

## Port of Vancouver (Cadet & Swan) and NuStar Terminals Services Inc.

April 2014

### BACKGROUND

Prior to 2000, Ecology found three facilities contributed to groundwater contamination at and near the Port of Vancouver and the Fruit Valley Neighborhood (FVN):

- **Cadet Manufacturing Company (Cadet)** at 2500 W. Fourth Plain Blvd.
- **Former Swan Manufacturing Company (Swan)** at 2001 and 2501 W. Fourth Plain Blvd.
- **NuStar Terminals Services, Inc. (NuStar)** at 2565 NW Harborside Drive.



Studies show the groundwater impacted from these sites with chlorinated solvents such as trichloroethylene (TCE), perchloroethylene (PCE), and other related compounds.

### Port of Vancouver sites (Cadet and Swan):

From 1956 to 1964, Swan made electric heaters at its property and used TCE to clean sheet metal parts. In 1964, Swan moved operations to where the Cadet facility is now. Cadet bought Swan in 1972 and used TCE until 1976.

The Port of Vancouver (port) owns the Swan site and has been cleaning up the site for more than a decade. In March 2006, it bought the Cadet building and land and took on cleanup responsibility for the Cadet site as well.

### NuStar Terminals Services, Inc. site:

NuStar's facility is at the port's Terminal #2, next to the Columbia River. The property is about 18.7 acres and leased from the port. NuStar's terminal receives, stores, and transfers bulk chemicals, jet fuel, and alcohol.

The terminal has been used as a bulk storage facility since 1960 and handled chlorinated solvents until the mid-1990s. Prior to NuStar's operation, historical sampling

Facility Site ID#:1026

Contact: Site Manager Craig Rankine, 360-690-4795, [Craig.Rankine@ecy.wa.gov](mailto:Craig.Rankine@ecy.wa.gov)

Public Involvement: Natalie Graves, 360-407-0067, [Natalie.Graves@ecy.wa.gov](mailto:Natalie.Graves@ecy.wa.gov)

showed soil and groundwater contaminated with chlorinated solvents. NuStar took over the terminal in 2005. Its cleanup efforts are designed to address contamination on or under the property leased from the Port.

## EARLIER SITE CLEANUP ACTIONS

### Port of Vancouver sites (Cadet and Swan):

To date, many cleanup actions have been used to reduce the overall groundwater contamination:

- From 1998-1999, the port **excavated and treated** about 13,800 cubic yards of TCE-impacted soil from the Swan site.
- From 2002-2004, the port completed a **groundwater treatment program** to reduce contamination at the Swan site. The program injected chemicals to shallow groundwater to break down pollutants into non-toxic substances.
- By 2003, Cadet set up a system that used **air sparging and soil vapor extraction** beneath the Cadet facility. This system injected air into polluted groundwater, turning it into soil vapor. Extraction wells pulled these vapors from the soil so they could be treated. Based on the success of this cleanup action, Ecology approved shutdown of the system in 2011.
- By 2004, Cadet put in **soil vapor vacuum systems** in six homes in the FVN to protect indoor air. Based on the success of the overall cleanup efforts, Ecology approved removal of these systems from 2011 – 2013.
- By 2005, Cadet put in eight **groundwater recirculating treatment wells** in the FVN. Cadet and the port used the wells to reduce TCE levels in the groundwater. Based on the success of overall cleanup efforts, Ecology approved removal of these systems from 2010- 2012.
- In May 2009, the port began running a **new groundwater pump and treat system**. The system removes pollutants from groundwater using **air stripping**. This system continues to operate. See page 2 of our 2009 [fact sheet](#) for more about air stripping.



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## NuStar Terminals Services, Inc:

NuStar has and continues to use a variety of interim soil and groundwater cleanup actions:

- In 2000, a predecessor to NuStar built a **groundwater pump and treat** system and **soil vapor extraction** system. The system pumped groundwater from extraction wells, and cleaned and filtered the water before pumping it back into another series of wells. Before the water was put back into the ground, an oxidizing agent was added to help break down pollutants.

The soil vapor extraction system was made up of eight extraction wells used to clean shallow soil. These systems continued through 2005.

- In 2008, NuStar began a method called **enhanced bioremediation**. This uses modified vegetable oil to improve the ability of naturally occurring micro-organisms (bacteria) to break down pollutants in groundwater. Based on the success of this method, NuStar expanded the treatment area in 2011. Since these efforts began in 2008, pollutant concentrations in groundwater have greatly decreased. This is still being used today.
- In 2008, NuStar installed another **soil vapor extraction** system made up of 18 extraction wells. NuStar expanded the system in 2011, adding 34 more wells. It continues to operate.
- The interim actions that began in 2008 and expanded in 2011 are ongoing and have been successful. The extent of contamination has reduced greatly.

NuStar and the port continue to monitor groundwater through Ecology- required sampling and analysis programs.

### More information

Use this link to view more cleanup site documents, such as fact sheets and agreements: <https://fortress.wa.gov/ecy/gsp/CleanupSiteDocuments.aspx?csid=3450>

You can contact Site Manager Craig Rankine at 360-690-4795 with questions about site cleanup.

If you need this document in an alternative format, call reception at (360) 407-6300. Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability call 877-833-6341.

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