Naval Weapons Industrial Reserve Plant Bethpage
Preliminary Assessment/Site Inspection for 1,4-Dioxane

April 2019

At the former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, a Preliminary Assessment/Site Inspection (PA/SI) is the first step to assess if 1,4-dioxane is present in site groundwater as a result of past operations. The Navy has completed two of five sampling events to evaluate the concentrations of Volatile Organic Compounds (VOCs) and 1,4-dioxane in Bethpage groundwater and surface water over an approximate one-year period. The Navy is working with the ***New York State Department of Environmental Conservation (NYSDEC)*** in developing sampling plans, interpreting results, and making decisions on actions if needed to address VOCs, 1,4-dioxane, and other environmental contaminants at NWIRP Bethpage.

Background

NWIRP Bethpage was a 109-acre government-owned, contractor-operated facility. It was operated by Northrop Grumman (NG) and its predecessors, including Grumman Aircraft Engineering Corporation ([Grumman] and its successor NG) from 1942 until 1996. NWIRP's primary mission was the research prototyping, testing, design engineering, fabrication, and primary assembly of military aircraft.

The Navy is conducting a PA/SI to evaluate the potential release of 1,4-dioxane using the existing groundwater monitoring well network. As this compound is typically present with Volatile Organic Compounds (VOCs), we are analyzing samples for VOCs.

Several VOCs have been identified in groundwater at the former NWIRP Bethpage facility related to the use of chlorinated and non-chlorinated solvents at the facility. Several other VOCs (such as toluene) have been identified in off-property areas that may or may not result from former NWIRP operations. In addition, 1,4-dioxane has been detected in off property groundwater, including VOC-impacted groundwater associated with the former NWIRP Bethpage. Because 1,4-dioxane was widely used in a variety of residential and commercial products, some of the 1,4-dioxane in groundwater may not be associated with industrial activities at the facility.

VOCs

- VOCs were used historically as solvents and degreasers at NWIRP Bethpage.
- VOCs are common in many household products (i.e. nail polish remover, laundry detergents, and paints).
- VOCs are components of diesel fuel and gasoline.

1,4-Dioxane

- Widespread use as a stabilizer in certain chlorinated solvents, paint strippers, greases, antifreeze, and waxes.
- Also widely used in residential and commercial products (i.e. soaps, cosmetics, shampoos, and deodorants).
- The NYS Dept. of Health (NYSDOH) Maximum Contaminant Level (MCL) is 50 micrograms per liter (µg/L), however a new MCL is under review with a recommended value of 1 µg/L.
- No federal (MCL) has been established for 1,4-dioxane in drinking water.

The PA/SI will evaluate 1,4-dioxane in groundwater at the facility. The objectives of this study are:

1) Are there additional VOCs in groundwater at the facility that warrant additional investigation?

2) Is there environmental evidence that the 1,4-dioxane identified in off-property groundwater originated at the former NWIRP Bethpage?

The VOC contaminated groundwater plumes emanating from the Navy and NG sites span more than 3,000 acres and is more than 700 feet deep. Currently, two Northrop Grumman groundwater production wells and three containment wells operate as part of an on-site containment system, which inhibits the migration of contaminants.

Sampling Results

The Navy sampled approximately 50 monitoring wells each in April and September 2018. During the two sampling events, the Navy also sampled water from recharge basins and the discharge from the Bethpage Community Park (BCP) Operable Unit (OU) 3 Interim Remedial Measures treatment system (BCP treatment system). The following is a summary of the results:

1,4-Dioxane

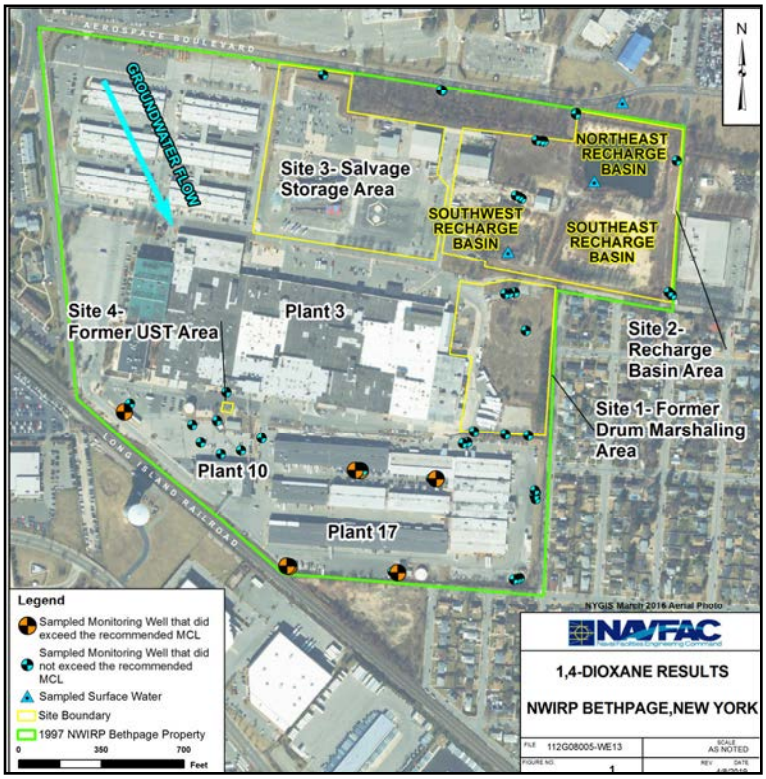
- **All groundwater samples results were below the current NYSDOH MCL.** Concentrations ranged from not detected to 6.4 µg/L.
- Seven well samples were above the new recommended MCL of 1 µg/L. Orange Wells (see figure) indicates where 1,4-dioxane exceeds the new recommended MCL.

VOCs

- Trichloroethene (TCE) is the most commonly detected VOC in onsite groundwater due to past use as a solvent. Results are consistent with historical data from prior sampling of wells.
- The MCL for TCE is 5 µg/L. 10% of the samples had concentrations above the MCL. Concentrations ranged from non-detect to 1,400 µg/L.

Surface Water

- Samples were collected from the Northeast Recharge Basin, Southeast Recharge Basin, and the discharge from the BCP treatment system.
- Surface water samples were collected during a period of no precipitation and a precipitation event.
- Surface water lab results in the Northeast Recharge Basin, Southwest Recharge Basin, and BCP treatment system discharge testing results showed low-level VOC detections.



Next Steps

- The Navy is awaiting validated results from the third and fourth sampling events completed in December 2018 and March 2019. Additional sampling is planned for June 2019.
- The results of all sampling events will be compiled into a draft PA/SI report for regulatory review and shared with the public during the NWIRP Bethpage Restoration Advisory Board meetings.

FOR MORE INFORMATION

Copies of all official environmental program documents are available for review at an information repository located at Bethpage Public Library, 47 Powell Avenue, Bethpage, NY 11714, (516) 931-3907.

Additional information on the NWIRP Bethpage Environmental Restoration Program (ERP) is available online at **http://go.usa.gov/DyXF**

For more information on the NWIRP Bethpage ERP, please contact: Public Affairs Officer, NAVFAC Mid-Atlantic, 9742 Maryland Ave, Norfolk VA 23511-3095