

Explanation of Significant Differences Sharkey Landfill Superfund Site

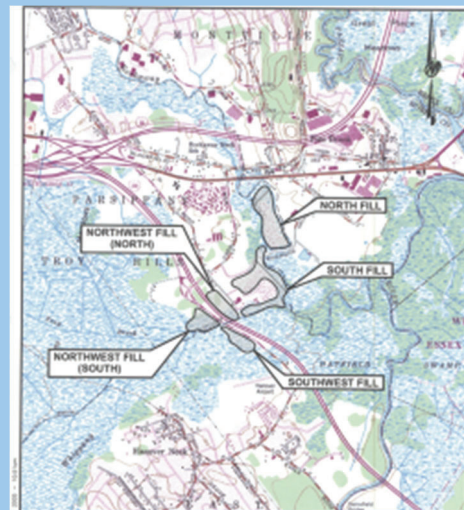
Site Name: Sharkey Landfill Superfund Site
Operable Unit 1

CERCLA ID #: NJD980505762

Site Location: Edwards and Sharkey Road
Parsippany-Troy-Hills, NJ

Support Agency: New Jersey Department of Environmental
Protection

Lead Agency: U.S. Environmental Protection Agency,
Region 2



I. Introduction

This decision document presents an Explanation of Significant Differences (ESD) for the Sharkey Landfill Superfund Site (Site), located in Parsippany-Troy Hills, New Jersey. EPA issued a Record of Decision (ROD) for Operable Unit 1 (OU1) on September 29, 1986. An ESD for OU1 was issued on October 4, 1993. The ROD, as modified, is being further modified by this second ESD.

This ESD is issued in accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. § 9617(c), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), § 300.435(c)(2)(i).

This ESD will become part of the Administrative Record for the Site (NCP § 300.825(a)(2)), which has been developed in accordance with Section 113(k) of CERCLA, 42 U.S.C. § 9613(k).

This ESD and the Administrative Record are available for review online at

<https://www.epa.gov/superfund/sharkey-landfill> and at the information repository maintained at the Parsippany-Troy Hills Public Library located at 449 Halsey Road, Parsippany, New Jersey 07054, Monday - Thursday, 9:00 am to 9:00 pm, and Friday to Saturday, 9:00 am to 5:00 pm; and at the U.S. Environmental Protection Agency (EPA) Region 2 Administrative Record File Room, 290 Broadway, 18th Floor, New York, New York 10007, Monday - Friday, 9:00 am to 5:00 pm.

II. Statement of Purpose

Since the ROD's issuance in 1986, EPA has identified the need to implement institutional controls (ICs) at the Site. The selected remedy in the 1986 ROD, as modified, does not include ICs for groundwater. EPA has determined that a change to the selected remedy to incorporate the implementation of ICs at the Site is warranted.

The purpose of this ESD is to provide the public with an explanation of the modification to the selected remedy, summarize the information that supports this modification, and confirm that the revised

remedial action complies with the statutory requirements of Section 121 of CERCLA, 42 U.S.C. § 9621. This ESD documents EPA's decision to implement ICs in the form of deed notices, and to evaluate establishment of a Classification Exemption Area/Well Restriction Area (CEA/WRA) for all five fill areas as part of the remedy for the Site in the event groundwater exceeds applicable water quality standards.

Section 117(c) of CERCLA and Section 300.435(c)(2)(i) of the NCP require the publication of an ESD when the Agency determines that modifications to the original selected remedy are necessary and such modifications are significant, but do not fundamentally alter the remedy selected in the ROD with respect to scope, performance, or cost.

III. Site History and Contamination

Site History

The Site is located in the Townships of Parsippany-Troy Hills and East Hanover, in Morris County, New Jersey. The Site is bounded by Route 46, New Road, the Rockaway River, and extends south beyond Interstate Route 280 between Troy Meadows and the Hatfield Swamp.

The Site is approximately 90 acres in size and is divided into five separate landfill areas (fill areas): the Large Fills (North Fill, South Fill) and the Small Fills (Northwest-North (NW-N) Fill, Northwest-South (NW-S) Fill, and Southwest Fill). The North Fill is an approximately 26-acre island in the Rockaway River and is located at the northern end of Sharkey Road in Parsippany-Troy Hills. The South Fill is an approximately 32-acre area adjacent to the Rockaway and Whippany Rivers and the Parsippany-Troy Hills wastewater treatment plant.

The NW-N and NW-S Fills are about 11 and 15 acres in size, respectively, and were originally one fill area. The two fill areas were created as a result of the construction of Interstate 280. The Southwest Fill is an approximately 9-acre area located along the

Whippany River southeast of Ridgedale Avenue in East Hanover, which received fill material excavated during the construction of Interstate 280.

During the 1930s, a pig farm was located on the Site. Landfilling operations began in 1945. In addition to accepting municipal solid waste from several counties in northern New Jersey, the landfill allegedly received hazardous and toxic materials between 1962 and 1969 from the Ciba-Geigy Company. Records indicate that about 560,000 pounds of toluene, 130,000 pounds of benzene, 40,000 pounds of chloroform, 20,000 pounds of methylene chloride and 3,000 pounds of dichloroethylene were disposed of at the Site.

From April 13, 1972, to May 10, 1972, about 25,700 tons of non-chemical wastes and 1,160 tons of liquid and chemical wastes, described as cesspool-type, were deposited at the landfill. Sludge from the adjacent Parsippany-Troy Hills Sewage Treatment Plant (STP) was also deposited in the landfill. Sharkey Farms ceased landfill operations on September 9, 1972. The Sharkey Landfill is believed to have remained inactive until 1979, when excavation began for the expansion of the Parsippany-Troy Hills STP. Several acres of refuse were removed from the South Fill area and redispersed in the North Fill area. No evidence of chemical waste disposal was reported during the excavation. The expansion project was finished in 1981. Since that time, the Site has remained unchanged.

On September 8, 1983, the Site was included on the National Priorities List. The New Jersey Department of Environmental Protection (NJDEP) was the lead agency at the Site from December 1983 to April 1994.

A remedial investigation and feasibility study (RI/FS) were conducted by NJDEP from December 1983 to September 1986, to determine the nature and extent of contamination and to develop alternatives for remediation.

The results of the RI/FS indicated the presence of low concentrations of organic compounds,

pesticides, and inorganic compounds in soils, and low levels of organic and inorganic compounds in the shallow groundwater beneath the Site. The primary contaminants of concern include volatile organic compounds (VOCs), organics, inorganics, and heavy metals.

The analytical results of samples collected from the shallow aquifer monitoring wells during the RI indicated low levels of organic contamination, with benzene and trichloroethene exceeding drinking water standards. Inorganic chemicals, primarily heavy metals, were also detected in the shallow aquifer. Some of these contaminants were also found in excess of drinking water standards in both the Rockaway and Whippany Rivers located near the landfill. The closest surface water intake, for the purpose of public consumption, is approximately eight miles downstream of the Site.

The analytical results from the deeper aquifer samples collected during the RI revealed the presence of cadmium, lead, chromium, iron, manganese, mercury, and nickel at concentrations in excess of drinking water standards, indicating that contamination within the landfill impacted the aquifer. The analyses of the lower aquifer also found benzene in one well at a concentration of 13 micrograms per liter (µg/L).

A December 2, 1994 Consent Decree (CD) between EPA and a group (the Group) of potentially responsible parties (PRPs) required the PRPs to perform the remedial design (RD) and the remedial action (RA) in accordance with the remedy selected in the 1986 ROD, as modified by the 1993 ESD. The RD was completed on May 9, 2000. Remedial action construction activities began on September 5, 2000, and were substantially completed on December 29, 2003. The PRPs have been conducting groundwater and surface water sampling activities, as required by the CD.

Under the CD, HMAT Associates, Inc. (HMAT), a PRP that is not part of the Group, is responsible for remediation of the NW-N Fill area. HMAT's responsibilities include Site management planning,

as well as the installation of soil cover, drainage controls, erosion protection, and other related work at the NW-N Fill area. HMAT began remedial action construction activities at the NW-N Fill area in May 2002. EPA performed an inspection of the Site and observed that remediation activities were substantially completed on October 4, 2002. EPA issued a Preliminary Closeout Report for the entire Site on March 9, 2004.

The groundwater extraction system at the Site was shut down on August 18, 2014, because the well sampling schedule and results met the specified requirements described in the scope of work portion of the CD. Groundwater sample results from the existing monitoring wells are currently evaluated with respect to federal and state standards, including maximum contaminant levels (MCLs) (drinking water standards), and Well Trigger Levels. Surface water data are compared with River Trigger Levels. Well and River Trigger Levels are defined in the CD and are used by EPA to evaluate the effectiveness of the remedy.

To evaluate potential migration of contamination in groundwater, EPA has determined that the monitoring well network must be expanded outside the boundaries of the Large Fills and be sampled to ensure contaminated groundwater is not migrating beyond the landfill boundaries. EPA will evaluate imposing groundwater restrictions in the future, pending the results of sampling from the expanded well network around the Large Fill areas.

Site Contamination

The contaminants of concern (COCs) found at the Fill areas were acetone, chromium, lead, benzo(a)pyrene, nickel, pesticides (dieldrin, 4,4'-DDD, endrin, ketone, and polychlorinated biphenyl (PCB), Aroclor 1254 in soil; cyanide in sediments; VOCs (acetone, 2-butanone, naphthalene, phenanthrene, 2-methylnaphthalene, fluoranthene, and pyrene) in leachate; arsenic, benzene, trichloroethene, cadmium, lead, chromium, iron, manganese, mercury, nickel, cyanide, phenols, VOCs (acetone and 2-butanone) in groundwater

monitoring wells, and chromium and nickel in surface water.

From 2014 to 2019, nine groundwater monitoring wells were sampled at the South Fill and seven wells were sampled at the North Fill. The analytical results indicated that arsenic levels exceeded the New Jersey Ground Water Quality Standard (NJGWQS) of 3 µg/L in most wells and ranged from 2.4 to 87.3 µg/L. Arsenic levels were showing a rising trend in several wells, especially in the area of the South Fill. Concentrations of 1,4-dioxane were found at elevated levels, ranging from 3.9 to 1,500 µg/L. A Well Trigger Level was not developed for 1,4-dioxane because it was not identified as a COC when the Well Trigger Levels were established in the CD; however, the NJGWQS for 1,4-dioxane is 0.4 µg/L. Ten groundwater monitoring wells were sampled twice at the Small Fills. There were very low, sporadic detections of VOCs, semi volatile organic compounds, pesticide, and metals compounds, but groundwater does not appear to be significantly impacted by the Small Fills.

IV. Selected Remedy

A ROD for OU1 was issued on September 29, 1986. An ESD for OU1 was signed on October 4, 1993. These documents are available in the Superfund Document Management System (SDMS) under Record Numbers 100007 and 53777, respectively.

The selected remedy in the 1986 ROD included:

- Capping of the landfill in accordance with relevant Resource Conservation and Recovery Act requirements, including the appropriate grading of fill areas,
- A venting system for landfill gases,
- Extraction and treatment of shallow groundwater and leachate,
- Surface water controls to accommodate seasonal precipitation and storm runoff as well as erosion control for riverbanks,
- Security fencing to restrict Site access, and

- An environmental monitoring program to ensure the effectiveness of the remedial action.

On October 4, 1993, EPA issued an ESD to change the capping component of the 1986 ROD to limited capping, and to modify the cap. Specifically, EPA determined that only the portions of the North Fill and South Fill areas that exhibit slopes of less than or equal to three horizontal to one vertical (3:1) would be capped since the slopes greater than 3:1 would allow a significantly higher amount of precipitation to run off. One of the primary reasons for installing a cap as part of the selected remedy was to reduce the infiltration of rainwater into the waste material and thereby reduce contamination of underlying groundwater. EPA determined that capping was less necessary on the steeply sloped areas than on the mildly sloped areas since more infiltration into the waste material would occur on the mildly sloped areas than on the steep slopes. The remaining portions of the Large Fill areas, as well as the three other Small Fill areas, would be covered with soil and vegetated, as necessary.

The 1993 ESD also modified the liner material component of the 1986 ROD. Since the steep slopes were not to be capped under the modified remedy, the use of a synthetic liner was determined to be appropriate on the North Fill and South Fill areas.

The 1993 ESD also called for a groundwater monitoring program to be implemented for all Fill areas in addition to a surface water monitoring program for the Rockaway and Whippany Rivers, and for the installation of a groundwater extraction system for the Large Fills area to provide hydraulic containment and to prevent migration of contaminants out of each fill area when operating at design capacity.

V. Description of Significant Differences and Basis for the ESD

The remedy selected in the ROD, as modified, does not include ICs for groundwater. Due to hazardous substances, pollutants, or contaminants remaining at

the Site above levels that allow for unlimited use and unrestricted exposure to groundwater and soil, EPA has determined that ICs are necessary to ensure long term protectiveness of human health and the environment and to protect the integrity of the remedy.

Accordingly, EPA has determined that inclusion of ICs as part of the remedy is necessary to minimize the potential for human exposure to contaminated groundwater and to assure protectiveness of the remedy as related to any future redevelopment of the Site. These ICs would be in the form of deed notices for all five fill areas to prevent usage of the Site that is inconsistent with the remedy, e.g., allowing for installation of drinking water wells through the cap. Additionally, a CEA/WRA, which is an IC under New Jersey law documenting an area where water quality standards cannot be met and which limits installation of drinking water wells, will be considered for all five fill areas. The CEA/WRA would be established in the event that groundwater is being impacted by site-related contaminants at concentrations above applicable water quality standards.

VI. Support Agency Comments

EPA consulted with NJDEP and provided it the opportunity to comment on this ESD in accordance with NCP § 300.435(c)(2) and CERCLA Section 121(f). NJDEP concurred with this ESD in a letter dated September 25, 2023.

VII. Statutory Determinations

EPA has determined that the remedy, as modified by these significant changes, complies with the statutory requirements of CERCLA Section 121, 42 U.S.C. § 9621, is protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

Because the remedy selected in the 1986 ROD, as modified by this ESD and the 1993 ESD, will result in hazardous substances, pollutants, or contaminants remaining on site above levels that allow for unlimited use and unrestricted exposure, a statutory review pursuant to CERCLA Section 121(c), 42 U.S.C. § 9621(c) will continue to be conducted no less often than every five years. The next statutory review will be conducted in 2024.

VIII. Public Participation

In accordance with CERCLA Section 117(c) and Section 300.435(c)(2) of the NCP, a formal public comment period is not required when issuing an ESD. EPA will announce the availability of the ESD in a local newspaper of general circulation with a notice briefly summarizing this ESD. The ESD and the documents that provide the basis for the ESD will be placed in the Administrative Record for the Site in accordance with Section 300.825(a)(2) of the NCP and the information repository maintained at the address above. The ESD will also be placed on EPA's Site page located at <https://www.epa.gov/superfund/sharkey-landfill>

IX. Authorizing Signature

EPA has determined the remedy for the Site, as modified by this ESD, is protective of human health and the environment, and will remain so provided the actions presented in this report are implemented as described above.

This ESD documents the significant changes related to the remedy at the Site. EPA selected these changes with the concurrence of NJDEP.

U.S. Environmental Protection Agency

Pat Evangelista
Digitally signed by Pat Evangelista
Date: 2023.09.28 16:51:27
-04'00'

September 28, 2023

Pat Evangelista

Date

Director

Superfund and Emergency Management Division
EPA - Region 2