Long-Term Stewardship Assessment Report

Thiokol Specialty Chemical Division

EPA ID #: WVD074968413

Newell, West Virginia 26047

Assessment Date: March 14, 2019

Report Date: April 2, 2019

Introduction: Long-term potential stewardship (LTS) refers to the activities necessary to ensure that engineering controls (ECs) are maintained and that institutional controls (ICs) continue to be enforced. The purpose of the Environmental Protection Agency (EPA) Region 3 LTS program is to periodically assess the efficacy of the implemented remedies (i.e. ECs and ICs) and to update the community on the status of Resource Conservation and Recovery Act (RCRA) Corrective Action facilities. The assessment is conducted in twofold, which consists of a record review and a field inspection, to ensure that the remedies are implemented and maintained in accordance to the final decision.

Site Background: The Thiokol Specialties Chemical Division (Thiokol) facility is situated in Hancock County, West Virginia approximately 3.5 miles southwest of Newell, West Virginia, adjacent to West Virginia State Route 2 (Facility). The Facility comprises 13.71 acres, approximately six acres of which comprise the manufacturing portion of the Facility. The remainder of the Facility is wooded. The manufacturing portion of the Facility consists of a production area that is gated and fenced, and a drum storage area located west of the production area. The Facility is relatively flat with a steep hillside at the western edge of the property that leads down to a gravel quarry and ponds remaining from quarrying operations. The Ohio River is located approximately 0.5 mile west of the Facility. East of the Facility is State Route 2 which provides access to the Facility. Thiokol currently operates the facility to produce custom chemical manufacturing, solvent recovery, as well as production of powder biocides.

Beginning on November 19, 1980, Thiokol operated the plant as a hazardous waste management facility. Thiokol retrofitted the plant for use in herbicide manufacturing, making primarily acifluoren and pendimenthalin under the trade names of “Blazer” and “Prowl” respectively. RCRA inspections by WVDEP during this time period revealed poor waste management practices such as open and leaking drums, stained soils, and discolored pools of standing water. Multiple RCRA violations associated with drum labeling and storage requirements were cited by WVDEP and EPA during operational history. From June 1993 through May 1996, EPA Region III directed Comprehensive Environmental Response Compensation and Liability Act (“CERCLA”) emergency response activities at the Facility. A total of 1,980 full drums were located at the Facility. Approximately 200 of the 1,980 drums were reportedly leaking onto the ground. It was estimated that 100 cubic yards of material and/or

contaminated soils were also removed during remediation activities. Thiokol has assumed all environmental liability for the Facility including the waste generated.

At the request of WVDEP for assistance in assessing environmental impacts at the Facility, in 2002 EPA issued an Administrative Order of Consent ("Consent Order") to NewChem under Section 3008(h) of RCRA. The Consent Order required NewChem to conduct a site-wide environmental investigation to determine sources and extent of any contamination and to conduct interim measures, as necessary, at the Facility. In 2003, groundwater samples collected during the Remedial Facility Investigation (RFI) revealed the occurrence of TCE in three monitoring wells located on the southwest corner of the Facility property.

Current Site Status: On November 29, 2011 EPA issued the Final Decision and Response to Comments (FDRTC). The final remedy consists of the implementation of enhanced anaerobic bioremediation through the introduction of a non-toxic compound into groundwater at select monitoring well locations at the Facility in order to accelerate the treatment process for the removal of groundwater contamination, the verification of the effectiveness of the treatment through groundwater monitoring and Facility-wide ICs. An Environmental Covenant, pursuant to the West Virginia Environmental Covenants Act, is currently being drafted as the implementation mechanism for ICs at the Facility.

Long-term Stewardship Site Visit: On March 14, 2019, EPA conducted a long-term stewardship site visit with West Virginia Department of Environmental Protection (WVDEP) and Thiokol and their consultant to discuss and assess the status of the implemented remedies at the site.

The attendees were:

Name	Organization	Email Address	Phone No.
John Hopkins	EPA Region 3	hopkins.john@epa.gov	(215)814-3437
Kenan Cetin	West Virginia Department of Environmental Protection	kenan.cetin@wv.gov	(304)238-1220 Ext. 3507
Dennis Copper	Deltech Resins	dcooper@deltechresins.com	
Thomas Walsh	Civil & Environmental Consultants Inc.	twalsh@cecinc.com	1-800-365-2324
Brianne Hastings	Civil & Environmental Consultants Inc.	bhastings@cecinc.com	412-249-3117

Institutional Controls (ICs) Status:

Groundwater Use Restriction: Use of groundwater beneath the Facility for potable purposes or any other use that could result in human exposure is prohibited. The facility is served by the local water utility and there were no potable uses of groundwater observed during the site visit.

Land Use Restriction: The Property shall not be used for any purpose other than industrial. There were no residential structures or uses of the site at the time of the visit. Thiokol is currently in compliance with the land use restrictions.

Well Installation Restriction: Well drilling at the Property without prior approval from WVDEP, to prevent inadvertent exposure to the contaminated groundwater and adverse effects to the final remedy, is prohibited. There were no new wells or well drilling observed during the site visit.

Enhanced Anaerobic Bioremediation and Groundwater Performance Monitoring: Groundwater generally flows in a west/southwesterly direction towards the Ohio River. Groundwater monitoring is conducted at eight (8) monitoring wells on a quarterly basis. The main constituent of concern in groundwater is Trichloroethylene (TCE) found in the shallow unconsolidated aquifer. One well, MW-MP6, currently has sampling results with TCE concentrations above EPA's Maximum Contaminant Level (MCL) for TCE of 5 ug/L. In August 2013, a Regenesis® 3-D Microemulsion® injection was performed at well MW-MP6. Subsequent monitoring events indicated that the injection did not affect the groundwater chemistry near MW-MP6 in a way that promotes enhanced anaerobic bioremediation.

In November 2016, Regenesis® PlumeStop® injections were performed approximately 40ft upgradient of monitoring well MW-MP6 at seven injection points spaced 10ft apart with a layout of a straight line nearly perpendicular to the observed groundwater flow direction. Post injection groundwater monitoring suggests that TCE groundwater concentration trends at MW-MP6 have seasonal fluctuations, which are likely a result of groundwater elevation changes and the flushing of residual TCE from the lower vadose zone. Thiokol will continue to monitor groundwater on a quarterly basis until the MCL for TCE has been attained at all monitoring wells, specifically MW-MP6.

Reporting Requirements: Thiokol has reported quarterly groundwater monitoring results to EPA in a timely manner, with the latest sampling event occuring on December 17, 2018.

Mapping: The EPA facility website map is accurate and includes the 14-acre Thiokol facility. A downloadable geospatial PDF map is available on EPA's corrective action facility webpage under the "Reports, Documents and Photographs" section, found here.

Conclusions and Recommendations: No IC deficiencies were identified. EPA recommended a follow-up to confirm minor monitoring well maintenance to be performed. EPA has determined that the remedy institutional and engineering controls will be fully implemented once the draft Environmental Covenant is executed and recorded.

Attachments:

Figure 1: Aerial Map of Thiokol Specialties Chemical Division

Picture 1: Monitoring Well MW-MP6

Picture 2: Monitoring Well MW-2D

Picture 3: Monitoring Well MW-4

Picture 4: Monitoring Well MW-5

Picture 5: Monitoring Well MW-7

Figure 1: Aerial Map of Thiokol Specialties Chemical Division

Picture 1: Monitoring Well MW-MP6

Picture 2: Monitoring Well MW-2D

Picture 3: Monitoring Well MW-4

Picture 4: Monitoring Well MW-5

Picture 5: Monitoring Well MW-7