Well Identification

Objective: Collect information to guide private well water sampling for PFAS in response to a suspected PFAS contamination source or a well water sample in exceedance of a PFAS health advisory level

a. Creation of project management materials
    i. Create a shared folder in the applicable software (Teams, Google Drive, Box, etc.). Add all documents, links, and files mentioned in this toolkit to this folder.
    ii. Make a copy of Template 1A, the Well Identification Spreadsheet and add it to the shared folder. This will help keep track of the following: sampling status, outreach method(s), address, homeowner name, contact information, well ID/Wisconsin Unique Well Number (WUWN), year constructed, well depth, depth of open interval, geologic materials encountered over the open interval, link to well construction report, distance from contaminated well (hotspot) or suspected source of contamination (when available), and notes.
        1. Create a custom map of the study area using GIS software (e.g., ArcGIS Pro) or Google Maps My Maps and save it in the shared folder.

b. Selection of wells to target for PFAS sampling

    i. Choose the designated area to conduct sampling. The project goals will help inform the appropriate location for well sampling (e.g., proximity to an existing contaminated well (hotspot) or suspected source of contamination, areas of high risk, etc.).

        1. Determine groundwater flow direction near the existing contaminated well or source (if known) using a water-table elevation map. Water-table elevation maps based on

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measurements from monitoring wells installed in the study area are preferred; however, this is not economically feasible for most projects. County-scale water-table elevation maps from the Wisconsin Geological and Natural History Survey (WGNHS) are available for many Wisconsin counties and provide generalized water-table elevations and flow directions (Wiersma et al, in review). Contact the WGNHS for assistance determining groundwater flow direction in the study area.

2. If the goal of the project is to sample in proximity to an existing contaminated well with an unknown source, consider targeting wells both upgradient (upflow) and downgradient (downflow) of the contaminated well. It may be helpful to conduct the sampling in phases, starting near the impacted well and then expanding sampling from there (e.g., every ¼ mile). This allows flexibility in the sampling plan as more information is gained regarding the distribution of PFAS in groundwater in the area.
3. If the goal of the project is to sample in proximity to a known or suspected PFAS source, target wells located downgradient of the PFAS source.
4. Another consideration for well selection is the availability of a well construction report, so that well characteristics and local geology can be taken into account. For example, shallow wells (i.e., casing depth < 40 ft) are generally at higher risk for PFAS contamination compared to deep wells (Wisconsin Department of Natural Resources, 2025). However, deeper groundwater can still be affected depending on specific hydrogeologic conditions.

c. Identification of well addresses and well construction reports
    i. Using the custom map, identify addresses in the project area. If using Google Maps My Maps, the fire number will be displayed in the text on the property.
        1. Search the fire number in the Wisconsin DNR Well Construction Report Database. If there is a corresponding well report with a matching well address, proceed to Step ii. Note that older well construction reports are unlikely to list a well address. Furthermore, the location of well construction reports in the DNR database may only be accurate to the

center of a parcel. For these reasons, further investigation using historic land records may be required.

2. If there is not a corresponding well construction report, add a point to a map layer labeled “No report available.”
    a. Note: This does not mean there is not a private well. For help finding a well construction report, contact DNRWELLREPORT@wisconsin.gov. In some cases, there may not be a well construction report, or there is not enough detail on the well construction report to match it to a specific well address.

ii. If the address has a corresponding well construction report, add the address as a point to the Google custom map. Corresponding information should also be added to the Well Identification Spreadsheet. Alternatively, if using GIS software, the DNR has a GIS layer of well construction reports (but note that the locations of the wells are not always accurate (e.g., placed at the centroid of a section or parcel).
    1. Tracking process
        a. Custom map
            i. First, if there is an identified contaminated well (hotspot) or suspected PFAS source, add a pin to this location and label it.
            ii. Search for the identified well address and add it as a point to the map.
                1. Add the well ID (Wisconsin Unique Well Number or WUWN) to point description, or as part of the point name.
        b. Well Identification Spreadsheet (Template 1A)
            i. Add the address of the well to the corresponding column. Confirm the mailing address through the USPS Address Search, as this will be important when conducting outreach.
            ii. Using the OnX hunter app or county land records, identify the homeowner's name for each identified well address. Add this to the appropriate column.
            iii. The well construction reports contain information about the well characteristics. Depending on the project goals, identify which characteristics to add to the spreadsheet.

Template 1A includes the well ID/WUWN, year constructed, well depth, depth of open interval, and geologic materials encountered over the open interval.

1. Determine the well open interval using the depth of well casing and total depth of the well. For instructions on how to interpret a well construction report, see the section 3 module on understanding well construction reports in the Water WELLness: Managing Your Private Well Water System online guide.
2. Add the well construction reports to the shared folder (making a subfolder for the reports) and hyperlink them in the corresponding column spreadsheet.

iv. If the project is based around a contaminated well or suspected source, calculate the distance between that and the identified well using the Google Maps distance ruler or ArcGIS Pro Measure tool.

2. Continue identifying wells and tracking them in the Well Identification spreadsheet. This will be completed when all potential wells within the project area are identified.