



Update for ATSDR Health Assessors

Including APPLETREE Partners
(Internal Use Only)

Guidance & Clearance News

September 2020

The purpose of this newsletter is to keep you informed about the guidance and resources that are available for use in your health evaluations.

ANNOUNCEMENT OF PHA WEBINARS



ATSDR invites you to attend the Public Health Assessment (PHA) Training Series. This series is tailored to public health assessors, program managers, and other health professionals involved in the PHA, whether from ATSDR or Appletree recipients. It consists of nine webinars on the ATSDR's PHA process and features subject matter experts in the field. The webinars are scheduled from August to December 2020.

Registration: Click [here](#) to register for the webinars.

Upon registration, you will receive an email with details on how to connect and join the webinar series. From that email, you can add the first webinar session to your personal calendar using the "Add to Calendar" hyperlink. For the other webinars in the series, you will receive a calendar appointment through Outlook to reserve the times for those sessions on your calendar.

You will also receive reminder emails from customercare@gotowebinar.com with the same webinar join information one week and one day before each webinar session. Please note that for those who may be using CITGO to access the webinar, you may need to access it another way. One approach is to send the email to your personal Outlook account and access it that way.

Date/Time: All webinars are from 1:30-3:00 pm, EST, except **Webinar 5 (1:30-3:30 pm, EST)**.

PHA Training Webinars:

1. ATSDR's PHA Process Overview, and Site Information and Data Gathering – *(Completed on 08/05/2020—see [Webinar 1 Link](#))*
2. Exposure Pathway Evaluation – *(Completed on 08/19/2020--see [Webinar 2 Link](#))*
3. Selection of Sampling Data – 09/02/2020
4. Data Screening Analysis – 09/16/2020
5. The Health Effects Evaluation Process, Estimating Exposure Point Concentrations, and Defining Exposure Units – 09/30/2020
6. Exposure Calculations (e.g., doses, hazard quotients) – 10/14/2020
7. Toxicological Evaluation – 10/28/2020
8. Clear Writing of Environmental Health Information – 11/18/2020
9. Engaging the Community – 12/02/2020

Pre-requisites:

1. **Please complete the online modules and materials listed below before attending each of the corresponding webinars.**

This information provides fundamental information for the live presentations.

The online modules are posted in CDCTRAIN. After clicking on the modules, either create an account or login to CDCTRAIN to start the course.

You can obtain continuing education credits at the end of each module.

- Webinar 1: [Module 1](#) [Module 2](#) [Module 3](#)
- Webinar 2: [Module 4](#)
- Webinar 3: [Module 5](#)
- Webinar 4: Module 6*
- Webinar 5-7: Module 7*
- Webinar 8: Module 8*
- Webinar 9: Updated Guidance Material*

*Upcoming webinars and material. We will provide you with this information once it becomes available.

Send any questions about the online modules that you would like the SMEs to discuss during the live webinars. Send the information to Rebecca.DeVries@erg.com by **the Friday before each webinar**. For those unable to attend, recordings of all webinars will be available to ATSDR and its APPLETREE recipients.

Evaluating Cancer Risk for Intermittent/Seasonal Exposures

In our health assessment work, we often have scenarios where persons are exposed for less than a full year. Some examples could be when a child wades or swims in a stream during the summer months or when a family uses a potable well only seasonally while camping or renting. These exposure scenarios could end after just one season (year) or could have been occurring seasonally for many years. So, you may ask yourself if you should calculate a cancer risk for these exposure scenarios? In many cases, the answer is “yes”!

Scenario #1: Intermittent/seasonal exposure for only one year

For a site where we expect snow cover 6 months/year, a completed exposure pathway exists for trespassing on the site. The site data indicate exposure to several potentially carcinogenic chemicals above their CREGs. It was documented that this exposure occurred for only one year because the state environmental agency was alerted about the trespassing and they subsequently took actions to prevent trespassing in the future.

You should:

- a. Calculate a cancer risk using $EF = (\# \text{ days per week}/7) \times (6/12) \times (1/78)$, but only for chemicals that are mutagenic*. Please note that you will also need to enter the number of days per week you think the trespassing occurred.
- b. For chemicals that are promoters**, do not calculate a cancer risk because a 1-time exposure for 6 months is not likely to be long enough to promote cells through cancer stages.

* Anything that causes a mutation (a change in the DNA of a cell). DNA changes caused by mutagens may harm cells and cause certain diseases, such as cancer. Examples of mutagens include radioactive substances, x-rays, ultraviolet radiation, and certain chemicals.

** A substance, not in itself capable of causing cancer, that, operating in conjunction with other agents, promotes the development of cancer.

Scenario #2: Intermittent/seasonal exposure that occurs for more than one year

A stream used by local children to wade or swim during the warmer months (determined to be 6 months) is located near your site. In addition, community members told you that they know that this activity has been on-going for many years. Subsequently, you determine that a completed exposure pathway exists because sampling data indicate that the site has contaminated the stream surface water and sediment with several potentially carcinogenic chemicals above ATSDR CREGs.

You should:

Calculate cancer risk using $EF = (\# \text{ days per week}/7) \times (6/12) * (\# \text{ years of exposure}/78)$ for both mutagens and non-mutagens (i.e., promoters). Please note that you will need to enter the number of days per week you assume the wading and swimming occurs and the number of years you assume the activity occurred.

In the scenarios above, we use a 6-month timeframe as a general guide to determine a duration when one should consider calculating a cancer risk for mutagens or chemicals with age-dependent adjustment factors (ADAF). However, there is nothing special about 6 months, particularly for mutagens; you could apply Scenario

#1 for any exposure duration that is less than a year. Applying Scenario #2 for promoters where the exposure is only one month a year for multiple years is not likely a reasonable assumption for promoting cells through the different stages of carcinogenesis.

Mutagenic chemicals are identified on the EPA’s Regional Screening Levels (RSL) table and can be found in <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016>. This list may be updated and should be checked for all contaminants at a site. In addition, the health guideline module in PHAST has information about whether a chemical is a mutagen. ATSDR toxicological profiles also have a section on this, including bacterial tests that are used to identify whether a chemical directly damages DNA.

Cancer Classifications

Agency	Cancer Class*	
EPA	CH	
NTP	2	Reason
IARC	1	Carcinogenic
NIOSH		

*Some cancer class abbreviations were created by ATSDR and are listed here for ease of use only.

Is contaminant classified as mutagen? Yes

Are ADAFs applied in PHAST? Yes

You should contact the ADS staff or PHAST@cdc.gov should you have an intermittent exposure scenario where you want to calculate cancer risk. It may be possible to set up some cancer risk calculations in PHAST; whereas, other cancer risk calculations will have to be completed outside of PHAST.

EPA's Lead Evaluation Tools – Update

ATSDR's evaluation of lead exposure is multi-faceted and considers the following:

- media concentrations (arithmetic mean) exposure unit concentrations,
- characteristics of the exposed populations
- factors associated with the risk for higher blood lead levels (BLLs) (e.g., age of housing, race, country of origin)
- other local sources of lead exposure
- measured BLLs of the children exposed (if available)
- local blood lead data
- finalized EPA lead models

EPA developed three lead evaluation models for risk assessments and cleanup decisions.

Below we provide an update on the status of EPA lead models and their availability for ATSDR use.

- Integrated Exposure Uptake Biokinetic (IEUBK) Model
- Adult Lead Model (ALM)
- All Ages Lead Model (AALM) *Draft Release*

The IEUBK Model

The IEUBK model is designed to integrate exposure from lead in air, water, soil, dust, food, paint, and other sources with pharmacokinetic modeling to predict blood lead levels (BLLs) in children 6 months to 7 years of age. The model estimates a distribution of blood lead concentrations centered on the geometric mean blood lead concentration.

IEUBK model - Children

- Predicts BLL distribution for children 6 months to 7 years as a group or a specific age
- **Minimum** exposure duration is **3 consecutive months** for at least **one day per week**

Note: The geometric mean is a type of mean or average, which indicates the central tendency or typical value of a set of numbers by using the product of their values (as opposed to the arithmetic mean which uses their sum).

A detailed description of the model and supporting documentation is available on EPA's web site:

<https://www.epa.gov/superfund/lead-superfund-sites-frequent-questions-risk-assessors-integrated-exposure-uptake>

The currently approved model version is the IEUBKwin 1.1. EPA is in the process of updating the model. The draft IEUBKwin 2.0 version is projected to be released in 2020.

Important note: ATSDR does not endorse the use of draft release models. Only finalized versions of validated models can be cited in ATSDR health evaluations. The IEUBKwin 1.1 and ALM are the currently approved models.

Adult Lead Methodology (ALM)

The Adult Lead Methodology (ALM) predicts the risk of elevated blood lead levels in adult women, including from soil lead exposure in non-residential settings (such as the workplace). However, the ultimate receptor is the unborn child. This model predicts BLLs for adults exposed in non-residential settings. The ALM is recommended for repeated intermittent or continuous exposures over extended periods; it should not be used for acute exposures. EPA developed the ALM in 1996 as interim guidance until release of the more comprehensive All Ages Lead Model. In 2017, EPA updated default values that incorporate the 2009-2014 National Health and Nutrition Examination Survey (NHANES) data details that can be found at EPA's website: <https://semspub.epa.gov/work/HQ/196766.pdf>.

ALM model - Pregnant women

- Predicts BLL for pregnant women and their developing babies
- Use 2017 updated default values

A detailed description of the model and supporting documentation is available on EPA's web site: <https://www.epa.gov/superfund/lead-superfund-sites-frequent-questions-risk-assessors-adult-lead-methodology>.

All Ages Lead Model (AALM) **Draft Release – Not for official ATSDR use**

The All Ages Lead Model (AALM) estimates the effect of lead exposures from various media (air, water, food, dust, soil) on lead concentrations in blood, bone, and various other tissues of humans from infancy through 90 years of age. The AALM estimates lead in blood and other tissues following acute exposures, transiently reoccurring exposures, and chronic exposures for individuals of any age.

AALM model - Any age

- Predicts BLL and internal lead levels for any age person
- Lead from various media (air, water, food, dust, soil)
- Acute, transient, recurring, and chronic exposures

EPA released the draft AALM version 2.0 in 2019. A detailed description of the model and supporting documentation is available on EPA's web site: <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=343670>. On August 3, 2020, EPA's Scientific Advisory Board issued their review of the draft model. EPA will address comments and release the final report and modeling tool on the EPA website. A projected date has not been made. This model is available for exploratory analyses by ATSDR staff, but the AALM should not be used to make a health conclusion at a site until EPA finalizes the model.

Rounding Doses, Hazard Quotients, and Cancer Risk in Public Health Documents

Recently, the ADS staff have seen some variation in how reports deal with significant figures, so we thought we'd suggest some guidelines for rounding doses, hazard quotients, and cancer risk.


1. PHAST reports doses using two significant figures so dose tables in your documents should show two significant figures. Showing the dose with two significant figures will allow ADS staff to confirm an HQ or cancer risk calculation.
2. For $HQ < 1$, PHAST reports two significant figures (e.g., 0.57). Having HQs in two significant figures might be useful when calculating hazard index (HI) for mixtures (see caution below). However, it is not important when evaluating a single chemical. Therefore, when $HQ < 1$, report them as one significant figure (e.g., 0.6).
3. For $HQ > 1$ but < 10 , PHAST reports the HQ as two significant figures. Your document should report HQ between 1 and 10 as two significant figures.
4. For $HQ \geq 10$, PHAST reports the HQ as a whole number (e.g., 20). Your document should show $HQ \geq 10$ as a whole number.
5. When reporting cancer risk estimates, PHAST reports the risk using two significant figures (e.g., $1.8E-5$). Your document should **report the cancer risk using one significant figure** (e.g., $2E-5$) because the uncertainty in cancer risk estimates warrants reporting only one significant figure.


Caution: When you are conducting a series of calculations by hand do not round numbers while doing intermediate calculations. Round only the final number. This will help to avoid introducing error in the final number.

The following tables show the original table generated by PHAST and the modified table using the rounding rules above.

Modified table following the rounding rules described previously.

Table 1. Residential: Default exposure doses for chronic exposure to benzene in drinking water along with non-cancer hazard quotients and cancer risk estimates

 Exposure Group	RME Dose (mg/kg/day)	RME Non-cancer Hazard Quotient	RME Cancer Risk	RME Exposure Duration for Cancer (yrs)
Birth to < 1 year	0.014	14 [†]	-	1
1 to < 2 years	0.0078	11 [†]	-	1
2 to < 6 years	0.0056	8.8 [†]	-	4
6 to < 11 years	0.0044	5.5 [†]	-	5


 Exposure Group	RME Dose (mg/kg/day)	RME Non-cancer Hazard Quotient	RME Cancer Risk	RME Exposure Duration for Cancer (yrs)
11 to < 16 years	0.0035	1.6 [†]	-	5
16 to < 21 years	0.0034	0.8	-	5
Total Child	-	-	7E-5 [‡]	21
Adult	0.0039	0.6		33

[†]A shaded cell indicates the hazard quotient exceeds the non-cancer health guideline, which ATSDR evaluates further.

[‡] A shaded cell indicates that the cancer risk exceeds one extra case in a million people similarly exposed, which ATSDR evaluates further.

Original Table generated by PHAST showing non-rounded numbers.

Table 1. Residential: Default exposure doses for chronic exposure to benzene in drinking water along with non-cancer hazard quotients and cancer risk estimates.

 Exposure Group	RME Dose (mg/kg/day)	RME Non-cancer Hazard Quotient	RME Cancer Risk	RME Exposure Duration for Cancer (yrs)
Birth to < 1 year	0.014	14 [†]	-	1
1 to < 2 years	0.0078	11 [†]	-	1
2 to < 6 years	0.0056	8.8 [†]	-	4
6 to < 11 years	0.0044	5.5 [†]	-	5
11 to < 16 years	0.0035	1.6 [†]	-	5
16 to < 21 years	0.0034	0.82	-	5
Total Child	-	-	7.1E-5 [‡]	21
Adult	0.0039	0.61	9.3E-5 [‡]	33

How to Use Health Guidelines and Hazard Quotients in Public Health Documents

As you know, the starting point for deciding whether non-cancerous harmful effects might be possible in exposed persons involves using health guidelines like a minimal risk level (MRL), reference dose (RfD), or reference concentration (RfC). A hazard quotient (HQ), which is the ratio of a site-specific dose to the health guideline, is often used to numerically show whether the health guideline has been exceeded. For example, an HQ of 0.5 means that the site-specific dose is below the health guideline and that non-cancerous effects are not likely based solely on exposure to this chemical. It's important to remember, though, that when the HQ exceeds 1, it does not mean that harmful effects will occur.

First, let's look at the official definition of an MRL, RfD, and RfC. *Source of EPA definitions: [EPA definitions](#)

Minimal Risk Level (MRL)—An estimate of daily human exposure to a hazardous substance that is likely to be without an appreciable risk of adverse noncancer health effects over a specified route and duration of exposure. ATSDR develops MRLs for oral and inhalation exposure and for acute (≤ 14 days), intermediate (15—364 days), and chronic (≥ 365 days) exposure durations.

Reference Dose (RfD)*— An estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure for a chronic duration (up to a lifetime) to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime.

Reference Concentration (RfC)*—An estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure for a chronic duration (up to a lifetime) to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime.

One common theme in all three definitions is that when the site-specific doses or concentrations are below the health guideline, then people are not at (appreciable) risk of non-cancerous harmful effects. It's important to remember that the definitions do not say that persons are at risk if the health guideline is exceeded.

Thus, if your HQ exceeds 1, you will need to conduct a toxicological evaluation to determine whether persons are at risk of non-cancerous health effects. This evaluation involves comparing the site-specific dose or air concentration to animal or human doses or concentrations that cause harmful effects. This topic is covered in the 2005 Public Health Assessment Manual (PHAGM) and is being expanded in the updated PHAGM currently being drafted.

For some additional insight into this toxicological evaluation process, review this 2020 presentation by Drs. Andy Prussia (OIA) and David Mellard (OCHHA): [Understanding How Benchmark Dose analysis Effects Public Health Assessments](#). This presentation describes how animal or human NOAELs and LOAELs are used in benchmark dose modeling to derive benchmark dose lower confidence limits (BMDLs). BMDLs are modeled concentrations with a defined risk level and are based on NOAELs, LOAELs, and other dose-response data. BMDLs provide a better understanding of potential health effects at different exposure levels than NOAELs and LOAELs alone, and they also consider uncertainties. The PowerPoint linked above includes a case example using 1,2,3-trichloropropane that shows how to compare site-specific doses to BMDLs when deciding the risk of non-cancerous health effects.

PHAST v1.7 Enhancements

ATSDR continues to make enhancements to PHAST based largely on comments sent to PHAST@cdc.gov, Technical Project Officers, and the PHAST team. Your suggestions for improving PHAST are important so please keep them coming!

The following enhancements have been made to PHAST v1.7:

1. Numerous admin features have been added to PHAST. These features are available only to PHAST team members. One important feature is the ability for PHAST team members to add a contaminant to the PHAST database. Once a contaminant is added, you will be able to screen and calculate doses for that new contaminant. If health guidelines or cancer values are available, PHAST will calculate hazard quotients and cancer risk estimates.

You can request a contaminant be added to the PHAST database by sending an email to PHAST@cdc.gov. At the request of a state partner, two chemicals have been added to the PHAST database: heptane (142-82-5) and 4-ethyltoluene (622-96-8).

2. PHAST will now display air results in $\mu\text{g}/\text{m}^3$ or ppb for any contaminant that has a molecular weight. Formerly, this was allowed only for contaminants that were designated as a VOC.
3. When importing contaminants for screening against air CVs, PHAST allows greater flexibility in the units the results are displayed.
4. PHAST no longer displays contaminant names in all caps.
5. Earlier PHAST versions allowed you to only view the combined residential soil results from the Quick Summary screen. You can now view default residential soil results for ingestion only and dermal only from the Quick Summary.

Quick Summary

The Quick Summary displays the results for the default residential scenario for exposure to soil/sediment through ingestion and dermal contact combined. To view ingestion only and dermal only results, click "Enter Site-Specific Parameters" above, enter your site-specific or default information, and calculate results. The calculations use [default exposure parameters](#) from ATSDR's Exposure Dose Guidance.

Collapse All
Show Default Combined Residential Results
Show Default Residential Results by Route

Results for the Highest Exposed Group	Value	Notes
Arsenic		
Chronic Hazard Quotient	0.22	Doses for all standard age groups are below the chronic health guideline.
Intermediate Hazard Quotient	NA	No intermediate health guideline. Review doses for each age group.
Acute Hazard Quotient	0.11	Doses for all standard age groups are below the acute health guideline.
Cancer Risk	> 1.0E-6	Review cancer risks for adults and children; See CVs and Health Guidelines Module for additional cancer class information.

6. You can now generate default results when running soil occupational scenarios. Default occupational results are based on default occupational exposure parameters shown in the table below.

Drinking Water Ingestion | Surface Water Ingestion & Dermal | **Soil/Sediment Ingestion & Dermal** | Air Inhalation | Food Ingestion

Dose Calculator: Soil/Sediment Ingestion & Dermal

This module calculates default and site-specific doses, hazard quotients, and cancer risks.

Help ?
Show Equations +

Contaminant Information | **Exposure Groups and Body Weights** | Exposure Factors | Intake Rates | Adherence Factors | Skin Surface Areas | Results

Exposure Groups and Body Weights

Because the dose calculator is scenario driven, only select exposure groups that have the same exposure factors. If you have groups with different exposure factors, enter them as separate scenarios.
Select one or more exposure groups from a single residential, occupational, trespasser/recreational, or other scenario.

Residential Scenario | **Occupational Scenario** | Trespasser/Recreational Scenario | Other Scenarios

Select a standard worker group for your occupational scenario or enter a custom group. If you add a custom exposure group, enter a body weight and exposure duration for each.

Exposure Group	Body Weight (kg)
<input type="checkbox"/> Workers - indoor	80
<input type="checkbox"/> Workers - outdoor (low intensity soil contact)	80
<input type="checkbox"/> Workers - outdoor (high intensity soil contact)	80

Exposure Group	Body Weight (kg)	Duration (years)	Notes
Add Custom Exposure Group			

[Enter Exposure Factors](#) ?
[Calculate Default Results](#) ?

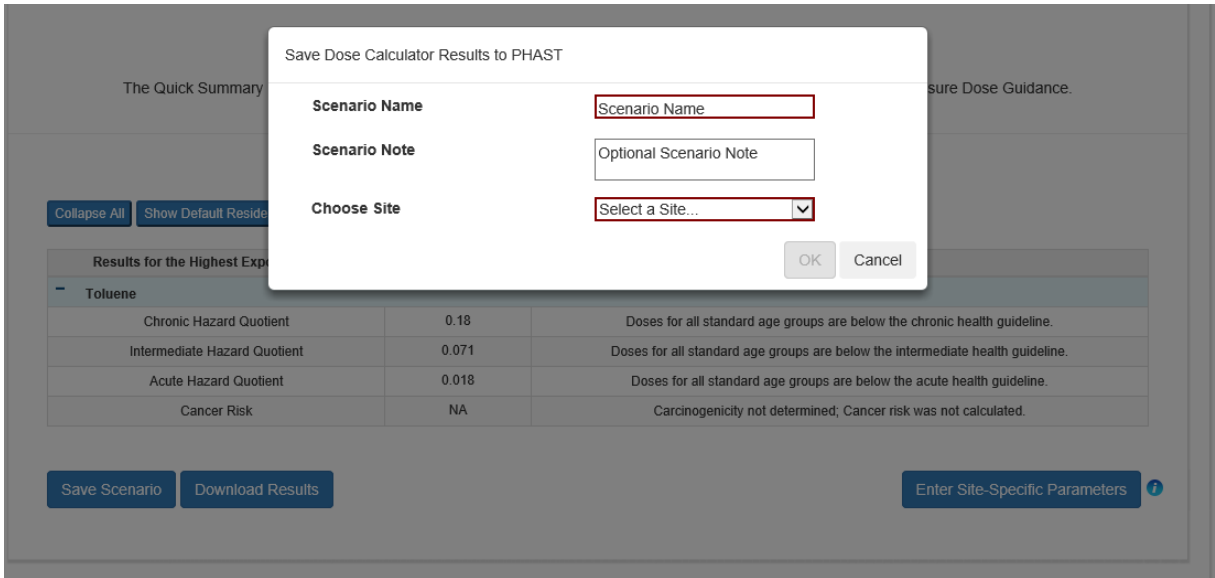
Exposure Group	Body Weight (kg)	Intake Rate (mg/day)	Adherence Factor to Skin (mg/cm ² -event)	Combined Skin Surface Area (cm ²)	Notes
Workers - indoor	80	30	0.07	3,470	
Workers - outdoor (low intensity soil contact)	80	100	0.07	3,470	
Workers - outdoor (high intensity soil contact)	80	330	0.07	3,470	

Exposure Factors

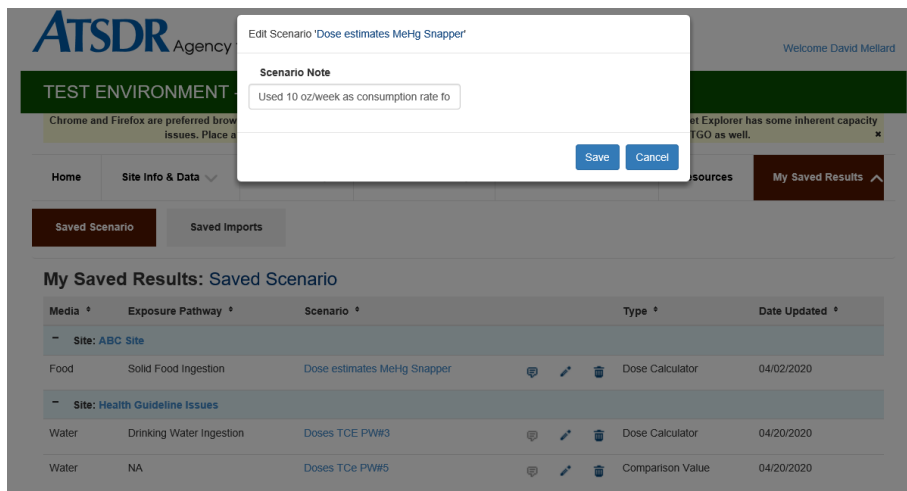
Duration	Days	Weeks	Years	Non-Cancer Exposure Factor
Acute				1
Intermediate	5	50		<u>0.71</u>
Chronic	5	50	CTE: 6.6 yrs RME: 25 yrs	<u>0.68</u>

EF cancer: $EF_{\text{non-cancer}} \times \text{Age-Specific Exposure Duration (years)}/78 \text{ years}$
 EF dermal: The dermal absorbed dose equation includes a 1 event/day EF parameter.

- If you add multiple custom groups in the dose calculator module, PHAST will now display the custom groups in the order they were entered. This is also true for scenarios retrieved from "My Saved Results."
- The dose calculator results now have floating headers to help users scroll through data with many contaminants and still see the header row.
- You can now add a note with information about your run when saving your scenarios in PHAST to "My Saved Results."



10. You can also add and edit notes for already saved scenarios by clicking the new note icon from the list of saved scenarios. This might be particularly useful as you add more saved scenarios to “My Saved Results” and need to distinguish between different runs for the same site.



11. Saved scenarios are now grouped by scenario.
12. PHAST now displays a table of contents when dose calculator results are downloaded into a report. The instructions to health assessors that appear on the report’s title page are now media-specific.

Creating Effective Maps for Health Assessments

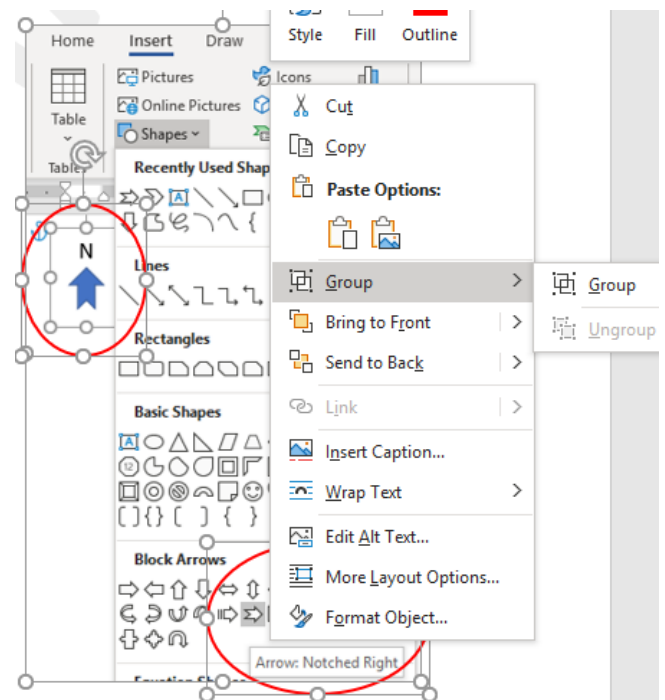
Maps play a crucial role in most health assessments by allowing authors to share data and site characteristics by location. They are a familiar and transparent way to show where contamination is and how it migrates relative to points of exposure. Maps are generally well-received and improve credibility and interaction with communities.

Maps can be created with the help of ATSDR's Geospatial Research, Analysis and Services Program (GRASP) or used from other reports. GRASP is adept at data visualization that is often more user friendly than those from technical reports. If using maps from other sources, we need to check for the following:

1. Scale bar. Most maps should already have a scale bar. If the map is an image file and does not have a scale bar, one will need to be drawn. If author is unsure about the scale, find the area using an online map and create an approximate scale bar; provide a note that the scale is approximate.
2. North arrow. This is easy because maps are almost always rotated with North up. Verify that the map is oriented this way and draw the arrow pointing straight up (see screenshot tips below). Create the arrow then copy and paste it into a text box containing the N for North.
3. Legend. What do those dots/symbols represent? Insert a text box showing their meaning.
4. Descriptive title.
5. Source of the image or map should be credited in small font underneath. Give credit to the last modifier of the map (e.g. the original image maybe belonged to ESRI but Weston modified it and put it in their report; credit Weston).

These things can be inserted quickly and easily using Word or PowerPoint drawing tools after importing the map image file. Be sure to use the 'Group' function so that what you draw does not move around on the image (shift+left click each item, then right click and select Group). The inserted drawn symbols don't need to be fancy. For maps created in a GIS, it is usually easier to go back to the GIS program to do this. If using a figure from another report, cover the previous Figure # to prevent confusion. You may also have to cover the old legend with a new one if the names or reference/sample numbers don't make sense in the context of your document.

Privacy considerations may come into play when using maps in health assessments. In general, ATSDR avoids using names and/or addresses to identify sample results. This can make it difficult to present spatial information. Maps are a useful way to show contaminant levels and locations without explicitly stating private information. Using data points with darker or stronger colors helps data visualization tremendously.



Stay one step ahead on 508 compliance with a few quick checks. One way to check for enough contrast between elements is to view the map's readability in black and white. Avoid using red and green together. Include alternative or

alt text that describes the information portrayed and locations shown on the map. For example: *Figure 1 is an aerial photograph of the site. The marked site boundary, soil contamination locations, and elementary school are highlighted to show the proximity of the contamination to the elementary school.* If you're uncertain how to add alt text to a table or image, search YouTube for instructions. Here are two videos that show how to add alt text to WORD for an image and a table: <https://www.youtube.com/watch?v=RWpw1Wd3wQg> and <https://www.youtube.com/watch?v=V2ojLTX5cNw>. Many other instructional videos are available for different versions of Word. Find one that fits your version.

What New ATSDR Guidance is Evolving?

Do you know where to find all the latest FINAL ATSDR guidance documents? All of the latest guidance documents are posted in the [Resources Section in PHAST](#). The table below shows new guidance coming soon!

Guidance Topics	Status	Point(s) of Contact
Particulate Matter Guidance	Summer 2020	Michelle Colledge; Greg Ulirsch
Exposure Point Guidance for Non-Discrete Sampling	Winter 2021	Greg Ulirsch; James Durant
Exposure Point Concentration (EPC) Guidance for PAHs	Fall 2020	Greg Ulirsch; James Durant
Exposure Unit (EU) Guidance	Fall 2020	Greg Ulirsch; James Durant
Air Exposure Dose Guidance	Fall 2020	Michelle Colledge