RECORD OF DECISION

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION
OPERABLE UNIT TWO

BRUNSWICK WOOD PRESERVING SITE

BRUNSWICK, GLYNN COUNTY, GEORGIA

PREPARED BY

U. S. ENVIRONMENTAL PROTECTION AGENCY

REGION 4

ATLANTA, GEORGIA

RECORD OF DECISION
BRUNSWICK WOOD PRESERVING SITE - OPERABLE UNIT TWO
DECLARATION

SITE NAME AND LOCATION

Brunswick Wood Preserving Site, Operable Unit Two (OU2)
Brunswick, Glynn County, Georgia
EPA ID No. GAD981024466

STATEMENT OF BASIS AND PURPOSE

This decision document presents the Selected Remedy for Operable Unit Two (OU2) of the Brunswick Wood Preserving Site located in Brunswick, Glynn County, Georgia (the Site). The Site was divided into two operable units to manage the remedial response. The Record of Decision for Operable Unit One (OU1) addressed the long-term threats to human health posed by the Site. See Record of Decision, Summary of Remedial Alternative Selection, Operable Unit One, Brunswick Wood Preserving Site, Brunswick, Glynn County, Georgia (June 19, 2002). The Selected Remedy under this Record of Decision for OU2 focuses on the ecological risks of contamination at the Site, especially ecological risks posed to Burnett Creek and the surface water pathway.

This remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. Section 9601 et seq., and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. This decision is based on the Administrative Record for the Brunswick Wood Preserving Site. All documents referenced in the Operable Unit Two Record of Decision are included in the Administrative Record for the Site and available to the public.

The State of Georgia, as represented by the Georgia Environmental Protection Division (GAEPD), has been the support agency during the investigation and BERA process for the Brunswick Wood Preserving Site. As such, the GAEPD has reviewed the documents that comprise the BERA and resulting analyses and has been involved in the process. The State concurs with the Selected Remedy.

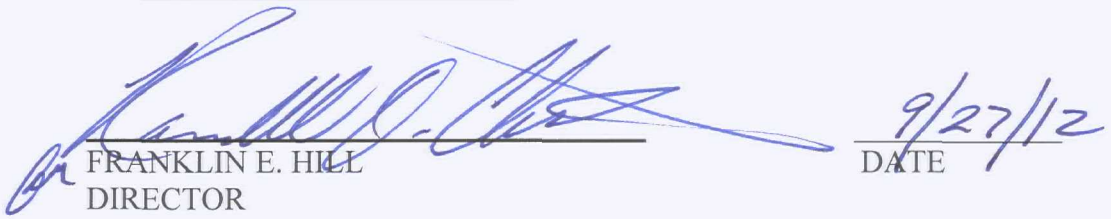
DESCRIPTION OF SELECTED REMEDY

Operable Unit One (OU1) primarily addressed human health risk posed by site-wide soils and groundwater, while Operable Unit Two (OU2) primarily addresses ecological risks from contamination at the Site, especially ecological risks posed to Burnett Creek and the surface water pathway. Based on the Administrative Record, the Selected Remedy for OU2 is ***No Action.***

STATUTORY DETERMINATIONS

The Selected Remedy for OU2, ***No Action,*** is justified since there are no potentially unacceptable ecological risks and therefore further remedial action is not necessary to address ecological risks. Any consideration of future actions necessary to address risks to human health is relevant to OU1 at this Site. The OU2 Selected Remedy together with the selected remedy for OU1, ensure protection of human health and the environment.

AUTHORIZING SIGNATURE



9/27/12

FRANKLIN E. HILL
DIRECTOR
SUPERFUND DIVISION
U.S. EPA REGION 4

DATE

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1.0 SITE LOCATION AND DESCRIPTION

The Brunswick Wood Preserving Site (the Site) is located in Brunswick, Glynn County, Georgia (EPA ID Number GAD981024466). It occupies 84 acres, of which approximately 50 acres were used for site activities. The Site is bordered by railroads on its east and west ends, with its north end defined by Perry Lane Road and its south end bordered by residential and wooded areas. Burnett Creek, a tidally influenced stream, is located on the western end of the Site. See Figures 1 and 2.

The EPA has been the lead agency at the Site, while the State of Georgia, as represented by the Georgia Environmental Protection Department (GAEPD), has been the support agency during the investigation and BERA process for OU2 of the Site, as well as for the OU1 Remedial Design and Remedial Action. As such, the GAEPD has reviewed the documents that comprise the OU2 investigation and BERA and has been involved in the process. The State concurs with the Selected Remedy for OU2.

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

The Site was originally operated by American Creosote Company, which constructed the facility sometime between 1958 and 1960, then sold it shortly afterward. The site was acquired by Escambia Treating Company in 1969 from Georgia Creosoting Company and the Brunswick Creosoting Company. In 1985, a corporate reorganization resulted in the purchase of the facility by the Brunswick Wood Preserving Company, which operated the site until it closed in early 1991.

All three major types of wood treating operations were carried out at the facility: creosote (which includes many polycyclic aromatic hydrocarbons, or PAHs), PCP (pentachlorophenol, the manufacture of which includes dioxins as unwanted by-products), and CCA (chromated copper arsenate). Figure 1 shows the creosote ponds that were formerly used at the site. IM-1 and IM-2 were located to the west, while IM-4 and IM-5 were located to the east. During the site's operation, contamination of the environment resulted from several activities, including poor house-keeping, open dumping into Burnett Creek, and accidental spills. In addition, wastes were sprayed in the air over the IM-4/5 ponds to reduce waste volumes. The Site was regulated under the Resource Conservation and Resource Act (RCRA) at the time of a major spill of diesel containing PCP in August, 1989. Subsequent investigations by the State of Georgia culminated with a RCRA Facility Investigation (RFI) report completed shortly before the facility caught on fire and ceased operations in February, 1991.

The EPA's cleanup activities at the Site were conducted using federal funding, both because of the time-critical nature of initial response activities and due to the inability of the company formerly operating the Site to finance those activities. The EPA has collected past costs payable to the Superfund through two enforcement actions taken pursuant to CERCLA Section 122(h): Kerr-McGee Chemical Corporation, the corporate successor to American Creosote Company, paid $345,000; and Charles Soule, former president of Escambia Treating Company, paid $21,500.

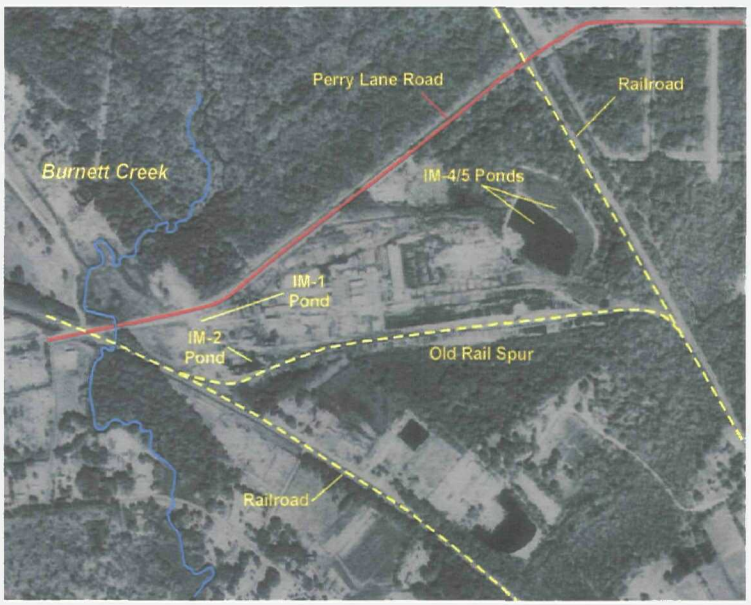

FIG_2H.CDR

FIGURE 1
CIRCA 1991

FIGURE 2
JANUARY 2012

EPA's First Removal Action and Preliminary Assessment
From March 1991 to April 1995, the EPA conducted a removal action to address imminent threats posed by the Site (OU1 and OU2 address long-term threats posed by the Site to the environment and human health). Many activities were conducted during this removal action: site structures were demolished and removed; sludges were dewatered; wastewater was treated; drums and lab wastes were disposed off-site; poles, lumber, equipment, and scrap metal were recycled and/or salvaged; and large areas of contaminated soil were excavated. Soils were excavated from under the old rail spur which ran along the southern boundary of the facility, the creosote/penta treatment area at IM-2, the CCA treatment area, treated pole storage areas, and the IM-1 impoundment area. Approximately more than 165,000 tons of excavated soils were placed on-site in four different encapsulated waste cells, each covered by a geomembrane. Extensive sampling activities were also conducted in 1991 including sampling of soils, sediments (including those in Burnett Creek), surface water, and groundwater. These sampling activities were conducted by the EPA's Environmental Response Team and are documented in the *"Final Report - Preliminary Assessment"* dated November 1991. In addition, the EPA sampled almost fifty private drinking water wells during this time. This EPA removal action cost approximately $11.9 million.

Expanded Site Investigation (ESI) and NPL Listing
In June 1993, the EPA conducted an Expanded Site Investigation (ESI). Environmental sampling consisted of soils, sediments, and groundwater. This investigation was conducted to support the Hazard Ranking System package that was used to propose the Site to Superfund's National Priorities List (NPL). The site was listed on Superfund's NPL on April 1, 1997.

State Removal Action
In 1996, the GAEPD began a separate removal action. This action involved the off-site transportation and disposal of 3 of the 4 waste cells that remained on-site after the EPA's removal action. During the State's removal action, a total of 151,000 tons of contaminated material was disposed off-site. The State's removal action cost approximately $21 million, of which approximately $18.5 million were credited towards the State's 10% cost share of Superfund NPL cleanups.

Remedial Investigation
Field work for the Remedial Investigation (RI) conducted in three formal phases. In addition, other work has been conducted at or near the Site, as discussed below.

December, 1996 CBEPP: At the request of the community, two residences on Floraville Road were added to the Community-Based Environmental Protection Project (CBEPP) sampling effort. Soils at five off-site residences, along with groundwater at four off-site residential wells, were sampled in the vicinity of the Site at this time, prior to beginning Phase I of the RI. The results are documented as part of the *"Brunswick Community Based Environmental Protection Study"* dated December 1996. The results from the off-site residential soil samples did not show compounds at any levels of public health concern.

Phase I of the RI began in February 1997 and consisted of further sampling of surface soils, subsurface soils, surface water, site sediments, and Burnett Creek sediments and fish. ***Phase II*** of the RI was conducted in October 1997 and consisted of further sampling of groundwater using direct push technology (DPT) to install temporary wells. DPT was also used to investigate the subsurface geological stratigraphy. Phase I/II results are documented in the *"Remedial Investigation Report"*

dated June 1998.

Supplemental Sampling: After community interviews in December 1998, the EPA conducted supplemental sampling to investigate a potential off-site drainage pathway south of the Site, along the old rail spur running roughly northwest-southeast (see Figure 1). The results are documented as part of the *"Supplemental Sampling Investigation Report"* dated February 1999.

Phase III of the RI began in May 2000 and included the installation and sampling of 34 permanent groundwater wells and several temporary groundwater wells. The EPA took additional subsurface soil samples on-site and sampled residential soils and 21 residential water wells. At the request of the community, Burnett Creek sediments were also sampled from Perry Lane Road to Old Jesup Road. Phase III results are documented in the *"Final Report - Phase III Remedial Investigation"* dated December 2000.

A baseline assessment of human health risk was completed in June 1999. Additional assessment of human health risk has been documented in the technical memorandums *"Draft Technical Memorandum, Excavating Grids 4,13,15,29, and 31: Impact on Human Health Risk Assessment"*, dated June 2001, and *"Technical Memorandum (Revision 1), Reevaluation of Groundwater Using Recently Obtained Data, Human Health Risk Assessment"*, dated June 2002.

In order to appropriately manage the different aspects of investigation, analysis and remedy selection and implementation, the EPA divided the Site into two Operable Units to address human health impacts from contamination on Site (OU1) and ecological risks (OU2). Information gathered during the RI informed considerations for both Operable Units, while additional information was also gathered relevant to OU2.

Feasibility Study

A Feasibility Study (FS) for OU1 was first finalized in October 1999, and an expanded FS subsequently finalized in June 2001.

During additional multi-faceted field investigations to support the OU1 FS, sediment and biota sampling were conducted in Burnett Creek. Results are documented in the *"Supplemental Sampling Investigation Report, Subsurface Site Soils, Groundwater, and Burnett Creek, May 7, 2001."*

Residential Groundwater Well Monitoring

A regular groundwater monitoring program by the EPA's Science and Ecosystem Support Division has sampled private wells in the site vicinity to ensure the safety of residents' drinking water. Approximately 20-25 private wells in the area were sampled in August 2001, September 2002, October 2003, December 2004, January 2006, November 2006, November 2007, June 2009, November 2010, and March 2012.

OU1 Record of Decision

The EPA selected a remedy for OU1 in a Record of Decision (ROD) on June 19, 2002. The remedy documented in the OU1 ROD included the following:

- ✓ Placement of two subsurface slurry walls around the old creosote ponds
- ✓ Solidification and/or stabilization of the contaminated soils and sediments from the Site and Burnett Creek, to bind the contaminants to the soil materials. These materials were subsequently placed over the old creosote ponds as structural subcaps
- ✓ Placement of engineered 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 ozone and hydrogen peroxide in a process called *in situ* chemical oxidation
- ✓ Placement of institutional controls to restrict future land use to ensure the long-term integrity of the remedy, and prevent groundwater use
- ✓ Long term monitoring to ensure that the remedy remains protective

OU1 Remedial Design

The EPA began the OU1 Remedial Design (RD) in 2003 and completed it in 2004, including extensive investigation of the subsurface geology at the Site to ensure the success of the slurry walls planned as part of the OU1 remedy, in addition to treatability studies relevant to the subcaps, the slurry wall soils mix, and the groundwater treatment.

Additional sediment sampling was also done in Burnett Creek as part of the OU1 RD, focusing on the tidal flats north of Highway 341. The OU1 RD is documented in the *"Final Remedial Design, 30% Stage, Data Evaluation Report, July 2004"* and the *"Final 100% Remedial Design (Six Volumes), November 2004."*

EPA's Second Removal Action

In September 2005, the Brunswick area was impacted by Tropical Storm Tammy, with flooding of residential yards adjacent to the Site on Floraville Road. As part of this removal action, the EPA supplied bottled water to the residents.

OU1 Remedial Action

In 2006, the EPA began the OU1 Remedial Action (RA), with the construction work divided into three phases, as discussed below. The OU1 RA was completed July 19, 2012, and designated Operational & Functional July 29, 2012.

Phase I of the OU1 RA ended in late 2007 and included site preparation, drainage improvements, pond dewatering and treatment, and soil/sediment excavation activities. See *"Final Remedial Action Report, Phase I: Site Preparation, Pond Dewatering/Sediment Excavation/Backfilling, Surface Soil Excavation/Backfilling, Soil/Sediment Stockpiling, and Perimeter Air Monitoring, August 2009"* and *"Burnett Creek Restoration Construction Closeout Report, Rev. 0, October 2008."*

Phase II of the OU1 RA ended in December 2009 and included the treatment of contaminated soils/sediments, construction of two subcaps and subsurface barrier walls, additional restoration of Burnett Creek, and construction of the western engineered cap. See the *"Interim Remedial Action Phase II Report, Revision 1: Solidification/Stabilization; Sub-cap Construction; Slurry Wall Construction at IM-1/2, IM-4/5, and CD-11; and Earthen and Vegetative Cap Construction at IM-1/2, June 2010."*

Phase III of the OU1 RA was funded primarily with $8.3 million provided through the American

Recovery and Reinvestment Act of 2009, and included an additional subsurface barrier wall, the eastern engineered cap, site restoration activities, and installation/startup of the groundwater remediation system. Phase III construction activities concluded in July 2011. See the *"Interim Remedial Action Phase III Report, Revision 2, Eastern Cap Construction, Final Site Grading & Restoration, Western Outer Barrier Wall & Cap Construction, & Installation of Groundwater Remedial Treatment System June 2012,"* and *"Ground Water Data Summary Report, Rev. 0, December 2010."*

Explanation of Significant Differences (ESD)
The EPA issued an ESD in June 2011 which approved the additional subsurface barrier wall and cap, north of Perry Lane Road and along the railroad tracks, that was constructed during Phase III of the OU1 RA. This additional subsurface barrier wall and cap was completed in January 2011.

Five Year Review
The first FYR for the Site was triggered by the start of OU1 remedial activities in 2006. The U.S. Army Corps of Engineers prepared the FYR, conducting community interviews and a site visit on May 1, 2012. This FYR was completed on September 27, 2012.

OU1 Long Term Response Action
In May 2011, the EPA conducted baseline groundwater sampling prior to startup of the groundwater treatment system. The LTRA consists of in-situ chemical oxidation via injection of ozone and hydrogen peroxide. Quarterly sampling events to monitor contaminant levels in groundwater have since been conducted in November 2011, February 2012, May 2012, and August 2012. In addition, chemistry parameters and groundwater levels are monitored on a monthly basis. The EPA expects that chemical injection will cease at the end of calendar year 2013, while performance monitoring will continue in accordance with the 2002 OU1 ROD. The groundwater remedial action objective is to restore the shallow aquifer beneath the Site to beneficial use outside of the western containment area.

Baseline Ecological Risk Assessment
In 2009, the EPA finalized a BERA to determine the current and future effects of Site contaminants on ecological health (see *"Step Three, Final Problem Formulation, Baseline Ecological Risk Assessment", November 9, 2009,* and *"Screening-Level Ecological Risk Assessment", June 8, 1999)*, following the national guidance "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (EPA 1997). Based on the low potential risks identified for wildlife, a site management decision was made to terminate the BERA after the Problem Formulation, which is Step 3 of the EPA's ecological risk assessment process.

OU2 Remedial Investigation
In October and November 2011, the EPA conducted additional biota and sediment sampling in Burnett Creek to supplement the work done in November 2000 (discussed above). The results are documented in the *"Remedial Investigation Report, Operable Unit Two, Burnett Creek Biota and Sediment, October/November 2011"* (April 17, 2012).

OU2 Remedial Alternatives Screening & Evaluation Technical Memorandum
The EPA documented the considerations and process used to evaluate remedial approaches to OU2 in its *"Technical Memorandum, Remedial Alternatives Screening and Evaluation, Operable Unit Two (OU2), April 19, 2012"*.

3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

For a summary of community participation highlights through June 19, 2002, please see the OU1 ROD which was finalized on that date.

On April 5, 2007, a public availability session was held in Brunswick to inform the public that field construction activities were beginning for the OU1 Remedial Action.

Beginning in May, 2000, the EPA has prepared and mailed regular site updates to the Site mailing list to keep the community informed of Site activities, including the *Brunswick Environmental Cleanup Newsletter*, which the EPA has updated regularly since 2008. As of July 2012, over thirty mailings have been mailed to the Site mailing list, including the proposed plans for OU1 and OU2.

Three videos were also made while implementing the OU1 Remedial Action to keep the public informed about the EPA's remedial activities at the Site. These videos are available for viewing on EPA Region 4's web page at the following address: *http://www.epa.gov/region4/waste/npl/nplga/brunwpga.htm*.

On June 26, 2012, a public meeting was held in Brunswick to present to the public the OU2 proposed plan for the Site. A transcript of this public meeting was subsequently made available to the public at the information repository, as part of the OU2 Administrative Record. The public notice for this meeting was published in the Brunswick News newspaper on June 22, 2012; this notice also informed the public of the OU2 Administrative Record maintained at the information repository, and which contained the OU2 proposed plan. The public comment period on the OU2 proposed plan was originally June 20 through July 20, 2012; on written request, this comment period was twice extended to September 19, 2012, with public notice of the extension published in the Brunswick News newspaper on August 25, 2012.

The Administrative Record for OU2 was available to the public during the entire comment period, at both the information repository maintained at the Three Rivers Regional Library at 208 Gloucester Street, Brunswick, Georgia, and at the EPA Region 4 Library located at 61 Forsyth St., S.W., in Atlanta, Georgia. The EPA's response to the comments received during the comment period for OU2 are contained in the Responsiveness Summary that is included as part of this OU2 ROD, as Appendix A.

This decision document presents the selected remedial action for OU2 at the Brunswick Wood Preserving Site, addressing ecological risk, chosen in accordance with CERCLA (as amended) and the NCP. The decision for this Site is based on the Administrative Record. The requirements under Section 117 of CERCLA/SARA for public and state participation have been met for this Site.

4.0 SCOPE AND ROLE OF ACTION

Potential future risks to public health and the environment exist at the Site due to contamination documented in shallow groundwater, soils/sediments, and Burnett Creek. The subject of this ROD is OU2, which primarily addresses potential ecological risks from the Site, in particular to Burnett Creek and the surface water pathway, based upon the BERA. OU1 and OU2 are not strictly media specific (i.e., groundwater, soil, surface water). Certain actions undertaken during the OU1 RA to address human health also reduced potential ecological risks from the Site. For example, the OU1 RA resulted in removal of the most contaminated sediment at two areas of Burnett Creek prior to completion of the BERA. The present OU2 ROD therefore addresses ecological risks remaining after completion of the OU1 RA, based upon both prior and recent sampling and analysis.

The OU2 remedy is the final remedy selected for the Brunswick Wood Preserving Site.

5.0 SUMMARY OF SITE CHARACTERISTICS: BURNETT CREEK

The Brunswick Wood Preserving site is located adjacent to Burnett Creek, a major tidally influenced creek, which flows into Cowpen Creek, then the Turtle River, the Brunswick River, and ultimately, into the Atlantic Ocean. Since OU2 addresses ecological risk primarily in Burnett Creek, only the surface water pathway is addressed here. The reader is referred to the 2002 OU1 ROD (Section 5.0) and OU1 RD/RA documents for a summary of hydrogeology/soils and groundwater.

5.1 NATURE AND EXTENT OF CONTAMINATION

There are four major groups of contaminants that pose potential risk to human health and the environment at the Site: pentachlorophenol (PCP, a wood preservative), dioxins (unwanted by-products of PCP manufacture), polycyclic aromatic hydrocarbons (PAHs, associated with creosote), and chromated copper arsenate (CCA, the third wood preservative used at the Site during its operational history). Dioxin in sediment and biota poses the highest toxicological risk to ecological receptors in Burnett Creek.

The field work involved in characterizing the contamination in Burnett Creek was done primarily in 1997-2000, 2003, and 2011, and are documented as part of the *"Supplemental Sampling Investigation Report, Subsurface Site Soils, Groundwater, and Burnett Creek, May 7, 2001,"* *"Remedial Investigation Report, Operable Unit Two, Burnett Creek Biota and Sediment, October/November 2011,"* and *"Final Remedial Design, 30% Stage, Data Evaluation Report, July 2004."*

Dioxin results are reported here using the World Health Organization's (WHO) toxicity equivalence factors (TEFs) for dioxin/furan congeners. TEFs for each congener represent an order of magnitude estimate of the toxic equivalence to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), which is the most toxic dioxin congener. TEQ results are calculated as the sum of each congener's concentration multiplied by their respective TEF, with different TEFs for birds, fish, and mammals. Unless otherwise noted, dioxin levels reported here are mammalian TEQs, expressed in units of nanograms per kilogram (ng/kg), which is analogous to parts per trillion (ppt). The WHO updated its mammalian TEFs in 2005.

It is EPA Region 4's informal policy to account for non-detected congeners when calculating dioxin TEQs. This can be done by using the sample quantitation limit (SQL) as an actual concentration (the SQL is the concentration above which the congener was not detected). However, such a conservative approach is not always appropriate and may result in overestimation of risk. For example, the background composite sample of forage fish taken from Dillard Creek in 1997 has a lower dioxin level than all but two of the biota samples ever taken from Burnett Creek, with all but two congeners reported by the lab as non-detected. However, if each non-detected congener were accounted for with its corresponding SQL and TEF, this sample then has a calculated TEQ higher than any of the biota samples ever taken from Burnett Creek. The TEQ dioxin values reported here for both sediment and biota do not include non-detected congeners.

5.1.1 SEDIMENT

Figure 3 and Chart 1 show the dioxin levels discussed below in Sections 5.1.1.1, 5.1.1.3, and 5.1.1.4. With the exception of location 11SD, the most recent samples in Burnett Creek indicate that dioxin levels in creek sediment have decreased by roughly an order of magnitude since 2000. The significant reductions in dioxin levels seen in creek bed sediments are likely a result of natural recovery processes such as sorption, burial, and dispersal processes, or a combination thereof, assisted by the OU1 RA excavation in 2008 of the most contaminated creek sediments. These natural processes will continue to take place, and dioxin levels in creek sediment should continue to decline with time (as should those in creek biota), without further remedial action.

For comparison purposes, it is noted that the dioxin cleanup standard for site soils used for the OU1 Remedial Action was 1000 ng/kg (or 1 ug/kg, which is analogous to 1 part per billion), expressed as mammalian TEQ; none of the sediment samples taken in Burnett Creek have exceeded this standard.

5.1.1.1 1997-2000 OU1 RI SAMPLING

The EPA collected three sediment samples in Burnett Creek as part of the OU1 RI Phase I in 1997. In February 1999, an additional sediment sample was taken at the pipe discharge at Perry Lane Road. In July 2000 and November 2000, the EPA collected 21 additional sediment samples in Burnett Creek. The highest dioxin level in these samples was 464 ng/kg TEQ, and was found in the short east-west reach of the creek bed south of Perry Lane Road. This reach was one of two areas of the creek excavated in 2008 during the OU1 Remedial Action, with the other being at Perry Lane Road itself. Dioxin results and locations for these samples are shown on Figure 3, with dioxin results highlighted in red on Chart 1.

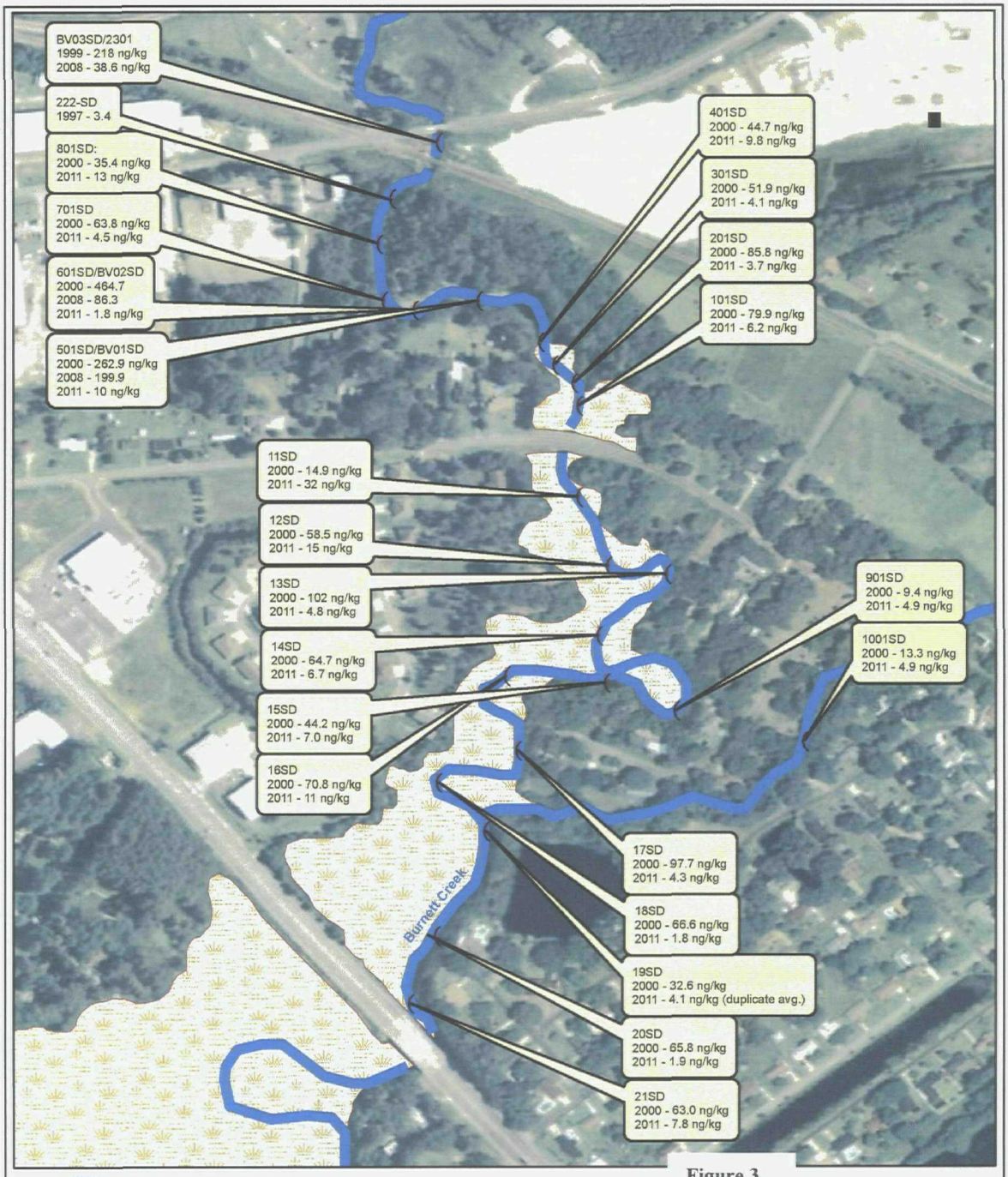

Figure 3

Dioxin Results, Mammalian TEQs
Burnett Creek Sediments
OU2 Remdial Investigation
Brunswick Wood Superfund Site
Brunswick, Glynn County, Georgia

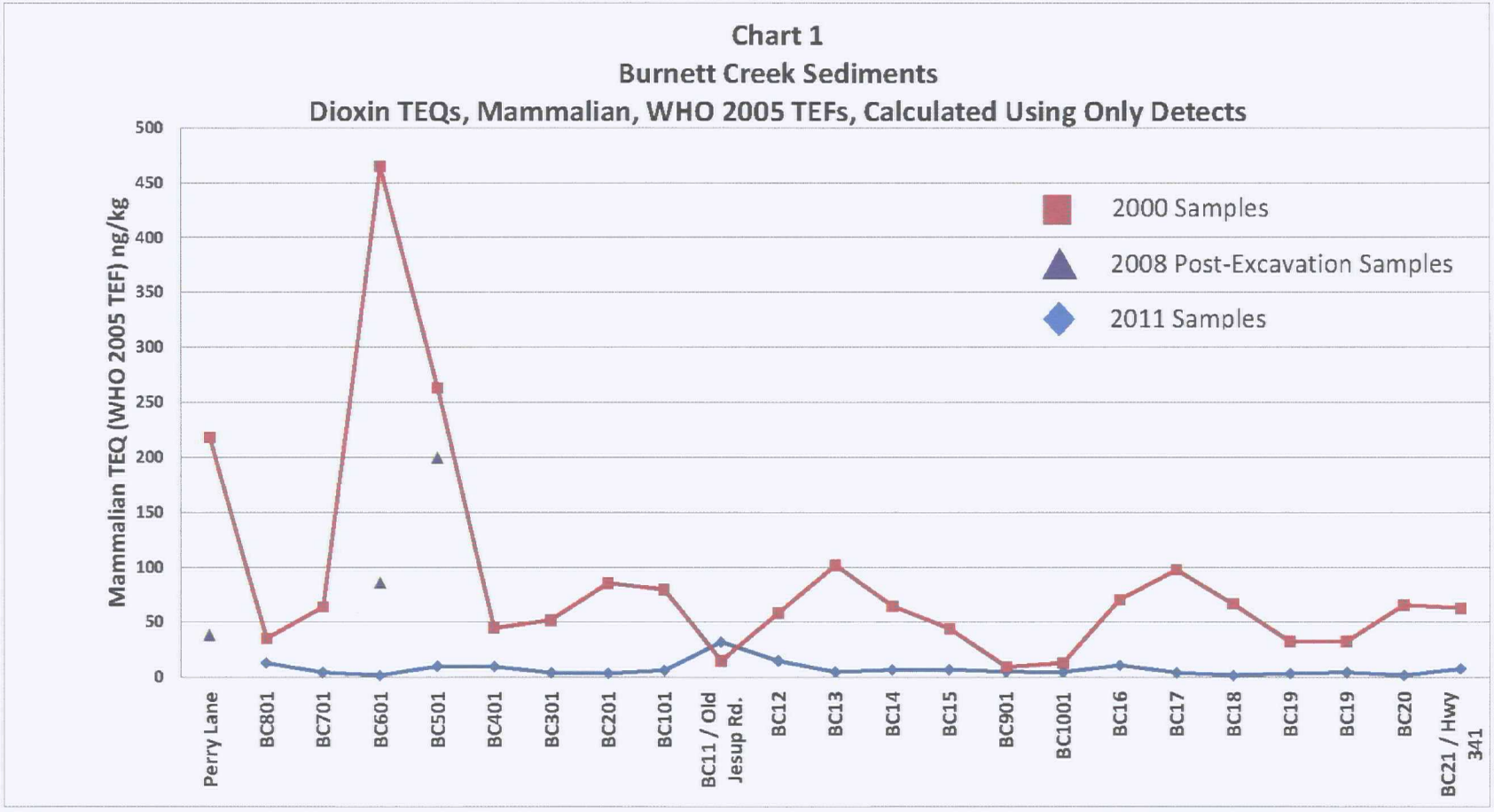
Chart 1
Burnett Creek Sediments
Dioxin TEQs, Mammalian, WHO 2005 TEFs, Calculated Using Only Detects
Mammalian TEQ (WHO 2005 TEF) ng/kg
500
450
400
350
300
250
200
150
100
50
0
2000 Samples
2008 Post-Excavation Samples
2011 Samples
Perry Lane
BC801
BC701
BC601
BC501
BC401
BC301
BC201
BC101
BC11 / Old Jesup Rd.
BC12
BC13
BC14
BC15
BC901
BC1001
BC16
BC17
BC18
BC19
BC19
BC20
BC21 / Hwy 341

5.1.1.2 2003 OU1 RD SAMPLING: TIDAL FLATS

The EPA collected twenty-two sediment samples in Burnett Creek as part of OU1 RD in 2003. These samples focused on the tidal flats north of Highway 341. Dioxin levels found in these samples ranged from 5.5 to 179 ng/kg TEQ. These samples are documented as part of the *"Final Remedial Design, 30% Stage, Data Evaluation Report, July 2004;"* however, the results shown here are as taken from the *"Step Three, Final Problem Formulation, Baseline Ecological Risk Assessment, November 9, 2009,"* (BERA) which re-calculated the results using the World Health Organization's 2005 mammalian TEFs for dioxin/furan congeners.

5.1.1.3 2008 POST-EXCAVATION OU1 RA CONFIRMATORY SAMPLING

The EPA collected three post-excavation confirmatory samples in 2008 at those two areas of Burnett Creek where the most contaminated sediment had been excavated as part of the OU1 Remedial Action. These three samples showed dioxin levels of 38.6, 86.3, and 199.9 ng/kg TEQ. By comparison, the highest levels that had previously been found in Burnett Creek outside these excavated areas were 102 ng/kg and 179 ng/kg TEQ in the creek bed and tidal flats, respectively. Dioxin results and locations for these samples are shown on Figure 3, with dioxin results highlighted in purple on Chart 1.

5.1.1.4 2011 OU2 RI SAMPLING

In November 2011, the EPA collected sediment samples from 21 locations in the creek bed of Burnett Creek. Based on the results of this sampling, the EPA subsequently did not collect sediment samples from the tidal flats of Burnett Creek. The dioxin levels in these sediment samples ranged from 1.8 to 32 ng/kg TEQ. Dioxin results and locations for these samples are shown on Figure 3, with dioxin results highlighted in blue on Chart 1.

5.1.2 BIOTA

5.1.2.1 2000 OU1 RI SAMPLING

In 2000, the EPA collected samples of mullet, mummichog, shrimp, and crab from Burnett Creek. Dioxin levels in these samples are shown in Table 1.

5.1.2.2 2011 OU2 RI SAMPLING

In 2011, the EPA again collected samples of mullet, mummichog, shrimp, and crab from Burnett Creek. Dioxin levels in these samples are also shown in Table 1.

Table 1 also shows the lipid, or fat, content found in each biota sample. Since dioxin congeners are lipophilic compounds, they tend to concentrate in the fatty tissues of biota. When comparing samples, it is therefore customary to compare dioxin results after accounting, or normalizing, for the lipid content. This

Table 1
Burnett Creek Biota Samples

			2011 Sample Results				2000 Sample Results		
Location	Sample ID	Species	Dioxin TEQ ng/kg	Lipids %	Lipid Normalized	Lipid Average	Dioxin TEQ ng/kg	Lipid %	Lipid Normalized
BW1	BW1MUC1	Mummichog	*1.09*	0.92	118.5				
BW1	BW1MUC2	Mummichog	*0.7*	0.81	86.4	102.4	*3.69*	1.6	230.6
BW1	BW1SHR1	Shrimp	*0.18*	0.88	20.5				
BW1	BW1SHR2	Shrimp	*0.16*	0.89	18.0	19.2	*0*	1.1	0.0
BW1	BW1MUL1C	Mullet	*3.43*	7.7	44.5				
BW1	BW1MUL2C	Mullet	*3.65*	7	52.1	48.3	*2.95*	3.5	84.3
BW1	BW1MUL1F	Mullet	*0.76*	1.5	50.7				
BW1	BW1MUL2F	Mullet	*1*	3.3	30.3	40.5	*0*	1.1	0.0
BW1	BW1BCR1	Blue Crab	*0.26*	0.49	53.1				
BW1	BW1BCR2	Blue Crab	*0.13*	0.39	33.3	43.2	*0.94*	0.5	188.0
BW2	BW2MUC1	Mummichog	*1.9*	0.69	275.4				
BW2	BW2MUC2	Mummichog	*1.3*	1	130.0	202.7	*1.903*	1.8	105.7
BW2	BW2SHR1	Shrimp	*0.14*	0.48	29.2				
BW2	BW2SHR2	Shrimp	*0.16*	0.63	25.4	27.3	*0.23*	1.1	20.9
BW3	BW3MUC1	Mummichog	*4.6*	0.9	511.1				
BW3	BW3MUC2	Mummichog	*3.3*	1.4	235.7	373.4	*3.01*	2	150.5

BW1: Highway 341 Bridge
BW2: Old Jesup Road Bridge
BW3: Perry Lane Road

2011 Results are lower
2011 Results are higher

is done by dividing the dioxin level for the whole body sample by its lipid content. For example, for the mummichog sample BW2MUC2, the laboratory reported a dioxin level of 1.3 ng/kg TEQ and a lipid content of 1%, or 0.01. Normalizing the dioxin level for the lipid content thus gives a value of 130.0.

Generally, the dioxin levels found in creek biota did not show a similar reduction as that seen in creek sediment. Using lipid normalized numbers, some biota had increased dioxin levels over time (highlighted in red on Table 1), while others had decreased dioxin levels (highlighted in green on Table 1). Dioxin levels in mummichog samples collected at Perry Lane Road increased from 2000 to 2011, as did mummichog and shrimp samples collected at the Old Jesup Road bridge. Dioxin levels in shrimp and mullet (fillet) samples collected at the Highway 341 bridge also increased, whereas mummichog, mullet (carcass), and blue crab samples at this location did not. These results are not unexpected since contaminant levels in biota usually take longer to recover than those in sediment.

OU2 examines dioxin levels as relevant to ecological impact. However, the EPA continues its consideration of human health impacts relevant to OU1. Therefore, the EPA notes that the dioxin levels in the Burnett Creek biota samples collected in 2000 and 2011 do not represent a public health concern. However, Burnett Creek is a tributary to Cowpen Creek, which then feeds into the Turtle River upriver of Hwy 303. The State of Georgia has placed fish consumption guidelines on this reach of the Turtle River. These fish consumption guidelines have been placed by the State of Georgia for reasons that are not related to Brunswick Wood Preserving (e.g., PCBs and mercury), and are not part of this OU2 selected remedy. The public should continue to follow the State's fish consumption guidelines for this reach of the Turtle River, as shown below on Table 2. The State of Georgia's latest fish consumption guidelines can be found at the following web site:

http://www.gaepd.org/Documents/fish_guide.html

Table 2
State of Georgia's Fish Consumption Guidelines (2010 Update)

Upper Turtle & Buffalo Rivers (St. Simons Estuary) ***Satilla River Basin***

Species	Site Tested	Recommendation	Chemical
White Shrimp	Turtle and Buffalo Rivers, Upriver of Georgia Hwy 303	No Restrictions	
Blue Crab, Red Drum, Spotted Seatrout		1 meal/week	PCBs, Mercury
Flounder		1 meal/week	PCBs
Southern Kingfish, Sheepshead		1 meal/month	PCBs, Mercury
Black Drum, Croaker, Spot		1 meal/month	PCBs
Striped Mullet		Do Not Eat	PCBs
Clams, Mussels, Oysters	Not applicable	Do Not Eat	Shellfish Ban *
* Shellfish Ban: National Shellfish Sanitation Program			

6.0 CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

The Brunswick Wood Preserving Site is currently unused. It is bordered by mixed use properties, including residential areas. The residential area to the east is separated from the Site by a railroad and a perennial ditch, while the residential area to the west is separated by both a railroad and a power easement. In addition, most of the residential area to the west is separated from the Site by Burnett Creek. Groundwater from the surficial aquifer under the Site is a potential future drinking water source, although currently the surficial aquifer is not used as such in the area. Burnett Creek is an estuarine resource for both recreational and seafood consumption purposes, whose headwaters begin just north of the Site.

As discussed in Section 6.0 of the 2002 OU1 ROD, a commercial land use was deemed the most anticipated potential future land use for this Site. Recreational use that is consistent with maintenance of the capped surfaces is also a favorable opportunity for reuse of the Site. Relevant to future use of the Site are the unsettled title to the three parcels making up the Site, and the lien which the State of Georgia has imposed upon the title to the Site. Future use will be subject to relevant restrictions to be filed in real estate records to ensure the continued protectiveness of the OU1 remedy.

Redevelopment of a Superfund site has many advantages to the local community, local government, the State, and to the EPA. The EPA looks forward to working with all stakeholders in the Site to resolve the above issues, and to facilitate the return of this Site to a productive re-use.

7.0 SUMMARY OF ECOLOGICAL SITE RISKS – BURNETT CREEK

As part of OU2, the EPA conducted a BERA to determine the current and future effects of Site contaminants on ecological health. This document is available for review as part of the Administrative Record (see "Step 3, Final Problem Formulation, Baseline Ecological Risk Assessment", dated November 9, 2009). Pursuant to the EPA's Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (EPA 1997), a site management decision was made at that time to terminate the BERA, since proceeding beyond Step 3 of the BERA process was not warranted based on the low potential risks identified for wildlife. Step 3 of the BERA process relies on generalized and very conservative assessment and measurement endpoints to identify potential risks to wildlife. An assessment endpoint is an environmental value to be protected (e.g. bird, fish, or mammal), while a measurement endpoint is a measure of biological effects (e.g., mortality, reproduction, or growth).

The Alternate Toxicity Values (ATVs) and Toxicological Reference Values (TRVs) cited in this section were used to estimate ecological risk, and were taken from the EPA's 1993 "Interim Report on Data and Methods for Assessment of 2,3,7,8-tetrachlorodibenzo-p-dioxin Risks to Aquatic Life and Associated Wildlife, Office of Research and Development, Washington DC, EPA/600/R-93/055". ATVs are screening values taken from sources other than the primary toxicity screening value source; given the uncertainty around the derivation of some toxicity screening values, it can be informative to consider other or "alternate" toxicity screening values. The low risk TRV represents a level that is not associated with unacceptable risks, while concentrations leading to doses between the low risk and high risk TRVs are usually considered adequately protective for most ecological risk scenarios.

7.1 SEDIMENT

7.1.1 2009 BASELINE ECOLOGICAL RISK ASSESMENT (BERA)

The 2009 BERA evaluated 50 sediment samples collected from Burnett Creek from 1997-2008. Dioxins were retained as chemicals of potential concern (COPCs) in sediment for the protection of mammals and fish, based on conservative screening ATVs of 25 ng/kg TEQ and 100 ng/kg TEQ, respectively. Most of the dioxin levels in sediment exceed the dioxin ATV for mammals but the cumulative weight of evidence indicates that the exceedances would cause no measurable harm to mammalian wildlife. Only two sediment samples (SD31 and BV01SD) evaluated in the BERA exceeded the dioxin ATV for fish; dioxin in sediment is not expected to pose an unacceptable risk to fish based on this low frequency of exceedance. Dioxin was not retained by the BERA as a COPC for birds in sediment since the highest dioxin TEQ in the creek sediments did not exceed the dioxin ATV for birds of 210 ng/kg TEQ.

7.1.2 2011 OU2 REMEDIAL INVESTIGATION

Of the 21 sediment samples collected in 2011, only the sample at station 11SD, at 32 ng/kg TEQ, exceeded the dioxin ATV for mammals of 25 ng/kg TEQ. Dioxin is not expected to pose an unacceptable risk to mammals based on this low frequency of exceedance, and considering the natural recovery processes shown to be taking place. Dioxin in sediment does not pose any risk to birds and fish because the highest levels found in the 2011 creek sediment samples did not exceed the ATV for birds or fish of 210 ng/kg TEQ and 100 ng/kg TEQ, respectively.

7.2 BIOTA

7.2.1 2009 BASELINE ECOLOGICAL RISK ASSESMENT (BERA)

7.2.1.1 2000 BIOTA SAMPLES

The 2009 BERA also evaluated risks to mammals, birds, and fish through food chain consumption of the Burnett Creek biota samples collected in 2000. Dioxin levels in these biota samples were compared to low risk and high risk TRVs for mammals, birds, and fish, as shown on Table 3 (which also includes the composite forage fish samples taken in 1997). For birds and fish, none of the dioxin levels in these samples exceeded the low risk TRVs of 6 and 50 ng/kg TEQ, respectively. For mammals, dioxin levels exceeded the low risk TRV of 0.7 ng/kg TEQ in the blue crab, mullet, and mummichog samples but did not exceed the high risk TRV of 7 ng/kg TEQ.

7.2.1.2 FOOD WEB MODELS

Food-web models were also used in the 2009 BERA as additional lines of evidence to estimate risks to piscivorous mammals and birds consuming contaminated prey items and incidentally ingesting sediment

Table 3
Hazard Quotients for Dioxins in Biota Associated with Low and High Risk to Various Wildlife Species (Using Detected Congeners Only)

A. Risks to Mammalian Wildlife						
Fish Species	Sample ID	Location*	Dioxin/Furan TEQ (ww) (ng/kg)	Q	Mammalian TRV** Low Risk HQ 0.7	Mammalian TRV** High Risk HQ 7
Composite (1)	BW001	Ditch/outfall	0.002	J	0.003	0.0003
Composite (2)	BW002	Ditch/upstream	0.111	J	0.16	0.02
Composite (3)	BW003	Burnett Creek	0.66	J	0.94	0.09
Composite (4)	BW004 (ref)	Dillard Creek	0.005	J	0.01	0.001
Blue crab	BCR341	Biota-1	0.94	J	1.3	0.1
Mullet***	MLT341(A+B)	Biota-1	2.95	J	4.2	0.4
Mummichog	MUW341	Biota-1	3.69	J	5.3	0.5
Mummichog	MUW501	Biota-3	3.01	J	4.3	0.43
Mummichog	MUWOJR	Biota-2	1.903	J	2.7	0.3
Shrimp	PSHP341	Biota-1	0	UJ	0.0	0.0
Shrimp	SHPOJR	Biota-2	0.232	J	0.3	0.03
B. Risks to Fish Wildlife					Fish TRV 50	Fish TRV 80
Composite (1)	BW001	Ditch/outfall	0.001	J	0.00002	0.00001
Composite (2)	BW002	Ditch/upstream	0.014	J	0.0003	0.00018
Composite (3)	BW003	Burnett Creek	0.171	J	0.003	0.00214
Composite (4)	BW004 (ref)	Dillard Creek	0.0016	J	0.00003	0.00002
Blue crab	BCR341	Biota-1	0.9	J	0.02	0.01
Mullet***	MLT341(A+B)	Biota-1	2.1	J	0.04	0.03
Mummichog	MUW341	Biota-1	3.465	J	0.1	0.04
Mummichog	MUW501	Biota-3	3.2	J	0.1	0.04
Mummichog	MUWOJR	Biota-2	1.65	J	0.03	0.021
Shrimp	PSHP341	Biota-1	0	UJ	0.0	0.0
Shrimp	SHPOJR	Biota-2	0.11	J	0.002	0.0013
C. Risks to Avian Wildlife					Avian TRV 6	Avian TRV 60
Composite (1)	BW001	Ditch/outfall	0.001	J	0.0002	0.00002
Composite (2)	BW002	Ditch/upstream	0.014	J	0.002	0.0002
Composite (3)	BW003	Burnett Creek	0.171	J	0.03	0.003
Composite (4)	BW004 (ref)	Dillard Creek	0.002	J	0.0003	0.00003
Blue crab	BCR341	Biota-1	0.8	J	0.1	0.01
Mullet***	MLT341(A+B)	Biota-1	2.6	J	0.4	0.04
Mummichog	MUW341	Biota-1	4.226	J	0.7	0.1
Mummichog	MUW501	Biota-3	4.53	J	0.8	0.1
Mummichog	MUWOJR	Biota-2	1.645	J	0.3	0.03
Shrimp	PSHP341	Biota-1	0	UJ	0.0	0.0
Shrimp	SHPOJR	Biota-2	0.105	J	0.02	0.002

NOTES:

Highlighted cells have HQ≥1

HQ = Hazard quotient

TEQ = Toxic equivalent

ww = Wet weight

ng/kg = Nanogram per kilogram

Q = Qualifier

J = Estimated concentration

U = Analyte not detected at or above reporting limit

* See Figures 3-3 and 3-4 for sampling locations

**Toxicity reference values (TRV) from EPA (1993) and are in ng/kg ww

***Mullet results combined from fillet (A) and carcass (B)

(1) Composite of Gobi/darter, mosquito fish (Gambusia spp.), top minnow, and sucker/sunfish

(2) Composite of Gobi/darter/sunfish, mosquito fish (Gambusia spp.), top minnow, and sucker

(3) Composite of Gobi/darter, mosquito fish (Gambusia spp.), top minnow, silverside/sunfish, and mummichog

Creek has been excavated in this area.

(4) Composite of top minnow and mummichog

Table 4
Food Web Models for Mammalian and Avian Piscivores
(Using Detected Congeners Only)

Piscivorous Mammal																
Mink (*Mustela vison*) Dioxins/Furans	Sediment Conc (mg/kg)	Sediment IR[a] (kg/day)	Sediment Dose (mg/day)	Biota Conc (mg/kg)	Food IR[b] (kg/day)	Food Dose (mg/day)	Water Conc (mg/L)	Water IR (L/day)	Water Dose (mg/day)	Total Dose (mg/day)	Body Weight[c] (kg)	ADD (mg/kg-day)	NOAEL[d] (mg/kg BW/day)	LOAEL[d]	NOAEL HQ	LOAEL HQ
Fish from Burnett Creek																
Max Sediment/Max Fish	1.79E-04	0.003	5.376E-07	1.54E-05	0.029	4.5E-07	0	0	0	9.8E-07	0.55	0.0000018	1E-06	1.00E-05	1.8	0.2
Ave Sediment/Ave Fish	6.38E-05	0.003	1.914E-07	7.33E-06	0.029	2.1E-07	0	0	0	4E-07	0.55	0.0000007	1E-06	1.00E-05	0.7	0.1
Mullet at Location 1	6.30E-05	0.003	1.89E-07	1.23E-05	0.029	3.6E-07	0	0	0	5.5E-07	0.55	0.0000010	1E-06	1.00E-05	1.0	0.1
Mummichog at Location 1	6.30E-05	0.003	1.89E-07	1.54E-05	0.029	4.5E-07	0	0	0	6.4E-07	0.55	0.0000012	1E-06	1.00E-05	1.2	0.1
Mummichog at Location 2	4.74E-05	0.003	1.421E-07	7.93E-06	0.029	2.3E-07	0	0	0	3.7E-07	0.55	0.0000007	1E-06	1.00E-05	0.7	0.1
Mummichog at Location 3	4.47E-05	0.003	1.341E-07	1.25E-05	0.029	3.6E-07	0	0	0	5E-07	0.55	0.0000009	1E-06	1.00E-05	0.9	0.1
Invertebrates from Burnett Creek																
Blue Crab at Location 1	6.30E-05	0.003	1.89E-07	5.00E-06	0.029	1.5E-07	0	0	0	3.3E-07	0.55	0.0000006	1E-06	1.00E-05	0.6	0.1
Shrimp at Location 1	6.30E-05	0.003	1.89E-07	0.00E+00	0.029	0	0	0	0	1.9E-07	0.55	0.0000003	1E-06	1.00E-05	0.3	0.0
Shrimp at Location 2	4.74E-05	0.003	1.421E-07	1.16E-06	0.029	3.4E-08	0	0	0	1.8E-07	0.55	0.0000003	1E-06	1.00E-05	0.3	0.0
Piscivorous Bird																
Green heron (*Butorides virescens*) Dioxins/Furans	Sediment Conc (mg/kg)	Sediment IR[a] (kg/day)	Sediment Dose (mg/day)	Fish Conc (mg/kg)	Food IR[e] (kg/day)	Food Dose (mg/day)	Water Conc (mg/L)	Water IR (L/day)	Water Dose (mg/day)	Total Dose (mg/day)	Body Weight[f] (kg)	ADD mg/kg-day)	NOAEL[g] (mg/kg BW/day)	LOAEL[g]	NOAEL HQ	LOAEL HQ
Fish																
Max Sediment/Max Fish	1.21E-04	0.00023	2.78E-08	1.89E-05	0.0115	2.2E-07	0	0	0	2.5E-07	0.241	0.0000010	1.4E-06	1.40E-05	0.7	0.1
Ave Sediment/Ave Fish	3.99E-05	0.00023	9.18E-09	7.84E-06	0.0115	9E-08	0	0	0	9.9E-08	0.241	0.0000004	1.4E-06	1.40E-05	0.3	0.0

NOTES:

Highlighted cells are HQ≥1

Conc = Concentration

IR = Ingestion rate

ADD = Average daily dose

NOAEL = No-observed-adverse-effect level

LOAEL = Lowest-observed-adverse-effect level

HQ = Hazard quotient

mg/kg = Milligrams per kilogram (all concentrations in dry weight)

BW = Body weight

L = Liter

Max = Maximum

[a] Beyer *et al*. (1994)

[b] Bleavins and Aulerich (1981)

[c] Mitchell (1961)

[d] Murray *et al*. (1979)

[e] Kushlan (1978)

[f] Niethammer and Kaiser (1983)

[g] Nosek *et al*. (1992)

at the Site. The calculated average daily doses were then compared with literature-derived no-observed-adverse-effect level (NOAEL) and lowest-observed-adverse- effect level (LOAEL) TRVs in order to calculate Hazard Quotients, as shown on Table 4.

Piscivorous mammals consuming mullet and mummichog from one station and incidentally ingesting contaminated sediment showed risk from dioxins based on the NOAEL but not the LOAEL TRV. The NOAEL is a dose that has been determined not to cause unacceptable risk. Due to the conservative assumptions used in the risk models and the non-exceedence of the LOAEL TRV, it was concluded using the weight of evidence that risks to piscivorous mammals were not significant in Burnett Creek.

The food-web models did not show unacceptable risks to piscivorous birds from exposure to contaminated media at the Site.

7.2.2 2011 OU2 REMEDIAL INVESTIGATION

For birds and fish, none of the 2011 biota samples had dioxin levels exceeding low risk TRVs of 6 and 50 ng/kg TEQ, respectively. For mammals, dioxin levels exceeded the low risk TRV of 0.7 ng/kg TEQ in the mullet and mummichog
samples but did not exceed the high risk TRV of 7 ng/kg TEQ.

8.0 SELECTED REMEDY – BASIS FOR NO ACTION

Based on the information obtained in the OU2 Administrative Record, contaminant concentrations in Burnett Creek biota and sediment do not pose potentially unacceptable risks to ecological receptors. As such, further action under CERCLA is not necessary and the EPA did not develop remedial alternatives for OU2. The remedy selected for OU2 is No Action.

9.0 DOCUMENTATION OF SIGNIFICANT CHANGES

The OU2 Proposed Plan was mailed to the public on June 15, 2012. It identified No Action as the preferred remedy for OU2. The initial 30 day public comment period began on June 20, 2012, and by written request was twice extended, ending September 19, 2012 for a total of 90 days.

After consideration of all written and verbal comments received during the public comment period, no significant changes were made to the OU2 selected remedy.

It is the EPA's judgment that the remedial action identified in this OU2 ROD is the appropriate response to protect the environment from actual or threatened releases of hazardous substances into the environment. See also *"Remedial Alternatives Screening & Evaluation Technical Memorandum, Operable Unit Two, April 19, 2012"*.

9.1 ECOLOGICAL RISK ASSESSMENT OF SITE SURFACE SOILS

Section 4.0 of the 2002 OU1 ROD, Scope and Role of Action, stated that "residual contaminant levels in site soils will be evaluated for ecological risk based on confirmatory samples taken after the OU1 remedy is conducted, and remediated as necessary as part of OU2." However, this evaluation was not done as part of the 2009 Baseline Ecological Risk Assessment, which instead focused on Burnett Creek and the surface water pathway. For that reason, an evaluation is provided here using dioxin data for Site surface soils potentially attractive to wildlife which are outside the capped areas and were not excavated during the OU1 Remedial Action.

The three areas of the Site that currently remain wooded and potentially attractive to wildlife are as follows: 1) the northeastern portion of the Site next to Perry Lane Road; 2) that narrow portion between the eastern cap and the railroad tracks; and 3) the southeastern portion of the Site, approximately 30 acres, on which wood preserving operations were not conducted during its operating history. These wooded areas can be seen on Figure 2.

Summary of Available Site Surface Soil Dioxin Data

For the northeastern wooded area of the Site, two surface soil samples (BW065SF from the 1998 Phase I RI and SS62 from the 2004 Remedial Design) were analyzed for dioxin, with reported levels of 193 and 26.7 ng/kg mammalian TEQ, and 114 and 16.8 ng/kg avian TEQ.

For the narrow eastern wooded area of the Site, one surface soil sample (BW069SF from the 1998 Phase I RI) was analyzed for dioxin, with a reported level of 0.2 ng/kg mammalian TEQ, and 0.02 ng/kg avian TEQ.

For the southeastern wooded area of the Site, three surface soil samples (BWP09SF, BWP11SF, and BWP12SF from the 1998 Phase I RI) along its northern boundary were analyzed for dioxin, with reported levels of 42.9, 20.3, and 37.5 ng/kg mammalian TEQ, and 23.4, 9.6, and 15.2 ng/kg avian TEQ. These samples were taken along the northern tree line, closest to where Site operations were conducted during its operating history.

Evaluation of Available Dioxin Data

No general surface soil ecological screening values for dioxins are available. Therefore it is appropriate to utilize values used at another Superfund site for which evaluation criteria were developed, and for which ecological receptors and habitat are similar. For this evaluation, the Site surface soil dioxin levels cited above are compared with the risk-based remedial goal options (RGOs) from the 2002 ROD for the Weyerhauser Superfund Site in North Carolina (the "Weyerhauser Site").

For mammals, for the Weyerhauser Site, the NOAEL-based RGO was 50 ng/kg mammalian TEQ, while the LOAEL-based RGO was 500 ng/kg mammalian TEQ. For birds, the NOAEL-based RGO in the 2002 ROD for the was 110 ng/kg avian TEQ, while the LOAEL-based RGO was 1,100 ng/kg avian TEQ.

Mammals
For the northeastern wooded area of the Site, the average dioxin level in the two surface soils BW065SF and SS62 is 110 ng/kg mammalian TEQ. This average is between the NOAEL and the LOAEL used at the Weyerhauser Site. As discussed in Section 7.2.1.2, that data presents evidence of a dose that has been determined not to cause unacceptable risk (LOAEL), although due to the conservative assumptions used for screening, it exceeds the total lack of risk (NOAEL). Therefore Site surface soils are not expected to pose a significant risk to mammals in their use of this area.

For the southeastern wooded area of the Site, along its northern boundary, the average dioxin level in the three surface soils BWP09SF, BWP11SF, and BWP12SF is 33.6 ng/kg mammalian TEQ. Neither that average or the BW069SF sample taken in the narrow eastern wooded area of the Site exceed the mammalian NOAEL TEQ of 50 ng/kg used for the Weyerhauser Site.

No unacceptable risk to mammals is expected from their use of these areas of the Site.

Birds
For the northeastern wooded area of the Site, the average dioxin level in the two surface soils (BW065SF and SS62) is 65 ng/kg avian mammalian TEQ, while for the southeastern wooded area, the average dioxin level in the three surface soils (BWP09SF, BWP11SF, and BWP12SF) is 16.1 ng/kg avian mammalian TEQ. Neither of these averages or the BW069SF sample taken in the narrow eastern wooded area of the Site exceed the avian NOAEL TEQ of 110 ng/kg used for the Weyerhauser Site of 110 ppt, therefore no appreciable risk to birds is expected from their use of these areas of the Site.

Given the results of these risk comparisons, it is believed that no unacceptable risk to ecological receptors exists from the terrestrial portions of the Site.

APPENDIX A

OU2 RESPONSIVENESS SUMMARY - BRUNSWICK WOOD PRESERVING NPL SITE

The OU2 Responsiveness Summary shows how the EPA considered public comments made on the Remedial Action summarized herein, for Operable Unit Two (OU2) of the Brunswick Wood Preserving National Priorities List (NPL) Site. For additional reference, a transcript of the public meeting held June 26, 2012, is part of the OU2 Administrative Record (AR) for the Site. A copy of the OU2 AR is available for review at the information repository, located at the Three Rivers Regional Library, 208 Gloucester Street, Brunswick, Georgia. In addition, written comments were received during the 90 day public comment ending September 20, 2012.

This Responsiveness Summary is organized as follows:

1) ***Transcript of the public meeting held June 26, 2012, 69 pages. Comments are prefaced with TRANS.***
2) ***Fax dated July 18, 2012, and email dated September 18, 2012, both from a citizen. Comments are prefaced with FAX and EMAIL.***
3) ***Letter dated September 17, 2012, from the Glynn Environmental Coalition (GEC). This letter contained 20 comments, with each prefaced with GEC.***
4) ***Letter dated September 18, 2012, from the TAG Advisor, on behalf of the Glynn Environmental Coalition (GEC). This letter contained unnumbered general comments, in addition to 11 specific comments, with each prefaced with ESC.***

COMMENTS PRESENTED DURING JUNE 26, 2012, PUBLIC MEETING

TRANS1. The following comment addresses the AR, which does not include a Feasibility Study.

Doesn't CERCLA specify that a Superfund site shall have a Feasibility Study (FS)?

EPA Response:

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly known as Superfund) authorizes the EPA to take two kinds of response actions for releases or threatened releases of hazardous substances: short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response, and long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. The EPA's current response actions, which followed inclusion of the Site on the NPL, are remedial in nature.

CERCLA references the FS as part of Superfund's remedial process, but does not specifically require a Superfund site to have one. The National Contingency Plan (NCP), established by CERCLA, provides the regulatory guidelines and procedures for Superfund responses. The NCP states at Section 300.430(e):

> The primary objective of the FS is to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy selected. The lead agency ***may*** develop a feasibility study to address a specific site problem or the entire site. The development and evaluation of alternatives ***shall*** reflect the scope and complexity of the remedial action under consideration and the site problems being addressed. Development of alternatives shall be fully integrated with the site characterization activities of the remedial investigation... [and] the lead agency shall include an alternatives screening step, ***when needed***, to select a reasonable number of alternatives for detailed analysis.(Emphasis added.)

The NCP then states at Section 300.430(e)(7) that "as appropriate," the criteria of effectiveness, implementability, and cost "shall be used to guide the development and screening of remedial alternatives." Alternatives that remain after evaluation in this screening stage are then analyzed in further detail pursuant to the nine criteria set forth in the NCP's Section 300.430(e)(9)(iii). Thus, while the NCP requires that the EPA's review of alternatives reflect the relevant facts of the site so that the decision-maker makes an informed decision, an FS *per se* is not required, so long as the purposes of the NCP and CERCLA are satisfied.

To ensure consistent application of the relevant criteria by the Regional offices, the EPA issued the following guidance related to the selection of remedies for Superfund sites: "*A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*" (EPA 540-R-98-031, OSWER 9200.1-23P, PB98-963241, July 1999). On page 8-5 of that document it is stated: "Generally, an FS is not necessary for a No Action decision."

The EPA issued the "*Remedial Alternatives Screening & Evaluation Technical Memorandum*", dated April 19, 2012, which outlined the basis for a No Action remedy selection for OU2 at the Site. As explained in the Memorandum, "EPA's evaluation of all available information has determined that the data support a preferred alternative of No Action for OU2 at the Site. Consequently, EPA has not further screened or evaluated the other possible general response actions identified in the previous section." As noted in this Memorandum, the available information supporting the preferred alternative of No Action for OU2 included:

1) ecological risk assessments showing that potentially unacceptable risks to mammals were unlikely from Burnett Creek sediment and biota, while no unacceptable risks were posed for birds and fish;
2) remedial actions undertaken as part of OU1, including control of upland sources and the excavation of the most contaminated sediment from two areas in Burnett Creek in 2008, essentially eliminating future contaminant releases to the creek; and,
3) evidence that natural recovery processes such as sorption, burial, and dispersal, or a combination thereof, have reduced, and are expected to continue to reduce, contaminant levels in creek sediment and biota over time.

In addition, the OU2 Proposed Plan noted that further remedial action would disrupt these natural processes and disturb ecological habitat, while potentially increasing the bioavailability of buried contaminants.

The EPA has undertaken a fully appropriate review of the relevant information pertaining to ecological risk presented by the Site for the purposes of OU2. Although there is not a separate document entitled "Feasibility Study," the substantive information required by CERCLA and the NCP has been completed and made available to the public.

TRANS2. The following comment addresses characterization and sampling protocol for Burnett Creek sediments.

> Concerning the Burnett Creek sediment recovery, it's my recollection that the sampling [in 2000] took three samples across the creek bed, and your [2011 samples were] in the bottom of the creek in the scour zone. How can you compare two different sampling methods and extrapolate a conclusion? Isn't it true in 2000 they took samples across the creek and composited those to get their result? We are comparing apples and oranges because we don't know that the same scientific methods were used. If they took transect samples and composited them and you take single samples results in the scour zone in the center, obviously two different methods were used and the data is not comparable.

EPA Response:

In July 2000, ten sediment samples from Burnett Creek were collected and documented as part of the "*Final Report - Phase III Remedial Investigation,*" dated December 2000. Two of these samples were grab samples (i.e., only one sediment aliquot was collected) while the other eight samples were composites of multiple sediment aliquots. Specific information is not given regarding aliquot collection for the eight composite samples, but it is stated that "sample locations were generally selected to be representative of depositional areas within the banks of the creek." The reason for this is that depositional areas would be expected to have higher contaminant levels; as such, aliquots in the center of the creek bed or the scour zone would have been avoided, as they would bias the sample results lower.

In November 2000, eleven additional grab samples were collected and documented as part of the *"Supplemental Sampling Investigation Report, Subsurface Site Soils, Groundwater, and Burnett Creek, May 7, 2001."*

In October 2011, twenty-one grab samples were collected and documented as part of the "*Remedial Investigation Report, Operable Unit Two, Burnett Creek Biota and Sediment, October/November 2011,*" dated April 17, 2012. These samples were collected at the same locations sampled in 2000.
As noted, eight of these sample locations had aliquots composited in 2000 whereas grab samples were collected from these locations in 2011. However, this does not affect the samples' integrity. The overall conclusion remains that natural recovery processes have resulted in significantly decreased dioxin levels in Burnett Creek sediments.

TRANS3. The following comment addressed the future land use of the Site.

> I may be missing a good bit of this. But I'm not sure that I know where we are headed. In other words, I don't know that I saw anything about the intended uses of this property or of the creeks. I see that we are testing, but I'm not sure where that is leading us. Where are we going? What will be the decision-making process? Will the public be involved? Who are the owners? Are we dealing only with governmental agencies as the owners of this property?

EPA Response:

The final anticipated land use of the Site has yet to be determined and was not the focus of this public meeting. The EPA will ensure that any future land use is compatible with the continued protectiveness of remedial actions taken at the Site. The ownership of the Site is unsettled at this time. If and when a future land use is contemplated, the EPA will involve the public in the process.

TRANS4. The following comments address liens placed on the Site property.

> Does the State have a lien on this property? [If so] for how much? Does the EPA have a lien on this property?

EPA Response:

Yes, the State of Georgia has a lien on the Site property based on the amount of money spent by the State on its 1996-97 removal action, or approximately $21 million. The EPA has previously cited $18.5 million as the amount spent by the State on its 1996-97 removal action. However, that amount is actually that credited by the EPA towards the State's 10% cost share for all Superfund remedial actions in Georgia. The EPA does not have a lien on the Site property.

TRANS5. The following question addresses the EPA's sampling of residential water wells in the Site vicinity.

> My question is about the sampling of private wells. Will you be changing locations and sampling different sites of wells to see? So a private well owner would have to ask you for sampling?

EPA Response:

The EPA's regular sampling of residential water wells in the Site vicinity is flexible. When asked by a resident to consider sampling of their water well, the EPA always places a priority on ensuring that residential drinking water is safe, while taking into consideration technical factors that may preclude sampling in some cases. Two residents inquired during this public meeting about having their well water

sampled. Those requests will be considered during the next residential well sampling event in 2013.

TRANS6. The following comment addresses CERCLA and NCP requirements for public participation.

We are coming up on a legal decision for this site, the Record of Decision. The meeting was announced seven days ahead. That is when we received the proposed plan for remedial action. The documents upon which the EPA expects the public to comment upon were made available three business days ago. One is these 75 documents for OU2 are technical in nature and several are between 300 and 600 pages in length. It's absolutely ridiculous for the EPA to be holding this hearing, paying for a meeting room, paying for a court reporter, when you know no one can review documents and make meaningful comments. The EPA has made a mockery of the public meeting and public comment process. The EPA -- I mean, the Glynn Environmental Coalition administers the EPA Technical Assistance Grant for Brunswick Wood Preserving site. This EPA program is intended to foster community involvement in the decision-making process. This EPA program is intended --excuse me -- the EPA program is based upon the community obtaining a technical adviser to review documents, produce a report in layman's language and answer questions from the community in preparation for meetings like the EPA public meeting we are here about tonight. The timing of the release of documents and the planning of this meeting with just three days' notice thwarts the spirit and intent of the EPA Technical Assistance Grant program.

The EPA purchased an ad in the sports section of the Brunswick News. I guess you might see it if you were checking the Braves game scores. I have asked several people if they saw the ad. I have not found one that says they have seen the EPA ad. The Glynn Environmental Coalition has made a concerted effort to let our community know about the meeting, but without enough information to make meaningful comments there is little reason to come.

The record should show that this meeting is being conducted as Tropical Storm Debby drops torrential rains on our area. It's passing overhead and during a National Weather Service flood warning and flood watch until 8 PM Wednesday, June 27. If this meeting is not in violation of the letter of the law, it is most certainly in violation of the spirit of the law and has all appearances of being planned to thwart meaningful community involvement in the decision-making process. In actuality, this meeting does thwart meaningful participation in the decision-making process by our community and does thwart EPA technical assistance grant group's ability to review, produce reports, distribute them, and answer questions from the community. EPA public comment meetings are very important. I know you will say the public can write comments and submit them during the public comment period. If that were the intent of the law for people to have the time to write comments, there would not be a EPA public comment meeting. The purpose of the EPA public comment meeting is for those without great writing skills or ability to participate in the decision-making process. That is why you paid the big bucks for the court reporter sitting over here. Yes, there was a waste of money because there will not be any meaningful public comments here tonight since the EPA has pretty much made sure that this is the case by holding onto documents until three business days before the meeting. The Glynn

Environmental Coalition has not had time to review the documents but has made an attempt to check

the list of documents for completeness.

EPA Response:

The National Contingency Plan (NCP) states at Section 300.430(f)(3) that the EPA shall "publish a notice of availability and brief analysis of the proposed plan in a major local newspaper of general circulation," "provide the opportunity for a public meeting to be held ***during*** the public comment period," "provide a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments on the proposed plan," and "keep a transcript of the public meeting held ***during*** the public comment period... and make such transcript available to the public." [Emphasis added].

The OU2 Proposed Plan was mailed to the Site mailing list on Friday, June 15, 2012, and announced June 26 as the date of the public meeting. The Proposed Plan also announced June 18 as the beginning of the public comment period; however, since the OU2 AR was not available at the local site repository until June 20, the start of the public comment period was subsequently revised to June 20, then later extended, after receipt of written request, to August 20. Courtesy copies of the OU2 AR were sent by the EPA to both the TAG and TAG Advisor on June 21. A notice announcing the OU2 Proposed Plan and public meeting appeared in the Brunswick News on June 22.

The NCP does not specify when the public meeting might be held within the public comment period; however, the NCP's intent for the public meeting is for the EPA to present the OU2 Proposed Plan to the public ***during*** the public comment period, rather than afterward. The NCP does not require a specific location for the public notice in a local newspaper.

Tropical Storm Debby made landfall on the Gulf Coast near Steinhatchee, Florida, on June 26, 2012, with sustained winds of 40 mph. Rainfall amounts recorded in Brunswick, Georgia for June 23 through June 27 were 0.01", 2.09", 1.49", 2.23", and 0", and did not have an appreciable impact on the public meeting. The CERCLA/SARA and NCP requirements for public participation have been met for this Site.

TRANS7. The following comment addresses the OU2 Administrative Record and CERCLA/NCP public participation requirements, and a comment period extension.

> The administrative record is incomplete... there might be more documents missing from the administrative record also. The Glynn Environmental Coalition requests to extend the comment period until 120 days after the public health assessment is completed and then have the EPA public meeting on the proposed plan for Operable Unit 2 at the Brunswick Wood Preserving Superfund site. When the Glynn Environmental Coalition has reviewed the administrative record index, we will submit a list of documents to be added to the administrative record as provided for under OSWER Directive No. 9833.3 A-1. I question if we even have a legal meeting here tonight because the community just three days ago just received the administrative record. You know, we are still working just reading through the index. The community is supposed to be involved in the construction of the administrative record. This has been our first opportunity to see the administrative record and make input.

EPA Response:

The AR is maintained on an ongoing basis. The EPA believes the AR to be complete. As noted in the response to TRANS1, the EPA has undertaken a fully appropriate review of the relevant information pertaining to ecological risk presented by the Site for the purposes of OU2. The substantive information required by CERCLA and the NCP has been completed and made available to the public as part of the OU2 AR, which forms the basis for the selected remedy documented in this Record of Decision. The public comment period was extended to August 20, 2012, and consisted of sixty days.

TRANS8. The following comment also addresses the OU2 Administrative Record.

The difference this time, Brian, is previously we had the documents for three, four, five months.

EPA Response:

The Remedial Investigation field work for OU2 was conducted in October and November 2011, and the results are documented in the "*Remedial Investigation Report, Operable Unit Two, Burnett Creek Biota and Sediment, October/November 2011,*" which was finalized April 17, 2012. The EPA then issued the "*Remedial Alternatives Screening & Evaluation Technical Memorandum,*" dated April 19, 2012, which outlined the basis for a No Action remedy selection for OU2 at the Site. These documents were placed in the site file then made available to the public on June 20, 2012, as part of the OU2 AR.

TRANS9. The following comment addresses potential human health risks posed by Burnett Creek biota.

You talked earlier about the advisory for Turtle River in the Burnett Creek area. If you look at this, it says PCBs and mercury. Dioxin is not on here for a reason. It's because there is no dioxin data to evaluate. The State does not make advisories without the data to support them. But any astute environmental person would look at this and see that it says PCBs and, knowing we have a completed exposure route in Burnett Creek and that PCBs and dioxin are additive, that would set a light off in their mind that we have an increased risk because of an additive risk. The EPA has stated in documents repeatedly that Burnett Creek is fished in all regions by the public. That is a completed exposure route. Also, in February the IRIS database which the EPA bases its assessments on lowered the allowable level for non-carcinogenic risks to 50 parts per trillion. We cannot extrapolate from minnows the risk to human health without a bio-accumulation factor. Actually the State may not even use your data because they take data from the size fish that can be legally caught. But in this situation because we do need the information, a bio-accumulation factor could be applied. Noticeably missing are the fish that people catch in this creek: red drum, also called spot tail bass, spotted sea trout, black drum. We see people fish from the bridge right next to the site. There is no doubt that seafood is not *(sic)* being consumed in that area of the creek.

EPA Response:

The State of Georgia's fish consumption guidelines for the Turtle River upstream of Highway 303 are shown as Table 2 in Section 5.1.2.2. These fish consumption guidelines relate to human health for reasons not related to Brunswick Wood Preserving (e.g., PCBs and mercury). Those determinations are not part of this OU2 selected remedy because OU2 addresses Site-related potential risk to ecological receptors.

The EPA appreciates the concern regarding the appropriate creek biota sampling methodology to determine potential risk to human health. As such, the EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

TRANS10. The following comment also addresses potential human health risks, specifically citing ATSDR's public health assessment and a human health risk assessment.

> The public health assessment for OU2 is missing, and as noted in the 1999 Public Health Assessment, public health risks from consumption of contaminated seafood were to be evaluated when data was available. And also, you forgot the most important part of who you are supposed to be protecting, us. The human health -- public health assessment was not completed. A human health risk -- a baseline human health risk assessment wasn't completed. And these are what should be reviewed and for us to comment on at this meeting.

EPA Response:

The Agency for Toxic Substances and Disease Registry's (ATSDR) Petitioned Public Health Assessment, dated February 9, 1999, noted that consumption of Burnett Creek fish was an indeterminate public health hazard. However, this document was finalized prior to the EPA's additional biota and sediment sampling conducted in Burnett Creek from 2000 to 2011, during the RI/FS/RD/RA activities at the Site.

The first biota sampling done in Burnett Creek, other than the forage fish samples collected during the Remedial Investigation, was conducted in November 2000. The public health risks associated with the contaminant levels found in these blue crab, mullet, shrimp, and mummichog samples were evaluated and discussed in the March 2001 and May 2001 Site Updates sent to the site mailing list in 2001. A baseline risk assessment for human health was finalized in June 1999. Human health risk impacts calculated in that document have been reevaluated twice with technical memoranda. The first was the "*Draft Technical Memorandum, Excavating Grids 4,13,15,29, and 31: Impact on Human Health Risk Assessment,*" dated June 19, 2001, and the second was the "*Technical Memorandum (Revision 1), Reevaluation of Groundwater Using Recently Obtained Data, Human Health Risk Assessment,*" dated June, 2002. Each of these documents is included in the OU1 AR, which is part of the OU2 AR by cross-reference.

The EPA's evaluation of all available information has determined that the data support a preferred alternative of No Action for OU2 at the Site.

TRANS11. The following comment addresses the Endangered Species Act.

> I have a question about the changes in the Endangered Species Act. Do they affect what level you are willing to clean up the Burnett Creek? So are there any species that have been delisted since the Superfund projects started that would have changed?

EPA Response:

Generally, the Endangered Species Act does not affect cleanup levels established for Superfund cleanups. In cases where endangered or threatened species utilize habitat at a Superfund Site, construction activities will be modified or adjusted as possible so as to minimize, or eliminate, adverse disruptions to the local ecology.

The EPA finalized the "*Screening-Level Ecological Risk Assessment, June 8, 1999,"* in which one endangered species, the wood stork (*Mycteria americana*), was identified as utilizing the Site. Observed near the IM4/5 creosote ponds in 1989, wood storks were also subsequently seen onsite prior to completion of the OU1 Remedial Action. The wood stork is currently classified as endangered by the US Fish and Wildlife Service (USFWS), although USFWS recommended in 2007 that the Southeast U.S. breeding population of the wood stork be reclassified as threatened. For further information on that pending reclassification, please see the following document:

http://www.fws.gov/northflorida/WoodStorks/2007-Review/2007-Wood-stork-5-yr-Review.pdf

As discussed in Section 7.0, ecological risk assessments have shown that potentially unacceptable risks to mammals were unlikely from Burnett Creek sediment and biota, while no unacceptable risks were posed for birds and fish. These determinations apply equally to endangered or threatened species.

COMMENTS PRESENTED BY CITIZEN VIA FAX DATED JULY 18, 2012 AND EMAIL DATED SEPTEMBER 18, 2012

FAX1. After attending the public hearing on June 26, 2012, regarding the Environmental Protection Agency (EPA) proposed cleanup remedy of *No Action* at the Brunswick Wood Preserving Site OU2, I request that the comment period be extended.

EPA Response:

The EPA responded by letter of August 16, 2012, to the GEC's written request of August 12, 2012, in which the comment period for the OU2 Proposed Plan was extended through September 19, 2012, to provide the community additional time to review the Administrative Record for OU2, resulting in a total of 90 days for public comment. This extended comment period provided ample opportunity for review and participation by interested community members and groups in the decision making process.

FAX2. Daniel Parshley spoke on behalf of the Glynn Environmental Coalition (GEC), which I am a member of, and objected, to the short notice of the meeting and the fact that Tropical Storm Debby caused a hardship for individuals who wanted to attend. I am particularly concerned that the new technical advisor for the GEC was not able to attend and did not have an opportunity to provide advice to the community which is the purpose of the technical assistance grant.

EPA Response:

The EPA regrets that the TAG Advisor was unable to attend the public meeting on June 26, 2012. However, the TAG Advisor had a schedule conflict that required his presence in New Jersey. Tropical Storm Debby did not prevent his attendance at the June 26, 2012, public meeting for the Brunswick Wood Preserving Site.

FAX3. The materials provided at the meeting provide conflicting information. On the fifth page of the proposed plan there is a breakdown of the fish species in the Upper Turtle & Buffalo Rivers (St.Simons Estuary) along with the recommendations for consumption and the chemical of concern with indication of a shellfish ban. The proposed *No Action* means that the community which has been waiting for the cleanup since 1991 cannot reasonably expect the quality of the seafood to ever change.

In the Summary of Site Risks under the heading of Burnett Creek Sediment the report states:

"Most of the dioxin levels in the sediment exceed the dioxin ATV for mammals but the cumulative weight of evidence (primarily the food chain modeling) indicates that the exceedances (sic) would cause no measurable harm to mammalian wildlife".

I don't understand. We mammals are being told to constrain our consumption of the fish. The birds eat the fish and then they are eaten by the wildlife which is not following the consumption recommendations. How can that statement be correct?

EPA Response:

The table referred to in this comment is the State of Georgia's fish consumption guidelines for the Turtle River upstream of Highway 303, shown as Table 2 in Section 5.1.2.2. These fish consumption guidelines relate to human health for reasons not related to Brunswick Wood Preserving (e.g., PCBs and mercury). Those determinations are not part of this OU2 selected remedy because OU2 addresses Site-related potential risk to ecological receptors.

The EPA appreciates the concern regarding the appropriate creek biota sampling methodology to determine potential risk to human health. As such, the EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

FAX4. Another concern I have is that the proposed remedy of No Action addresses just the contaminants from the Brunswick Wood Preserving Site and does not take the LCP Site contaminants into consideration. How will this proposal affect our ability to have contaminants from the LCP site cleaned up?

EPA Response:

The LCP Chemicals Site is also undergoing remediation under Superfund's National Priorities List, and is not the subject of this OU2 selected remedy for Brunswick Wood Preserving Site. The choice of remedy for OU2 has no effect on choices that have or will be made for the LCP Chemicals Site. For more information on the LCP Chemicals site status, please contact Mr. Galo Jackson, the EPA's Remedial Project Manager for the LCP Chemicals Site, at 404-562-8937 or via email at jackson.galo@epa.gov.

EMAIL5. My concerns regarding the proposal of no action in the cleanup of the Burnett Creek are based on my concern for the consumption of contaminated fish from the waters. If I understand correctly the amounts of contaminants are being reduced naturally and therefore the EPA believes a cleanup is not necessary. Just because the contaminants are being moved around or being consumed by fish and wildlife and are leaving the site does not mean the health hazard has been removed. As I said in my request for an extension of the public comment period, I am concerned that there are fish advisories which will not go away any time in the near future. If we are being told to limit our intake of the local fish the threat still exists. Unfortunately, the fish advisories are mainly posted at fishing locations and I have yet to see a fish advisory in a local restaurant. The places where the uninformed, under educated local citizens are eating do not warn of the hazard. As long as local restaurants are allowed to sell local fish without warning the consumers then the threat to public health still exist so the source of the pollution needs to be removed.

EPA Response:

The most contaminated sediments in Burnett Creek were excavated in 2008. Based on the information in the OU2 AR, contaminant concentrations in Burnett Creek biota and sediment do not pose potentially unacceptable risks to ecological receptors. As such, further action under OU2 is not necessary.

The EPA appreciates the concern regarding the appropriate creek biota sampling methodology to determine potential risk to human health. As such, the EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

COMMENTS PRESENTED BY THE GLYNN ENVIRONMENTAL COALITION (GEC), LETTER DATED SEPTEMBER 17, 2012

GEC1. At the June 26, 2012 EPA Public Comment Meeting on the Proposed Plan for Operable Unit Two (OU2) encompassing Burnett Creek and other estuarine areas, the EPA received comments about potential human health risks from consumption of contaminated seafood. The EPA informed those at their Public Comment meeting on the Proposed Plan for OU2 that the human health risks from consumption of contaminated seafood would be handled under OU1, the Upland Operable Unit for the Site. This statement from the EPA has caused a lot of confusion due to the Administrative Record for OU2 including a Human Health Risk Assessment (1). Even though the document is called a Memorandum, the text clearly describes the intent.

> *"Assessment of human health risks from dioxins furans.* Data are presented for dioxins/furans in sediment and biota but no assessment of human health risk is done. With the EPA recently verified reference dose for TCDD (IRIS 2012), the site data can be screened/assessed based on human exposure."

EPA Response:

OU2 addresses potential ecological risks, primarily to Burnett Creek and the surface water pathway, based upon the Baseline Ecological Risk Assessment (BERA). However, the EPA Region 4's Technical Support Section was also asked to review the OU2 Remedial Alternatives Screening & Evaluation Technical Memorandum from a human health perspective, since this memo addressed the State of Georgia's fish consumption guidelines and the additional biota and sediment samples that had been collected in Burnett Creek in October/November 2011. This was done in Kevin Koporec's memorandum of April 13, 2002, to Brian Farrier. No human health concerns were noted in the 2011 samples. This evaluation was made based on the available data without regard to fish size.

GEC2 and GEC3. The Human Health Risk Assessment (1) Memorandum does acknowledge knowing about the State of Georgia Seafood Consumption Advisory and the lack of information to complete an assessment. The Memorandum states:

> "Section 2.2 - Public Health Assessment.
> On what contaminant(s) in Burnett Creek/Turtle River is the state's fish consumption advisory based? If not based on dioxin s/furans, I assume it is based on contaminant(s) originating from a source other than the Brunswick Wood Preserving site(?). This issue should be discussed further in this Tech Memo. The screening of health risks from the calculated TEQ values in edible fillets showing no unacceptable risks (previous comment) can be passed to the Georgia DNR office that assesses the need for consumption advisories so that they can include it in their database as appropriate."

Even though the human health risk assessor acknowledges the consumption advisor(y) should be discussed further in the memo, there is no discussion. Instead, and after previously stating the samples being analyzed for risk were biological, the toxicologist recommends the "...edible filets..." show no unacceptable risk. The toxicologist does not appear to understand the "edible filets" to which he is referring are from fish 2 ounces in weight and nowhere near the size consumed by people.

The EPA has clear criteria for selecting seafood used to evaluate human health risk, and the samples violated the EPA protocols (2).

> "EPA recommends that neither spawning populations nor undersized juvenile stages be sampled in fish contaminant monitoring programs. Sampling of target finfish species during their spawning period should be avoided as contaminant tissue concentrations may decrease during this time (Phillips, 1980) and because the spawning period is generally outside the legal harvest period. Note: Target finfish species may be sampled during their spawning period if the species can be legally harvested at this time. **Sampling of undersized juveniles of species that use estuaries as nursery areas is precluded by EPA's recommended monitoring strategy because juveniles may not have had sufficient time to bioaccumulate contaminants or attain harvestable size."** (emphasis added)

The bioaccumulation of dioxin and furan would be significantly higher in fish the size and type caught and consumed by people. In addition, the toxicologist recommends his conclusions be passed on to the Georgia DNR to be included in their database. The EPA has clear procedures for assessing Human Health Risk from seafood, and particularly in areas with multiple contaminants (2). The EPA states:

> "EPA provides guidance on chemical mixtures in risk assessments in Guidelines for the Health Risk Assessment of Chemical Mixtures (U.S. EPA, 1986c). EPA has recently published a supplement to the 1986 guidelines (U.S. EPA, 1999a). Tllis document is intended to reflect the evolutionary scientific development in the area of chemical mixtures risk assessment. It proposes several different approaches depending on the nature and quality of the available data, the type of mixture, the type of assessment being made, the known toxic effects of the mixture or its components, **the toxicologic or structural similarity of a class of mixture or of mixture components, and the nature of the environmental exposure."** (Section 2.3.4, Page 2-20)

The State of Georgia Seafood Advisory is based upon chemicals that are "...toxicologic or structural similarity of a class of mixture..." which is PCBs in this case. The PCBs, dioxin, and furan can be additive to produce a TEQ. The guidelines established by the EPA were not followed for this Human Health Risk Assessment. Furthermore, the Proposed Plan for OU2 acknowledges the presence of PCBs and presents a table from the Georgia Department of Natural Resources listing PCBs as the chemical of concern. Interestingly, the same information concerning PCB contamination was not shared with the EPA toxicologist conducting the human health risk assessment even though the Memorandum does reference the seafood consumption advisory.

EPA Response:

Burnett Creek is a tributary to Cowpen Creek, which then feeds into the Turtle River upriver of Hwy 303, and the State of Georgia has placed fish consumption guidelines on this reach of the Turtle River. The EPA discussed these fish consumption guidelines in the OU2 Proposed Plan which was presented to the public on June 26, 2012. The guidelines are based on contaminants (e.g., PCBs, mercury, and the National Shellfish Sanitation Program's shellfish ban) which are unrelated to the Brunswick Wood Preserving Site.

EPA's response to comment TRANS15 in the 2002 OU1 ROD stated that bioaccumulation of dioxin in larger fish was not thought to be a public health concern in Burnett Creek. It was noted that Burnett Creek's headwaters are just upstream of Perry Lane Road, with the creek and its tidal flats comprising

about 18 acres between Highway 341 and Perry Lane Road, and that although large fish may enter the creek at high tide, they would not be expected to obtain an appreciable portion of their diet between Perry Lane Road and Old Jesup Road. With regard to the 2000 samples, it was stated that:

> Dioxin was not detected in the edible fillets from the mullet sample taken at the Hwy 341 bridge. The biota sampling was also done in November, which is generally a good time of year for such edible species as flounder, black drum, redfish, and speckled trout to be present in estuarine tributaries. However, these species were not found at the three sample stations from Perry Lane Road to Highway 341. EPA recognizes that the mullet were relatively small; however, larger specimens were not found.

In the "*Remedial Investigation Report, Operable Unit Two, Burnett Creek Biota and Sediment, October/November 2011,*" dated April 17, 2012, it was stated:

> Mummichogs were collected from all three locations; shrimp were collected at the two lower stations (BW1 and BW2); and mullet and blue crab were collected only at the lower station at Hwy 341 (BW1). Attempts were made to collect larger species, such as red drum and spotted trout, using both hook and line and gill nets, but these methods and attempts were unsuccessful.

and:

> Striped mullet samples consisted of two samples, each containing 10 fish, with all fish in the same size class (within 75% total length of each other). Size ranges were similar for each sample, ranging from 114 mm to 151 mm in length *(4.4" – 5.9")*, for sample BW1MUL1 and 118 mm to 152 mm in length *(4.6" – 5.9")*, for sample BW1MUL2. These sizes were somewhat smaller than those comprising the mullet sample collected at the same location in 2000. Sizes for that investigation ranged from 165 mm to 181 mm *(6.5 – 7.1")*.

As discussed in the Response to Comment GEC1, the EPA Region 4's Technical Support Section was asked to review the OU2 Remedial Alternatives Screening & Evaluation (RASE) Technical Memorandum from a human health perspective, since additional biota and sediment samples had been collected in October/November 2011. This was done in Kevin Koporec's memorandum of April 13, 2012, to Brian Farrier. Mr. Koporec's evaluation was made on the available data without regard to fish size.

The RASE Technical Memorandum given to Mr. Koporec for his review contained the same information on the State of Georgia's fish consumption guidelines as shown in Section 5.1.1.2 of this document.

No human health concerns have been noted in the biota samples collected from Burnett Creek in 2000 and 2011, which have included shrimp, blue crabs, and mullet. The EPA understands that the mullet fish collected from the creek were small and unlikely to be of the size eaten by humans. However, the cumulative weight of evidence suggests that bioaccumulation of Site dioxins above levels of public health concern in larger fish is unlikely in Burnett Creek. In addition to the factors discussed above, this

cumulative weight of evidence also considers the natural recovery processes that have been shown to be taking place since 2000.

Polychlorinated biphenyls (PCBs) are not associated with the Brunswick Wood Preserving Site. None of the Burnett Creek sediment samples collected during the Phase I and Phase III Remedial Investigation detected PCBs. Sediment and biota samples taken subsequently in Burnett Creek were not analyzed for PCBs.

The EPA appreciates the concern regarding the appropriate creek biota sampling methodology to determine potential risk to human health. As such, the EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

GEC4. The June 19, 2002 Record of Decision (ROD) for OU1 states the following:

> "State of Georgia will work with EPA to include dioxin analysis as part of the next seafood sampling event in this reach of the Turtle River, to fully identify potential public health risk from the Brunswick Wood Preserving site, if any."

and,

> "The State of Georgia's program monitors seafood in the Turtle River at several stations, including the reach from the Buffalo River to Highway 303. This reach includes the Cowpen and Burnett Creek tributaries. The State of Georgia will work with EPA to include dioxin analysis as part of the next seafood sampling event in this reach of the Turtle River (including Burnett Creek itself), to fully identify potential public health risk from the Brunswick Wood Preserving site, if any."

The Glynn Environmental Coalition (GEC) is not aware of any sampling and analysis for dioxin in fish which are the species and size people catch and eat from Burnett Creek and the surrounding creeks and estuary by the State of Georgia. No documents were found in the Administrative Record indicating the EPA has contacted the Georgia Department of Natural Resources, Georgia Coastal Resources Division, or the Georgia Environmental Protection Division concerning sampling and analysis of seafood of the species and size people catch and eat from Burnett Creek for dioxin/furan.

Sampling has been conducted and EPA Region 4, the Georgia Department of Natural Resources, Georgia Coastal Resources Division, and the Georgia Environmental Protection Division all were aware of the sampling and analysis (3). The sampling did include a statistical zone including the Burnett Creek area.

A significant amount of dioxin and furan data is available for the St. Simons Sound estuarine system and the Turtle River area, which includes Burnett Creek, but the EPA failed to include or analyze the data in the Proposed Plan for OU2. (12) (13) (14) (15) Notable is the estuarine system in which the Site is located is among the most studied bodies of water but the EPA has not drawn on this wealth of information. It is

certain the conclusions presented in the Proposed Plan for OU2 would be far different if the full body of scientific knowledge concerning ecological and human health risks was examined.

EPA Response:

As discussed in Section 2.0 of this document, the EPA has sampled biota in Burnett Creek in 2000 and 2011. This data has been shared with the State of Georgia for consideration, as appropriate, as part of its fish consumption guidelines. The public should continue to follow the State's fish consumption guidelines for this reach of the Turtle River.

GEC5, GEC6, GEC7, and GEC8. The AR for the Proposed Plan for OU2 undeniably includes a Human Health Risk Assessment conducted to analyze Site impacts to human health from seafood consumption. The Proposed Plan for OU2 includes a discussion of the "Burnett Creek Biota, Public Health Assessment" and the State of Georgia Seafood Consumption Advisory for the Upper Turtle River & Buffalo Rivers (St. Simons Estuary). The Proposed Plan of OU2 extensively discusses risk to human health from seafood contaminated by the Brunswick Wood Preserving Superfund Site, and seafood contamination in general from the multiple sources throughout the St. Simons Estuary. What is lacking in the proposed plan is an objective analysis of the existing data that currently forms the basis of the State of Georgia Seafood Consumption Advisory. Notable is the same statistical areas as discussed in the Proposed Plan for OU2 were used for the 2011 seafood sampling event (3). The EPA Region 4 Proposed Plan for OU2 does not use the EPA's own guidance for the evaluation of human health risks, which is a completed exposure route (2). The decisions and assumptions being made by the EPA at the Brunswick Wood Preserving Superfund Site are likely of themselves a significant risk to human health.

The EPA contractors could not catch Sea Trout, Red Fish (spot tail bass), Black Drum, Croaker, or Spot. The EPA's conclusion - these fish are not present in Burnett Creek, even though other documents clearly state recreational fishing takes place in Burnett Creek (4). The ROD states, "Burnett Creek is a resource for both recreational and seafood consumption purposes." Their lack of fishing prowess is being used to make conclusions. The Site documents show they did not even use proper fishing techniques to catch the targeted species. Most importantly- THE LACK OF DATA IS NOT DATA. The data presented in support of the Proposed Plan is deficient in quantity and quality, and likely would be rejected by the EPA if presented by a Potentially Responsible Party at a Superfund Site. The EPA should be held to the same scientific standards as they require of others and follow their own procedures and protocols. Successful seafood sampling has been conducted in the St, Simons Estuary System for many years, and there are numerous examples to draw upon for appropriate sampling and analysis techniques (3)(5). Notable is that both the examples of successful collection of seafood of the species and size consumed by people were collected at other Superfund Sites in the St. Simons Estuary System, under the direction or knowledge of EPA Region 4 Remedial Project Managers, and available for use in the Proposed Plan for OU2.

The EPA should be held accountable for multiple failures to either obtain or evaluate available data in the EPA's possession using the protocols established by the EPA.

The St. Simons Sound is a very contaminated estuary system and our goal is to obtain information so the Georgia Environmental Protection Division can issue accurate and protective seafood consumption advisories. The cavalier attitude of the EPA and their failure to use data they have from other Superfund sites in this estuary system shows significant problems addressing completed exposure routes from contaminated seafood, and an inability to recognize when chemicals are additive (PCBs and dioxins/Furans).

There is a serious problem with the EPA's approach to protecting human health from a completed exposure route, and this problem is just the type Congress intended to protect the American public from when they passed CERCLA and mandated a Public Health Assessment (PHA) by the Agency for Toxic Substance and Disease Registry (ATSDR). The OU2 Proposed Plan should be delayed until the EPA obtains a competent contractor to collect seafood of the species and size consumed by people from Burnett Creek.

The "seafood" being used to conclude there is no human health risk are not the size and type consumed from Burnett Creek. The mullet were from less than 2 ounces to just over 2 ounces. Data from fish people do not eat was extensively used and depended upon to make conclusions concerning human health risks. At a minimum, a bioaccumulation factor should have been applied to the results, and consumption amounts increased to more accurately assess human health risks. Still, the underlying data would raise doubts about any conclusions concerning human health risks. Sampling and analysis of seafood species of the size consumed by people are needed to evaluate human health risks.

The EPA has clear guidelines concerning which seafood species should be targeted for analysis (2).

> "3.4.2 Target Finfish Species
> Two problems were encountered in the selection of target finfish species for monitoring fish tissue contamination at estuarine/marine sites regionally and nationally. First is the lack of finfish species common to both Atlantic and Gulf Coast waters as well as Pacific Coast waters. Species used in several federal fish contaminant monitoring programs are compared in Table 3-18. Members of the families Sciaenidae (seven species), Bothidae (two species), and Pleuronectidae (eight species) were used extensively in these programs. Bottom dwelling finfish species (e.g., flounders in the families Bothidae and Pleuronectidae) may accumulate high concentrations of contaminants from direct physical contact with contaminated bottom sediments. In addition, these finfish feed on sedentary infaunal or epifaunal organisms and are at additional risk of accumulating contaminants via ingestion of these contaminated prey species (U.S. EPA, 1987a). For finfish species, two Atlantic coast species, spot (Leiostomus xanthurus) and winter flounder (Pseudopleuronectes americanus), are recommended and/or used in three of the national monitoring programs, and the Atlantic croaker (Micropogonias undulatus) is recommended and/or used in two national monitoring programs."

Notable is that the other two EPA Superfund Sites in the St. Simons Sound Estuary System do use the EPA protocols for selecting species to be targeted for sampling and analysis. Furthermore, the seafood collection methods are appropriate for the species and size desired.

EPA Response:

The issues raised in these four comments are addressed in the EPA's response to comments TRANS9, FAX3, FAX4, FAX5, EMAIL1, GEC2, and GEC 3.

The State of Georgia's fish consumption guidelines for the Turtle River upstream of Highway 303 are shown as Table 2 in Section 5.1.2.2. These fish consumption guidelines relate to human health for reasons not related to Brunswick Wood Preserving (e.g., PCBs and mercury). Those determinations are not part of this OU2 selected remedy because OU2 addresses Site-related potential risk to ecological receptors.

The EPA appreciates the concern regarding the appropriate creek biota sampling methodology to determine potential risk to human health. As such, the EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

GEC9. The public has been expressing concerns about the health risks from Burnett Creek since at least the 1970s. At the EPA Public Hearing for the OU1 (Upland) ROD, the public continued to express these concerns:

'Comments were also voiced concerning Burnett Creek, with Respect to contaminant levels and the approach EPA was taking with remediation of the creek.

'I'm a little concerned... that there is creosote built up in the bottom of Burnett Creek.'

'What about the pollution that's already in the creek? [There's] four inches or more of creosote at the bottom of that creek. What is going to be done about cleaning up the creek?'

'Four inches of creosote was reported to cover the bottom of Burnett Creek in the early 70s, and spills continued until [the site] closed in 1991.'

'We're worried about what happens to the larval production in the estuaries which produces our shrimp and crab.'

'The proposed action will virtually assure that the contamination of Burnett Creek will have no place to be contained or treated. It virtually assures it.'

'Why was [the baseline ecological risk assessment] not done? Wouldn't [that] provide a lot of the information we've been seeking about human health risks from eating the seafood from Burnett Creek?'

EPA Response:

It is known that free product was discharged to Burnett Creek during site operations, and it is possible that creosote existed up to a depth of four inches in depositional areas during the 1970s. However, Table 6 shows that as of the year 2000, contaminant levels have declined such that free product no longer exists in Burnett Creek sediments."

Contrary to the EPA's assertions at the public comment meeting, free product still exists in Burnett Creek and the GEC can demonstrate this at any time EPA Region 4 wishes. Furthermore, the EPA has not taken action to alleviate public concerns about potential health threats from the consumption of contaminated seafood or conducted the sampling and analysis need to issue a seafood consumption advisory.

EPA Response:

The excerpts cited in comment GEC9 were taken from the 2002 OU1 Record of Decision's comment TRANS2, which was voiced verbally during the July 26, 2001, public meeting for the OU1 Proposed Plan. As noted in the EPA's response to the OU1 TRANS2 comment at that time, it is known that free product was discharged to Burnett Creek during site operations, and it is possible that creosote existed up to a depth of four inches in depositional areas during the 1970s. Also, Table 6 in the 2002 OU1 ROD showed that as of the year 2000, contaminant levels had declined such that free product no longer existed in Burnett Creek sediments.

From 2007 to 2011, cleanup actions costing $29.5 million were undertaken as part of OU1, including control of upland sources and the excavation of the most contaminated sediment from two areas in Burnett Creek in 2008, essentially eliminating future contaminant releases to the creek.

In 2011, additional biota and sediment sampling in Burnett Creek provided evidence that natural recovery processes such as sorption, burial, and dispersal, or a combination thereof, have reduced, and are expected to continue to reduce, contaminant levels in creek sediment and biota over time. In addition, ecological risk assessments show that potentially unacceptable risks to mammals are unlikely from Burnett Creek sediment and biota, while no unacceptable risks were posed for birds and fish.

GEC10. Since the EPA has shown an inability to utilize seafood sampling data from the LCP Chemicals Superfund Site and other sources, the Administrative Record from the LCP Chemicals Superfund Site (LCP Site) should be added to the Brunswick Wood Preserving Superfund Site Administrative Record.

EPA Response:

The EPA has evaluated the request to include certain documents in the AR for the Brunswick Wood Preserving Site (submitted via email by the Glynn Environmental Coalition on September15, 2012), but determined that it is not appropriate to include the requested documents in the AR. The AR is the specific body of documents that "forms the basis" for the selection of a particular response at a Site. The EPA has not considered information from the LCP Site in choosing the remedy for the Brunswick Wood Preserving Site. Consequently, only documents which were considered or relied upon in the EPA's decision-making belong in the AR.

GEC11. The LCP Site is known to have discharged dioxin/furan, in addition to PCBs. The EPA has incorrectly made an assumption that the dioxin levels decrease with distance from the Brunswick Wood Preserving Site, which will only be true to a certain extent. Statements like this demonstrate the EPA does not have an understanding of the other dioxin sources in the St. Simons Sound estuarine system. Dioxin is known to have been released, or continue to be released from the following: Brunswick Wood Preserving Superfund Site, LCP Chemicals Superfund Site, Georgia Pacific Pulp and Paper Mill, Hercules Incorporated, Terry Creek Dredge Spoil Areas/Hercules Outfall Site. (12)(13)(14)(15)

EPA Response:

The OU2 ROD considers only the actions relevant to the potential for ecological impact from the Brunswick Wood Preserving Site. Both the LCP Chemicals and Terry Creek Dredge Spoil Area/ Hercules Outfall Sites are also undergoing remediation under Superfund's National Priorities List, and are not the subject of the OU2 selected remedy for Brunswick Wood Preserving Site. For more information on the LCP Chemicals Site status, please contact the EPA's Remedial Project Manager Mr. Galo Jackson, at 404 562 8937 or via email at jackson.galo@epa.gov. For more information on the Terry Creek Dredge Spoil Area/ Hercules Outfall Site status, please contact the EPA's Remedial Project Manager Mr. Scott Martin, at 404 562 8916 or via email at martin.scott@epa.gov.

GEC12. The OU1 ROD for the Site states:

> "The State of Georgia also has several years of fish samples that have been analyzed at two fish collection stations on the Turtle River, one of which is near Highway 303. That data also indicates that bioaccumulation of dioxin is not a public health problem in the Turtle River or its tributaries."

Important to note is the State of Georgia did not sample for dioxin at the Highway 303 location. THE LACK OF DATA IS NOT DATA AND DOES NOT INDICATE THE PRESENCE OR ABSENCE OF DIOXIN. The State of Georgia did sample for PCBs, which were found and were a driving factor in the seafood advisory discussed in this section of the ROD. Interestingly, the EPA failed to realize that the PCBs driving the seafood advisory and the dioxin data they obtained would be additive and increase the human health risk from the consumption of contaminated seafood from Burnett Creek.

EPA Response:

This comment expresses concern about a statement in the OU1 ROD regarding implications of possible dioxin bioaccumulation as it relates to human health. The State of Georgia used PCB contamination (unrelated to the Site) as part of the basis for its fish consumption guidelines for the Turtle River upstream of Highway 303. Those determinations are not part of this OU2 selected remedy, because OU2 addresses Site-related potential risk to ecological receptors.

The EPA appreciates the concern as it relates to data adequate to determine potential risk to human health. As such, the EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

GEC13. The Site OU1 (Uplands) ROD noted:

> "The State of Georgia uses a dioxin level of 3 parts per trillion TEQ (ppt, measured in toxic equivalents or TEQ) to issue a fish advisory Levels below 3 ppt TEQ would not trigger an advisory (none of the November 2000 biota samples from Burnett Creek exceeded this value except the non-edible mullet carcasses). Levels between 3 and 10 ppt TEQ would trigger an advisory recommending no more than one meal per week, while levels between 10 and 30 ppt TEQ would trigger an advisory recommending no more than one meal per month. Levels exceeding 30 ppt TEQ would trigger an advisory recommending that the fish not be eaten."

The EPA failed to realize a bioaccumulation factor should be applied to the fish data used for this conclusion. The fish used were 2 ounces and not of the size people eat. The EPA did note the whole body dioxin levels did exceed fish advisory levels. Since the fish were of the size and types consumed by larger prey fish people do eat, the data was relevant. Also, the prey fish would not filet the fish before eating. The EPA failed to understand the ramifications of the data or purposely used it to mislead the public about the potential threats from consumption of contaminated seafood from the Burnett Creek area. Neither thought is comforting. At a minimum, the data should be corrected (bioaccumulation factor) prior to producing the final Proposed Plan for OU2. Furthermore, the updated EPA Integrated Risk and Information System dioxin/furan and dioxin like compounds (i.e. PCBs) data should be used, as recommended by the EPA toxicologist (1)(6)(7).

EPA Response:

The excerpt cited in comment GEC13 was taken from the 2002 OU1 Record of Decision, in the EPA's response to comment GEC4, which was voiced verbally during the July 26, 2001, public meeting for the OU1 Proposed Plan. The EPA's response at that time noted that, except for the non-edible mullet carcass samples, none of the November 2000 biota samples from Burnett Creek exceeded the State's 3 ppt dioxin level used to issue a fish consumption guideline. The same findings were shown with regard to the 2011 biota samples collected from Burnett Creek. As shown on Table 1, none exceeded the 3 ppt mammalian TEQ, except for the non-edible mullet carcass samples.

The State of Georgia's fish consumption guidelines for the Turtle River upstream of Highway 303 are shown as Table 2 in Section 5.1.2.2. These fish consumption guidelines relate to human health for reasons not related to Brunswick Wood Preserving (e.g., PCBs and mercury). Those determinations are not part of this OU2 selected remedy because OU2 addresses Site-related potential risk to ecological receptors.

The EPA appreciates the concern regarding the appropriate creek biota sampling methodology to determine potential risk to human health. The EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

GEC14. The Agency for Toxic Substance and Disease Registry (ATSDR) has commented on the lack of data which is hindering their ability to assess human health risks from the Site. ATSDR noted in the February 9, 1999 Public Health Assessment:

> "Consumption of fish from Burnett Creek was identified as a potential exposure pathway. Contaminated groundwater from the site appears to be migrating toward and releasing into Burnett Creek. Certain toxic compounds identified at BWP can accumulate in fish, including PAHs, dioxins, and metals. Because Burnett Creek is potentially contaminated with chemicals that are known to bioaccumulate in fish and no fish samples have been collected from the creek, it is unknown if this pathway is of public health concern. ATSDR cannot fully evaluate this exposure pathway without Burnett Creek fish monitoring data."
>
> And under Conclusions:
>
> "Indirect exposure to site contaminants through consumption of Burnett Creek fish pose an indeterminate public health hazard. Burnett Creek fish may be accumulating even low levels of site-related contaminants (e.g., dioxins/furans) in sediment to levels associated with public health hazards to people who eat fish from Burnett Creek. Supporting fish sampling data, however, are not available to enable a full evaluation."
>
> And under Recommendations:
>
> "If persons fish along Burnett Creek near the site, ATSDR recommends actions be taken (e.g., fish monitoring) to determine the extent, if any, to which Burnett Creek fish are accumulating site-related contaminants (e.g., dioxins) to levels that could pose health hazards to persons consuming Burnett Creek fish."

As noted in the ROD for OU1, people do along Burnett Creek near the Site. The EPA has failed to produce data of the quality and quantity needed to evaluate risks to human health from consumption of seafood from Burnett Creek and the surrounding area.

EPA Response:

The Agency for Toxic Substance and Disease Registry's (ATSDR) Public Health Assessment, dated February 9, 1999, is discussed in the EPA's response to comment TRANS10.

GEC15. The EPA is failing to provide information relevant to the data being reviewed by risk assessors. The April 13, 2012, Memorandum from Kevin Koporec, Toxicologist Technical Support Section, Superfund Support Branch to Brian Farrier, EPA Remedial Project Manager, noted the following (1):

> "On what contaminant(s) in Burnett Creek/Turtle River is the state's fish consumption advisory based? If not based on dioxin s/furans, I assume it is based on contaminant(s) originating from a source other than the Brunswick Wood Preserving site (?). This issue should be discussed further in this Tech

Memo. The screening of health risks from the calculated TEQ values in edible fillets showing no unacceptable risks (previous comment) can be passed to the Georgia DNR office that assesses the need for consumption advisories so that they can include it in their database as appropriate."

The EPA failure to inform toxicologist Kevin Koporec about the small size of the seafood sampled and note fish were not of the size and species consumed from Burnett Creek undermined the conclusions. The assumption that the data was from seafood of the size and species consumed by people was evident in the above statement when Mr. Korporec stated,"... in edible fillets.... "Furthermore, no information was provided about the basis of the current seafood consumption advisory. Therefore, an incorrect and unsupportable conclusion was reached:

"Thus the reported dioxin (TEQ) data are within risk based levels for consumption of recreationally caught fish."

The actions of the EPA are a risk to the health and welfare of those catching and consuming seafood from Burnett Creek and the surrounding area. The EPA should have immediately informed Mr. Korporec that the filets were not from fish the size people eat and not representative of the species eaten from the Burnett Creek area. At a minimum, the seafood sampling specified in the ROD should be conducted without further delay. If the recommendations of Kevin Koporec to pass on his conclusions has been followed, the EPA should immediately notify the Georgia Environmental Protection Division so the data can be extracted from their database. To do otherwise will lead to the corruption of data (and the body of scientific knowledge) meant to protect human health and could result in a false belief by residents and fishers that the seafood is safe to eat.

The recommendation of Kevin Koporec that the data and conclusions should be passed on to the Georgia DNR is nothing less than horrifying. Bad data leads to bad decisions, and the actions of the EPA are endangering the health and welfare of the citizens ofBrunswick, Glynn County, Georgia. The seriousness of this matter cannot be stressed enough and the EPA should take immediate action to correct the situation.

EPA Response:

The issue raised in comments GEC15 was addressed in the EPA's response to comments GEC1, GEC2, and GEC3.

GEC16. The EPA should immediately implement seafood sampling every five years for the species of fish and the size of fish people eat from Burnett Creek area. The data should be collected in October or November of the year before the 5-Year Review for the Site is conducted so the data is available for use during the Review. Furthermore, the Georgia Environmental Protection Division toxicologist and hazardous waste division should have input in to the sampling plan methods. Since the 5-Year Review is currently in progress, the first round of seafood sampling should be conducted in the Fall of 2012 and subsequent sampling the year before the 5-Year Review.

EPA Response:

EPA appreciates the concern regarding the appropriate creek biota sampling methodology to determine potential risk to human health. As such, the EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

GEC17. Several studies in the St. Simons Sound Estuary System have noted potential impact to human health from the contaminant levels observed in marine mammals (8)(9)(10). The impact to marine mammals is not discussed or analyzed in the Proposed Plan for OU2. Dolphins and manatees are known to enter and feed in Burnett Creek. Other aquatic dependent species like the mink and otter are also known to inhabit Burnett Creek. Notable is both the dolphin and otter do and will consume fish larger that those caught and analyzed by the for use in the Proposed Plan for OU2. Furthermore, the manatee does ingest sediment while foraging on marine vegetation and an analysis should be conducted of sediment contamination in vegetated areas, which would be the flats along Burnett Creek. Recent data is lacking for the flats along Burnett Creek.

EPA Response:

As part of OU2, EPA conducted a BERA to determine the current and future effects of Site contaminants on ecological health. This document is available for review as part of the AR (see "Step 3, Final Problem Formulation, Baseline Ecological Risk Assessment," dated November 9, 2009). Pursuant to EPA's Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (EPA 1997), a site management decision was made at that time to conclude the BERA at Step 3 of the BERA process based on the low potential risks identified for wildlife. The most recent data show that creek sediment and biota do not pose unacceptable risks to birds and fish, while for mammals, potentially unacceptable risks are unlikely from sediment or from ingestion of biota prey items, and therefore no remedial action is warranted for OU2. Step 3 of the BERA process relies on generalized assessment/measurement endpoints and conservative screening values to identify potential risks to wildlife.

An assessment endpoint is an environmental value to be protected (e.g. populations of birds, fish, or mammals), while a measurement endpoint is a measure of biological effects (e.g., mortality, reproduction, or growth). Specific assessment endpoints such as dolphins, manatees, otters, and mink are identified as warranted by a BERA when it is continued beyond Step 3 of the BERA process. This was not done at the Site because it was not warranted.

Regarding the manatee and the dolphin, it is believed that these mammals would be less exposed to contaminants from Burnett Creek than most other ecological receptors, due to the large home range of the manatee (which moves among several states over the course of a year) and the dolphin (which ranges 13-33 miles or more) compared to an ecological receptor that may spend its whole life in the Burnett Creek area. Because of the expected low frequency of use of Burnett Creek, coupled with the anticipated low risk of adverse effects for all ecological receptors as determined by the BERA, it is not believed that the manatee or the dolphin is at unacceptable risk from Site contaminants in Burnett Creek. The EPA has

conducted the ecological risk assessment process in conjunction with NOAA and the U.S. Fish & Wildlife Service, the federal trustees for wildlife species.

GEC18 and GEC19. A search of literature by the EPA would have expanded the available database for Burnett Creek, including seafood sampling (10). The presence of these seafood sampling results from Burnett Creek further refutes the EPA claim that fish of the size and species people eat are not present.

The St. Simons Estuarine System is arguably one of the most studied and analyzed estuaries anywhere in the world and many of these studies have been conducted under the oversight of the EPA or at the direction of the EPA. The lack of data, or the selective nature of the data used in the Proposed Plan for OU2 is curious and raises many questions about the approach of the EPA to cleanup of the site, standards being used, and continuity with the other cleanups and studies in which the EPA is currently involved in the St. Simons Estuary System.

The GEC expects the EPA to be an active participant in the investigation and problem formulation statement for a Site. Involvement of the EPA in journal articles, peer reviewed and published, is more typical than the quantity and quality of data being used for the OU2 Proposed Plan (11). The GEC doubts the study design, methods, and results rise to this level, nor to the level expected of the Potentially Responsible Parties (PRP) for the other two Superfund Sites in the St. Simons Estuary System.

In the referenced study, PCB Contamination at the LCP Chemicals Superfund Site. the EPA calculated Toxic Equivalents (TEQs) for 2,3,7,8-TCDD from Aroclor 1268 (PCB-1268) (11). Likewise, the EPA can do so with Site data and add the result to the TEQ for PCBs in recent seafood samples to obtain a more accurate assessment of the risk to human health from seafood consumption.

EPA Response:

The issues raised in comments GEC18 and GEC19 are addressed in the EPA's response to comments FAX3, FAX4, FAX5, EMAIL1, GEC2, and GEC11.

GEC20. The Proposed Plan for OU2, taken as a whole, appears to have been written in support of the conclusion that no action is needed at the Site. The underlying studies, samples, and analysis appear to have been designed to support a predetermined conclusion. The absence of the wealth of data and studies from the St. Simons Sound estuarine System, many of which were conducted at the direction of the EPA, further supports the appearance of a predetermined conclusion and selective use of data. The Stakeholder Agencies like NOAA and the Georgia Department of Natural Resources have information that would greatly add to the ecological assessment, but these studies, reports, and data are noticeably missing. Overall, it is what is missing from the Proposed Plan for OU2 that is most noticeable followed by the poor quality and quantity of the studies and data used in support of the Plan.

EPA Response:

The State of Georgia, as represented by the Georgia Environmental Protection Division (GAEPD), has been the support agency during the Remedial Investigation and Feasibility Study (RI/FS) process for the Brunswick Wood Preserving Site. As such, they have reviewed the documents that comprise the RI/FS and have been involved in the process. The State concurs with the Selected Remedy for OU2 at the Site.

The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) were also involved with the RI/FS process at the Site, with both given an opportunity to comment on the OU2 Proposed Plan.

The EPA's determination that No Action is the appropriate remedy for OU2 considers only whether any additional actions are necessary or appropriate to address ecological risks from contamination at the Site. The sampling and analysis were appropriate for this purpose, and support the proposed remedy.

COMMENTS PRESENTED BY THE TECHNICAL ASSISTANCE ADVISOR ON BEHALF OF THE GLYNN ENVIRONMENTAL COALITION (GEC), LETTER DATED SEPTEMBER 18, 2012

Note: All citations quoted in the Specific Comments are as taken from the OU2 Proposed Plan.

ESC General Comment 1. Any impacts to human health should be based on appropriate data collected for a human health risk assessment, not from an ecological data set. The fish collected for a human health assessment need to be large enough individuals of species that humans consume. The tissue levels reported in fish collected in Burnett Creek are from fish that are forage fish, not of a size or species that people eat - the fish are too small. In order to use these results, a bioaccumulation factor needs to be applied to the tissue levels in order to obtain the higher dioxin concentrations expected in larger, predator fish. Geisy et al. (*Dioxins, Dibenzofurans, PCBs and colonial, fish-eating water birds*, Ch. 9 IN: Dioxins and Health, edited by A. Schecter 1994) estimate an accumulation factor of 10 fold or greater from forage fish to predatory fish and as great as millions from water to piscivorous birds. Piscivorous birds often represent a similar trophic level as people. Dioxins and dioxin-like chemicals are notoriously bioaccumulative and concentrations may increase by thousands from one prey species to the predator species (see also Rice et al IN: Hoffman et al. eds. Handbook of Ecotoxicology 2nd ed. 2003). Thus, the levels of bioaccumulative contaminants such as dioxins and PCBs in forage fish do not apply to human health risks.

EPA Response:

The EPA appreciates the concern regarding the appropriate creek biota sampling methodology to determine potential risk to human health. As such, the EPA will consider that concern as part of the Five Year Review for OU1 to determine what additional action, if any, is appropriate to safeguard human health.

The biota samples that have been collected from Burnett Creek in 1997, 2000, and 2011 have included forage fish. However, the 2000 and 2011 sampling also included shrimp, blue crabs, and mullet fish. While the focus for OU2 is ecological health, no human health concerns have been noted in connection with these biota samples.

As discussed in the EPA's response to comments GEC2 and GEC3, the EPA understands that the mullet fish collected from the creek were small and unlikely to be of the size eaten by humans. However, the cumulative weight of evidence suggests that bioaccumulation of Site dioxins above levels of public health concern in larger fish is unlikely in Burnett Creek. This cumulative weight of evidence considers factors specific to Burnett Creek, including the natural recovery processes that have been shown to be taking place since 2000. The Geisy reference cited here, for example, is specific to the Great Lakes.

ESC General Comment 2. In addition, an operable unit that is accessible to humans must undergo proper human health risk assessment; impacts on ecological and human health are not assignable by operable unit

without regard to actual site use. With those points in mind, the OU2 Proposed Plan is lacking a discussion on the human health risks at the site and no analysis of potential exposure pathways. Analysis of risk-based levels need to include fish consumption for subsistence fishing, not just for recreational fishing, as exposure to dioxin will be greater and more frequent for a subsistence angler. Also, testing for additional contaminants alongside dioxin would give a fuller picture of the state of the sediments and their potential impacts on ecosystem and human health. PCBs, known to occur in the aquatic system of which Burnett Creek is a part, and known to act in a dioxin-like mechanism, need to be accounted in the human health assessment.

EPA Response:

As discussed in Section 4.0 of this Record of Decision, the EPA has conducted Site remedial activities in separate parts, or operable units (OUs). The OUs at this Site are defined not by geography but by impact. The subject of this ROD is OU2, which addresses potential ecological risks, primarily to Burnett Creek and the surface water pathway, based upon the Baseline Ecological Risk Assessment (BERA). OU1 focused on human health risk, and as such, did include evaluations of human health risks. These evaluations are discussed in the EPA's response to comment TRANS10.

Polychlorinated biphenyls (PCBs) are not associated with the Brunswick Wood Preserving Site. None of the Burnett Creek sediment samples collected during the Phase I and Phase III Remedial Investigation detected PCBs. Sediment and biota samples taken subsequently in Burnett Creek were not analyzed for PCBs.

ESC General Comment 3. The Proposed Plan decision is for No Further Action in Burnett's Creek, with little to no evidence that the conditions have changed significantly in the past decade. Two major problems

are presented in the data and analysis that underlie the Proposed Plan. A major contaminant in Burnett Creek is the dioxin that came from the Brunswick Wood Preserving Site proper. The appropriate means of determining the status of the creek and biota over time is to sample the creek sediments, biota and surface waters using the same locations, procedures, and species. The sample results need to indicate a statistical change, or at the very least, a consistent and demonstrable trend (declining) across time and space. The Proposed Plan does not present data on water, sediments, or fish tissue that indicate a statistical and consistent decrease in dioxin over time. Nor does the Proposed Plan propose continued monitoring to assess contaminant levels in water, sediments or biota. The data are simply not presented and likely not available to justify "No Further Action" if the justification is a timeline of data on site contaminants in water, sediment and biota and demonstration of low risk anticipated for either people or ecological receptors.

EPA Response:

Chart 1 shows that, with the exception of location 11SD, dioxin levels in the most recent sediment samples in Burnett Creek have decreased by roughly an order of magnitude from 2000 to 2011. Figure 3 shows that sediment samples taken in 2011 were generally co-located at the same location as those samples taken in 2000. These are significant reductions in sediment dioxin levels that indicate that natural recovery processes and remedial actions taken as part of OU1, or a combination thereof, have significantly reduced, and are expected to continue to reduce, contaminant levels in creek sediment and biota over time.

ESC General Comment 4. Burnett Creek is habitat for a manatee observed in 2012, and with a calf in a previous year. The presence of a manatee, a protected species, requires an affirmative determination by the US Fish and Wildlife Service that the dioxin levels in the creek are not a threat to the animals that use the creek for foraging or calving. Aquatic mammals are frequently highly sensitive to dioxin and dioxin-like chemicals, and the combination of dioxins and PCBs is a specific concern. The few research papers on manatees and related species indicate that accumulation of dioxin-like chemicals is a concern for these animals, summarized in the Supplemental Information on manatees at the end of this document. The Proposed Plan will leave contaminated sediments in place in the tidal flats, in the marsh areas, and perhaps, or more likely, in the groundwater beneath Burnett Creek, with no remedy and no real estimation of the impact on human health or ecological resources. This lack of remedy or anticipated improvement in conditions via reduction in contaminant concentrations is a problem that requires immediate correction. The Administrative Record (AR) for the BWP site includes information that fish in the Burnett Creek system have PCB levels in tissues sufficiently high to warrant health advisories. These levels of PCBs need to be considered in the risk analyses for Burnett Creek for both humans and ecological receptors. Mink and some avian species are often more sensitive to these contaminants than are people, especially based on fish consumption exposure routes.

EPA Response:

See the EPA's response to comment GEC17.

The following statement included in the comment is incorrect: "The Administrative Record (AR) for the

BWP site includes information that fish in the Burnett Creek system have PCB levels in tissues sufficiently high to warrant health advisories." As stated in the EPA's response to comment GEC2 and GEC3, PCBs are not associated with the Brunswick Wood Preserving Site. None of the Burnett Creek sediment samples collected during the Phase I and Phase III Remedial Investigation detected PCBs. Sediment and biota samples taken subsequently in Burnett Creek were not analyzed for PCBs.

ESC General Comment 5. The process by which the public was notified and "involved" in this particular Proposed Plan was inadequate in the extreme. The Plan was released with the Administrative Record (AR) for a 30 day review and comment period despite the AR being hundreds of pages of critical documents on which the Plan is based. The official public meeting for the Plan was held in the middle of a tropical storm that caused widespread flooding and other damage, with only a few days notice. Although EPA extended the comment period for the Proposed Plan, the massive file and complexity of the site are not so easily remedied with more time.

EPA Response:

See the EPA's response to comments TRANS1, TRANS6, FAX1, and FAX2.

ESC Specific Comment 1. *"By comparison, the highest levels that had previously been found outside these excavated areas were 102 ng/kg and 179 ng/kg TEQ in the creek bed and tidal flats, respectively."*

These dioxin values are still too high to remain unexcavated after the 2008 excavation. As of February 17, 2012 EPA officially released a new reference dose (RfD), listed in the IRIS database. This new value is 0.7 pg/kg-day and is the value used by EPA to estimate a soil preliminary remediation goal (PRG) of 72 ppt, or 72 ng/kg.

EPA Response:

Figure 3 and Chart 1 show that the 102 ng/kg dioxin level cited here is from a sediment sample taken at location 13SD in 2000, while the sediment sample taken at this same location in 2011 indicated a dioxin level of 4.8 ng/kg. The similar reductions seen in all but one of the 2011 creek bed sediment samples were the primary reason the EPA did not pursue additional sediment sampling in Burnett Creek's tidal flats north of Highway 341.

The contaminant concentrations in Burnett Creek biota and sediment do not pose potentially unacceptable risks to ecological receptors, and do not warrant further excavation of creek sediment. Further excavation of the creek would disrupt the ongoing natural recovery processes and disturb ecological habitat, while potentially increasing the bioavailability of buried contaminants.

The RfDs cited in the IRIS database are human health reference doses, and are not applicable to the ecological risk assessments done for OU2.

ESC Specific Comment 2. The Proposed Plan should provide more details about the 2008 excavation, such as how deep the sediment excavation occurred and how much was removed. A map detailing where the 2008 removals occurred would be beneficial to the reader for the purpose of comparing it to the current sampling locations.

EPA Response:

This information can be found in the *"Burnett Creek Restoration and Closeout Report, Revision 0,"* dated October 2008.

ESC Specific Comment 3. *"In November 2011, EPA collected sediment samples from 21 locations in the creek bed of Burnett Creek (see "Remedial Investigation Report, Operable Unit Two, Burnett Creek Biota and Sediment, October/November 2011"). Based on the results of this sampling, EPA subsequently did not collect sediment samples from the tidal flats of Burnett Creek."*

This needs explanation as the organisms affected by the contaminant load in the creek bed are not the same as those affected by the tidal flats. The tidal flats can be regularly flooded, re-introducing contamination to soils that are accessible to terrestrial organisms.

EPA Response:

See the EPA's response to ESC General Comment 4 and ESC Specific Comment 1.

ESC Specific Comment 4. *"By comparison, the dioxin cleanup standard for site soils used for the OU1 Remedial Action, discussed in the previous section, was 1000 ng/kg TEQ (or 1 µg/kg, which is analogous to 1 part per billion). None of the sediment samples taken in Burnett Creek have exceeded this standard".*

As of February 17, 2012, EPA officially released a new reference dose (RfD), listed in the IRIS database. The new dioxin value is 0.7 pg/kg-day and is the value used by EPA to estimate a soil preliminary remediation goal (PRG) of 72 ppt, or 72 ng/kg.

EPA Response:

See the EPA's response to ESC Specific Comment 1.

ESC Specific Comment 5. *"The significant reductions in dioxin levels seen in creek bed sediments are likely a result of natural recovery processes such as sorption, burial, and dispersal processes, or a combination thereof, assisted by the OU1 RA excavation in 2008 of the most contaminated creek sediments. These natural processes will continue to take place, and dioxin levels in creek sediment should continue to decline with time (as should those in creek biota), without further remedial action."*

Based on the dioxin sampling that has taken place, it can't be assessed what contribution "natural processes" have made to the lower dioxins levels when removal actions have taken place.

EPA Response:
As noted in the EPA's response to ESC General Comment 3, natural recovery processes and remedial actions taken as part of OU1, or a combination thereof, have reduced, and are expected to continue to reduce, contaminant levels in creek sediment and biota over time. The EPA has not attempted to estimate, or quantify, a potential contribution attributable to each of these factors.

ESC Specific Comment 6. The "Upper Turtle & Buffalo Rivers (St. Simons Estuary)" table should be given a proper table number and title and should be referenced in the text as such.

EPA Response:

The table referred to is the State of Georgia's fish consumption guidelines for that reach of the Turtle River, upriver of Highway 303, which includes Burnett Creek. This fish consumption guidelines have been put in place for reasons that are not related to Brunswick Wood Preserving (e.g., PCBs and mercury). The table is shown as Table 2 in Section 5.1.2.2 of this OU2 Record of Decision.

ESC Specific Comment 7. It is customary in official documents that graphs have a figure number and title. The graph following Figure 2 should be assigned a Figure number, and should not be referred to as a chart.

EPA Response:

Dioxin levels in the sediment of Burnett Creek were presented in the OU2 Proposed Plan in two ways for the reader's benefit. On Figure 2 they were represented spatially, while on Chart 1 they were represented graphically.

ESC Specific Comment 8. The graph "Burnett Creek Sediments Dioxin TEQs, Mammalian, WHO 2005 TEFs – Calculated Using Only Detects" should use a half detection limit for non-detects, as this would be a more conservative estimate than what the current graph shows.

EPA Response:

The graph referred to in this comment is Chart 1. The issue of using only detected values reported by the laboratory for dioxin congeners was discussed as shown below in the OU2 Remedial Alternatives Screening & Evaluation Technical Memorandum, dated April 19, 2012, which was prepared to support the rationale for the OU2 remedial approach:

> *"It is EPA Region 4's informal policy to account for non-detected congeners when calculating dioxin TEQs. This can be done by using the sample quantitation limit (SQL) as an actual concentration (the SQL is the concentration above which the congener was not detected). However, such a conservative approach is not always appropriate and may result in overestimation of risk. For example, the background composite sample of forage fish taken from Dillard Creek in 1997 has a lower dioxin level than all but two of the biota samples ever taken from Burnett Creek, with all but two congeners reported by the lab as non-detected. However, if each non-detected congener were accounted for with its corresponding SQL and TEF, this sample then has a calculated TEQ higher than any of the biota samples ever taken from Burnett Creek. The TEQ dioxin values reported here for both sediment and biota do not include non-detected congeners."*

ESC Specific Comment 9. *"Generally, the dioxin levels found in the 2011 creek biota did not show a decline similar to that seen in Burnett Creek sediment."*

This is usually true of contaminated areas as the biota are much slower to show a decrease in chemical loads even after active cleanup of site sediments and a decrease in chemical loads of those sediments. This would be an appropriate section to include a description of bioaccumulation of lipid-soluble contaminants, such as dioxin.

EPA Response:

As part of the OU2 Proposed Plan, the EPA did not include a comprehensive description of bioaccumulation of lipid-soluble contaminants, such as dioxin. Such information is considered reference information not unique to the Site.

ESC Specific Comment 10. The sample IDs need to be further explained relative to the averaging done in the 2011 sample results. For example, are BW1MUC1 and BW1MUC2 samples from the same mummichog, or from two separate mummichog? Is the lipid % relative to the tissue sample or the whole

fish the sample is taken from? Were the 2000 sample results based on an average, or individual fish samples?

EPA Response:

The graph referred to in this comment is Table 1. The 2011 sample results are discussed in the "*Remedial Investigation Report, Operable Unit Two, Burnett Creek Biota and Sediment, October/November 2011,*" dated April 17, 2012, sections 4.0 and 5.0. BW1MUC1 and BW1MUC2 are two separate mummichog samples taken in Burnett Creek at the BW1 location at the Highway 341 bridge. Each mummichog sample consisted of whole body composites, ranging from 49 – 75 individual fish per sample.

Lipid % values for the 2011 samples shown on Table 1 are an average of the two samples taken at each station location, be it whole body composite (mummichog), tissue (shrimp and crab), carcass (mullet), or fillet (mullet).

The 2000 sample results are discussed in the *"Supplemental Sampling Investigation Report, Subsurface Site Soils, Groundwater, and Burnett Creek, May 7, 2001."* The 2000 biota samples were single samples at each station location (i.e., not averaged).

ESC Specific Comment 11. Based on information that a manatee has been frequenting Burnett Creek and may nurse young there, Step 3 of the BERA should be re-instated with assessment endpoints that include the manatee.

EPA Response:

See the EPA's response to GEC17.

This concludes the Responsiveness Summary for the Operable Unit Two (OU2) Record of Decision.

APPENDIX B

CONCURRENCE LETTER FROM STATE OF GEORGIA

Concur

Georgia Department of Natural Resources

2 Martin Luther King, Jr. Dr., SE, Suite 1154 E, Atlanta, Georgia 30334-9000
Mark Williams, Commissioner
Environmental Protection Division
Judson H. Turner, Director
Land Protection Branch
Keith M. Bentley, Chief
Phone: 404/656-7802 FAX: 404/651-9425

CERTIFIED MAIL
Return Receipt Requested

September 13, 2012

Mr. Franklin E. Hill
Division Director
Waste Management Division
USEPA Region IV
61 Forsyth Street SW
Mail Code: 9T25
Atlanta, GA 30303-8960

Re: Brunswick Wood Preserving NPL Site

Dear Mr. Hill:

The Environmental Protection Division (EPD) has reviewed the draft version of the Record of Decision (ROD) for Operable Unit Two (OU2) of the referenced fund-lead NPL site. EPD concurs that the proposed remedy, **No Action**, is the appropriate, cost-effective remedy for OU2 to ensure protection of human health and the environment.

EPD plans to continue working closely and cooperatively with EPA during the implementation and monitoring of this remedy. EPD will also attend public meetings or meetings with EPA contractors, and perform any other tasks associated with our Remedial grant.

Please continue to contact Faney Foster, of my staff, at (404) 656-7802 if EPD can be of further assistance in this matter.

Sincerely,

Judson H. Turner
Director

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APPENDIX C

TRANSCRIPT OF JUNE 26, 2012 OU2 PROPOSED PLAN PUBLIC MEETING

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

RE: Brunswick Wood Preserving
Operable Unit Two (OU2)
Proposed Plan for Remedial Action

PUBLIC MEETING held at the Stellar Conference Center, 144 Venture Drive, Brunswick, Georgia, on Tuesday, June 26, 2012, commencing at 6:30 p.m., as recorded by Luan G. Wilson, Registered Professional Reporter.

- - -

ORIGINAL

PRESENT:

Brian Farrier, EPA Remedial Project Manager

Angela Miller, EPA Community Relations

Melissa Heath, EPA, Attorney

David Keefer, EPA

Dr. Brett Thomas, EPA

Jim Brown, GA EPD

Strant Colwell, USFWS

MEMBERS OF THE PUBLIC: (Sign-in Sheet)

Daniel Parshley

Gerrard D. Hegstrom

Deborah Strong

Ronald Gornto, Sr.

Frank Lea

LuAnne Lea

Paul Redding

Pamela Tillman

Betty McKenzie

- - -

Tuesday, June 26, 2012 6:44 p.m.

MS. MILLER: Thank you all very much for coming out tonight. My name is Angela Miller, and I am Community Involvement Coordinator for the site. And how many of you came by boat?

(Laughter)

A VOICE: We will go back by boat.

MS. MILLER: If we need a boat, who has one?

Anyway, thank you very much for coming out tonight. We really appreciate it. Tonight we are going to be discussing the Proposed Plan for Operable Unit Two at the Brunswick Wood Preserving site.

How is the lighting? Is it okay because we can cut out the chandeliers, if you can see it better?

A VOICE: Okay.

MS. MILLER: How is that? Is that better? Good. We will leave it like that.

There is a sign-in sheet. If you didn't sign in, I really would appreciate you signing in and getting some goodies over here. I don't like to take all that back. So take what you need.

Also there is a comment period. I have got a court reporter that is going to transcribe the entire meeting and during the questions and answers, she is going to take your questions and your comments. After Brian gets through with his presentation, we will open it up to questions. If you would, please for her sake, if you would state your name and then your comment and/or your question. And the comment period runs through July 20 unless we get an extension, a request for an extension.

And I think -- I think that it is about it. There are restrooms through this door. I believe they are on the right-hand side if you need to. And there is also a water fountain out there too.

With that, I will turn it over to Brian Farrier.

MR. FARRIER: Again, I would like to repeat what Angela said. We appreciate you coming out here during the aftermath of this tropical storm we had. We can't control everything that happens.

As Angela said, we are here to talk about

the Proposed Plan for Operable Unit 2 at the Brunswick Wood Preserving site that the EPA has been working on since 1991.

Let me see. Which one I am supposed to click on?

My name is Brian Farrier. I am the Remedial Project Manager for EPA for the Brunswick Wood Preserving site. Tonight I have several people here that have helped us with this project -- as part of the project. Jim Brown with GEPD is here. Angela Miller just opened up the meeting. My supervisor, David Keefer with EPA is here. Melissa Heath is here, attorney for EPA, for this site.

Linda George and Dr. Joe Owusu, Ecological Risk Assessor that helped with this site. They could not make it to the meeting today. For them there is another EPA Ecological Risk Assessor, Dr. Brett Thomas in the back. And also I would like to recognize Don Hunter who has been the field project manager for this site since 1996. He retires in September. I think a lot of you know Don. And Bob Safay with ATSDR has also done a tremendous job.

We are going to talk in general terms

about the Superfund remedial process. We are going to talk about the operable units, how they were set up for Brunswick wood preserve, talk about the background. We will talk about the work that the State and EPA has done under their removal authority as opposed to remedial authority under Superfund. We will talk about EPA's remedial action under Operable Unit 1. Talk about the project costs at the point in time.

I'll move on to the things that have to do with Operable Unit 2 and address the Ecological Risk Assessment. The Ecological Risk Assessment that was done in 2009 involved sampling at Burnett Creek on which the State has Fish Consumption Guidelines, and I want to emphasize that. We will talk about the results of the risk assessment and move on to the proposing, no further action under Operable Unit 2. We have other activities that we also talk about outside of OU2.

Superfund's Remedial Process starts with site discovery. We do a preliminary assessment/site investigation. If it meets the criteria for listing on the National Priorities

List, we put the site on the NPL. This is Superfund's vehicle for conducting remedial authority. The remedial investigation characterizes contaminants on site. The feasibility study looks at those contaminants to calculate the risk and identify the options available to address that risk.

EPA then chooses preferred alternatives and present it to the public, and only after we accept public comment will we finalize the remedy for an operable unit. Operable Unit 1 was done 11 years ago in 2001, and Operable Unit 2, that's what we are doing tonight, and that will be very limited.

The Record of Decision formalizes the remedy for that operable unit and then we conduct design, the clean up, the O and M, and then eventually remove the site from the NPL.

Operable Unit 1 addresses human health, site soils, groundwater, did excavate the most contaminated sediments from two areas in Burnett Creek, and I'll talk about that in a minute.

Operable Unit 2 that we are looking at tonight primarily addresses ecological risks on

Burnett Creek and is proposing no further construction work as part of OU2.

Site Background. The site started in 1958. Wood treating operations were eventually conducted at this 84-acre site. EPA began its removal action in 1991 when the site went bankrupt. In 1996, the State conducted their own removal action. We will talk about most of those. In 1997 the site was finalized on the NPL. In 2002, the OU1 Record of Decision was finalized. Moved on to the remedial design that was finalized in 2004.

We obtained funding for the remedial action and cleanup lasted from 2007 to 2011. During that time frame we completed an Ecological Risk Assessment for Operable Unit 2. That was done in 2009. And to further support the Ecological Risk Assessment, we did additional sampling in Burnett Creek last year in 2011. And all that has led to the public meeting that we are having tonight to get public comment on our proposed approach for OU2.

As I said, EPA began its removal action when the site went bankrupt in 1991. Several

activities took place then: Site structures demolished, sludges dewatered, wastewater treated. We began sampling private drinking water wells in the area. That effort continues now with annual sampling of residential water wells in the area.

The excavated soils and sediments were placed in four waste cells during this time. EPA spent $11.9 million during this removal action, and in 1996 the State came in and did its own removal action with the four waste cells constructed by EPA; three of them were removed off site. Roughly 150,000 tons were removed and the State spent $18.5 million of its own money.

In June of 2007 the EPA began remedial action on the Operable Unit 1. The work was done in three phases: Phase I involved site preparation activity, clearing. We did a lot of drainage improvements after Tropical Storm Tammy in 2005. The creosote ponds were dewatered, excavated and backfilled. Excavations were conducted on the site itself and at the two areas of the creek that we will be talking about more in a few minutes.

The contaminated materials were staged for three months until the pug mill was mobilized to start the S/S treatment of these contaminated materials. Basically, concrete was mixed with this in a pug mill and the treated materials was used to build two subcaps over the creosote ponds on either end of the site.

As part of the containment strategy for Operable Unit 1, we also constructed the primary subsurface barrier walls going down to 70 feet beneath the ground surface. And then they put, as part of Phase II, the engineered cap on the western end of the site. The containment strategy was subsurface barrier walls. Mother Nature provided the key. We put the cap on top. Phase II also included a pilot study for the groundwater treatment.

And then in October of 2009, we began Phase III of this work and placed the second engineered cap on the eastern end of the site over the creosote ponds on that end. We did site restoration activities and we built a secondary subsurface barrier wall/cap on the western end of the site.

They also did two additional pilot studies. Phase III was funded primarily by the American Reinvestment & Recovery Act with $8.3 million, also known as stimulus funding.

Total cost for the remedial action was $29.5 million. That compared to the ROD estimate from 2001 of $28.6 million. The ROD did not include everything that we had to do like the extension of the eastern wall cap, as I told you about in a minute.

We also had to chisel to put walls where they wanted in the geological key provided by Mother Nature, and the divide did not address or include the western secondary barrier wall cap or the secondary wall.

Total costs to this date. EPA removal action, pipeline activity through the remedial design, $15.4 million. State spent $18.5 million, and then EPA remedial action cost $29.5 million for a total of $63.4 million spent to date. We're still conducting groundwater treatment that we call long-term remedial actions. That and O and M costs and fees are not included in those numbers.

Here you can see an aerial photograph of

the site looking east in the summer of 2008. You can see a construction subsurface barrier wall on the eastern end. And on the western end, you can see the material that has been staged to construct that barrier wall.

Here we have what's called an engineering as-built which shows the remedy as constructed after everything is done. Again, if I can remember to use the laser pointer that Angela gave me, you can see the extension to the eastern cap that we had to do after construction started. You can also see on the western end the outer barrier wall, and that is an addition to the primary subsurface barrier wall that we constructed first.

Here you can see the site in January of this year after everything is done. The site is a little bit cleaner in the protected area based on state input, and basically that's what the site looks like right now.

Now with that, we are moving on to Operable Unit 2 and Ecological Risk Assessment. And what we are proposing for OU2 which is no further construction. The Ecological Risk Assessment was finalized in 2009. The purpose

of the Ecological Risk Assessment was to assess risk to Burnett Creek ecological receptors and determine the need for additional action. There are eight steps in EPA Ecological Risk Assessment process.

Throughout that process we have what we called Scientific/Management Decision Points on which the process could be terminated based on the findings that had been found at that point. In 2009, the baseline Ecological Risk Assessment was terminated after Step 3. We will talk that about that more in a minute.

The rationale for the decision in 2009 is that we saw low potential unacceptable risks in the creek from dioxin which was the main driver of risk in Burnett Creek. The upland sources, the creosote ponds, the sources of contamination to the creek had been controlled as part of the Operable Unit 1 remedial actions. The most contaminated sediments in Burnett Creek had also been excavated as part of the OU1 remedial action. We will talk about those two areas in a minute.

We also anticipated natural recovery processes such as burial of sediments and

dispersal of contaminates to take place and, as I will tell you in a minute, that turned out to be the case.

The sampling of Burnett Creek began in 1997 with sediments. During remedial investigation, we sampled sediments on several occasions. During the RI/FS, we concentrated on the creek bed. In 2003 during the remedial design, we sampled in the tidal flats just north of Highway 341. In 2008 after we excavated two areas of the creek -- after the excavations, we took confirmatory samples afterward, and then last year, we took samples all along the creek bed.

We will look at those numbers in a minute too. Again, the ones we took last year focused on the creek bed with the idea that if it warranted, we would move to the tidal flats. And they did not do that and we will tell you why in a minute.

Based on the numbers that we got and sediment samples that we took, the natural recovery processes taking place in sediments has been confirmed. These processes again include burial and dispersal of contaminants.

We also sampled biota in 2000 and 2011. We sampled shrimp, crab, mummichog, mullet from the creek bed along Old Jesup Road and Highway 341. No site-related public health concerns were found in these samples, however, the State has a Fish Consumption Guideline for this reach of the Upper Turtle River. The Upper Turtle River includes Burnett Creek so we still advise the public to follow the State's Fish Consumption Guidelines. I can't emphasize that too much.

I want to repeat: The State Consumption Guidelines for the Turtle River that includes Burnett Creek ranges from no restrictions for white shrimp. For different species, the restriction ranges from no more than one meal a week to no more than one meal a month. For other species, the striped mullet and shellfish for reasons not related to Brunswick Wood Preserve, but recommend *Don't eat them*.

Again, these are guidelines that have nothing to do with Brunswick Wood Preserving. They are talking about contaminants, the PCBs and mercury. They are not associated with the shellfish ban.

Here you can see the samples that we have taken in 2000 and 2011 for sediment. The blue shows Burnett Creek. The main thing I want to emphasize on this slide are the excavated areas shown here at Perry Lane Road and then here in the east-west reach of the creek just south of Perry Lane Road where contaminants were dropped out. We excavated that area, and we also excavated at the road. The results of these samples can be better seen on this slide, the main presentation that I am doing here tonight.

As we said we would do in 2000, we said we would excavate the high numbers of dioxin in the two areas of the creek. These are the same numbers that we saw in 2001 during that proposed plan meeting. These two areas were excavated and we took post excavation confirmatory samples, and that's what you see here, but that number right here dropped all the way to this number.

The most contaminated location dropped all the way to this sample right here. And that one is not quite to the point as we would have liked. The 2008 samples are shown right here. In 2011, we went back in and we sampled the

creek bed. And that's what you see in the blue right here. And you can see the significant reduction in dioxins that are shown in the blue. The highest number that we have here is 34 PPT. That's the only location that had a higher number than what we had sampled in 2000.

The biota is a different story. Generally, it can be expected that biota takes longer to recover than sediment because the sediment undergoes natural recovery processes. To make a long story short, the mummichog -- the four species that we sampled, a small forage fish, mullet -- we have fish and shrimp and crab are the four species that we sampled. Some of these samples, the dioxin levels from 2000 to 2011 increased, and that is what you see in red. Others such as mummichog at this location we considered the dioxin levels have gone down. So some of them went up and some went down. So the biota in Burnett Creek have not fully recovered and shown the same results that we see in sediment. That is important.

Let's take a look at the Ecological Risk results from the 2009 Risk Assessment. We do several things where we evaluate ecological

risk assessment. We look at birds, we look at fish, and we look at mammals. At the Step 3 stage -- like I said, there's an 8 step Ecological Risk Assessment process. At Step 3, we use conservative screening values. What we do is we took the sediments and biota and we compare them to the screening values. The biota, the sediment.

One other thing I want to emphasize. These are the results from the 2009 Risk Assessment, which you are looking at '97 to 2008 data. That is what you are looking at with the 2009 Risk Assessment. The birds, the screening value was not exceeded. We did not exceed the birds and the sediment data. The fish, only two samples exceeded the screening value. For mammals, 37 of 47 samples exceeded the screening value, the majority of samples, for mammals.

2000 samples, the biotas did not exceed -- the birds and fish risk screening values were not exceeded. Mammals, blue crab, for mummichog and mullet, those three species, when compared to the low risk screening values -- those are exceeded but the high risk screening

value was not exceeded. So what we say is that for mammals consuming those three samples, we have an acceptable risk range.

And then the third line of evidence that we look at is what we call food web modeling where we look at the dose in a bird or mammal or fish from both biota and the sediment in combination. Again the bird's screening value was not exceeded. The mammals again the low risk screening value was exceeded but the high risk screening value was not. So we have an acceptable risk range for mammals.

The conclusions for the Ecological Risk Assessment in 2009. We have got the lines of evidence showing an acceptable risk for fish and mammals. As I said, we went back into the creek and we collected additional samples of sediments and biotas in 2011.

We again compared the sediment from last year to the screening values that we used in 2009, same screening values. This time the sediment numbers are so much lower. For fish and birds, we did not see screening values exceeded in sediment. The conservative screening values do not (inaudible). The

mammals, all the locations that you see on the map over here -- that one location that had the 34 parts per trillion -- that's the only sample that exceeded the screening value for sediment.

For biota, again for birds and fish, the risk screening values were not exceeded for birds and fish consuming those. The mammals consuming mummichog and mullet samples, again we had the same story. We exceeded the low risk screening values but not the high. So therefore, we were in an acceptable risk range.

The conclusion of the Ecological Risk Assessment for samples taken last year were the same. The lines of evidence indicate an acceptable risk for mammals, but the birds and fish had no unacceptable risks.

So based upon that data from the Ecological Risk Assessment, here is the rationale that no further action is proposed. Again the rationale for the proposed remedy is the same as what we said in 2009. It's protective of human health and environment, we see low potential risk there to ecological receptors from the residual dioxin levels in creek biota and sediments. Again, as part of

the OU1 remedial action we controlled the upland sources of contaminates. Also as part of OU1 remedial action, we already excavated the two areas of the creek that had the most contaminated sediments.

Again the natural recovery processes such as burial and dispersal, these processes in sediment have been confirmed. The state of Georgia concurs with the proposed remedy that you see tonight: No action. We have (inaudible) national, the NOAA Administration and the Fish and Wildlife Service. They have been involved in the process.

That pretty much concludes what I wanted to show you for Operable Unit 2. Let me finish by showing you some of the upcoming activities we can expect and Angela talked about. We are soliciting comments from the public, both verbally tonight. You can ask questions. They will go on the transcript. And as part of the Record of Decision that EPA will respond to comments.

You can also write to EPA, write them in the next 30 days; 60 days if there is a comment extension. They will respond to those also.

Only after EPA responds to the comments will we finalize the remedy as part of the Record of Decision for OU2.

We will continue operation of the groundwater treatment system that began last year in 2011. We will continue the annual sampling residential water wells in the area to ensure that resident's drinking water is safe. And then in September of this year we expect to finalize the first five-year review. Contaminates have been left on site so we will be doing five-year reviews on the site in perpetuity.

So every five years EPA will come in and make sure that the groundwater use is in fact what is still permissible. So EPA will have their eyes on this thing in perpetuity. The first five-year will be done in September.

I appreciate your patience. And that concludes my presentation. So we are here to answer your questions, if you have any.

MS. MILLER: So if you have a question -- like I said earlier, if you have a question or comment, just stand up or raise your hand and we will go in order. If you would state your

name and then your comment or question. Brian is going to read off of the monitor.

MR. FARRIER: I can hear a lot better than I did 11 years ago, but I still would like to use the monitor if I need help.

MR. PARSHLEY: Can I make a comment first?

MS. MILLER: Sure.

MR. PARSHLEY: As I commented --

MS. MILLER: Say your name.

MR. PARSHLEY: Daniel Parshley, P-a-r-s-h-l-e-y. As I made a comment at the previous public hearing for the last ROD, it will be helpful for the public to understand you by having this up on the screen so we can read what you are saying at the same time.

And when someone has -- it might be difficult for someone to understand or they may have a hearing impairment in the audience, it improves their ability to understand you. I know he can't hear good. So, you know, just as they do it for you, you should be doing it for him. Okay.

Is this meeting in preparation for a Record of Decision?

MR. FARRIER: Yes.

MS. MILLER: Yes.

MR. PARSHLEY: This meeting is?

On your slide you said there is a Remedial Investigation/Feasibility Study. Is there a feasibility study for OU2?

MR. FARRIER: The feasibility studies for OU2 is what is called a Remedial Alternatives Screening Evaluation. We didn't call it a feasibility study per se, but it did the same thing. It provided the rationale for the proposed remedy of no action. That is in the administrative method providing the basis for what you heard tonight.

MR. PARSHLEY: But doesn't CERCLA specify that a Superfund site shall have a feasibility study?

MR. FARRIER: That represents the feasibility study stage of it, but it was not called a feasibility study per se, no.

MR. PARSHLEY: Right. But doesn't CERCLA state there will be a feasibility study?

MR. FARRIER: Does it state --

MR. PARSHLEY: Yes.

MR. FARRIER: I don't quite follow but I'm saying the RASE memo provides the same basis

for the remedy. But it was not called feasibility study, no.

MS. HEATH: For no action ROD because there's no construction, the steps are a little bit different.

MR. PARSHLEY: That's outlined in CERCLA?

MS. HEATH: But the effective -- yeah, there is some guidance on our website that explains a no action ROD.

MR. PARSHLEY: Yeah. That's what CERCLA says if there's no feasibility study in this case?

MS. HEATH: It's -- the purpose is served, through -- it does not have to be a feasibility study per se, but the purpose is served through the steps towards a no action ROD.

MR. PARSHLEY: And that's what CERCLA says?

MS. HEATH: Yes. I mean, the steps are really in the NCP. So Superfund itself, the statute doesn't prescribe the steps for a no action ROD.

MR. PARSHLEY: But doesn't CERCLA specifically state there will be a feasibility study for a ROD?

MR. FARRIER: For the Record of Decision We follow that process, but it's not called a feasibility study, per se, no.

MS. HEATH: Right.

MS. MILLER: Does anybody else have questions too?

MR. PARSHLEY: Well, I'm going to see if I can do all of them in the order that he presented them and that we will make sense.

MS. MILLER: I mean, if there are other people that want to ask questions, we will take turns.

MR. PARSHLEY: Do you have a time limit on tonight?

MS. MILLER: Not really but I am trying to be considerate of other people who may have questions.

MS. HEATH: I can get back to you on that. I hadn't been asked that question before.

MR. PARSHLEY: Concerning the Burnett Creek sediment recovery, it's my recollection that the sampling that in preparing took three samples across the creek bed, and your sample was in the bottom of the creek in the scour zone. How can you compare two different

sampling methods and extrapolate a conclusion?

MR. FARRIER: We sampled in the creek in 2000 and on several occasions before that and also in 2011. Those two samples were the bread and butter from what we compared but there was more than those two events. We sampled with a bucket at locations. We did not sample across the creek and make it -- that I'm aware. I would have to go back and look at the exact protocol, but we do have a samples that can be compared -- are comparable to 2000 and 2011.

MR. PARSHLEY: But isn't it true in 2000 they took samples across the creek and composited those to get their result?

MR. FARRIER: I can't remember if they did it that way, but what we did try to do was focus on the 2011 samples at those same locations that you see in the photo.

MR. PARSHLEY: The same methods?

MR. FARRIER: As far as 2000 and 2011, I can take the question and answer that. I can't recall it now.

MR. PARSHLEY: Because it leads on to the next slide, the Burnett Creek Biota Sampling. Actually, the biota sampling says it is

trending to be more contaminated. Surprise, three were down; four were up in contamination. So the trend does not show what the sediments are showing. The biota is showing that it is increasing.

MR. FARRIER: Some samples the biota samples, the dioxin levels are considered to be increasing; others they are considered to be decreasing. That is not that unusual for biota samples. It is going to take longer for biota to recover.

Another point I would like to make too is that you can see the levels in the sediment that we have. There is not a lot of room for remediation on that and you can't really remediate biota.

MR. PARSHLEY: We are comparing apples and oranges because we don't know that the same scientific methods were used. If they took transect samples and composited them and you take single samples results in the scour zone in the center, obviously two different methods were used and the data is not comparable.

MR. FARRIER: I emphasize that the samples we took at 2000 at the locations shown by the

boxes and the samples taken in 2011 certainly can be compared. They can be compared with sampling protocol, and we can answer that for you.

MR. PARSHLEY: Okay. And I will save the my formal -- I will have my formal comments in that period. Thank you.

MR. FARRIER: Are there any other questions from the audience?

MR. HEGSTROM: I may be missing a good bit of this. But I'm not sure that I know where we are headed. In other words, I don't know that I saw anything about the intended uses of this property or of the creeks. I see that we are testing, but I'm not sure where that is leading us. Where are we going?

MS. MILLER: Can you state your name, please.

MR. HEGSTROM: Jerry Hegstrom.

MR. FARRIER: Probably one way to answer your question is 98 percent of what you've seen tonight is where we have been. We've spent $63.4 million on this site to get to where we are right now. Where we are going right now, we proposed no further construction. We do not

want to excavate Burnett Creek to try to recover the residual dioxin levels that you see in the blue line right here.

So with that, I would say we are not going into Burnett Creek. Excavation of Burnett would also involve habitat destruction and disruption. We are not proposing that. As far as the site future use, there is lots of potential options for redeveloping the site. None of those have been decided on. We don't have an anticipated future use to propose but are focused on Op Unit 2, and we will focus on whether Burnett Creek needs further remedial action.

So to answer your question, we are not going to excavate further in the creek. We don't see a need from the risk assessment that we have done that would warrant further excavation.

Does that answer your question?

MR. KEEFER: I think maybe what he is asking, and correct me if --

MS. MILLER: That's David Keefer.

MR. KEEFER: I didn't give you my card. I apologize.

The site now is suitable for a broad range of uses that the community may determine that they want, whether it be recreational or commercial use or even potentially industrial use. So that will be determined as far as the property goes by the community and whoever the eventual landowner is. EPA doesn't own the property, and we will not determine what the future use is.

What we will do is make sure that any future use is not incompatible with the remedy that we have constructed. So right now the site poses no threat to anyone walking across it or any threat to Burnett Creek. So in the future, the end state, the site is in many ways from an environmental contamination is at its end state. That is where we are. Now as far as what happens now, that's up to you-all.

MS. HEATH: And we do support reuse and there's some materials on there just our general reuse program, and we will be involved in helping discussions happen. But as David says, we are not the owner. We don't have any money involved in the future use.

Our main purpose now is to make sure that

any future uses are protective. So you are not going to go drill drinking water wells out there. We want to make sure that nobody does anything like that. But we will assist with future uses to make the best use for the community out of this site.

MR. HEGSTROM: What will be the decision making for -- Jerry Hegstrom again. What will be the decision-making process? Will the public be involved? Who are the owners? Are we dealing only with governmental agencies as the owners of this property?

MR. FARRIER: Well, we certainly want to be responsive to you on that, but I am here to talk about what we are proposing. You are talking about the future site use. That is really more of a local decision. That would be up the community to decide what they want to do.

MS. HEATH: We can address that.

MR. KEEFER: We can answer.

MR. HEGSTROM: The reason I ask some of these questions is I understand to some extent the testing that you are going through, recommendations may be made, but it's always

been my impression that when we are dealing with a project, we want to know where we are going with that project. That is why I am asking the question the way I did.

MS. HEATH: Right. The ownership of the property is an issue at this point. It was owned by a corporation that was dissolved. It was not properly, legally dissolved with distribution of assets. Therefore, the title is not clear at this point. It may default to escheat to the State. That hasn't been determined.

That is the topic of some conversations that we have been having with the State and the County and other parties. When it's determined who owns it, then I would expect, just to be consistent with other reuse, that the community will be an important part of determining the best use for the property. It is an opportunity to really have a win-win come out of this.

MR. BROWN: To Mr. Jim Brown.

MR. HEGSTROM: Does the State have a lien on this property?

MR. BROWN: Yes.

MR. HEGSTROM: For how much, sir?

MR. BROWN: I don't know the exact amount, but it's equal to the amount of money that we spent doing the removal that we did back in '96-'97, I think it is around 21 million.

MR. HEGSTROM: Okay. So it's more than 18.6.

MR. BROWN: The 18.6 was the amount of money that EPA credited the State having spent to meet their certain guidelines that they credited the money for. We spent other money we didn't get credit for.

MR. HEGSTROM: Is it Ms. Heath? Does the EPA have a lien on this property?

MS. HEATH: No, we do not.

MR. HEGSTROM: Okay. Thank you.

MS. TILLMAN: My name is Pamela Tillman, and my question is about the sampling of the private wells. I don't know how many locations, I think you said five different locations for sampling of wells. Will you be changing locations and sampling different sites of wells to see?

MR. FARRIER: We can do that. I did have something up there about 50 wells being sampled

in 1991. The average sampling that's being done right now is about 20 to 25, 21, something like that. The number that we do is totally flexible whether you want to do well samples, we will consider that, assuming it's not too far away or something like that. If people come and ask to have their water well sampled, we always consider that.

MS. TILLMAN: So a private well owner would have to ask you for sampling? How would you do that?

MR. FARRIER: Sure. You can send me an email. You can ask me. We had one resident that lived north of Highway 341, not too far from where Tommy Mallard lived, in that subdivision, and he had a problem. And we sampled his well the next day. I don't know exactly when but he thought the problem was coming from the site.

And in a situation like that, we want to be immediately responsive. We determined that it wasn't. We did not include his well this year because we don't see a need. But if you have a concern, we can sample your private drinking water. With that, if it's not five

miles away. You know what I mean.

MS. TILLMAN: Thank you.

MR. FARRIER: You're welcome.

MR. HEGSTROM: Jerry Hegstrom again. To follow up on that, I'm about a mile, mile and a half away. If I wanted my well tested, what would I do?

MR. FARRIER: If you are concerned about your drinking water, we would sample it. We would consider technical reasons why we might not want to, but if you are really concerned about it, we would err on the side of addressing your concerns. We have sampled wells, updating them of the sources, and then we talked to people and we explained to them we didn't find anything. We didn't expect to find anything, and they are happy.

If you are not happy with that, we would sample again, address your concerns and make sure that you're comfortable that your drinking well water is safe.

Any more questions?

MS. MILLER: Didn't you have a comment that you wanted to make?

MR. PARSHLEY: I have comments prepared.

MS. MILLER: Okay. Because it's -- apparently there is no more questions.

MR. PARSHLEY: There is or isn't?

MS. MILLER: I guess there is not.

MR. PARSHLEY: Does anybody else have something to say?

MS. MILLER: We'll just open the floor.

MR. PARSHLEY: Do you want to get me out of the floor.

MS. MILLER: I know you do so that is why I turned to you.

MR. PARSHLEY: Thank you, Angela.

Daniel Parshley. Where do you want comments taken?

MS. MILLER: Wherever.

MR. PARSHLEY: I am not submitting orally. These are notes. For the record, would the record show that there is no place for people to place their notes to submit oral comments at the hearing, please.

So Angela is holding her hands out to hold the papers. Thank you, Angela.

The EPA on May 1 held a site tour. The tour took place with Brian, Angela, the Army Corps of Engineers, the State of Georgia EPD.

They were doing the five-year review. The State was doing their inspection. We had experts there. The community was invited. This is an example of EPA at its best.

If there was to be an award for the EPA and community involvement, this event would deserve an award. This was an outstanding example of community involvement in this decision-making process. It brought the community together. People were able to ask questions, observe what they were inspecting at the site and got a great understanding of what was happening.

But dang was it hot, Brian, wasn't it?

MR. FARRIER: Appreciate that. Thank you.

MR. PARSHLEY: This brings us to tonight. I had to start there because I know that the EPA can do a good job. 21 years, the EPA has been involved in this site -- 21 years, over two decades.

We are coming up on a legal decision for this site, the Record of Decision. The meeting was announced seven days ahead. That is when we received the proposed plan for remedial action. The documents upon which the EPA

expects the public to comment upon were made available three business days ago. One is these 75 documents for OU2 are technical in nature and several are between 300 and 600 pages in length.

It's absolutely ridiculous for the EPA to be holding this hearing, paying for a meeting room, paying for a court reporter, when you know no one can review documents and make meaningful comments. The EPA has made a mockery of the public meeting and public comment process.

The EPA -- I mean, the Glynn Environmental Coalition administers the EPA Technical Assistance Grant for Brunswick Wood Preserving site. This EPA program is intended to foster to community involvement in the decision-making process. This EPA program is intended -- excuse me -- the EPA program is based upon the community obtaining a technical adviser to review documents, produce a report in layman's language and answer questions from the community in preparation for meetings like the EPA public meeting we are here about tonight.

The timing of the release of documents and

the planning of this meeting with just three days' notice thwarts the spirit and intent of the EPA Technical Assistance Grant program. The EPA purchased an ad in the sports section of the Brunswick News. I guess you might see it if you were checking the Braves game scores. I have asked several people if they saw the ad. I have not found one that says they have seen the EPA ad.

The Glynn Environmental Coalition has made a concerted effort to let our community know about the meeting, but without enough information to make meaningful comments there is little reason to come. The record should show that this meeting is being conducted as Tropical Storm Debby drops torrential rains on our area. It's passing overhead and during a National Weather Service flood warning and flood watch until 8 p.m. Wednesday, June 27.

If this meeting is not in violation of the letter of the law, it is most certainly in violation of the spirit of the law and has all appearances of being planned to thwart meaningful community involvement in the decision-making process.

In actuality, this meeting does thwart meaningful participation in the decision-making process by our community and does thwart EPA technical assistance grant group's ability to review, produce reports, distribute them, and answer questions from the community.

EPA public comment meetings are very important. I know you will say the public can write comments and submit them during the public comment period. If that were the intent of the law for people to have the time to write comments, there would not be a EPA public comment meeting. The purpose of the EPA public comment meeting is for those without great writing skills or ability to participate in the decision-making process.

That is why you paid the big bucks for the court reporter sitting over here. Yes, there was a waste of money because there will not be any meaningful public comments here tonight since the EPA has pretty much made sure that this is the case by holding onto documents until three business days before the meeting.

The Glynn Environmental Coalition has not had time to review the documents but has made

an attempt to check the list of documents for completeness. The administrative record is incomplete. The public health assessment for OU2 is missing, and as noted in the 1999 Public Health Assessment, Public health risks from consumption of contaminated seafood were to be evaluated when data was available. The seafood data was corrected in 2000 and 2011. There might be more documents missing from the administrative record also.

The Glynn Environmental Coalition requests to extend the comment period until 120 days after the public health assessment is completed and then have the EPA public meeting on the proposed plan for Operable Unit 2 at the Brunswick Wood Preserving Superfund site. When the Glynn Environmental Coalition has reviewed the administrative record index, we will submit a list of documents to be added to the administrative record as provided for under OSWER Directive No. 9833.3 A-1.

And I would like to make one additional comment, and it's concerning the proposed plan for remedial action OU2 that was received by most people seven or eight days ago in our

community. You talked earlier about the advisory for Turtle River in the Burnett Creek area.

If you look at this, it says PCBs and mercury. Dioxin is not on here for a reason. It's because there is no dioxin data to evaluate. The State does not make advisories without the data to support them.

But any astute environmental person would look at this and see that it says PCBs and, knowing we have a completed exposure route in Burnett Creek and that PCBs and dioxin are additive, that would set a light off in their mind that we have an increased risk because of an additive risk. The EPA has stated in documents repeatedly that Burnett Creek is fished in all regions by the public. That is a completed exposure route.

Also, in February the IRIS database which the EPA bases its assessments on lowered the allowable level for non-carcinogenic risks to 50 parts per trillion. We cannot extrapolate from minnows the risk to human health without a bio-accumulation factor. Actually the State may not even use your data because they take

data from the size fish that can be legally caught. But in this situation because we do need the information, a bio-accumulation factor could be applied.

Noticeably missing are the fish that people catch in this creek: Red drum, also called spot tail bass, spotted seatrout, black drum. We see people fish from the bridge right next to the site. There is no doubt that seafood is not being consumed in that area of the creek.

MR. REDDING: Croaker, whiting.

MR. PARSHLEY: I have gone by Paul's, and he has thrown a net and caught shrimp and boiling up shrimp. So you can attest to the people fishing into the creek.

MR. REDDING: Yeah. Okay.

MR. PARSHLEY: He lives on the creek.

Thank you for the opportunity. We know what a great job the EPA can do, but in preparation for this meeting, it was not the EPA's best day. Thank you.

MS. MILLER: It's normal practice to send out proposed plans seven to ten days prior to the public meeting, and then come out with a

public meeting. Not everyone can take the proposed plan, sit down and read it and understand it as you might. So we come out with the proposed plan so we can actually present the information to you, and then you have majority of the comment period to actually comment. You have a technical adviser who is going to look at the information. We're still -- I mean, the comment period is July 20th. If you ask for an extension, we can consider the extension.

We want a win-win here. We want you to understand what we are presenting. That is why we come out here. We had no clue when we start planning these meetings that Tropical Storm Debby was going to be here tonight. I apologize for that.

MR. REDDING: Debby.

MS. MILLER: What did I say?

MR. REDDING: Tammy.

A VOICE: No, Debby.

MS. MILLER: Did I say Tammy?

MR. FARRIER: Yes.

MS. MILLER: Oh, okay.

MR. REDDING: My hearing is getting bad.

MS. MILLER: We did not know, and I truly apologize for that.

But the meeting room, yes, we did pay for the meeting room. We have to have a place to meet. This meeting room is very convenient. We have been meeting here for years. This is the only meeting where I am required to hire a court reporter and that is to transcribe the meeting and to take down comments and questions. They are part of the Record of the Decision. It is in the responsiveness summary.

There are people that read the entire record of decision and responsiveness summary, and that's the purpose of having a court reporter to transcribe the entire meeting. This is the only meeting I have to pay. I am required by the National Contingency Plan to hire a court reporter.

MR. FARRIER: One other comment to clarify that, it's kind of stuck between a rock and a hard spot. And I'm the project manager I would like to do it a little bit differently. I think I did the same thing I did in 2001. I mailed out a proposed plan on a Friday.

MS. MILLER: We sent it out on a Friday.

MR. FARRIER: Ten days later we had a meeting on a Tuesday and, you know, do I have the public meeting right afterwards so that people don't have confusion in their mind? I would like to be out here a little bit sooner rather than later in order to answer people's questions. Some people might want to wait two weeks, well, that might leave people confused. It is a rock and a hard spot as to how you want to do it.

MR. PARSHLEY: Daniel Parshley. The difference this time, Brian, is previously we had the documents for three, four, five months.

MR. FARRIER: I will grant you that.

MR. PARSHLEY: The EPA had 21 years. And now you have given the community three business days.

MR. FARRIER: What I would say to that is that the time frame for what we did on OU2 was a lot quicker. We went out in the fall of 2011. We sampled. The draft document came in February or March, and we finalized that at this point in time and we moved on to what we call the Remedial Alternatives Screening and Evaluation memo, RI/FS. That was finalized in

April and then the proposed plan went out, a more compressed time frame.

If I had to do it over again, I would have provided the RASE memo to you at the time, but I still felt it met the requirement of the law.

MS. MILLER: The other thing I wanted to clear up is an ad in the paper. I can put a legal ad in the paper, but it's about that big (indicating). So I would rather spend a little bit more money and ask that it be placed in the retail section. And it just ended up in the sports section so...

MR. FARRIER: Again --

MS. MILLER: I didn't know it ended up in the sports section. I asked for retail section because I don't like the little legal print because nobody can -- I can't even read that with my glasses on.

MR. PARSHLEY: I question if we even have a legal meeting here tonight because the community just three days ago just received the administrative record. You know, we are still working just reading through the index.

The community is supposed to be involved in the construction of the administrative

record. This has been our first opportunity to see the administrative record and make input. If we don't make input --

MR. FARRIER: Two definitions -- go ahead.

MR. PARSHLEY: We should make our input because that becomes the body of what's going to be reviewed in preparation for this meeting.

And also, you forgot the most important part of who you are supposed to be protecting, us. The human health -- public health assessment was not completed. A human health risk -- a baseline human health risk assessment wasn't completed. And these are what should be reviewed and for us to comment on at this meeting. So we want to declare that this was a false start.

MR. FARRIER: I would say to you, Daniel, that the purpose of tonight's meeting is not to get all comments of the community. That's the purpose of the comment period. We started the comment period last June 20, and you have an opportunity to extend that comment period and the administrative record as required by law June 20.

Now it goes to July 20. Again, we will be

happy to answer all the comments you can submit.

MR. PARSHLEY: How can you have this meeting if the administrative record is incomplete and all the documents are not there?

MR. FARRIER: That is a different issue. I thought you were talking about the timing. If you want to comment on the incompleteness, that's a separate comment.

MR. KEEFER: The OU2 is addressing the ecological risk. The human health risk was addressed by OU1. Perhaps that clarify that there's not a human health risk assessment for the ecological risk operable unit.

MS. HEATH: A lot of times the OUs are decided geographically, and it is somewhat confusing because we focused on the creek because the creek did not sustain a complete removing and capping like the main site pretty much. But in this case the OU2 is ecological risk and not the human risk. OU1 was the human risk aspects of the entire site.

MR. PARSHLEY: Following his argument, the human health risk, public health assessment for OU1 said that it would be incomplete until the

data from Burnett Creek was incorporated to evaluate the risk to human health. So regardless of how you wish to argue it, the risk is to human health to Burnett Creek has not been addressed and this meeting is premature.

MR. KEEFER: We can clarify that in our response to your comments. We can clarify all this with corrections.

MR. PARSHLEY: Okay.

MS. MILLER: Anybody else?

Daniel, any more?

MR. PARSHLEY: No, ma'am. I still love you.

MS. MILLER: Again, thank you guys for coming out here. We really appreciate it. Any more questions or comments?

A VOICE: Yeah, I do.

MS. MILLER: Yes, sir. Go ahead state your name, please.

MR. GORNTO: I'm Ronald Gornto. You have got white stream fish. I grew up here, and you put down here that a shellfish ban. You know I don't even want to buy fish. I don't want to buy shrimp. Right here it has got *white*

shrimp, no restrictions, and then you have got a shellfish ban. And then you have got one mercury and all that. And you have got LCP over there and you have Hercules here. We have got all these places around here, and it basically says don't eat. Don't eat the seafood.

Right? Don't swim in the water either; right? You know what I mean? I live in Houston by the water. I'm just saying I would like to know what are they going to do about it. What's happening?

I mean, I used to live over there right beside that creosote place. I can smell that stuff. I grew up here. I had a house out there -- I still got a house right there, but I live in Notting Hill.

MR. FARRIER: If I understand your question, you're asking about what are we going to do about the Fish Consumption Guidelines is what I heard.

I'm having a little bit of difficulty reading the transcript.

MR. BROWN: To step in, Daniel -- I'm sorry, Brian -- the Fish Consumption Guidelines

are based on looking at the fish in the different reaches of the different water bodies around the Brunswick area. There is a lot of different facilities -- like you noted, a lot of different facilities have different impacts on those water bodies.

MR. GORNTO: All right.

MR. BROWN: What we do is you have to go after them one at a time. This site, they have done removals in the creek to reduce the concentration of the contaminants in the sediments to hope those ecosystem rebound and clean itself up naturally so those restrictions can be dropped. There are doing cleanups over at LCP. They are doing cleanups at Hercules and at the Perry Creek location.

So these different cleanups will eventually lead to lessening of those restrictions. It's sort of a site-by-site approach that overall leads to a cleanup of a different water bodies across the area, if that helps answer your question.

MR. GORNTO: I won't eat fish.

MR. BROWN: Well, you can still go out and catch them.

MR. GORNTO: I live on a lake and I know Mr. Paul -- he lives right there. I remember a long time ago his dad used to build that, whatever I know it's a concern. It's a real concern in this community. It really is. It's been a concern since before the '50s.

MR. BROWN: Yes, and we share your concern and we're doing what we can in the State and EPA and coastal resources and the different Fish and Wildlife.

MR. GORNTO: I worked for some, a lot of those plants.

MR. BROWN: Yeah.

MR. GORNTO: I worked out there at the (inaudible) and you can kick and spark, you know, about all.

MR. BROWN: Yeah.

MR. GORNTO: You didn't have no power tools.

MR. BROWN: And progress --

MR. GORNTO: I worked at the wastewater treatment on St. Simons, and they used to just put it in the ocean. You know, it's bad. It's bad around here.

MR. BROWN: And a lot of the

contamination, like you said.

MR. GORNTO: They used to haul dirt.

MR. BROWN: There is a lot -- the restrictions that have been placed on these facilities have increased over time as we have learned more and more about the impacts, the things you are talking about have on the water bodies and ecosystems that you are fishing in.

MR. GORNTO: Right.

MR. BROWN: So those laws have changed over time.

MR. GORNTO: I have four kids.

MR. BROWN: There are controls in place now that weren't in place 10 years ago, 20 years ago. And some of this contamination, I mean, it goes back to the '50s. A lot of the industries in town goes back even earlier. So these discharges have been going on a long time. It takes a while for it to get cleaned up.

MR. FARRIER: One thing I would like to add to that, you know, we can remediate steps which lead to the contaminate. We can't really remediate -- go out and capture all the fish

and whatever. But as far as sediment goes, the two most contaminated areas of the creek we excavated. And you can see the results right here, and you can see them turn down here. What are we doing, I am focusing on Burnett Creek as part of the ecological -- this is what we did here.

MR. GORNTO: I mean, Terrell Creek and all that --

MS. MILLER: Her hand was up first.

MS. STRONG: I have a question about the changes in the Endangered Species Act.

MS. MILLER: Deborah Strong.

MS. STRONG: Do they affect what level you are willing to clean up the Burnett Creek?

MR. FARRIER: Not that I'm aware. Your question is on the transcript. We are here to take comments. I'm not going to answer all your questions because I don't know the answer to everything, but if somebody else knows it, fine.

MS. HEATH: The Endangered Species Act basically defines which species are either endangered or threatened. And that impacts federal decisions in a lot of different

statutes and funding mechanisms. The Superfund cleanup levels are determined separate from those, and they might take into consideration things like --

MS. STRONG: (Inaudible)

MS. HEATH: Yeah, but those are completely different. The Superfund contains screening levels and action levels. Those are determined based on risk and separate from species determinations.

MR. FARRIER: I think the answer is no. We concur and having responded in some RI.

MR. KEEFER: Usually, where the Endangered Species Act impinges upon our cleanup is if there as wood stork or an eagle or a rookery nearby, then we will have to modify or adjust the way we do construction work so as not to disturb the species during the nesting season, something like that. It doesn't typically bear directly on the level of the cleanup, more on how you execute the cleanup.

MR. THOMAS: I can talk about the risk if you want.

MS. MILLER: Yes.

MR. THOMAS: As far as the ecological

risk --

MS. MILLER: Brett.

MR. THOMAS: Oh, sorry. Brett Thomas.

As far as the ecological risk goes, we will take into account -- typically, you are looking at a population level of protection for endangered species or something, you may look at a more individual level of protection. So we will sometimes be a little more conservative with regard to protecting particular endangered species, if we find they are in the area.

MS. STRONG: So are there any species that have been delisted since the Superfund projects started that would have changed?

MR. THOMAS: I'm not sure.

MS. STRONG: More a process with the Fish and Wildlife. I noticed on the PowerPoint, it made reference to Fish and Wildlife and another organization.

MR. KEEFER: No.

MR. THOMAS: Generally speaking, for example, when you look at the risks that were calculated and how that factors into what the sediment -- what the work that Brian and EPA had done to get the sediments from where they

were to where they are now, and then the decision of does more work need to be done?

To me, looking at it, there's not a rationale ecological risk-wise that you would go out and do anything else. The removals that they have done appear at this point that they are addressing adequately the potential ecological risks.

At some point you start to outweigh -- if you go out and be more invasive, you start to do more harm than good to an ecosystem. So you kind of balance between the risk of remedy versus wanting to clean stuff up. I think at this point the source -- if we are moving from the site to the sediment, sediments to biota, the sediments appear to be on the right track at this point.

For me, as an ecological risk assessor, I would look at it and say that it appears to be on the right track. We can see where it is going.

MS. STRONG: So you are with EPA?

MR. THOMAS: Yes.

MS. STRONG: And there's no one here from Fish and Wildlife.

MR. COLWELL: Yes, there is.

MS. STRONG: You are?

MR. COLWELL: Strant Colwell. But you are asking two different laws. You are talking about cleanup and take under the Endangered Species Act. So, what they are talking about is all species, everything ecological not an endangered species, but all species.

MR. KEEFER: If I can just clarify also, if you're concerned about wood storks -- if you recall back to the presentation, it was stated that the lower screen -- all the birds were below the lowest screening level, and that screening level is protection of an individual bird, not a population-wide protection level. So it would be what we would use if there were a wood stork present at the site or another endangered bird.

If that helps.

MS. STRONG: So if it was present at the site?

MR. KEEFER: Right. The more conservative. It was below the low level that you would use if there was a wood stork there.

MS. STRONG: Okay.

MR. COLWELL: Does that answer you? I can talk with you later.

MS. MILLER: Yes, sir.

MR. REDDING: I hope we have learned something from our mistakes over the years. This pole yard, Escambia, they were downtown Brunswick, and they cooked the poles. And they had a use for them and they made money with it and so forth and it was -- they had needed to do that.

Then the City of Brunswick didn't like they were dumping their waste in the Brunswick River. And they bought this site out here on Burnett Creek, and it was a nice place to dump their waste in the creek.

Okay. It's killing the crabs and fish and marsh grass. They started out didn't even have a sediment pond. They would just dump it in the creek. Okay. The neighbors don't like it. It stinks. It's killing the grass, the fish, the shrimp, getting in people's gardens.

The neighbors and my family fussed about it and called the health department, and they sent somebody to get a sample. Oh, those are dead fish. They are all over the creek.

Brunswick News come out and take pictures, and you get a county commissioner to come take a look at it, you know, and they're all shaking their heads, We wish you folks would hush. You are messing with 20 people's jobs over there.

And look what we spent today. Look what a mess we've got. We have got five Superfunds in this county. What are we doing to keep this from happening? We are finding ways to clean it up. Spent a lot of money, got a lot of land that's not on the tax books that's not being used.

When are we going to start sending some EPA people out with some authority and say, *Hey you, Industry, if you can't keep it out of the air, you can't keep it out of our drinking water, we are going to do something serious for you. Shut you down.*

MS. HEATH: You are our eyes and ears. And if you see things that you think are violations of the law, because we do now have the Clean Water Act and the Clean Air Act and RECRA. And when you see something, let us know because we have got eight states in Region 4.

MR. REDDING: I have seen a number of

things and reported it, and it's kind of a fairytale. I see wastewater coming out of a borrow pit with green algae and a mess coming in the creek. It is washing the rocks and all the foundation from under the bridge. And I say, well, what are we going to do about this? Well, they go put a few rock in the ditch and tell them to pick the pipe up off the bottom, but they keep pumping.

Then I fuss some more about it, and then the EPA says, What you are seeing there is we have the drains under the bridge, and that's not doing it. That's what is doing the washing there. I said, No, you need to go to DOT. And you need to come take some pictures of this. It's washing the rock from under the bridge, the big rock and the foundation. And they say, well, we will get that stopped.

I say, Well, who did you give a permit to put this under the side of the road? And they say, well, we got a commissioner asked for a permit, but he doesn't have it.

And it goes on and on and on. You know, we are talking to death and --

MR. FARRIER: I think one thing before we

move on to Daniel, you know, you kind of moved us away from the Brunswick Wood Site. When we talk about things that might have to do with municipal waste or other types of waste, I would focus on the positive and say that what happened at Brunswick Wood Preserve is what we are addressing tonight will not happen again.

MR. REDDING: I understand.

MR. FARRIER: I think I'm safe in saying this.

MR. REDDING: I'm just talking in general, but we have been talking this since 1958, and we spent a few bucks on it.

MR. FARRIER: I understand. I understand but --

MR. PARSHLEY: There needs to be a clarification and reality check here. You say we are your eyes and ears. We knew that industry did not have any air permits 30 years after the Clean Air Act and brought this to EPA Region 4's attention. It took the National Investigations Team out of Colorado to come here and say -- write a report saying no one can regulate you because you don't have a permit. They are using the permit application

shield.

When we succeeded, the State under their SIP issued the permits but didn't change anything, didn't give us healthful air. We sued. Then when the court -- a year and a half later when the judge set a trial date, the EPA eliminated the law under which we brought our case in the Federal Register.

Ma'am, with all due respect, we are your eyes and ears but you will fight us every turn. We -- you know, we are not gullible and starry eyed about the EPA anymore.

Thank you.

MR. REDDING: One thing the pole yard was doing when they were polluting the creek bad enough. Then the folks got after them with an out-of-town lawyer and so forth and they put them in a pollution pond. And then we got a treatment plant here and they started to having to haul some down to the treatment plant. Well, it cost money.

Then they come up with a plan. They pumped this in their boiler. They burn bark for the stream for the process. Okay. They don't pump enough in there to put the fire out,

but they put enough in there day in and day out, it's vaporizing. And this stinky mess goes out the stack, and people riding down the highway, it's burning the hair in your nose. It's burning your nose and eyes. That's what he's talking about stinking, not only in the water but in the air.

MR. GORNTO: I was going to school -- I'm Ronald Gornto. I was about -- it was about 1975, and they said it was like smoking a pack of cigarettes living in Brunswick, Georgia.

That's a fact. It was in the newspaper.

MS. McKENZIE: I have one of my daughter's doctors said he wouldn't get out of the car and pump gas in Brunswick, Georgia. He wouldn't breathe the air. I mean, that was in the '90s, early '90s. Things have gotten a lot better since then, but it has been bad.

It's not just like you were talking you treat one area and you look at one part of the water for each facility, but we have to -- as a whole.

And I'm back in the work force after 20 years out of it, and I won't work in Brunswick. I drive to Jacksonville rather than work in

this town. Some of the old buildings you go in -- and even though the plants are better, they reek. What about all the people that are still working in those plants or buildings, government buildings, federal buildings that are serving jury duty? And they have to sit in the schools, particularly people get bussed out of town and they have to breathe in that.

I am getting off track. I will shut up.

MR. PARSHLEY: State your name.

MR. REDDING: This is kind of off the wall --

MR. PARSHLEY: She wants you to state your name.

MR. REDDING: Paul Redding. This is off the wall, but it's kind of got to be a joke and it's not really a joke. It is serious. We would like to invite folks: This is a nice tourist area to come down to our beaches and swim. There is a problem. They have got signs on those beaches. The water is contaminated. It is filthy, nasty water.

And we have all these educated people in Glynn County, and they can't figure out where it's coming from. It's sad. I know. Folks

bring their families over to Jekyl or St. Simons, it has signs there: This water is contaminated. It is sad, this tourist area.

MS. MILLER: Any comments or questions?

MR. REDDING: That is all.

MS. MILLER: Again, thank you very much for coming out.

(Applause)

MR. FARRIER: Thank you. Appreciate it.

(The meeting was concluded at 8:07 p.m.)

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CERTIFICATE

STATE OF GEORGIA

COUNTY OF GLYNN

I, LUAN G. WILSON, Registered Professional Reporter, certify that I was authorized to and did stenographically report the foregoing proceedings, pages 1 through 66, and that the transcript is a true and complete record of my stenographic notes.

DATED this 6th day of July, 2012 at Brunswick, Georgia.

Luan G. Wilson

LUAN G. WILSON, R.P.R.