<u>**P.O.BOX 10009**</u>   <u>**Richmond, VA 23240-0009**</u>
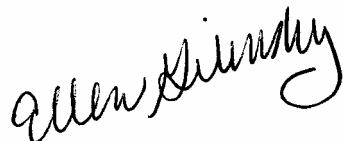
Subject: <u>**Guidance Memo No.06-2004**</u>
GEOGRAPHICAL INFORMATION SYSTEM (GIS) DATA PLOTTING
PROCEDURE

To: Regional Directors

From: Ellen Gilinsky, Ph.D., Director

Date: May 12, 2006

Copies: Deputy Regional Directors, Groundwater Managers, Frederick Cunningham, John Giese, Elizabeth Lamp

Summary:

The purpose of this guidance is to provide staff with the GIS Data Plotting procedure for the Petroleum Storage Tank program. This guidance is intended to supply a clear, complete, and consistent mechanism for users when plotting confirmed release sites, registered facilities and alternate water supply sites using the GIS Data Editing Tool.

Electronic Copy:

An electronic copy of this guidance in PDF format is available for staff internally on DEQNET, and for the general public on DEQ's website at: http://www.deq.virginia.gov.

Contact information:

Please contact Marilynn Alfaro, Office of Spill Response and Remediation Business Analyst, (804) 698-4397 or maalfaro@deq.virginia.gov if you have any questions about this guidance.

Disclaimer:

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any particular method for the analysis of data, establishment of a wasteload allocation, or establishment of a permit limit. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the process of plotting points in the GIS Data Editing Tool. The procedures are intended to provide a clear, complete, and consistent mechanism for users when plotting release sites (PC #s), registered facilities and alternate water supply (AWS) sites.

2.0 SCOPE

This procedure is applicable to all Petroleum Storage Tank program personnel that will be using the GIS Data Editing Tool to review, verify, and validate points posted to the GIS data layers generated for release sites (PC #s), registered facilities and AWS sites. The information posted with these points will be supplied by the Comprehensive Environmental Data System (CEDS).

3.0 TERMS AND DEFINITIONS

For the purpose of this procedure, the following definitions apply:

3.1 Alternate Water Supply (AWS) – water supplies impacted by a petroleum release. Department of Environmental Quality (DEQ) will provide alternate water supply system when: (1) petroleum constituents are present in a private drinking water supply; or (2) petroleum constituents in excess of the Virginia Health Department standards are found in a public water system.

3.2 Registered Facility – any development or installation within the Commonwealth that deals in, stores, or handles oil, and includes aboveground storage tanks (ASTs) and underground storage tanks (USTs).

3.3 Confirmed Release – any confirmed petroleum spill, leak, emission, or discharge from an UST system, an exempt UST 1 and 2, small heating oil AST, an AST, or a facility into groundwater, surface water or upon lands, subsurface soils or storm drain systems.

4.0 RESPONSIBILITIES

For the purpose of this procedure the Office of Spill Response and Remediation (OSRR) business analyst will be responsible for distributing, updating, and maintaining this procedure. The project coordinator or regional groundwater managers or designee will be responsible for the implementation of this procedure and ensuring that Petroleum Storage Tank program personnel are using, applying and conforming to the procedures provided herein.

5.0   PROCEDURE

This procedure will facilitate the interpretation and placement of release site (PC #s), registered facility and AWS site points in the GIS data layers.   Key issues that need to be addressed prior to the placement of these points are: (1) types of points, (2) accuracy, and (3) point placement.

5.1 Types of Points

There are three types of points defined within the GIS Data Editing Tool, and these are:

➢   Geocoded or previous data layer (original shape file) points which are plotted and marked as unverified points by the GIS application;

➢   Points that have been reviewed and placed in the most accurate location are plotted and marked as verified points by the GIS application;

➢   Un-plotted points that could not be geocoded and which are not plotted but are marked as "no points" by the GIS application.

These definitions are the same for each of the GIS data layers of releases (PC #s), registered facilities and AWS. The verified point does not denote how accurate the placement of the point is; it only indicates that the DEQ personnel has reviewed and verified the placement of the point. Accuracy depends on the location information available for the specific point at the time of verification.

5.2   Accuracy

There are several reasons why the accuracy for plotting a point can be affected, and these can be:

➢ Facility, release site or building could have changed drastically due to construction or other circumstances;

➢   The address in CEDS is incorrect (or invalid), and it is difficult to determine where the original facility, release site, or building was located;

➢ The visibility of the facility, release site or building is blurry or aerial photo is missing from the GIS data layer.

The placement of the points will take into account the information available in the central or regional files for a specific registered facility, release site or AWS. The general guidelines will be to place points as accurately as possible using all information available. A disclaimer will be posted on any public access application, e.g. "What's in My Backyard", that states all points were plotted as accurately as they could be with the supporting information available and users should be aware that inaccuracies may exist due to incomplete or unavailable information.

The following are tools and tips for the correct placement of points:

➢ Refer to file materials (e.g. field site maps)

- ➤ Use a 2nd geocoding tool (e.g. Google maps, locality GIS sites, government GIS sites)

- ➤ Use DEQ GIS data viewer (either hi-res imagery or topographic maps)

- ➤ If appropriate, field verification.

5.3   Point Placement

The placement of points will be discussed in this section, but the section will be subdivided by the different GIS data layers: releases (PC #), registered facility, and AWS. The GIS application will allow the user to see multiple layers (i.e., registered facility and releases data layers), but only one data layer at a time will be able to be edited for plotting a point or moving the placement of a geocoded point. While one layer is edited, the other two will be visible for comparison.

5.3.1   Releases (confirmed) Data Layer

For new releases (PC #) or releases that can be positively identified, place point directly on the location of the release.

If the facility is large or the information on where the release occurred is sketchy, then place the point in the vicinity of the release. The rationale being that it may help users to know the approximate location of the release.

For releases where the uncertainty is great, plot the point at the side (on the proper side) of the road of the facility; not at the road itself but next to road. If a facility borders more than one road, plot the point along the address road.

5.3.2   Registered Facility Data Layer

For the registered facility data layer, it is recommended that the placement of points should be at the entrance of the facility, along the address road (on the proper side) of the facility. The rationale being that registered facilities have different expansion of area (i.e. gas station, industrial company or army base) and may contain more than one registered tank facility; therefore, plotting registered facility points at the entrance will make it consistent for all facilities no matter the size.

5.3.3   AWS Data Layer

The placement of points of the AWS data layer is similar to releases. Placement of the points should be as close to the location of the AWS. If it is difficult to determine the actual location of the AWS, then the placement of the AWS point on a house or building on the property is sufficient. Again, if the uncertainty is great, place the point at the side (on the proper side) of the road of the property.

5.3.4   Recommendations for the order of plotting points

It is recommended that the first points plotted or verified should be new release sites (PC #), facilities, or AWS sites because the location information will be the most current and

easiest to investigate for accuracy.

The next set of points recommended for plotting or verification is the non-geocoded points because they are the smallest group of points in each region, and it will enable the Virginia Department of Health to use the GIS data layers for well permits.

The next set of points to verify should be the points geocoded and imported into the system. The original shape file release points should be left for last because they are at least located with some degree of accuracy.

6.0   RECORDS MANAGEMENT

The initial procedure and all subsequent revisions shall be maintained by the OSRR business analyst under the Petroleum Storage Tank program document control.

7.0   ATTACHMENTS

Attachment 1 – Example of the placement of a release (PC #) point.

ATTACHMENT 1

Example of the placement of a release (PC #) point: