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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
SUPERFUND PROGRAM  
**EXPLANATION OF SIGNIFICANT DIFFERENCES**



**BRUNSWICK WOOD PRESERVING SITE**  
*Brunswick, Glynn County, Georgia*  
*June 2011*

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**INTRODUCTION &  
STATEMENT OF PURPOSE**

The U.S. Environmental Protection Agency (EPA) is issuing this Explanation of Significant Difference (ESD) for the Brunswick Wood Preserving Superfund Site both to inform the public of its Site activities and to explain significant differences being implemented in the selected remedy for the Site. This ESD is issued as part of EPA's public participation responsibilities under Section 300.435 (c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). More detailed information can be found at the Information Repository for the Site, which is located at the Brunswick-Glynn County Library, 208 Gloucester St., Brunswick, Georgia, 31520. The repository contains the Administration Record, including the Remedial Investigation and Feasibility Study documents that form the basis for the selected remedy at this Site, in addition to the Remedial Design (RD) documents. EPA and the State encourage the public to review these documents to gain a better understanding of the Site. Additional

information on the Site's history and EPA's remedial activities can also be found at the Site's web page:

<http://www.epa.gov/region4/waste/npl/nplga/brunwpga.htm>

If you or someone you know would like to be added to EPA's mailing list for the Brunswick Wood Preserving Site, please contact EPA by email, mail, or phone using the information below:

***EPA Contacts :***

Brian Farrier

Project Manager

Email: [farrier.brian@epa.gov](mailto:farrier.brian@epa.gov)

or

Angela Miller

Community Relations

Email: [miller.angela@epa.gov](mailto:miller.angela@epa.gov)

Phone: 1-800-435-9234

## SITE HISTORY AND REMEDIAL ACTION STATUS

The Brunswick Wood Preserving Superfund Site is a former wood treating site. While in operation from 1958 to 1991, wood was treated using pentachlorophenol (PCP), creosote, and chromated copper arsenate (CCA). Wastewater from facility operations was disposed in on-site ponds on the eastern and western ends of the 84 acre Site.

EPA's remedial work at this Site is being conducted in two parts, or Operable Units (OUs). OU1 addresses the former wood treatment facility, soil, groundwater, and sediments. OU2 addresses any remaining impacts to the adjacent Burnett Creek. The OU1 remedy signed in 2002 includes the following:

- Placement of two subsurface slurry walls around the old creosote ponds to contain mobile contaminants;
- Solidification and/or stabilization of the contaminated soils and sediments from the Site and Burnett Creek. This treatment will bind the contaminants to the soil materials, which will subsequently be placed over the old creosote ponds as subcaps;
- Placement of caps on top of the subcaps to prevent human contact with wastes and prevent the infiltration of water into the wastes below;
- Treatment of the contaminated groundwater outside the western slurry wall using a process called *in situ* chemical oxidation;
- Placement of institutional controls to restrict future land and groundwater use; and,

- Long term monitoring to ensure that the remedy remains protective.

Funded in 2006, field activities for the OU1 Remedial Action began in June 2007. Phase One activities ended in late 2007 and included Site preparation, drainage improvements, pond dewatering and treatment, and soil/sediment excavation activities.

Phase Two of the OU1 Remedial Action began in February 2008. The primary solidification treatment component of the remedy was completed in July 2008 and those treated soils/sediments were placed as subcaps over the old creosote ponds. Construction of the subsurface slurry walls were completed in June 2009. Phase Two ended in December 2009 with additional restoration of Burnett Creek and completion of the western engineered cap. Expenditures through Phase Two totaled approximately \$20 million.

Phase Three of the OU1 Remedial Action was funded primarily with \$8.3 million provided through the American Recovery and Reinvestment Act of 2009. Construction of the eastern engineered cap, along with most Site restoration activities, was completed in May 2010. Phase Three will also address the full-scale treatment of contaminated groundwater, for which additional field pilot-scale studies began in August 2010. In addition, Phase Three includes a secondary subsurface barrier wall constructed on the western end of the Site using panel-cutter technology to contain additional mobile contaminants outside the primary slurry wall.

## GROUDWATER REMEDIATION

The OU1 Remedial Action overall cleanup strategy is designed to contain contaminant source areas within subsurface barriers, with groundwater contamination outside the western containment area treated in-situ via chemical oxidation (ISCO) and enhanced bioremediation followed by monitoring.

ISCO is feasible where the extent of treatment areas are relatively small; for example, in the small area near Burnett Creek where the wall was re-aligned to avoid a gas pipeline and power transmission line structures (that re-alignment was discussed in the July 2008 Site update). In cases where the treatment area is more extensive, or includes significant source materials (e.g., creosote), ISCO can be technically challenging and extremely costly. These challenges are found on the western end of the Site, in addition to major infrastructure obstructions on the surface.

As part of the groundwater treatment design, and due to observations made during construction of the western primary barrier wall, EPA conducted several additional subsurface investigations. These investigations defined more fully the extent of creosote source areas outside the footprint of the primary barrier wall along Perry Lane Road and the CSX rail line. The significant volume of creosote identified exceeded the basis for estimate used in the June 2002 OU1 Record of Decision

(ROD), making the use of ISCO technology infeasible to address subsurface contamination in this area. The revised estimated cost to treat only the source areas found outside the western primary barrier wall ranged from \$3.4 million to \$9.0 million; by comparison, the original estimate for the entire groundwater treatment component of the remedy was \$0.89 million, as documented in the OU1 ROD (pg. 67).

The advent of panel cutter technology for subsurface barrier construction allowed EPA to consider a secondary wall to address this problem. Constructed along Perry Lane Road and the CSX railroad tracks, this secondary wall contains the remaining creosote source material (see map). EPA also expanded the engineered cap to prevent rainfall infiltration into the additional walled area. The estimated cost of the secondary barrier wall and cap was \$1.9 million (see footnote at bottom of Table 1 for more information regarding costs). This technical approach is fully consistent with the ROD objective of containing creosote source materials and using in-situ treatment to restore contaminated groundwater to beneficial use.

Due to the additional work involved with the design evaluation and installation of the secondary barrier wall, the project schedule has been affected. At this time, it is anticipated that construction of the OU1 remedy will be completed by September 2011.



## EXPLANATION OF SIGNIFICANT DIFFERENCES

The secondary subsurface barrier wall constructed north of Perry Lane Road and along the CSX rail line represents a significant design adjustment affecting the scope of the OUI Remedial Action. This secondary subsurface wall will contain additional creosote source areas found outside the western primary barrier wall, for which treatment by in-situ chemical oxidation (ISCO) is technically challenging and cost-prohibitive. The source containment strategy of the remedy will remain the same; in addition, the total cost of the OUI RA will remain within the range of the estimate in the June 2002 Record of Decision.

The technology used for the secondary wall is a relatively new cutting process

that places cement and bentonite in-situ to provide the subsurface barrier to groundwater contaminant flow. This technology allows the installation to occur in closer proximity to surface obstructions and to proceed more quickly. By contrast, the primary walls were constructed in an ex-situ process blending bentonite and clay soil.

This significant change does not fundamentally alter the Site remedy selected in the June 2002 ROD. The objectives of the OUI remedy remain unchanged, with the same level of protection.

Table 1 summarizes the significant differences.

## REVIEW AND STATUTORY DETERMINATIONS

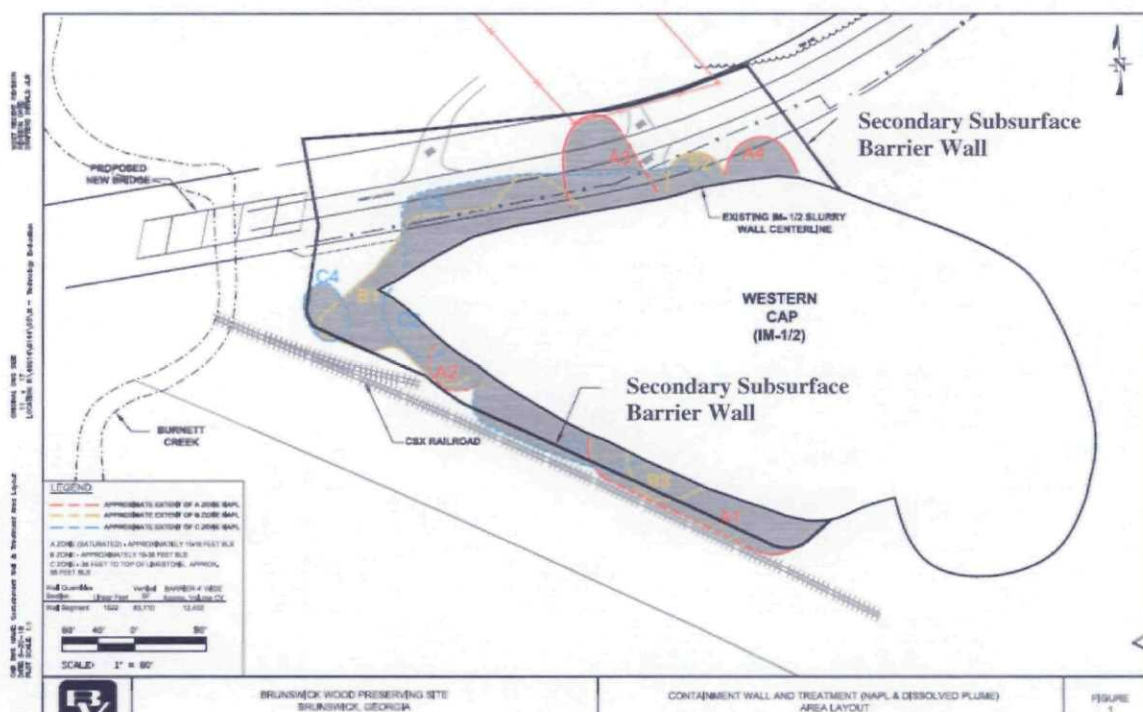
The Georgia Environmental Protection Division (GaEPD) has reviewed this ESD and was given an opportunity to provide comments. GaEPD did not provide comments on this ESD. GaEPD concurs with the selected remedy for the Site and is supporting the Remedial Action through its State Superfund Contract with EPA. The modified remedy for the Site has been reviewed for consistency with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, more commonly known as Superfund) and fully satisfies the requirements of CERCLA § 121. Copies of this ESD have been sent to the mailing list that EPA maintains for this Site.

This ESD has also been made part of the Administrative Record (AR) for the Site, pursuant to the National Contingency Plan (NCP) §300.825(a)(2); the AR is available for public review at the Information Repository for the Site (see page 1 for the Information Repository location), and also at EPA's Region 4 office located at 61 Forsyth St., SW, Atlanta, Georgia, 30303. A public notice informing the public of this ESD was published in the *Brunswick News* on June 30, 2011. EPA has met the public participation requirements set forth in CERCLA Section 117(c) and in the National Contingency Plan (NCP) § 300.435(c)(2)(i).

**Table 1. Summary of Significant Differences**

	Original, June 2002 Record of Decision	Revised	Difference
Number of Subsurface Barrier Walls/Caps	Two	Three	+1
Cost	\$11,589,220 <sup>1</sup>	\$13,489,220	+\$1,900,000 <sup>2,3</sup>

- 1) See Record of Decision dated June 2002, Table 14, page 65. Includes capital costs for two barrier walls, subcaps, and caps (does not include contractor or contingency fees).
- 2) See "Technological Evaluation of Remedial Alternatives to Manage NAPL Outside of IM 1/2 Slurry Wall", Revision 2, December 15, 2010 (TE Memo).
- 3) Actual costs were \$1,985,455 for the additional wall/cap on the western end of the site. This cost represents only the subcontractor costs to install the secondary barrier wall and cap (prime contractor's fee not included). Additional costs of \$368,412 for utility relocations and the treatment of trench spoils were also incurred that were not included in the TE Memo cost estimate. Also, for comparison purposes the TE Memo did not attempt to include procurement, design, or field management costs for each alternative (these costs totaled \$230,450 for the additional wall and cap).





United States Environmental Protection Agency, Region 4  
Superfund Remedial Branch  
61 Forsyth St., SW  
Atlanta, Georgia, 30303

Official Business  
Angela Miller  
Community Relations

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