Welcome to aquaNation version 1.0! Here you will find a step-by-step guide explaining the various functionalities and features of the current Map Tool. In order to find instructions on a particular function, like saving, printing, etc., type the desired function into the dialogue box and you will be directed to the respective informative section.

Please enjoy the tool and happy mapping!

<Note – we should just use a dialogue box as the input, and we can have the program catch a bunch of relevant catchphrases to show the relevant section – like if they put in select it takes them to Toggleable Options>Value Selector, if they type in save or saving or anything with “sav” we can probably just direct them to File>Save, etc.>

# **Main User Interface**

## Map

* The map is fully clickable.
* When a state is clicked, a dialogue box appears in which the user can enter particular water values for the state.
* The value is then displayed underneath the state name on the map.

## Right Input Column

### Value Setter

1. Enter the postal code (ex. NE, WY, IL) of the intended state or the full state name (ex. Nebraska, Wyoming, Illinois).
2. Then, enter the water sample value.
3. The value has been successfully mapped to the state, and will be displayed on the map.

### Value Getter

1. Enter the postal code (ex. NE, WY, IL) or the full state name (ex. Nebraska, Wyoming, Illinois) of the state which you require water sample values.
2. The value will then be displayed below the “Get Value” box.

### Toggleable Options

#### Show State Names

Toggles on and off the display of the state postal codes on the map.

#### Show Water Values

Toggles on and off the display of water values on the map.

#### Value Selector

Choose between particular stored data types (ex. Arsenic, Radon, Gold, Lead).

### Value Set Adder

1. Type in the desired new data type and press add. (Note: new data type is added to the Value Selector drop-down menu).

# **Toolbar**

## File Tools

### Export

With the export menu, the user is given the option to export the document as any of the following:

* PDF
* CSV
* Text File
* Image

Clicking on any of the previous types in the menu opens a standard dialogue to save the file to a preferred directory.

### Open

The open tool allows the user to access a map data file saved elsewhere on the device, via a standard dialogue.

### Save

The save tool allows the user to save a map data file to a preferred location on the device via a standard dialogue.

### Print

The print tool opens a standard dialogue box to print out the map, complete with customized colors, and with the map displaying the desired data type (ex. Arsenic, Radon, Gold, Lead).

## Edit

The edit section contains standard undo and redo buttons.

### Undo – Ctrl+Z

### Redo – Ctrl+Y

## Options

The options section opens up the Preferences dialogue box, which has a plethora of additional customization options.

### Colors Section

This is the section where one can set particular colors to a given numerical range for a water value type.

#### Remove Parameters

In the furthest right column, one can remove parameters, if there are unnecessary customization boxes for desired colors.

#### Add Parameters

New color parameters can be added via the “Add Another Parameter” button at the bottom.

#### Back Button

The back button cancels all currently recorded color changes and returns the user to the main user interface.

#### Done Button

The done button saves all new changes to color preferences and applies them to the map.

#### Color Parameter Functionality

* The furthest left column allows the user to pick a specific color for the to-be-specified numerical range.
* The user can set particular numerical range using the From and To columns.
* NOTE: If two or more parameters overlap (ie. The user were to specify the range 0.0 <= x < 1.0 for the colors of yellow, blue, and orange), the conflicting parameters will glow red when the user selects the Done button.

### Text Section

#### Font

Use the font drop-down menu to specify a generic text font to be used in the map.

#### Style

The style drop-down menu allows the user to bold or italizize the generic font for the map.

#### Size

The user can use the size drop-down menu to specify a size for the font in the map (though the map may become jumbled if the user selects a font size larger than approximately 14 point font.

## View

The view drop-down menu allows the user to toggle the Right Input Column on the main user interface on and off.

## Analysis

The analysis section is the meat of the product, where the user can find the options to create a timed slideshow, create multiple types of graphs including histograms and box plots, collect statistics, and even develop a spreadsheet.

### Map Slideshow

#### Toolbar

* Options Preferences: The user can select the time interval with which to advance slides.
* View: The user can select whether or not to display state postal code names and water values in a checkbox style.

#### Value Selector

Choose between particular stored data types (ex. Arsenic, Radon, Gold, Lead).

#### Backward and Forward

Move the progress of the displaying map slide forward or backwards.

#### Slider

Allow the user to drag to the desired slide.

#### Start Slideshow

The user can use this button to begin a timed slideshow.

### Map Analysis Tools

#### Histogram

Automatically creates a histogram of values for a particular data type. The number of ranges desired to be displayed can be manually entered below the graph to suit the need of a particular data range.

#### Box Plot

Generates a standard box plot for the selected data type.

#### Values

Creates a table with each state alphabetically organized in the left column. Values for all data types are recorded in additional columns.

* Note: The order of the columns can be adjusted by clicking and dragging any column.

#### Statistics

Generates a standard statistical analysis sheet on the data type selected underneath for all states with recorded values. This section provides the following:

* Mean
* Summation of Values
* Standard Deviation
* Number of Values
* Minimum Value
* First Quartile Value
* Median
* Third Quartile Value
* Maximum Value

#### General

##### Back

Exits from Map Analysis Tools without saving changes.

##### Value Selector

Choose between particular stored data types (ex. Arsenic, Radon, Gold, Lead).

###### Done

Saves changes and returns the user to the main user interface.