-2016 15:03:14	
7	example	example	Soilless - surface water	2-2-2016 13:51:40	3-2-2016 10:03:23	1
8	example2	example2	Soilless - surface water	3-2-2016 10:03:50	3-2-2016 10:04:02	
lit	Projects					
lit Ger	Projects heral Comments aption: example	:2	CreationDate:	3-2-2016	*	
lit Ger	Projects neral Comments aption: example	2	CreationDate:	3-2-2016	×.	
lit Ger De	Projects neral Comments aption: example escription: example	:2	CreationDate: ModificationDate:	3- 2 -2016 3- 2 -2016	<u>×</u>	
lit Ger De	Projects neral Comments aption: example escription: example Cultivation - assessm	:2 :2 ent type: Nutrient	CreationDate: ModificationDate: emission reference period:	3-2-2016 3-2-2016	<u>v</u>	
lit Ger De	Projects heral Comments aption: example escription: example Cultivation - assessm Soliless - surface	:2 :2 ent type:	CreationDate: ModificationDate: emission reference period: -2017	3-2-2016 3-2-2016	<u>×</u>	
lit Ger De	Projects neral Comments aption: example escription: example Cultivation - assessm Soilless - surface	:2 :2 ent type: Nutrient water C 2015 re water C 2015	CreationDate: ModificationDate: emission reference period:	3-2-2016 3-2-2016	<u>×</u>	
lit Ger Ca	Projects heral Comments aption: example escription: example Cultivation - assessm Soilless - surface Soil-bound - surfar Soil-bound - groun	:2 :2 ent type: Nutrient water C 2015 :e water C 2015 d water C 2018	CreationDate: ModificationDate: emission reference period:	3-2-2016 3-2-2016	<u>×</u>	
lit ier Ca	Projects heral Comments aption: example escription: example Cultivation - assessim Soilless - surface Soil-bound - surfar Soil-bound - groun	2 2 ent type: Nutrient water C 2015 ce water C 2015 d water C 2018 C 2018	CreationDate: ModificationDate: emission reference period:	3- 2 -2016 3- 2 -2016	× ×	
fit Gar	Projects heral Comments aption: example escription: example Cultivation - assessim Soilless - surface Soil-bound - surfar Soil-bound - groun	:2 :2 ent type:	CreationDate: ModificationDate: emission reference period: -2017 -2017 (filter water reused) -2020 -2020 (filter water reused)	3- 2 -2016 3- 2 -2016	× ×	

*Figure A1: The projects screen, enabling the addition, removal and editing of projects. In the Edit Projects screen an option was added to select a nutrient emission reference period and to specify filter rinsing water management* 

# 2. Management of application timing

Discharge moments for growers are currently fixed: the system automatically discharges when the salt content is too high. In practice the grower may be able to manage the time between application and discharge. To allow calculating the effect of a certain timespan between application and discharge an application manager was added.

Only if the user chooses the option that calculations presume the reuse of filter water, he/she is given the choice of whether or not the application should be managed with regard to discharge. Management in this respect implies that the program will <u>adjust the application date</u> if the period between the specified application date and the discharge dates is shorter than allowed.

This option is selected in the lower half of the Assessment screen (Edit Assessments, Figure A2). When selected, an option to define a minimum interval between application and discharge is provided and an application screen is opened that allows access to a discharge and application viewer (Figure A3 and A4).

III= Project	s	Calculate	Assessment Report	Show	Graphs	? Help	(2) Exit				
~								1			
owse Ass	essme	ents	<b>D</b>		n li	C.L.L.		1		C. K. D.L.	14 1°C 11
elected		aption	Description		Results	Substance	unale a destance		Crop	CreationDate	Modificatio
Select all		Deselect all		rror							•
Select all it Assession assessment Caption: Description	Out exa	Deselect all put options   Status   mple assessment mple assessment	Continue multiple runs on er	rror	Croj 	o: Cut flov stance: EXGE1	vers		GEM exampl	e substance for soil-b.	, , , ,

Figure A2: The assessments screen for an assessment with enabled management of application dates

After the user has specified the minimum number of days that preferably should occur between an application and the next subsequent discharge event, the user will be asked to specify a target application date in the 'applications' screen which opens when the Application button on the assessments screen is opened. If the user, without realising it, chooses an application date which is too closely followed by a discharge date, GEM will automatically search for the nearest application date which fulfils the requirement of having the specified number of days prior to a discharge event. For this reason, the user is given the possibility to enter the maximum number of days that the program may automatically adjust the application date in order to create sufficient time between application and discharge. The acceptable change in application date is specified as the number of days that the application date may be moved to an earlier or to a later date.

200523	- pres de		17	0		- pr	-
Valid	Nr.	Application type	Target Application Date	Dosage	SearchInterval		1
Yes	1	With nutrient solution	05-Jul	1	1		
							000
							Ó
lit App Applica Intende late: Nosage	lications tion type ed applica	: With nutrien ation Jul V / 1]: 1	t solution 💌 5 💌				

*Figure A3: The applications screen, enabling addition, removal and editing of individual applications. A new option has been added to define an interval within which GEM may search for suitable application dates.* 

GEM checks first if an application is possible one day earlier than the target date, else it checks the day after the target date. This is continued until the limits of the search interval are achieved. If, despite allowing an automatic adjustment of the application date, the program is not able to find an application date sufficiently far away from subsequent discharge events, the user is warned by a text box on the right side of the screen, with text in red stating 'No solution found for one or more of your target application dates. You may try an alternative application target date and/or search interval.'

Regardless whether suitable application dates were found, with or without automatic adjustment of the dates by the program, the user can visualize the application dates by pressing the 'Check applications' button. The resulting diagram will depict discharge dates and suitable (where necessary: adjusted) application dates.

polications:	date (Applic, Nr)	2000	2001	2002	2003	2004	2005	2006	*	Legend:	
	30-06					Discharge				Discharge	Day of discharge
First	01-07		Discharge			o lo ci lo ci g c					bu) or aberia ge
-	02-07	71			Discharge						Minimal interval between
Prev	03-07				References and			Discharge			application and discharge
Next	04-07		Discharge				Discharge			4	Application
inext	05-07	Discharge									
Last	06-07		71	Discharge						×	No solution found
	07-07			Refedenties . Auto							
	08-07									🖌 A (*)	New application date
	09-07		Discharge				10			100.000	
0	10-07									-	
v	11-07									P*	
	12-07						Discharge			No colution	found for one or
	13-07									more of vo	round for one or
	14-07							Discharge		application	dates. You may
	15-07 (1)	1	4	4	4	4	1	×	-	try an alter	native
	16-07			A (1)				22		application	target date
	17-07							Discharge		and/or sea	rch interval.
	18-07										
	19-07				Discharge					1	
	20-07							Discharge			
	21-07										
	22-07	Discharge		Discharge		Discharge		11			
	23-07		Discharge								
	24-07										
	25-07	0						Discharge			
	26-07				Discharge						
	27-07										
	28-07										
	29-07					Discharge					
	30-07								Ŧ		

*Figure A4: An example of automatically adjusted application dates. For the case presented no solution was found within the required time between application and timing and the search interval.* 

Any user-chosen application date too close to a discharge, which cannot be adjusted by the program within the constraints of the 'acceptable change in application date' to allow an application anyway, will be marked in red (see July 15<sup>th</sup> 2006 in the example given above).

If the requirements for the minimal interval between application and discharge date are not met, no calculations can be performed!

If under these circumstances the author selects the invalid assessment anyway, and tries to perform a calculation, either the 'Finished' textbox will pop up immediately or after all selected assessment have been calculated, without any calculations being performed (provided that the 'Continue multiple runs on error' has been enabled). The corresponding error is shown in the Status tab on the Assessment screen.

#### 3 Changes in the input and assessment report

If the user wishes to check whether user specified dates were adjusted by the program, he/she may do so by either visually inspecting the applications in the application scheme (an example is given in Figure A4), or alternatively through inspection of the Substances input file (View --> Input files --> SUBSTANCE, section 4: Management section). See also Figure A5.

The same list of actual application dates is also available through the Assessment Report of the assessment, provided that results are available, i.e. the calculations for the assessment have been performed (Annex B).

Input files				
WATERMODEL	SUBSTANCE	TOXSWA		
174.6	KomEqlSub	_bif (L.kg-1)	·	
* Section 4: Man:	agement Sect	ion		5
-99	AFraPot (-)			
No	OptPots (-)			
GEM Applio	cationScheme			
table Application	ns			
30-Jun-2000-0000	30-Jun-200	0-0200 AppSolu	ation 1	
29-Jun-2001-0000	29-Jun-200	1-0200 AppSolu	ation 1	
30-Jun-2002-0000	30-Jun-200	2-0200 AppSolu	ation 1	-
30-Jun-2003-0000	30-Jun-200	3-0200 AppSolu	ation 1	
30-Jun-2004-0000	30-Jun-200	4-0200 AppSolu	ation 1	
30-Jun-2005-0000	30-Jun-200	5-0200 AppSolu	ation 1	5
30-Jun-2006-0000	30-Jun-200	6-0200 AppSolu	ation 1	1
end_table				L
				z
* Section 5: Crop	p Section			
5 LJ	AI (m2.m-2)			5
•				Ζ,
*				P.
			Close	Help
				WC5755

*Figure A5. Screenshot of Application Scheme as defined in the Substance Emission Model input file. The use of the application manager resulted in a justified application date in 2001, i.e. the date was adjusted from June 30 to June 29.* 

The inspection of the selected Nutrient emission period can be done similarly via View --> Input files --> WATERMODEL. Figure A6 shows an example in which the reference period 2015-17 is selected and filter water is reused. The crop selected has rose as a reference crop. All file names and corresponding nitrate emission periods are listed in Annex A. The selected input file name of the WATERSTREAM model is additionally provided in the assessment report.

UUTTON LODG	Service Service 1	a	1					-
WATERMODEL	SUBSTANCE	TOXSWA						
?xml version=	="1.0"?>							Т
root>								1
<gem></gem>								
<parameter< td=""><td>&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></parameter<>	>							
<name>ir</name>	nputfile							
<value></value>	cose_2015-17_re	use_filter_w	ater.xml <td>/alue&gt;</td> <td></td> <td></td> <td></td> <td></td>	/alue>				
<unit></unit>								
<help></help>								
<td>er&gt;</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	er>							
<parameter< td=""><td>:&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></parameter<>	:>							
<name>ed</name>	chofile							
<value>I</value>	):\UserData\GEM	2\Projects\7	\9\WATERMOD	EL\echo.txt <td>alue&gt;</td> <td></td> <td></td> <td></td>	alue>			
<unit></unit>								
<help></help>								
<td>er≻</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	er≻							
<parameter< td=""><td>:&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></parameter<>	:>							
<name≻ou< td=""><td>utputfile<td>&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td></td></name≻ou<>	utputfile <td>&gt;</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	>						
<value>I</value>	D:\UserData\GEM	2\Projects\7	\9\WATERMOD	DEL\rose_2015-1	7_reuse_filter_	water.wat <td>alue&gt;</td> <td></td>	alue>	
<unit></unit>								
<help></help>								
							,	F
						Close	Help	

*Figure A6. Screenshot of the input file of the WATERSTREAM model. The input file name refers to the combination of reference crop- emission period and whether or not the filter water is reused.* 

# Annex A input file names of WATERSTREAM model related to Nutrient Emission Reference Period

Input file name	Reference crop	Nutrient emission period	Filter water management
Ficus_2015-17	ficus	2015-2017	discharged
Ficus_2018-20	ficus	2018-2020	discharged
Ficus_2015-17_reuse_filter_water	ficus	2015-2017	reused
Ficus_2018-20_reuse_filter_water	ficus	2018-2020	reused
Rose_2015-17	rose	2015-2017	discharged
Rose_2018-20	rose	2018-2020	discharged
Rose_2015-17_reuse_filter_water	rose	2015-2017	reused
Rose_2018-20_reuse_filter_water	rose	2018-2020	reused
Tomato_2015-17	tomato	2015-2017	discharged
Tomato_2018-20	tomato	2018-2020	discharged
Tomato_2015-17_reuse_filter_water	tomato	2015-2017	reused
Tomato_2018-20_reuse_filter_water	tomato	2018-2020	reused
Pepper_2015-17	sweet pepper	2015-2017	discharged
Pepper_2018-20	sweet pepper	2018-2020	discharged
Pepper_2015-17_reuse_filter_water	sweet pepper	2015-2017	reused
Pepper_2018-20_reuse_filter_water	sweet pepper	2018-2020	reused

#### Annex B Assessment report (changes as compared to GEM 1.1.1 are highlighted)

Assessment report: GEM 2.2.2

General assessment information

Report generated on	3-2-2016 9:57:16
Project ID	: 7
Assessment ID and Caption	9 example assessment, (example assessment)
Cultivation - assessment type	Soilless – surface water
Nutrient emission reference period	: 2015-2017 (filter water reused)
Substance code	EXGE1
Substance name	GEM example substance for soil-bound SW and soilless
Selected Crop from the DTG list	Cut flowers
Minimal interval between application	n and discharges : 1 days
Application scheme:	

Nr Application type Target application date Dosage (kg/ha) Depth (m) Fraction intercepted (-) 1 With nutrient solution 5-7-2001 1.00 NA NA

### Model versions

GEM version	: 2.2.2
Build date	: 25-Jan-2016
Database version	: 2
SPIN version	: SPIN (Substances Plug IN) 2.2
WATERSTREAMSMODEL version	: 2.0
(also referred to as WATERMODE	CL)
SUBSTANCE EMISSION model versi	on : v 1.2.1
TOXSWA version	: 3.3.5
PEARL version	: 3.2.2
SWAP version	: 3237
Copy rights	: Alterra, RIVM, PBL and Wageningen UR Greenhouse Horticulture
Soilless specific	
Pots : No	
Substance name End-of-pipe	removal fraction
Summary output of model: WATER	STREAMS MODEL (also referred to as WATERMODEL)
Basin capacity [m3/ha]: 500	
Greenhouse area [ha]: 1	
Max Na concentration [mmol/l]:	4
Na uptake [factor of concentra	ution]: 0.001
Illumination [micromol/m2/s]:	200
Na rain water [mmol/l]: 0.327	
Na osmosis water [mmol/l]: 0.3	27
Na tap water [mmol/l]: 1.5	
Na ground water [mmol/l]: 0.5	
Na surface water [mmol/l]: 1.5	
Surface water priority: 5	
Tapwater priority: 3	
Ground water priority: 4	
Basin priority: 1	
Drainperc [%]: 50	
System leakage [%]: 1.5	
Percentage condens recycled [%	;]: 80
Osmosis used: True	
Osmosis capacity [m3/ha/day]:	60
Daynum osmosis start: 91	

```
Summary output of model: SUBSTANCE
-----
* SUBSTANCE EMISSION MODEL REPORT: Header
* Results from the SUBSTANCE EMISSION MODEL (c) Alterra, WUR Greenhouse Horticulture and RIVM
* SUBSTANCE EMISSION MODEL kernel version % \left( {\left( {{{\mathbf{v}}_{{\mathbf{v}}}} \right)} \right) : v1.2.1
* SUBSTANCE EMISSION MODEL created on : 13-1-2016
* SUBSTANCE EMISSION MODEL was called from : Greenhouse_Emission_Model_1.0
* Working directory : D:\UserData\GEM2\Projects\7\9\SUBSTANCE
* Run ID
                       : 9
* Input file generated on : 03-Feb-2016 09:32:14
*_____
       _____
* Waterflux file: rose_2015-17_reuse_filter_water
*_____
* Number of substances : 1
* Parent substance : EXGE1
* Application scheme
                    : GEM
* End of SUBSTANCE EMISSION MODEL REPORT: Header
* SUBSTANCE EMISSION MODEL REPORT: GEM
* Start date
              : 01-Jan-2000
* End date
              : 01-Jan-2007
* _____
-----
*
* NumApp
           7
*
  Nr Start of application
                         End of application Dosage (kg ha-1)
                                                           application type
*
   1 05-Jul-2000 00:00:00 05-Jul-2000 02:00:00 1.0000 application with nutrient solution
       05-Jul-2001 00:00:00 05-Jul-2001 02:00:00 1.0000 application with nutrient solution
*
    2
      05-Jul-2002 00:00:00 05-Jul-2002 02:00:00 1.0000 application with nutrient solution
    3
      04-Jul-2003 00:00:00 04-Jul-2003 02:00:00 1.0000 application with nutrient solution
   4
   5 05-Jul-2004 00:00:00 05-Jul-2004 02:00:00 1.0000 application with nutrient solution
*
*
   6 04-Jul-2005 00:00:00 04-Jul-2005 02:00:00 1.0000 application with nutrient solution
*
    7 05-Jul-2006 00:00:00 05-Jul-2006 02:00:00 1.0000 application with nutrient solution
* Substance 1 EXGE1
* Substance properties:
* Molar mass (g.mol-1)
                                                   :
                                                      255.7
* Saturated vapour pressure (Pa)
                                                   : 0.4E-09; measured at (C) 20.0
* Solubility in water (mg.L-1)
                                                   : 0.6E+03; measured at (C) 20.0
* Half-life in tanks (d)
                                                   : 1000.0; measured at (C) 25.0
* Selectivity factor for pesticide uptake (-)
                                                        0.4
* coef. for equilibrium sorption on organic matter (L.kg-1) :
                                                     131.0
* Important mass fluxes (kg ha-1) of substance EXGE1
*_____
* yr
       Identifier
                   Applied Transformed
                                        Uptake Discharged to surface water
2000 BalMasWat_EXGE1
                   0.100E+01 0.590E-02 0.744E+00 0.199E+00
                             0.598E-02
2001 BalMasWat_EXGE1
                   0.100E+01
                                       0.726E+00
                                                  0.217E+00
                 0.100E+01 0.593E-02 0.753E+00 0.189E+00
2002 BalMasWat_EXGE1
2003 BalMasWat EXGE1 0.100E+01 0.566E-02 0.711E+00 0.234E+00
2004 BalMasWat_EXGE1 0.100E+01 0.604E-02 0.820E+00 0.117E+00
2005 BalMasWat_EXGE1 0.100E+01 0.604E-02 0.770E+00 0.170E+00
2006 BalMasWat_EXGE1 0.100E+01 0.657E-02 0.784E+00 0.154E+00
* END OF SUBSTANCE EMISSION MODEL REPORT: GEM
```

Daynum osmosis stop: 237

```
* _____
                                  _____
  * The run time was 3 minutes and 55 seconds
Summary output of model: TOXSWA
-----
* TOXSWA REPORT: Header
* Results from the TOXSWA model (c) Alterra
* GEM version : 2.2.2
* TOXSWA model version : 3.3.5
* TOXSWA created on : 19-Jan-2016
* TOXSWA created on
* Working directory : D:\UserData\GEM2\Projects\7\9\TOXSWA
* Run ID
                    : 9
* Input file generated on : 03-02-2016
* _____
* Scenario
                     : Netherlands
* Meteo Station
                     : DeBilt
* Substance
                    : EXGE1
* Flow Type
                    : Variable
* Water Body Type : greenhouse_ditch
* Simulation Period : 01-Jan-2000 to 31-Dec-2006
                                               * End of TOXSWA REPORT: Header
* TOXSWA REPORT: Substance properties and substance loadings
* Summary for the following substances
* Substance 1: EXGE1
                     : 255.7
* Molar mass (g.mol-1)
* Saturated vapour pressure (Pa) : 0.400E-09 measured at (C) : 20.0
* Water solubility (mg.L-1) : 0.613E+03 measured at (C) : 20.0
* Half-life in water (d)
                          :
                                7.00 measured at (C) : 20.0
* Half-life in sediment (d)
                         : 1000.00 measured at (C) : 20.0
* Kom susp.solids (coef. for sorption on organic matter) (L.kg-1) :
                                                          131.00
* Freundlich exponent (-)
                                                            0.90
* Kom sediment (coef. for sorption on organic matter) (L.kg-1) :
                                                          131.00
* Freundlich exponent (-)
                                                      :
                                                            0.90
* Kmp (coef. for sorption on macrophytes-dry weight)
                                              (L.kg-1) :
                                                            0.00
* End of TOXSWA REPORT: Substance properties and substance loadings
* TOXSWA REPORT: Target percentiles water layer
* Start date simulation : 01-Jan-2000
* End date simulation : 31-Dec-2006
* Time window for selecting the maximum concentration:
* Evaluation period
* Start End
01-Jan 31-Dec
* Percentile summary for substance EXGE1
* _____
* Period
          Date of
                          Maximum substance
* number
         maximum
                          concentration in water
                          (ug/L)
* _____
                                          _____
   01-Aug-2000
                              669.8
1
   07-Jul-2001
                             3358.2
2
   06-Jul-2002
3
                              1681.4
4
    05-Jul-2003
                              2058.6
5
    16-Jul-2004
                              1703.4
```

6 24-Jul-2005 7 14-Jul-2006 906.6 1917.0 \* The 50 percentile peak concentration of EXGE1 is 1703.4 ug/L \* End of TOXSWA REPORT: Target percentiles water layer \* TOXSWA REPORT: Time weighted average exposure concentrations (TWA) water layer selected year \* Targets: \* TWA7 TWA period: 7.0 d Time window Start date: 01-Jan End date: 31-Dec TWA period: 21.0 d Time window Start date: 01-Jan End date: 31-Dec \* TWA21 \* Target TWA period Maximum TWA TWA (ug/L) Start \* \_\_\_\_\_ \* Results for substance: EXGE1 260.0 120.9 TWA7 7.00 16-Jul-2004 21.00 16-Jul-2004-07h30 TWA21 \*

\* End of TOXSWA REPORT: Time weighted average exposure concentrations (TWA) water layer select ed year

- \* Report\_type Percentile
- \* Run\_Id 9
- \* Location Netherlands
- \* Meteo\_station DeBilt
- \* Substance EXGE1
- \* Result\_EXGE1 1703.4 ug/L
- \* End of TOXSWA REPORT: Project\_Summary