

Remediation Overview

Lockheed Martin started conducting environmental investigations at its Valley Forge, Pa., facility after a large water tank was removed and oily sand was discovered in the

Remedial Investigation Objectives

Lockheed Martin's goal, first and foremost, is to protect human health and the environment. Its objectives for the remedial investigation were to:

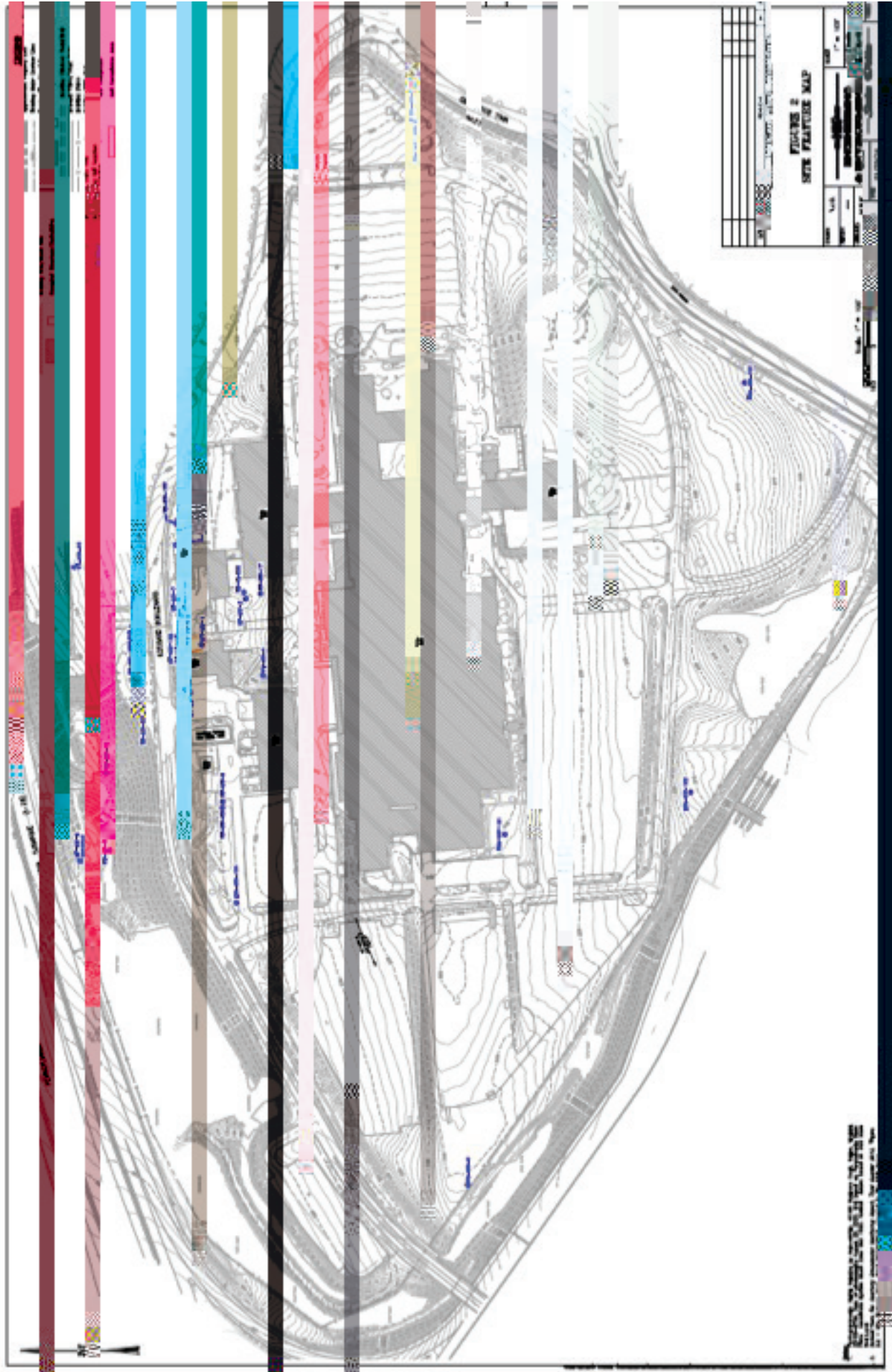
- Evaluate the nature and extent of contaminants in the groundwater near the former water tank area,
- Collect sufficient data to support the establishment of a Site-Specific Cleanup Standard, and
- Evaluate and select the appropriate groundwater remedy.

The testing determined that the solvent PCE, also known as perchloroethene or tetrachloroethene, was present in the oily sand. PCE is a manmade liquid solvent used for jobs such as removing grease from metal surfaces or dry cleaning.

All contaminated sand and soils were removed and hauled to a permitted landfill. Testing in April 2007 determined that the PCE had not spread to soil beyond the tank area. A groundwater investigation was initiated after it was determined that PCE concentrations in bedrock exceeded Pennsylvania regulatory standards.

In March 2008, the first groundwater monitoring well was installed, and sampling determined that PCE had reached the groundwater. Over the next 18 months, 12 additional wells were installed to gather more information. From 2010 through 2012, 27 additional monitoring wells were installed, bringing the total number to 40. Many of these wells are constructed with multi-level sampling ports. This means that multiple samples can be collected from separate and discrete depths within the same monitoring well. Results of the groundwater sampling showed that levels of PCE were above Pennsylvania regulatory standards in several well locations near the former water tank area.

Lockheed Martin is conducting the remedial investigation voluntarily and in collaboration with the Pennsylvania Department of Environmental Protection (PA- 2mP)cations eol bpv andRecycplng and EnvironmentalRremedia-
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Monitoring Well Location Plan

centrations (MSC) for groundwater-related constituents in Buildings 300, 500, 550, or 750.

Concentrations of PCE detected in one sub-slab and one indoor air sample collected in Building 600 exceeded the non-residential MSC. Concentrations of PCE detected in one sub-slab and one indoor air sample collected in the Tunnel 9000 (T9000) portion of Building 100 exceeded the MSC. Although these single detections do not pose a health risk to the employees, vapor intrusion mitigation strategies are being evaluated for both buildings and will be implemented in 2015-2016.

Schedule for Environmental Remediation Activities

In addition to the ongoing collection of samples from the groundwater monitoring wells and the evaluation of potential soil vapor mitigation strategies at T9000 and Building 600, the following activities will be completed:

Fall 2014

- Submit Remedial Investigation Report and Risk Assessment Report

Spring 2017

- Submit Act 2 Groundwater Closure Report

For More Information:

Lockheed Martin will keep employees informed of the activities and copies of the Remedial Investigation Report and Risk Assessment Report will be available on the Valley Forge remediation website upon approval from PADEP.

If you have questions, please don't hesitate to contact:

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GLOSSARY

Groundwater Model — A Groundwater Model is a computer model that simulates the site environment. Groundwater modeling helps a technical team determine how the groundwater is flowing and how contaminants are behaving at the site. The team uses that information to determine the best cleanup methods.

Groundwater Monitoring Well — Groundwater Monitoring Wells are used to measure the properties in the groundwater on a regular basis. By measuring the level of contaminants in the water over time, scientists can determine if the level is decreasing, increasing or staying the same. Groundwater monitoring is used to select cleanup methods. It also helps determine if the cleanup methods in place are working as intended.

Land Recycling and Environmental Remediation Standards Act — Commonly called PA Act 2, the Land Recycling and Environmental Remediation Standards Act monitors companies' voluntary cleanup and reuse of commercial and industrial sites.

PCE — PCE is a manmade liquid solvent also known as tetrachloroethene. It is used for jobs such as dry cleaning or removing grease from metal surfaces. It also is used to make other chemicals, and is found in some consumer products.

Pennsylvania Statewide Health Standards — These cleanup standards are part of the Land Recycling and Environmental Remediation Standards Act. The standards, which are designed to protect public health, offer specific measurements for what is considered a safe amount of any given contaminant in soil or groundwater.

Plume — The plume is the area where contamination is located in the groundwater.

Remedial Investigation — A Remedial Investigation is conducted to determine the nature and extent of contamination. A remedial investigation also helps determine the points on a site where cleanup standards must be met, and it collects data that is used to determine how a cleanup will be conducted.

TCE — TCE is a solvent called trichloroethene that is rarely used anymore. It is a nonflammable, colorless liquid that was used to clean metal parts. TCE also was used in paint removers, spot removers, adhesives and typewriter correction fluids.

Vapor Intrusion Study — Contaminants such as chemicals in the ground can give off gases, or vapors, that can get inside buildings. Common products that can cause vapor intrusion are gasoline or diesel fuel, dry cleaning solvents and industrial de-greasers. The vapors move through the soil and seep through cracks in basements, foundations, sewer lines and other openings. Vapor intrusion studies are used to determine if there are vapors in the building and if those vapors could pose a risk to people in the building.