



Central Chemical NPL Site (BMI MD#0302)

What You Need to Know

Site Location

The Central Chemical NPL Site occupies 19 acres in Hagerstown, Washington County, Maryland. The site is located at 601 Mitchell Avenue, approximately 0.8 mile north of U.S. Highway 11.

Site History

From 1937 through 1984, the facility blended agricultural pesticides, herbicides, and fertilizers. Concentrated pesticides manufactured at other locations, were blended with inert materials to produce, and package consumer grade products. In 1965, a fire destroyed the pesticide manufacturing building and operations ceased. From 1968 to 1984, the plant processed fertilizers and herbicides. The facility was later leased to various small businesses until 2003. The site has been unoccupied since 2003.

Over time, wind-blown powders from blending operations and product spills contaminated the soils throughout the property. In addition, bulk wastes and liquid wastes were disposed of onsite. Twenty-one soil contaminants of concern (“COC”) have been identified including the metals arsenic, manganese, thallium, and numerous pesticides including DDT, DDD, DDE, chlordane, dieldrin, endrin, lindane, and alpha, beta, delta, and gamma-BHC; and the semi-volatile organic compound benzo(a)pyrene. Potential groundwater COCs include the soil contaminants plus additional semi-volatile, volatile organic compounds and dioxins and furans (“D/F”).

Elevated levels of DDT were first detected in the sediments of Antietam Creek in 1976 by the United States Geological Survey and were traced back through sediment sampling via surface water pathways to the Central Chemical site. Consequently, the Maryland Water Resources Administration issued a Complaint and Order to Central Chemical, requiring placement of soil cover for the disposal lagoon and perform a hydrologic investigation and cleanup to prevent future release of DDT to surface water. Central Chemical came to the attention of State regulators again in 1987, when a portion of the former disposal lagoon was accidentally unearthed during a trenching operation for a sewer line. Soil sampling revealed high concentrations of noted COCs and the Maryland Department of the Environment (“MDE”) ordered Central Chemical to perform an investigation to characterize potentially hazardous waste sources.

The Environmental Protection Agency (“EPA”) was identified as the lead agency and in August 1997, the potentially responsible parties (“PRPs”) entered an Administrative Order of Consent (“AOC”) to conduct a Remedial Investigation (“RI”) and Feasibility Study (“FS”). On September 25, 1997, this site was listed on the National Priorities List (“NPL”). The site was divided into two operable units (“OU”) and in 2009, EPA issued a Proposed Remedial Plan for OU1, describing the preferred cleanup alternative for the contaminated soils and waste at the site. The Proposed Plan was followed by a Record of Decision (“ROD”) in September 2009. The OU1 Remedy includes on-site solidification/stabilization (“S/S”) of a

former waste lagoon; excavation, consolidation, and capping of contaminated soils; and the installation of a groundwater extraction and treatment system.

In August 2013, EPA issued the Administrative Settlement Agreement and Order on Consent for Remedial Design (“RD”). On September 25, 2015, the PRPs, EPA and MDE entered a Consent Decree (“CD”) for RD and remedial action (“RA”) for OU1. In June 2018, finalization of a hydraulic containment system remedial design was halted due to the identification of high concentrations of D/F in the groundwater beneath the waste lagoon. On April 29, 2019, the Department of Justice issued a stipulated penalties demand letter to the PRPs regarding violations of the CD and AOC for D/F notification. Dispute resolution concluded in September 2019 with the PRPs signing a settlement agreement on stipulated penalties. On January 14, 2021, EPA approved the ROD amendment Explanation of Significant Differences (“ESD”) No.1 altering the discharge location for treated groundwater to the stormwater system. On October 11, 2021, the PRPs notified EPA/MDE of a Project Coordinator change.

Environmental Investigation

Various consultants, the MDE, and the EPA were involved with hydrogeologic investigations at the property between 1977 and 1997. Results from these investigations indicated that surface and subsurface soil were impacted with pesticides and metals. Groundwater and surface water had also been impacted.

In October 1995, an Expanded Site Investigation was performed, and offsite soil samples were collected in an open field north and behind the subject property. In August 1996, additional off-site characterization was completed along the northwest fence line. Elevated concentrations of COCs were identified in surface soil up to 13 feet from the original fence. In February 1997, confirmatory samples were collected 30 feet beyond the fence line and an AOC was implemented in August 1997. The AOC required installation of a 10-foot tall chain link fence along the northern site boundary, which was relocated from the original location 20 feet to contain impacted soils and provide additional site security by restricting access to protect potential trespassers. Pesticide concentrations exceeding EPA removal levels for residential soils were not detected in the confirmatory samples beyond the new fence line. A Human Health Risk Assessment (“HHRA”) was finalized in the revised RI report, which evaluated the residential off-site soil exposure risk. Additional residential soil sampling was performed as outlined in the ROD on June 11, 2018, and in April 2019 additional residential soil characterization sampling identified no further action and the adjacent homeowners were notified.

In April 2003, the Central Chemical Community Liaison Panel (“CLP”) consisting of Hagerstown community members, the PRPs and their consultant along with EPA, and MDE held their initial meeting. The CLP meetings were held on an approximate quarterly basis during the proposed planning stage. RI fieldwork began in 2003, which characterized buildings, evaluated surface and subsurface soil, groundwater, storm water, and off-site surface water, sediment, and groundwater. A draft RI report was received in December 2004. EPA/MDE determined that a Supplemental Investigation of groundwater was necessary to delineate contamination off-site and to obtain a better understanding of aquifer characteristics. At this point in time, EPA separated the site delineation of the groundwater from the on-site soils into two separate parallel OUs. Fieldwork to delineate off-site groundwater was initiated in 2005 and due to the karst aquifer complexity has continued to date.

Operable Unit 1

Between February and May 2005, the PRPs demolished all Central Chemical building structures, and the demolition debris was recycled or disposed of off-site. Initial work on the FS started in 2005 and a revised study was received in March 2009 that included an S/S alternative plan for the former lagoon landfill. In September 2009, EPA issued a ROD which outlined the proposed remedy for addressing contaminated soils and waste at the site. The ROD included onsite S/S of the former waste lagoon, excavation, consolidation and capping of the impacted soils from across the site and installation of a groundwater extraction and treatment system to capture shallow impacted groundwater beneath the consolidation area.

In 2010, a Pre-Remedial Design Investigation (“PDI”) was performed to support the remedial design. The final PDI was completed in February 2015. Refinements to the treatability and background studies were performed and work on the remedial design began in 2015. In February 2015, EPA approved the RD Work Plan and between 2015 and 2017, numerous RD reports as outlined in the Settlement Agreement were submitted to EPA and specific submittals on the 100% RD were approved in May 2017. On April 20, 2017, EPA/MDE participated in a local community involvement townhall meeting to discuss the proposed RD and subsequent RA.

In June 2017, the PRPs notified EPA/MDE of change in consultant and contractors and initiated soil sampling for D/F. In September 2017, EPA/MDE initiated alternate requirements to discharge site extracted and treated groundwater to the municipal storm system (“MS4”) through performance of a statement of basis and a ROD remedy change via ESD. On September 26, 2017, site mobilization occurred for limited RA under contract 1. EPA/MDE continued to receive and review RD deliverables. In December 2017, MDE delivered applicable or relevant and appropriate requirements (“ARARs”) for National Pollutant Discharge Elimination System (“NPDES”) permit equivalency requirements to the ESD for changing the groundwater discharge location to the MS4.

In February 2018, planned contract 1 limited RA activities were completed. In June 2018, finalization of the 100% RD HCS was halted due to the identification of high concentrations of D/F in groundwater beneath the waste lagoon and consolidation area. Evaluation of D/F as a site COC remained ongoing until it was determined not to be a soil COC on August 25, 2020. On June 11, 2018, adjacent residential soil sampling was initiated as outlined in the ROD. On August 7, 2018, a Statement of Basis was completed, which identified the performance standards for groundwater extraction and treatment effluent discharge limits to the MS4.

In January 2019, a Site Air Evaluation Work Plan was submitted to evaluate the potential migration of pesticide odors from sinkholes. In February 2019, MDE delivered State ARARs for water appropriation for the extraction and treatment system remedial action. In March 2019, additional pump testing of site extraction wells was initiated to determine an adequate capture zone. In May 2019, the pump test evaluation determined insufficient hydraulic containment coverage. In April 2019, the PRPs submitted a final Dioxin Technical Memorandum for the evaluation of D/F in soil. In October 2019, the PRPs provided a soil pre-excavation characterization proposal to help verify the removal of impacted soils during the remedial action. In November 2019, an additional scope of work for the Aquifer Testing Data Report for additional installation of extraction wells was approved.

In January 2020, the PRPs requested re-evaluation of manganese, arsenic, and thallium metals background values in soil through submittal of a technical memorandum and on September 24, 2019, EPA disapproved the report. In February 2020, EPA issued a RA update schedule postcard to the local community and in March 2020, site activities began for the installation of additional extraction wells and new aquifer pumping tests were performed over the summer to re-evaluate hydraulic capture of the groundwater beneath the consolidation area. The extraction wells installation and aquifer testing activities

were temporarily suspended due to the COVID 19 global pandemic, and the final Aquifer Testing Data report was approved in September 2020. On April 6, 2020, EPA issued a draft ESD No. 1 for public comment and a publication was circulated in a local Hagerstown newspaper. In October 2020, EPA/MDE received a Tier 1 soil pre-excavation characterization sampling work plan. Tier 1 soil characterization results revealed the need for additional characterization and on April 19, 2022, a Tier 2 investigation was approved and completed in July 2022. EPA/MDE await submission of the Tier 2 characterization data; however, based on preliminary Tier 2 results, a Tier 3 investigation is anticipated.

On January 14, 2021, EPA approved the ESD No.1 altering the ROD remedy decision for discharge of treated groundwater to the MS4. In March 2021, EPA conditionally approved the 100% RD HCS. On June 2, 2021, EPA/MDE received modification requests for the HCS design and the statement of Basis. MDE issued the revised final Statement of Basis (No. 17-EP-3838C).

On January 4, 2022, RA to construct the HCS began and was completed in July 2022. In May 2022, revisions to the Contract 2 RD were initiated and the design was separated into Contract 2A (S/S) and Contract 2B (excavation and cap). On June 6, 2022, the first Five Year Review report was completed. On July 17, 2022, the groundwater extraction and treatment began operation via the constructed HCS; thereby concluding RA on Contract 1. On August 31, 2022, Contract 2A RD was approved and RA initiated for Contract 2B S/S. RA of Contract 2A is ongoing and is expected to be complete by December 31, 2022.

Operable Unit 2

In April 2008, a Supplemental Groundwater Investigation Report was received, and results identified that offsite migration of pesticides extended approximately ½-mile northeast and 1-mile southwest from the site. The groundwater investigation continued in March 2015 with submittal of a Groundwater Interim Report. In February 2014, a sub-slab soil gas vapor intrusion investigation was performed at the adjacent north residential community. Results did not identify any risk exceedances and no further action letters were issued to the residents. Between March 2014 and July 2016, EPA performed three groundwater tracer studies to help identify COC migration conduit pathways. In May 2014, residential well sampling was performed on the irrigation wells located at the residential community located approximately 1-mile north of the site at the Fountain Head Country Club. These single family residences receive municipal water supply for drinking water; however, separate irrigation wells exist for lawn irrigation purposes. Results identified low levels of site related pesticides in all irrigation wells. One resident well and the Fountain Head Country Club well slightly exceeded the State of Maryland tap water screening level for Dieldrin, an insecticide not necessarily connected to the site and impacts will be evaluated in connection with a background study. Follow up residential well testing was performed in November 2015, that identified levels of Dieldrin below the screening level. Based on a risk evaluation, EPA/MDE determined that due to the water use, no further action was currently necessary and notified the property owners.

On April 2, 2018, a new draft RI report was submitted to EPA/MDE. In June 2018, the PRPs submitted a HHRA and a Screening Level Ecological Risk Assessment (“SLERA”) to support the RI. On June 5, 2018, extremely high concentrations of D/F in groundwater beneath the waste lagoon and consolidation area were identified and evaluation of D/F continued until it was determined in 2021 to be a potential groundwater COC. Due to the high D/F groundwater concentrations identified, the RI report was placed on hold and a groundwater monitoring event with split sampling was performed in October 2018 and again in May 2021. In July 2018, a groundwater Passive Sampling Plan (“PSP”) was submitted to EPA/MDE to help identify COCs through the conduit tertiary flow pathway. In August 2018, EPA/MDE were notified of PRPs Project

Coordinator change. On November 9, 2018, a draft Background Study Work Plan (“BSWP”) was submitted.

In April 2019, EPA/MDE received a Groundwater Monitoring Report and disapproved the report on December 4, 2020. In May 2019, the PRPs recommenced evaluation of the draft RI report and addendums to include D/Fs. In August 2019, EPA requested the United States Geological Survey (“USGS”) to perform an evaluation of site related information to conclude a groundwater conceptual site model. In September 2019, a groundwater D/F verification work plan was submitted and ultimately approved in December 2020. In October 2019, a change in D/F analytical laboratories was determined. In December 2019, EPA’s contractor completed limited 3D groundwater modelling based on packer testing data.

In April 2020, preparation of the PSP and BSWP resumed. In May 2020, MDE drafted a framework for off-site institutional controls. In June 2020, a D/F groundwater verification report was submitted, and potential interim remedial actions (“IRA”) were discussed, and ultimately disapproved by EPA in December 2020. In July 2020, a revised PSP and D/F risk evaluation was submitted. In August 2020, the BSWP was submitted. On December 4, 2020, EPA disapproved the IRA.

On March 4, 2021, a 3D visualization analysis presentation was performed. On March 19, 2021, EPA confirmed D/F as a potential groundwater COC. On March 23, 2021, EPA issued disapproval for a Dioxin Attenuation Evaluation Technical Memorandum. On March 24, 2021, EPA disapproved the 2019 groundwater monitoring report. On April 5, 2021, round 1 of 6 sampling events of the PSP and BSWP were initiated. A 2021 site-wide groundwater sampling event commenced on May 17, 2021, and the final report submitted on January 31, 2022.

On February 9, 2022, the United States Geological Society submitted the final conceptual site model. On March 30, 2022, a Background Study report was submitted for review. On June 27, 2022, the PSP report was submitted for review. EPA/MDE continue to evaluate the BS and PSP reports.

Current Status

Tier 2 Pre-excavation sampling was completed in July 2022 and Tier 3 sampling is anticipated. Contract 1 RA is construction complete and the extraction and treatment system continues to operate. Contract 2B RA began on August 31, 2022 and is expected to be construction complete by December 31, 2022. The Groundwater RI for OU-2 is currently ongoing and a final report is anticipated by July 2023.

Site Repository

EPA maintains site related reports and documents online

<https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0303260>