



Workscope:

Implementation of multiple investigations and remediation strategies at this facility on behalf of the NVF Company and later, the State of Delaware. The focus of the project was geared toward implementation of the innovative remediation solution Alliance designed to address the zinc contamination that was present in groundwater and discharging to Red Clay Creek (RCC). Alliance completed this work pursuant to applicable regulations with DNREC and EPA Region III under CERCLA

Goal:

Satisfy EPA requirements for closure; design of a remedy to prevent impacts to surface water; conduct groundwater delineation activities; and implementation of a groundwater recovery pump and treat remediation system to prevent metals contamination (zinc-laden groundwater) from impact to the adjacent creek.

Project Description:

The NVF Company needed to respond and complete work related to the Consent Order with EPA Region III pertaining to the No. 1 Mill area of the property. Previous soil and groundwater data indicated that metals, in particular zinc and mercury, were elevated in the No. 1 Mill area of the site and had resulted in impacts to the adjacent surface water body, Red Clay Creek. NVF was obligated under the Order to demolish the No.1 Mill building and complete an investigation for zinc and mercury. Alliance responded to EPA's comments on the Response Action Plan that had been submitted for the project. Alliance also provided a Work Plan for Post-Response Action Monitoring for EPA approval to evaluate soil metal concentrations in the footprint of the building after demolition. NVF's contractor demolished the building and removed process sludges and contaminant source materials. Alliance implemented the Work Plan and identified areas of metals impact within the footprint of the demolished building. A soil cap and vegetative cover were installed to remove the potential for metal contaminated soil to erode, and thereby cause impacts to creek sediments. Additionally, Alliance installed a series of groundwater monitoring wells to identify metal concentrations in groundwater between the impacted area and Red Clay Creek. Groundwater sampling and monitoring were performed on routine basis to evaluate subsurface conditions. Surface water samples were also collected. Alliance designed and installed a groundwater treatment system to capture zinc contaminated groundwater. The Site had been assigned a Waste Load Allocation pursuant to the zinc TMDL for the Red Clay Creek based on the diffuse discharge of zinc impacted groundwater to the creek. Alliance has been operating the system and demonstrating compliance with the TMDL since its installation. Response Actions were completed to the satisfaction of EPA Region III and DNREC, and Alliance prepared a Final Summary of Response Actions that was approved with no further actions required by EPA with respect to the Order.

Client

State of Delaware
Contract - Former
NVF facility

Project Team

Paul Miller, P.E.,
Bill Smith, P.G.,
Bob Kondelin, P.G.,
Tom Murphy

Regulation

EPA Region III
Cercla Site,
DNREC HSCA
regulations

Project Value

\$250,000+

Innovation:

- The operation of the groundwater recovery trench resulted in significant measurable improvements in the water quality of the RCC.
- The use of the existing site systems resulted in an approximate savings of \$200,000 for DNREC, versus the purchase of a dedicated wastewater treatment system. In addition, the use of the portable trailer allows for rapid removal during the potential flooding of the area.
- The mass loading of zinc from the Site to the creek has been reduced to levels acceptable under the Total Mass Daily Load (TMDL) requirements for the RCC.



Client

State of Delaware
Contract - Former
NVF facility

Project Team

Paul Miller, P.E.,
Bill Smith, P.G.,
Bob Kondelin, P.G.,
Tom Murphy

Regulation

EPA Region III
Cercla Site,
DNREC HSCA
regulations

Project Value

\$250,000+