

**Alaska Department of Environmental Conservation  
Contaminated Sites Program  
Instructions for Running the Cumulative Risk Calculator**

October 4, 2019

This calculator tool is designed to generate cumulative risk calculations for the compounds present at your site.

1. Navigate to: <http://dec.alaska.gov/spar/csp/Calculators.htm> **NOTE:** This tool works best with Firefox or Chrome browsers.

2. Click on the link to the Cumulative Risk Calculator

3. **Select Scenario:** Several options are given.

### Select Scenario

- Resident
- Indoor Worker
- Outdoor Worker
- Groundwater

4. If you have chosen a scenario other than groundwater, **select the Precipitation Zone.** Otherwise, proceed to Step 5.

### Select Precipitation Zone:

- Soil (Arctic Zone)
- Soil (< 40" Precipitation Zone)
- Soil (> 40" Precipitation Zone)

5. **Select Chemical Info Type:** choose Database hierarchy defaults

### Select Chemical Info Type

- Database hierarchy defaults
- User-provided

6. **Select RfD/RfC Type:** choose Chronic

### Select RfD/RfC Type:

- Chronic
- Subchronic

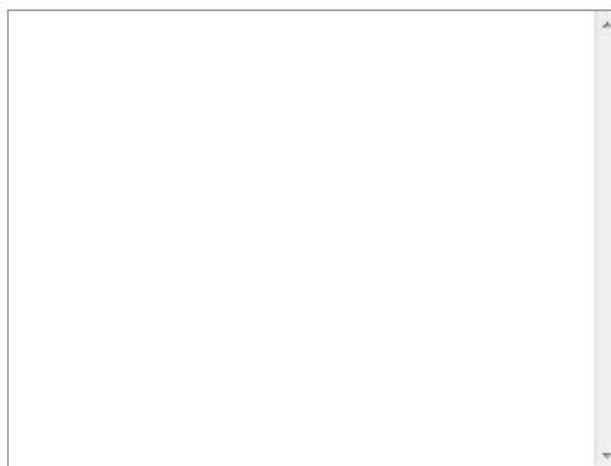
7. **Select Individual Chemicals** by name or CAS Number, using the arrow buttons as shown. You can set the cursor inside the box, type the first few letters of the name or digits of the CAS number to select the compound you want. Holding down control (Ctrl) key allows for individual selection of multiple compounds with your mouse, while the shift key allows for corresponding rows to be selected. Use the arrow buttons to add or remove chemicals by name or CAS number in the selection box. Checking the Or Select All box inserts all the chemicals in the selection box.

### Select Individual Chemicals



A list of chemicals with 'Acenaphthene (83329)' selected. The list includes: Acenaphthene (83329), Acenaphthylene (208968), Acetone (67641), Aldrin (309002), Ammonium Perchlorate (7790989), Anthracene (120127), Antimony (metallic) (7440360), Arsenic, Inorganic (7440382), Barium (7440393), Benz[a]anthracene (56553), Benzaldehyde (100527), Benzene (71432), Benzo[a]pyrene (50328), and Benzo[b]fluoranthene (205992).

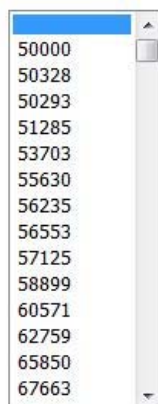
### Selected



An empty rectangular box for selected chemicals.



### Or Select Individual CAS Numbers



A list of CAS numbers: 50000, 50328, 50293, 51285, 53703, 55630, 56235, 56553, 57125, 58899, 60571, 62759, 65850, and 67663.

8. **Number of Extra Chemicals:** If you select “test chemical” in step 8, you can enter data for a chemical not found in the list. Users can calculate cleanup levels for up to 13 non-listed chemicals at a time. In the dropdown box enter here the number of chemicals you wish to add to calculate risk. (See “**Inputting Information for Added Chemicals**, below.)

### Number of Extra Chemicals



A dropdown menu with a downward-pointing arrow.

Use this option to calculate risk for chemicals not in the database. You will be asked to fill out the form for toxicity values and chemical-specific parameters on the next page.

9. **Include Metadata:** Select “yes” if you want additional outputs giving details about the toxicity of the selected chemicals (e.g. target organs, critical effects, etc.) in a separate output.

#### **Include Metadata**

Yes

10. **Include CDIs in Output:** Select “yes” if you want the chronic daily intake for the different pathways outputted in the results.

#### **Include CDIs in Output**

Yes  
\*very wide

11. **Include Toxicity in Output:** Select “yes” if you want the toxicity data for the different chemicals outputted in the results.

#### **Include Toxicity in Output**

Yes  
\*very wide

12. **Hit Retrieve:**

Retrieve

13. **Enter Media Concentration(s)** in the corresponding box next to the chemical(s). Here is where you enter the highest concentration of the chemical remaining at the site.

**MEDIA CONCENTRATIONS**

**If a concentration is missing for a particular medium, put a "." (dot or period) in the input field.**

Chemical	Soil (<40" Precipitation Zone) (mg/kg)
Acenaphthene (83329)	<input type="text"/>
Acenaphthylene (208968)	<input type="text"/>
Acetone (67641)	<input type="text"/>
Aldrin (309002)	<input type="text"/>
Ammonium Perchlorate (7790989)	<input type="text"/>

14. **Hit Retrieve** by scrolling to the bottom of the page.

You can also view the results on the next page. At the top of the page you can choose to export the results to either a spreadsheet or a pdf file. Alternatively you can scroll down to the bottom of the page and use the horizontal scroll bar to view the results.

**Site-specific Risk Models**

**R si Cumulative Risk Calculator for Soil (>40" Precipitation Zone)**

ca=Cancer, nc=Noncancer, ca\* (Where nc CL < 100 x ca CL), ca\*\* (Where nc CL < 10 x ca CL),  
 max=CL exceeds ceiling limit (see User's Guide), sat=CL exceeds csat, sol=CL exceeds Solubility  
 I=IRIS; D=Drinking Water/Health Advisory Goals; P=PPRTV; A=ATSDR; C=Cal EPA; X=APPENDIX PPRTV SCREEN; H=HEAST; S=SURROGATE

Chemical	Ingestion HI Child	Inhalation (Volatiles) HI Child	Inhalation (Particulates) HI Child	Dermal HI Child	Noncarcinogenic HI Child	Ingestion Risk	Inhalation (Volatiles) Risk	Inhalation (Particulates) Risk	Dermal Risk	Carcinogenic Risk
Acenaphthene	.11E-04	-	-	6.51E-05	2.76E-04	-	-	-	-	-
Acenaphthylene	.69E-02	-	-	5.21E-03	2.21E-02	-	-	-	-	-
Acetone	.09E-04	2.94E-05	8.00E-11	-	2.38E-04	-	-	-	-	-
Aldrin	.83E-01	-	-	-	6.83E-01	3.92E-05	3.33E-06	4.90E-10	-	4.25E-05
Ammonium Perchlorate	.50E-04	-	-	-	1.50E-04	-	-	-	-	-
<i>*Total Risk/HI</i>	<i>1.01E-01</i>	<i>2.94E-05</i>	<i>8.00E-11</i>	<i>5.27E-03</i>	<i>7.06E-01</i>	<i>3.92E-05</i>	<i>3.33E-06</i>	<i>4.90E-10</i>	-	<i>4.25E-05</i>

*Scroll*



Output generated 29APR2016:13:35:45