

Middlesex Sampling Plant Site

New Jersey

EPA ID#: NJ0890090012

EPA REGION 2

Congressional District(s): 06

Middlesex

Borough of Middlesex

NPL LISTING HISTORY

Proposed Date: 9/29/1998

Final Date: 1/19/1999

Site Description

The Middlesex Sampling Plant (MSP) is situated on approximately 9.6 acres in Middlesex, Middlesex County, New Jersey. The facility was established in 1943 by the Manhattan Engineer District (MED) to sample, store, and/or ship uranium, thorium, and beryllium ores. In 1955, the Atomic Energy Commission (AEC), successor to the MED, terminated the operation and later used the site for storage and limited sampling of thorium residues. In 1967, the AEC activities ceased, on-site structures were decontaminated, and the site was certified for unrestricted use under applicable criteria in effect at that time.

Between 1968 and 1980, the site ownership changed, first to the General Services Administration, and then to the Department of the Navy for use as a U.S. Marine Corps reserve training center. From 1976 to 1980, many radiological surveys were conducted in the Middlesex area to determine the extent of radiological contamination which may have occurred as a result of MSP activities. In 1980, custody of the MSP was given to the Department of Energy (DOE). DOE placed the site in its Formerly Utilized Sites Remedial Action Program (FUSRAP). The purpose of the FUSRAP program was to cleanup contaminated sites where work was performed as part of the Nation's early atomic energy program.

Contamination was determined to be present on both the MSP and surrounding land parcels. Two of these parcels had apparently been contaminated by fill that was transported to these locations during the 1940's. The remaining contaminated parcels (adjacent to the MSP) were contaminated by wind and water erosion transporting radioactive materials. Removal actions to address this contamination were undertaken in the early 1980's. Contaminated materials were excavated from these vicinity properties (VP) and placed them into interim storage at MSP which resulted in the VP "pile" containing approximately 35,000 cubic yards. By 1981, remediation at the VPs was considered complete.

The Middlesex Municipal Landfill (MML), a nearby former FUSRAP site, was established in the mid-1940's. In addition to municipal waste soils contaminated with pitchblende (high grade uranium ore) from MSP were disposed at MML. By 1974, solid waste disposal ceased at MML. In 1984, the DOE removed contaminated materials from MML and placed them into interim storage at MSP which resulted in the MML "pile" containing approximately 35,000 cubic yards. By 1986, remediation at MML was considered complete.

The Energy and Water Appropriations Act of 1998 (PL 105-62) provided appropriations for the U.S. Army Corps of Engineers (USACE) to administer and execute the DOE's FUSRAP program. Responsibility for cleanup of the MSP site transferred from DOE to the USACE in October, 1997.

The east side of the facility borders fields and residential areas, and the west side borders an industrial site. The property to the south consists of marshy land and fields, and includes the drainage ditch that carries surface water runoff from the site. The main entrance to the MSP (Mountain Avenue) is to the north and adjacent to the Lehigh Valley Railroad right-of-way property.

Site Responsibility: This site is being addressed by the U.S. Army Corps of Engineers (USACE) through Federal actions, with EPA oversight.

Threat and Contaminants

The contaminants identified at the MSP are radioactive particles in the uranium and radium decay series as well as various metals (arsenic, chromium, and lead) and volatile organic compounds (VOCs - including benzene and MTBE). The cleanup of offsite properties has substantially decreased the health risk to the surrounding community. A Public Health Assessment conducted by the Agency for Toxic Substances and Disease Registry (ATSDR), published in May 2002, determined that no exposures posing public health hazards are occurring now, or are likely to occur in the future, as long as appropriate health and safety measures are followed during any future excavation activities conducted at the

site.

Cleanup Approach

The radiological surveys identified areas of contamination which resulted in a Middlesex Remedial Action Program being developed by the DOE. This program was designed to consist of several phases of remediation. The first phase provided for the construction of storage pads and a drainage system at the MSP site, followed by the decontamination of several nearby off-site VPs. The second consisted of the decontamination of the remaining VPs adjoining the MSP site. These first two phases, which generated the VP pile, were completed in the early 1980's. Subsequently the MML was addressed in 1984 and 1986. The final phase, which comprises the decontamination and decommissioning of the MSP site has not yet been completed. Responsibility for the remaining cleanup of the MSP site transferred from DOE to the USACE in October, 1997.

Response Action Status

Initial Actions: Cleanup activities began in 1980 under the DOE's "Formerly Utilized Sites Remedial Action Program" (FUSRAP). From 1980 through 1981 the DOE excavated and contained (stockpiled at the interim storage site) about 35,000 cubic yards of contaminated soil from several vicinity residential properties and a church rectory. An additional 33,000 yards of contaminated soils were removed from the Middlesex Municipal Landfill and placed in a separate interim storage pile in 1984 and 1986. In 1996, the DOE conducted a removal action to demolish several former process buildings and excavate contaminated sediments from a drainage ditch located on the southern portion of the site. The USACE is continuing to maintain and monitor the site. In 1998, the USACE conducted a removal action to dispose of the MML interim storage pile and disposed of 137 tons of structural steel remaining from the building demolition discussed above. Of this, 44 tons of steel were recycled. In 1999, the USACE conducted a removal action to dispose of the VP interim storage pile. A total of 35,679 cubic yards of material was sent for disposal.

Entire Site: The USACE began formal investigation of contamination remaining on-site in 2001. The objective of the investigation was to determine the nature and extent of remaining contamination, and to provide information necessary to develop recommendations for cleanup of any residual contamination as well as final disposition of waste on site. The USACE conducted Remedial Investigation/Feasibility (RI/FS) Studies on both the soils and groundwater. The Record of Decision (ROD) for the Soils OU 1 was signed in September 2005 and the selected remedy included excavation of contaminated soils to levels allowing for residential use with off-site disposal of the contaminated soils. The remedial action for the soils was completed in the Spring of 2008 with a final inspection performed by EPA and the New Jersey Department of Environmental Protection (NJDEP) in July 2008. The USACE's Final Post Remedial Action Report was approved by EPA for the Soils OU 1 on Sept. 21, 2010. Remedial Action is now considered complete for the Soils OU 1. The USACE completed a Draft Feasibility Study for the Groundwater OU 2. However, it was determined that additional groundwater data still needs to be collected to fully develop alternatives for remediation. The Draft Technical Memorandum (December 2011) submitted recently to EPA seems to indicate that some VOCs may be coming from off-site sources but also recommends additional sampling to discount possible on-site sources for other VOCs. Based on a tap water sample from a residence (with a private well) which showed some elevated VOCs, the Army conducted a well survey within one mile of the site to see if other residences on well water may need testing. Seven additional properties were sampled and no VOCs exceedances occurred. The residence with elevated VOCs in their tap water was connected to a public water supply. The Federal Facilities Agreement was signed by all of the appropriate parties (DOE, USACE, EPA) on September 30, 2009 and became effective on 12/04/2009.

Cleanup Progress

Removal actions conducted in the 1980's addressed contamination at several offsite vicinity properties by excavating and placing into interim storage approximately 68,000 cubic yards of contaminated soils and debris. In 1996, the DOE conducted a removal action to demolish several former process buildings and excavate contaminated sediments from a drainage ditch located on the southern portion of the site. A removal action for the MML interim storage pile was completed in 1998, approximately 33,000 cubic yards of contaminated materials from this action was transported offsite to a commercial disposal facility. The USACE had completed the removal of the material in the VP interim storage pile. Field investigation work for both the soils operable unit and the groundwater operable unit have been completed. Additional investigation of subsurface soils and groundwater began in 2001.

A soil sorting pilot study was performed on 130 cubic yards of soil taken from the VP pile using a soil sorting system in 1996. The soil sorting system is a method of volume reduction by mechanical sorting. Some volume reduction was achieved. Based on these results a second, larger scale test was conducted in 1997. This test was unsuccessful.

With EPA's approval letter for the Army's Final Post Remedial Action Report on September 21, 2010, Remedial Action Completion has been attained at the Soils OU 1. Remedial Investigative work on the GW OU 2 continues and the Army recently submitted a Draft Technical Memorandum (December 2011) to EPA which seems to be showing that some

organics such as TCE,DCE may be coming onto the site from an off-site source(s) but the Army has recommended further sampling to rule out the possibility of on-site sources for VOC contamination. The additional recommended sampling in the Draft Technical Memo is expected to begin in the near future.

Site Repositories

The Administrative Record for the MSP Site is located at the Middlesex Borough Library, 1300 Mountain Avenue, Middlesex, New Jersey.