



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

APR 25 2017,

**ACTION MEMORANDUM**

**SUBJECT:** Request for Approval of a Time-Critical Removal Action at the Burlington Industries Cheraw Site in Cheraw, Chesterfield County, South Carolina

**FROM:** Matthew J. Huyser, On-Scene Coordinator  
Emergency Response, Removal and Prevention Branch

**THRU:** James W. Webster, Ph.D., Chief  
Emergency Response, Removal and Prevention Branch

**TO:** Franklin E. Hill, Director  
Superfund Division

**I. PURPOSE**

The purpose of this Action Memorandum is to request and document approval of a removal action within a residential portion of the Burlington Industries Cheraw Site (Site) located in Cheraw, Chesterfield County, South Carolina. The Site was referred to the U.S. Environmental Protection Agency Region 4 (EPA) Emergency Response, Removal and Prevention Branch (ERRPB) by the South Carolina Department of Health and Environmental Control (DHEC) on October 4, 2016, based on elevated concentrations of Polychlorinated Biphenyls (PCBs) in residential properties and surface water drainage units. ERRPB completed a Removal Site Evaluation (RSE) on December 14, 2016, and determined that the Site poses a threat to public health and the environment that meets the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) section 300.415(b) criteria for removal actions. If approved, the total project ceiling for this action will be \$1,136,400 of which an estimated \$894,000 will be funded through the Regional Removal Allowance.

**II. SITE CONDITIONS AND BACKGROUND**

Site ID: B49F  
CERCLIS ID: SCN000404896  
Removal Category: Time-Critical Removal Action

## A. Site Description

### 1. Removal Site Evaluation

In October 2015, the DHEC Division of Site Assessment and Remediation was contacted by a resident in Cheraw, South Carolina, inquiring about an unidentified wastewater unit that had been historically located on his property and/or an adjacent vacant lot. Under a Preliminary Assessment (PA) DHEC determined that there had been several permitted sludge drying beds located on at least one undeveloped lot within the residential neighborhood. The drying beds were constructed by Burlington Industries on or before 1971 as part of a wastewater pretreatment system. Solid components in wastewaters from the plant had purportedly caused blockages within the city sewer. The pretreatment system utilized a clarifier, which separated sludge for the drying beds and sent pretreated water through the city sewer to the public wastewater treatment plant. In 1974, Burlington Industries received a construction permit (Permit No. 2852-C) from DHEC for "a chemical pretreatment system having recycling capabilities comprising units for neutralization, chemical precipitation, dissolved air flotation and sludge handling," which may have been for the purposes of expanding or modifying the existing installation.

According to a 1989 letter from Burlington Industries to DHEC requesting permission to remove or cover remaining solids in the drying beds:

*"In the early to mid-1970s, the plant was applying latex and acrylic finishes along with pigment dyes and delusterants to fiberglass fabrics and some of this material was falling out in the sewer lines causing blockage problems for the city. At their request, the plant installed a settling tank and the sludge from this tank were pumped into drying beds behind the plant."*

It is unknown at what point the application of these finishes was initiated and at what point they ceased. PCB-containing compounds were used as fabric coatings for heat and/or flame resistance<sup>1</sup> as well as in synthetic resins, rubber, adhesives and de-dusting agent<sup>2</sup>. Prior to construction of the pretreatment system and prior to operation of the Cheraw Wastewater Treatment Facility, the Burlington plant discharged at least some of its wastewater directly to the adjacent ditch. A letter dated March 12, 1970, from the Pee Dee District Sanitation Director to the South Carolina Board of Health Pollution Control Authority Executive Director states that "several complaints have been received by the Chesterfield County Health Department concerning the discharge of a waste product into an open ditch [by the Burlington Industries facility]". The Sanitation Director confirmed by direct observation that "the plant is indeed discharging a green fluid... into an open ditch at the rear of a housing development."

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<sup>1</sup> <http://www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/docs/SourcePCBs.pdf>

<sup>2</sup> Agency for Toxic Substances and Disease Registry Toxicological Profile for Polychlorinated Biphenyls (PCBs). November 2000

Burlington Industries, Inc. purchased the property at 650 Chesterfield Highway in Cheraw, Chesterfield County, South Carolina in 1960. The manufacturing facility was referred to as the James Fabrics Plant and produced woven fiberglass commercial and industrial fabrics. In 1988, the plant was sold to Highland Industries, Inc. The property sale to Highland Industries was only a subset of the overall property footprint owned by Burlington Industries and did not include the location on which the six, sludge drying-beds were located. The drying beds were closed in 1989 wherein approximately 300 cubic yards of dried sludge and soil were excavated and transported to the Chesterfield County Landfill for disposal as nonhazardous waste. Burlington Industries requested permission from DHEC in 1989 to cover the drying beds or dispose of the material as nonhazardous waste; sample analytical results were provided to demonstrate that the waste did not qualify as a RCRA (Resource Conservation and Recovery Act) toxicity characteristic hazardous waste (40 CFR § 261.24). However, no samples were analyzed for the presence of PCBs, and no information or indication was provided to DHEC that the waste stream could be contaminated with PCBs.

The undeveloped land north of the manufacturing plant that was not purchased by Highland Industries, including the land on which the former drying beds sat, was sold by Burlington Industries in 1990 to a developer who subdivided the property into 20 large lots, 11 of which are now occupied by residential structures. Based on the overlay of historical aerial images, it appears that the drying beds sat predominantly on one vacant lot located at the intersection of Little John Road and Robin Hood Drive. At present, the lot is mostly clear, with tree lines along the south, east and west boundaries.

In February 2016, DHEC conducted an expanded PA and collected 10, soil samples (three surface, three subsurface and three sediment samples). During the investigation, DHEC found several small pieces of a dark green or dark-gray, rubbery material on the lot where the former drying beds were located. The same material was found in larger segments along the western edge of the vacant lot. The material appeared to have characteristics consistent with material identified in photographs taken of the drying beds in 1988. Within soil and sediment samples that were collected, laboratory analysis found elevated concentrations of PCB Aroclor 1248 in the residential lot and the drainage ditch at a range of 300 micrograms-per-kilogram ( $\mu\text{g}/\text{kg}$ ) to 14,000  $\mu\text{g}/\text{kg}$ . These concentrations exceed the May 2016 EPA Region 4 Regional Screening Level (RSL)<sup>3</sup> for Aroclor 1248 which is 230  $\mu\text{g}/\text{kg}$ <sup>4</sup>.

In response to the unexpected discovery of PCBs at the Site, the DHEC Superfund State Remedial group began a Site Investigation (SI) in August 2016 and collected samples to further characterize the Site. Surface and subsurface soil samples were collected from around the former drying beds, the Highland Industries property and residential yards. Sediment samples were collected from the adjacent drainage ditch and subsequent creek. A Dextsil® L2000DX PCB analyzer was utilized for field screening of samples; 56 of over 100 samples yielded sufficiently positive values using the screening system<sup>5</sup> and were sent for laboratory analysis. PCB Aroclor 1248 was found in residential yards at concentrations up to 490,000

<sup>3</sup> Regional Screening Levels (RSL) are conservative risk-based screening values developed by the U.S. EPA to help identify contaminants of potential concern.

<sup>4</sup> RSL for Residential Soil with target cancer risk (TR) of 1E-06 and target hazard quotient (THQ) of 1.0

<sup>5</sup> EPA 600/R-98/109

µg/kg, and Aroclor 1254 was found in residential yards at concentrations up to 590,000 µg/kg (the comparable RSL for PCB Aroclor 1254 is 240 µg/kg). Aroclors 1248 and 1254 were found in ditch sediment samples at concentrations up to 1,900,000 µg/kg and 880,000 µg/kg, respectively.

Additional samples collected by DHEC in September, October and November 2016 investigated more residential properties, additional areas of the ditch near the former Burlington Industries facility, sediments within the surface water drainage corridor into the Pee Dee River, sediments from ponds adjacent to the drainage corridor and soils in Huckleberry Park. PCB Aroclors 1248 and 1254 were found throughout the Site with highest concentrations near the ditch at the west boundary of the former Burlington Industries facility, followed by decreasing concentrations throughout the surface water drainage corridor. The decreasing concentration trend was observed in both sediments and adjacent surface soils. Table 1 contains a summary of PCB Aroclor 1248 and 1254 sample results which exceeded 1,000 µg/kg, as well as subsequent concentration intervals by order of magnitude, from DHEC samples that were collected through October 2016.

*Table 1. Count of PCB Aroclor 1248 and 1254 detections above 1,000 µg/kg (aka 1 ppm) and subsequent intervals by order of magnitude within soil and sediment samples collected by DHEC through October 2016*

	≥1,000 < 10,000 µg/kg		≥10,000 < 100,000 µg/kg		≥100,000 > 1,000,000 µg/kg		≥1,000,000 µg/kg		Total Samples
	1248	1254	1248	1254	1248	1254	1248	1254	
Sediment in Ditch near facility			5	7	8	4			23
Sediment Downstream	7	8							26
Pecan Drive Residences	5	31	5	13	7	9	1	1	138
Sherwood Forest Residences	3	7	2		1	1			21
Huckleberry Park	7	8	2	1					12
City Parcel by Middle School	2	3	3	2					5
Highland Industries Property	1	1	5	5					30

Sediments within the ditch at the west boundary of the former Burlington Industries facility show a high degree of uniformity among all samples collected with concentrations of PCBs for each Aroclor in excess of 10,000 µg/kg. Several residences on Pecan Drive show high concentrations of PCBs, and these are parcels that border the drainage ditch. At least six parcels contain PCB Aroclors 1248 or 1254 in excess of 100,000 µg/kg while three more parcels contain concentrations of at least 10,000 µg/kg. One sample in a residential yard on Pecan Drive yielded PCB Aroclor 1248 and 1254 concentrations of 2,100,000 µg/kg and 1,600,000 µg/kg, respectively.

PCB Aroclors were found at concentrations above 1,000 µg/kg within the yards of two occupied residences of the Sherwood Forest community, which is located on the east side of the drainage ditch. Several small segments of dark gray rubbery material, consistent with material DHEC had identified in February, were found in unoccupied parcels of the Sherwood Forest community. Sample results of these materials yielded concentrations of PCB Aroclor 1248 up to 750,000 µg/kg. Concentrations of PCB Aroclors 1248 and 1254 in excess of 10,000 µg/kg were also found on surface soils of a 4.2-acre city-owned parcel north of Long Middle School which had recently been clear cut by the city for storm water management purposes.

Within Huckleberry Park, PCB Aroclor 1248 was found at 1,400 µg/kg within a general grass area. PCB Aroclor 1248 was also found at concentrations ranging from 5,200 µg/kg to 16,000 µg/kg under swing sets within the park. PCB Aroclor 1254 was found at concentrations ranging from 4,700 µg/kg to 13,000 µg/kg within the same samples under the swing sets. After DHEC's August 2016 sampling event, which identified PCBs within Huckleberry Park, the City of Cheraw closed the park to public access. During an October sampling event, DHEC documented evidence of children in the park such as bare footprints and sand/mud that had been placed onto the park slide. A pile of material was found by DHEC along the creek bank which borders the south side of the park. The City of Cheraw identified this material as dredge from the creek, which was removed under approval by the U.S. Army Corps of Engineers for the purposes of improving storm water drainage following Hurricane Matthew.

Contamination of PCBs on the Highland Industries property (former Burlington Industries facility) occurs generally within 150 feet of the drainage ditch. Five locations yielded PCBs of both Aroclors 1248 and 1254 in excess of 10,000 µg/kg and one location yielded PCB concentrations in excess of 1,000 µg/kg. Since purchasing the property in 1988, Highland Industries has expanded the west side of the building and constructed a parking lot and road on the west side within 20 feet of the west property line. Additionally, a stormwater retention unit was constructed, or was expanded, near the point at which the ditch initiates. It is unknown whether construction activities disturbed or otherwise affected soils that were/are contaminated with PCBs.

The EPA Region 4 Superfund Site Evaluation Section reviewed and approved the SI submitted by DHEC in September 2016. Based on the high concentrations of PCBs at the Site, DHEC requested that the EPA Region 4 Emergency Response, Removal and Prevention Branch (ERRPB) conduct a Removal Site Evaluation (RSE). The EPA met with DHEC on October 19 to receive a briefing on the Site, then attended a public meeting where DHEC presented their sampling and investigation findings to residents in Cheraw. The EPA's START contractor (Superfund Technical Assessment and Response Team) digitized data collected by DHEC into the EPA's Scribe database and geospatial publishing service.

Data and digital maps were provided to the EPA's Scientific Support Section (SSS) for risk evaluation. SSS subsequently categorized portions of the Site based on PCB concentration and land use setting. The Tier I category consisted of occupied residential properties displaying PCB Aroclor concentrations greater than 10 times the respective EPA Region 4

Removal Management Level (RML)<sup>6</sup> for residential soil; Tier II consisted of occupied residential properties with PCB Aroclor concentrations greater than the RML. For purposes of risk assessment, Huckleberry Park was evaluated as a residential property.

The residential soil RMLs for PCB Aroclors 1248 and 1254 are 23,000 µg/kg and 3,500 µg/kg, respectively. Under the Tier I criteria, 10-times the RML for PCB Aroclors 1248 and 1254 will be 230,000 µg/kg and 35,000 µg/kg, respectively. At present, there are six residential properties and 1,000 feet of adjacent drainage ditch which meet Tier I criteria; furthermore, six residential properties and Huckleberry Park meet Tier II criteria. Three unoccupied properties have PCB concentrations which are 10 times the respective Aroclor RML. Additional properties may be added as subsequent sample data are collected and evaluated.

## **2. Physical Location**

The former Burlington Industries facility is currently owned by Highland Industries, Inc. and is located at 650 Chesterfield Highway, Cheraw, Chesterfield County, South Carolina. The original Burlington Industries property extended to the north and east of the facility and covered 93.8 acres. An eastern portion of this property was undeveloped by Burlington Industries and was sold for commercial use. The central parcel of 51.7 acres, which contained the manufacturing facility operated by Burlington Industries beginning in 1961, was ultimately sold to Highland Industries, Inc. in 1988. The northern parcel of 25 acres, upon which the former drying beds are located, was sold to a developer in 1990 who subdivided the property into 20 large lots, 11 of which are now occupied by residences. That development is known as Sherwood Forest. Two residences within the Sherwood Forest development border the contaminated ditch and one borders a downstream unnamed tributary; also, one parcel contains the former drying beds. West of the facility is a development of 61 residences along Pecan Drive which was built in the 1960s. Ten of these residences border the property with Highland Industries along with three undeveloped parcels. Five of these residences plus an additional seven residences along Pecan Drive border the contaminated ditch.

The surface water drainage corridor from the former Burlington Industries facility to the Pee Dee River is approximately 3.2 miles long. Storm water from contaminated soils at the facility and nearby residences flows to a drainage ditch that travels northward approximately 1,000 feet where it joins an unnamed intermittent tributary. The tributary flows approximately one mile eastward; along the way it flows adjacent to three ponds but does not inherently pass through any pond system. The tributary then intersects with Wilson Branch, a perennial creek. Wilson Branch flows northeast for approximately 0.5 miles, and borders Huckleberry Park, until it intersects with Huckleberry Branch. Huckleberry Branch is a perennial creek that flows 1.5 miles east and south until it discharges to the Pee Dee River. The corridor is prone to flooding, particularly in residential yards and the public park along Wilson Branch.

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<sup>6</sup> Removal Management Levels (RML) are risk-based screening values developed by the U.S. EPA to determine whether sample concentrations are sufficiently elevated that they may warrant a removal action. Exceedance of an RML by itself does not require a removal action, nor does it imply that adverse health effects will occur.

### 3. Site Characteristics

There are approximately 3,008 residents living within one half mile of the surface water drainage corridor and 344 living within one thousand feet of the corridor. Residences within the Pecan Drive community consist of brick exterior single-story homes over crawl spaces and within one half acre lots. Residences within the Sherwood Forest community are generally brick exterior single and double story homes over crawl spaces and within lots of 0.75 to 1.3 acres. The parcel which once contained the drying beds is flat and vegetated.

The ditch that runs between the Pecan Drive residences and the Highland Industries property initiates approximately 350 feet upstream of the discharge pipe of a stormwater retention pond on Highland's property. This initial section of ditch is approximately six to ten feet wide with steep banks of two to three feet at a nearly one to one slope. The ditch begins to narrow after the discharge pipe until it reaches an average bed of three to four feet wide and nearly sheer banks of approximately 4 feet. The ditch is heavily vegetated along both banks with brush and large trees. The ditch is described by DHEC as having been empty but damp during previous sampling events. During a Site visit following a rain event, EPA observed water standing in the ditch at depths up to nearly twelve inches in some places. According to the U.S. Department of Agriculture National Cooperative Soil Survey, soils in the area are generally loamy sand which suggests that standing water will infiltrate to ground water between rain events.

Huckleberry Park is approximately 2.75 acres of flat grassed park with large trees interspersed. It is bordered on the east by Wilson Branch which is part of the surface water drainage corridor for the Site. Wilson Branch is approximately ten feet wide along the park with shallow banks of approximately three feet. The park has a relatively low elevation and does not drain efficiently, evidenced by observations of standing pools of water and saturated soil within the park during a Site visit by the EPA following a rain event. Within the park are three play areas, one play structure which includes a slide and two swing sets. Each play area is floored with sand and surrounded by plastic playground border systems. It was observed by both the EPA and DHEC in December, 2016, that all the swings had been removed from the swing sets and signs had been posted in the park announcing that it had been closed.

The contaminated city-owned parcel north of Long Middle School is a low-lying area along an unnamed tributary and is classified as a freshwater forested/shrub wetland. All vegetation from the parcel was removed by the City of Cheraw in 2016 but occurred prior to notification that elevated concentrations of PCBs were present. A culvert under Jersey Street would constrict storm water in the unnamed tributary from draining this parcel.

### 4. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

Part 302.4 of Title 40 in the Code of Federal Regulations lists PCBs as a hazardous substance under section 102(a) of CERCLA, a toxic pollutant under section 307(a) of the CWA, and as a hazardous air pollutant under section 112 of the CAA. PCBs are also listed as a toxic chemical through section 313 of EPCRA and determined to present an unreasonable risk of

injury to health and or the environment under section 2605(e) of the Toxic Substances Control Act (TSCA).

The EPA RML for PCBs Aroclor 1248 is 23 mg/kg for residences and 95 mg/kg on industrial properties. The EPA RML for PCB Aroclor 1254 is different for a calculated Hazard Quotient (HQ) equal to 1 (1.2 mg/kg for residential soil and 15 mg/kg for industrial soil) versus a HW equal to 3 (3.5 mg/kg for residential soil and 44 mg/kg for industrial soil).

Photolysis and biodegradation are slow degradation processes for PCBs in the soil and are further limited by increased chlorination of the molecule; as a result, PCBs are inherently persistent in the environment. While both PCB Aroclors found at the Site are considered stable and persistent, Aroclor 1254, which is near the upper range of chlorine content for the family of common PCBs, will likely remain stable for an extended period of time.

#### **5. NPL Status**

The Site is not on the National Priorities List (NPL) but is currently being evaluated and scored for proposed listing to the NPL.

#### **6. Maps, Pictures and Other Graphic Representations**

Maps, pictures and other graphical representations of data are provided as attachments to this Action Memorandum.

### **B. Other Actions to Date**

#### **1. Previous Actions**

No action has ever been initiated at the Site by any government or private entity to address and remove contaminated soils or sediments related to PCBs. In 1989, the wastewater sludge drying beds which had been operated by Burlington Industries were closed; approximately 300 cubic yards of dried sludge and soil were excavated and transported to the Chesterfield County Landfill for disposal as nonhazardous waste. Burlington Industries requested permission from DHEC in 1989 to cover the drying beds or dispose of the material as nonhazardous waste; sample analytical results were provided to demonstrate that the waste did not qualify as a RCRA toxicity characteristic hazardous waste (40 CFR § 261.24). However, no samples were analyzed for the presence of PCBs, and no information or indication was provided to DHEC that the waste stream could be contaminated with PCBs.

#### **2. Current Actions**

The City of Cheraw has closed Huckleberry Park to the public and removed some playground equipment. The city has also ceased all stormwater-related work in Wilson Branch and the upstream unnamed tributary. Impacted residents on Pecan Drive and in Sherwood Forest have been briefed and provided information on reducing exposure to contaminated soils and sediments. Highland Industries, Inc. has closed the stormwater discharge pipe from its northwest retention pond.



Discussion are on-going for the implementation of an enforcement-lead removal for the industrial portion of the Site. Additional fund-lead response actions may be necessary depending on the outcome of the negotiation.

### **C. State and Local Authorities' Roles**

#### **1. State and Local Actions to Date**

South Carolina DHEC has conducted six sampling events at the Site to delineate the extent of PCB contamination in surface soils and sediments. Sample results were provided to property owners and DHEC representatives visited residents to inform them of protective measures that should be taken to prevent future exposure until a removal or remedial action could take place. DHEC held a public meeting on November 2, 2016, to present its findings to the surrounding community.

#### **2. Potential for Continued State/Local Response**

At a public meeting on November 2, 2016, DHEC committed to continue sampling residential yards located adjacent to the surface water corridor of the Site at the homeowners' request. DHEC anticipates fulfilling this commitment for the foreseeable future until such time as EPA initiates a removal action. However, the State of South Carolina does not presently have resources or funds available to address the most pressing response needs to the Site.

### **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

Sampling has shown that the Site is contaminated with PCB Aroclors 1248 and 1254 above their respective RMLs for surface soil on residential properties. PCB contaminants occur within residential yards, the Highland Industries lot, a public park and a surface water drainage corridor of 3.2 miles from the former Burlington Industries facility to the Pee Dee River.

Section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) lists factors to be considered in determining the appropriateness of a removal action. Paragraphs (b)(2)(i), (iv), (v) and (vii) directly apply to the Site:

#### **300.415(b)(2)(i): Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants.**

According to samples collected by DHEC, at least six residential parcels along Pecan Drive contain PCB Aroclors 1248 or 1254 in excess of 100,000 µg/kg while three more parcels contain PCB concentrations of at least 10,000 µg/kg. One sample in a residential yard on Pecan Drive yielded PCB Aroclor 1248 and 1254 concentrations of 2,100,000 µg/kg and 1,600,000 µg/kg, respectively. PCBs were found at concentrations above 1,000 µg/kg within yards of two occupied residences of the Sherwood Forest community.

Within Huckleberry Park, PCB Aroclor 1248 was found at concentrations ranging from 5,200 µg/kg to 16,000 µg/kg under swing sets within the park. PCB Aroclor 1254 was found at concentrations ranging from 4,700 µg/kg to 13,000 µg/kg within the same samples under the swing sets. During an October sampling event, DHEC documented evidence of children in the park such as bare footprints and sand/mud that had been placed onto the park slide.

**300.415(b)(2)(iv): High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.**

Sediments within the 1,000-foot ditch at the west boundary of the former Burlington Industries facility show a high degree of uniformity among all samples collected with concentrations of PCB Aroclors 1248 and 1254 in excess of 10,000 µg/kg. Concentrations for each PCB Aroclor exceeded 100,000 µg/kg in at least half of the samples that were collected from the ditch. At least seven downstream sediment samples in intermittent and perennial tributaries yielded PCB Aroclor concentrations in excess of 1,000 µg/kg. PCBs within ditch and creek sediments along the surface water corridor will migrate to the Pee Dee River.

**300.415(b)(2)(v): Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.**

The surface water drainage corridor at the Site is prone to flooding, particularly in residential yards and the public park along Wilson Branch. Contaminated sediments from the ditch and/or creek may mobilize and deposit upon residential properties during flooding events.

**300.415(b)(2)(vii): The availability of other appropriate federal or state response mechanisms to respond to the release.**

The State of South Carolina does not currently have sufficient funding to complete a response or removal action at the Site.

#### **IV. ENDANGERMENT DETERMINATION**

Actual or threatened releases of hazardous substances and/or pollutants from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare or the environment.

#### **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

##### **A. Proposed Actions**

###### **1. Proposed Action Description**

The requested funding outlined in this Action Memorandum will begin to mitigate the release or threat of release of Polychlorinated Biphenyls associated with the former Burlington Industries, Inc. operation in Cheraw, Chesterfield County, South Carolina. The scope of the removal action under this Action Memorandum addresses residential land use where

potential human health risks stem from PCB concentrations greater than 10 times the respective EPA Region 4 Removal Management Level (RML) for residential soil (i.e., Tier I). Six parcels have been identified which meet the Tier I criteria. Priority is also allocated to play areas within Huckleberry Park which exceed the EPA Region 4 RML for residential soil (i.e. Tier II). The scope of work, if approved, will include the following actions:

- Excavate surface soils and contaminated with PCBs from residential properties which meet Tier I criteria;
- Remove play units and sand from Huckleberry Park which meet Tier II criteria;
- Provide temporary staging of excavated PCB-contaminated soil/sediment between removal and disposal activities;
- Load and transport PCB-contaminated soil/sediment to an offsite location for treatment and/or disposal;
- Replace excavated soil with clean backfill and vegetation; and
- Restore impacted properties to the extent practicable.

## **2. Contribution to Remedial Performance**

The scope of this proposed action is to address the residential parcels which have the highest concentrations of contaminants as well as the public play areas for children. At this time the six Tier I parcels will be addressed as well as the play areas within Huckleberry Park which are considered Tier II. The response actions will, to the extent practicable, contribute to the efficient performance of any long-term remedial action at the Site.

## **3. Applicable or Relevant and Appropriate Requirements (ARAR)**

On-site removal actions conducted under CERCLA are required to attain ARARs, to the extent practicable, considering exigencies of the situation. Off-site removal activities must comply with all applicable federal and state laws, unless there is an emergency. This cleanup is being conducted as a removal action.

A letter to the State of South Carolina requesting identification of State ARARs was sent on January 5, 2017. An initial response from DHEC indicated the following four South Carolina State laws and regulations as State ARARS:

- Pollution Control Act [S.C. Code Ann. § 48-1]
- Storm water Management and Sediment Reduction Act [S.C. Code Ann. § 48-14]
- Solid Waste Landfills (Land clearing debris) [S.C. Code Ann. Regs. 61-107.4 and 61-107.19 App. I]
- Erosion and Sediment Reduction and Stormwater Management [S.C. Code Ann. Regs. 72-101]

Federal ARARs identified for the Site that are deemed practicable include:

- As provided in CERCLA Section 121(d)(3) and the Off-site Rule at 40 CFR § 300.440 *et seq.* the off-site transfer of any hazardous substance, pollutant, or contaminant generated during the response action will be sent to a treatment, storage, or disposal facility that is in compliance with applicable federal and state laws and has been approved by the EPA for acceptance of CERCLA waste.
- Wastes that are transferred off-site or transported in commerce along public right-of-ways will meet the Hazardous Materials Regulations requirements at 49 CFR part 171-180.
- Wastes containing PCBs will meet applicable remediation, sampling, transportation and disposal requirements specified under Toxic Substances Control Act (15 U.S.C. §2601 *et seq*) regulations 40 CFR Part 761 Subparts D, K, N, and R. The removal action will be conducted under CERCLA authority and is therefore not subject to *self-implementing* cleanup procedures under TSCA. This action memorandum will be considered to have met the *Risk-based disposal approval* notification and approval requirements under 40 CFR § 761.61(b).
- Some wastes containing PCBs may be subject to RCRA land disposal restrictions at treatment standards (40 CFR § 268) if PCB concentrations exceed RCRA land disposal permit limits of 1000 mg/kg for halogenated organic compounds (42 U.S.C. § 6924(d)(2)(E)).

ARARs include only federal and state environmental or facility siting laws/regulations and do not include occupational safety or worker protection requirements. Compliance with OSHA standards is required by 40 CFR § 400.400(e)(1) & (2). On-Site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action. Response actions conducted on-site must comply with the substantive but not administrative requirements of ARARs. Off-site activities such as transportation and disposal of wastes are required to comply with all applicable requirements, including the administrative portions.

#### **4. Projected Schedule**

Initial cost estimates project that removal activities at the Site will require an uninterrupted period of approximately two weeks to accomplish the proposed activities listed in section V.A.1; however, a period of performance in the amount of six months will be necessary to accommodate sufficient pre-mobilization planning, delays, and closure procedures which will follow removal activities.

## B. Estimated Costs

<b>Extramural Costs:</b>	<b>Proposed Ceiling:</b>
<b><u>Regional Allowance Costs:</u></b>	
ERRS	\$ 894,000
<b><u>Other Extramural Costs Not Funded from the Regional Allowance:</u></b>	
START	\$ 51,000
USCG GST	\$ 0
EPA ERT	\$ 0
CLP	\$ 2,000
<b><u>Subtotal Extramural Costs:</u></b>	
Extramural Costs Contingency (20%)	\$ 189,400
<b>TOTAL REMOVAL ACTION PROJECT CEILING:</b>	<b>\$ 1,136,400</b>

## VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Actual or threatened releases of hazardous substances from this Site, if not addressed by the response action selected in this Action Memorandum, present an imminent and substantial endangerment to public health, welfare, and the environment.

## VII. OUTSTANDING POLICY ISSUES

None.

## VIII. ENFORCEMENT

Enforcement activities for the industrial portion of the Site have been initiated and are ongoing. The scope of this requested response is limited to the higher tiered residential property. Please see the attached Enforcement Addendum (Enforcement Sensitive) for further information regarding enforcement activities.

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be \$1,650,735 using the following formula: (Total Extramural Costs) + (45.26% x (Total Extramural Costs + Total Intramural Costs)) or (\$1,136,400 + (45.26% x (\$1,136,400)))<sup>7</sup>.

<sup>7</sup> Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of the site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create

**IX. RECOMMENDATION**

This decision document represents the selected removal action for the Burlington Industries Cheraw Site in Cheraw, Chesterfield, South Carolina developed in accordance with CERCLA as amended and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP Section 300.415(b) criteria for a removal action. I recommend your approval for the proposed action. The total projected ceiling, if approved, will be \$1,136,400, of which an estimated \$897,000 comes from the Regional Removal Allowance.

APPROVED: Franklin E. Hill DATE: 4/25/19  
Franklin E. Hill, Director  
Superfund Division

DISAPPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
Franklin E. Hill, Director  
Superfund Division

Attachments

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any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.