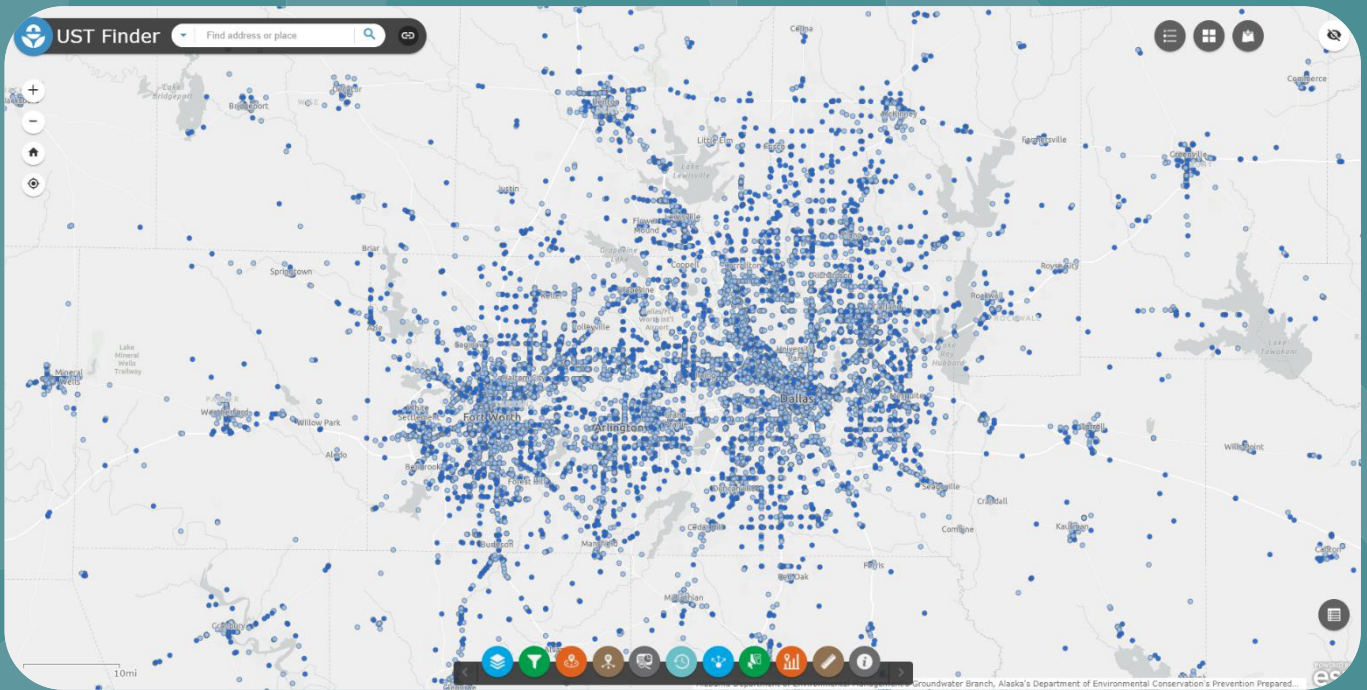**EPA**
United States
Environmental Protection
Agency

UST Finder
User Manual

Office of Research and Development
Center for Environmental Solutions and Emergency Response
Land Remediation and Technology Division

UST Finder
User Manual

Land Remediation and Technology Division
Center for Environmental Solutions and Emergency Response
Cincinnati, Ohio 45268

Notice/Disclaimer

The U.S. Environmental Protection Agency, through its Office of Research and Development, funded and conducted the research described herein under an approved Quality Assurance Project Plan (Quality Assurance Identification Number G-LMMD-0031994-QP-1-1). It has been subjected to the Agency's peer and administrative review and has been approved for publication as an EPA document. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Foreword

The U.S. Environmental Protection Agency (US EPA) is charged by Congress with protecting the Nation's land, air, and water resources. Under a mandate of national environmental laws, the Agency strives to formulate and implement actions leading to a compatible balance between human activities and the ability of natural systems to support and nurture life. To meet this mandate, US EPA's research program is providing data and technical support for solving environmental problems today and building a science knowledge base necessary to manage our ecological resources wisely, understand how pollutants affect our health, and prevent or reduce environmental risks in the future.

The Center for Environmental Solutions and Emergency Response (CESER) within the Office of Research and Development (ORD) conducts applied, stakeholder-driven research and provides responsive technical support to help solve the Nation's environmental challenges. The Center's research focuses on innovative approaches to address environmental challenges associated with the built environment. We develop technologies and decision-support tools to help safeguard public water systems and groundwater, guide sustainable materials management, remediate sites from traditional contamination sources and emerging environmental stressors, and address potential threats from terrorism and natural disasters. CESER collaborates with both public and private sector partners to foster technologies that improve the effectiveness and reduce the cost of compliance, while anticipating emerging problems. We provide technical support to EPA regions and programs, states, tribal nations, and federal partners, and serve as the interagency liaison for EPA in homeland security research and technology. The Center is a leader in providing scientific solutions to protect human health and the environment.

Gregory Sayles, Director
Center for Environmental Solutions and Emergency Response

Abstract

This user manual is a companion to EPA's UST Finder application. It is a step-by-step guide on how to navigate the UST Finder application as well as methods used and background material. You can access UST Finder by clicking here or copying and pasting this link into a browser: https://gispub.epa.gov/ustfinder

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Acronyms and Abbreviations

EJ	Environmental Justice
GIS	Geographic Information System
HUC	Hydrologic Unit Code
LUST	Leaking Underground Storage Tank
NLCD	National Land Cover Database
PWSID	Public Water System Identification
SDWIS	Safe Drinking Water Information System
SPA	Surface Water Protection Area
SWPA	Source Water Protection Area
TOS	Temporarily Out of Service
TrUSTED	Tribal Underground Storage Tanks Database
UST	Underground Storage Tank
WHPA	Wellhead Protection Area

1. Background

UST Finder is an online mapping tool providing access to localized information on the attributes and locations of leaking underground storage tanks (LUSTs), underground storage tank (UST) facilities, and underground storage tanks. UST Finder integrates static, state sourced and EPA sourced tribal data as of 2018-2021. This state and EPA (tribal sites) sourced data was standardized to create a national profile of the 2018-2021 UST and LUST universe by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

UST Finder and associated data are publicly available and free to use. Located on EPA's GeoPlatform, it incorporates UST data into a user-friendly GIS environment where stakeholders, decision-makers, and emergency responders can easily access UST information on a computer, tablet or smartphone.

1.1. Disclaimer of Liability

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2. Data Dictionary

Below are the attribute descriptions of underground storage tank facilities, underground storage tanks, and leaking underground storage tanks.

2.1. Underground Storage Tank Facility Attributes

Table 2.1: UST Facility Attributes

UST Facility Attributes	Description
Facility ID,[1, 3]	Concatenated state abbreviation and facility ID
Name[1, 3]	Facility name
Address[1, 3]	Facility address
City[1, 3]	Facility city
County[1, 3]	Facility county
State[1, 3]	Facility state
Zip Code[1, 3]	Facility zip code
Latitude[1, 2, 3]	Facility latitude
Longitude[1, 2, 3]	Facility longitude
Coordinate Source[2]	The source of the facility's coordinates. Either 'State' sourced or 'Geocode'.
Address Match Type[2]	The geocoded address type. For more information click here. For either state or geocoded coordinate sources, if the facility was outside of its state boundary, it is labeled 'Fail' and no coordinates are mapped.
Open USTs[1, 2, 3]	Count of open USTs
Closed USTs[1, 2, 3]	Count of closed USTs
Temporarily Out of Service USTs[1, 2, 3]	Count of temporarily out of service USTs
Estimated Population within 1500ft*[2]	Estimated 2010 census derived population within 1,500 ft of a facility. ArcGIS's Tabulate Intersection tool was used to calculate 1,500 ft facility buffers to census block population.
Estimated Private Domestic Wells within 1500ft*[2]	Estimated private domestic wells within 1,500 ft of a facility. ArcGIS's Tabulate Intersection tool was used to calculate 1500ft facility buffers to EPA estimated private domestic wells. For more information and to access national well estimates visit EPA's Well Map.
Within 100-year Floodplain*[2]	Denotes ('Yes'/'No') whether a facility is within the EPA estimated 100-year floodplain for the conterminous United States. For more information click here.
Land Use*[2]	The majority land use type within 300 ft of a facility. Land use data is derived from the 2016 National Land Cover Database. Facility land use are identified as developed (open, low, medium, high intensity) or 'non-developed' (encompassing the remaining land use classes).
Within Source Water Protection*[2] Area (SWPA)	Identifies a facility within a federally delineated surface water, source water protection area ('Yes' or 'No'). SPA's are areas of

	interest for the protection of surface water sources of drinking water. By identifying areas significant to drinking water source protection while obscuring the exact locations of intake facilities, this information gives a wide range of planners, policy makers, and practitioners the information needed to target and prioritize areas for protection.
SWPA Public Water System and Facility ID (PWSID)[*2]	Concatenated PWSID (ID that uniquely identifies a Public Water System) and Facility ID (Water system facility ID that, when used with the PWSID, uniquely identifies a water system facility. Note: Facilities from different water systems may have the same Facility ID. There may be repeat Facility ID values).
SPA Water Type[*2]	Code that indicates the source of the water. SW Surface water GU Ground water under the influence of surface water
SPA Facility Type[*2]	Code that indicates the type of water system facility. IG Infiltration Gallery IN Intake RS Reservoir SP Spring WL Well
SPA HUC12[*2]	HUC (Hydrologic Unit Code) determination made with EPA WATERS Web Services and NHDPlus.
Within Groundwater Wellhead Protection Area (WHPA)[*2]	Identifies a facility within a federally delineated wellhead, source water protection area ('Yes' or 'No'). WHPA's are areas of interest for the protection of groundwater sources of drinking water. By identifying areas significant to drinking water source protection while obscuring the exact locations of intake facilities, this information gives a wide range of planners, policy makers, and practitioners the information needed to target and prioritize areas for protection.
WHPA Public Water System and Facility ID[*2]	Concatenated PWSID (ID that uniquely identifies a Public Water System) and Facility ID (Water system facility ID that, when used with the PWSID, uniquely identifies a water system facility. Note: Facilities from different water systems may have the same Facility ID. There may be repeat Facility ID values).
WHPA Water Type[*2]	Code that indicates the source of the water. GW Ground water
WHPA Facility Type[*2]	Code that indicates the type of water system facility. SP Spring WL Well
WHPA HUC12[*2]	HUC (Hydrologic Unit Code) determination made with EPA WATERS Web Services and NHDPlus.

Facility Status[1,3]	'Open UST(s)' identifies facilities with at least one open or temporarily out of service UST. 'Closed UST(s)' identifies facilities with only closed UST(s).
Date of Last Inspection[3]	Last inspection date (for tribal sites only)
EPA Region[2]	EPA region
Tribe[3]	Tribe name (for tribal sites only)

[1] State sourced information
[2] EPA generated information
[3] EPA TrUSTD data (tribal data)
* These fields are only considered for facilities whose coordinates are state sourced or facilities with address match type 'StreetAddress', 'StreetInt', 'Subaddress', or 'PointAddress'.

2.2. Underground Storage Tank Attributes

UST attributes are included for all 50 states and DC.

Table 2.2: UST Attributes

USTs Attributes	Description
State[1,3]	UST State
Facility ID[1,3]	Facility ID that can be related to the UST facilities layer
Tank ID[1,3]	Unique UST ID (typically in the following format: "Facility ID"&"_"&"Tank Number")
Tank Status[1,3]	Tank Status
Installation Date[1,3]	Date of UST installation
Removal Date[1,3]	Date of UST removal
Capacity[1,3]	Tank capacity in gallons
Substances[1,3]	Substance stored (may be multiple entries representing fuel types in multiple compartments).
Tank Wall Type[1,3]	Tank wall type (either single or double)

[1] State sourced information
[3] EPA TrUSTD data (tribal data)

2.3. Underground Storage Tank Release Attributes

Table 2.3: UST Release Attributes

UST Releases Attributes	Description
Facility ID[1, 3]	Concatenated state abbreviation and facility ID
LUST ID[1, 3]	Concatenated state abbreviation and LUST ID
Name[1, 3]	Release name
Address[1, 3]	Release address
City[1, 3]	Release city
County[1, 3]	Release county
Zip Code[1, 3]	Release zip code
State[1, 3]	Release state
Latitude[1, 2, 3]	Release latitude
Longitude[1, 2, 3]	Release longitude
Coordinate Source[2]	The source of the release's coordinates. Either 'State' sourced or 'Geocode'.
Address Match Type[2]	The geocoded address type. For more information click here. For either state or geocoded coordinate sources, if the facility was outside of its state boundary, it is labeled 'Fail' and no coordinates are mapped.
Reported Date[1, 3]	The date the release reported or discovered
Status[1, 3]	The status of the release (as of date of data collection). Either "Open" or "No Further Action" or "Unknown".
Substance[1, 3]	The substance released
Estimated Population within 1500ft*[2]	Estimated 2010 census derived population within 1,500 ft of a release. ArcGIS's Tabulate Intersection tool was used to calculate 1,500 ft release buffers to census block population.
Estimated Private Domestic Wells within 1500ft*[2]	Estimated private domestic wells within 1500ft of a release. ArcGIS's Tabulate Intersection tool was used to calculate 1500 ft release buffers to EPA estimated private domestic wells. For more information and to access national well estimates visit EPA's Private Domestic Well Map.
Land Use*[2]	The majority land use type within 300 ft of a release. Land use data is derived from the 2016 National Land Cover Database. Release land use are identified as 'developed' (open, low, medium, high intensity) or 'non-developed' (encompassing the remaining land use classes).
Within Source Water Protection Area (SPA)*[2]	Identifies a facility within a federally delineated surface water, source water protection area ('Yes' or 'No'). SPA's are areas of interest for the protection of surface water sources of drinking water. By identifying areas significant to drinking water source protection while obscuring the exact locations of intake facilities, this information gives a wide range of planners, policy makers, and practitioners the information needed to target and prioritize areas for protection.
SPA Public Water System and Facility ID (PWSID)*[2]	Concatenated PWSID (ID that uniquely identifies a Public Water System) and Facility ID (Water system facility ID that, when used with the PWSID, uniquely identifies a water system facility. Note:

	Facilities from different water systems may have the same Facility ID. There may be repeat Facility ID values).
SPA Water Type*²	Code that indicates the source of the water. SW Surface water GU Ground water under the influence of surface water
SPA Facility Type*²	Code that indicates the type of water system facility. IG Infiltration Gallery IN Intake RS Reservoir SP Spring WL Well
SPA HUC12*²	HUC (Hydrologic Unit Code) determination made with EPA WATERS Web Services and NHDPlus.
Within Groundwater Wellhead Protection Area (WHPA)* ²	Identifies a facility within a federally delineated wellhead, source water protection area ('Yes' or 'No'). WHPA's are areas of interest for the protection of groundwater sources of drinking water. By identifying areas significant to drinking water source protection while obscuring the exact locations of intake facilities, this information gives a wide range of planners, policy makers, and practitioners the information needed to target and prioritize areas for protection.
WHPA Public Water System and Facility ID*²	Code that indicates the source of the water. GW Ground water SW Surface water GU Ground water under the influence of surface water
WHPA Water Type*²	Code that indicates the source of the water. GW Ground water SW Surface water GU Ground water under the influence of surface water
WHPA Facility Type*²	Code that indicates the type of water system facility. IG Infiltration Gallery IN Intake RS Reservoir SP Spring WL Well
WHPA HUC12*²	HUC (Hydrologic Unit Code) determination made with EPA WATERS Web Services and NHDPlus.
Within Estimated 100-year Floodplain*²	Denotes ("Yes"/"No") whether a release is within the EPA estimated 100-year floodplain for the conterminous United States. For more information click here.
Closed with Residual Contamination (Tribal Lands Only) ³	For tribal sites only, whether the site was closed with residual contamination ("Yes"/"No").
EPA Region²	EPA region
NFA Letter (Tribal Lands Only) ³	Hyperlink to no further action letter—only available for some tribal sites.
Tribe³	Tribe name

[1] State sourced information
[2] EPA generated information
[3] EPA TrUSTD data (tribal data)
* These fields are only considered for facilities whose coordinates are state sourced or facilities with address match type 'StreetAddress', 'StreetInt', 'Subaddress', or 'PointAddress'.

3. UST Finder Layer List
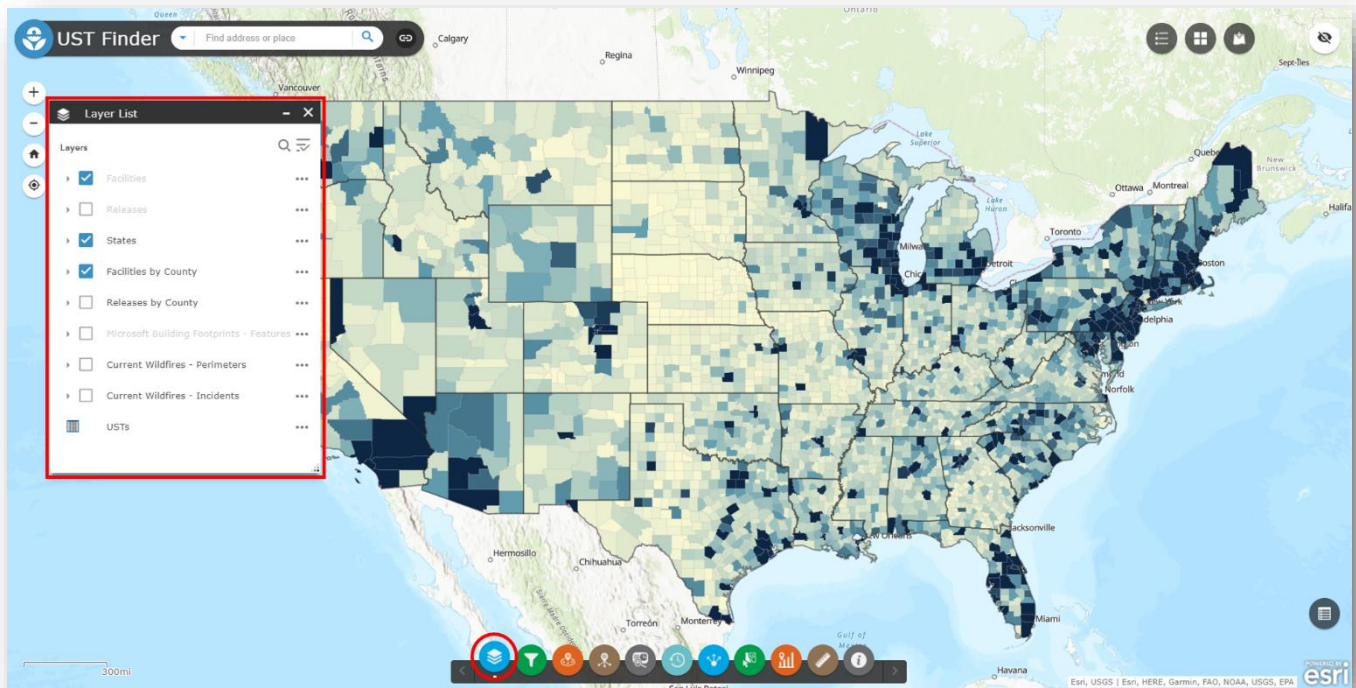
Figure 1. UST Finder's Layer List

Layers can be turned on and off from the layer list window. Some layers are scale dependent, meaning they cannot be activated until you either zoom in or out. If a layer's name is in grey, it means the layer is not available at that scale.

Below is a description of the layers available in UST Finder.

> You can manually change the scale at which layers become visible by clicking the ellipsis next to the layer name and manually "Set Visibility Range".

3.1. Facilities by County Layer

The Facilities by County layer is an aggregation of facilities and tanks at the county level. Each county contains information on the number of facilities (both facilities that no longer have active USTs and facilities with USTs actively in use), the number of open USTs, closed USTs, and temporarily out of service (TOS) USTs. Click a county to view a pop-up with this county level information.
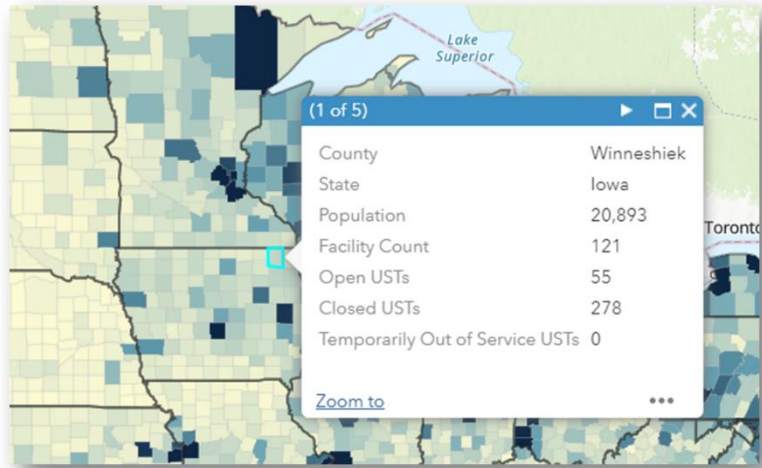
Figure 2. Facilities by County layer pop-up

3.2. Releases by County Layer

The Releases by County layer is an aggregation of releases at the county level. Each county contains information on the total number of releases and the number of releases by status—both open and no further action/closed. Click a county to view a pop-up with this county level information.
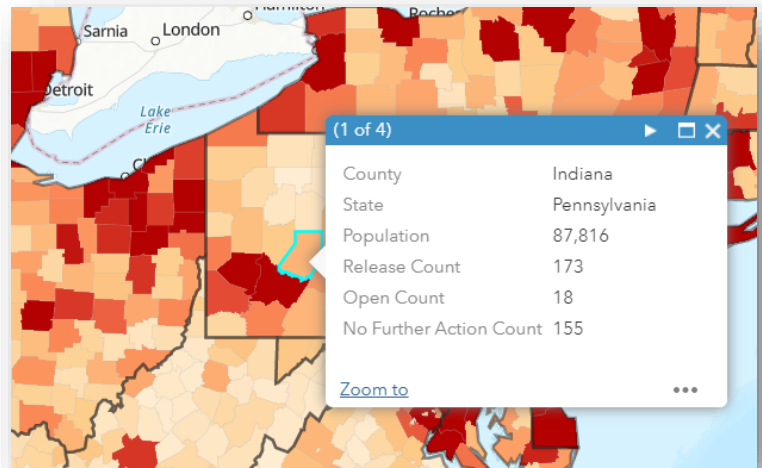
Figure 3. Releases by County layer pop-up

Click the Legend widget to view the color classes for each feature

3.3. UST Releases Layer

The Releases layer is visible
when zoomed in from the
county level aggregations.
Releases are color classified as
active (red points), no further
action (pink points) or
unknown (grey points).

In addition to the locations of
releases, each release has
associated data. Associated
data can be viewed in pop-ups
or the feature's attribute table,
discussed later.
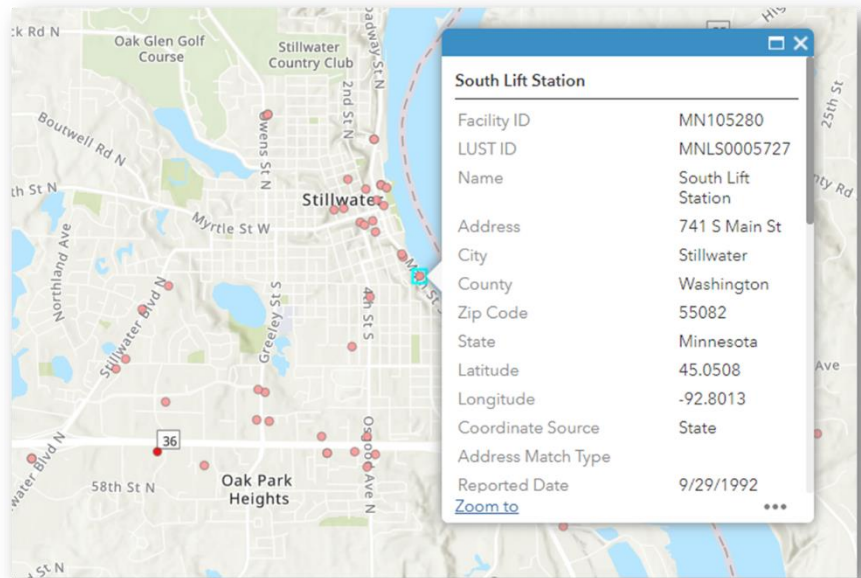
Figure 4. UST Releases layer pop-up

3.3.1. Facility and LUST ID

Some attributes are state sourced, and others are EPA generated. In most instances the Facility
ID and LUST ID (the numbers after the state abbreviation) are the state issued IDs. These IDs
reference individual state databases—where potentially more information about LUST sites can
be found.

3.3.2. Locational Information

If coordinates (Latitude and Longitude) were provided by the state, they were used to map the
LUST site. If no coordinates were provided, EPA geocoded the state sourced Address. The
Coordinate Source field identifies whether the coordinates were state sourced or geocoded. If
geocoded, the Address Match Type identifies how the address was matched (i.e. by postal zip
code, point address, street name, etc.).

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3.3.3. Reported Date

The Reported Date field is either the date the release was discovered or reported to the state. Note that these dates are not available for all states and releases.

3.3.4. Release Status

There are three release Status types: Open, No Further Action, and Unknown. It should be noted that individual states set their own criteria for what defines an open or closed release. An open release generally means the LUST site has not been remediated and is undergoing assessment, treatment and/or monitoring. For Kentucky, all the releases statuses are unknown.

3.3.5. Substance Released

The Substance field contains the substance associated at the UST release site. A site can have one or many substances released. The substance naming convention is not standardized between states. Table 3.1 lists the 17 states with substance release information.

Table 3.1: Substance Release Data by State

State	Number of sites with substances released
Arizona	8,547
Arkansas	1,337
DC	1,432
Illinois	21,789
Kansas	6,057
Louisiana	1,084
Maine	3,101
Michigan	17,300
Minnesota	1,664
Nebraska	8,381
Nevada	1,706
Oklahoma	4,072
Pennsylvania	7,623

South Carolina	9,443
South Dakota	2,984
Vermont	2,182
Washington	2,863

The remaining descriptions or UST Release attributes are EPA generated.

3.3.6. Estimated Population

The Estimated Population within 1500 ft field provides an estimate of the number of people living within 1,500 ft of a release. The 2010 Census blocks were used for the population data. 1,500-foot buffers were generated for each release and populations were estimated by the percent buffer intersection to each overlapping census block. These calculations were only performed for releases with coordinates provided by states or geocoded address match types of 'StreetAddress', 'StreetInt', 'Subaddress', or 'PointAddress'.

> **Why 1,500 feet?**
>
> *In the event of a petroleum release from an UST, the length of the plume can vary depending on a number of factors including substance, geography, soil media, and amount released. Although based on limited survey data, a plume length study indicated that the maximum observed extent of benzene generally is on the order of 1500 ft. Depending upon given site conditions, UST plumes can be longer.*

3.3.7. Estimated Private Domestic Wells

The Estimated Private Domestic Wells within 1500 ft field provides estimates of the housing units using private domestic wells as their primary source of water. These well estimates were developed by the EPA. The data provide improved estimates of the dependence and spatial distribution of housing units reliant on private domestic by census block. In order to capture the potential vulnerability of private drinking water wells to leaking underground storage tanks, UST Finder calculated 1,500 ft buffers for each release and tabulated the intersection of wells at the census block level.

3.3.8. Land Use

The Land Use type around release sites is calculated using data from the National Land Cover Database (NLCD). Knowing the land use type near release sites can suggest whether a site is in an urban or rural area, for example. Assigning development types (either developed-low, medium or high intensity) to releases sites can suggest the number of people, building, and level of development nearby. This can help inform, for example, remediation strategies. In-situ bioventing or biosparging may not be an appropriate remediation strategy in high intensity developed area due to the risk of vapor intrusion to nearby buildings. Land Use was calculated by assigning the majority land use type to a 300 ft buffer around release sites. If the majority land use type was not a "developed" land use type, "non-developed" was assigned.

3.3.9. Wellhead and Surface Water Source Water Protection Areas

The UST Release layer also provides information on whether a release site is Within a Source Water Protection Area (SPA) or Within a Groundwater Wellhead Protection Area (WHPA). This information is generated by U.S. Environmental Protection Agency Office of Water and provides source water protection areas for surface water source facilities as well as wellhead protection areas for groundwater sources. The sources for this GIS analysis are the Safe Drinking Water Information System (SDWIS) Federal Data Warehouse and the National Hydrography Dataset Version 2.1 (NHDPlus) (https://www.epa.gov/waterdata/nhdplus-national-data).

The EPA Source Water Protection Area (SPA) dataset provides spatially referenced source water protection areas for public drinking water system (PWS) source facilities located in the United States. Source facility location data were obtained from the Safe Drinking Water Information System/Federal Version (SDWIS/Fed) and include active surface water facilities (e.g., intakes, reservoirs, infiltration galleries, and springs) with a Water Type description of 'surface water' (SW) or 'ground water under the influence of surface water' (GU). Ground water facilities (e.g., wells) with valid locations (lat/long coordinates) and a Water Type description of ground water are also included as Wellhead Protection Areas (WHPAs). Surface water (SPA) delineations in the CONUS, Hawaii, U.S. Virgin Islands, and Puerto Rico are composed of National Hydrography Dataset Plus version 2.1 catchments located 24-hour time of travel upstream of all valid surface water source facility locations, while ground water protection areas (WHPAs) are composed of NHDPlus V 2.1 catchments that intersect wells. SPA and WHPA delineations in Alaska represent a 1-mile buffer radius due to limited availability of NHDPlus catchments in Alaska.

While these protection areas and locations of public drinking water intakes are not public information, UST Finder obscures the exact boundaries/locations by providing binary operators to identify whether or not a release is within a source water protection or ground water protection area, with either a "Yes" or "No". By identifying areas significant to drinking water source protection while obscuring the exact locations of intake facilities, this dataset gives a wide range of planners, policy makers, and practitioners the information needed to target and prioritize areas for protection in proximity to UST releases.

The WHPA and SPA Public Water System and Facility ID is the concatenated PWSID and FACILITY_ID which uniquely identifies a water system facility in one field.

3.3.10.   100-year Floodplain

The Within 100-year Floodplain field provides information on whether a UST release is within an estimated flood inundation area. The data used for identifying these zones is a flood inundation model that estimates FEMA's Flood Insurance Rate Maps (FIRMs) for the conterminous United States. Because of the high cost of FEMA flood modeling, only 60% of the conterminous United States have 100-year floodplains mapped. To fill in these "gaps" the US EPA developed this product to support research and online mapping activities related to the EnviroAtlas. The model hit rate for the CONUS was 0.79 compared to the FIRM, indicating that the model captured 79% of the 100-year floodplain identified by FEMA. Releases are identified

to be within the estimated 100-year floodplain by either a "Yes" or "No". For more information on this product or to download, visit the service [here](#).

3.3.11. Tribal information

UST Finder has certain data elements that are only applicable to tribal sites. These fields are sourced from EPA's Tribal Underground Storage Tanks Database (TrUSTD). For the Release layer, these fields include closed with Closed with Residual Contamination, NFA (no further action) Letter, and Tribe. NFA letters are only available for some sites in EPA regions 5,6, and 9 and are hyperlinks to pdf documents. The Facility layer contains Date of Last Inspection and Tribe.

3.4. UST Facilities Layer

The UST Facilities layer provides information on facilities that currently have (as of 2018-2020) at least one open or temporarily out of service (TOS) UST (shown in blue in Figure 5) as well as historical facilities—facilities that have no active or TOS USTs (shown in light blue in Figure 5).
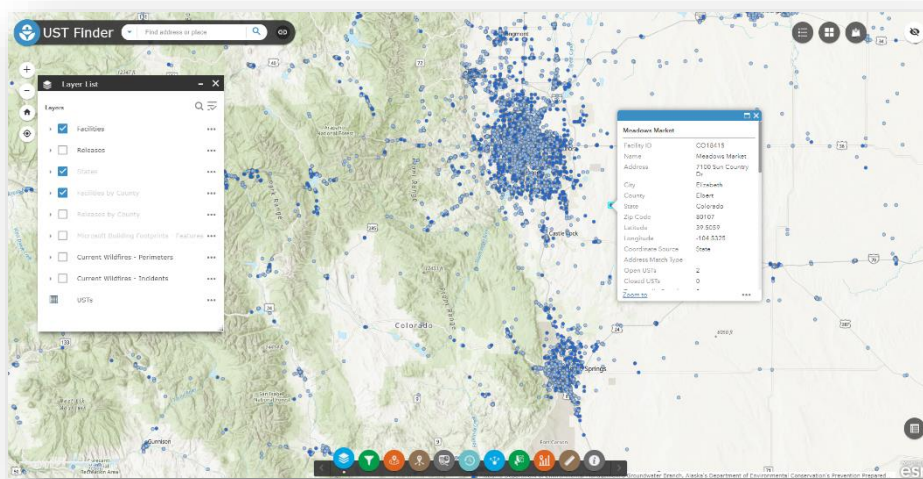
Figure 5. UST Facilities

In addition to the locations of releases, each release has associated data. Associated data can be viewed in pop-ups or the feature's attribute table.

3.4.1. Facility ID

Some attributes are state sourced, and others are EPA generated. In most instances the [Facility ID](#) (the numbers after the state abbreviation) are state issued IDs. These IDs reference individual state database—where potentially more information about facilities can be found.

3.4.2. Locational Information

If coordinates ([Latitude and Longitude](#)) were provided by the state, they were used to map the facility. If no coordinates were provided, the EPA geocoded the state sourced [Address](#). The

Coordinate Source field identifies whether the coordinates were state sourced or geocoded. If geocoded, the Address Match Type identifies how the address was matched (i.e. by postal zip code, point address, street name, etc.).

3.4.3. Tank Counts

The Open USTs, Closed USTs, and Temporarily out of Service USTs fields list the number of individual tanks, by status, at the facilities location as of 2018-2020. For most states, these counts were calculated from the Underground Storage Tank table.

3.4.4. Facility Status

The Facility Status field identifies whether a facility currently has one or more open or TOS tanks, or whether it is a legacy facility—one with only closed tanks.

The following attributes are similar to the UST Releases dataset. See the linked releases descriptions for more information

3.4.5. Estimated Population

See the Estimated Population within 1500 ft description here.

3.4.6. Estimated Private Domestic Wells

See the Estimated Private Domestic Wells within 1500 ft description here.

3.4.7. Land Use

See the Land Use description here.

3.4.8. Wellhead and Surface Water Source Water Protection Areas

See the Wellhead and Surface Water Source Water Protection Area description here.

3.4.9. 100-year Floodplain

See the estimated 100-year Floodplain description here.

3.4.10.　　　Tank Capacities in Pop-up

For most facilities, within the pop-up window, there is a bar chart of tank capacities for each tank at a given facility. This chart provides the capacity for every open, closed, and TOS tank at a facility. Hover over a bar to see the tank number associated with the tank capacity.
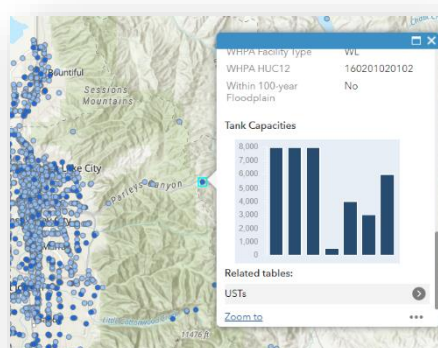

Figure 6. Tank Capacity Bar Chart

3.5. UST Table

The UST table is non-spatial data containing information on USTs for all 50 states and Washington D.C. UST information is contained in a stand-alone table. This table is related to each facility in a 1-many relationship, meaning for most facility, one or many tanks are linked by a common Facility ID. UST attributes can be found in the USTs attribute table or through the facilities pop-up window, discussed later.

3.5.1. Tank ID

The UST Tank ID is the unique tank ID number. Typically, the Tank ID is the concatenated Facility ID and tank number.

3.5.2. Installation Date

The UST Installation Date is the date the UST was installed, if provided by the corresponding state agency.

Figure 7. USTs layer in the Layer List menu

3.5.3. Removal Date

If the UST was removed from the ground, a Removal Date is given, if this information was provided by the corresponding state agency.

3.5.4. Capacity

In gallons, the Capacity of the tank. If the tank contained compartments, the compartment capacity was summed together to get a total tank capacity.

For California, individual tank compartments are treated as an individual tank. You can discern whether a California entry is a non-compartmentalized tank or compartment by the Tank ID. They CA Tank ID syntax is "CA"&[Facility ID]&"_"&"A Stand-alone Tank" *or* "One in a
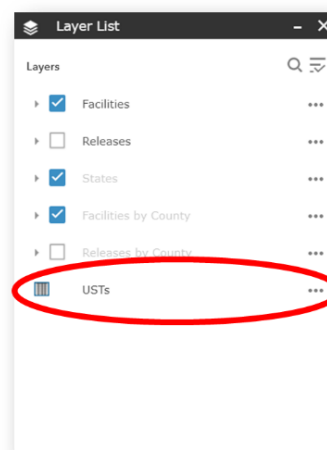
15

Compartment Unit"&"_"&[number of compartments].

Note that some state use 99, 999, 9999, 99999, etc. as null placeholders for tank capacities. If a tank's capacity is a series of nines, it may be spurious.

3.5.5. Substance

If available in state databases, the Substance stored in the UST is listed. Every state has a different substance classification system. For example, one state may use the term "gasoline" to encompass different ethanol blends, premium and standard, leaded (historic) and unleaded, etc.; while another state list the unique types of gasoline (i.e., E15). Given the disparity in defining substance types between states, one should be careful comparing the substances stored from state to state.

Not all USTs are federally regulated. Tanks containing home heating oil consumed on site, for example, is not a federally regulated tank. The goal of UST Finder was to catalog federally regulated tanks (for more information on UST laws and regulations visit here). When possible, non-regulated tanks were not included. If for example a state classified a tank as non-federally regulated, that tank was not included; or if a tank was identified to contain home heating oil *and* was consumed on site, that tank was not included. However, there are states and instances where the regulated, non-regulated distinction could not be made, and non-federally regulated tanks may have been included in UST Finder.

Some substance entries contain more than one substance. For the most part, this is due to either listing the substances in multiple individual compartments or listing the substances previously stored in the tanks.

3.5.6. Tank Wall Type

The Tank Wall Type identifies whether the tank is "Single" walled or "Double" walled.

3.6. Viewing UST Attributes

Mentioned previously, the UST table is related to the facilities table. This section will discuss several ways to view UST attributes associated with an UST Facility.

3.6.1. Viewing USTs information within the UST Facilities Pop-up

For every facility with related UST data, you can view the UST information via the UST Facilities' pop-up.

Step 1: Click a UST Facility to enable the pop-up and scroll to the bottom of the pop-up and select Related tables → USTs

Figure 8. Selecting USTs in the related table

Step 2: From the Related Records menu, you can see the individual tanks at a facility. Figure 9 shows there are eight USTs at this facility. By default, the tanks are listed by their unique tank ID, but they can also be listed by other attributes (below it was switched to UST "status") by selecting the down arrow. Click an UST to get more information about the individual tank.
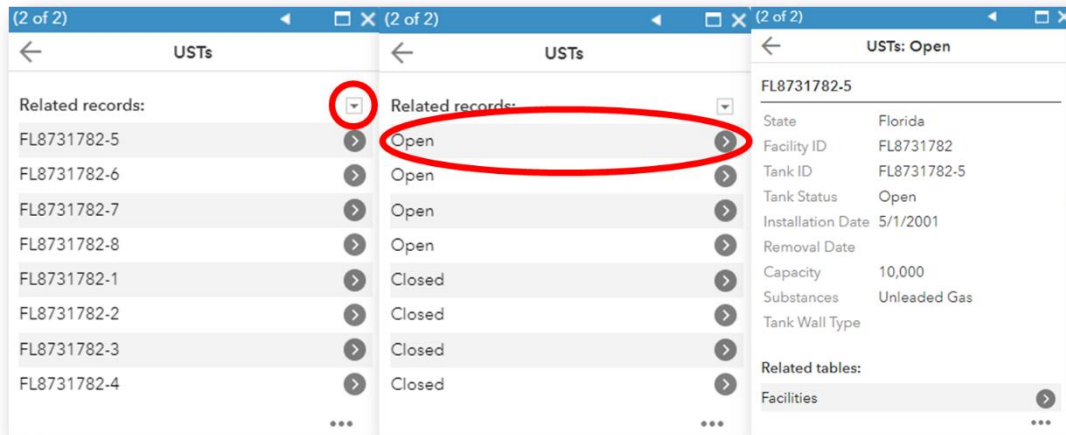
Figure 9. Getting information about a UST through the UST Facilities pop-up menu

3.6.2. Viewing all USTs at a UST Facility via pop-ups and attribute table

You can view all USTs at a given UST Facility by opening a facility pop-up and then viewing the tanks at that facility in the attribute table.

Step 1: Click a UST Facility to enable the pop-up and scroll to the bottom of the pop-up and select Related tables → USTs

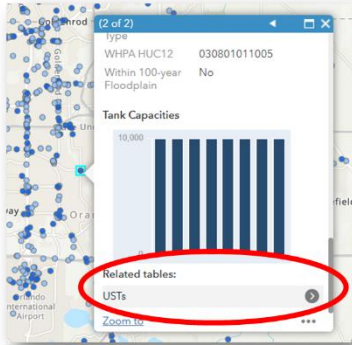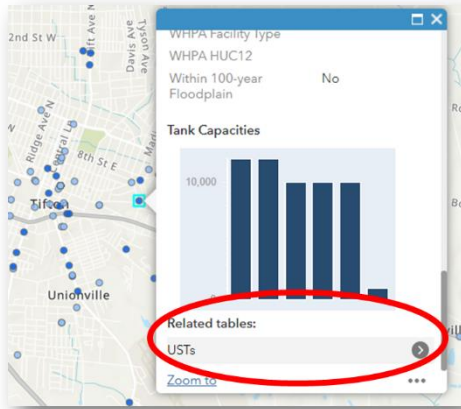Figure 10. Selecting USTs from the related table

Step 2: Click the ellipses in the UST window and select View in Attribute Table (Figure 11), which will expand the attribute table of all USTs at the facility (Figure 12).
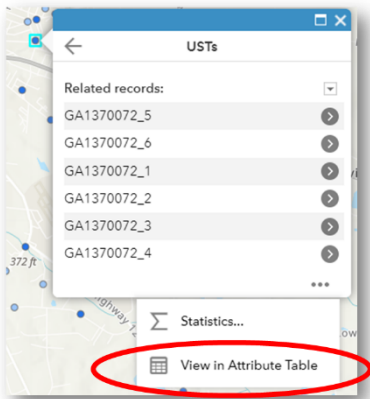
Figure 11. View attribute table in the UST menu
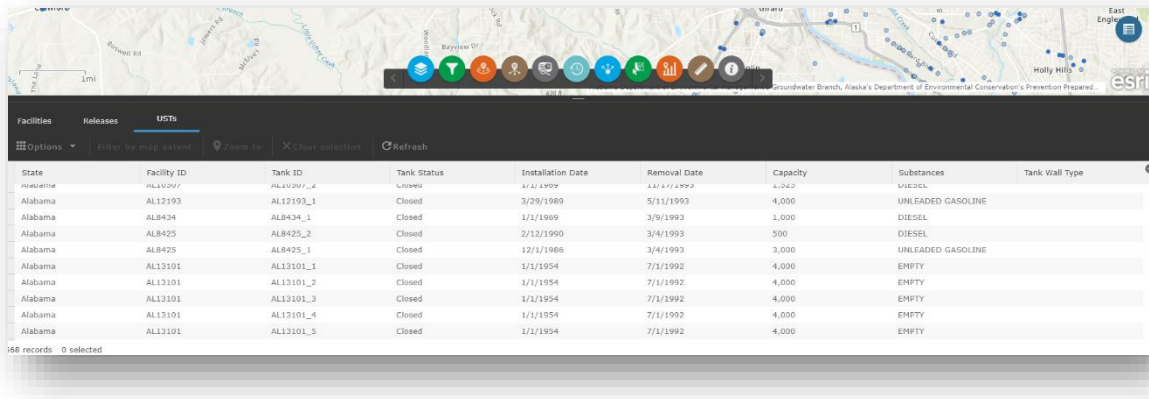
Figure12. Attribute table of USTs at a UST Facility

3.6.3. Viewing all USTs at a facility via the attribute table

You can see all USTs at a given UST Facility(ies) by opening the facility attribute table.

Select the attribute table symbol (1), select a facility from the attribute table (2), select Options (3), select Show related records (4), and select USTs (5)—see Figure 13.

Figure 13. Steps for viewing USTs via facilities' attribute table

4. Attribute Tables

For the Facilities, Releases, and USTs layers, there is an associated attribute table. Select the

attribute table icon ▦ on the right side of UST Finder to view the [Filter by map extent] attribute

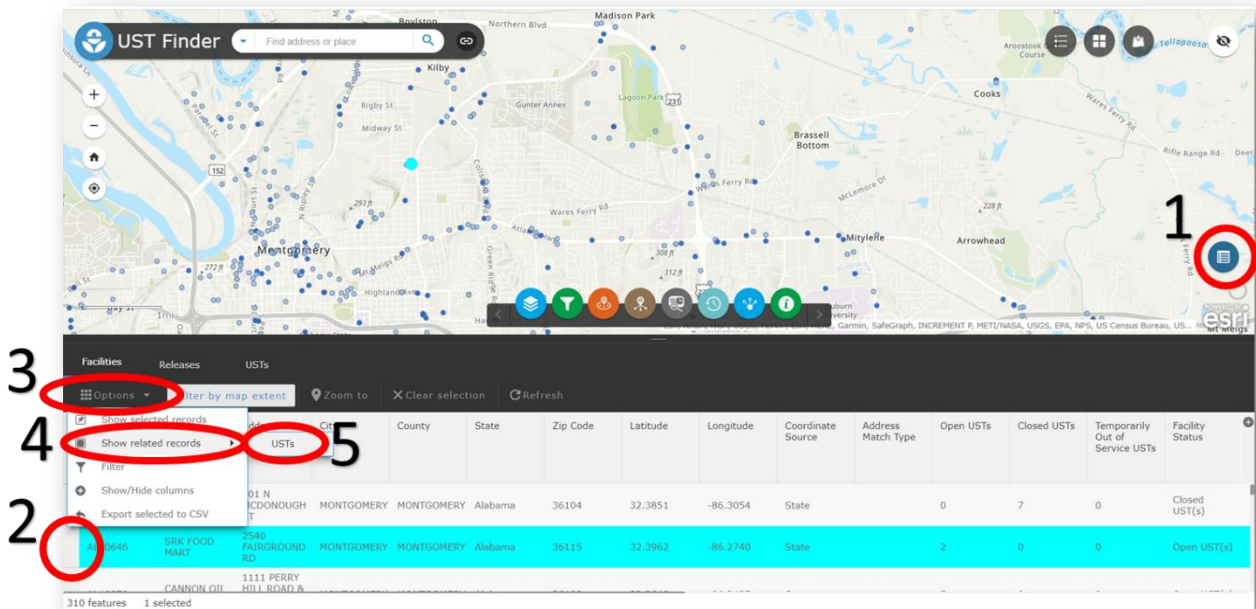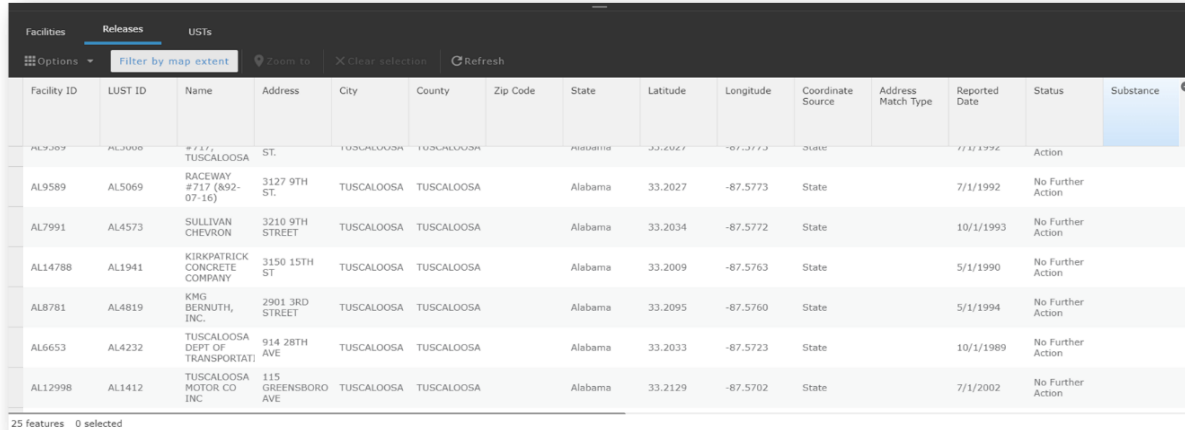| Facility ID	LUST ID	Name	Address	City	County	Zip Code	State	Latitude	Longitude	Coordinate Source	Address Match Type	Reported Date	Status	Substance
AL9589	AL5068	#717, TUSCALOOSA	ST.	TUSCALOOSA	TUSCALOOSA		Alabama	33.2027	-87.5773	State		7/1/1992	Action	
AL9589	AL5069	RACEWAY #717 (&92-07-16)	3127 9TH ST.	TUSCALOOSA	TUSCALOOSA		Alabama	33.2027	-87.5773	State		7/1/1992	No Further Action	
AL7991	AL4573	SULLIVAN CHEVRON	3210 9TH STREET	TUSCALOOSA	TUSCALOOSA		Alabama	33.2034	-87.5772	State		10/1/1993	No Further Action	
AL14788	AL1941	KIRKPATRICK CONCRETE COMPANY	3150 15TH ST	TUSCALOOSA	TUSCALOOSA		Alabama	33.2009	-87.5763	State		5/1/1990	No Further Action	
AL8781	AL4819	KMG BERNUTH, INC.	2901 3RD STREET	TUSCALOOSA	TUSCALOOSA		Alabama	33.2095	-87.5760	State		5/1/1994	No Further Action	
AL6653	AL4232	TUSCALOOSA DEPT OF TRANSPORTATI	914 28TH AVE	TUSCALOOSA	TUSCALOOSA		Alabama	33.2033	-87.5723	State		10/1/1989	No Further Action	
AL12998	AL1412	TUSCALOOSA MOTOR CO INC	115 GREENSBORO AVE	TUSCALOOSA	TUSCALOOSA		Alabama	33.2129	-87.5702	State		7/1/2002	No Further Action	

25 features   0 selected

Figure14. Attribute table

table. At the top of the attribute table, select the layer you want to view the attributes of—either Facilities, Releases, or USTs. Note that the attribute table only shows the features within the current map extent (excluding the UST table). The bottom left of the table shows the number of facilities or releases within the map extent and in the attribute table. By default, the "Filter by map extent" button is turned on. Deselecting this button returns all features (not just the ones within the map extent) to the attribute table. You can select an individual release or facility by clicking to the left of a row. When a row is selected you can Zoom to the site's location on the map.

The Options button allows the user to Export fields to CSV and filter the attribute table.

4.1. Export to CSV
Within the options menu in the attribute table you can Export fields to CSV. If a row(s) is selected just that row(s) will be exported, otherwise all fields in the table will be exported.

4.2. Attribute Filter

The ⊞ Options ▾ Options→Filter feature allows the user to customize a query within the attribute table. From the Filter menu select ⊕ Add expression   Add expression to customize a query. In figure 15 below a customized query is created for the UST database where tanks between 10000 and 50000 gallon capacities will be queried.
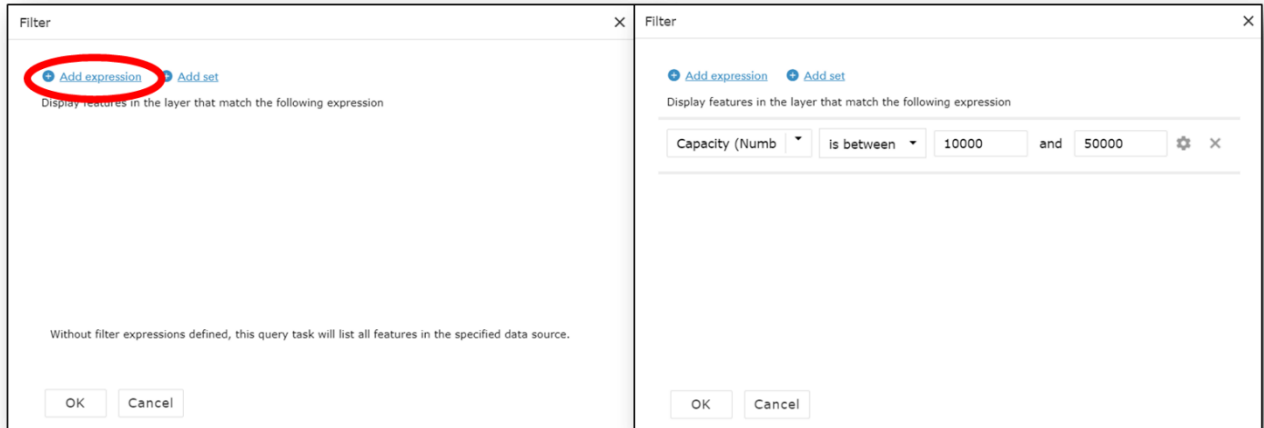

Figure 15. Custom Attribute query

Compound queries can also be performed where you can choose whether the criteria for all or any of the multiple expressions are met. Figure 16 shows a query that will return all USTs between 10,000 and 50,000 gallon capacity *and* USTs with a tank status of "Open". Click OK to return the queried results.
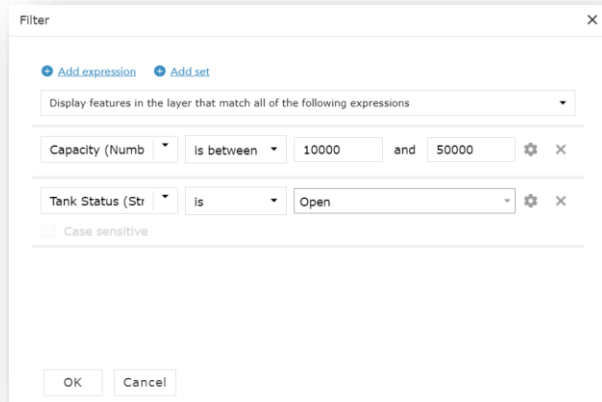
Figure16. Compound attribute query

5. Widgets

UST Finder contains widgets containing different functionality. Figure 17 shows the six widgets discussed in this section—Filter, Near Me, Area of Interest Report, Time Slider, Share, Select, Substance Stored Chart, Measurement, and About.
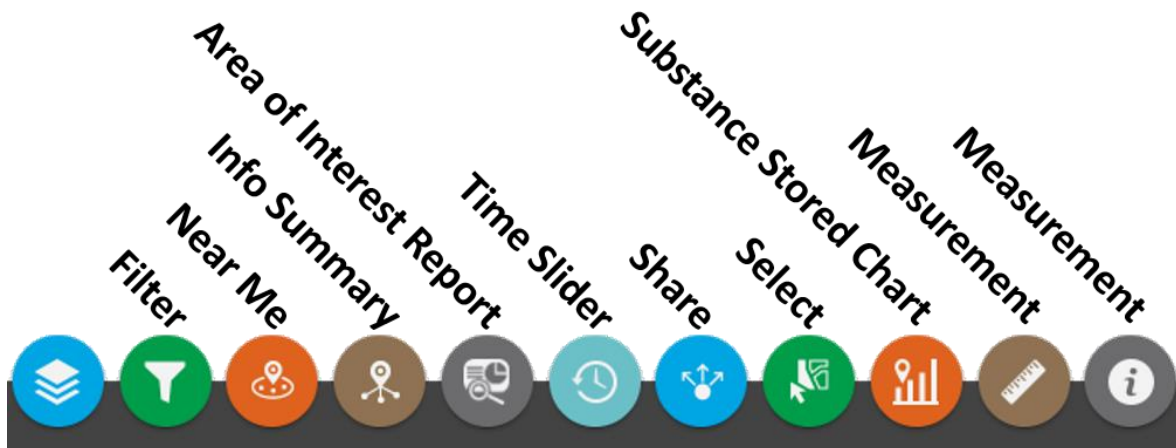
Figure 17. Widgets in UST Finder

5.1. Filter

Section 4.2 describes ways to filter UST data via the attribute table. You can also filter data using the Filter widget. The Filter widget is divided into two section: Facilities (blue) and Releases (red). The facilities section only filters the facilities layer and the release section only filters the release layer. The filter labels indicate what is being filters, for example, the State filter will only return facilities for a user defined state. Figure 18 shows the facilities filtered by State, in this case, Delaware. The filter tool can also be used to view federally recognized tribal sites only by toggling 'Tribal Lands'. Note that the Filter widget not only filters the locations on the map, but also the attribute table.
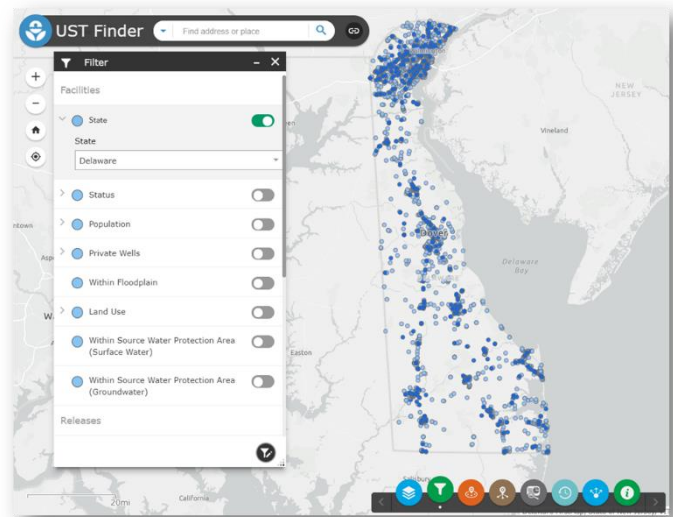
Figure 18. Filter Widget

You can also create multiple, compounding filters. If more than one filter is used, note that all statements in the argument are considered true. For example, in Figure 19, the filter returned UST releases that are within a source water protection area (surface water) *and* were reported on or after 1/1/2010.

22
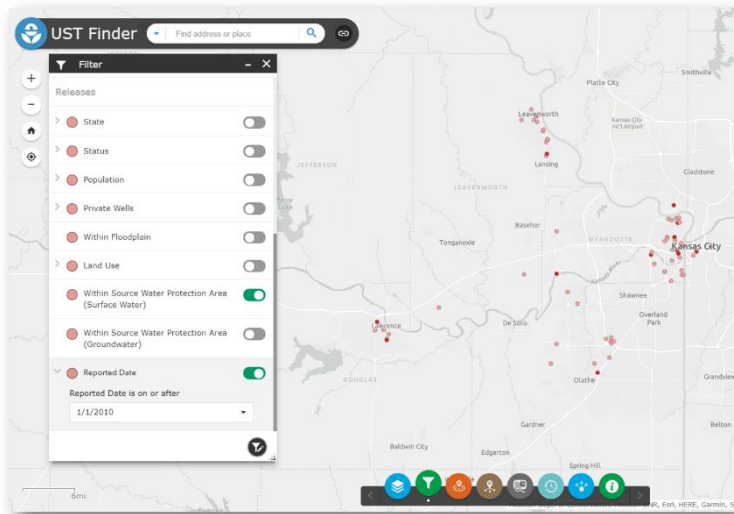
You can create a custom filter within the Filter widget by clicking the black and white button at the bottom right corner (filter and pencil icon, seen in Figure 19). In the custom filter window select the layer you wish to perform the filter on and click + Add ⬚ + Add express... express…. Figure 20 illustrates a custom filter on the facilities layer where only facilities that contain the word School is shown in the map (and attribute table).

Figure 19. Compounding Filter
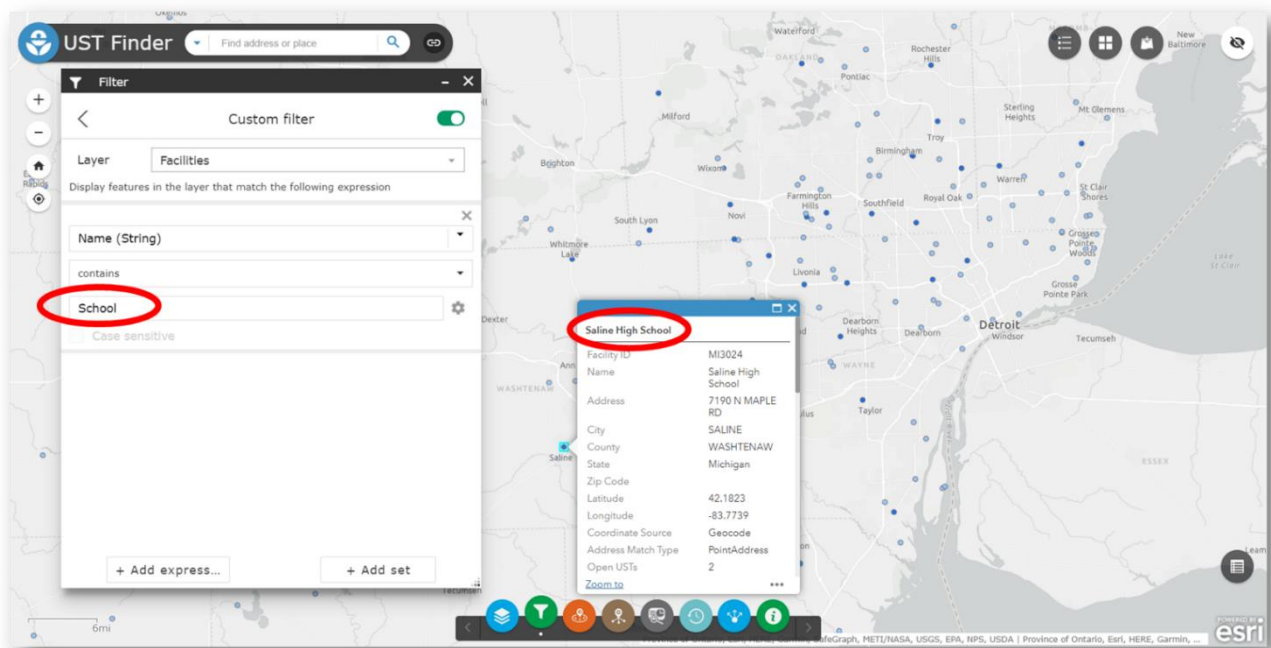
Figure 20. Custom Filter

5.2. Near Me

The Near Me widget provides users a way of identifying releases and/or facilities within a user defined distance of a location—such as where you are or where you live. When you open the Near Me widget there are several ways to set a location to identify releases and/or facilities nearby.

- If you are using a GPS enabled device, you can click the Find my location button

- Enter an address or place in the Find address or place bar

- Or click a location on the map

Afer a location is defined the user then sets a search radius using either the slider (increments of 1 mile) or the Show results within (Miles) box. Figure 21 identifies 7 facilities and 7 releases within .75 miles from Woodstock Park.
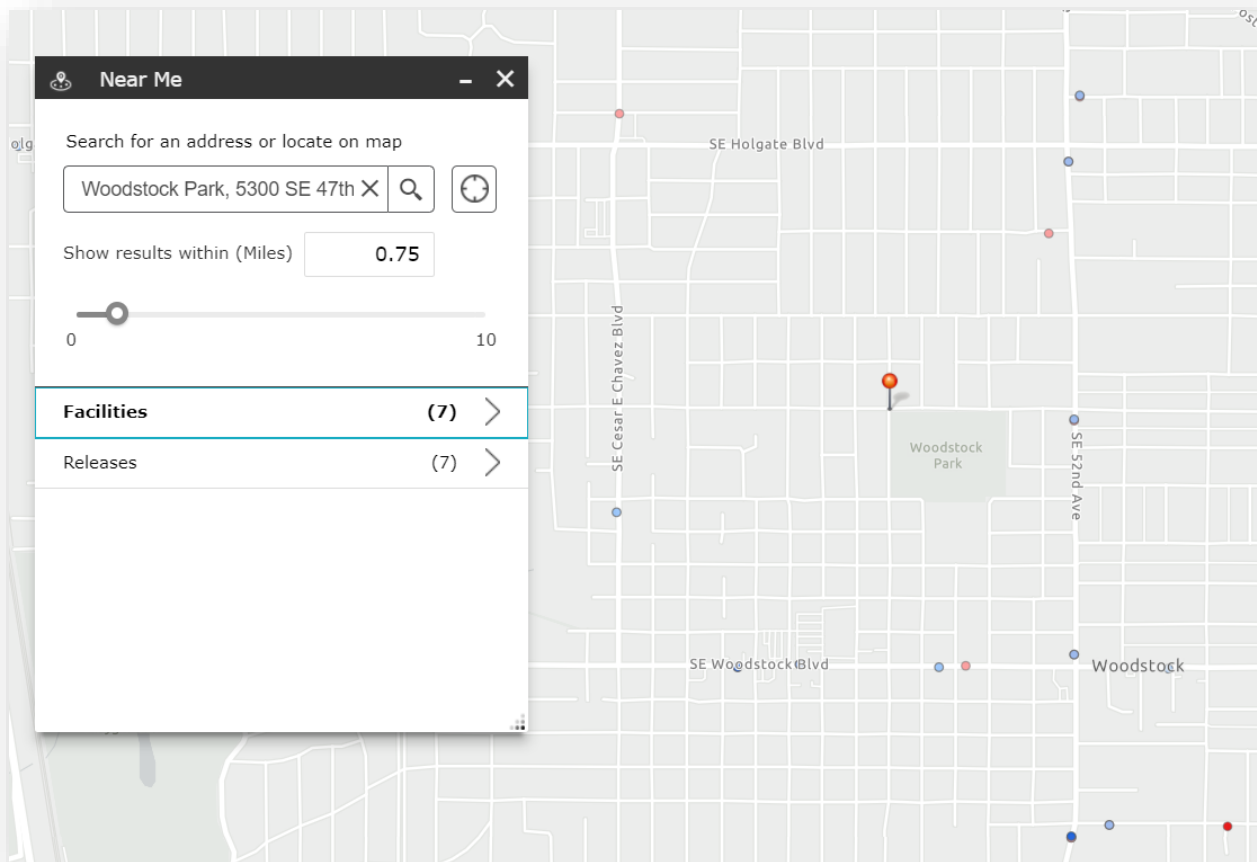
Figure 21. Near Me Widget

You can get more information about the nearby facilities and releases and the distance from the defined location by clicking on Facilities or Releases. To clear the results simply close out of the Near Me widget.

5.3. Info Summary

The Info Summary widget quickly tabulates the number of facilities and/or releases within a map frame. In Figure 22, the facilities and releases were previously filtered to sites within Rhode Island. The Info Summary widget tells us how many facilities and releases are in Rhode Island and their counts by status.
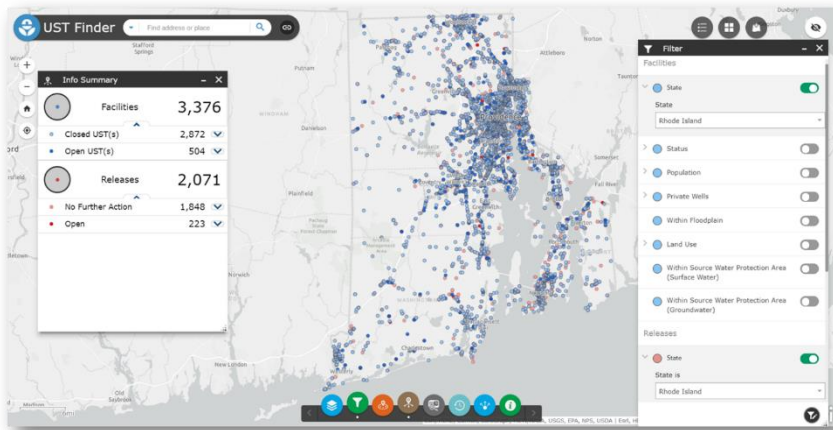
Figure 22. Info Summary Widget

5.4. Area of Interest Report

The Area of Interest Report Widget generates a PDF report of facilities and/or releases within a user defined area. First an area of interest must be identified. This can be done three ways— Place name, Draw, or Shapefile:
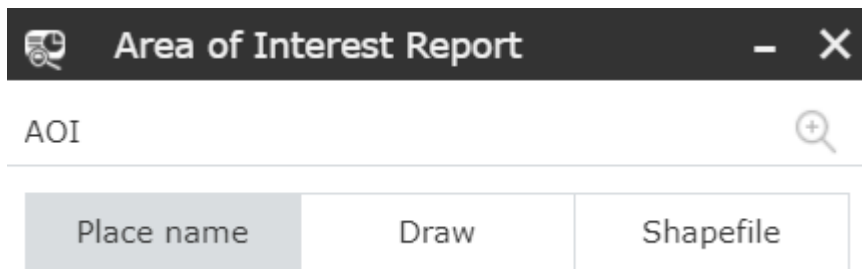
- Place name—enter a place or address and define a buffer distance

- Draw—you can define an area using a point, polyline, extent, circle, polygon, or selection
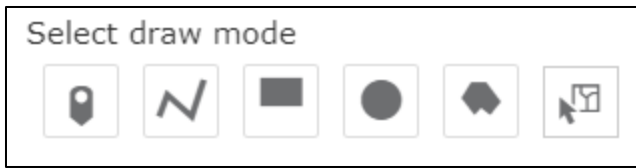
- Shapefile—Upload a zipped shapefile

Figure 23 depicts an area of interest defined by the Draw→Polygon tool. In this example the area of interest are facilities and releases near a river.
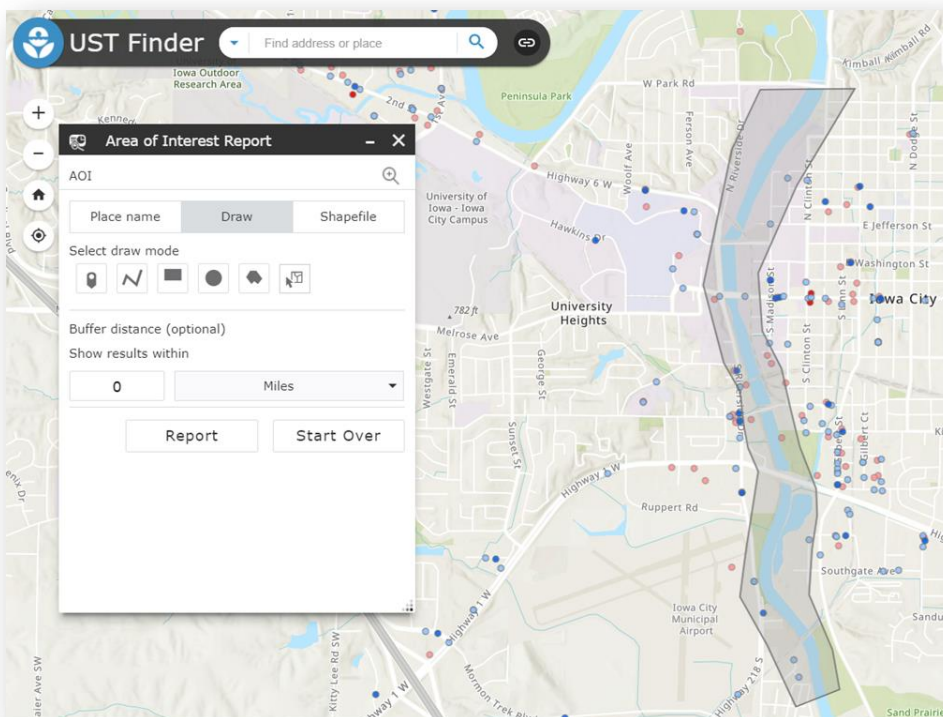
Figure 23. Area of Interest Report: Draw Polygon

After an area is defined, select Report. In the Report window you can either download ⬇ the intersecting facilities and releases to a CSV file or you can select the print icon 🖶 to generate a PDF report and map of facilities and releases within the area of interest.

Note that if any filters are applied, the Area of Interest Report tool will only report filtered sites.
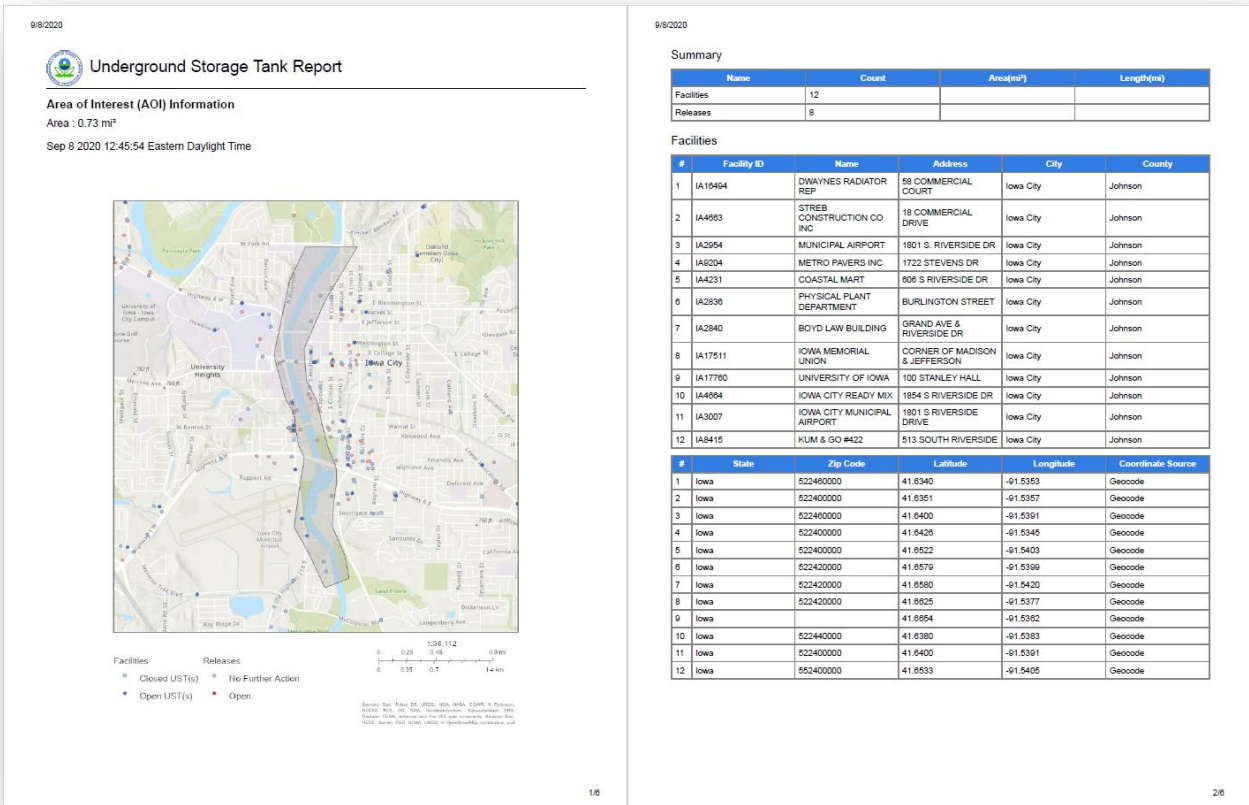
Figure 24. Area of Interest Report

5.5. Time Slider

The Time Slider tool only works on the Releases layer. It filters releases temporally—by release date. There are 39 states and the District of Columbia where this feature is available, listed in Table 5.1.

Table 5.1 States with Release Dates

States with Release Dates			
Alabama	Iowa	Montana	Rhode Island
Arizona	Kansas	Nebraska	South Carolina
Arkansas	Louisiana	Nevada	South Dakota
Colorado	Maine	New Jersey	Tennessee
Connecticut	Maryland	New York	Texas
D.C.	Massachusetts	North Carolina	Utah
Florida	Michigan	Ohio	Vermont
Georgia	Minnesota	Oklahoma	Virginia
Idaho	Mississippi	Oregon	West Virginia
Illinois	Missouri	Pennsylvania	Wisconsin

With the Time Slider widget open, the slider can be moved to find sites where releases occurred at a given year or occurred within a range of years. In Figure 25, the time slider is set to show sites on the map that were reported between 1998 and 2008.
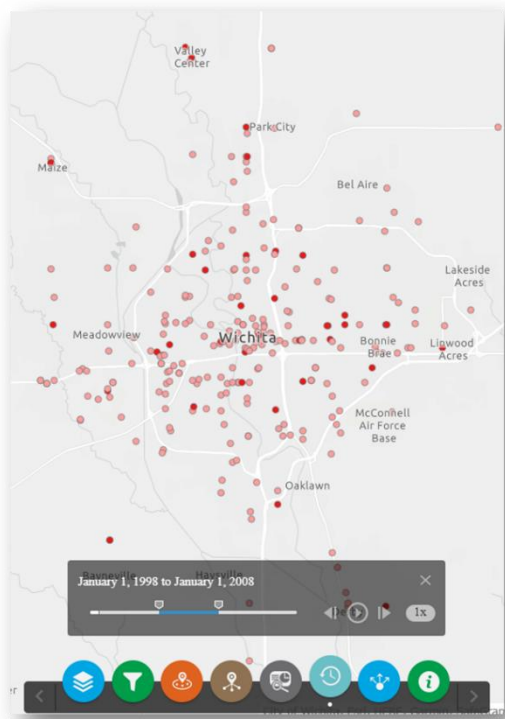
Figure 25. Time Slider widget

5.6. Share

You can easily share UST Finder using the Share widget. You can share a custom extent within UST Finder using the Share a link to this app link or you can embed the application using the Embed this app in a website code (Figure 26). The link options and Embed options allows users to tailor what is shared via the customize link.
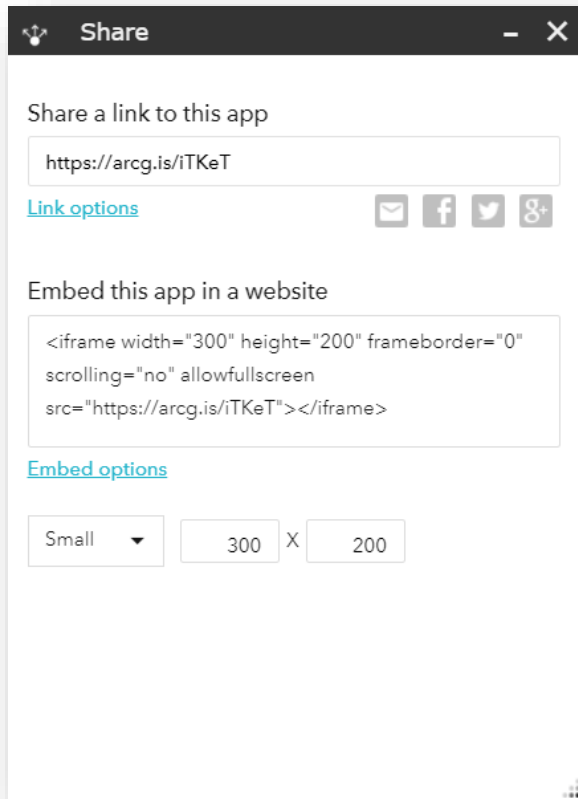
Figure 26. Share widget

5.7. Select

Individual or multiple Releases and/or UST Facilities can be selected from the map using the select tool. Sections will be shown in the attribute tables.

5.8. Substance Stored Chart

The Substance Stored Chart widget graphs the related UST information of a facility as a pie chart. With the widget open, select an UST Facility and a pie chart will appear. Green sections of the pie represent active tanks while grey represent closed tanks. The size of the pie represents the capacity of the tanks (hover mouse over pie to get the capacity in gallons). Also displayed is the contents of the tanks.

5.9. Measurement

Use this widget to measure distances and areas on the map.

5.10.   About

This widget contains more information about UST
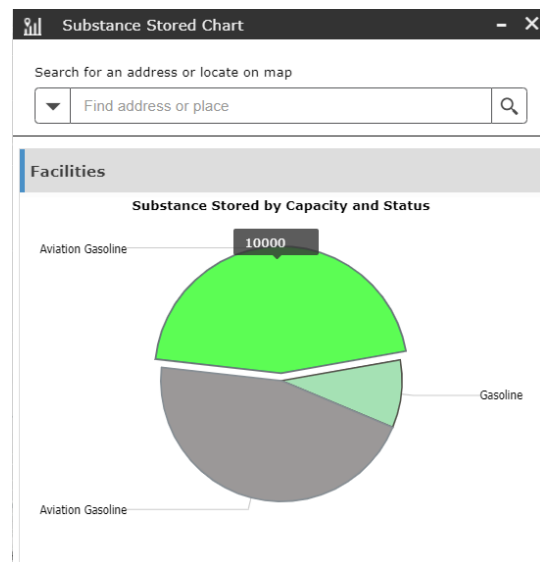
Figure 27. Substance Stored Chart widget

Finder.

6. Basemaps and Adding External Data

You can customize UST Finder by changing basemaps and adding external data. These options can be found at the top right of UST Finder.

6.1. Basemaps

There are a variety of basemaps to choose from in the basemap gallery, including aerial imagery, seen in Figure 27.
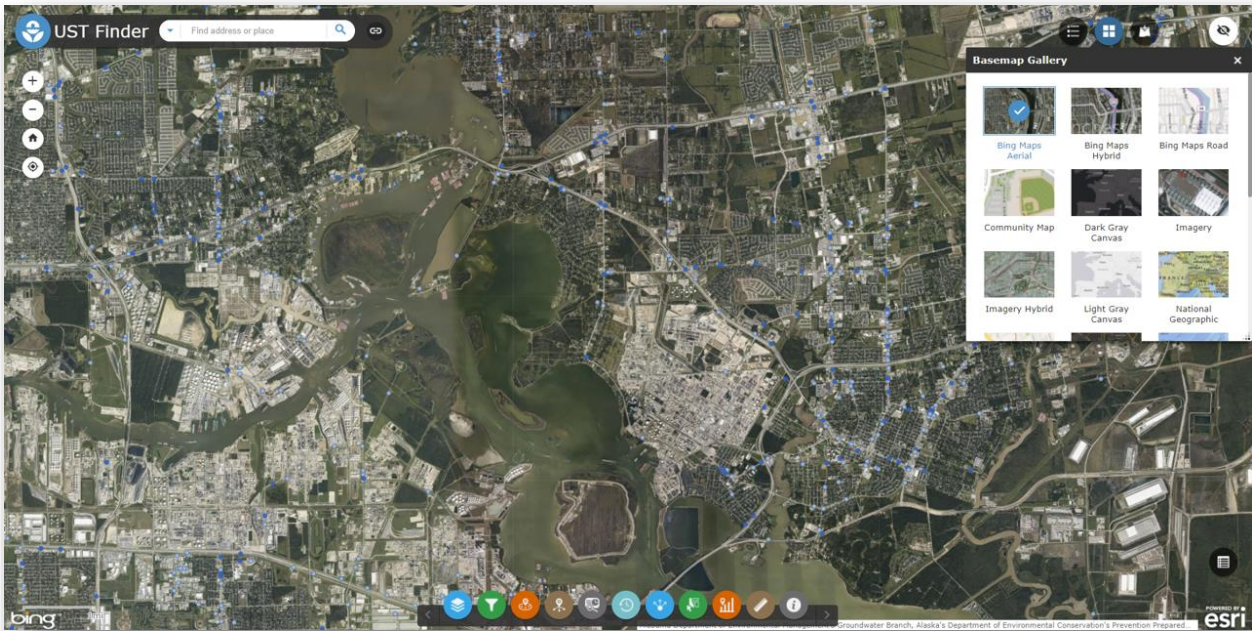
Figure 28. Using different basemaps

6.2. Add Data

You can add external data to UST Finder by using either the Search, URL, or File options within the Add Data widget.

6.2.1. Add Data via Search

Within the Add Data Search tab data can be added through ArcGIS Online, My content, or My Organization. There are thousands of datasets available in ArcGIS Online. Just search using keywords and select Add to add the layer to UST Finder. In Figure 28, wildfires were searched for via ArcGIS Online. Current Wildfire Perimeters were then added to UST Finder.
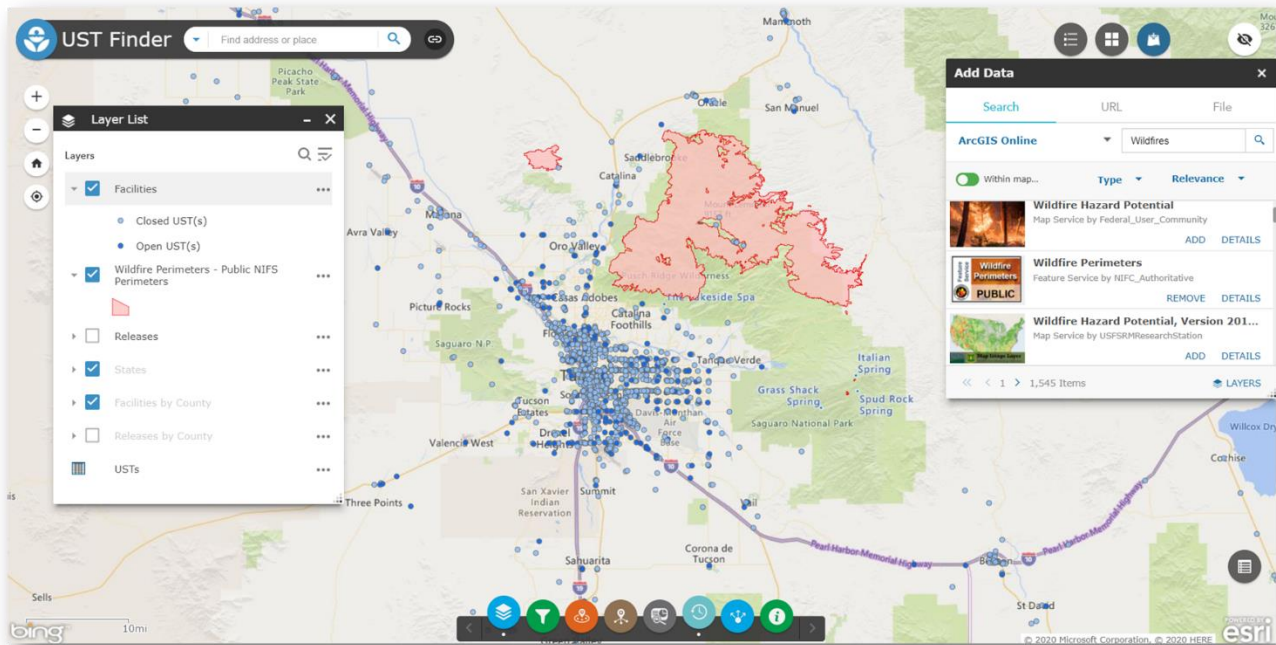
Figure 29. Searching and adding external data via ArcGIS online

6.2.2. Add Data via URL

If you know the URL of a web service you can enter the URL and select ADD.

6.2.3. Add Data via File

A zipped shapefile, CSV, KML, GPX, or Geo JSON can be uploaded into UST Finder.

7. UST Finder Source Data

UST Finder is a national collection of USTs, UST Facilities, and LUSTs from state sources. Below are the agencies names where data was collected for the three data layers.

7.1. Underground Storage Tank Data Sources

Alabama Department of Environmental Management's Groundwater Branch, Alaska's Department of Environmental Conservation's Prevention Preparedness and Response Program, Arizona Department of Environmental Quality's Underground Storage Tank Program, Arkansas

Department of Environmental Quality's Regulated Storage Tanks Division, California State Water Resource Control Board, Colorado Department of Labor and Employment's Division of Oil and Public Safety, Connecticut Department of Energy and Environmental Protection, Delaware Department of Natural Resources and Environmental Control's Underground Storage Tank Compliance Program, Florida Department of Environmental Protection's Permitting and Compliance Assistance Program, Georgia Environmental Protection Division's Underground Storage Tank Management Program, Hawaii Department of Health's Solid and Hazardous Waste Branch, Illinois State Fire Marshal's Division of Petroleum and Chemical Safety, Indiana Department of Environmental Management's UST Branch, Iowa Department of Natural Resources' Underground Storage Tanks Section, Kansas Department of Health and Environment's Storage Tank Section, Kentucky Energy and Environment Cabinet's Underground Storage Tank Branch, Louisiana Department of Environmental Quality's Underground Storage Tank Program, Maine Department of Environmental Protection's Underground Storage Tank Program, Maryland Department of the Environment's Oil Control Program, Massachusetts Department of Environmental Protection's Underground Storage Tank Program, Michigan Department of Licensing and Regulatory Affairs' Storage Tank Division, Minnesota Pollution Control Agency's Underground Storage Tank Program, Mississippi Department of Environmental Quality's Underground Storage Tank Program, Missouri Department of Natural Resources' Environmental Remediation Program, Montana Department of Environmental Quality's Underground Storage Tank Leak Prevention Program, Nebraska State Fire Marshal's Fuels Safety Division, Nevada Division of Environmental Protection's Underground Storage Tank Program, New Hampshire Department of Environmental Services' Underground Storage Tank Program, New Jersey Department of Environmental Protection's Site Remediation Program, New York Department of Environmental Conservation's Chemical Bulk Storage Program, North Carolina Environmental Quality's Underground Storage Tank Section, North Dakota Department of Environmental Quality's Underground Storage Tank Program, Ohio Department of Commerce's Bureau of Underground Storage Tank Regulations, Oklahoma Corporation Commission's Petroleum Storage Tank Division, Oregon Department of Environmental Quality's Underground Storage Tank Program, Pennsylvania Department of Environmental Protection's Division of Storage Tanks, Rhode Island Department of Environmental Management's Underground Storage Tank Management Program, South Carolina Department of Health and Environmental Control's Underground Storage Tanks Program, Tennessee Department of Environment and Conservation's Division of Underground Storage Tanks, Texas Commission on Environmental Quality, Utah Department of Environmental Quality's Underground Storage Tanks Branch, Vermont Department of Environmental Conservation's Waste Management and Prevention Division, Virginia Department of Environmental Quality's Underground Storage Tanks Program, Washington Department of Ecology's Underground Storage Tank Program, District of Columbia Department of Energy and Environment's Underground Storage Tank Program, West Virginia Department of Environmental Protection's Underground Storage Tank Section, Wisconsin Department of Agriculture's Trade and Consumer Protection's Bureau of Weights and Measures, Wyoming Department of Environmental Quality's Storage Tank Program, EPA's Tribal Underground Storage Tanks Database (TrUSTD)

7.2. Underground Storage Tank Facilities Data Sources

Alabama Department of Environmental Management's Groundwater Branch, Alaska's

Department of Environmental Conservation's Prevention Preparedness and Response Program, Arizona Department of Environmental Quality's Underground Storage Tank Program, Arkansas Department of Environmental Quality's Regulated Storage Tanks Division, California Environmental Protection Agency's California Environmental Reporting System, Colorado Department of Labor and Employment's Division of Oil and Public Safety, Connecticut Department of Energy and Environmental Protection, Delaware Department of Natural Resources and Environmental Control's Underground Storage Tank Compliance Program, Florida Department of Environmental Protection's Permitting and Compliance Assistance Program, Georgia Environmental Protection Division's Underground Storage Tank Management Program, Hawaii Department of Health's Solid and Hazardous Waste Branch, Idaho Department of Environmental Quality's Waste Management and Remediation Division, Illinois State Fire Marshal's Division of Petroleum and Chemical Safety, Indiana Department of Environmental Management's UST Branch, Iowa Department of Natural Resources' Underground Storage Tanks Section, Kansas Department of Health and Environment's Storage Tank Section, Kentucky Energy and Environment Cabinet's Underground Storage Tank Branch, Louisiana Department of Environmental Quality's Underground Storage Tank Program, Maine Department of Environmental Protection's Underground Storage Tank Program, Maryland Department of the Environment's Oil Control Program, Massachusetts Department of Environmental Protection's Underground Storage Tank Program, Michigan Department of Licensing and Regulatory Affairs' Storage Tank Division, Minnesota Pollution Control Agency's Underground Storage Tank Program, Mississippi Department of Environmental Quality's Underground Storage Tank Program, Missouri Department of Natural Resources'' Environmental Remediation Program, Montana Department of Environmental Quality's Underground Storage Tank Leak Prevention Program, Nebraska State Fire Marshal's Fuels Safety Division, Nevada Division of Environmental Protection's Underground Storage Tank Program, New Hampshire Department of Environmental Services' Underground Storage Tank Program, New Jersey Department of Environmental Protection's Site Remediation Program, New Mexico Environment Department's Petroleum Storage Tank Bureau, New York Department of Environmental Conservation's Chemical Bulk Storage Program, North Carolina Environmental Quality's Underground Storage Tank Section, North Dakota Department of Environmental Quality's Underground Storage Tank Program, Ohio Department of Commerce's Bureau of Underground Storage Tank Regulations, Oklahoma Corporation Commission's Petroleum Storage Tank Division, Oregon Department of Environmental Quality's Underground Storage Tank Program, Pennsylvania Department of Environmental Protection's Division of Storage Tanks, Rhode Island Department of Environmental Management's Underground Storage Tank Management Program, South Carolina Department of Health and Environmental Control's Underground Storage Tanks Program, Tennessee Department of Environment and Conservation's Division of Underground Storage Tanks, Texas Commission on Environmental Quality, Utah Department of Environmental Quality's Underground Storage Tanks Branch, Vermont Department of Environmental Conservation's Waste Management and Prevention Division, Virginia Department of Environmental Quality's Underground Storage Tanks Program, Washington Department of Ecology's Underground Storage Tank Program, District of Columbia Department of Energy and Environment's Underground Storage Tank Program, West Virginia Department of Environmental Protection's Underground Storage Tank Section, Wisconsin Department of Agriculture's Trade and Consumer Protection's Bureau of Weights and Measures, Wyoming Department of Environmental Quality's Storage Tank Program, EPA's Tribal Underground

Storage Tanks Database (TrUSTD)

7.3. Underground Storage Tank Releases Data Sources

Alabama Department of Environmental Management, Alaska Department of Environmental
Conservation's Division of Spill Prevention and Response, Arizona Department of
Environmental Quality, Arkansas Department of Environmental Quality's Office of Land
Resources, California Environmental Protection Agency State Water Resources Control Board,
Colorado Department of Labor and Employment's Division of Oil and Public Safety,
Connecticut Department of Energy and Environmental Protection, Delaware Department of
Natural Resources and Environmental Control, Florida Department of Environmental
Protection's Division of Waste Management, Georgia Department of Natural Resources'
Environmental protection Division, State of Hawaii's Department of Health-Solid and Hazardous
Waste Branch, Idaho Department of Environmental Quality, Illinois Environmental Protection
Agency's Bureau of Land Databases, Indiana Department of Environmental Management UST
Branch, Iowa Department of Natural Resources and Public Safety State Fire Marshal Office,
Kansas Department of Health and Environment's Storage Tank Section, Kentucky Energy and
Environment Cabinet-Division of Waste Management-Underground Storage Tank Branch,
Louisiana Department of Environmental Quality's Underground Storage Tank Program, Maine
Department of Environmental Protection's Bureau of Remediation and Waste Management,
Maryland Department of the Environment-Land and Materials Administration-Oil Control
Program, Massachusetts Department of Environmental Protection's Bureau of Waste Site
Cleanup, Michigan Department of Environment, Great Lakes, and Energy's Leaking
Underground Storage Tanks Program, Minnesota Pollution Control Agency's Petroleum
Remediation Program, Mississippi Department of Environmental Quality's Underground Storage
Tanks Program, Missouri Department of Natural Resources' Environmental Remediation
Program, Montana Department of Environmental Quality's Waste Management and Remediation
Division, Nebraska Department of Environmental Quality, Nevada Division of Environmental
Protection, New Hampshire Department of Environmental Services' Waste Division, New Jersey
Department of Environmental Protection's Division of Remediation Management, New Mexico
Environment Department's Petroleum Storage Tank Bureau, New York Department of
Environmental Conservation, North Carolina Department of Environmental Quality's Was
Management Division, North Dakota Department of Environmental Quality's Division of Waste
Management, Ohio Department of Commerce's Division of State Fire Marshal, Oklahoma
Corporation Commission's Petroleum Storage Tank Division, Oregon Department of
Environmental Quality's Tanks Program, Pennsylvania Department of Environmental
Protection's Storage Tank Cleanup Program, Rhode Island Department of Environmental
Management's Office of Waste Management, South Carolina Department of Health and
Environmental Control, South Dakota Department of Environmental and Natural Resources'
Ground Water Quality Program, Tennessee Department of Environment and Conservation's
Division of Underground Storage Tanks, Texas Commission of Environmental Quality, Utah
Department of Environmental Quality's Underground Storage Tank Branch, Vermont
Department of Environmental Conservation, Virginia Department of Environmental Quality's
Division of Land Protection and Revitalization, Washington Department of Ecology's Toxics
Cleanup Program, Washington D.C. Department of Energy and Environment, West Virginia
Department of Environmental Protection's Tanks Unit, Wisconsin Department of Natural
Resources' Remediation and Redevelopment Program, Wyoming Department of Environmental

Quality's Storage Tank program, Tribal Underground Storage Tanks Database (TrUSTD)

8. Appendix A

In July 2023, UST Finder data were populated with EJScreen v. 2.2 data. For every active underground storage tank facility and every open leaking underground storage tank location, there is information on associated community:

- Environmental Indicators
- Socioeconomic/health Indicators
- EJ Indexes

For more information on EPA's EJScreen, visit https://www.epa.gov/ejscreen.

8.1. Percentiles

These three elements are all reported in percentiles—by state percentiles and US percentiles. Percentiles are a way of reporting information in a standardized unit, reported from 0 to 100. A 50th percentile denotes that half of the data is above and half of the data is below the 50th percentile, for example. US percentiles use the entire EJScreen dataset to rank the percentiles while State percentiles are ranked state-by-state. If using state percentiles, the denominator is determined by the number of block groups within any given state, so comparisons between UST facilities or LUSTs need to be restricted to state analysis. For example, if using state percentiles do not compare an UST facility in Iowa to an UST Facility in New Hampshire—comparisons between states should be done with US percentiles.

8.2. Environmental Indicators

There are 13 environmental indicators in EJScreen. Below is a table of these indicators, key medium effected, data year, and source.

Key Medium	Indicator	Details	Source	Data Year
Air	Particulate matter 2.5	$PM_{2.5}$ levels in air, $\mu g/m^3$ annual avg.	EPA, Office of Air and Radiation (OAR) fusion of model and monitor data	2019
Air	Ozone	Annual average of top ten maximum daily 8-hour ozone air concentrations in parts per billion	EPA, OAR fusion of model and monitor data	2019

Key Medium	Indicator	Details	Source	Data Year
Air	Diesel particulate matter	Diesel particulate matter level in air, µg/m³	EPA Hazardous Air Pollutants	2019
Air	Air toxics cancer risk	Lifetime cancer risk from inhalation of air toxics	EPA Hazardous Air Pollutants	2019
Air	Air toxics respiratory hazard index	Ratio of exposure concentration to health-based reference concentration	EPA Hazardous Air Pollutants	2019
Air	Toxic Releases to Air	RSEI modeled toxicity-weighted concentrations in air of TRI listed chemicals.	Calculated from 2021 Risk-Screening Environmental Indicators (RSEI) Geographic Microdata results for the air pathway, retrieved 5/16/2023	2021
Air/other	Traffic proximity and volume	Count of vehicles (AADT, avg. annual daily traffic) at major roads within 500 meters, divided by distance in meters (not km)	Calculated from 2020 U.S. Department of Transportation traffic data, retrieved 1/19/2023	2020
Dust/ lead paint	Lead paint	Percent of housing units built pre-1960, as indicator of potential lead paint exposure	Calculated based on Census/American Community Survey (ACS) data, retrieved 2023	2017-2021
Waste/ air/ water	Superfund proximity	Count of proposed or listed NPL - also known as superfund - sites within 5 km (or nearest one beyond 5 km), each divided by distance in kilometers	Calculated from EPA CERCLIS database, retrieved 11/23/2022	2022

Key Medium	Indicator	Details	Source	Data Year
Waste/ air/ water	Risk management plan (RMP) facility proximity	Count of RMP (potential chemical accident management plan) facilities within 5 km (or nearest one beyond 5 km), each divided by distance in kilometers	Calculated from EPA RMP database, retrieved 10/22/2022	2022
Waste/ air/ water	Hazardous waste proximity	Count of hazardous waste facilities (TSDFs and LQGs) within 5 km (or nearest beyond 5 km), each divided by distance in kilometers	TSDF data calculated from EPA RCRAInfo database, retrieved 2/9/2023	2022
Waste/ air/ water	Underground storage tanks (UST) and leaking UST (LUST)	Count of LUSTs (multiplied by a factor of 7.7) and the number of USTs within a 1,500-foot buffered block group	Calculated from EPA UST Finder, retrieved 2/2/2023	2022
Water	Wastewater discharge	RSEI modeled toxic concentrations at stream segments within 500 meters, divided by distance in kilometers (km)	Calculated from RSEI modeled toxic concentrations to stream reach segments, created 11/23/2022	2020

8.3. Socioeconomic/health Indicators

There are 5 socioeconomic indicators and 1 health indictor displayed in the EJScreen dataset within UST Finder. These indicators form the basis for both the demographic index and the supplemental demographic index:

1. **People of color:**
   - The percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all

people other than non-Hispanic white-alone individuals. The word "alone" in this case indicates that the person is of a single race, not multiracial.

2. **Low-income:**
   - The percent of a block group's population in households where the household income is less than or equal to twice the federal "poverty level."

3. **Unemployment rate:**
   - The percent of a block group's population that did not have a job at all during the reporting period, made at least one specific active effort to find a job during the prior 4 weeks, and were available for work (unless temporarily ill).

4. **Limited English speaking:**
   - Percent of people in a block group living in limited English speaking households. A household in which all members age 14 years and over speak a non-English language and also speak English less than "very well" (have difficulty with English) is limited English speaking.

5. **Less than high school education:**
   - Percent of people age 25 or older in a block group whose education is short of a high school diploma.

6. **Low Life Expectancy:**
   - Average life expectancy data developed as a collaboration between NCHS, the National Association for Public Health Statistics and Information Systems, and the Robert Wood Johnson Foundation. This data is available at the tract level; the same tract value is then assigned to all sub block groups.
   Source: U.S. Small-area Life Expectancy Estimates Project (USALEE)

8.4. EJ Indexes

8.4.1. Standard EJ Indexes

There are thirteen EJ indexes in EJScreen reflecting the 13 environmental indicators, combined with socioeconomic information. The EJ index highlights block groups with the highest intersection of low-income populations, people of color, and a given environmental indicator. To calculate a single EJ index for one block group, EJScreen multiplies the environmental indicator by socioeconomic information. This socioeconomic information includes percent low-income and percent people of color (as the demographic index). This is the formula for the index:

EJ Index = (Environmental Indicator Percentile for Block Group) X (Demographic Index for Block Group)

8.4.2. Supplemental EJ Indexes

There are thirteen supplemental indexes in EJScreen reflecting the 13 environmental indicators, combined with socioeconomic information. The supplemental index highlights block groups with the highest intersection of five socioeconomic factors and a given environmental indicator. To calculate a single supplemental index for one block group, EJScreen multiplies the environmental indicator by socioeconomic information. This socioeconomic information includes percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy (as the supplemental demographic index). This is the formula for the index:

Supplemental Index = (Environmental Indicator Percentile for Block Group) X (Supplemental Demographic Index for Block Group)

8.5. Environmental Justice Layers within UST Finder

All 8 EJ layers can be found within the "EJ" widget towards the end of the widget band at the bottom of UST Finder:
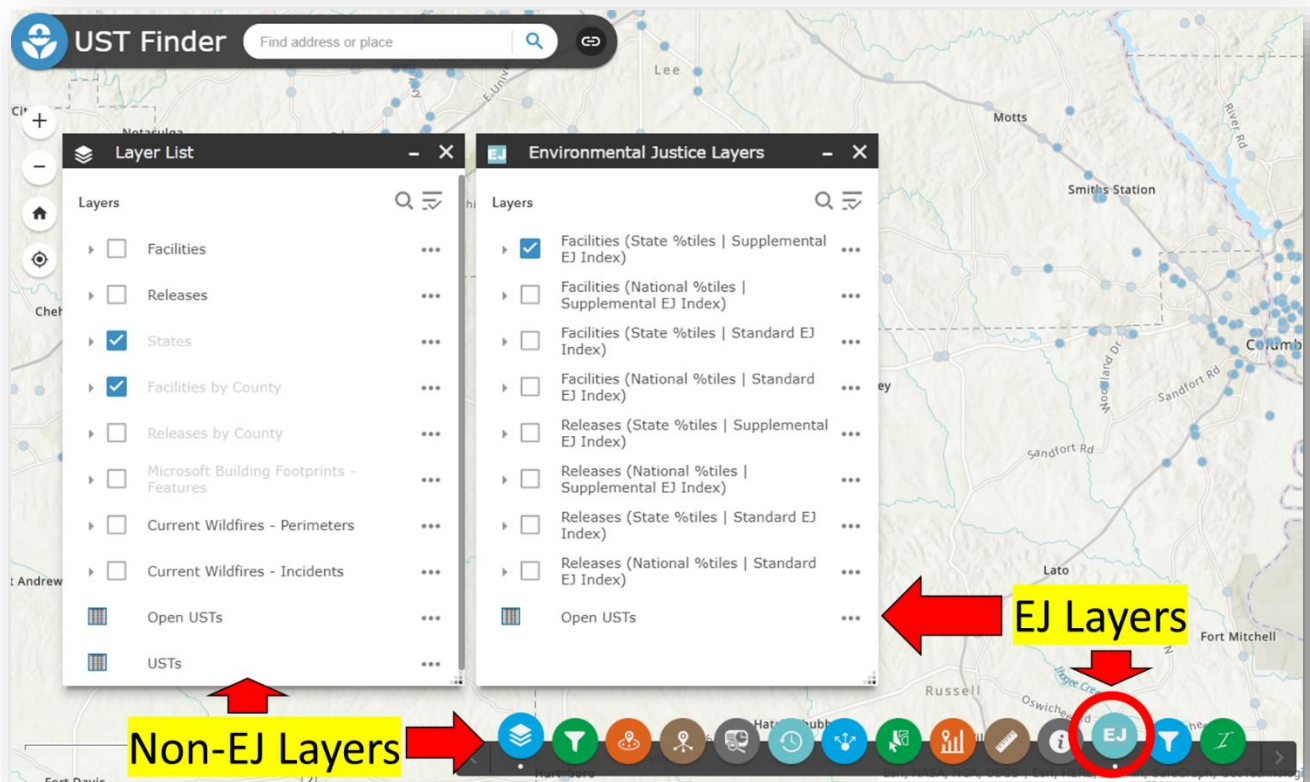

Figure 30 EJ Layer widget and window within UST Finder

When using the EJ layers, make sure to turn off the Non-EJ Layers to avoid overlapping features. With the EJ Layer window open, there are 8 features and 1 table:
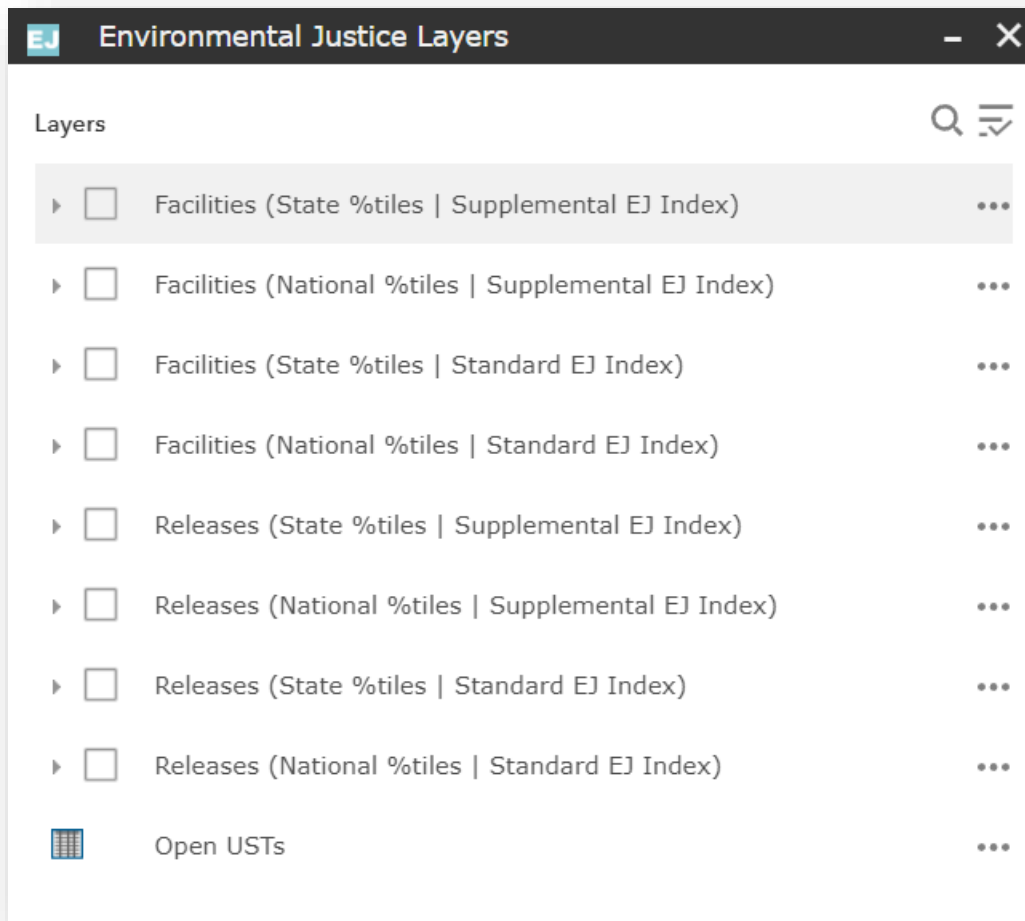
Figure 4 EJ Layers

The first 4 (UST Facilities) layers and last 4 (Releases) layers contain the same UST and LUST information but contain different EJ info depending on state %tiles or national %tiles and supplemental and standard EJ Indexes. Select the layer that best reflects how you want the percentiles ranked (state or national) and how you want the Indexes calculated (standard or supplemental).

8.6. Symbology

All 8 layers are symbolized by the number of EJ Indexes over the 80th %tile—between 0 and 13. For early applications of EJScreen, EPA identified the 80th percentile filter as that initial starting point. In other words, an area with any of the 13 EJ Indexes at or above the 80th percentile nationally should be considered as a potential candidate for further review. Further review may include considering other factors and other sources of information such as health-based information, local knowledge, proximity and exposure to environmental hazards, susceptible populations, unique exposure pathways, and other federal, regional, state, and local data (EJScreen).

As a visual way to quickly identify facilities or releases within communities that meet at least 1

EJ Index above the 80th %tile, all 8 layers are symbolized into 2 categories:
1. 0 EJ Indexes above the 80th %tile
2. 1-13 Indexes above the 80th %tile

The latter category is symbolized by a darker blue and darker red for facilities and releases, respectively. Below shows this binary symbology:
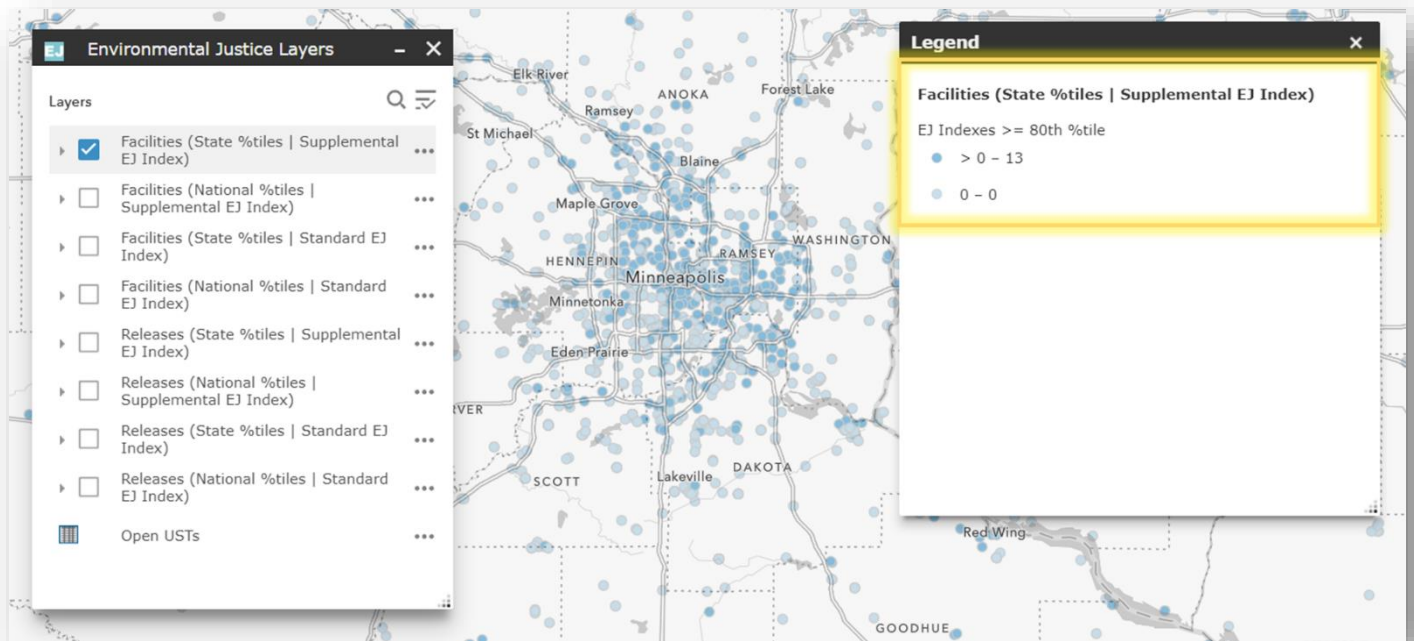

Figure 5 EJ Index symbology

8.7. EJ Layer Pop-ups

Click on a point on the map to open the pop-up window. within this window, scroll down to view EJ information:
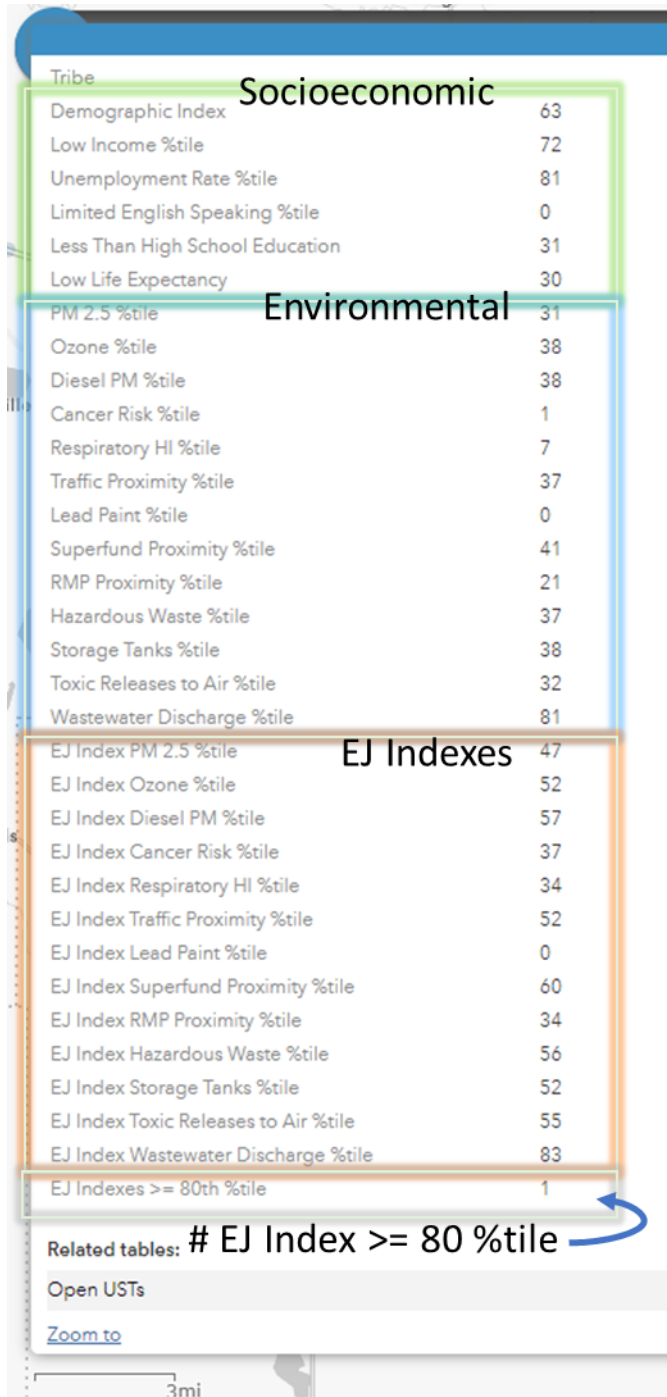
Tribe	
Socioeconomic	
Demographic Index	63
Low Income %tile	72
Unemployment Rate %tile	81
Limited English Speaking %tile	0
Less Than High School Education	31
Low Life Expectancy	30
Environmental	
PM 2.5 %tile	31
Ozone %tile	38
Diesel PM %tile	38
Cancer Risk %tile	1
Respiratory HI %tile	7
Traffic Proximity %tile	37
Lead Paint %tile	0
Superfund Proximity %tile	41
RMP Proximity %tile	21
Hazardous Waste %tile	37
Storage Tanks %tile	38
Toxic Releases to Air %tile	32
Wastewater Discharge %tile	81
EJ Indexes	
EJ Index PM 2.5 %tile	47
EJ Index Ozone %tile	52
EJ Index Diesel PM %tile	57
EJ Index Cancer Risk %tile	37
EJ Index Respiratory HI %tile	34
EJ Index Traffic Proximity %tile	52
EJ Index Lead Paint %tile	0
EJ Index Superfund Proximity %tile	60
EJ Index RMP Proximity %tile	34
EJ Index Hazardous Waste %tile	56
EJ Index Storage Tanks %tile	52
EJ Index Toxic Releases to Air %tile	55
EJ Index Wastewater Discharge %tile	83
EJ Indexes >= 80th %tile	1

Related tables: **# EJ Index >= 80 %tile**

Open USTs

Zoom to

3mi

Figure 6 EJ Layer pop-up by EJ "category"

8.8. EJ Index Filter

A second filter widget is added, the EJ Index Filter 🔽, allowing the user to query each of the 8 EJ layers by the number of EJ Indexes at or above the 80 %tile. The Filter is divided into 8—representing one filter per EJ Layer. When filtering, make sure you have the associated layer

turned on matching the associated filter. For example, the image below shows the Releases (State %tile │ Supplemental EJ Index) layer turned on and the Releases (State %tile │ Supplemental EJ Index) filter is being used.
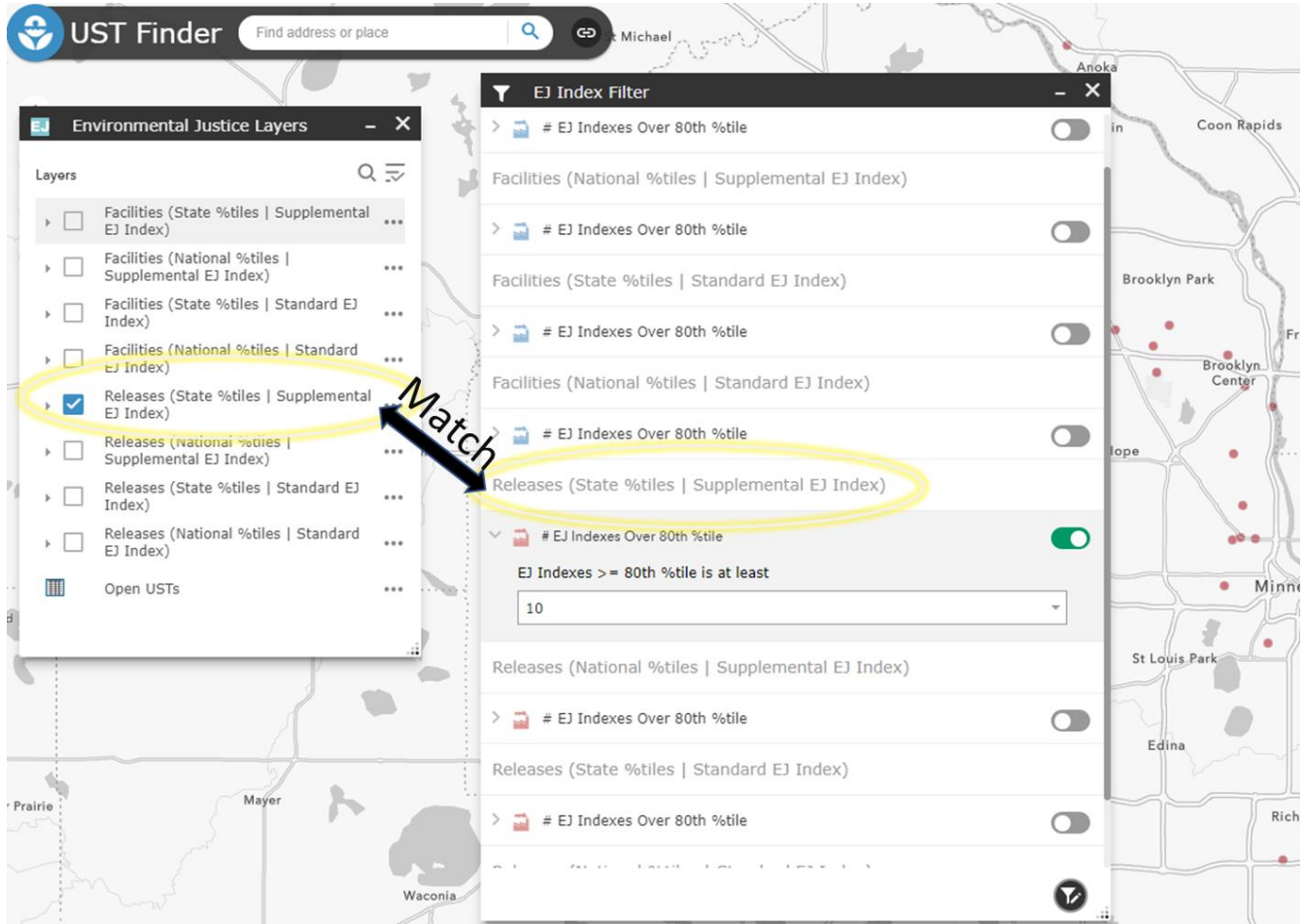

Figure 7 Filtering layers by # of EJ Indexes at or above the 80th %tile

8.9. EJ Index Charts

Use the EJ Index Charts to visually assess all EJ Index %tiles at an individual facility/releases or the average of all indexes for a defined geography. Turn on one of the 8 EJ layers and select the "I" widget .

Within the "I" window, click the layer name that is currently selected in the Environmental Justice Layer menu
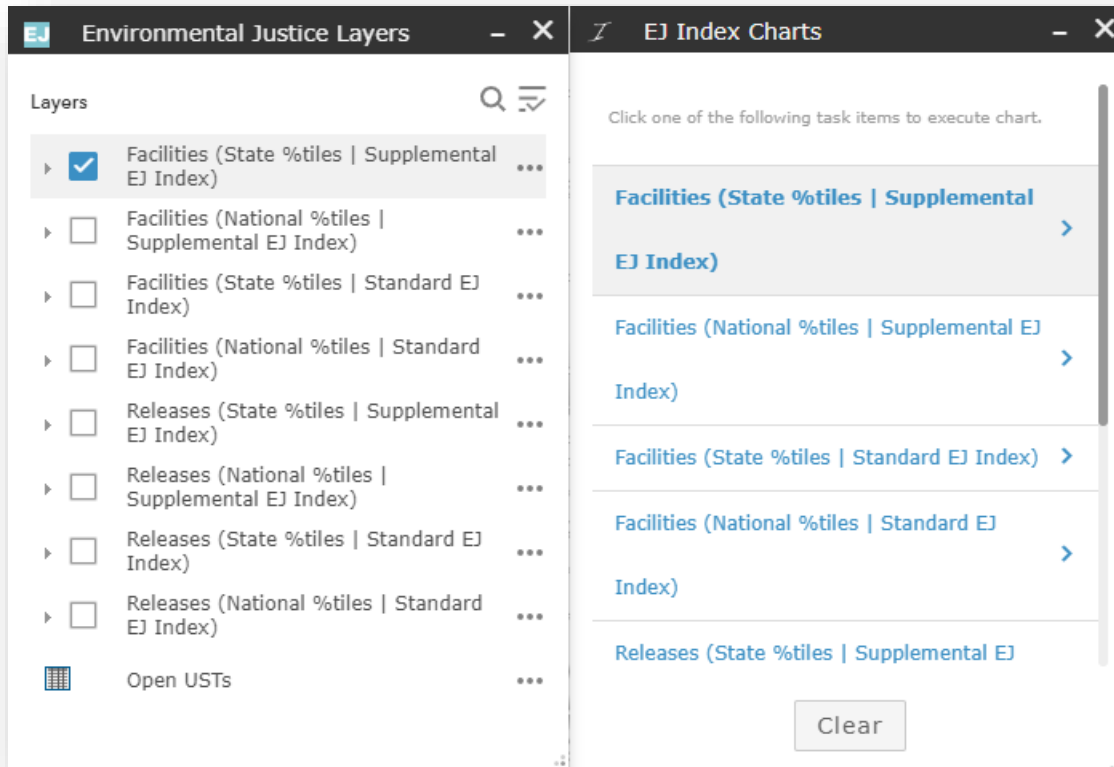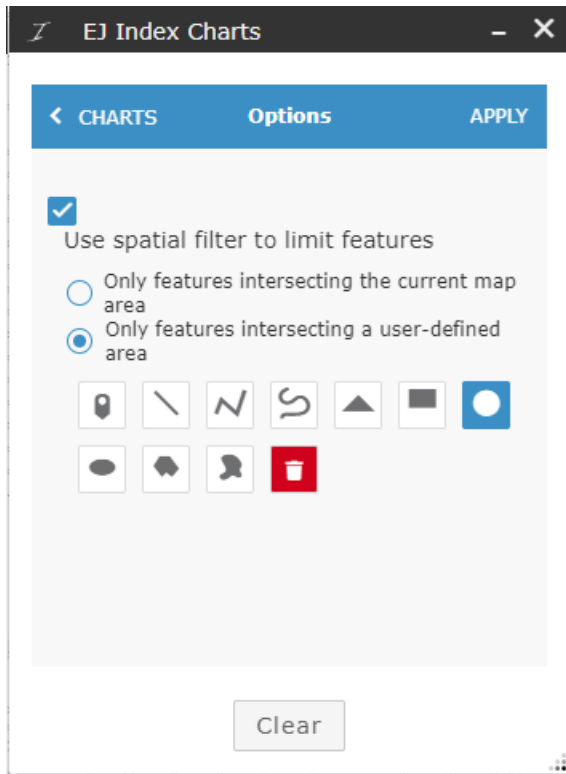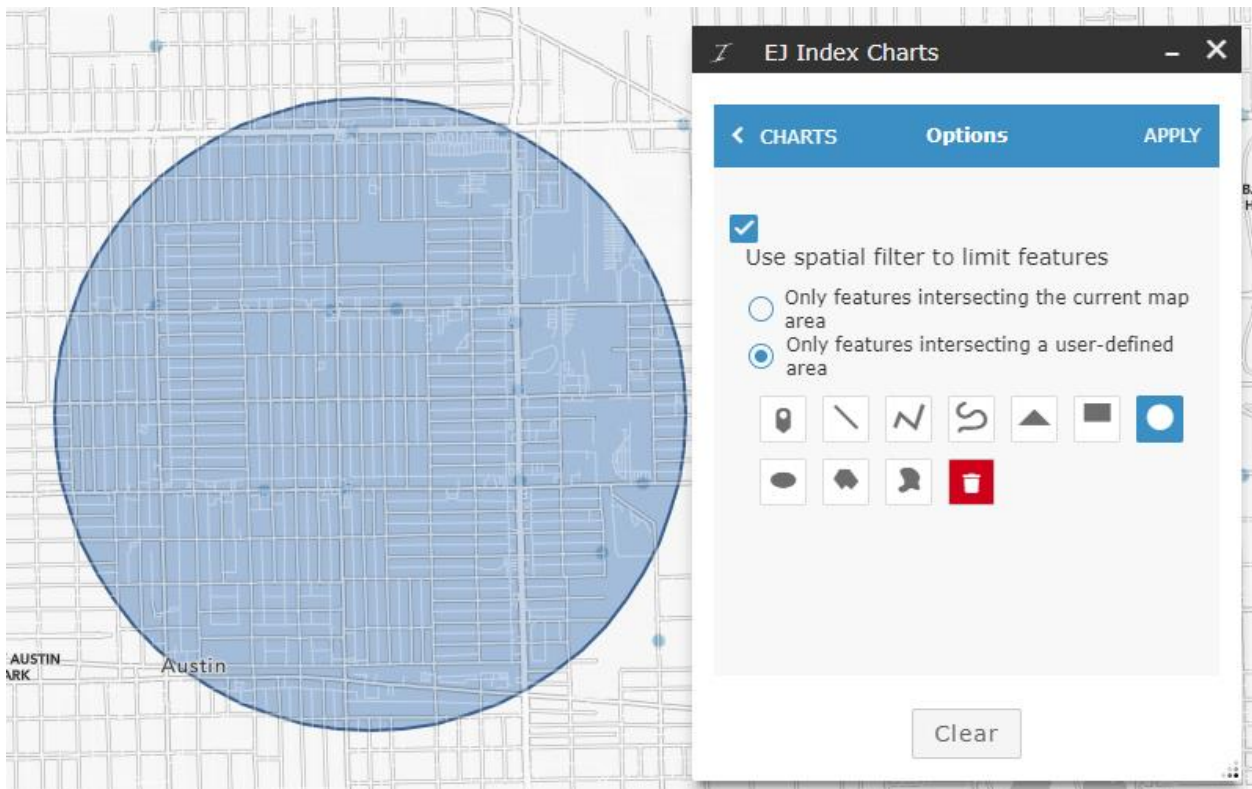
Figure 8 Select the EJ Index Chart layer matching the layer turned on in the Environmental Justice Layers window

Click "Use spatial filter to limit features". And select whether you want to calculate average indexes for all the features within your current map extent or features intersecting a user defined area.

Make a selection and select "Apply":

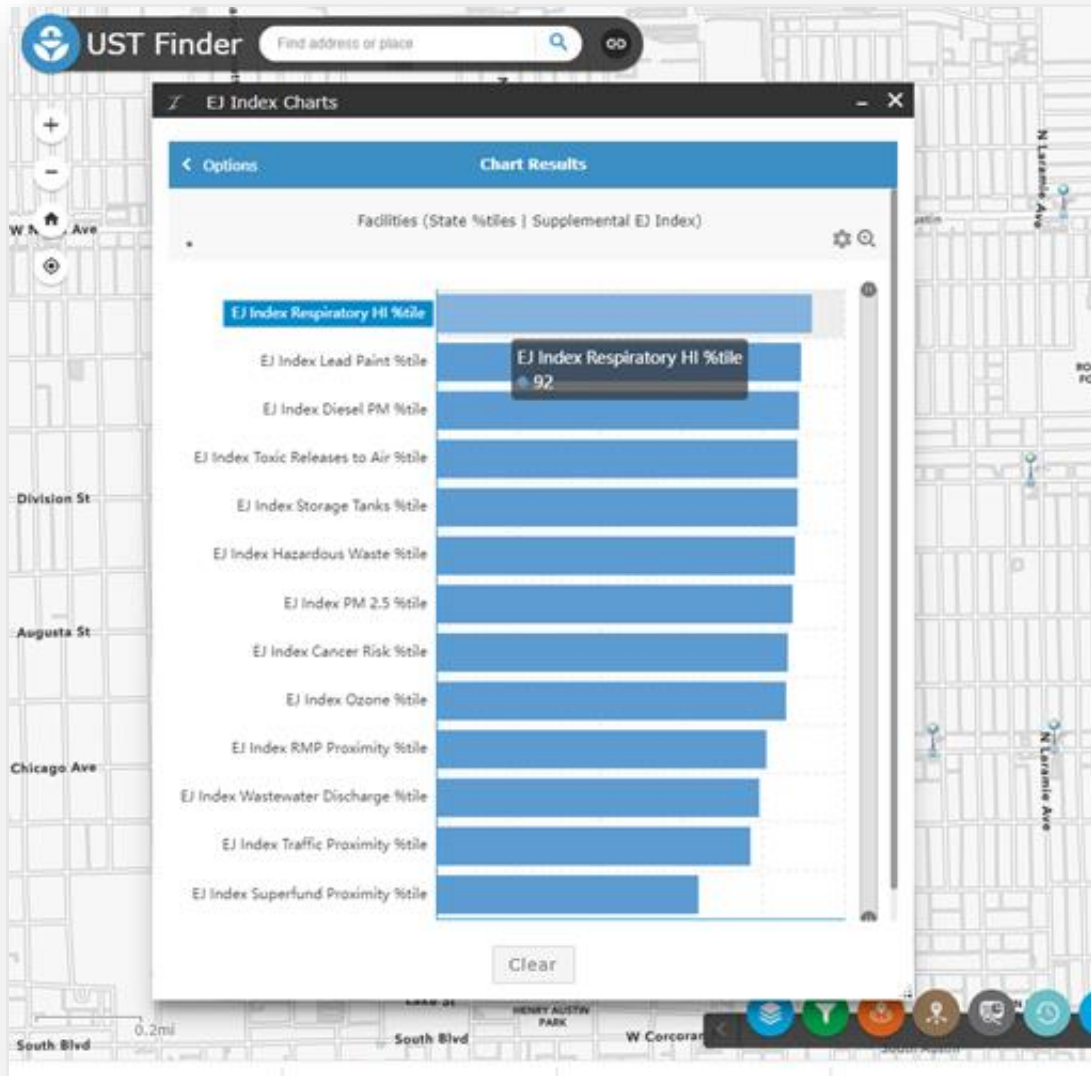"Chart Results" will appear. Hover over the bars for the 13 indexes to see the EJ Index %tiles for the facility/release(s).

Figure 9 Chart Results - EJ Index %tiles