



ISLAND COUNTY PUBLIC HEALTH

Environmental Health

PO Box 5000

Coupeville, WA 98239

P: 360.679.7350 F: 360.679.7390








This document describes the various data products that can be provided from the Island County Hydrogeology Datasystem. Data requests can be made by contacting:

Doug Kelly, Hydrogeologist
Island County Environmental Health
D.Kelly@co.island.wa.us
(360) 678-7885

A data request must include a definition for the search area for which data will be delivered. Three types of search areas can be accommodated:

1. A radial search where a center location is defined, along with a search radius.
2. A rectangular search where the X and Y coordinates of two search corners are defined.
3. A GIS search where a polygon is provided, and the search will identify wells that fall within the polygon.

By far the most common data request is a circular search, centered either on a parcel (center) or a well. A one-half mile radius tends to be a good starting point, although smaller and larger radius' are possible (within reason). The standard data package contains the following items:

<u>Filename</u>	<u>Description</u>
 00_ReadMe	This document, describes the documents that follow
 01_SearchResults.pdf	A tabular listing of wells that fall within the search area
 02_MapImg.pdf	A map (image) of selected well locations
 03_MapGE.kmz	A map (google earth) of selected well locations
 04_TdDist.pdf	A total depth elevation analysis of selected wells
 05_StickImg.pdf	A stratigraphic 'stick diagram' (image) of selected wells
 06_StickGE.kmz	A stratigraphic 'stick diagram' (google earth) of selected wells

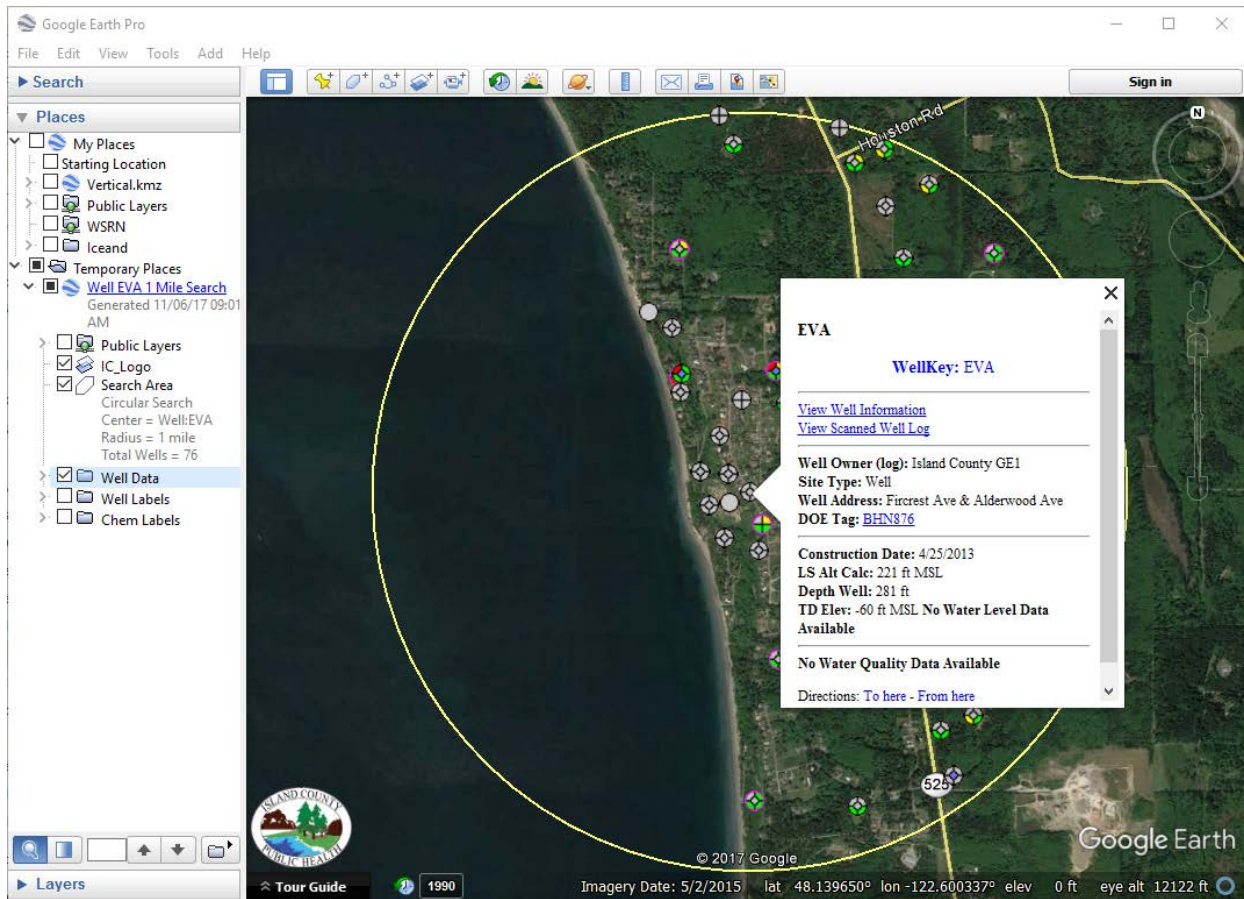
01_SearchResults.pdf is a tabular listing of wells that fall within the defined search area. A description of the fields (legend) utilized in the listing can be found [HERE](#). The WellKey column provides access to additional data (where available) for each well, including scanned well logs, mapping, chemistry and water level data. Click on any WellKey to access additional data.

02_MapImg.pdf is a map (image) of well locations. The well location icon for each well provides information about the well such as the horizontal and vertical well location accuracy, contaminants of concern / water quality. The map image is static and non-interactive, so it lacks some functionality of the second map type (google earth). Additional details regarding the mapping icons can be found [HERE](#). Both the image (02_MapImg.pdf) and google earth (03_MapGE.kmz) maps utilize the same icon strategy.

03_MapGE.kmz is a map (google earth) of well locations. Google earth maps utilize the same icon schemes described above for Image Maps. Well locations in a google earth map are

Revised: 3/29/18

'clickable' resulting in the display of additional information regarding the well as shown in the figure below.



When viewing additional well information, some data for the selected well may be available such as a scanned copy of the well log, and water quality data. Clicking on the blue hyperlinks will download these data for the selected well.

If you have the sidebar enabled in google earth, you can view additional information that is available as part of the google earth map file (03_MapGE.kmz). Clicking on the Public Layers folder will expand the folder to display additional layers of information that can be displayed and interacted with in google earth. Data layers such as parcels, lidar imagery, USGS topos are available (amongst others). A legend/key for the well icon scheme is also available in the public layers folder.

By default, the three-digit Well ID's are not displayed in the google earth map, but these labels can be turned on by checking 'Well Labels' just below the 'Well Data' selector.

A note regarding Google Earth; recently Google has released an online version of Google Earth (as opposed to the desktop versions that have been available previously). At this point, the online version of Google

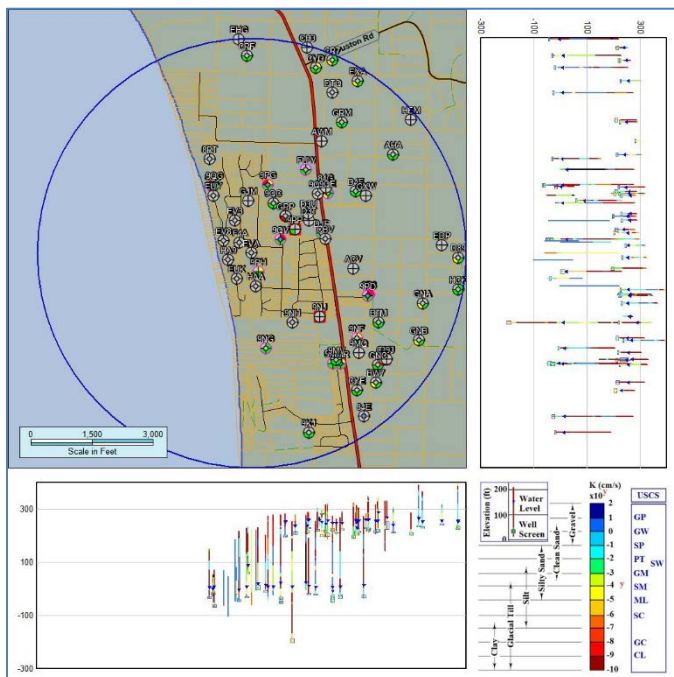
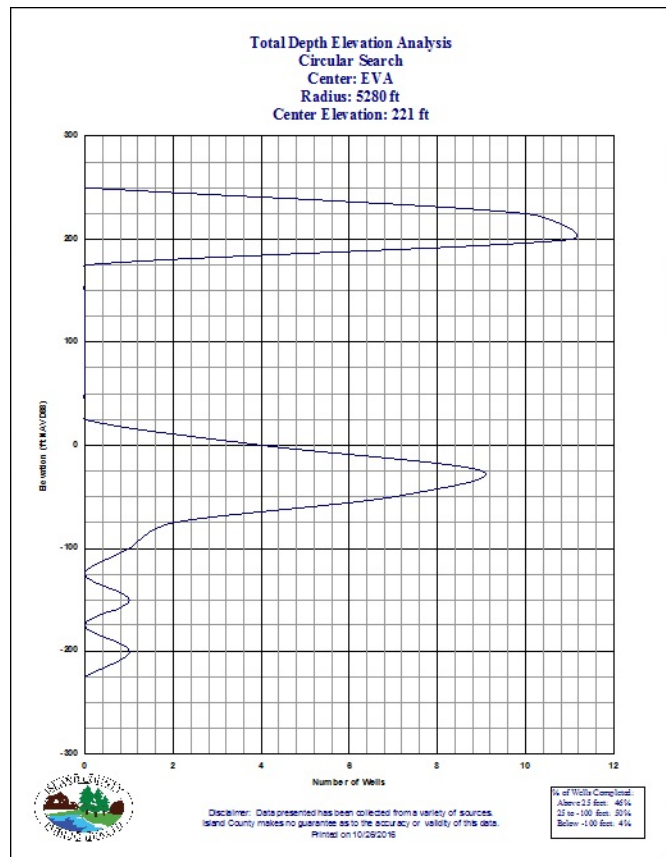


Earth does not support custom icons, so although the maps produced by ICPH will open in the online version of Google Earth, only x's will be displayed.

04_TdDist.pdf is a statistical analysis of well bottom-hole elevations for the wells in the search area. This tool can be used to identify elevations of primary aquifers in the search area. With this information, and an estimate of land surface elevation of a proposed well site, the user can estimate how deep they will need to drill to tap into an aquifer (estimated well depth = land surface elevation - aquifer elevation).

In the example to the right, there are two primary aquifers, one occurring between 200 and 225 feet above sea level, the other between 25 and 50 feet below sea level. If land surface elevation at a proposed well location is 340 feet above sea level, one would need to drill approximately 140 feet to tap into the upper aquifer (340 – 200), or 390 feet to tap into the deeper aquifer (340 – (-50)).

Because the accuracy of our estimate of land-surface elevation for any given well is dependant on the level of horizontal accuracy, only wells that are located to a parcel (or better) are utilized in this evaluation.

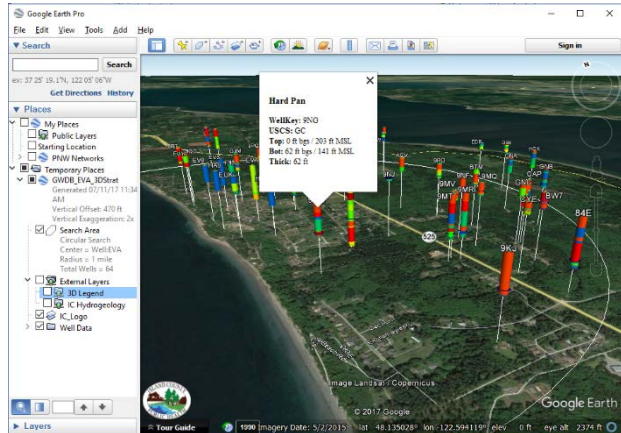


05_StickImg.pdf provides a graphical representation of the stratigraphic log information (stick diagram) for the wells in the search area. A standard map image has two cross-sectional views looking across the mapped area. Just below the map is the east/west cross-sectional view, while a north/south cross section is presented to the right of the map.

For every well (located at least to a parcel) in the search, a colored line is drawn directly below, and to the right of the well location. Colors of the line represent the type of geologic materials as shown on the key in the lower right corner. In general, gravels are blue, sands are green, silts are yellow, and clays /

hardpans are red. Well screens are represented by boxes, water level elevations in each well by the blue triangles. Elevations are in feet MSL. It may be difficult to gain an understanding of the structures of our aquifers by simply looking at well logs, but when you can view the stratigraphic information from 50 or 60 wells at the same time, bands of similar colors can be seen, representing aquifers (blue, cyan and green) and aquitards (yellow, orange and red).

06_StickGE.kmz is a 3D google earth version of the stick diagram described above. The google earth version is interactive, the user can hover their mouse over any section of a well log and the drillers description is displayed. Clicking on a section of a log will provide additional information regarding the elevations, thickness, and drillers description. The small white line below each well extends from the base of the stratigraphic column to the well location on land surface. Clicking on the well label at the top of the well, or the white well location lines provides additional information regarding the well. The public layers folder contains a key / legend for the 3D Stick Diagram. Note that for this data to display properly, Elevation Exaggeration (found under options, 3D View, Terrain) must be set to 1.0 .



An extended data package that contains more sophisticated and/or less commonly utilized data products is also available. A description of the extended data package can be found [HERE](#).

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

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