



ERMA Job aid: How to determine the proximity of a facility to surface waters of the state

Overview

This job aid explains the methodology for facility owners and operators, oil spill contingency plan preparers, and plan reviewers to use the Environmental Response Management Application (ERMA) to determine whether a facility is within $\frac{1}{4}$ mi of surface waters of the state.¹ It also shows how to determine which types of surface waters a facility may impact.

You will need the geographic coordinates of the facility, as well as a browser with an internet connection, to make these determinations. You do not need to have an ERMA login. After navigating to ERMA using the link below, you will enter the location of the facility and observe its proximity to surface waters of the state using data layers listed below. These layers will be pre-selected in ERMA when you open the website using the link below.

GIS data layers:

Surface waters of the state: National Hydrography Dataset (NHD) Flowlines and Direction
Buffer zone: Quarter Mile Buffer of Streams and Lakes - Statewide

ERMA Link:

<https://erma.noaa.gov/southwest#layers=12+13320+35719&y=37.46352&z=6.1&panel=layer&x=-122.05013>

Getting started with ERMA

1. Open an internet browser such as Mozilla Firefox or Google Chrome and navigate to the ERMA using the link above.
2. ERMA will open a window with two GIS data layers already displayed: the National Hydrography Dataset (NHD) and the $\frac{1}{4}$ mile buffer zone around streams and lakes. The $\frac{1}{4}$ mile buffer zone will appear as the light blue area on the map display. Please note that it may take several seconds to load this large dataset after clicking the link.
3. ERMA provides a simple set of tools for map navigation and analysis. These tools are located on the right side of the screen through the "Other" option (Figure 1). If you select "Other," the "Help" option is the third selection from the top.
4. Proceed to the next section for instructions on how to enter a facility location.

¹Note that ERMA includes U.S. Geological Survey data such as the National Hydrography Dataset that may, of necessity, be preliminary in nature. Such data and information are not guaranteed to be correct or complete. Users are cautioned to carefully consider the provisional nature of these data and information before using them for decisions that concern the conduct of business that involves operational consequences. Conclusions drawn from, or actions undertaken on the basis of, such data and information are the sole responsibility of the user.

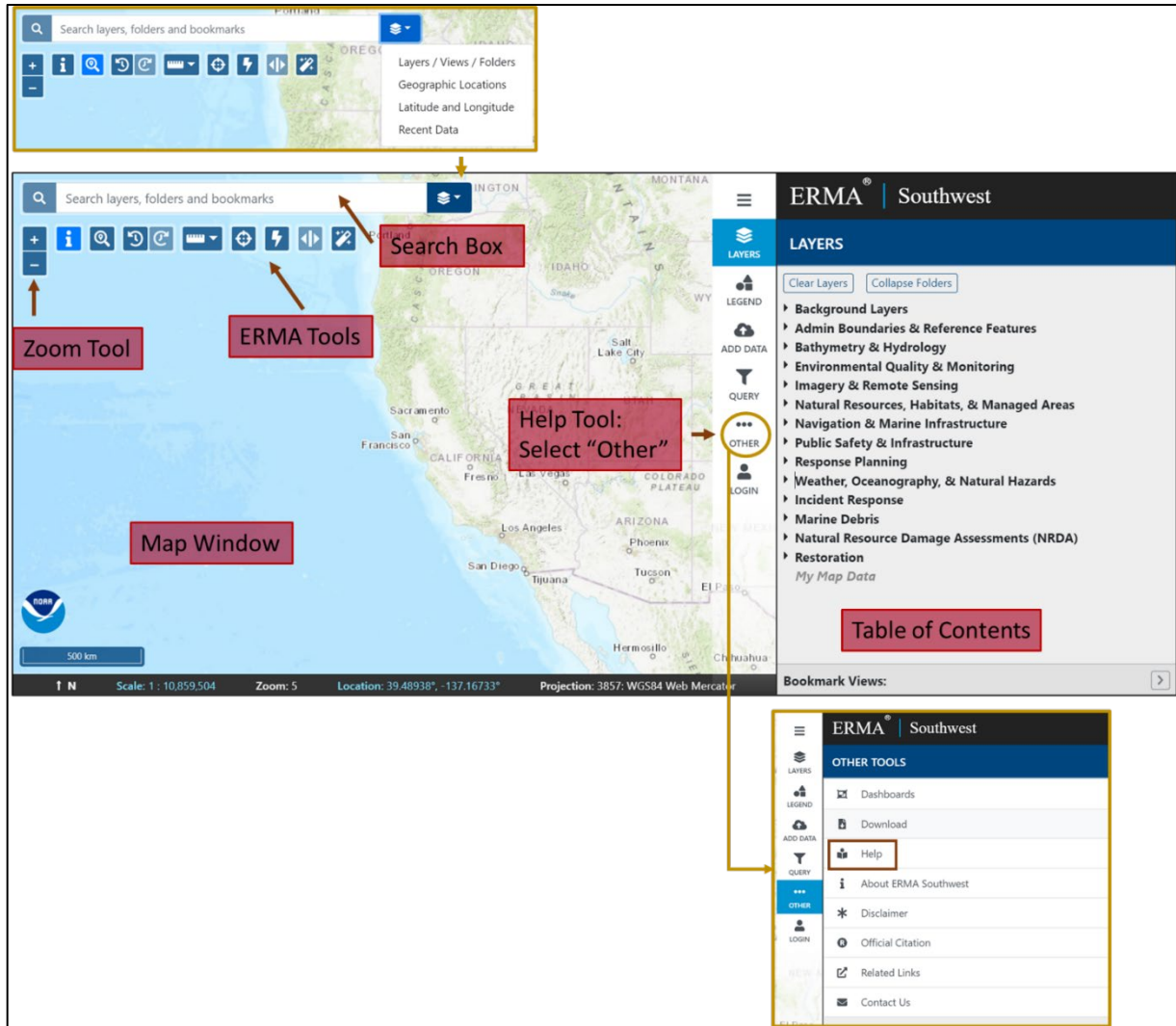


Figure 1. Southwest ERMA map window and navigation.

How to determine whether a facility is within ¼ mi of state waters

1. Before entering the facility location, select the dropdown arrow to the right of the search box and click the Latitude and Longitude option (Figure 1). Then enter the geographic coordinates of the facility into the search box using any of the formats listed below. Once you have entered the latitude and longitude, a marker will appear on the map at the location you entered (Figure 2). Use the zoom buttons (+/-) to zoom in on your location. You must have the zoom set to at least 13 to view the datasets properly.

Latitude/Longitude Formats:

Decimal Degrees (e.g., 35.556, -119.888)

Degrees decimal minutes (e.g., 40 45.800, -120 55.678)

Degrees minutes seconds (e.g., 34 24 34.567, -120 45 65.543)

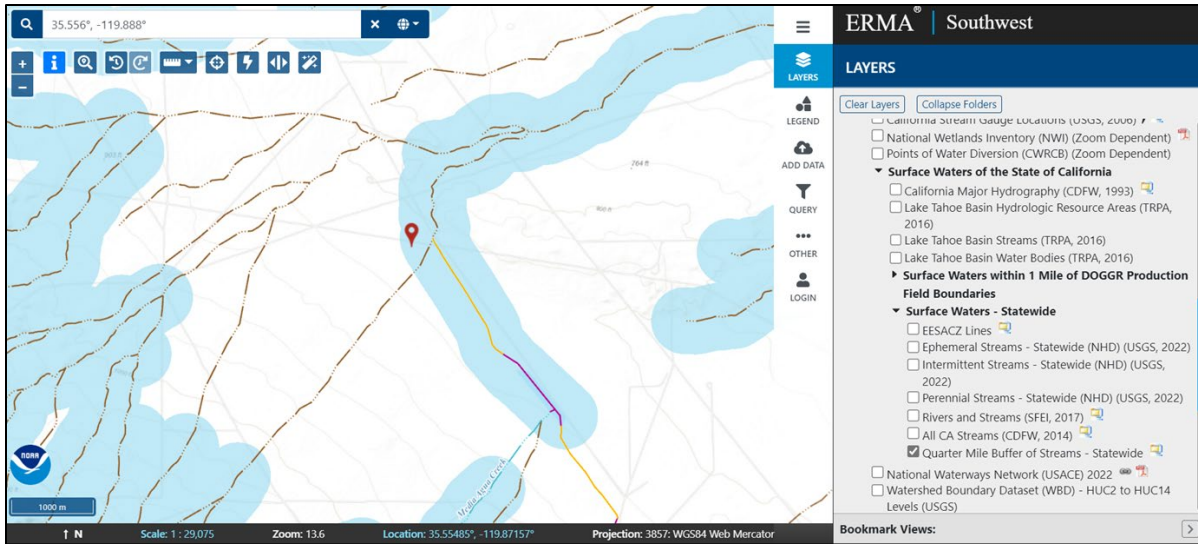


Figure 2. A location is displayed after latitude and longitude is entered in the search bar. If the marker is within the light blue area, the facility is within ¼ mile of surface waters of the state. Note that the zoom must be set to at least 13 to view the layers accurately.

- After zooming in on your location, you can determine if the facility lies within ¼ mi of surface waters of the state, which may subject the facility to OSPR’s inland Contingency Plan regulations (14 California Code of Regulations, section 817.04). If the location marker is within the light blue area, it is within the ¼ buffer zone (Figure 2). Refer to sections 817.04 (b) and (c) for further information regarding applicability and exemption criteria for facilities that are within ¼ mi of waters of the state.

How to determine the types of surface waters a facility may impact

The type(s) of streams that may be impacted by a facility affect the type of containment and recovery resources that must be listed in a facility’s contingency plan (see section 817.04(m)(1)(A)), the number of personnel required for the certified spill management team (see section 830.4(a)(3)(E)), and the required demonstration of financial responsibility (see section 791.7(h)(1)(G)1.).

The stream type designations refer to how often a stream contains water, as defined below²:

Ephemeral – A stream or part of a stream that flows only in direct response to precipitation; it receives little or no water from springs, melting snow, or other sources; its channel is at all times above the water table

Intermittent – A stream that flows only when it receives water from rainfall runoff or springs, or from some surface source such as melting snow

Perennial – A stream that normally has water in its channel at all times

² Stream type definition source: https://water.usgs.gov/water-basics_glossary.html.
1/24/2023

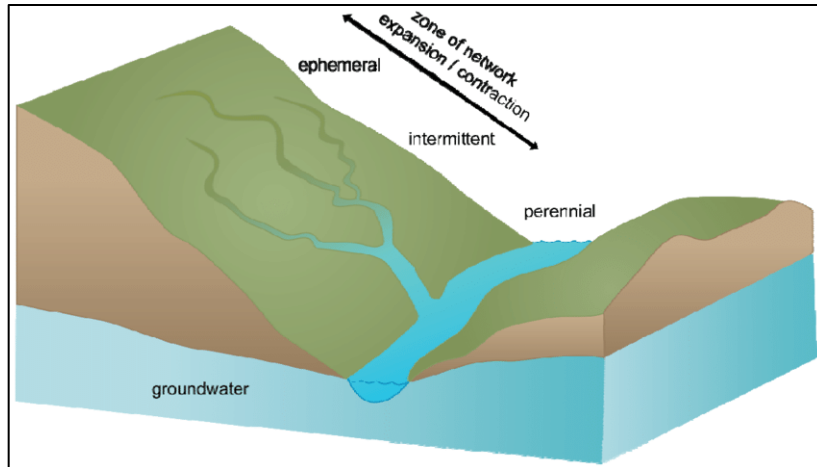


Figure 3. Image showing the differences between ephemeral, intermittent, and perennial streams³

1. To determine the type of stream(s) a facility may impact, enter the facility's latitude and longitude, as described in the previous section. Observe the stream(s) that the facility is within ¼ mi of, as displayed by the ¼ mi stream buffer layer. If you are zoomed in to at least 13, the symbology of the NHD layer will indicate the stream type.
2. Click on the Legend option on the right side of the map window to display the NHD Flowline symbology. Refer to the "Flowline – Large Scale" section of the NHD legend (Figure 4) to see the stream type for the location you are investigating. Figure 5 shows a map view featuring various stream types. Look at the symbology of the stream(s) a facility is within proximity of, and determine which stream types the facility may impact by comparing the map display to the NHD Flowline legend.

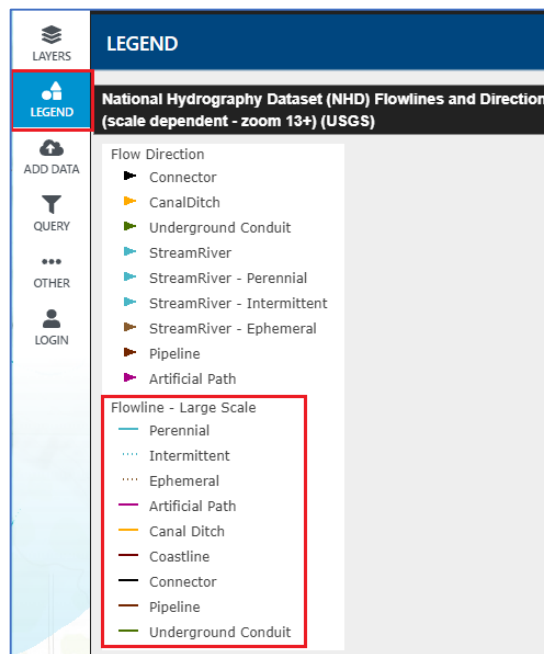


Figure 4: National Hydrography (NHD) dataset legend. Refer to the "Flowline – Large Scale" portion of the legend, indicated in the red box.

³ Source: Hosen, J., et al. (2011). Temporary streams: The hydrology, geography, and ecology of non-perennially flowing waters. In: *River Ecosystems: Dynamics, Management, and Conservation*, H.S. Elliott and L.E. Martin, Eds. ISBN: 978-1-61209-145-7 2011)

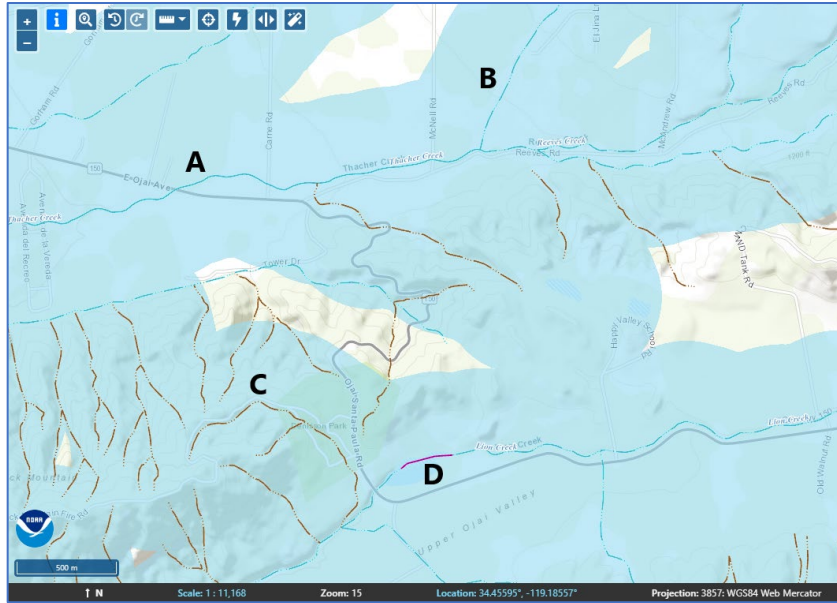


Figure 5: Map window depicting a perennial stream (A), an intermittent stream (B), an ephemeral stream (C), and an artificial path (D).

- If you are unsure about which stream type the symbology is indicating, you can double check using the stream attributes. Click on the stream(s) whose buffer zone the facility falls within. An attribute table will appear in a pop-up window that displays information including stream type. Navigate to the NHD tab in the pop-up window, shown in red near the top left of Figure 6. The 'FCode' column displays the stream type. For the example used below (Figure 6), the location is near ephemeral and intermittent streams, as displayed in the 'FCode' column.

Quarter Mile Buffer ... **National Hydrography...**

National Hydrography Dataset (NHD) Flowlines and Direction (scale dependent - zoom 13+) (USGS) [Layer 35719-arcgis rest]

Flowline - Large Scale

| OBJECTID | PERMANENT_IDENTIFIER | FDATE | Resolution | GNIS_ID | GNIS_NAME | LENGTHKM | REACHCODE | FlowDir | WBAREA_PERMANENT_IDENTIFIER | FType | FCode | Shape |
|----------|--|-----------|------------|---------|-----------|----------|----------------|---------------|-----------------------------|-------------|---|----------|
| 28889341 | {955A786D-487C-4556-B290-51ADFFC0DDCF} | 4/21/2021 | High | Null | Null | 0.748744 | 18070101005242 | WithDigitized | Null | StreamRiver | Stream/River: Hydrographic Category = Ephemeral | Polyline |
| 28900532 | {6E2B6D4B-1F30-4309-9523-D7336FE45663} | 4/21/2021 | High | Null | Null | 0.87949 | 18070101005242 | WithDigitized | Null | StreamRiver | Stream/River: Hydrographic Category = Intermittent | Polyline |
| 28903306 | {1D5E2750-11F0-4B5B-A9E9-3920CD553594} | 4/21/2021 | High | Null | Null | 0.443761 | 18070101005243 | WithDigitized | Null | StreamRiver | Stream/River: Hydrographic Category = Ephemeral | Polyline |
| 28903319 | {7B218FA8-AF05-4F0A-8E07-680C05DBBCF6} | 4/21/2021 | High | Null | Null | 0.363239 | 18070101005279 | WithDigitized | Null | StreamRiver | Stream/River: Hydrographic Category = Intermittent | Polyline |

Figure 6. Attribute table showing the stream type associated with a selected location. The stream type is identified in the "FCode" column, as shown in the red box. This table will be displayed when on the NHD tab of the pop-up window that appears when a map location is selected.

- A final method you can use to verify the stream type(s) a facility may impact is to turn on additional data layers that display the specific stream types.

Specific stream layers:

- Ephemeral Streams – Statewide
- Intermittent Streams – Statewide
- Perennial Streams – Statewide

- The easiest way to turn these layers on is to type the names of the data layers in the search bar. Ensure that the search bar is set to Layers/Views/Folders using the dropdown, as shown in Figure 7. As you type, the search bar will auto-populate with the name of the layer, so typing “Ephemeral” will pull up the Ephemeral Streams – Statewide layer. When you press return, the layer will turn on. Repeat this with the Intermittent Stream layer. If the only stream types within proximity of the facility are ephemeral and/or intermittent, see sections 817.04(m)(1)(A), 830.4(a)(3)(E), and 791.7(h)(1)(G)1 regarding the implications for a facility’s response resources, certified SMT, and financial responsibility, respectively.
- You are done! Using a combination of the NHD symbology, the attribute tables, and stream type-specific data layers, you can determine what stream type(s) a facility may impact. Be sure to make appropriate determinations for all locations where a facility conducts operations.



Figure 7. Use the Search Bar to find data layers displaying specific stream types (ephemeral, intermittent, perennial) to enter the stream type you are interested in. Note that you will need to select the dropdown menu and choose the “Layers/Views/Folders” option first. The symbology of the stream-specific layers is shown on the right.

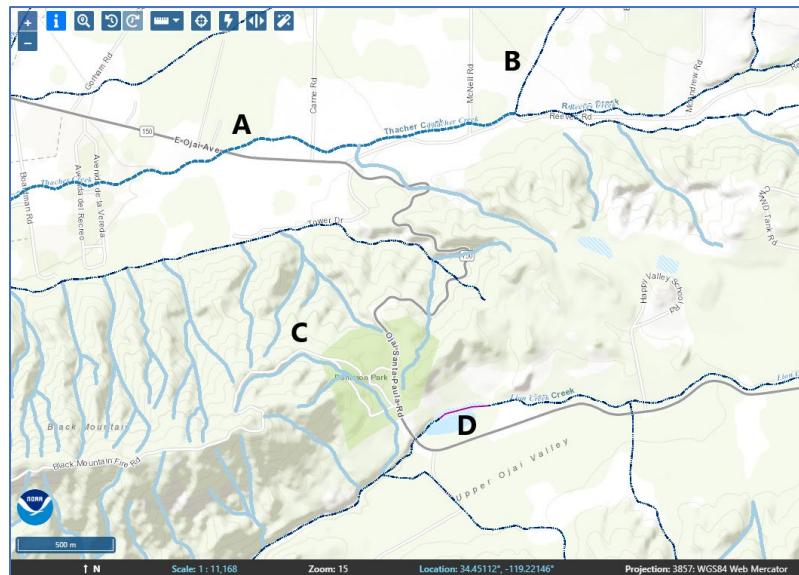


Figure 8: Map window showing the same location as Figure 5, with the ¼ mi buffer layer turned off for ease of viewing. Note the perennial (*A), intermittent (B), and ephemeral (C) stream layers.