



CERCLA/RCRA

Pinellas County, Florida, Site

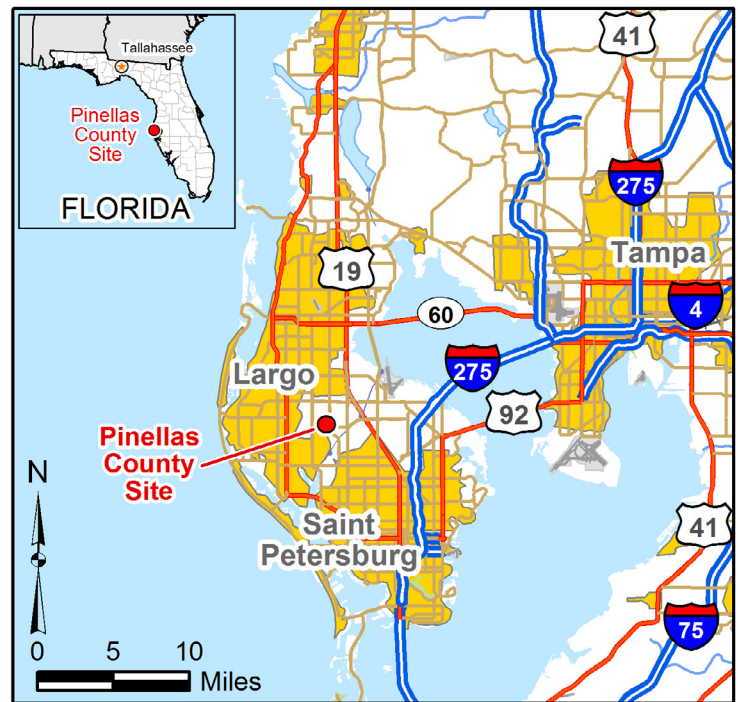
This fact sheet provides information about the Pinellas County, Florida, Site. Groundwater cleanup at the site is being conducted as part of the Pinellas Environmental Restoration Project, which is managed by the U.S. Department of Energy Office of Legacy Management under the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act.

Site Description and History

The Pinellas County site is located in Largo, Florida, about 10 miles north-northwest of St. Petersburg and across Tampa Bay from the city of Tampa. General Electric Company constructed the original Pinellas Plant in 1956. In 1957, General Electric sold the facility to the U.S. Atomic Energy Commission, a predecessor agency of the U.S. Department of Energy (DOE), but continued to operate the plant under a 25-year contract. The purpose of the facility was to develop and manufacture components for the nation's nuclear weapons program.

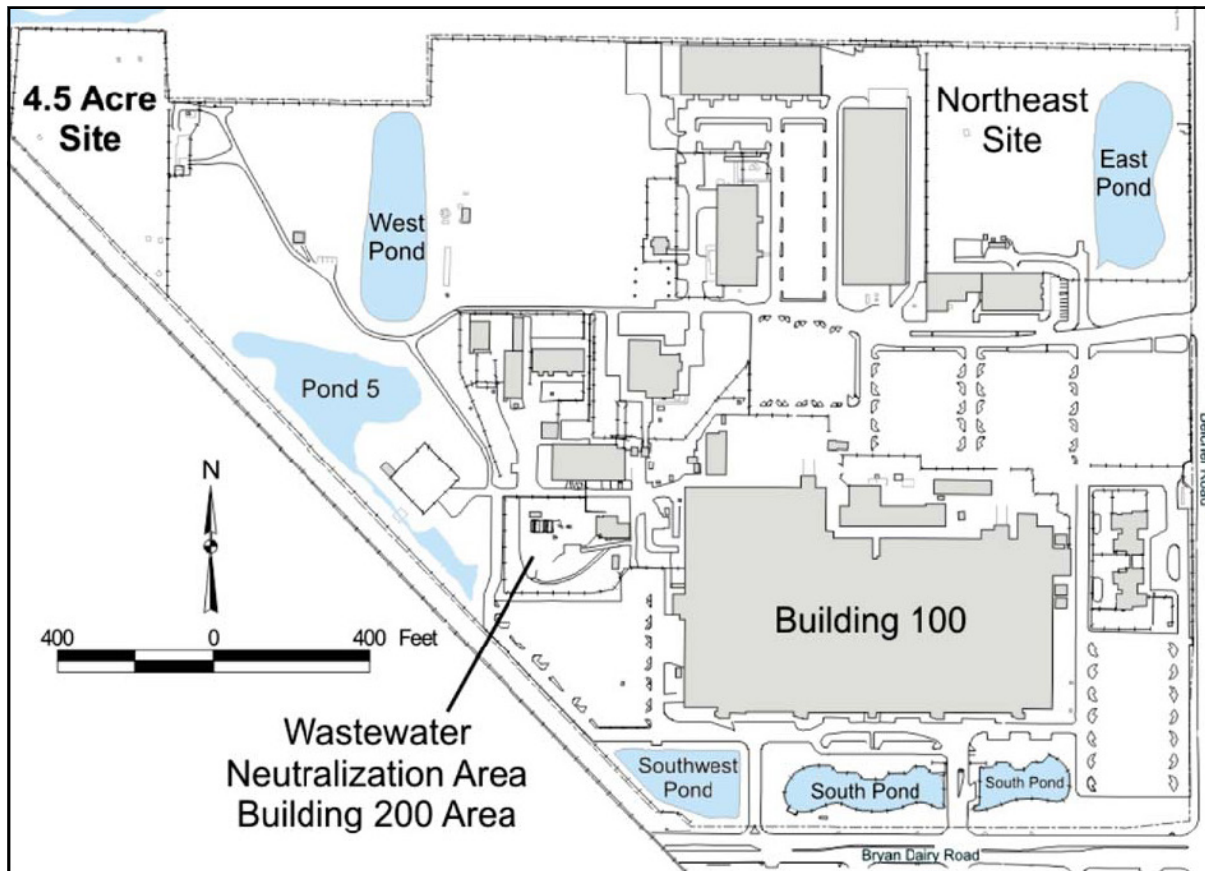
The Pinellas Plant ceased operations in 1994 and DOE sold the facility to the Pinellas County Industrial Council in 1995. The sales contract included clauses to ensure continued compliance with federal, state, and local regulations while DOE remediated the site. On July 1, 1999, the Pinellas County Industrial Council was dissolved, and ownership of the facility, now called the Young - Rainey Science, Technology, and Research (STAR) Center, changed to the Pinellas County government. The STAR Center houses more than 30 businesses that include a variety of administrative and light manufacturing operations.

As a result of historical waste disposal practices during DOE operations, portions of the subsurface and the shallow surficial aquifer were contaminated with organic solvents and metals. The contaminated areas are designated as solid waste management units (SWMUs). A total of 17 SWMUs were identified and investigated at the Pinellas site. DOE recommended, and the U.S. Environmental Protection Agency (EPA) Region IV and Florida Department of Environmental Protection (FDEP) approved, no further action decisions for 15 of these SWMUs. Two of the SWMUs, the Northeast Site and the Wastewater Neutralization Area, were closed in July 2016.



Location of the Pinellas County, Florida, Site

Currently, two SWMUs — the Old Drum Storage Area and the Industrial Drain Leaks—Building 100 — have contamination in the surficial aquifer groundwater at levels that exceed protective standards. These two SWMUs have been combined and are now known as the Building 100 Area. In addition, the 4.5 Acre Site is a former part of the Pinellas Plant. DOE owned this parcel from 1957 to 1972, at which time it was sold to a private landowner. The DOE Office of Legacy Management (LM) is responsible for administration of DOE activities at the 4.5 Acre Site and the STAR Center.



*Solid Waste Management Units at the Pinellas County, Florida, Site*

### **Building 100 Area**

Building 100, the largest building at the STAR Center, covers approximately 11 acres. During the period of DOE operations, the building was used for offices, laboratories, and production facilities. Groundwater contamination at the Building 100 Area resulted from historical leaks of underground drain lines located beneath the building and from leaks or spills at the former drum storage pad near the northwest corner of the building. The drum storage pad was removed in 1983, and use of the underground drain lines was discontinued in 1989. The major groundwater contaminants of concern are trichloroethene, dichloroethene, vinyl chloride, and 1,4-dioxane.

A groundwater extraction and treatment system operated at the Building 100 Area from 1997 to 2005. Contaminated groundwater was extracted through two recovery wells located at the northwest corner of the building, and treated at the surface using an air-stripper treatment system.

The Building 100 Area was evaluated for potential closure under FDEP's Risk-Based Corrective Action (RBCA) rules (*Florida Administrative Code*, Section 62-780.680), and Building 100 is being evaluated for potential closure. During the course of monitoring from 2007 to 2012, DOE discovered two groundwater contaminant plumes that extend beyond the property boundaries, one to the south and one to the east.

Monitoring was conducted in 2013 and 2014 to evaluate the stability of both the on-site and off-site plumes. Results indicated that the south plume was not stable, and DOE decided that enhanced biodegradation should be implemented to treat both the south and east plumes. Injection of emulsified soybean oil was conducted on the STAR Center property in October and November 2014, on the off-site properties in February 2015, and beneath the building in November 2015. Additional bioinjection activities were completed in 2016 and 2017, and monitoring is ongoing to support a conditional closure under FDEP RBCA regulations.

### **4.5 Acre Site**

The 4.5 Acre Site was sold to a private landowner in 1972, who sold it to a new private landowner in 2018. DOE currently maintains an agreement to access the site while groundwater remediation is ongoing.

During the period of U.S. government ownership, the 4.5 Acre Site was used for the disposal of drums containing waste resins and solvents. This practice resulted in contamination of groundwater in the shallow surficial aquifer. The main contaminants of concern are trichloroethene, dichloroethene, vinyl chloride, and benzene. The drums and the contaminated soil were removed in 1985.

In 1990, a groundwater extraction and treatment system

---

---

was put into operation at the 4.5 Acre Site. Contaminated groundwater was extracted through seven recovery wells at the site, treated with an air stripper to remove the volatile organic contaminants, and discharged to a publicly owned water treatment system. For several years, this treatment reduced the mass of the contaminant plume, and contained it within the boundaries of the site. By 1997, however, the treatment system no longer effectively reduced concentrations of groundwater contaminants.

A dual-phase extraction system was installed at the site in 1997 to replace the groundwater extraction system. This system was an improvement over the groundwater extraction system because it more efficiently removed both liquid- and vapor-phase contaminants from the subsurface.

By the end of 1998, the dual-phase system had treated approximately 9.45 million gallons of contaminated groundwater. This system was effective at removing high concentrations of contaminants, but it became less effective as contaminant concentrations decreased.

To treat the remaining lower concentrations of contaminants, DOE selected a type of enhanced bioremediation called biosparging. Bioremediation helps naturally occurring subsurface microorganisms break down organic contaminants into non-toxic compounds. A biosparging system was installed at the site in late 1999 to enhance aerobic bioremediation. The effectiveness of the biosparging system was limited by preferential airflow pathways in the subsurface and high chemical-oxygen demand in the aquifer material. The biosparging system was shut down in May 2003.

Subsequent groundwater monitoring showed that elevated contaminant concentrations remained in the subsurface. In response, DOE conducted an investigation in the summer of 2007 to determine if a source of contaminants was present in soil. Nearly 1,200 soil samples were collected and analyzed to characterize a 1-acre area of the site, and results indicated that a contaminant source was present.

In 2008 and 2009, approximately 2,500 cubic yards of contaminated soil were excavated using the large-diameter auger method and disposed of off-site, thereby removing the source of contamination. To treat the contaminants remaining at low concentrations in groundwater after soil removal, emulsified soybean oil was injected into the contaminant plumes in 2010, 2013 and again in 2016.

Currently DOE is pursuing an unconditional closure under FDEP's RBCA regulations.

## Regulatory Setting

In 1987, EPA performed a Resource Conservation and Recovery Act Facility Assessment at the Pinellas site to gather information on potential releases of hazardous materials. In February 1990, EPA issued a Hazardous and Solid Waste Amendments (HSWA) permit to DOE, enabling DOE to remediate the SWMUs. The 4.5 Acre Site is the subject of a remediation agreement between DOE and FDEP.

In November 2000, the State of Florida received HSWA authorization from EPA. FDEP issued a new HSWA permit to DOE in January 2002. Groundwater standards applicable to the Pinellas site are the Safe Drinking Water Act and FDEP maximum contaminant levels.

FDEP global RBCA regulations were codified on April 17, 2005, under Chapter 62–780, *Florida Administrative Code*. The purpose of this regulation is to apply the default cleanup target levels provided in Chapter 62–777 statewide. In August 2007, FDEP issued a revised HSWA permit to the Pinellas site, which incorporated the global RBCA regulations. The HSWA permit was revised again in January 2012.

## Legacy Management Activities

LM is pursuing closure of the Building 100 Area and the 4.5 Acre Site under the FDEP global RBCA rules. LM is managing this cleanup as part of the Pinellas Environmental Restoration Project.

## Contacts

Documents related to the Pinellas site are available on the LM website at <https://www.lm.doe.gov/pinellas/Sites.aspx>.

For more information about LM activities at the Pinellas site, contact:

U.S. Department of Energy  
Office of Legacy Management  
2597 Legacy Way, Grand Junction, CO 81503

(970) 248-6070 (monitored continuously)  
(877) 695-5322 (toll-free)

[Pinellas@lm.doe.gov](mailto:Pinellas@lm.doe.gov)