



SCANNED

ACTION MEMORANDUM

Date: February 17, 2023

Subject: Request for a Removal Action at the Brenntag Charleston Site, Area #3

County: Charleston, South Carolina.

From: Tim Hornosky, P.G., Project Manager
State Voluntary Cleanup Program

Thru: Lucas Berresford, Section Manager
State Voluntary Cleanup Program

To: Henry Porter, Chief
Bureau of Land and Waste Management

I. Purpose

The Purpose of this action memorandum is to request and document approval of the proposed removal action at Area #3 of the Brenntag Southeast Facility in Charleston, South Carolina. This action is intended to protect Human Health from a release threat, as defined by Section 101 of CERCLA, that exists at the site in the form of chlorinated volatile organic compound (CVOC) contamination in the soil and groundwater. This site poses a threat to human health and the environment that meets the National Contingency Plan (NCP) Section 300.415(b)(2) criteria for removal actions.

II. Site Conditions and Background

1. Physical Location and Site History

The Site currently operates as a chemical repackaging, distribution, and storage facility. The Site consists of an approximate 8.9-acre parcel located at 4200 Azalea Drive in Charleston, South Carolina. An office building and a warehouse are located on the Site, which is currently zoned for industrial use and is surrounded by a mix of commercial and light industrial properties. The Site is bounded to the east by Industrial Drive, to the South by Azalea Drive, to the west by William M. Bird & Company and Brickyard Creek, and to the north by American Steel Fabricators. Brickyard Creek flows to the south towards the Ashley River.

From 1960 through 1996 the Burriss Chemical Company operated a chemical warehouse and distribution facility on a 10.9-acre parcel including the Site. Two primary areas of concern were initially identified in the early 1990s. Area #1, located in the central

portion of the facility is impacted with CVOCs. Area #2, located in a former tank farm in the southern portion of the facility is primarily impacted with petroleum hydrocarbons. Area #3 was identified in 2021 and is the subject of the proposed action. Investigation of Area #3 has identified a limited area of shallow soil impacted by CVOCs adjacent to a rail spur at the southeastern corner of the property, along with a significant groundwater CVOc plume.

In 1997, the original 10.9-acre property was subdivided. Burris Chemical Company reportedly sold the 8.9-acre Site to SouthChem in 1997. The remainder of the property was distributed to Burris Environmental Services, Inc. (BES) at that time. W.M. Bird & Company entered into a Voluntary Cleanup Contract with the Department on October 21, 1997 (97-5304-NRP) and subsequently purchased the 2-acre property, now identified as 4210 Azalea Drive from BES. SouthChem entered into Consent Agreement 00-252-W with the Department on November 22, 2000 to address contamination on the 8.9-acre parcel at 4200 Azalea Drive. On May 1, 2001 SouthChem became Brenntag. Burris Environmental Services, Inc. subsequently entered into Consent Agreement 01-180-W with the Department on July 30, 2001 to address contamination on the 2-acre property at 4210 Azalea Drive.

2. Previous Investigations

Soil and groundwater investigations conducted in the 1990s indicated the existence of two separate sources and areas of contamination which do not overlap. Areas #1 and #2 are the subjects of separate investigations and remedial actions. The action proposed in this memorandum applies to Area #3, which was identified by investigations conducted in 2021 and 2022. Upon review of these investigations, the Department indicated that remedial action would be necessary to eliminate risks to human health and the environment.

Area #3 is located in the southern portion of the facility and is impacted with CVOCs. Brenntag has proposed a series of response actions to remove soils that serve as an ongoing source of contaminants to groundwater, and to address groundwater contamination. The proposed actions are presented in the October 18, 2022 Remedial Action Work Plan, Area #3 and include soil removal and disposal, installation of additional permanent monitoring wells, aggressive fluid/vapor recovery (AFVR) and underground injection of amendments to help break down CVOCs in groundwater.

The following compounds were identified as contaminants of concern for Area #3: tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2 dichloroethylene (cis-1,2 DCE), trans-1,2-dichloroethylene, 1,1-dichloroethylene, and vinyl chloride.

A. Soil

The predominant contaminant in Area #3 soil is TCE. Two soil sample locations exceeded the USEPA Industrial Regional Screening Level (IRSL) for TCE of 6,000 micrograms per kilogram (ug/kg); A#3-28 at 162,000 ug/kg, and A#3-46 at 18,190,965 ug/kg. Cis-1,2 DCE is also present at concentrations below the IRSL (2,300,000 ug/kg).

B. Groundwater

The investigation indicated that the majority of CVOC mass is in groundwater. Concentrations of TCE as high as 384,000 micrograms per liter (ug/L) were detected in samples collected near the bottom of the aquifer. The Cooper Marl underlies the shallow aquifer at a depth of approximately 20 feet bgs and is a regional confining layer, preventing further downward migration of groundwater. Cis-1,2-dichloroethylene and vinyl chloride are also present at elevated concentrations in Area #3 groundwater down-gradient of the release point. The distribution of contaminants indicates that some natural breakdown of the CVOCs is taking place in groundwater.

C. Surface Water

Surface water samples collected from Brickyard Creek, adjacent to the facility do not contain detectable concentrations of CVOCs.

D. Non-aqueous Phase Liquids (NAPL)

Reported TCE concentrations in groundwater exceed 10% of the theoretical solubility limit, suggesting that free-phase TCE is present. This was confirmed by observation of a dense, non-aqueous phase liquid (DNAPL) in three groundwater samples.

E. Vapor Intrusion

In June 2021, three (3) Indoor air samples were collected within the Brenntag office building located down-gradient of the release point, and within the areal extent of the groundwater CVOC plume. None of the samples exceeded the USEPA IRSLs. Although the Department does not regulate indoor air quality, vapor intrusion into occupied structures is considered a risk factor in determining the need for remedial action.

F. Removal Evaluation

Contamination at the site is associated with releases from a former rail unloading area. This area has been the subject of soil and groundwater assessment intended to define the extent of contamination on the Brenntag property. Contamination extends to the west onto the William M. Bird property. The purpose of the proposed removal action is to remove the primary source material. The location of the area proposed for removal is illustrated in Figure 1.

III. Threats to Public Health or Welfare or the Environment, and Statutory and Regulatory Authorities.

The Department has determined that a release of hazardous substances has occurred at the Site and may present an imminent and substantial endangerment to public health or welfare or the environment. In order to protect public health and the environment, it is necessary that action be taken to abate the release of hazardous substances from the site. The following NCP Section 300.415(b)(2) criteria are being met for this removal action.

- (i) Actual or potential exposure to nearby humans, animals or the food chain from hazardous substances or contaminants.

Due to the level of contamination at the Site, there is a direct threat of human exposure by either direct contact, inhalation and/or ingestion by persons working on the property.

- (ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems.

Contaminated soil has impacted groundwater above drinking water standards.

- (iv) High levels of hazardous substances or pollutants or contaminants in soils at or near the surface that may migrate.

Residual contamination has been identified above industrial screening levels in soils from shallow depths down into the saturated zone at about 3-5 feet bgs. Contaminated soils will continue to impact groundwater unless removed.

IV. Proposed Actions

1. Proposed Action Description

Brenntag is proposing a Removal Action to remove contaminated soils associated with the former railroad tracks along the southeastern corner of the property. Contaminated soil has been delineated within the limits of the Brenntag property near the former railroad tracks to a depth of approximately six feet.

The proposed removal action will include removal and proper offsite disposal of soils and backfilling with clean soil.

2. Engineering Evaluation/Cost Analysis (EE/CA)

An EE/CA has not been conducted for this Site. The action is being performed as a time critical removal action which does not require this to be conducted. The proposed action is being undertaken by the respondent at their expense under Consent Agreement 00-252-W.

3. Applicant or Relevant and Appropriate Requirements (ARARs)

Federal ARARs proposed for the removal action are the Resource Conservation and Recovery Act (RCRA), Occupational Safety and Health Act (OSHA), the Hazardous Material Transportation Act (HMTA) and the Offsite Rule. State ARARs include the Pollution Control Act, and the South Carolina Hazardous Waste Management Act. These ARARs will be followed during the removal action.

V. Expected change in the Situation Should Action be Delayed or Not Taken.

If the recommended action is not taken or is delayed, the source areas will remain in place

and allow for continued migration to groundwater and potentially impact to indoor air. Threats to adjacent property through migration will continue to exist.

VI. Public Participation

Actions taken at the Brenntag facility since 2000 have been implemented pursuant to Consent Agreement 00-252-W. Public participation activities have consisted of coordination between Brenntag, Burris Environmental Services (Respondent to Consent Agreement 01-180-W), and William M. Bird Company, a Non-Responsible Party and owner of the former Burris Chemical Headquarters building. DHEC created a site-specific webpage and established an administrative record when addressing the previous removal action for Area 2 on July 29, 2022. Postcards were sent to neighboring residents within a half-mile radius and a notice was published on the Post and Courier on August 13, 2022.

The summary of this proposed response action is being published in the Post and Courier and the Administrative Record has been updated to contain all documents used to make this decision, consistent with the Department's Public Participation Guidelines. Post cards will be sent to residents to provide notice of the removal action. The Administrative record is available through the Department's webpage.

VII. Outstanding Policy Issues

NONE.

VIII. Enforcement

SouthChem Corporation entered into Consent Agreement 00-252-W with the Department on November 15, 2000 with respect to assessment and remediation of the 8.9-acre property. Brenntag is the successor to SouthChem Corporation. Brenntag plans to perform the proposed removal outlined within this document under Consent Agreement 00-252-W. Brenntag will conduct and finance all activities in the approved work plan.

IX. Recommendation:

This decision document represents the selected removal action for Area #3 at the Brenntag Site. It was developed according to CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on available information contained in the Administrative Record for the Site.

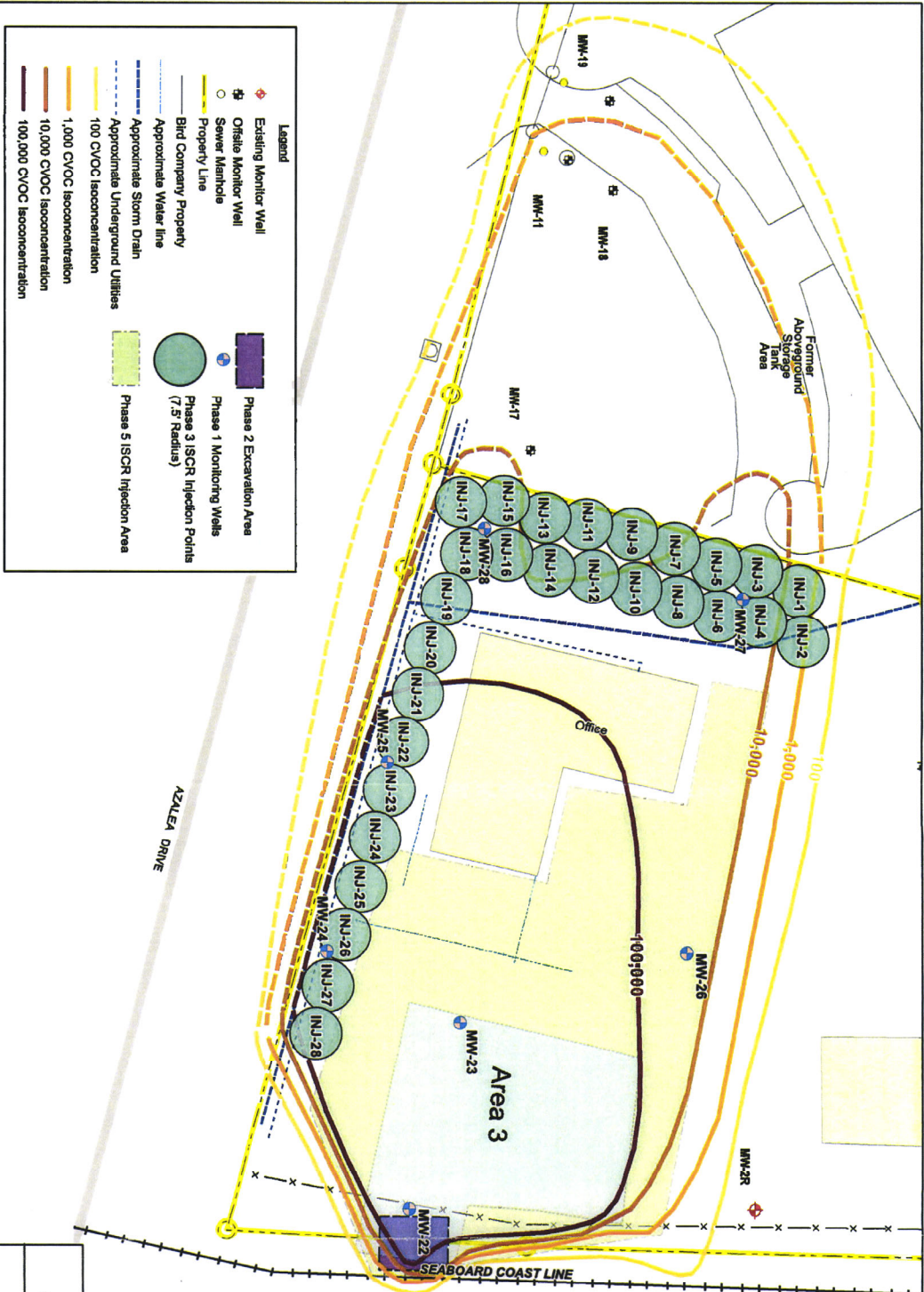
Conditions of the site meet the NCP Section 300.415(b)(2) criteria for a removal and I recommend your approval of the proposed removal action.

APPROVE: 

Date: 2-17-2023

DISAPPROVE: _____

Date: _____



- NOTES:**
- Total chlorinated ethene in deep surficial aquifer (15-20 ft bgl) are in micrograms per liter (ug/L)
 - Phase 1 monitoring well locations are preliminary and may be adjusted based on field conditions. Additional monitoring wells may be added during future phases of work.
 - Phase 2 excavation extent will be confirmed with additional samples.
 - Phase 3 injection locations may be adjusted based on Phase 2 sampling results.
 - Phase 4 injection locations may be adjusted based on Phase 3 sampling results.
 - Phase 5 ISCR injection details may be adjusted based on previous phases of work.

PROPOSED REMEDIAL LAYOUT
 BRENTNAG SOUTHEAST
 CHARLESTON, SOUTH CAROLINA
 REMEDIAL ACTION WORK PLAN AREA #3

ARCADIS

FIGURE
1

