Diamond Alkali Co.

New Jersey

EPA ID#: NJD980528996

EPA REGION 2

Congressional District(s): 08

Essex

Newark

NPL LISTING HISTORY
Proposed Date: 9/8/1983
Final Date: 9/21/1984

Site Description

The Diamond Alkali Superfund Site includes the former pesticides manufacturing plant and surrounding properties at 80 and 120 Lister Avenue in Newark, New Jersey, the Lower Passaic River Study Area, the Newark Bay Study Area and the extent of contamination. The Lower Passaic River Study Area includes the 17-mile tidal stretch of the river from Dundee Dam to Newark Bay, and tributaries. The Newark Bay Study Area includes Newark Bay and portions of the Hackensack River, Arthur Kill and Kill Van Kull. Because the problems posed by the upland part of the site are significantly different from those in the Passaic River and Newark Bay, the site was divided into three operable units: the 80 and 120 Lister Avenue properties, the Lower Passaic River Study Area, and the Newark Bay Study Area. The area is both densely populated and heavily industrialized.

From 1951 to 1969, the Diamond Alkali Company (subsequently known as the Diamond Shamrock Chemicals Company) owned and operated a pesticides manufacturing plant at 80 Lister Avenue in Newark. The property was used for manufacturing by numerous companies for more than 100 years. The mid-1940s marked the beginning of the manufacturing operations related to the current site conditions, including the production of DDT and phenoxy herbicides. Subsequent owners used the property until 1983, when sampling at the site and in the Passaic River revealed high levels of dioxin. Dioxin (also known as 2,3,7,8-tetrachlorodibenzo-p-dioxin or TCDD) is an extremely toxic chemical and an unwanted byproduct of the manufacture of certain chemicals which were produced at the site. Since Occidental Chemical Corporation (OCC) is a successor to the Diamond Shamrock Chemicals Company, OCC is required to perform remedial activities at the 80 and 120 Lister Avenue properties and the Newark Bay Study Area under the Superfund program.

For the Lower Passaic River Study Area, a more innovative approach is being taken. In 2004, EPA formed a partnership with the U.S. Army Corps of Engineers (the Corps), New Jersey Department of Transportation (NJDOT), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) and New Jersey Department of Environmental Protection (NJDEP) to conduct a joint study of the Lower Passaic River. The joint study is an integration of a Remedial Investigation/Feasibility Study (RI/FS) under Superfund and a Feasibility Study under the Water Resources Development Act (WRDA). A group of 43 potentially responsible parties (PRPs), including OCC, is required to provide funding for the Superfund portion of the integrated study. In May 2007, a group of 73 PRPs (named the Cooperating Parties Group or CPG), including the above 43, took over the performance of the Superfund portion of the study, under EPA oversight.

Site Responsibility: This site is being addressed through a combination of Federal, State, and potentially responsible party actions.

Threat and Contaminants

Dioxin, pesticides and other hazardous substances were found in the soil at 80 and 120 Lister Avenue. Other properties in the area were also contaminated by dioxin. Dioxin, pesticides, volatile organic compounds (VOCs) and other hazardous substances were found in groundwater at the site. Persons who contacted or ingested the contaminated soil may have been at risk. Although groundwater is not used as a source of drinking water, groundwater migrated toward the Lower Passaic River where it may have added to the contamination of fish and shellfish. However, all of those threats were addressed through immediate and interim remedial actions on the land site. Dioxin, polychlorinated biphenyls (PCBs), mercury, metals and pesticides were also found in sediment samples taken from the Lower Passaic River, Newark Bay and nearby waterways. The Lower Passaic River and Newark Bay are under fish and shellfish consumption advisories, issued by NJDEP based on PCB, dioxin and/or mercury contamination. EPA and NJDEP posted fishing advisory signs within the study area and beyond.

Cleanup Approach

The site is being addressed in several stages: immediate actions and interim remedial actions on the land site, time and non-time critical removals in the Passaic River, a long-term remediation of the 17-miles of the river starting with a focused remediation of the lower eight miles, and a long-term remediation of Newark Bay.

Response Action Status

Immediate Actions: The dioxin discovery led to the 80 Lister Avenue property being secured by a fence and by twenty-four hour security guard service. Exposed soils on the property were covered with geofabric to prevent potential migration of contamination. At other properties, dioxin-contaminated soils and debris were removed by excavation, vacuuming, and other means, and were transferred to 120 Lister Avenue for storage. This work was initiated by the EPA and NJDEP in 1983 and was taken over by the Diamond Shamrock Chemicals Company under State Administrative Consent Orders.

Interim Remedy: In 1987, EPA selected an interim remedy for the 80 and 120 Lister Avenue properties that included (1) construction of a slurry wall and flood wall around the properties, (2) installation of a cap over the properties, and (3) pumping and treating of groundwater to reduce the migration of contaminated groundwater. Under a 1990 Consent Decree with EPA and NJDEP, OCC and Chemical Land Holdings (CLH) submitted design plans to EPA for construction of the interim remedy. Prior to approving the design plans, EPA, at the request of the local community, explored the potential for implementing an alternative to the interim remedy selected in 1987. EPA considered innovative technologies as well as on-site and off-site thermal treatment options, but due to the nature of the material to be remediated, new technologies were deemed inappropriate at that time, and no off-site option was available. One alternative, on-site incineration, was deemed technically feasible, but the local community expressed opposition to on-site incineration in public meetings throughout the summer of 1998. Therefore, EPA approved the design plans for the interim remedy. CLH, now known as Tierra Solutions, Inc. (TSI), selected its construction contractor after approval of the design plans and specifications. Construction began in April 2000 and was completed in December 2001. The construction completion report was approved on July 24, 2006. Under the 1990 Consent Decree, the interim remedy is required to be reevaluated every two years to determine if it remains protective of human health and the environment. Pursuant to the Consent Decree, the first Remedy Evaluation Work Plan was submitted and is undergoing review.

Non-Time Critical Removal: In June 2008, OCC and EPA signed an Administrative Order on Consent (AOC) for a non-time critical removal of approximately 200,000 cubic yards of contaminated sediment from the Passaic River in the vicinity of the former Diamond Alkali plant in Newark NJ, to be done in 2 phases. Phase 1 would include the excavation of 40,000 cubic yards of contaminated sediment which would be shipped off-site for treatment and disposal. Phase 2 would include the excavation of 160,000 cubic yards of contaminated sediment which would be placed in a CDF, anticipated to be sited and constructed in Newark Bay. A public comment period was held from 11/19/08 to 12/19/08 on the Phase 1 Proposed Plan, the Engineering Evaluation/Cost Analysis and draft Community Involvement Plan, and the Action Memorandum was signed 1/9/09. After completion of the design plans, construction began in July 2011. Dredging began in March 2012 and the project was completed in January 2013.

Time-Critical Removal: In June 2012, EPA and the CPG signed an AOC for a time-critical removal action to address the risks posed by elevated concentrations of dioxins and PCBs (and other contaminants) found at the surface of a mudflat on the east bank of the river at River Mile (RM) 10.9 in Lyndhurst, NJ. The action will involve removing the volume of sediment necessary to place an engineered cap over those contaminated sediments, thereby reducing exposure and preventing migration of the contamination to other parts of the river. Design of the action is underway and dredging is expected to begin in summer 2013. This time-critical removal action is not a final remedy: a final decision for RM10.9 will be made by EPA as part of the 17-mile Lower Passaic River Study Area RI/FS Record of Decision.

Lower Passaic River Study Area: Under an AOC executed on April 20, 1994, CLH, on behalf of OCC, started an RI/FS in a six-mile stretch of the Passaic River. The objectives of the study were to determine: (1) the spatial distribution and concentration of dioxins, furans, PCBs, polycyclic aromatic hydrocarbons (PAHs), pesticides and metals, both horizontally and vertically in the Passaic River sediments; (2) the primary human and ecological receptors of contaminated sediments; and (3) the transport of contaminated sediment within the Study Area.

The sampling results from the six-mile stretch investigation and other environmental studies showed that sediments contaminated with hazardous substances, and potential sources of hazardous substances, exist along the entire 17-mile tidal stretch of the Passaic River, from Dundee Dam to Newark Bay. As a result, EPA expanded its investigation to include that 17-mile portion, also known as the Lower Passaic River, and its tributaries. At the same time, the Corps, with NJDOT as local sponsor, was authorized to conduct a study of restoration opportunities along the 17-mile Lower Passaic River. EPA, NJDEP, the Corps, NJDOT, NOAA, and USFWS formed a partnership to conduct a joint Superfund-WRDA study of the Lower Passaic River watershed.

During the course of the 17-mile study, the sediments of the lower eight miles of the river were found to be a major

source of contamination to the rest of the river and Newark Bay. Therefore, a Focused Feasibility Study was developed to evaluate alternatives for an action to control this major source of pollution. A draft of the Focused Feasibility Study was reviewed by a group of stakeholders and their comments are being incorporated. A Proposed Plan is expected to be released for public comment in 2013.

Newark Bay Study Area: In a separate action, EPA also found that hazardous substances are present in Newark Bay. Therefore, on February 13, 2004, EPA and OCC entered into an AOC for TSI to conduct an RI/FS in Newark Bay and its tributaries.

Enforcement Status

In 1984, NJDEP and Diamond Shamrock Chemicals Company entered into two Administrative Consent Orders, the first for the investigations and immediate response work at 80 Lister Avenue and the second for investigations and immediate response actions at other properties including 120 Lister Avenue. A Consent Decree was filed in 1989 among OCC, CLH, the State and EPA requiring OCC and CLH to undertake cleanup activities at the site. The U.S. District Court approved the Consent Decree in November of 1990. This work is being conducted under EPA oversight. In addition, CLH, on behalf of OCC, entered into an AOC on April 20, 1994 with EPA. Under this AOC, CLH conducted extensive sampling in a six-mile stretch of the Passaic River, the results of which have been incorporated into the current 17-mile Lower Passaic River Study.

On February 13, 2004, EPA and OCC signed an AOC for TSI to perform an RI/FS for Newark Bay, including portions of the Hackensack River, Arthur Kill and Kill Van Kull. The AOC allows EPA to maintain oversight of the Newark Bay work and to ensure that it is conducted consistently with the Lower Passaic River study.

Effective June 22, 2004, EPA entered into an AOC with 31 potentially responsible parties (PRPs) to fund the RI/FS portion of the joint Superfund-WRDA study of the Lower Passaic River (i.e., the 17-mile, tidal portion of the river, from Dundee Dam to Newark Bay, and tributaries). The Corps and NJDOT are cost-sharing equally the WRDA portion of the joint study. Effective November 9, 2005, EPA's June 2004 administrative settlement has been amended to include 12 additional companies that will share in the estimated cost of the RI/FS portion of the Lower Passaic River Restoration Project. A key benefit of the amendment is that all of the companies (both the new parties and the earlier settlors) have agreed to pay EPA $750,000 in additional funding for the RI/FS if such additional funds are needed to complete the study. On May 8, 2007, EPA entered into another AOC with 73 PRPs (including the 43 PRPs who signed the previous AOCs), for them to take over the RI/FS work, with EPA oversight. Coordination of the RI/FS with the WRDA portion of the study will continue through EPA.

On June 23, 2008, EPA and OCC signed an AOC for TSI to perform a non-time critical removal of 200,000 cubic yards of contaminated sediment from the Passaic River in the vicinity of the former Diamond Alkali plant in Newark, NJ, to be done in 2 phases. This work is being conducted under EPA oversight.

In June 2012, EPA and the CPG signed an AOC for a time-critical removal action to address the risks posed by elevated concentrations of dioxins and PCBs (and other contaminants) found at the surface of a mudflat on the east bank of the river at RM10.9 in Lyndhurst, NJ. This work is being conducted under EPA oversight.

Cleanup Progress

The interim remedy has reduced risks associated with the 80 and 120 Lister Avenue properties.

The Phase 1 non-time critical removal action removed the most concentrated inventory of dioxin-contaminated sediments from the Lower Passaic River.

Site Repositories

Newark Public Library, 5 Washington Street, Newark, NJ 07102

U.S. EPA Region 2 Superfund Records Center, 290 Broadway, 18th floor, New York, NY 10007