



## ISLAND COUNTY PUBLIC HEALTH

### Environmental Health

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The following document provides a detailed description of the symbology (well location icons) utilized in the Island County groundwater database mapping system. The mapping icons provide a significant amount of information regarding the wells, which allows for quick visual identification. The icons described in this document relate to both the database's internal mapping system, google-earth map files (.kml & .kmz), Island County internal and external mapping systems ([ICGeoMap](#), [IC Well Viewer Application](#)), and tabular summary listings created by the data system.

### Horizontal Location Accuracy

A well location icon provides information regarding the accuracy of the well location, both horizontally and vertically. Three levels of horizontal accuracy are provided, as follows:

- An open circle represents a well where the only location information is the ¼ ¼ section description. If the ¼ ¼ section description is correct, the well location is +/- 660 feet in both X and Y coordinates.
- ⊕ A circle overlain with a cross indicates we know that the well is located on a particular parcel of land, but we do not have any information regarding the location of the well on the parcel. The accuracy of this location is inversely proportional to the size of the parcel.
- ⊗ A circle overlain with a cross and a smaller inner circle indicates we know where on the parcel the well is located. Accuracies for these locations are normally that of a typical cell phone GPS.

### Water Quality Information

Information regarding certain water information is also included in the well icon framework. The four quadrants (NE, SE, SW, and NW) are color coded based on four different parameters.





#### Arsenic Concentration

The upper-right quadrant indicates maximum arsenic concentration for the well as follows:

- ⊗ Upper-right quadrant is grey = no arsenic data available.
- ⊕ Upper-right quadrant is green = the maximum arsenic concentration is less than 50% of the MCL (< 0.005).
- ⊗ Upper-right quadrant is yellow = the maximum arsenic concentration is greater than 50% of the MCL, but does not exceed the MCL.
- ⊗ Upper-right quadrant is red = the maximum arsenic concentration exceeds the MCL (> 0.010 mg/l).





### *Chloride Concentration*

The lower-right quadrant indicates maximum chloride concentration for the well, as it relates to [ICC 8.09.099](#) (Seawater Intrusion Protection) as follows:

-  Lower-right quadrant is grey = no chloride data available.
-  Lower-right quadrant is green = the maximum chloride concentration does not exceed 100 mg/l.
-  Lower-right quadrant is yellow = and the maximum chloride concentration is between 100 mg/l, and 250 mg/l.
-  Lower-right quadrant is red = the maximum chloride concentration exceeds 250 mg/l.





### *Hardness Concentration*

The lower-left quadrant indicates maximum hardness (as CaCO<sub>3</sub>) concentration for the well as follows:

-  The lower-left quadrant is grey = no hardness data available.
-  The lower-left quadrant is green = the maximum hardness concentration is less than or equal to 100 mg/l. This water is considered soft to slightly hard.
-  The lower-left quadrant is yellow = the maximum hardness concentration is greater 100 mg/l and less than or equal to 300 mg/l. This water is considered slightly hard to hard.
-  The lower-left quadrant is red = the maximum hardness concentration exceeds 300 mg/l. This water is considered very hard.




### Nitrate *Concentration*

The upper-left quadrant indicates maximum nitrate (total) concentration for the well as follows:

-  The upper-left quadrant is grey = no nitrate data available.
-  The upper-left quadrant is green = the maximum nitrate concentration is less than 50% of the MCL (< 5 mg/l).
-  The upper-left quadrant is yellow = the maximum nitrate concentration is greater than 50% of the MCL, but does not exceed the MCL.
-  The upper-left quadrant is red = the maximum nitrate concentration exceeds the MCL (> 10 mg/l).

### *Water Level Elevation*



The center dot indicates average water level elevation for the well, as it relates to [ICC 8.09.099](#) (Seawater Intrusion Protection) as follows:

-  The center dot is grey = no water level elevation data available\*.
-  The center dot is green = the average water level elevation is greater than 8.4 feet (NAVD88).
-  The center dot is red = the average water level elevation less than or equal to 8.4 feet (NAVD88).

\* Water level elevation is only displayed if the well measuring point has been surveyed, and if there are at least one verified-static depth to water measurement.





### *Other Well Info*

There are two more parameters that are indicated by the well icon, they are:

-  If the well is associated with a public water system, a bright purple outer circle is added.
-  If the well has been abandoned, then the four outer corners are colored red.

### *Other Location Types*

Some location types other than wells can also be displayed:

-  Interties between two water systems.
-  A spring, currently or formerly utilized as a water source.
-  A surface water sampling location (not associated with IC DNR).
-  Some water systems designate a collections of wells as a wellfield, water quality data may be associated with these wellfield sources.

### *Google Earth Maps – Additional Information*

In google earth maps, wells are ‘clickable’ and additional information may be available including scanned well logs, water quality data, links to water systems etc.

### *Google Earth Maps - Public Layers*

Several other data sets are available (in a google earth map) via the Public Layers folder, including:



## Landfills & Setbacks

Washington State law ([WAC 173-160-171.3.b.vi](#)) prohibits the drilling of wells within 1000 feet of a Landfill. Wells should not be drilled within these areas unless a [variance](#) is obtained from the Washington State Department of Ecology.

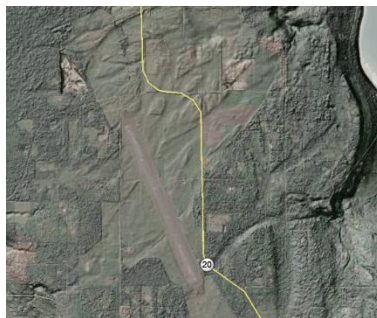
[PDF - Landfill Location Map](#)

[Google Earth - Landfill Location Map](#)



## Parcel Layer

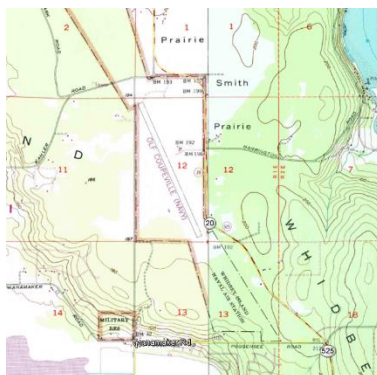
Parcels are 'clickable' to view additional information regarding ownership, valuations etc. Information regarding water source for the parcel is included (if known).



## Lidar DEM Hillshade

LIDAR (Light Distance And Ranging, also known as Airborne Laser Swath Mapping or ALSM) is a relatively new technology that employs an airborne scanning laser rangefinder to produce accurate topographic surveys of unparalleled detail.

This layer can be relatively slow to load.



## USGS Topo Maps

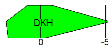
Depending on your zoom level, different maps will be displayed (24K, 100K, 250K). Due to excessive pixilation, topo maps are not displayed when highly zoomed in.

This layer can be very slow to load.



## Public Water Systems Service Area Map

Displays the service area maps for most larger (Group A) water systems. Clicking on an area provides the water system name and ID, and a link to the WA State Dept. of Health's web page for that system.



Displays stiff diagrams for those wells that have requisite chemical analysis.



Displays locations of WA State Dept. of Ecology [hazardous sites](#).



Displays locations of WA State Dept. of Ecology [regulated underground storage tanks \(UST\)](#).



Displays locations of WA State Dept. of Ecology [facility /site data](#) Sites.



## Seawater Intrusion Risk Areas Map

Displays a map of seawater intrusion risk areas as defined by [ICC 8.09.099](#) (seawater intrusion protection). Caution: This map is for reference purposes only. Contact Island County Public Health for a formal seawater intrusion risk rating for your project.

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For questions, comments, or requests for data, please contact:

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For more information regarding the Hydrogeology Program, visit the [Hydrogeology Web Page](#).

For information about other data products available from the Hydrogeology Program visit the [Hydrogeology Data Page](#).

Several documents are available that provide information regarding [Standard](#) and [Extended](#) data packages.