

Dietary Risk Assessment (Drinking Water Only)



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CARES Training Workshop
January 28-29, 2009
Washington DC

Water Assessment

- Learn how to import water data using water wizard to create files
- Learn how to use chronic module
- Learn features of water module and how to interpret output

Input Information

- Water Commodities – identify all types of water to be evaluated (FCID codes and descriptions)
- Water Residue Data – residue values from monitoring or modeling data (for each residue value, the following information must be provided: identity of water source, type of water, whether treated, region and state, code for water food form, Chemical CAS of compound being evaluated, water treatment factor(s), date format of water data, limit of detection).
- Processing Factors – modification factors for each water type as a result of processing

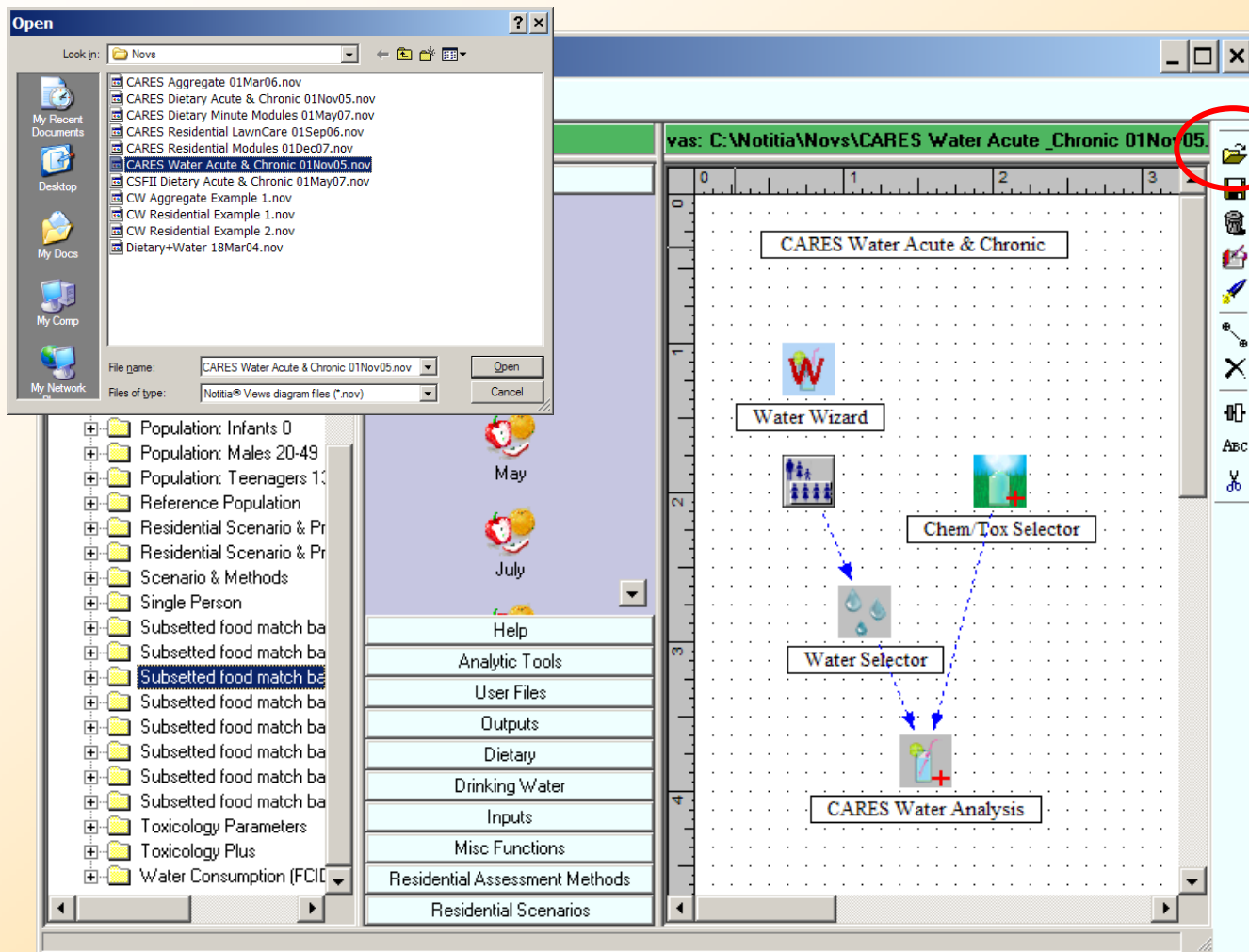
Build Water Data File

- The file is stored in C:\Notitia\Data\Templates.
CARES Template Water 10Nov04.xls

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Data ID	SourceID	Residue Type	Source Type	Treatment Type	Region	State	Water code	Chemical CAS	WTF	Date Option Type	Date Option Value 1	Date Option Value 2	Residue	Units	SetID	LOD	LOQ	Notes 1	Notes 2	Notes 3	Notes 4
2	Test101	None	3 S	S	R	0	12	86011000	12-345-6	1	1	01/01/91		0.0499	1		0.0001	0.0001	1991			
3	Test101	None	3 S	S	R	0	12	86011000	12-345-6	1	1	01/02/91		0.0362	1		0.0001	0.0001	1991			
4	Test101	None	3 S	S	R	0	12	86011000	12-345-6	1	1	01/03/91		0.0647	1		0.0001	0.0001	1991			
5	Test101	None	3 S	S	R	0	12	86011000	12-345-6	1	1	01/04/91		0.0228	1		0.0001	0.0001	1991			
6	Test101	None	3 S	S	R	0	12	86011000	12-345-6	1	1	01/05/91		0.0988	1		0.0001	0.0001	1991			
7	Test101	None	3 S	S	R	0	12	86011000	12-345-6	1	1	01/06/91		0.0836	1		0.0001	0.0001	1991			

	A	B	C	D	E	F	G	H	I	J	K
1	Residue Type					Source Type		Treatment Type			
2		1	Single value			S	Surface water	F	Finished		
3		2	Monitoring			G	Ground water	R	Raw		
4		3	Modeling								
5											
6	Water Codes										
7		86011000	Direct Tap Water				86021000	Indirect Tap Water			
8		86012000	Direct Bottled Water				86022000	Indirect Bottled Water			
9		86013000	Direct Other Water				86023000	Indirect Other Water			
10		86014000	Direct Missing Source Water				86024000	Indirect Missing Source Water			
11											
12	Date Option Types										
13		1	DATE in format mm/dd/yy (enter DATE in Date Option Value 1, Date Option Value 2 is blank)								
14		2	DAY between 1-365 and YEAR in format yyyy (enter DAY in Date Option Value 1 and YEAR in Date Option Value 2)								
15		3	Day in contiguous fashion, starting with 1 (enter DAY in Date Option Value 1 and Date Option Value 2 is blank)								
16											
17	Region Codes										
18		0	National								
19		1	Northeast								
20		2	Midwest								
21		3	South								
22		4	West								

Open Water Canvas



- Click open .nov File icon
- Select CARES Water Acute & Chronic 01Nov05.nov

Run Specifier

Run Specifier

Options

Available Run Properties

Date	Name	Organization	Description (Sh...

Current Run Properties

Date: 1/17/2009 4:21:11 PM Now Name: Bruce M. Young

Organization: Bayer Corporation

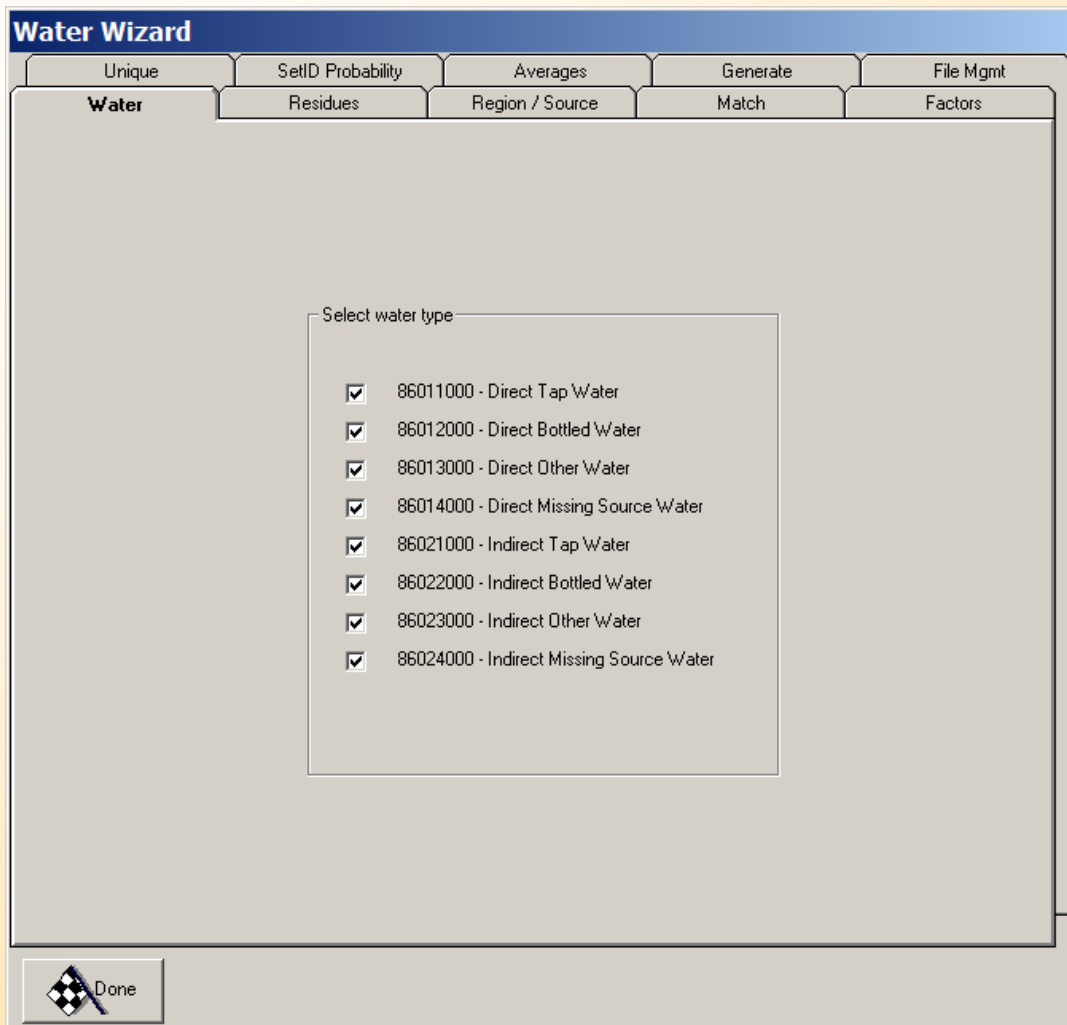
Description (Short): WATER DEMO ←

Description (Long): Children 1-2 yrs subset 100 ←

Buttons: Restore, Delete, Delete All, Report, Done, Cancel

- Click run-specifier
- Click Now enters date, name and organization
- Enter Short Name
This will be the prefix for all input and output files in:
C:\Notitia\Data\UserFiles

Water Wizard



- Right-click on Water Wizard icon, select Call Wizard.
- Select all water codes.

Residues

Water Wizard

Unique SetID Probability Averages Generate File Mgmt
 Water **Residues** Region / Source Match Factors

Enter/Modify Residue Values

Residue Values Import / Modification

Excel Import Template Import disposition: Replace Append

Clipboard / Grid:

Residue Type: -- Select -- Source Type: -- Select -- Treatment Type: -- Select -- Region: -- Select -- State: -- Select --

Data ID: Date Options: 1 mm/dd/yy Water Treat Factor: Chemical CAS:
 2 day 2000 year Water Code: 86011000 - Direct Tap Water
 3 Contiguous Days

Source ID: Residue Value: (ND = -1) Units: 1 - ppm LOD: LOQ:

	Data ID	Source ID	Residue Type	Source Type	Treatment Type	Region	State	Water code
1	Test101	None	3	S	R	0	12	86011000
2	Test101	None	3	S	R	0	12	86011000
3	Test101	None	3	S	R	0	12	86011000
4	Test101	None	3	S	R	0	12	86011000
5	Test101	None	3	S	R	0	12	86011000
6	Test101	None	3	S	R	0	12	86011000
7	Test101	None	3	S	R	0	12	86011000
8	Test101	None	3	S	R	0	12	86011000
9	Test101	None	3	S	R	0	12	86011000

- Click Import
- Select File
- Select Worksheet

Open

Look in: Templates

- CW Dietary Example #1.xls
- CW Dietary Example #2.xls
- CW Dietary Example #3.xls
- CW Water Example #1.xls
- CW Water Example #2.xls

Select Worksheet

Residues\$
TCodes\$

Match

Water Wizard

Unique SetID Probability Averages Generate File Mgmt
 Water Residues Region / Source **Match** Factors

Consumption

Water	Description

Residues

Water	Description
<input type="checkbox"/> 86011000	Direct Tap Water

Consumption => Residue Match

Water (Consump...)	Desc (Consumption)	Water (Residue)	Desc (Residue)	M...	M...	Notes
<input type="checkbox"/> 86011000	Direct Tap Water	86011000	Direct Tap Water	1	1	
<input type="checkbox"/> 86012000	Direct Bottled water	86011000	Direct Tap Water	1	1	
<input type="checkbox"/> 86013000	Direct Other Water	86011000	Direct Tap Water	1	1	
<input type="checkbox"/> 86014000	Direct Missing Source ...	86011000	Direct Tap Water	1	1	
<input type="checkbox"/> 86021000	Indirect Tap Water	86011000	Direct Tap Water	1	1	
<input type="checkbox"/> 86022000	Indirect Bottled Water	86011000	Direct Tap Water	1	1	
<input type="checkbox"/> 86023000	Indirect Other Water	86011000	Direct Tap Water	1	1	

Supplementary Rule

1. Match all Consumption waters with selected Residue water

- Check water type for residues
- Click Update to match all water types with this residue

Factors

Water Wizard

Unique SetID Probability Averages Generate File Mgmt

Water Residues Region / Source Match **Factors**

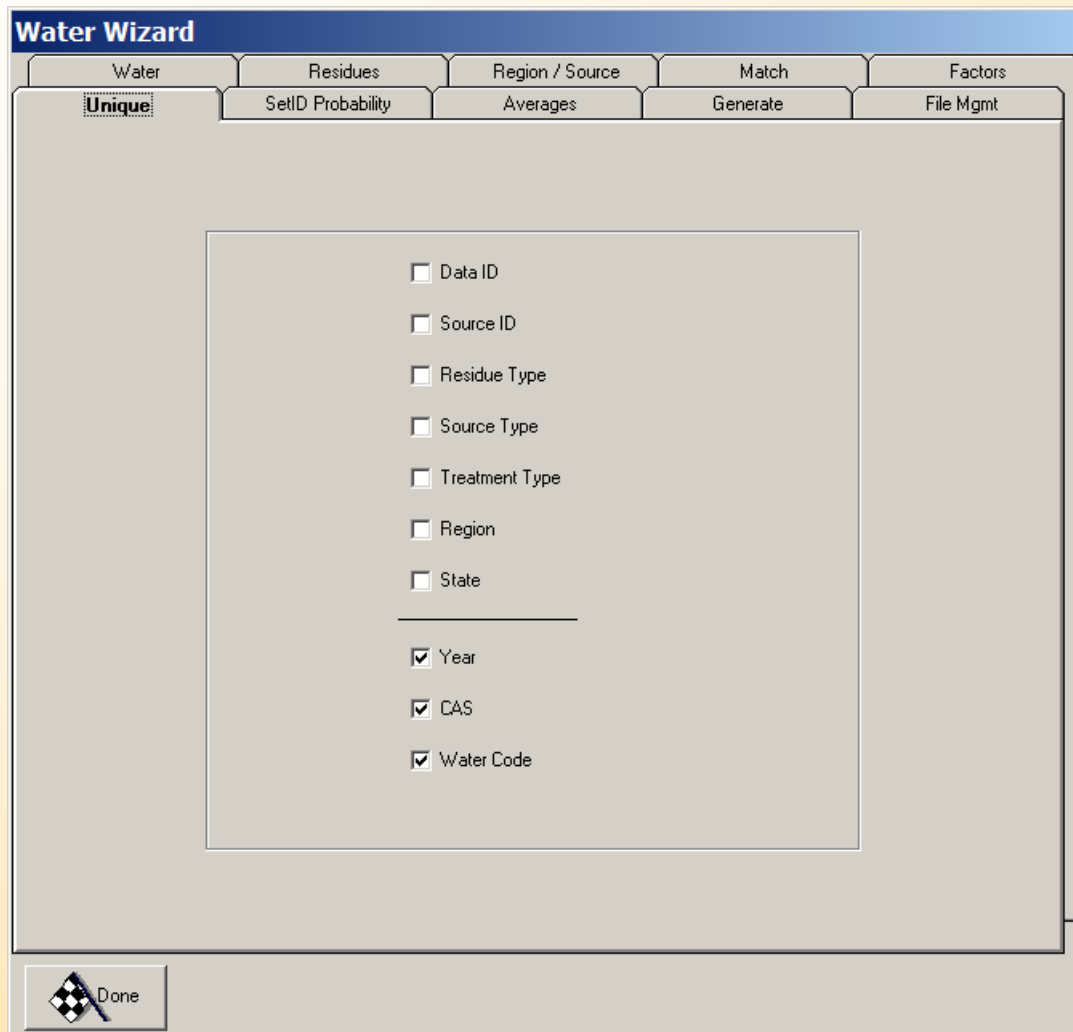
	Water (Consumption)	Desc (Consumption)	Water (Residue)	Desc (Residue)	Modifying Factor 1	Modifying Factor 2	Notes
1	86011000	Direct T	86011000	Direct T	1	1	
2	86012000	Direct B	86011000	Direct T	1	1	
3	86013000	Direct O	86011000	Direct T	1	1	
4	86014000	Direct	86011000	Direct T	1	1	
5	86021000	Indirect	86011000	Direct T	1	1	
6	86022000	Indirect	86011000	Direct T	1	1	
7	86023000	Indirect	86011000	Direct T	1	1	
8	86024000	Indirect	86011000	Direct T	1	1	

Update

Done

- Enter modifying factors
- Click Update to save changes

Unique



- Keep defaults
- Used only to change probability of selecting time series

SetID Probability

Water Wizard

Water Residues Region / Source Match Factors

Unique **SetID Probability** Averages Generate File Mgmt

SetID Probability

Group	SetID	SetID Probability	Count
1	1991 86011000 12-345-6	0.1	365
1	1992 86011000 12-345-6	0.1	366
1	1993 86011000 12-345-6	0.1	365
1	1994 86011000 12-345-6	0.1	365
1	1995 86011000 12-345-6	0.1	365
1	1996 86011000 12-345-6	0.1	366
1	1997 86011000 12-345-6	0.1	365
1	1998 86011000 12-345-6	0.1	365
1	1999 86011000 12-345-6	0.1	365
1	2000 86011000 12-345-6	0.1	366

Done

- Keep defaults for equal probability of selection
- Change SetID Probability to weight a specific time series

Average


Water Wizard

Water Residues Region / Source Match Factors

Unique SetID Probability **Averages** Generate File Mgmt

Select/Set 'Average' water residue values (ppm)

<input checked="" type="checkbox"/>	86011000 - Direct Tap Water	20
<input type="checkbox"/>	86012000 - Direct Bottled Water	
<input type="checkbox"/>	86013000 - Direct Other Water	
<input type="checkbox"/>	86014000 - Direct Missing Source Water	
<input type="checkbox"/>	86021000 - Indirect Tap Water	
<input type="checkbox"/>	86022000 - Indirect Bottled Water	
<input type="checkbox"/>	86023000 - Indirect Other Water	
<input type="checkbox"/>	86024000 - Indirect Missing Source Water	

 Done

- CARES will use rules for chronic value
- Check water type and enter value to over-ride the rules.

Generate

Water Wizard

Water Residues Region / Source Match Factors
Unique SetID Probability Averages **Generate** File Mgmt

File Generation

Output Description
Water Demd

Output files

Create new Residue file View

Create new Consumption => Residue file View

Dates for Including Valid Years

Start Date (month/day) 5/01 Defaults

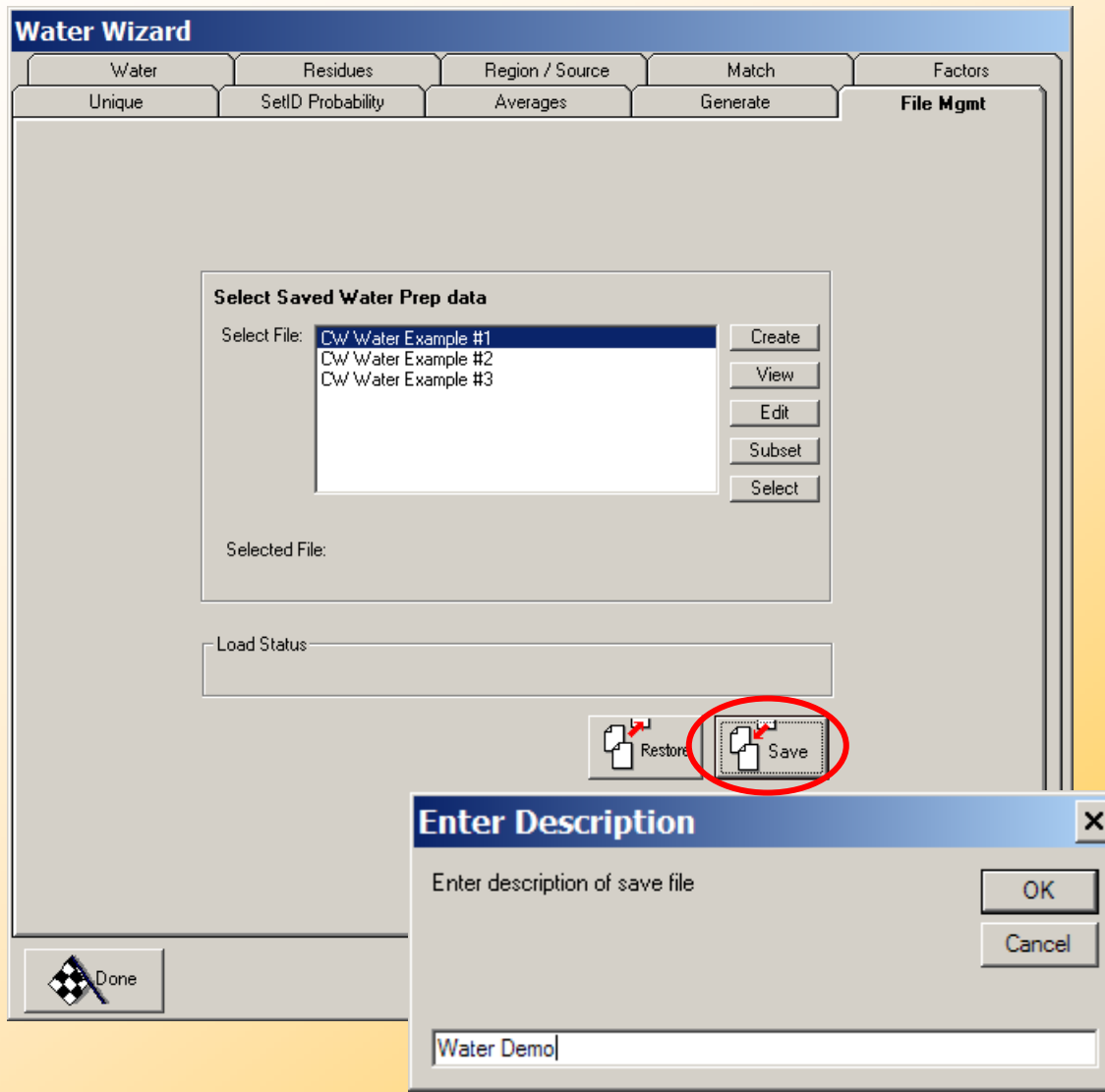
End Date (month/day) 8/31

Generate

Done

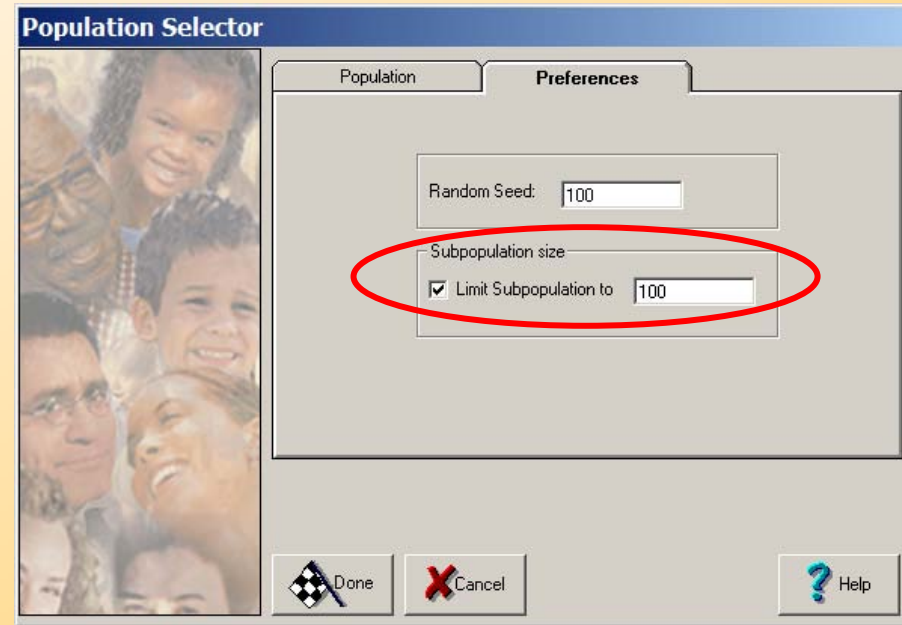
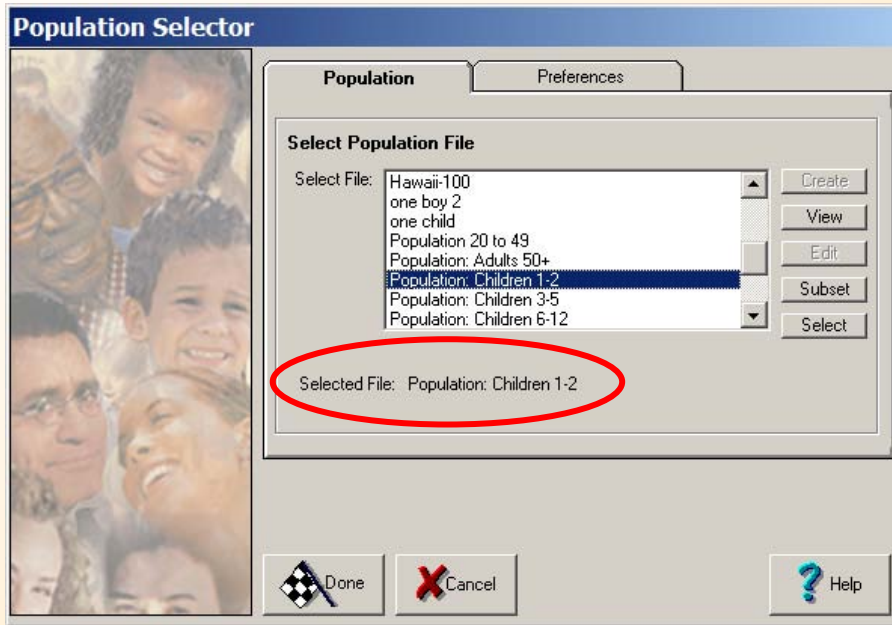
- Enter Description
- Click Generate
- Creates two files:
Water Maps
Water Residues

File Mgmt



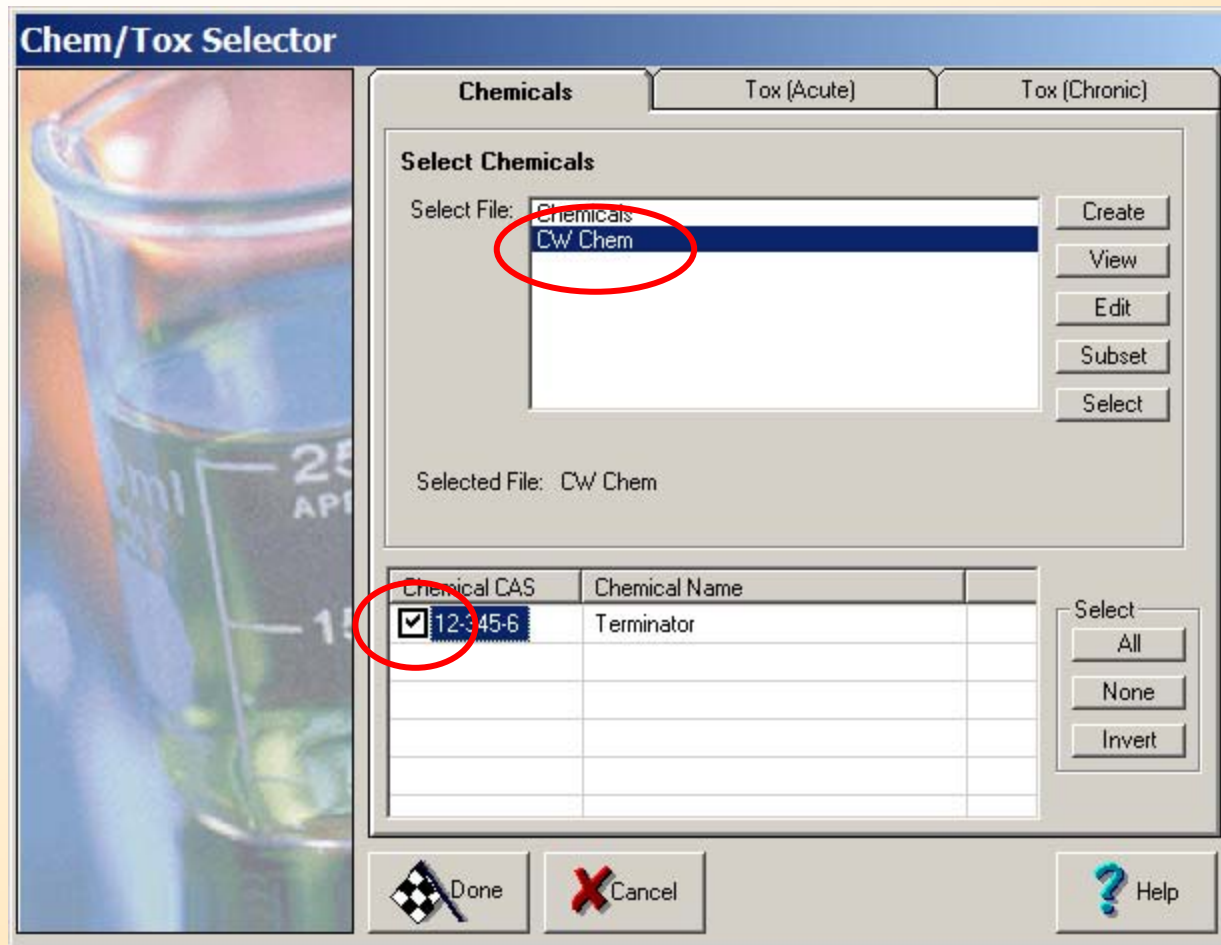
- Click Save
- Enter name
- Creates WaterPrep file.

Population Selector



- Double-click on population
- Click limit subpopulation and enter 100

Chem/Tox Selector



- Double-click CW Chem library
- Check CAS

Tox (Acute)



- Double-click CW Tox file
- Select Acute Water Tox endpoint

Tox (Chronic)

Chem/Tox Selector

Chemicals Tox (Acute) **Tox (Chronic)**

Select Toxicology File

Select File: CW Tox
Toxicology Plus

Buttons: Create, View, Edit, Subset, Select

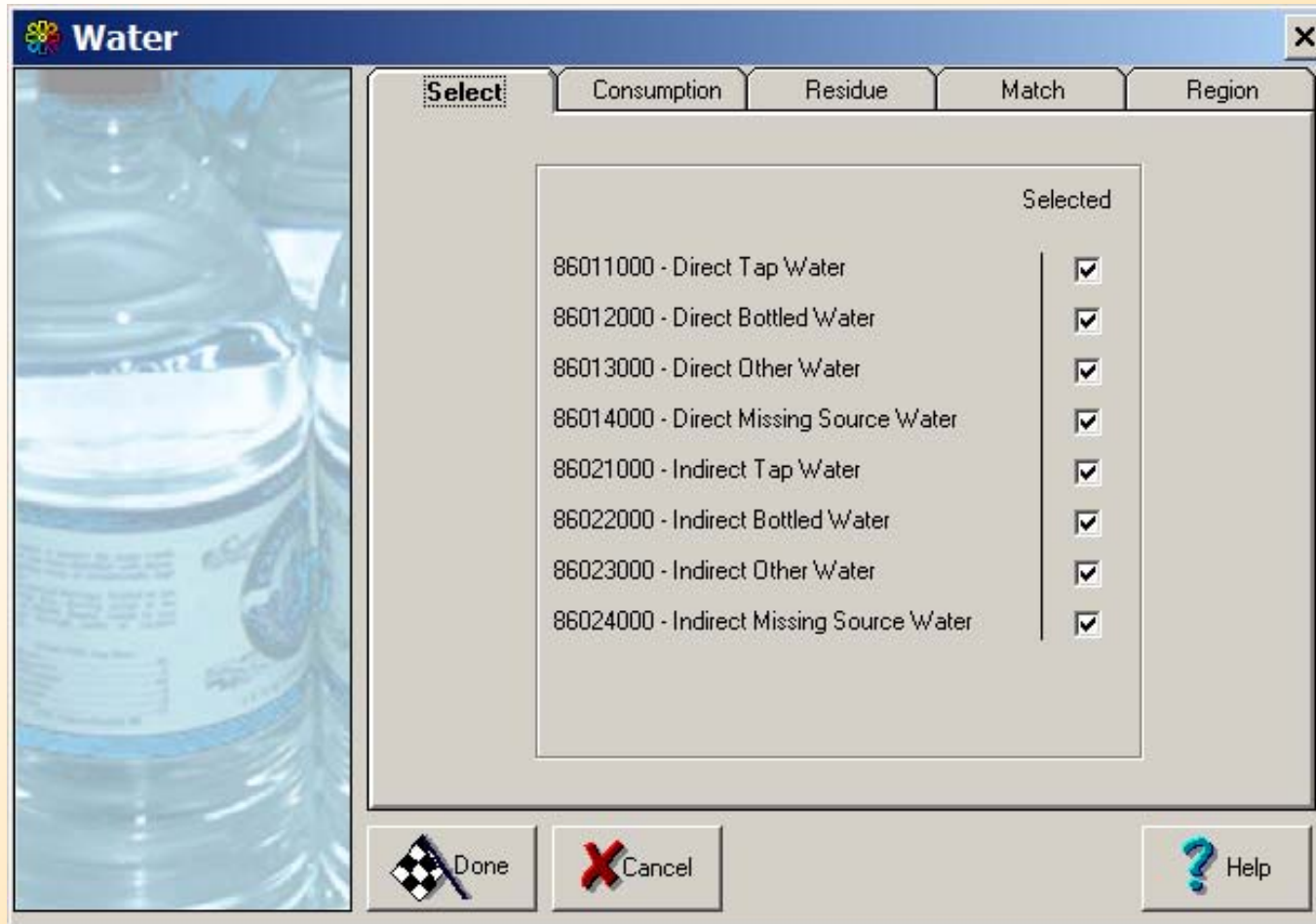
Selected File: CW Tox

Chemical CAS	Chemical Name	Route	Chronic NOEL	L
<input checked="" type="checkbox"/> 12-345-6	Terminator	Chronic	3.00e-02	1

Buttons: Done, Cancel, Help

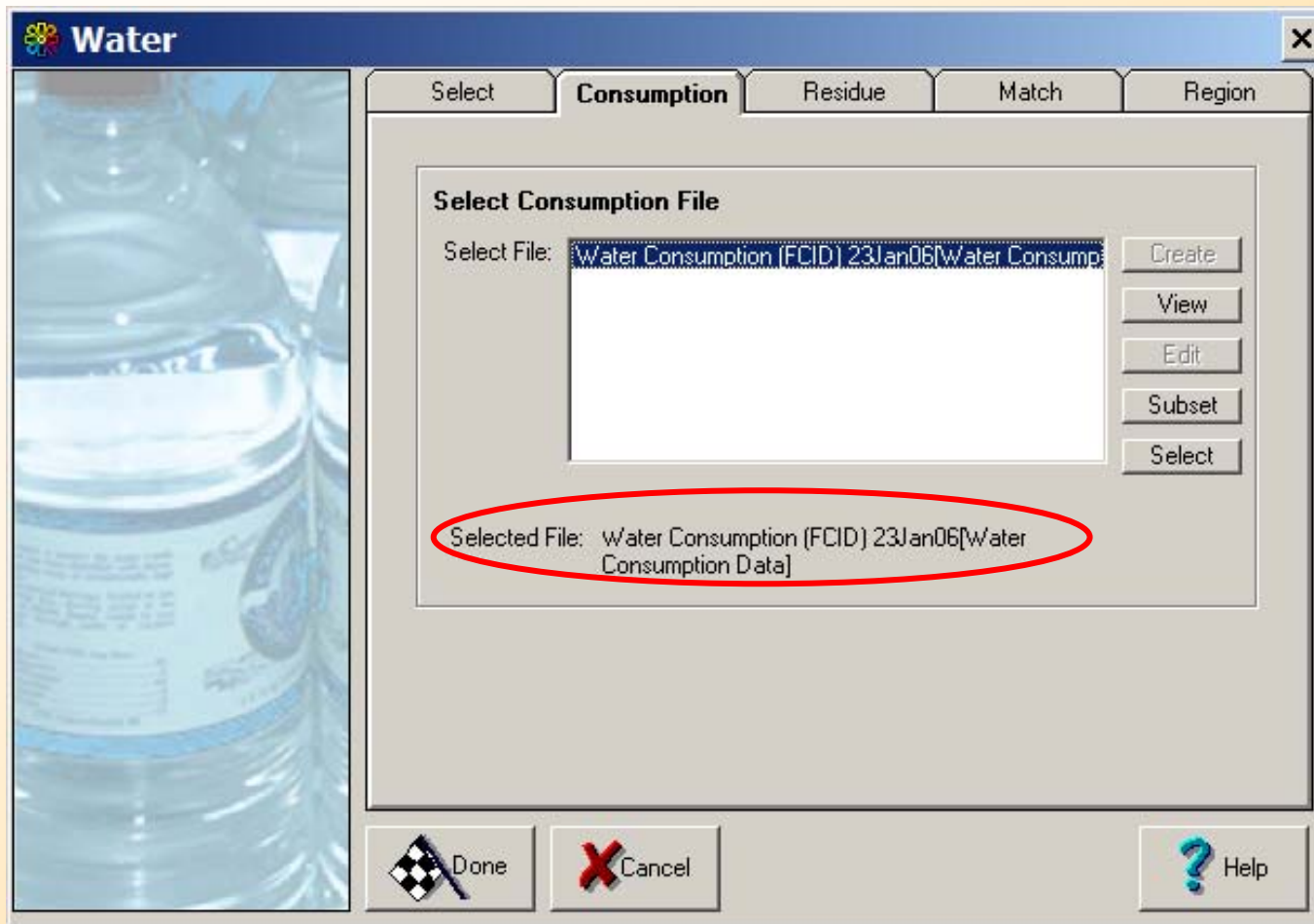
- Select Chronic endpoint

Water Selector



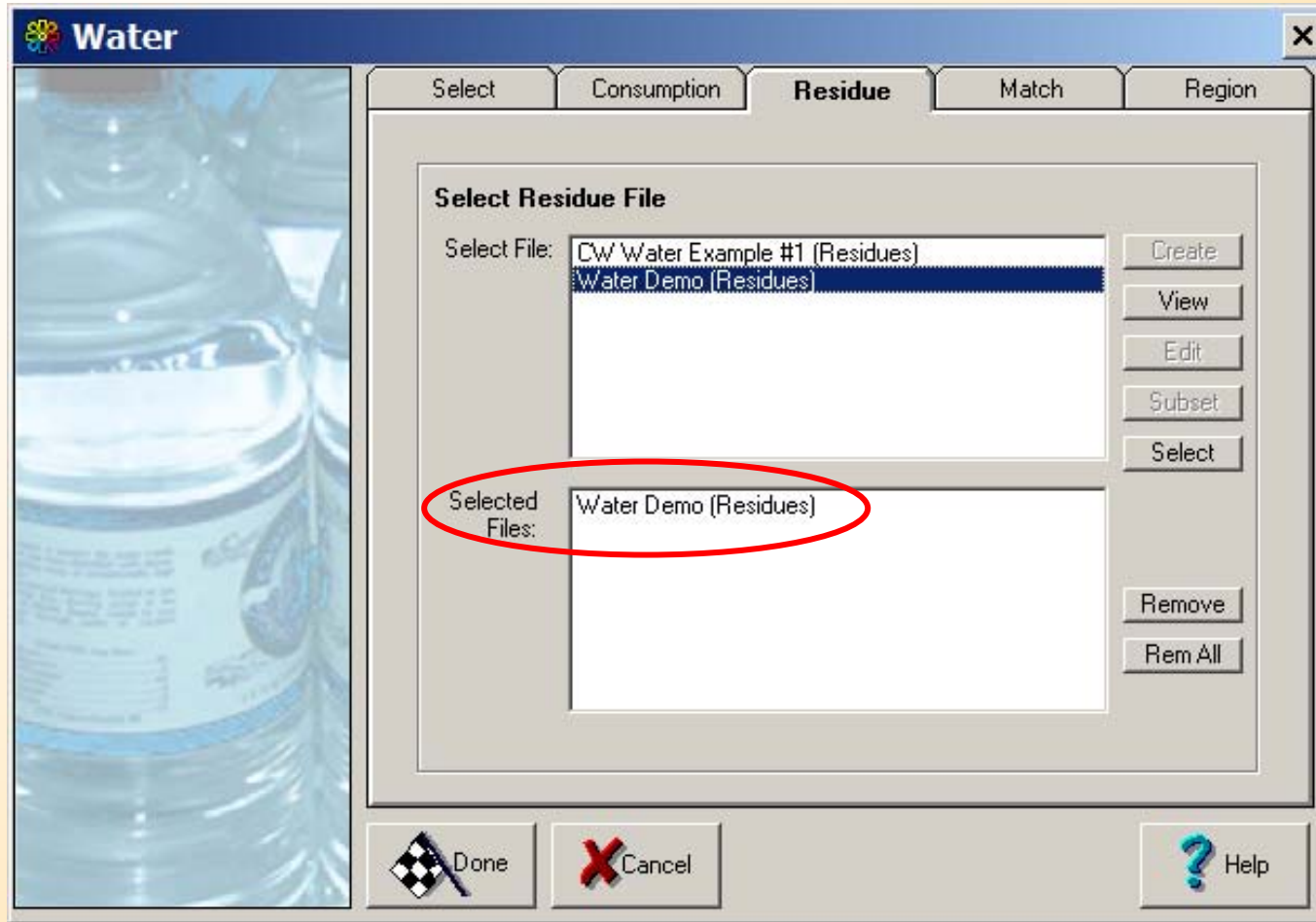
- Keep defaults all water types

Water Selector - Consumption



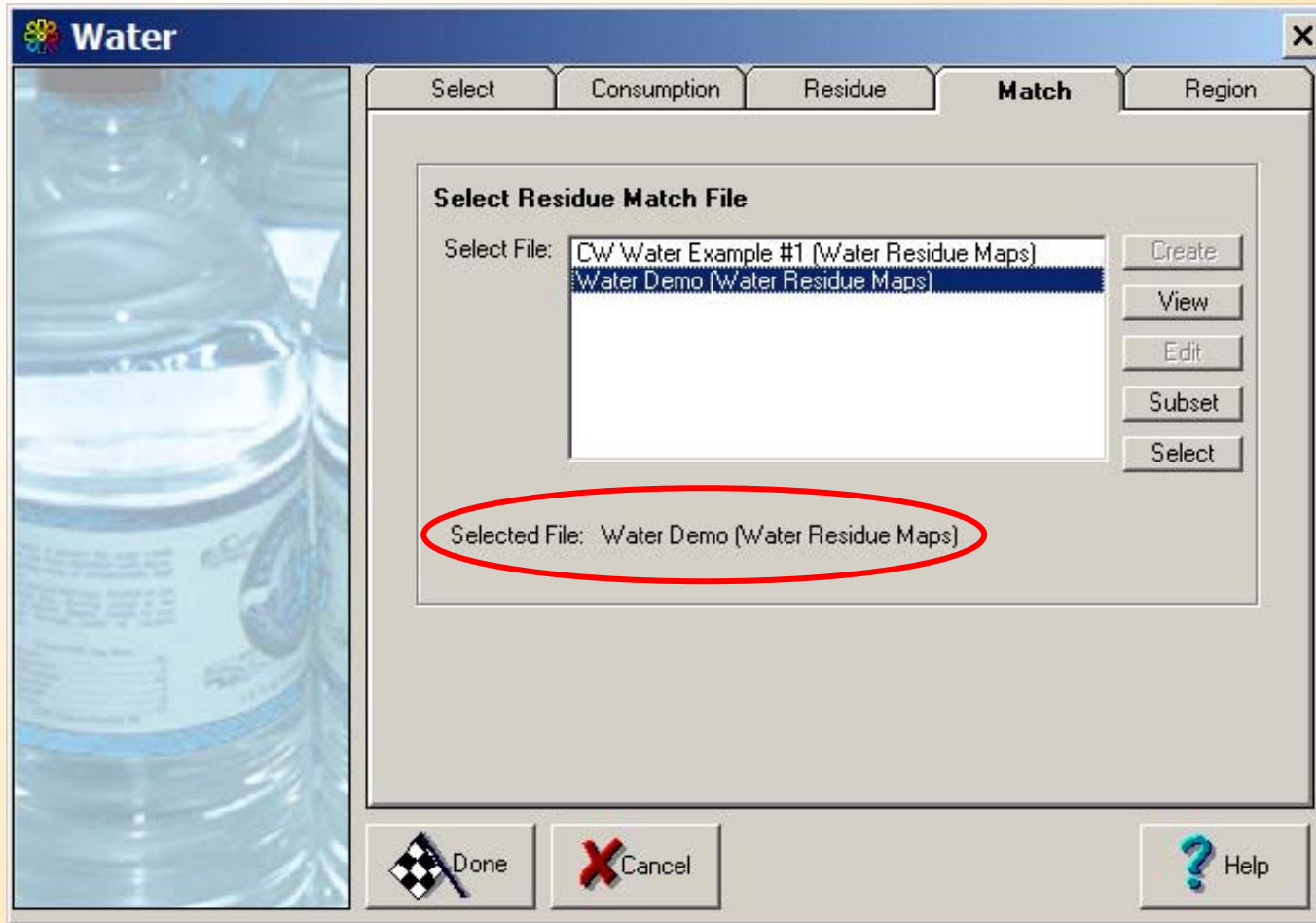
- Double-click on file.

Water Selector - Residue



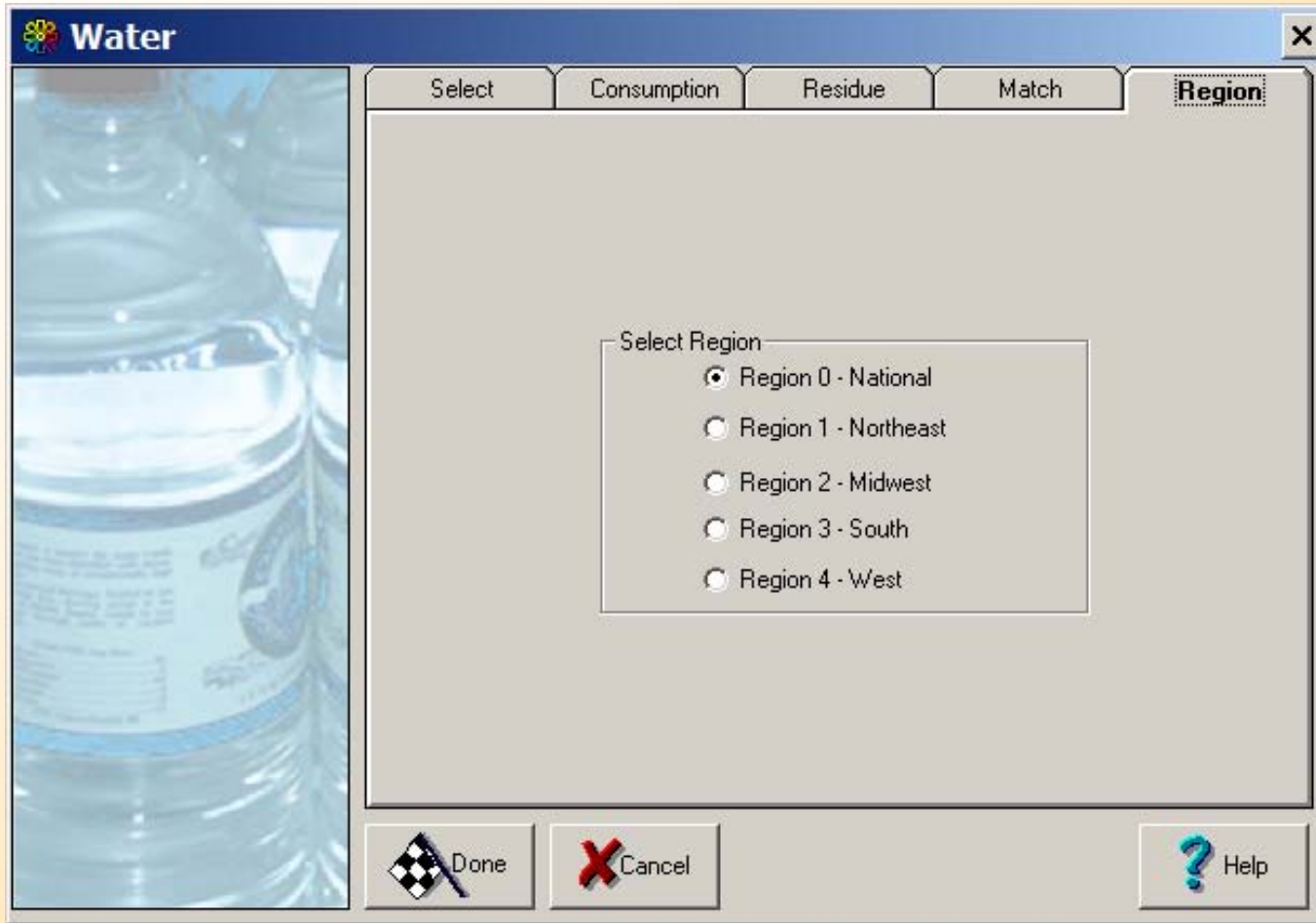
- Double-click Example #1

Water Selector - Match



- Double-click Example #1

Water Selector - Region



- Not currently used
- Geographical capabilities for water assessment



Water Analysis

Run Parameters

Percentiles Options

Random Seed Limits Outputs Avg. Period

Random Seed:

 Done  Cancel



Run Parameters

Percentiles Options

Random Seed Limits Outputs Avg. Period

Number of people to output daily exposure estimates, by water
 All People

Report exposure estimates greater than or equal to
(mg/kg/day)

 Done  Cancel

- Keep defaults

Water Analysis

Run Parameters

Percentiles Options

Random Seed Limits **Outputs** Avg. Period

Dietary Exposure, Annual, By Individual
 Dietary Exposure, By Day, By Water
 Dietary Exposure, By Day, By Chemical

Done
 Cancel

Run Parameters

Percentiles Options

Random Seed Limits Outputs **Avg. Period**

Water Exposure, By Day (Moving Average)

- Averaging period 1: 7 days
- Averaging period 2: 14 days
- Averaging period 3: 21 days
- Averaging period 4: 28 days

Output TEDs greater than: 0.000001

Done
 Cancel

- Create 7-Day Moving Average

Water Analysis

Run Parameters

Random Seed Limits Outputs Avg. Period

Percentiles Options

P%() Ranges

	Start	Stop	Increment
Range 1	100	80.01	-0.01
Range 2	80	0	-1
Range 3			
Range 4			

Done Cancel

Run Parameters

Random Seed Limits Outputs Avg. Period

Percentiles **Options**

Automatically Estimate Exposure Limit to Exclude

P%(): 90

Number of People: 100

Source Considerations

Enable Water Source Considerations Output SetID

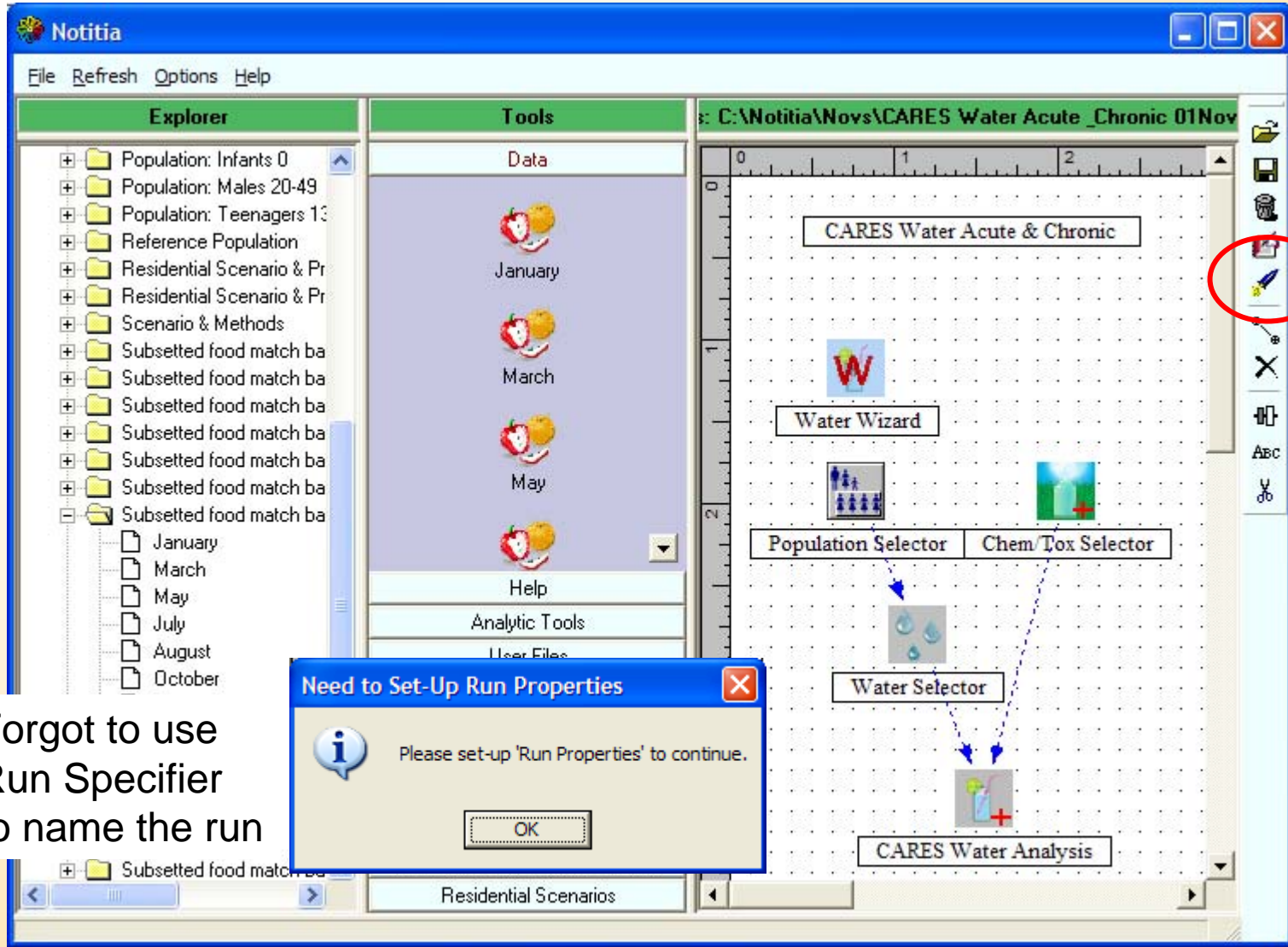
Acute/Chronic

CARES		EPA
<input checked="" type="checkbox"/> Acute (MOE)		
<input checked="" type="checkbox"/> Acute (aPAD)		
<input checked="" type="checkbox"/> Chronic (MOE)		<input checked="" type="checkbox"/> Chronic (MOE)
<input checked="" type="checkbox"/> Chronic (cPAD)		<input checked="" type="checkbox"/> Chronic (cPAD)
<input checked="" type="checkbox"/> Chronic (Cancer Risk)		<input checked="" type="checkbox"/> Chronic (Cancer Risk)

Done Cancel

- Select Output SetID and Acute/Chronic

Run Assessment



Run Canvas




Forgot to use Run Specifier to name the run


Water Output

Right-Click on Water Analysis icon select View Current
 Check output tables or select all and click View button

Outputs

- Chronic - Exposure Percentiles
- Chronic - Exposure, By Water
- Chronic - Risks
- Drinking Water Acute TED Percentiles
- Drinking Water Exposure, By Day, By Chemical
- Drinking Water Exposure, By Individual, By Day
- Drinking Water Exposure, By Individual, By Year
- Drinking Water Moving Average TED Percentiles
- Drinking Water TED, By Day
- Drinking Water TED, By Day (Moving Average)
- Drinking Water, Sampling Information

 Done

 View

Selection

All

None

Acute Results

Drinking Water Exposure, By Individual, By Day

File Data Statistics Graph Options Help

Contribution Analysis Tool

	CARES ID	Day	Chemical	Food	Consumption (g/kg/day)	Residue (mg/g)	SetID	Exposure (mg/kg/day)	TED	MOE	Residue Attributes
1	01-0023871-03	1	12-345-6	86011000	17.39	9.065e-07	1994 860110	1.576e-05	1.576e-05	31718	/None/Modeli
2	01-0023871-03	2	12-345-6	86011000	6.745	9.571e-05	1994 860110	6.456e-04	6.456e-04	774	/None/Modeli
3	01-0023871-03	2	12-345-6	86021000	5.969	9.571e-05	1994 860110	5.713e-04	5.713e-04	875	/None/Modeli
4	01-0023871-03	3	12-345-6	86012000	28.98	3.991e-05	1994 860110	1.157e-03	1.157e-03	432	/None/Modeli
5	01-0023871-03	3	12-345-6	86021000	13.27	3.991e-05	1994 860110	5.296e-04	5.296e-04	944	/None/Modeli
						1.647e-05	1994 860110	1.385e-04	1.385e-04	3609	/None/Modeli
						1.107e-05	1994 860110	2.712e-04	2.712e-04	1843	/None/Modeli

Drinking Water Acute TED Percentiles

File Data Statistics Graph Options Help

	Percentile	TED (Weighted)	MOE (Weighted)	TED (Weighted, Per Capita)	MOE (Weighted, Per Capita)	%PAD
1	100.000	2.571e-02	19	2.571e-02	19	1542.6659
2	99.990	2.172e-02	23	2.172e-02	23	1303.1459
3	99.980	2.083e-02	24	2.083e-02	24	1249.7755
4	99.970	1.915e-02	26	1.908e-02	26	1144.7452
5	99.960	1.885e-02	27	1.883e-02	27	1129.8061
6	99.950	1.858e-02	27	1.858e-02	27	1114.7501
7	99.940	1.751e-02	29	1.751e-02	29	1050.6691
8	99.930	1.727e-02	29	1.720e-02	29	1031.9728
9	99.920	1.715e-02	29	1.710e-02	29	1026.2462
10	99.910	1.703e-02	29	1.701e-02	29	1020.7087
11	99.900	1.635e-02	31	1.621e-02	31	972.6749

Notitia Graph

Key	Description	Percentile
1	Direct Tap Water	48.03 %
2	Direct Bottled water	22.82 %
3	Indirect Tap Water	17.85 %
4	Indirect Bottled Water	9.02 %
5	Direct Other Water	2.20 %

Loaded Drinking Water Acute TED Percentiles Records = 2081

Moving Average

Drinking Water TED, By Day (Moving Average)

File Data Statistics Graph Options Help

1

	CARES ID	Start Day	TED1	MOE1	TED2	MOE2	TED3	MOE3	TED4
1	01-0023871-03	1	8.481e-04	589	0.000e+00	-1	0.000e+00	-1	0.000e+00
2	01-0023871-03	2	8.951e-04	558	0.000e+00	-1	0.000e+00	-1	0.000e+00
3	01-0023871-03	3	7.548e-04	662	0.000e+00	-1	0.000e+00	-1	0.000e+00
4	01-0023871-03	4	5.932e-04	842	0.000e+00	-1	0.000e+00	-1	0.000e+00
5	01-0023871-03	5	7.515e-04	665	0.000e+00	-1	0.000e+00	-1	0.000e+00
6	01-0023871-03	6	7.132e-04	701	0.000e+00	-1	0.000e+00	-1	0.000e+00
7	01-0023871-03	7							
8	01-0023871-03	8							

Loaded Drinking Water TED, By Day

- Up to 4 different moving average calculations

Drinking Water Moving Average TED Percentiles

File Data Statistics Graph Options Help

1

	Percentile	TED1 (Weighted)	MOE1 (Weighted)	TED2 (Weighted)	MOE2 (Weighted)	TED3 (Weighted)	MOE3 (Weighted)	TED4 (Weighted)	MOE4 (Weighted)
1	100.000	7.132e-03	70	0.000e+00	1000000	0.000e+00	1000000	0.000e+00	1000000
2	99.990	6.775e-03	74	0.000e+00	1000000	0.000e+00	1000000	0.000e+00	1000000
3	99.980	6.726e-03	74	0.000e+00	1000000	0.000e+00	1000000	0.000e+00	1000000
4	99.970	6.655e-03	75	0.000e+00	1000000	0.000e+00	1000000	0.000e+00	1000000
5	99.960	6.501e-03	77	0.000e+00	1000000	0.000e+00	1000000	0.000e+00	1000000
6	99.950	6.374e-03	78	0.000e+00	1000000	0.000e+00	1000000	0.000e+00	1000000

Loaded Drinking Water Moving Average TED Perce | Records = 2081

Chronic Rules for Average Residue

Table 8-2. CARES Methods for Calculating Average Residue Values

Toxicological Endpoint	Residue Type	Procedure for Calculating Average Residue Value
Chronic (NOAEL) ¹	Single Value	Single value
	Monitoring	(No chronic outputs provided)
	Modeling	90 th percentile value of N average
Chronic (Cancer) ²	Single Value	Single value
	Monitoring	(No chronic outputs provided)
	Modeling	Average of (N x 365) values
¹ Chronic MOEs are based on the percentiles derived from annual average exposures for all CARES individuals included in a model run.		
² Lifetime cancer risk is based on the average of all the annual average exposures for all CARES individuals included in a model run.		

EPA Chronic

Chronic - Exposure, By Water

File Data Statistics Graph Options Help

1

	Chemical	Food Code	Chronic Method	Residue Average (ppm)	Consumption Average (g/kg)	Chronic Exposure (mg/kg/day)	Consumption Average (Infants) (g/kg)	Chronic Exposure (Infants) (mg/kg/day)	Consumption Average (Children 1-2 yrs) (g/kg)	Chronic Exposure (Children 1-2 yrs) (mg/kg/day)	Consumption Average (Children 3-5 yrs) (g/kg)	Chronic Exposure (Children 3-5 yrs) (mg/kg/day)	Consumption Average (Children 6-12 yrs) (g/kg)	Chronic Exposure (Children 6-12 yrs) (mg/kg/day)
1	12-345-6	86011000	Chronic (NOEL)	2.000e+01	8.545e+00	1.709e-01	4.928e+00	9.857e-02	1.345e+01	2.690e-01	1.351e+01	2.703e-01	1.057e+01	2.113e-01
2	12-345-6	86011000	Chronic (Cancer)	2.000e+01	8.545e+00	1.709e-01	4.928e+00	9.857e-02	1.345e+01	2.690e-01	1.351e+01	2.703e-01	1.057e+01	2.113e-01
3	12-345-6	86012000	Chronic (NOEL)	2.000e+01	3.444e+00	6.888e-02	3.330e+00	6.659e-02	4.186e+00	8.373e-02	4.616e+00	9.232e-02	2.448e+00	4.896e-02
4	12-345-6	86012000	Chronic (Cancer)	2.000e+01	3.444e+00	6.888e-02	3.330e+00	6.659e-02	4.186e+00	8.373e-02	4.616e+00	9.232e-02	2.448e+00	4.896e-02

Loaded Chronic - Exposure, By Water

Deterministic approach based on current EPA Policy is to calculate chronic exposure with a deterministic equation:
(average residue x average consumption).

Chronic - Risks

File Data Statistics Graph Options Help

1

Row Seq	Output	U.S. Population	Infants	Children 1-2 yrs	Children 3-5 yrs	Children 6-12 yrs	Youths 13-19 yrs	Adults 20-49 yrs	Adults 50+ yrs	Females 13-49 yrs
1	Chronic Exposure (EPA) (mg/kg/day)	4.39e-01	1.35e+00	6.50e-01	5.95e-01	4.14e-01	2.97e-01	4.24e-01	4.27e-01	4.17e-01
2	Chronic MOE (EPA)	0	0	0	0	0	0	0	0	0
3	%cPAD (EPA)	146308.77	451600.31	216760.34	198349.13	137971.92	98946.15	141480.76	142174.77	138951.28
4	Chronic Exposure - Cancer (EPA) (mg/kg/day)	4.39e-01	4.39e-01	4.39e-01	4.39e-01	4.39e-01	4.39e-01	4.39e-01	4.39e-01	4.39e-01
5	Chronic Risk - Cancer (EPA)	2.19e-03	2.19e-03	2.19e-03	2.19e-03	2.19e-03	2.19e-03	2.19e-03	2.19e-03	2.19e-03
6	Chronic Exposure - Cancer (CARES) (mg/kg/day)	1.60e-03	-	-	-	-	-	-	-	-
7	Chronic Risk - Cancer (CARES)	8.00e-06	-	-	-	-	-	-	-	-

Loaded Chronic - Risks

Records = 7

Row: 7, Col: 4

Probabilistic Chronic

Drinking Water Exposure, By Individual, By Year

	CARES ID	Chemical	365 Day Total	Maximum of Daily	Annual Average	TED	MOE
1	01-0023871-03	12-345-6	5.923e-01	1.259e-05	1.623e-03	1.623e-03	308
2	04-0002538-04	12-345-6	5.970e-01	1.586e-05	1.636e-03	1.636e-03	305
3	04-0006637-03	12-345-6	6.300e-01	1.256e-05	1.726e-03	1.726e-03	289
4	04-0049509-04	12-345-6	5.491e-01	1.493e-05	1.504e-03	1.504e-03	332
5	04-0070329-04	12-345-6	6.910e-01	1.908e-05	1.893e-03	1.893e-03	264
6	04-0077225-13	12-345-6	5.670e-01	1.196e-05	1.553e-03	1.553e-03	321
7	06-0006970-04	12-345-6	6.102e-01	1.303e-05	1.672e-03	1.672e-03	299
8	06-0011436-06	12-345-6	6.197e-01	1.859e-05	1.698e-03	1.698e-03	294

Loaded Drinking Water Exposure, By Individual, By Year | Records = 100

Chronic - Exposure Percentiles

	Percentile	Chronic Exposure (mg/kg/day)	Chronic MOE	%cPad
1	100.000	1.930e-03	16	6.43e+02
2	99.990	1.930e-03	16	6.43e+02
3	99.980	1.930e-03	16	6.43e+02
4	99.970	1.930e-03	16	6.43e+02
5	99.960	1.930e-03	16	6.43e+02
6	99.950	1.930e-03	16	6.43e+02
7	99.940	1.930e-03	16	6.43e+02
8	99.930	1.930e-03	16	6.43e+02
9	99.920	1.930e-03	16	6.43e+02
10	99.910	1.930e-03	16	6.43e+02
11	99.900	1.930e-03	16	6.43e+02

Loaded Chronic - Exposure Percentiles | Records = 2081

- Calculates the Annual Average from the 365 day probabilistic exposure profile for each individual
- Creates percentile distribution of Annual Average
- There is no guidance or policy on the appropriateness or use of probabilistic chronic exposure distributions for dietary (water) assessments.

Questions?