12/1/06-00562

Final

Baseline Ecological Risk Assessment
Blows Creek Watershed
St. Juliens Creek Annex, Chesapeake, Virginia

December 2006

This Baseline Ecological Risk Assessment (BERA) for Blows Creek, St. Juliens Creek Annex (SJCA), Chesapeake, Virginia completes Step 7 of the **8 step ERA process for Superfund**[1]. This step was conducted in accordance with the Navy policy for completing ecological risk assessments (ERAs) (CNO, 1999), which is consistent with the Navy/Tier II ERA approach developed for Region 3 and the general approach developed by the United States Environmental Protection Agency (USEPA) for conducting ERAs (USEPA, 1997).

A Screening Ecological Risk Assessment (SERA) (Steps 1 through 3 of an ERA) was conducted as part of a Remedial Investigation (RI) (CH2M HILL, 2003a). The results indicated the potential for impacts to Blows Creek and it was determined that additional investigation was needed to fully characterize potential risks to benthic-dwelling organisms from the presence of chemicals in sediment and potential risks to avian piscivores from the possible accumulation of mercury in prey (whole body fish). Therefore, this BERA (Steps 4 through 7) was completed to further characterize these potential risks. The objectives of this BERA are to:

- Evaluate data collected to further evaluate potential risks to ecological receptors;
- Further characterize potential risks to benthic-dwelling organisms from the presence of organic and inorganic chemicals in sediment; and,
- Determine if mercury concentrations in Blows Creek sediment represent a potential risk to avian piscivores and, if risks are indicated, further characterize the concentration trends and likely source(s) of mercury in Blows Creek.

The remaining portions of the BERA are organized as follows:

- **Section 1 - Site Background**
- **Section 2 - Problem Formulation**
- **Section 3 - Exposure Estimates and Risk Calculations**
- **Section 4 - Risk Outcomes**
- **Section 5 - Risk Evaluation**
- **Section 6 - Conclusions**
- **Section 7 – Uncertainties**

[1] Attached is an interactive CD which contains hyperlinks to figures and tables, identified by **bold blue** text, and access to definitions of key terms identified by underlined text.

1 Site Background

SJCA is a 490-acre facility situated at the confluence of St. Juliens Creek and the Southern Branch of the Elizabeth River in the City of Chesapeake, Virginia (**Site Location Figure**). SJCA began operations as a naval ammunition facility in 1849. Past operations have included general ordnance operations involving wartime transfer of ammunitions to various other Naval facilities throughout the United States and abroad. Activity at SJCA has decreased in recent years and all ordnance-related activities have been discontinued. SJCA's current primary mission is to provide a radar-testing range and various administrative and warehousing facilities for nearby Norfolk Naval Shipyard and other local naval activities.

Blows Creek, a subwatershed to the Southern Branch of the Elizabeth River, runs through the center of SJCA. Blows Creek is a tidally-influenced brackish water tributary to the Southern Branch of the Elizabeth River. The headwaters to Blows Creek originate in the Craddock District, which is a mixed residential/light industrial area located to the north/northwest of SJCA. However, more than 90 percent of Blows Creek is located on SJCA property. The Southern Branch of the Elizabeth River passes through highly developed areas upstream and adjacent to SJCA, discharges into the James River (about 7 miles to the north), and ultimately discharges to the southern reaches of the Chesapeake Bay.

Several Installation Restoration (IR) Sites are located within the Blows Creek drainage basin and have been identified as potential historical sources to Blows Creek (**Source Areas Figure**). A phased approach has been used for the Blows Creek drainage investigation. The following summarizes the progression and key documents associated with this investigation:

- **Remedial Investigation/Human Health Risk Assessment/Ecological Risk Assessment for Sites 3, 4, 5, and 6 (CH2M HILL, 2003a).** A SERA was conducted as part of an RI for four IR Sites within the Blows Creek basin to evaluate potential risks associated with historic site-related activities. Although focused on the evaluation of Sites 3, 4, 5, and 6, the conceptual site model (CSM) developed for the RI indicated there are also pathways by which chemicals originating from additional IR and non IR-related sources could be discharging to Blows Creek. The primary focus of this evaluation was on the upland areas, adjacent wetlands, and associated drainages to Blows Creek. The results of the RI indicated the potential for impacts to Blows Creek, based on the potential for site-related chemicals to have discharged to this drainage. It was determined that additional investigation of Blows Creek was needed to fully characterize potential risks to benthic-dwelling organisms from the presence of chemicals in sediment and potential risks to avian piscivores from the possible accumulation of mercury in prey (whole body fish).

- **Work Plan for Baseline Ecological Risk Assessment (Step 4) Blows Creek Sites 3, 4, and 5 (CH2M HILL, 2003b).** The BERA Work Plan developed a CSM specific to Blows Creek and identified a phased approach to further investigate the potential ecological risks that were first identified in the SERA. The Phase I investigation focused on the collection of additional surface sediment samples (0 to 6 inch depth) from locations

throughout Blows Creek to account for the range of potential sources and pathways via which chemicals could be entering Blows Creek. All samples collected during this phase were analyzed for chemical and physical composition, while a subset of samples were split and sent for sediment bioassay testing. The Phase II investigation focused on the collection of whole body fish (mummichog [*Fundulus* spp.]) from Blows Creek for mercury analysis.

- **Evaluation of Phase I Baseline Ecological Risk Assessment Sediment Data: Evaluation of Mercury Risks to Aquatic-Based Wildlife and Potential Exposure Pathways to Subsurface Sediment (CH2M HILL, 2004).** The sediment data collected from Blows Creek during the Phase I investigation was evaluated with a desktop food web model to confirm the potential risks that were previously indicated in the SERA. The evaluation concluded that potential risks exist and that further evaluation was recommended. Whole body fish was subsequently collected in Phase II to further evaluate mercury risks to avian piscivores. Additionally, sediment samples were collected for mercury analysis from the mouth of Blows Creek to evaluate potential sources of mercury, including IR Site 4 and the tidal influences of the Southern Branch of the Elizabeth River.

- **Phase II Baseline Ecological Risk Assessment Work Plan for Blows Creek (CH2M HILL, 2005).** The Phase II Work Plan provided a detailed description of the approach for collecting fish and sediment samples for mercury analysis. Composite whole body fish samples were collected from the lower, middle, and upper reaches of Blows Creek for mercury analysis. Surface sediment (0 to 6 inch depth) samples were collected from three linear transects adjacent to the mouth of Blows Creek for mercury analysis.

2 Problem Formulation

The problem formulation describes the environmental setting, habitats and biota, and develops a CSM for the Blows Creek watershed.

2.1 Environmental Setting

The topography of the Blows Creek drainage basin is relatively flat (**Site Topography Figure**). Much of the soils within the northeastern portion of the basin are comprised of dredge fill materials (USEPA, 1995a), which are likely to have originated from the Southern Branch of the Elizabeth River (**Site Soil Types Figure**).

Physical characteristics of the Blows Creek surface water and sediment (**Physical Composition Figure**) were measured during previous investigations.

Habitats and Biota

Terrestrial Habitats. Terrestrial habitats within the Blows Creek drainage basin are dominated by residential and light industrial development (> 50% of the total watershed area), while the remaining areas consist of mostly mixed upland forest and open field habitats (**Site Habitats Figure**). These habitats are expected to support a variety of terrestrial wildlife species, and were evaluated in the SERA (CH2M HILL, 2003a).

Aquatic and Wetland Habitats. Aquatic habitats within the Blows Creek drainage basin are comprised of the main body of Blows Creek and the fringing wetland within the area of

tidal influence. Numerous upland drainages occur throughout the Blows Creek watershed. Although these drainages periodically transport water to Blows Creek, they are dry throughout most of the year and do not represent viable aquatic habitat. Wetlands, which comprise just over 8% of the total habitat area, consist mostly of spartina and phragmites marsh. The brackish aquatic habitat of Blows Creek is expected to support a variety of aquatic species, including fish, insects, crustaceans, mammals, and birds.

Blows Creek provides habitat for diversity of both water column dwelling and demersal brackish water fish species. Some species, such as mummichog (*Fundulus* spp.), are resident in this water body, while other migratory species (e.g., striped bass *Morone saxatilis*) may spend only a portion of their lives in this drainage. Blows Creek is also likely to be a spawning and nursery ground for some species.

A variety of mammalian and avian species representative of different trophic levels forage and seek shelter in the range of habitats surrounding Blows Creek (**Representative Wildlife Table**). Piscivorous species, such as the belted kingfisher (*Ceryle alcyon*) and mink (*Mustela vison*), would be expected to forage primarily on fish and other aquatic organisms. Omnivorous species, such as some waterfowl and mammalian species, are likely to feed on a variety of plant and animal materials, while herbivorous species, such as the muskrat (*Ondatra zibethicus*), will forage primarily on aquatic and wetland vegetation.

Herpetofauna diversity and abundance will be limited by salinity in the main body of Blows Creek. The lower salinity habitats present in the upper reaches of this drainage are expected to support most of these species.

Rare, Threatened, and Endangered Species

A rare, threatened, and endangered species literature search was conducted for an area within two and five miles of SJCA (**Literature Search Results**). Searches were conducted by the Virginia Department of Conservation and Recreation, Division of Natural Heritage (VDCR, 2005), the Commonwealth of Virginia Department of Game and Inland Fisheries (VDGIF, 2005), and the U. S. Fish and Wildlife Service (USFWS, 2005). Peregrine falcon (*Falco peregrinus*) and the Dismal Swamp southeastern shrew (*Sorex longirostris fisheri*) were classified as state threatened and were identified by the search because they reside or migrate within a five mile radius of SJCA. The peregrine falcon can be found in coastal areas during migration, and has been observed near the mouths of the Western Branch and Eastern Branch of the Elizabeth River. The Dismal Swamp southeastern shrews' distribution is restricted to the Great Dismal Swamp National Wildlife Refuge located on the Virginia/North Carolina border (USFWS, 2005), and it is not expected to occur within the Blows Creek watershed.

2.2 Conceptual Site Model

A CSM (**CSM Figure**) was developed to identify potential chemical sources, transport pathways by which chemicals could move in the environment and exposure routes via which receptors could be exposed to chemicals in the environment.

Potential Chemical Sources

Ten potential IR site-related source areas have been identified within the Blows Creek watershed. The location and description of each potential source area within the Blows Creek watershed is summarized in the CSM. In addition, there is the potential for chemicals

to enter Blows Creek from sources not related to IR activities, including residential and industrial areas located upstream and the Southern Branch of the Elizabeth River located downstream.

Potential Transport Pathways

The CSM summarizes the primary transport pathways by which chemicals could enter Blows Creek. The primary transport pathways from IR Sites are surficial runoff (via both sheet flow and upland drainage swales scattered throughout the Blows Creek drainage) and groundwater infiltration. Additional sources include piped discharge from a historic floor drain system at IR Site 19 and direct disposal of waste from historic activities at IR Sites 1 and 4.

Following entry into Blows Creek, chemicals could remain in surface water in dissolved form, adsorb to suspended particulates, or associate with sediments via settling or adsorption. Once in sediment, chemicals may be remobilized to surface water via dissolution and/or particulate may be resuspended by physical forces, such as storm events and tidal fluxes, and biological forces, such as bioturbation. In low energy depositional environments, such as those present in Blows Creek, the potential for chemical resuspension/remobilization decreases as particulate depth in sediment increases.

Exposure Routes and Receptors

As shown in the CSM, ecological receptors at several different trophic levels could be exposed to chemicals in Blows Creek sediment and surface water. Risks associated with most potential exposure pathway/receptor combinations were adequately addressed in the SERA (CH2M HILL, 2003) and do not warrant further evaluation in the BERA. Based on the SERA outcome, risks associated with the following receptor/exposure pathway combinations were identified for additional evaluation in the BERA:

- **Risks to Benthic-Dwelling Organisms from Exposure to Chemicals in Sediment**: Based on the comparison of sediment chemical concentrations to literature toxicity screening values, the SERA indicated a potential for adverse effects to benthic-dwelling organisms from the presence of a number of different chemicals in sediments. The focus of the BERA is on the evaluation of sediment bioassay and chemical analytical data collected following completion of the SERA. Sediment bioassays provide a direct indication of chemical toxicity in sediment, while the additional chemical analytical data are used to further characterize chemical concentrations in the Blows Creek drainage.

- **Risks to Avian Piscivores from Exposure to Mercury via the Ingestion of Prey:** The SERA indicated the potential for adverse effects to avian piscivores birds from the ingestion of mercury following accumulation from sediments into prey (i.e., whole body fish). The SERA evaluation was based on the use of a literature-based food web model, which was used to estimate accumulation, and ultimately risks to wildlife. Fish data, which were collected following the SERA evaluation, were used in the BERA to more accurately and directly quantify actual mercury concentrations in fish, and ultimately, potential risks to avian piscivores.

As part of the problem formulation process, specific assessment endpoints, measurement endpoints, and surrogate species were identified for detailed evaluation in the BERA (**Assessment and Measurement Endpoints Table**).

3 Exposure Estimates and Risk Calculations

The following sections summarize the data and methods used in the BERA to evaluate risks to benthic-dwelling organisms and avian piscivores.

3.1 Summary of Data Evaluated in the BERA

The BERA evaluated all sample data collected during the Phase I and II investigations. Data from earlier Blows Creek investigations were also used, as applicable, for the evaluation of risks in Blows Creek (**Sample Summary Figure and Table**). All chemical analytical data were **validated and screened for usability** prior to evaluation in the BERA.

3.2 Chemical Concentrations in Sediment and Fish

Data (**Analytical Data Tables**) were summarized into the following groupings for evaluation in the BERA:

- All sediment samples collected for chemical analysis from Blows Creek (**Blows Creek Sediment Summary Statistics Table**);
- Sediment samples collected for mercury analysis from linear transects in the Southern Branch of the Elizabeth River, immediately adjacent to the mouth of Blows Creek (**Mouth of Blows Creek Sediment Summary Statistics Figure and Table**);
- Whole body tissue residue samples collected for mercury analysis from three composite sample locations in Blows Creek (**Fish Tissue Summary Statistics Figure and Table**).

3.3 Risk Calculations

The following sections describe the approaches used to calculate risks for benthic-dwelling organisms and avian piscivores.

Risk Calculations for Benthic-Dwelling Organisms

Sediment bioassay outcomes were used in conjunction with chemical analytical data in a weight of evidence approach to evaluate the overall potential for adverse effects to benthic-dwelling organisms in Blows Creek. The following sections outline the specific approach used to evaluate each of these data components.

Sediment Bioassays. Sediment bioassays were conducted with *Leptocheirus plumulosus (L. plumulosus)*, which is a benthic-dwelling organism indigenous to the brackish waters of the Chesapeake Bay region. A 28 day survival, growth, and reproduction test was conducted using procedures presented in ASTM (2001) and USEPA (1994 and 2001).

Bioassay testing provides an effective indicator of potential effect to benthic organisms because it directly measures sediment toxicity and accounts for the effects of multiple contaminants in sediment. A subset (19) of the total (38) sediment samples collected during the Phase I BERA investigation was split for bioassay analysis. Following completion of the bioassay, *L. plumulosus* survival, growth, and reproduction in site samples were statistically compared to both the laboratory control and upgradient reference samples. In addition to indicating the overall health of the bioassay organism, comparison of site samples to the laboratory control provides information about the potential for adverse effects to the bioassay organism relative to pristine/unimpacted conditions. The comparison to

upgradient reference samples, meanwhile, differentiates between effects caused by chemicals originating from site-related and non site-related sources.

Chemical Analysis. Evaluation of sediment chemical analytical data was conducted to further characterize the spatial extent of potential risk to benthic-dwelling organisms in Blows Creek and to support the interpretation of the bioassay outcomes.

Chemical analytical data collected from 38 locations throughout Blows Creek were evaluated by comparing chemical concentrations detected at each location to literature-based sediment screening values (**Medium-Specific Screening Values Table**) to identify chemicals/locations where there is the potential for adverse effect to benthic-dwelling organisms. Risks were estimated by comparing the estimated exposure concentrations with corresponding screening values using the Hazard Quotient (HQ) method to derive screening risk estimates. Chemicals with HQs greater than 1.0 indicate a potential for risk, while HQs which are equal to or less than 1.0 are not considered a potential risk and are eliminated from further consideration in the BERA. Chemicals which were detected but did not have literature-based screening values and chemicals that were not detected but which had reporting limits exceeding screening values were further evaluated as uncertainties (**Section 7**).

Chemical concentrations in the subset of samples identified for bioassay analysis were compared against *L. plumulosus* survival, growth, and reproduction to determine if a relationship could be established between chemical concentration and bioassay organism response. The results of these analyses will be used, along with the bioassay outcomes, to predict the potential for adverse effects to benthic organisms in the broader range of chemical analytical samples collected from Blows Creek.

An equilibrium partitioning (EqP) approach, which adjusts for the bioavailability of chemicals based on the presence of organic carbon in sediments, was used to develop toxicity screening values for non-ionic (non-polar) organic chemicals (USEPA, 1993a and 1996a). Additionally, **soluble extractable metal/acid volatile sulfide (SEM/AVS)** analysis was conducted to evaluate the bioavailability of selected metals (cadmium, copper, lead, mercury, nickel, and zinc) based on the presence of sulfides in sediment (Suter, 1993; Ankley, 1996). SEM/AVS ratios greater than 1.0 indicate that one or more of the selected metals are bioavailable and, if present at high enough concentrations, have the potential to adversely affect benthic-dwelling organisms.

Risk Calculations for Avian Piscivores

The potential for mercury to represent a risk to avian piscivores (as represented by belted kingfisher) was identified for further consideration based on evaluation of sediment chemical analytical data in the SERA (CH2M HILL, 2003a) and a preliminary evaluation of the Phase I sediment chemical analytical data (CH2M HILL, 2004). Both evaluations used sediment chemical analytical data and literature-based bioaccumulation factors to estimate mercury concentrations in prey (fish) to birds that might feed upon them. Fish were collected as part of the Phase II investigation (CH2M HILL, 2005) to directly and more accurately measure mercury concentrations to which avian piscivores would be exposed via ingestion. Mummichog were collected from Blows Creek for this analysis because they are resident species to Blows Creek, therefore mercury concentrations found in these fish will

accurately reflect accumulation within this water body. The measured concentrations in fish were then used to **model** an exposure dose for avian piscivores.

Following estimation of exposure dose, risks from mercury to avian piscivores (represented by belted kingfisher) were calculated by comparing the modeled dose to literature–based toxicity values, using the HQ method (**Ingestion Screening Values for Belted Kingfisher Table**). Modeled doses were compared to three dose-based toxicological screening values: a No Observed Adverse Effect Level (NOAEL), a Lowest Observed Adverse Effect Level (LOAEL), and a Maximum Acceptable Toxicant Concentration (MATC), to provide a range of potential effects levels.

Reference Concentration Comparisons and Evaluation of Chemical Trends

Chemical concentrations detected in Blows Creek sediment were compared to those detected in existing reference sediment data to determine if the detected concentrations exceed those present in non site-impacted areas. The chemical concentrations indicating potential risk were compared to 95% Upper Tolerance Limits (UTLs) from reference samples collected in the nearby St. Juliens Creek (CH2M HILL, 2005) and in dredge fill soil (CH2M HILL, 2001). St. Juliens Creek reference samples were collected from the upper portions of this water body, in areas that are not likely to have received direct chemical input. Soils were used in the latter comparison because available information suggests that a substantial portion of the soils in the northeastern portion of the Blows Creek watershed are comprised of dredge fill materials, and it is anticipated that, as a result of surficial runoff, sediment concentrations could approximate those detected in dredge fill soils.

In addition to the reference comparison, mercury concentrations measured in sediment along three transect lines at the mouth of Blows Creek were evaluated. The objective of this evaluation was to further define the relationship between mercury concentrations in Blows Creek and the Southern Branch of the Elizabeth River, and determine if Blows Creek is a source of mercury to the Southern Branch of the Elizabeth River. Emphasis will be placed on this analysis if mercury represents a potential risk to avian piscivores.

4 Risk Outcomes

The following sections summarize the risk outcomes for the evaluation of potential adverse effects to benthic-dwelling organisms and avian piscivores.

4.1 Risk Outcomes for Benthic Dwelling Organisms

Bioassay Outcomes (Sediment Bioassay Outcomes Figure)

Comparison of Sediment Chemical Concentrations to Literature-Based Screening Values. Eighteen inorganic chemicals, eight pesticides, one polychlorinated biphenyl (PCB), and 23 semivolatile organic compounds (SVOCs) were detected at one or more locations at concentrations exceeding conservative, literature-based screening values (HQs greater than 1.0) indicating there is potential risk to benthic-dwelling organisms from Blows Creek sediment (**Sediment Screening Figure**). Chemicals that were not detected and/or were without screening values were further evaluated as uncertainties (**Section 7**).

Evaluation of Organic Chemical Bioavailability: Comparison of Organic Chemical Concentrations to Bioavailability-Adjusted Screening Values. One volatile organic compound (VOC), two pesticides, and 13 SVOCs (primarily polycyclic aromatic hydrocarbons [PAHs]) were detected in samples from one or more locations at concentrations exceeding the bioavailability-based EqP screening values (HQs greater than 1.0) indicating there is potential risk to benthic-dwelling organisms from Blows Creek sediment (**EqP Comparison Figure**).

Evaluation of Selected Inorganic Chemical Bioavailability: Comparison of SEM/AVS Ratios. SEM/AVS ratios were greater than one (1.05 to 28.9) for 11 of the 36 sediment samples collected from Blows Creek indicating there is potential risk to benthic-dwelling organisms (**SEM/AVS Results Figure**).

4.2 Risk Outcomes for Avian Piscivores

Dietary mercury doses modeled from the whole body fish data did not exceed literature-based dietary screening values when compared to the NOAEL (HQ of 0.68), MATC (HQ of 0.39), or LOAEL (HQ of 0.23), indicating there is no potential risk to avian piscivores from the ingestion of fish from Blows Creek.

5 Risk Evaluation

5.1 Evaluation of Risks to Benthic-Dwelling Organisms

The chemical concentrations detected in sediment were compared to conservative ecological screening values to identify chemicals having the potential to cause an adverse effect (**Sediment Screening Statistics Figure**). A number of chemicals were detected at one or more locations at concentrations exceeding screening values, suggesting that each of these chemicals has the potential to adversely affect benthic-dwelling organisms. However, the frequency of the exceedance for most chemicals remained low; suggesting the overall area of potential impact is also limited. A potential for adverse effect, based on frequency of exceedance, appears to be associated primarily with PAHs, pesticides (most notably DDT), and, to a lesser extent, inorganic chemicals (metals).

Sediment bioassays were conducted to further refine potential risks suggested by the chemical analytical comparisons. There was a notable difference in the bioassay statistical test outcomes of the site samples when compared to laboratory control and reference samples (**Sediment Bioassay Outcomes Table**).

Typically, the control, representing a relatively pristine or optimal condition, should have the highest level of survival, growth and reproduction than the site or reference samples. In this case, the reference locations showed a slightly higher level of survival, growth, and reproduction than in the laboratory control. This may have been due to a random effect or it may be the result of a stimulatory or "hormetic" effect. Such an effect has been reported in the scientific literature and occurs when organisms are exposed to chemical concentrations, which are below toxicological effects thresholds (Calabrese and Baldwin, 1992). It is anticipated that the relatively low chemical concentrations detected in the upgradient reference samples may have resulted in such an effect, and caused a greater statistical significance in the comparison to the pooled reference. When compared to the laboratory

control, survival and growth were significantly reduced in only two Blows Creek samples (SJBC-SD11 and SD36, respectively), while reproduction was not significantly reduced in any sample. Comparison of site survivability to reference samples also showed these two sample locations to be statistically significant at location SJBC-SD06. The endpoint results for the remaining sample locations, relative to both control and reference, were not as complimentary and therefore the results represent increased uncertainty.

In order to better evaluate the significance of these results, chemical analytical data were correlated with bioassay outcomes to identify the chemicals likely to be causing the observed bioassay organism response (**Correlation Coefficient Outcomes Table**). The results of these correlations do not indicate a clear relationship between chemical concentration and bioassay organism growth, survival, and/or reproduction. Sediment sample SJBC-SD36 had some of the highest PAH concentrations detected in any sample collected from Blows Creek, and it is considered likely that PAHs resulted in the observed bioassay organism response.

Most chemical concentrations at SJBC-SD11 were consistent with those detected throughout Blows Creek where there was no bioassay organism responses observed. Therefore, the observed response at SJBC-SD11 could not be easily explained and was further addressed as an uncertainty (**Section 7**) in the risk assessment.

Bioavailability was evaluated as an additional line of evidence. The bioavailability of organic chemicals can be reduced by the presence of organic carbon in sediment. There was a lower frequency of exceedance for many of the organic chemicals (e.g., most PAHs) when compared to the EqP screening values (**EqP Comparison Table**).The lower frequency of exceedance suggests the bioavailability of these chemicals will be decreased by the presence of organic carbon in sediment, while a more limited subset of chemicals indicated an increased potential for adverse effect based on the different toxicity value used in the EqP comparison. The SEM/AVS ratios suggest that selected inorganic chemicals (cadmium, copper, lead, mercury, nickel, and zinc) may be bound in sulfide complexes and therefore, not bioavailable at many of the sample locations (**SEM/AVS Results Figure and Table**). These results suggest a reduced bioavailability, however, a potential remains for these and other inorganic chemicals to cause an adverse effect.

The chemical concentrations indicating potential risk were compared to 95% UTLs from reference samples collected in the nearby St. Juliens Creek and dredge fill soils to determine if concentrations detected within Blows Creek sediments exceed those present in non site-impacted areas (**Background Comparison Table**). Results of this comparison indicate that detected concentrations for the majority of chemicals identified as a potential risk in Blows Creek sediment do not exceed the 95% UTLs for St. Juliens Creek sediment or dredge fill soils at most locations. It is therefore concluded that chemical concentrations (and associated risks) in most areas of Blows Creek do not exceed those present in the nearby St. Juliens Creek or in dredge fill soils.

5.2 Evaluation of Risks to Avian Piscivores

Dietary mercury concentrations modeled from fish (*Fundulus spp*.) tissue did not exceed literature-based dietary screening values, and it was therefore concluded there is no potential risk to avian piscivores from the ingestion of fish from Blows Creek.

6 Conclusions

6.1 Risks to Benthic-Dwelling Organisms

Sediment bioassay outcomes, when considered in conjunction with the chemical analytical data, suggest a limited potential for adverse effect to benthic dwelling organisms. Considering all lines of evidence, uncertainty, and the CSM, the greatest potential for adverse effect was indicated at sample locations SJBC-SD11 and SD36. Sediment sample SJBC-SD36 was collected immediately adjacent to Site 4 and had some of the highest PAH concentrations detected in any sample collected from Blows Creek.

It is possible that PAHs, potentially originating from Site 4, resulted in the observed bioassay organism response. It should be noted, however, that Site 4 has since been remediated with a soil cover and removal of the adjacent drainage ditch and does not represent an ongoing source of chemicals to Blows Creek. There is more uncertainty associated with the outcome observed at sample location SJBC-SD11 as chemical concentrations and physical conditions at this location were similar to those at many other locations within Blows Creek, where no bioassay organism response was observed.

Although there are some uncertainties associated with the bioassay outcomes, the results of the bioassay and chemical analyses, when considered together, suggest only a very limited and localized potential for adverse effect to benthic-dwelling organisms. Furthermore, reference concentration comparisons indicate that chemical concentrations within Blows Creek sediment approximate those detected in the nearby St. Juliens Creek sediment and in dredge fill soils, which are thought to comprise a substantial portion of the soils within the Blows Creek drainage.

6.2 Risks to Avian Piscivores

Dietary mercury concentrations modeled from fish tissue residue data did not exceed literature-based dietary screening values and it is concluded there is no potential for adverse effect to avian piscivores from the presence of mercury in Blows Creek sediment.

Furthermore, although mercury concentrations detected in Blows Creek sediment (up to 1 mg/kg) were higher than detected in the Southern Branch of the Elizabeth River, adjacent to the mouth of Blows Creek (up to 0.3 mg/kg), the mercury concentrations detected in Blows Creek sediment did not exceed the 95% UTL concentrations detected in either the nearby St. Juliens Creek or in dredge fill soils, which are thought to comprise a substantial portion of the soils within the Blows Creek drainage.

6.3 Mercury Fate and Transport

A focused evaluation of mercury concentration trends within Blows Creek was conducted based on the potential for mercury to represent a risk to avian piscivores and the elevated mercury concentrations detected within an upland drainage adjacent to Site 4 and the mouth of Blows Creek. Additional sediment samples were collected from transects immediately outside the mouth of Blows Creek. The objective of these samples was to determine the extent to which the mercury concentrations in sediments at the mouth of Blows Creek have been influenced by the Southern Branch of the Elizabeth River, and to differentiate this potential source from the adjacent Site 4 upland drainage.

Mercury concentrations detected in sediments at the mouth of Blows Creek, although relatively low (< 1 mg/kg), were higher than those detected in the transect samples (up to 0.3 mg/kg). These results, coupled with the relatively consistent distribution of mercury across the transects, suggest that mercury concentrations detected in the lower reaches of Blows Creek did not originate from the immediately adjacent Southern Branch of the Elizabeth River, but instead, are likely to have in part originated from the Site 4 upland drainage.

Based on its potential to represent a source of mercury and other chemicals to Blows Creek, soils were removed from the Site 4 drainage and a soil cover was placed over the waste area in 2005. This drainage no longer represents a potential source of chemicals to Blows Creek. As indicated in the BERA evaluation, mercury concentrations currently within the Blows Creek sediments do not exceed the 95% UTL concentrations detected in either the nearby St. Juliens Creek or in dredge fill soils and tissue residue data indicate that mercury concentrations currently in sediment do not represent a potential risk to avian piscivores.

6.4 Recommendation

Based on the conclusions presented herein, it is the consensus of the SJCA Project Management Team (consisting of representatives from the Navy, USEPA, and VDEQ) that Blows Creek requires no further action under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended. This no further action decision will be incorporated into the Record of Decision for IR Site 5.

7 Uncertainties

Due to the need to make assumptions and extrapolations when estimating risk, there are uncertainties associated with risks estimated in this BERA (**Key Uncertainties Table**). Many of the uncertainties surrounding risk estimates for Blows Creek have been greatly reduced by the additional sampling conducted as part of the BERA. However, as with any assessment, there remains some uncertainty that must be considered when making risk management decisions about a site.

Acronyms

ASTM	American Society for Testing and Materials
BERA	Baseline Ecological Risk Assessment
CSM	conceptual site model
EqP	equilibrium partitioning
ERA	ecological risk assessment
HQ	Hazard Quotient
IR	Installation Restoration
LOAEL	Lowest Observed Adverse Effect Level
MATC	Maximum Acceptable Toxicant Concentration
mg/kg	milligrams per kilogram
NOAEL	No Observed Adverse Effect Level
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
RI	Remedial Investigation
SEM/AVS	soluble extractable metal/acid volatile sulfide
SERA	Screening Ecological Risk Assessment
SJCA	St. Juliens Creek Annex
SVOC	semivolatile organic compound
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UTL	Upper Tolerance Limit
VDCR	Virginia Department of Conservation and Recreation, Division of Natural Heritage
VDGIF	Virginia Department of Game and Inland Fisheries
VOC	volatile organic compound

Additional acronyms can be found on the following web sites:
http://www.epa.gov/region1/assistance/univ/acro.html
http://public.lantops-ir.org/sites/public/sjca/Site%20Files/acronyms.aspx

Glossary

aquatic habitats: The natural home of marine or freshwater flora and fauna.

aquatic species: All animals and plants, including pathogens or parasites of aquatic animals or plants, that are dependent on aquatic ecosystems for at least a portion of their life cycles.

assessment endpoints: Environmental characteristics, which if they were found to be significantly affected, would indicate the need for protection or remediation.

avian piscivores: Birds that feed preferably on fish.

benthic-dwelling organisms: Organisms that live on the bottom of a water body or in the bottom sediments.

bioassay testing: Test that measures the effects of one or more chemicals on a living organism.

bioavailability: The degree to which a toxic substance or other pollutant is present in the environment and available to a potentially impacted organism.

bioturbation: The mixing of sediments by living organisms such as worms, clams, or arthropods that make burrows in soft sediment.

brackish water: Any mixture of sea water and fresh water with a salinity of substantially less than 30 parts per thousand (ppt) but greater than 3 ppt.

chemical sources: An area where hazardous substances or petroleum products have been deposited, stored, released, disposed of, or placed.

conceptual site model (CSM): Description of how chemicals enter and are transported within an ecosystem, and how organisms could be exposed to those chemicals.

demersal: Organisms dwelling at or near the bottom of a water body.

detected but did not have literature-based screening values: Chemical is detected and present in the tested environmental media, but could not be quantitatively evaluated in the BERA because of the absence of a literature-based toxicity screening value. These chemicals were treated as uncertainties.

equilibrium partitioning (EqP) approach: Approach defined in USEPA (1996b and 1999) for developing sediment toxicity values for non-ionic (non-polar) organic chemicals. EqP-based values were used to estimate chemical bioavailability and were calculated using the following formula:

$$Value = (f_{oc})\,(K_{oc})\,(FCV)$$

where: *Value* = Equilibrium partitioning-based value (µg/kg)

f_{oc}	=	Total organic carbon (TOC) content (percent, as a fraction)
K_{oc}	=	Normalized adsorption coefficient (L/kg)
FCV	=	Chronic Ambient Water Quality Criteria (AWQC) or its equivalent (µg/L)

TOC (f_{oc}) values measured at each sample location were used in this formula to develop site-specific (and sample-specific) screening values. K_{oc} values were estimated from K_{ow} values using the formula from USEPA (1996b):

$$Log_{10}K_{oc} = 0.00028 + 0.983\,(Log_{10}K_{ow})$$

where: f_{ow} = Octanol water partition coefficient.

exposure routes: The means by which a chemical or pollutant enters an organism after contact (e.g., ingestion, inhalation, or dermal absorption).

food web model: A model that describes the organisms found in a food web.

groundwater infiltration: The process by which precipitation moves from the land surface into the underlying soil.

Hazard Quotient (HQ) method: Estimate of the potential for adverse effect to an organism, which is calculated by dividing the estimated exposure concentration by the corresponding medium-specific screening value or by dividing the exposure dose by the corresponding ingestion screening value (food web exposure). HQs exceeding 1.0 indicate the potential for risk, while HQs less than or equal to 1.0 indicate that adverse effects are not occurring.

herbivorous species: An organism whose primary diet consists of plants.

herpetofauna: Amphibians and reptiles.

"hormetic" effect: The stimulating effect of a subinhibitory concentration of any toxic substance on an organism.

laboratory control: Control sample of known composition. In this case, the objective of the laboratory control is to determine the health of the test organism at the time of testing and to determine bioassay organism response under pristine conditions.

literature-based screening values: Region III Biological Technical Assistance Group (BTAG) sediment screening values (USEPA, 1995b) or alternate screening values selected from the available scientific literature (CH2M HILL, 2000).

literature-based bioaccumulation factors: The ratio of the concentration of a chemical within an organism to the concentration of that chemical in the surrounding environment. A measure of the extent to which the organism accumulates the chemical as a result of uptake through ingestion and contact with contaminated media (e.g., water).

Lowest Observed Adverse Effect Level (LOAEL): Lowest concentration or amount of a chemical, found by experiment or observation, that causes an adverse alteration of morphology, functional capacity, growth, development or life span in an organism, system, or (sub)population.

Maximum Acceptable Toxicant Concentration (MATC): Concentration bounded by the NOAEL and LOAEL which is used as the concentration of toxicant predicted to have no detrimental impacts on the test population.

measurement endpoints: Quantitative expression of an observed or measured effect to an assessment endpoint or its surrogate in response to a stressor to which it is exposed.

model: Dietary intakes for belted kingfisher were calculated using the following formula (modified from USEPA [1993]):

$$DI_x = \frac{\sum_i (FIR)(FC_{xi})(PDF_i)}{BW}$$

where:	DI_x	=	Dietary intake for chemical x (mg chemical/kg body weight/day)
	FIR	=	Food ingestion rate (kg/day, dry-weight)
	FC_{xi}	=	Concentration of chemical x in food item i (mg/kg, dry weight)
	PDF_i	=	Proportion of diet composed of food item i (dry weight basis)
	BW	=	Body weight (kg, wet weight)

The belted kingfisher's FIR is estimated to be 0.018 kg/day, dry weight (USEPA, 1993) and its diet is estimated to consist of 84% fish (PDF of 0.84) and 16% aquatic invertebrates (PDF = 0.16) (USEPA, 1993b). Mercury concentrations measured in fish (*Fundulus* spp.) tissue were used to estimate the fish tissue FC. The aquatic invertebrate FC was estimated by multiplying the mean mercury concentration in Blows Creek sediment (0.32 mg) by a sediment-to-invertebrate BAF of 1.08 (Bechtel Jacobs, 1998). A BW of 0.15 kg reported by Dunning (1993) was used in the evaluation.

The model conservatively assumed that all receptors spend 100 percent of their time on the site. Water ingestion was not included in the model because mercury was not detected in surface water. Sediment ingestion is reported to be negligible for belted kingfisher (Sample and Suter, 1994).

non-ionic (non-polar) organic chemicals: Organic compounds that do not have a positive or negative electric charge.

No Observed Adverse Effect Level (NOAEL): Greatest concentration or amount of a chemical, found by experiment or observation, that causes no detectable adverse alteration of morphology, functional capacity, growth, development or life span in an organism, system, or (sub) population.

not detected but which had reporting limits exceeding screening values: Chemical is not detected, but has a reporting limit which exceeds the screening value, making it possible the non detected chemical is present at a concentration which exceeds the screening value. These chemicals were treated as uncertainties.

omnivorous species: An organism that eats both plants and animals.

peregrine falcon: The peregrine falcon is a crow-sized bird, weighing just over two pounds with a wing span of approximately 3 feet.

piscivorous species: An organism whose primary diet consists of fish.

problem formulation: The first phase of an ecological risk assessment, which includes a preliminary description of exposure and ecological effects, scientific data and data needs, key factors to be considered, and the scope and objectives of the assessment. This phase produces the risk hypotheses, conceptual site model, and analysis plan, and is the basis around which the rest of the assessment is developed.

receptors: Any living organism or environmental medium which is exposed to contamination from a discharge.

soluble extractable metal/acid volatile sulfide (SEM/AVS): The toxicity of the metals cadmium, copper, lead, nickel, and zinc in sediment are influenced by the presence of sulfides in sediments, because these metals form complexes with sulfides, which reduces their bioavailability and toxicity in sediment.

The bioavailability of these metals is expressed as a ratio of the SEM concentrations to the AVS concentrations measured in sediment (on a molar basis). When simultaneously extracted metals concentrations are less than the sulfide concentration (SEM/AVS ratio less than 1.0), toxicity to benthic organisms has not been observed for these metals (Hansen and Berry, 1996; Ankley, 1996). Ratios greater than 1.0 indicate the potential for toxicity, but do not definitively indicate that an adverse effect is occurring.

statistically compared: Data outcomes were evaluated to determine homogeneity of sample variances and normality of distribution using Shapiro-Wilk's Test for Normality and the F-Test for Equality of Two Variances, respectively. Data sets were subsequently evaluated using parametric or non-parametric Analysis of Variance (ANOVA) statistics, as appropriate. Pair-wise comparisons were based on the two sample t-Test. Statistical difference was evaluated at an alpha of 0.05.

surrogate species: Species selected as an indicator of the potential for effects to a broader range of related organisms.

terrestrial habitats: The natural home of a plant or animal that lives on land.

toxicity screening values: A value above which there is significant potential for adverse toxicological effect to the test organism/organisms being evaluated.

transport pathways: The means by which chemicals move through the environment following a release.

trophic levels: A group of organisms in a food chain of an ecosystem that occupy a similar functional position in the ecosystem.

upgradient reference samples: Samples collected from non-site impacted areas. In this case, the samples are used to evaluate bioassay organism response when the organism is exposed to regional contaminants that are not site-related.

Upper Tolerance Limits (UTLs): A 95 confidence/95 coverage background UTL is an upper bound (with 95% confidence) of the background 95th percentile. Background UTLs can be used to identify samples that potentially exceed background conditions.

validated and screened for usability: All data were validated by a qualified data validator using acceptable data validation methods. The data validation qualifiers, or flags, used for the BERA data include:

- Data qualified with a "B" flag by the data validator indicate that the analytes have also been detected in a field, equipment, or trip blank, or in a laboratory QA/QC sample. The concentration of a "B"-qualified result is less than 10 times the concentration of the constituent for an associated QA/QC result. If the sample concentration is less than 10 times the associated blank concentration, the conclusion is that the parameter was not detected. These data were treated as not detected in the BERA.
- Data qualified with a "J" indicate that the analyte is present but the value is estimated. These data were treated as detected in the BERA.
- Data qualified with a "K" indicate that the analyte is present but the reported value may be biased high and the actual value is expected to be lower. These data were treated as detected in the BERA.
- Data qualified with an "L" indicate that the analyte is present, but the reported value may be biased low and the actual value is expected to be higher. These data were treated as detected in the BERA.
- Data qualified with an "R" indicate an unusable result. The analyte may or may not have been present and the result was rejected. These data were treated as not detected in the BERA.
- Data qualified with a "U" indicate that the analyte was not detected and the associated value indicates the approximate sample concentration necessary to be detected. These data were treated as not detected in the BERA.
- For duplicate samples, the higher of two detected concentrations was used. In cases where there was only one detect, the detected value was used, while in cases where the duplicates were both nondetects, the higher of the two detection limits was used to estimate concentration.

water column dwelling: Animals or plants living in the section of water extending from the surface to the bottom.

weight of evidence approach: The extent to which multiple lines of evidence support the hypothesis that one or more chemicals causes an effect.

wetlands: An area that is regularly saturated by surface water or groundwater and which is characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions (e.g., swamps, bogs, marshes, and estuaries).

Additional glossary terms can be found on the following web site:
http://public.lantops-ir.org/sites/public/sjca/Site%20Files/glossary.aspx

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Instructions

for the Interactive CD

Overview

Attached is an interactive CD to accompany the Baseline Ecological Risk Assessment (BERA) for the Blows Creek Watershed, St. Juliens Creek Annex, Chesapeake, Virginia. The CD contains an interactive table of contents and access to:

- ***Text*** with hyperlinks to figures and tables, identified by **bold blue** text, and access to definitions of key terms identified by placing your cursor over the underlined text.
- ***Figures*** with interactive components, including
  - Clickable figures, with access to pop-up boxes containing detailed site information
  - Clickable figure/table combinations, with access to parameter-specific data
  - Hyperlinks to detailed tables
- ***Summary Tables*** with hyperlinks to more detailed tables
- ***Glossary*** of key terms and acronyms
- ***References*** of source documents
- ***Printable Version*** of the complete document

The hyperlinked information can be accessed with Adobe Acrobat Reader®, which is available free from Adobe.

Troubleshooting

The CD will auto launch when placed in most computers. If it does not auto launch, then follow this path to manually execute the CD: Start\Run\Browse\D:\ShellRun.exe

If the CD launches but the content is blocked or otherwise not visible, then the active content must be enabled by going to the following locations on the Internet Explorer Tool Bar:

- Tools -> Internet Options -> Advanced tab. Scroll down to 'Security', and ensure the following boxes are checked:
  - 'Allow active content from CDs to run on My Computer'
  - 'Allow active content to run in files on My Computer'.

- Tools -> Internet Options -> Privacy tab. Ensure that the 'Block pop ups' box is unchecked.

- Tools -> Internet Options -> Security Settings tab-> Custom Level. Scroll down to 'ActiveX controls and plugins' and ensure that 'Run ActiveX controls and plugins' is enabled.

In addition to enabling active content via the Internet Explorer Tool Bar, please ensure that any third-party pop up blockers, such as those associated with the Google toolbar, are either inactivated or uninstalled.

Representative Aquatic and Terrestrial Wildlife Likely to Occur at Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*			
Benthic-Dwelling Organisms			
Red-jointed fiddler	*Uca minax*	Red-gilled Mud Worm	*Marenzellaria viridis*
Atlantic ribbed mussel	*Geukensia demissa*	Amphipod	*Leptocheirus plumulosus*
Fish			
Brown Bullhead	*Ameiurus nebulosus*	Atlantic menhaden	*Brevoortia tyrannus*
Yellow Bullhead	*Ameiurus natalis*	Mummichog	*Fundulus heteroclitus*
Common Carp	*Cyprinus carpio*	White Perch	*Morone americana*
Channel Catfish	*Ictalurus punctatus*	Yellow Perch	*Perca Flavescens*
American Eel	*Anguilla rostrata*	White Shad	*Alosa sapidissima*
Hogchocker	*Trinectes maculatus*	Golden Shiner	*Notemigonus crysoleucas*
Banded Killifish	*Fundulus diaphanus*	Banded Sunfish	*Enneacanthus obesus*
Mammals			
Eastern Harvest Mouse	*Reithrodontomys humulis*	Raccoon	*Procyon lotor*
Large-toothed Muskrat	*Ondatra zibethicus macrodon*	Southeastern Shrew	*Sorex longisrostris longirostris*
Common Mink	*Mustela vison*	Long-tailed weasel	*Mustela frenata*
Birds			
Great Egret	*Ardea alba egretta*	American Black Duck	*Anas rubripes*
Sedge Wren	*Cistothorus platensis*	Great Blue Heron	*Aredea herodias*
Bufflehead	*Bucephala albeola*	Green Heron	*Butorides virescens*
Canvasback	*Aythya valisineria*	Belted Kingfisher	*Ceryle alcyon*
Great Cormorant	*Phalacrocorax carbo*	Common Loon	*Gavia immer*

Assessment Endpoints, Risk Hypotheses, Measurement Endpoints, and Receptors Evaluated in the BERA *St. Juliens Creek Annex, Chesapeake, Virginia*			
Assessment Endpoints	**Risk Hypothesis**	**Measurement Endpoint**	**Receptor Species**
Protection of benthic communities from the toxic effects (on survival and growth) of site-related chemicals present in the sediment.	Are levels of site-related chemicals present in the sediment sufficient to cause adverse effects on the survival and growth of benthic-dwelling organisms at the site?	1) Sediment bioassay outcomes with *L. plumulosus* ; and 2) Comparison of chemical concentrations in sediment to literature-based benthic organism screening values.	Benthic-dwelling organisms
Protection of piscivorous birds to ensure that ingestion of mercury in prey does not have a negative impact on growth, survival, and reproduction.	Are levels of mercury in sediment sufficient to cause adverse effects on the growth, survival, and reproductive success of piscivorous birds using Blows Creek?	Comparison of mercury concentrations estimated in prey (from fish tissue residue analysis) to literature-based dietary screening values.	Belted Kingfisher

Sediment Samples - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*											
		Analyte									
Sample Event	Sample ID	TCL VOCs	TCL SVOCs	TCL Pesticides/PCBs	TCL Explosives	TCL Dioxins	TAL Metals	TAL Mercury	AVS/SEM	Grain Size	TOC
Sediment Background Samples (April and October, 1999)	SJSBK-SD07-001	x	x	x			x				
	SJSBK-SD07-002	x	x[1]	x			x				
	SJSBK-SD08-001		x	x			x				
	SJSBK-SD08-002	x	x	x			x				
	SJSBK-SD09-001	x[1]	x	x			x				
	SJSBK-SD09-002	x[1]	x	x			x				
	SJSBK-SD10-001	x	x	x			x				
	SJSBK-SD10-002	x	x	x			x				
	SJSBK-SD11-001	x[1]	x	x			x				
Site 5 Sediment Samples (April 1999)	SJS05-SD07		x	x			x				
Site 4 Sediment Samples (April 1999)	SJS04-SD04		x	x			x				
	SJS04-SD05		x	x			x				
	SJS04-SD06		x	x			x				
	SJS04-SD07		x	x			x				
	SJS04-SD08		x	x			x				
	SJS04-SD09		x	x			x				
Site 1 Sediment Samples (February, 2001)	SJS01-SD01	x	x	x			x				
	SJS01-SD02	x	x	x			x				
	SJS01-SD03	x	x	x			x				
	SJS01-SD04	x	x	x			x				
BERA Phase I Sediment Samples (September, 2003)	SJBC-SD01-03C		x	x	x		x		x	x	x
	SJBC-SD02-03C		x	x	x		x		x	x	x
	SJBC-SD03-03C		x	x	x		x		x	x	x
	SJBC-SD04-03-P		x	x	x	x	x		x	x	x
	SJBC-SD04-03C		x	x	x	x	x		x	x	x
	SJBC-SD05-03C		x	x	x		x		x	x	x
	SJBC-SD06-03C		x	x	x		x		x	x	x
	SJBC-SD07-03C		x	x	x		x		x	x	x
	SJBC-SD08-03C		x	x	x		x		x	x	x
	SJBC-SD09-03C		x	x	x		x		x	x	x
	SJBC-SD10-03C		x	x	x		x		x	x	x
	SJBC-SD11-03C		x	x	x		x		x	x	x
	SJBC-SD12-03C		x	x	x		x		x	x	x
	SJBC-SD13-03C		x	x	x		x		x	x	x
	SJBC-SD14-03C		x	x	x	x	x		x	x	x
	SJBC-SD15-03C		x	x	x		x		x	x	x
	SJBC-SD16-03C		x	x	x	x	x		x	x	x
	SJBC-SD17-03C		x	x	x		x		x	x	x
	SJBC-SD18-03C		x	x	x	x	x		x	x	x
	SJBC-SD18-03C-P		x	x	x	x	x		x	x	x
	SJBC-SD19-03C		x	x	x		x		x	x	x
	SJBC-SD20-03C		x	x	x	x	x		x	x	x
	SJBC-SD21-03C		x	x	x		x		x	x	x
	SJBC-SD22-03C		x	x	x		x		x	x	x
	SJBC-SD23-03C		x	x	x		x		x	x	x
	SJBC-SD23-03C-P		x	x	x		x		x	x	x

1) A subset of this chemical group was analyzed at this sample location.

Sediment Samples - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*											
		Analyte									
Sample Event	Sample ID	TCL VOCs	TCL SVOCs	TCL Pesticides/PCBs	TCL Explosives	TCL Dioxins	TAL Metals	TAL Mercury	AVS/SEM	Grain Size	TOC
BERA Phase I Sediment Samples (September, 2003)	SJBC-SD24-03C		x	x	x		x		x	x	x
	SJBC-SD25-03C		x	x	x		x		x	x	x
	SJBC-SD26-03C		x	x	x		x		x	x	x
	SJBC-SD27-03C		x	x	x		x		x	x	x
	SJBC-SD28-03C		x	x	x	x	x		x	x	x
	SJBC-SD29-03C		x	x	x		x		x	x	x
	SJBC-SD30-03C		x	x	x	x	x		x	x	x
	SJBC-SD31-03C		x	x	x		x		x	x	x
	SJBC-SD32-03C		x	x	x	x	x		x	x	x
	SJBC-SD33-03C		x	x	x		x		x	x	x
	SJBC-SD34-03C		x	x	x		x		x	x	x
	SJBC-SD35-03C		x	x	x		x		x	x	x
	SJBC-SD36-03C		x	x	x		x		x	x	x
BERA Phase II Sediment Samples (October, 2004)	SJBC-SD200-04D							x			x
	SJBC-SD201-04D							x			x
	SJBC-SD202-04D							x			x
	SJBC-SD203-04D							x			x
	SJBC-SD204-04D							x			x
	SJBC-SD205-04D							x			x
	SJBC-SD206-04D							x			x
	SJBC-SD207-04D							x			x
	SJBC-SD208-04D							x			x
	SJBC-SD209-04D							x			x
	SJBC-SD210-04D							x			x
	SJBC-SD211-04D							x			x
	SJBC-SD212-04D							x			x

1) A subset of this chemical group was analyzed at this sample location.

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD01	SJBC-SD02	SJBC-SD03	SJBC-SD04		SJBC-SD05	SJBC-SD06	SJBC-SD07	SJBC-SD08
Sample ID	SJBC-SD01-03C	SJBC-SD02-03C	SJBC-SD03-03C	SJBC-SD04-03C	SJBC-SD04-03C-P	SJBC-SD05-03C	SJBC-SD06-03C	SJBC-SD07-03C	SJBC-SD08-03C
Sample Date	09/16/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/16/03	09/16/03
Chemical Name									
Volatile Organic Compounds (UG/KG)									
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD09	SJBC-SD10	SJBC-SD11	SJBC-SD12	SJBC-SD13	SJBC-SD14	SJBC-SD15	SJBC-SD16	SJBC-SD17
Sample ID	SJBC-SD09-03C	SJBC-SD10-03C	SJBC-SD11-03C	SJBC-SD12-03C	SJBC-SD13-03C	SJBC-SD14-03C	SJBC-SD15-03C	SJBC-SD16-03C	SJBC-SD17-03C
Sample Date	09/23/03	09/16/03	09/16/03	09/23/03	09/24/03	09/24/03	09/24/03	09/24/03	09/25/03
Chemical Name									
Volatile Organic Compounds (UG/KG)									
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD18		SJBC-SD19	SJBC-SD20	SJBC-SD21	SJBC-SD22	SJBC-SD23	
Sample ID	SJBC-SD18-03C-P	SJBC-SD18-03C	SJBC-SD19-03C	SJBC-SD20-03C	SJBC-SD21-03C	SJBC-SD22-03C	SJBC-SD23-03C	SJBC-SD23-03C-P
Sample Date	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03
Chemical Name								
Volatile Organic Compounds (UG/KG)								
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD24	SJBC-SD25	SJBC-SD26	SJBC-SD27	SJBC-SD28	SJBC-SD29	SJBC-SD30	SJBC-SD31	SJBC-SD32
Sample ID	SJBC-SD24-03C	SJBC-SD25-03C	SJBC-SD26-03C	SJBC-SD27-03C	SJBC-SD28-03C	SJBC-SD29-03C	SJBC-SD30-03C	SJBC-SD31-03C	SJBC-SD32-03C
Sample Date	09/26/03	09/25/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03
Chemical Name									
Volatile Organic Compounds (UG/KG)									
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD33	SJBC-SD34	SJBC-SD35	SJBC-SD36		SJS01-SD01	SJS01-SD02	
Sample ID	SJBC-SD33-03C	SJBC-SD34-03C	SJBC-SD35-03C	SJBC-SD36-03C	SJBC-SD36-03C-P	SJS01-SD01-00-04A	SJS01-SD02-001	SJS01-SD02-001P
Sample Date	09/24/03	09/24/03	09/26/03	09/24/03	09/24/03	02/08/01	02/08/01	02/08/01
Chemical Name								
Volatile Organic Compounds (UG/KG)								
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,1-Dichloroethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,1-Dichloroethene	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,2-Dichloroethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	17 U	22 U	22 U
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	17 U	22 U	22 U
2-Butanone	NA	NA	NA	NA	NA	17 U	22 U	22 U
2-Hexanone	NA	NA	NA	NA	NA	17 U	22 U	22 U
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	17 U	22 U	22 U
Acetone	NA	NA	NA	NA	NA	8.2 B	9.4 B	9.4 B
Benzene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Bromodichloromethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
Bromoform	NA	NA	NA	NA	NA	17 U	22 U	22 U
Bromomethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
Carbon disulfide	NA	NA	NA	NA	NA	17 U	22 U	22 U
Carbon tetrachloride	NA	NA	NA	NA	NA	17 U	22 U	22 U
Chlorobenzene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Chloroethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
Chloroform	NA	NA	NA	NA	NA	17 U	22 U	22 U
Chloromethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
Cumene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Cyclohexane	NA	NA	NA	NA	NA	17 U	22 U	22 U
Dibromochloromethane	NA	NA	NA	NA	NA	17 U	22 U	22 U
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	17 UJ	22 UJ	22 UJ
Ethylbenzene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Methyl acetate	NA	NA	NA	NA	NA	17 U	22 U	22 U
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	17 U	22 U	22 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS01-SD03	SJS01-SD04	SJS04-SD10	SJS04-SD11	SJS04-SD06	SJS04-SD07	SJS04-SD08	SJS04-SD09	
Sample ID	SJS01-SD03-001	SJS01-SD04-001	SJS04-SD04-000	SJS04-SD05-001	SJS04-SD06-001	SJS04-SD07-001	SJS04-SD08-001	SJS04-SD09-001	SJS04-SD09-001P
Sample Date	02/08/01	02/08/01	07/15/97	04/22/99	04/15/99	04/22/99	04/15/99	10/28/99	10/28/99
Chemical Name									
Volatile Organic Compounds (UG/KG)									
1,1,1-Trichloroethane	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
1,1,2,2-Tetrachloroethane	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
1,1-Dichloroethane	30 U	24 U	31 U	19 U	24 U	20 U	30 U	18 U	20 U
1,1-Dichloroethene	30 U	24 U	31 U	19 U	24 U	20 U	30 U	18 U	20 U
1,2,4-Trichlorobenzene	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	30 U	24 U	31 U	19 U	24 U	20 U	30 U	18 U	20 U
1,2-Dichloroethene (total)	NA	NA	31 U	19 U	24 U	20 U	30 U	18 U	20 U
1,2-Dichloropropane	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
1,3-Dichlorobenzene	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
2-Butanone	30 U	24 U	31 U	37 B	24 U	32 B	30 U	18 U	20 U
2-Hexanone	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
4-Methyl-2-pentanone	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Acetone	16 B	9.9 B	140	52	24 U	16 J	39 J	18 U	NA
Benzene	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Bromodichloromethane	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Bromoform	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Bromomethane	30 U	24 U	31 U	19 U	24 U	20 U	30 U	18 U	20 U
Carbon disulfide	30 U	24 U	19 J	19 U	10 J	7 J	11 J	13 B	15 B
Carbon tetrachloride	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Chlorobenzene	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Chloroethane	30 U	24 U	31 U	19 U	24 U	20 U	30 U	18 U	20 U
Chloroform	30 U	24 U	31 U	19 U	24 U	20 U	30 U	18 U	20 U
Chloromethane	30 U	24 U	31 U	19 U	24 U	20 U	30 U	18 U	20 U
Cumene	30 U	24 U	NA		NA	NA	NA	NA	NA
Cyclohexane	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Dichlorodifluoromethane (Freon-12)	30 UJ	24 UJ	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Methyl acetate	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	30 U	24 U	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS05-SD07		SJSBK-SD07		SJSBK-SD08		SJSBK-SD09	
Sample ID	SJS05-SD07-001	SJS05-SD07-001P	SJSBK-SD07-001	SJSBK-SD07-002	SJSBK-SD08-001	SJSBK-SD08-002	SJSBK-SD09-001	SJSBK-SD09-001P
Sample Date	10/28/99	10/28/99	04/15/99	10/28/99	04/15/99	10/26/99	04/16/99	04/16/99
Chemical Name								
Volatile Organic Compounds (UG/KG)								
1,1,1-Trichloroethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
1,1,2,2-Tetrachloroethane	22 U	24 UJ	18 U	36 U	33 R	16 U	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
1,1-Dichloroethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
1,1-Dichloroethene	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
1,2-Dichloroethene (total)	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
1,2-Dichloropropane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	12 J	24 U	18 U	47	33 R	14 J	NA	NA
2-Hexanone	22 U	24 UJ	18 U	36 U	33 R	16 U	NA	NA
4-Methyl-2-pentanone	22 U	24 UJ	18 U	36 U	33 R	16 U	NA	NA
Acetone	58 B	33 B	18 U	1,100 J	46 R	16 B	NA	NA
Benzene	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Bromodichloromethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Bromoform	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Bromomethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Carbon disulfide	NA	14 J	18 U	12 J	12 R	16 B	5 J	5 J
Carbon tetrachloride	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Chlorobenzene	22 U	24 UJ	18 U	36 U	33 R	16 U	NA	NA
Chloroethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Chloroform	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Chloromethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Cumene	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	22 U	24 UJ	18 U	36 U	33 R	16 U	NA	NA
Methyl acetate	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJSBK-SD09		SJSBK-SD10		SJSBK-SD11		SJBC-SD200	SJBC-SD201
Sample ID	SJSBK-SD09-002	SJSBK-SD09-002P	SJSBK-SD10-001	SJSBK-SD10-002	SJSBK-SD11-001	SJSBK-SD11-001P	SJBC-SD200-04D	SJBC-SD201-04D
Sample Date	10/26/99	10/26/99	04/16/99	10/26/99	10/28/99	10/28/99	10/25/04	10/25/04
Chemical Name								
Volatile Organic Compounds (UG/KG)								
1,1,1-Trichloroethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	30 U	19 UJ	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	31 J	30 U	20 J	NA	NA	NA	NA
2-Hexanone	NA	NA	30 U	19 UJ	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Acetone	168 J	115 B	30 U	19 B	NA	80	NA	NA
Benzene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Bromodichloromethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Bromoform	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Bromomethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Carbon disulfide	NA	45 J	9 J	29 J	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Chlorobenzene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Chloroethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Chloroform	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Chloromethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Cumene	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Methyl acetate	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD201	SJBC-SD202	SJBC-SD203	SJBC-SD204	SJBC-SD205	SJBC-SD206	SJBC-SD207	SJBC-SD208	SJBC-SD209
Sample ID	SJBC-SD201-04D-P	SJBC-SD202-04D	SJBC-SD203-04D	SJBC-SD204-04D	SJBC-SD205-04D	SJBC-SD206-04D	SJBC-SD207-04D	SJBC-SD208-04D	SJBC-SD209-04D-F
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name									
Volatile Organic Compounds (UG/KG)									
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD209	SJBC-SD210	SJBC-SD211	SJBC-SD212
Sample ID	SJBC-SD209-04D	SJBC-SD210-04D	SJBC-SD211-04D	SJBC-SD212-04D
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name				
Volatile Organic Compounds (UG/KG)				
1,1,1-Trichloroethane	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA
Acetone	NA	NA	NA	NA
Benzene	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA
Cumene	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA
Methyl acetate	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
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N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD01	SJBC-SD02	SJBC-SD03	SJBC-SD04		SJBC-SD05	SJBC-SD06	SJBC-SD07	SJBC-SD08
Sample ID	SJBC-SD01-03C	SJBC-SD02-03C	SJBC-SD03-03C	SJBC-SD04-03C	SJBC-SD04-03C-P	SJBC-SD05-03C	SJBC-SD06-03C	SJBC-SD07-03C	SJBC-SD08-03C
Sample Date	09/16/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/16/03	09/16/03
Chemical Name									
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, total	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (UG/KG)									
1,1-Biphenyl	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	2,300 U	1,100 U	1,900 U	3,100 U	2,900 U	4,300 U	1,700 U	1,800 U	1,600 U
2,4,6-Trichlorophenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2,4-Dimethylphenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2,4-Dinitrophenol	2,300 U	1,100 U	1,900 U	3,100 U	2,900 U	4,300 U	1,700 U	1,800 U	1,600 U
2,4-Dinitrotoluene	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2,6-Dinitrotoluene	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2-Chlorophenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2-Methylnaphthalene	900 U	450 U	750 U	1,200 U	1,200 U	410 J	680 U	720 U	650 U
2-Methylphenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2-Nitroaniline	2,300 U	1,100 U	1,900 U	3,100 U	2,900 U	4,300 U	1,700 U	1,800 U	1,600 U
2-Nitrophenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD09	SJBC-SD10	SJBC-SD11	SJBC-SD12	SJBC-SD13	SJBC-SD14	SJBC-SD15	SJBC-SD16	SJBC-SD17
Sample ID	SJBC-SD09-03C	SJBC-SD10-03C	SJBC-SD11-03C	SJBC-SD12-03C	SJBC-SD13-03C	SJBC-SD14-03C	SJBC-SD15-03C	SJBC-SD16-03C	SJBC-SD17-03C
Sample Date	09/23/03	09/16/03	09/16/03	09/23/03	09/24/03	09/24/03	09/24/03	09/24/03	09/25/03
Chemical Name									
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, total	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (UG/KG)									
1,1-Biphenyl	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	2,000 U	2,200 U	1,900 U	2,300 U	1,200 U	2,100 U	1,400 U	1,300 U	2,000 U
2,4,6-Trichlorophenol	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2,4-Dimethylphenol	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2,4-Dinitrophenol	2,000 U	2,200 U	1,900 U	2,300 U	1,200 U	2,100 U	1,400 U	1,300 U	2,000 U
2,4-Dinitrotoluene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2,6-Dinitrotoluene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2-Chlorophenol	790 U	870 U	770 UJ	930 U	490 U	820 UJ	560 U	530 U	780 U
2-Methylnaphthalene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2-Methylphenol	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2-Nitroaniline	2,000 U	2,200 U	1,900 U	2,300 U	1,200 U	2,100 U	1,400 U	1,300 U	2,000 U
2-Nitrophenol	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
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N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD18		SJBC-SD19	SJBC-SD20	SJBC-SD21	SJBC-SD22	SJBC-SD23	
Sample ID	SJBC-SD18-03C-P	SJBC-SD18-03C	SJBC-SD19-03C	SJBC-SD20-03C	SJBC-SD21-03C	SJBC-SD22-03C	SJBC-SD23-03C	SJBC-SD23-03C-P
Sample Date	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03
Chemical Name								
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, total	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (UG/KG)								
1,1-Biphenyl	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	1,800 U	1,800 U	2,100 U	1,400 U	1,200 U	1,600 U	1,400 U	1,200 U
2,4,6-Trichlorophenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2,4-Dimethylphenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2,4-Dinitrophenol	1,800 U	1,800 U	2,100 U	1,400 U	1,200 U	1,600 U	1,400 U	1,200 U
2,4-Dinitrotoluene	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2,6-Dinitrotoluene	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2-Chlorophenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2-Methylnaphthalene	730 U	710 U	840 U	570 U	460 U	150 J	550 U	490 U
2-Methylphenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2-Nitroaniline	1,800 U	1,800 U	2,100 U	1,400 U	1,200 U	1,600 U	1,400 U	1,200 U
2-Nitrophenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD24	SJBC-SD25	SJBC-SD26	SJBC-SD27	SJBC-SD28	SJBC-SD29	SJBC-SD30	SJBC-SD31	SJBC-SD32
Sample ID	SJBC-SD24-03C	SJBC-SD25-03C	SJBC-SD26-03C	SJBC-SD27-03C	SJBC-SD28-03C	SJBC-SD29-03C	SJBC-SD30-03C	SJBC-SD31-03C	SJBC-SD32-03C
Sample Date	09/26/03	09/25/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03
Chemical Name									
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, total	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (UG/KG)									
1,1-Biphenyl	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	1,400 U	1,800 U	1,100 U	1,100 U	2,200 U	2,600 U	3,000 U	2,300 U	1,800 U
2,4,6-Trichlorophenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2,4-Dimethylphenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2,4-Dinitrophenol	1,400 U	1,800 U	1,100 U	1,100 U	2,200 U	2,600 U	3,000 U	2,300 U	1,800 U
2,4-Dinitrotoluene	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2,6-Dinitrotoluene	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2-Chlorophenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2-Methylnaphthalene	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2-Methylphenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2-Nitroaniline	1,400 U	1,800 U	1,100 U	1,100 U	2,200 U	2,600 U	3,000 U	2,300 U	1,800 U
2-Nitrophenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD33	SJBC-SD34	SJBC-SD35	SJBC-SD36		SJS01-SD01	SJS01-SD02	
Sample ID	SJBC-SD33-03C	SJBC-SD34-03C	SJBC-SD35-03C	SJBC-SD36-03C	SJBC-SD36-03C-P	SJS01-SD01-00-04A	SJS01-SD02-001	SJS01-SD02-001P
Sample Date	09/24/03	09/24/03	09/26/03	09/24/03	09/24/03	02/08/01	02/08/01	02/08/01
Chemical Name								
Methylcyclohexane	NA	NA	NA	NA	NA	17 U	22 U	22 U
Methylene chloride	NA	NA	NA	NA	NA	17 U	22 U	3.3 J
Styrene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Tetrachloroethene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Toluene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Trichloroethene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA	NA	17 UJ	22 UJ	22 UJ
Vinyl chloride	NA	NA	NA	NA	NA	17 U	22 U	22 U
Xylene, total	NA	NA	NA	NA	NA	17 U	22 U	22 U
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	17 U	22 U	22 U
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	17 U	22 U	22 U
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	17 U	22 U	22 U
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	17 U	22 U	22 U
Semivolatile Organic Compounds (UG/KG)								
1,1-Biphenyl	550 U	620 U	670 U	1,600 U	820 U	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	560 U	720 U	730 U
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	560 U	720 U	730 U
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	250 U	250 U	250 U
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	560 U	720 U	730 U
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	250 U	250 U	250 U
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	560 U	720 U	730 U
2,4,5-Trichlorophenol	1,400 U	1,600 U	1,700 U	3,900 U	2,000 U	560 U	720 U	730 U
2,4,6-Trichlorophenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	250 U	250 U	250 U
2,4-Dichlorophenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
2,4-Dimethylphenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
2,4-Dinitrophenol	1,400 U	1,600 U	1,700 U	3,900 U	2,000 U	2,700 U	3,500 U	3,600 U
2,4-Dinitrotoluene	550 U	620 U	670 U	1,600 U	820 U	250 U	250 U	250 U
2,6-Dinitrotoluene	550 U	620 U	670 U	1,600 U	820 U	250 U	250 U	250 U
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	250 U	250 U	250 U
2-Chloronaphthalene	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
2-Chlorophenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
2-Methylnaphthalene	59 J	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
2-Methylphenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
2-Nitroaniline	1,400 U	1,600 U	1,700 U	3,900 U	2,000 U	2,700 U	3,500 U	3,600 U
2-Nitrophenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
2-Nitrotoluene	NA	NA	NA	NA	NA	250 U	250 U	250 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS01-SD03	SJS01-SD04	SJS04-SD10	SJS04-SD11	SJS04-SD06	SJS04-SD07	SJS04-SD08	SJS04-SD09	
Sample ID	SJS01-SD03-001	SJS01-SD04-001	SJS04-SD04-000	SJS04-SD05-001	SJS04-SD06-001	SJS04-SD07-001	SJS04-SD08-001	SJS04-SD09-001	SJS04-SD09-001P
Sample Date	02/08/01	02/08/01	07/15/97	04/22/99	04/15/99	04/22/99	04/15/99	10/28/99	10/28/99
Chemical Name									
Methylcyclohexane	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.9 J	24 U	64 B	23 B	3 B	26 B	3 B	13 B	11 B
Styrene	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Tetrachloroethene	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Toluene	30 U	24 U	31 U	19 UJ	6 J	20 U	15 J	18 U	20 U
Trichloroethene	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Trichlorofluoromethane(Freon-11)	30 UJ	24 UJ	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	30 U	24 U	31 U	19 U	24 U	20 U	30 U	18 U	20 U
Xylene, total	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
cis-1,2-Dichloroethene	30 U	24 U	31 U	19 UJ	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	30 U	24 U	NA	NA	24 U	20 U	30 U	18 U	20 U
trans-1,2-Dichloroethene	30 U	24 U	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	30 U	24 U	31 U	19 UJ	24 U	20 U	30 U	18 U	20 U
Semivolatile Organic Compounds (UG/KG)									
1,1-Biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
1,2-Dichlorobenzene	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
1,3,5-Trinitrobenzene	250 U	250 U	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
1,3-Dinitrobenzene	250 U	250 U	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2,4,5-Trichlorophenol	980 U	790 U	1,400 U	1,500 UJ	2,000 U	1,700 UJ	2,500 U	NA	NA
2,4,6-Trichlorophenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2,4,6-Trinitrotoluene	250 U	250 U	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2,4-Dimethylphenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2,4-Dinitrophenol	4,700 U	3,800 U	1,400 U	1,500 UJ	2,000 U	1,700 UJ	2,500 U	NA	NA
2,4-Dinitrotoluene	250 U	250 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2,6-Dinitrotoluene	250 U	250 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2-Amino-4,6-dinitrotoluene	250 U	250 U	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2-Chlorophenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2-Methylnaphthalene	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2-Methylphenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2-Nitroaniline	4,700 U	3,800 U	1,400 U	1,500 UJ	2,000 U	1,700 UJ	2,500 U	NA	NA
2-Nitrophenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
2-Nitrotoluene	250 U	250 U	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS05-SD07		SJSBK-SD07		SJSBK-SD08		SJSBK-SD09	
Sample ID	SJS05-SD07-001	SJS05-SD07-001P	SJSBK-SD07-001	SJSBK-SD07-002	SJSBK-SD08-001	SJSBK-SD08-002	SJSBK-SD09-001	SJSBK-SD09-001P
Sample Date	10/28/99	10/28/99	04/15/99	10/28/99	04/15/99	10/26/99	04/16/99	04/16/99
Chemical Name								
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	26 B	18 B	18 B	36 B	26 R	16 B	NA	101 B
Styrene	22 U	24 UJ	18 U	36 U	33 R	16 U	NA	NA
Tetrachloroethene	22 U	24 UJ	18 U	36 U	33 R	16 U	NA	NA
Toluene	22 U	24 UJ	18 U	36 U	33 R	2 J	NA	NA
Trichloroethene	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Xylene, total	22 U	24 UJ	18 U	36 U	33 R	16 U	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	22 U	24 U	18 U	36 U	33 R	16 U	NA	NA
Semivolatile Organic Compounds (UG/KG)								
1,1-Biphenyl	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	1,500 U	3,000 U	2,800 U	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
2,4-Dimethylphenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
2,4-Dinitrophenol	NA	NA	1,500 U	3,000 U	2,800 U	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
2-Chlorophenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
2-Methylnaphthalene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
2-Methylphenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
2-Nitroaniline	NA	NA	1,500 U	NA	2,800 U	NA	NA	NA
2-Nitrophenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJSBK-SD09		SJSBK-SD10		SJSBK-SD11		SJBC-SD200	SJBC-SD201
Sample ID	SJSBK-SD09-002	SJSBK-SD09-002P	SJSBK-SD10-001	SJSBK-SD10-002	SJSBK-SD11-001	SJSBK-SD11-001P	SJBC-SD200-04D	SJBC-SD201-04D
Sample Date	10/26/99	10/26/99	04/16/99	10/26/99	10/28/99	10/28/99	10/25/04	10/25/04
Chemical Name								
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	37 B	30 B	19 B	NA	10 B	NA	NA
Styrene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Tetrachloroethene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Toluene	5 J	4 J	30 U	2 J	NA	NA	NA	NA
Trichloroethene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Xylene, total	NA	NA	30 U	19 UJ	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	30 U	19 UJ	NA	NA	NA	NA
Semivolatile Organic Compounds (UG/KG)								
1,1-Biphenyl	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	2,500 U	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	1,000 U	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	1,000 U	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	1,000 U	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	2,500 U	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	1,000 UL	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	1,000 U	NA	NA	NA	NA	NA
2-Methylphenol	NA	NA	1,000 U	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	2,500 UL	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	1,000 U	NA	NA	NA	NA	NA
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD201	SJBC-SD202	SJBC-SD203	SJBC-SD204	SJBC-SD205	SJBC-SD206	SJBC-SD207	SJBC-SD208	SJBC-SD209
Sample ID	SJBC-SD201-04D-P	SJBC-SD202-04D	SJBC-SD203-04D	SJBC-SD204-04D	SJBC-SD205-04D	SJBC-SD206-04D	SJBC-SD207-04D	SJBC-SD208-04D	SJBC-SD209-04D-F
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name									
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, total	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (UG/KG)									
1,1-Biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD209	SJBC-SD210	SJBC-SD211	SJBC-SD212
Sample ID	SJBC-SD209-04D	SJBC-SD210-04D	SJBC-SD211-04D	SJBC-SD212-04D
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name				
Methylcyclohexane	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA
Styrene	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA
Toluene	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA
Trichlorofluoromethane(Freon-11)	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA
Xylene, total	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA
Semivolatile Organic Compounds (UG/KG)				
1,1-Biphenyl	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA
1,3,5-Trinitrobenzene	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA
2,4,6-Trinitrotoluene	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA
2-Methylphenol	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA
2-Nitrotoluene	NA	NA	NA	NA

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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD01	SJBC-SD02	SJBC-SD03	SJBC-SD04		SJBC-SD05	SJBC-SD06	SJBC-SD07	SJBC-SD08
Sample ID	SJBC-SD01-03C	SJBC-SD02-03C	SJBC-SD03-03C	SJBC-SD04-03C	SJBC-SD04-03C-P	SJBC-SD05-03C	SJBC-SD06-03C	SJBC-SD07-03C	SJBC-SD08-03C
Sample Date	09/16/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/16/03	09/16/03
Chemical Name									
3,3'-Dichlorobenzidine	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
3-Nitroaniline	2,300 U	1,100 U	1,900 U	3,100 U	2,900 U	4,300 U	1,700 U	1,800 U	1,600 U
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	2,300 U	1,100 U	1,900 U	3,100 U	2,900 U	4,300 U	1,700 U	1,800 U	1,600 U
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
4-Chloro-3-methylphenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
4-Chloroaniline	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
4-Chlorophenyl-phenylether	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
4-Methylphenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
4-Nitroaniline	2,300 U	1,100 U	1,900 U	3,100 U	2,900 U	4,300 U	1,700 U	1,800 U	1,600 U
4-Nitrophenol	2,300 U	1,100 U	1,900 U	3,100 U	2,900 U	4,300 U	1,700 U	1,800 U	1,600 U
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	900 U	450 U	750 U	1,200 U	1,200 U	2,900	680 U	720 U	650 U
Acenaphthylene	110 J	450 U	750 U	1,200 U	130 J	1,700 U	76 J	720 U	650 U
Acetophenone	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Anthracene	94 J	450 U	83 J	1,200 U	150 J	360 J	180 J	92 J	100 J
Atrazine	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Benzaldehyde	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Benzo(a)anthracene	350 J	95 J	240 J	300 J	310 J	790 J	280 J	350 J	220 J
Benzo(a)pyrene	410 J	99 J	280 J	410 J	370 J	810 J	330 J	320 J	360 J
Benzo(b)fluoranthene	370 J	130 J	300 J	380 J	430 J	1,100 J	420 J	330 J	360 J
Benzo(g,h,i)perylene	370 J	89 J	250 J	420 J	390 J	670 J	260 J	210 J	260 J
Benzo(k)fluoranthene	330 J	87 J	270 J	460 J	360 J	1,000 J	310 J	470 J	590 J
Butylbenzylphthalate	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Caprolactam	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Carbazole	900 U	450 U	750 U	1,200 U	1,200 U	530 J	680 U	720 U	650 U
Chrysene	550 J	130 J	350 J	560 J	520 J	1,200 J	450 J	420 J	400 J
Di-n-butylphthalate	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Di-n-octylphthalate	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Dibenz(a,h)anthracene	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	100 J
Dibenzofuran	900 U	450 U	750 U	1,200 U	1,200 U	600 J	680 U	720 U	650 U
Diethylphthalate	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Dimethyl phthalate	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Fluoranthene	730 J	190 J	490 J	780 J	750 J	2,300	910	640 J	1,200
Fluorene	900 U	450 U	750 U	1,200 U	1,200 U	350 J	680 U	720 U	650 U
HMX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD09	SJBC-SD10	SJBC-SD11	SJBC-SD12	SJBC-SD13	SJBC-SD14	SJBC-SD15	SJBC-SD16	SJBC-SD17
Sample ID	SJBC-SD09-03C	SJBC-SD10-03C	SJBC-SD11-03C	SJBC-SD12-03C	SJBC-SD13-03C	SJBC-SD14-03C	SJBC-SD15-03C	SJBC-SD16-03C	SJBC-SD17-03C
Sample Date	09/23/03	09/16/03	09/16/03	09/23/03	09/24/03	09/24/03	09/24/03	09/24/03	09/25/03
Chemical Name									
3,3'-Dichlorobenzidine	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
3-Nitroaniline	2,000 U	2,200 U	1,900 U	2,300 U	1,200 U	2,100 U	1,400 U	1,300 U	2,000 U
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	2,000 U	2,200 U	1,900 U	2,300 U	1,200 U	2,100 U	1,400 U	1,300 U	2,000 U
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
4-Chloro-3-methylphenol	790 U	870 U	770 UJ	930 U	490 U	820 U	560 U	530 U	780 U
4-Chloroaniline	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
4-Chlorophenyl-phenylether	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
4-Methylphenol	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
4-Nitroaniline	2,000 U	2,200 U	1,900 U	2,300 U	1,200 U	2,100 U	1,400 U	1,300 U	2,000 U
4-Nitrophenol	2,000 U	2,200 U	1,900 U	2,300 U	1,200 U	2,100 U	1,400 U	1,300 U	2,000 U
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	790 U	870 U	770 UJ	930 U	490 U	820 UJ	560 U	60 J	780 U
Acenaphthylene	790 U	870 U	770 U	930 U	490 U	85 J	100 J	530 U	83 J
Acetophenone	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Anthracene	140 J	870 U	770 U	99 J	490 U	140 J	180 J	84 J	120 J
Atrazine	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Benzaldehyde	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Benzo(a)anthracene	380 J	210 J	84 J	300 J	120 J	510 J	510 J	160 J	490 J
Benzo(a)pyrene	460 J	200 J	93 J	400 J	190 J	490 J	550 J	200 J	480 J
Benzo(b)fluoranthene	820	190 J	110 J	610 J	340 J	580 J	900	270 J	690 J
Benzo(g,h,i)perylene	350 J	110 J	770 U	320 J	120 J	320 J	420 J	130 J	170 J
Benzo(k)fluoranthene	370 J	330 J	110 J	400 J	190 J	740 J	710	230 J	600 J
Butylbenzylphthalate	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Caprolactam	790 U	870 U	770 U	930 U	490 U	110 B	560 U	530 U	780 U
Carbazole	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Chrysene	440 J	190 J	110 J	400 J	160 J	630 J	730	190 J	660 J
Di-n-butylphthalate	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Di-n-octylphthalate	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Dibenz(a,h)anthracene	110 J	870 U	770 U	930 U	490 U	820 U	190 J	530 U	110 J
Dibenzofuran	790 U	870 U	770 U	930 U	490 U	820 U	560 U	60 J	780 U
Diethylphthalate	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Dimethyl phthalate	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Fluoranthene	960	660 J	210 J	650 J	190 J	1,300	660	330 J	590 J
Fluorene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
HMX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
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N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD18		SJBC-SD19	SJBC-SD20	SJBC-SD21	SJBC-SD22	SJBC-SD23	
Sample ID	SJBC-SD18-03C-P	SJBC-SD18-03C	SJBC-SD19-03C	SJBC-SD20-03C	SJBC-SD21-03C	SJBC-SD22-03C	SJBC-SD23-03C	SJBC-SD23-03C-P
Sample Date	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03
Chemical Name								
3,3'-Dichlorobenzidine	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
3-Nitroaniline	1,800 U	1,800 U	2,100 U	1,400 U	1,200 U	1,600 U	1,400 U	1,200 U
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	1,800 U	1,800 U	2,100 U	1,400 U	1,200 U	1,600 U	1,400 U	1,200 U
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
4-Chloro-3-methylphenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
4-Chloroaniline	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
4-Chlorophenyl-phenylether	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
4-Methylphenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
4-Nitroaniline	1,800 U	1,800 U	2,100 U	1,400 U	1,200 U	1,600 U	1,400 U	1,200 U
4-Nitrophenol	1,800 U	1,800 U	2,100 U	1,400 U	1,200 U	1,600 U	1,400 U	1,200 U
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	730 U	710 U	840 U	570 U	460 U	110 J	550 U	490 U
Acenaphthylene	76 J	78 J	840 U	570 U	52 J	180 J	550 U	490 U
Acetophenone	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Anthracene	98 J	92 J	840 U	79 J	87 J	320 J	71 J	53 J
Atrazine	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Benzaldehyde	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Benzo(a)anthracene	320 J	300 J	220 J	220 J	280 J	980	210 J	200 J
Benzo(a)pyrene	330 J	340 J	280 J	310 J	410 J	1,300	230 J	220 J
Benzo(b)fluoranthene	600 J	590 J	470 J	470 J	550	1,600	310 J	250 J
Benzo(g,h,i)perylene	130 J	130 J	120 J	110 J	130 J	430 J	550 U	60 J
Benzo(k)fluoranthene	440 J	530 J	360 J	380 J	470	1,500	250 J	240 J
Butylbenzylphthalate	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Caprolactam	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Carbazole	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Chrysene	470 J	500 J	340 J	320 J	450 J	1,300	230 J	230 J
Di-n-butylphthalate	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Di-n-octylphthalate	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Dibenz(a,h)anthracene	79 J	88 J	840 U	63 J	71 J	300 J	550 U	490 U
Dibenzofuran	730 U	710 U	840 U	570 U	460 U	110 J	550 U	490 U
Diethylphthalate	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Dimethyl phthalate	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Fluoranthene	430 J	440 J	400 J	300 J	380 J	1,300	330 J	250 J
Fluorene	730 U	710 U	840 U	570 U	460 U	110 J	550 U	490 U
HMX	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD24	SJBC-SD25	SJBC-SD26	SJBC-SD27	SJBC-SD28	SJBC-SD29	SJBC-SD30	SJBC-SD31	SJBC-SD32
Sample ID	SJBC-SD24-03C	SJBC-SD25-03C	SJBC-SD26-03C	SJBC-SD27-03C	SJBC-SD28-03C	SJBC-SD29-03C	SJBC-SD30-03C	SJBC-SD31-03C	SJBC-SD32-03C
Sample Date	09/26/03	09/25/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03
Chemical Name									
3,3'-Dichlorobenzidine	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
3-Nitroaniline	1,400 U	1,800 U	1,100 U	1,100 U	2,200 U	2,600 U	3,000 U	2,300 U	1,800 U
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	1,400 U	1,800 U	1,100 U	1,100 U	2,200 U	2,600 U	3,000 U	2,300 U	1,800 U
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
4-Chloro-3-methylphenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
4-Chloroaniline	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
4-Chlorophenyl-phenylether	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
4-Methylphenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
4-Nitroaniline	1,400 U	1,800 U	1,100 U	1,100 U	2,200 U	2,600 U	3,000 U	2,300 U	1,800 U
4-Nitrophenol	1,400 U	1,800 U	1,100 U	1,100 U	2,200 U	2,600 U	3,000 U	2,300 U	1,800 U
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	540 U	720 U	49 J	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Acenaphthylene	540 U	110 J	63 J	62 J	230 J	320 J	190 J	110 J	730 U
Acetophenone	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Anthracene	57 J	120 J	160 J	350 J	280 J	270 J	780 J	160 J	730 U
Atrazine	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Benzaldehyde	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Benzo(a)anthracene	220 J	500 J	300 J	340 J	1,100	1,900	1,100 J	430 J	250 J
Benzo(a)pyrene	220 J	710 J	370 J	350 J	1,200	1,800	2,100	650 J	340 J
Benzo(b)fluoranthene	370 J	800	440	430 J	1,500	2,200	3,000	1,100	470 J
Benzo(g,h,i)perylene	150 J	270 J	210 J	220 J	730 J	1,000 J	2,100	490 J	230 J
Benzo(k)fluoranthene	230 J	770	390 J	380 J	1,300	1,500	2,400	720 J	380 J
Butylbenzylphthalate	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Caprolactam	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Carbazole	540 U	720 U	430 U	47 J	860 U	1,000 U	130 J	910 U	730 U
Chrysene	370 J	640 J	450	500	1,400	2,000	3,400	590 J	330 J
Di-n-butylphthalate	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Di-n-octylphthalate	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Dibenz(a,h)anthracene	87 J	150 J	100 J	95 J	350 J	450 J	1,200 J	210 J	140 J
Dibenzofuran	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Diethylphthalate	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Dimethyl phthalate	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Fluoranthene	400 J	710 J	630	460	1,600	4,200	950 J	710 J	420 J
Fluorene	540 U	720 U	45 J	430 U	860 U	1,000 U	1,200 U	910 U	730 U
HMX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD33	SJBC-SD34	SJBC-SD35	SJBC-SD36		SJS01-SD01	SJS01-SD02	
Sample ID	SJBC-SD33-03C	SJBC-SD34-03C	SJBC-SD35-03C	SJBC-SD36-03C	SJBC-SD36-03C-P	SJS01-SD01-00-04A	SJS01-SD02-001	SJS01-SD02-001P
Sample Date	09/24/03	09/24/03	09/26/03	09/24/03	09/24/03	02/08/01	02/08/01	02/08/01
Chemical Name								
3,3'-Dichlorobenzidine	550 U	620 U	670 U	1,600 U	820 U	2,700 U	3,500 U	3,600 U
3-Nitroaniline	1,400 U	1,600 U	1,700 U	3,900 U	2,000 U	2,700 U	3,500 U	3,600 U
3-Nitrotoluene	NA	NA	NA	NA	NA	250 U	250 U	250 U
4,6-Dinitro-2-methylphenol	1,400 U	1,600 U	1,700 U	3,900 U	2,000 U	2,700 U	3,500 U	3,600 U
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	250 U	250 U	250 U
4-Bromophenyl-phenylether	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
4-Chloro-3-methylphenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
4-Chloroaniline	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
4-Chlorophenyl-phenylether	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
4-Methylphenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
4-Nitroaniline	1,400 U	1,600 U	1,700 U	3,900 U	2,000 U	2,700 U	3,500 U	3,600 U
4-Nitrophenol	1,400 U	1,600 U	1,700 U	3,900 U	2,000 U	2,700 U	3,500 U	3,600 U
4-Nitrotoluene	NA	NA	NA	NA	NA	250 U	250 U	250 U
Acenaphthene	100 J	90 J	670 U	510 J	260 J	110 U	140 U	150 U
Acenaphthylene	180 J	170 J	78 J	360 J	280 J	110 U	110 J	72 J
Acetophenone	550 U	620 U	670 U	1,600 U	820 U	NA	NA	NA
Anthracene	320 J	320 J	170 J	2,400	960	110 U	95 J	32 J
Atrazine	550 U	620 U	670 U	1,600 U	820 U	NA	NA	NA
Benzaldehyde	550 U	620 U	670 U	1,600 U	820 U	NA	NA	NA
Benzo(a)anthracene	790	980	440 J	3,900	2,700	44 J	360	190
Benzo(a)pyrene	1,100	1,200	590 J	2,900	2,000	53 J	450	220
Benzo(b)fluoranthene	1,700	1,600	790	3,500	2,800	59 J	570	270
Benzo(g,h,i)perylene	820	930	350 J	1,900	1,400	58 J	330	210 J
Benzo(k)fluoranthene	1,300	1,400	620 J	4,400	2,600	45 J	370	190
Butylbenzylphthalate	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Caprolactam	550 U	620 U	670 U	1,600 U	820 U	NA	NA	NA
Carbazole	550 U	85 J	670 U	1,600 U	820 U	560 U	720 U	730 U
Chrysene	1,100	1,300	630 J	4,700	3,300	59 J	540	250
Di-n-butylphthalate	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Di-n-octylphthalate	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Dibenz(a,h)anthracene	360 J	480 J	200 J	690 J	600 J	110 U	140 J	61 J
Dibenzofuran	92 J	620 U	670 U	170 J	820 U	560 U	720 U	730 U
Diethylphthalate	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Dimethyl phthalate	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Fluoranthene	1,200	1,400	650 J	8,600	5,600	64 J	550	290
Fluorene	90 J	81 J	670 U	1,600 U	88 J	110 U	140 U	150 U
HMX	NA	NA	NA	NA	NA	500 U	500 U	500 U
Hexachlorobenzene	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS01-SD03	SJS01-SD04	SJS04-SD10	SJS04-SD11	SJS04-SD06	SJS04-SD07	SJS04-SD08	SJS04-SD09	
Sample ID	SJS01-SD03-001	SJS01-SD04-001	SJS04-SD04-000	SJS04-SD05-001	SJS04-SD06-001	SJS04-SD07-001	SJS04-SD08-001	SJS04-SD09-001	SJS04-SD09-001P
Sample Date	02/08/01	02/08/01	07/15/97	04/22/99	04/15/99	04/22/99	04/15/99	10/28/99	10/28/99
Chemical Name									
3,3'-Dichlorobenzidine	4,700 U	3,800 U	570 UJ	620 UJ	790 U	680 UJ	1,000 U	NA	NA
3-Nitroaniline	4,700 U	3,800 U	1,400 U	1,500 UJ	2,000 U	1,700 UJ	2,500 U	NA	NA
3-Nitrotoluene	250 U	250 U	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	4,700 U	3,800 U	1,400 U	1,500 UJ	2,000 U	1,700 UJ	2,500 U	NA	NA
4-Amino-2,6-dinitrotoluene	250 U	250 U	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
4-Chloro-3-methylphenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
4-Chloroaniline	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
4-Chlorophenyl-phenylether	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
4-Methylphenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
4-Nitroaniline	4,700 U	3,800 U	1,400 U	1,500 UJ	2,000 U	1,700 UJ	2,500 U	NA	NA
4-Nitrophenol	4,700 U	3,800 U	1,400 U	1,500 UJ	2,000 U	1,700 UJ	2,500 U	NA	NA
4-Nitrotoluene	250 U	250 U	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	200 U	160 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Acenaphthylene	120 J	68 J	70 J	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	110 J	160 U	200 J	620 UJ	790 U	680 UJ	1,000 U	NA	110 L
Atrazine	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	350	170	1,300	620 UJ	570 J	78 J	430 J	190 L	510 L
Benzo(a)pyrene	410	200	1,200	620 UJ	500 J	71 J	330 J	180 L	430 L
Benzo(b)fluoranthene	570	250	1,900	620 UJ	860	150 J	710 J	300 L	540 L
Benzo(g,h,i)perylene	310	150 J	290 J	620 UJ	340 J	680 UJ	310 J	NA	280 L
Benzo(k)fluoranthene	370	160	1,100	620 UJ	380 J	680 UJ	290 J	93 L	230 L
Butylbenzylphthalate	980 U	790 U	58 J	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	980 U	160 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Chrysene	570	220	1,200	620 UJ	580 J	110 J	560 J	220 L	530 L
Di-n-butylphthalate	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Di-n-octylphthalate	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	120 L	NA
Dibenz(a,h)anthracene	150 J	60 J	150 J	620 UJ	120 J	680 UJ	110 J	NA	110 L
Dibenzofuran	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Diethylphthalate	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Dimethyl phthalate	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Fluoranthene	560	320	2,800	620 UJ	830	200 J	580 J	250 L	NA
Fluorene	200 U	160 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
HMX	500 U	500 U	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS05-SD07		SJSBK-SD07		SJSBK-SD08		SJSBK-SD09	
Sample ID	SJS05-SD07-001	SJS05-SD07-001P	SJSBK-SD07-001	SJSBK-SD07-002	SJSBK-SD08-001	SJSBK-SD08-002	SJSBK-SD09-001	SJSBK-SD09-001P
Sample Date	10/28/99	10/28/99	04/15/99	10/28/99	04/15/99	10/26/99	04/16/99	04/16/99
Chemical Name								
3,3'-Dichlorobenzidine	NA	NA	600 U	NA	1,100 U	NA	NA	NA
3-Nitroaniline	NA	NA	1,500 U	NA	2,800 U	NA	NA	NA
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	1,500 U	3,000 U	2,800 U	NA	NA	NA
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	600 U	NA	1,100 U	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
4-Chloroaniline	NA	NA	600 U	NA	1,100 U	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	600 U	NA	1,100 U	NA	NA	NA
4-Methylphenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
4-Nitroaniline	NA	NA	1,500 U	NA	2,800 U	NA	NA	NA
4-Nitrophenol	NA	NA	1,500 U	3,000 U	2,800 U	NA	NA	NA
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Acenaphthylene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Atrazine	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	220 J	280 L	360 J	NA	NA	NA
Benzo(a)pyrene	NA	NA	210 J	210 L	320 J	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	320 J	280 L	520 J	87 L	NA	NA
Benzo(g,h,i)perylene	NA	NA	150 J	NA	190 J	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	160 J	170 L	210 J	NA	NA	NA
Butylbenzylphthalate	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Chrysene	NA	NA	250 J	290 L	430 J	79 L	NA	NA
Di-n-butylphthalate	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Di-n-octylphthalate	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	60 J	NA	1,100 U	NA	NA	NA
Dibenzofuran	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Diethylphthalate	NA	NA	86 J	NA	1,100 U	NA	NA	NA
Dimethyl phthalate	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Fluoranthene	190 L	680 L	280 J	310 L	470 J	64 L	150 J	NA
Fluorene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
HMX	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	600 U	NA	1,100 U	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJSBK-SD09		SJSBK-SD10		SJSBK-SD11		SJBC-SD200	SJBC-SD201
Sample ID	SJSBK-SD09-002	SJSBK-SD09-002P	SJSBK-SD10-001	SJSBK-SD10-002	SJSBK-SD11-001	SJSBK-SD11-001P	SJBC-SD200-04D	SJBC-SD201-04D
Sample Date	10/26/99	10/26/99	04/16/99	10/26/99	10/28/99	10/28/99	10/25/04	10/25/04
Chemical Name								
3,3'-Dichlorobenzidine	NA	NA	1,000 UL	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	2,500 UL	NA	NA	NA	NA	NA
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	2,500 U	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	1,000 UL	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	1,000 U	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	1,000 UL	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	1,000 UL	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	1,000 U	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	2,500 UL	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	2,500 U	NA	NA	NA	NA	NA
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	1,000 UL	NA	140 L	NA	NA	NA
Acenaphthylene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Atrazine	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	160 L	160 L	1,000 UL	120 L	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	1,000 UL	64 L	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Butylbenzylphthalate	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Chrysene	NA	NA	1,000 UL	89 L	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Diethylphthalate	NA	NA	1,000 UL	NA	170 L	170 L	NA	NA
Dimethyl phthalate	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Fluoranthene	280 L	280 L	1,000 UL	110 L	44 L	44 L	NA	NA
Fluorene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
HMX	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	1,000 UL	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD201	SJBC-SD202	SJBC-SD203	SJBC-SD204	SJBC-SD205	SJBC-SD206	SJBC-SD207	SJBC-SD208	SJBC-SD209
Sample ID	SJBC-SD201-04D-P	SJBC-SD202-04D	SJBC-SD203-04D	SJBC-SD204-04D	SJBC-SD205-04D	SJBC-SD206-04D	SJBC-SD207-04D	SJBC-SD208-04D	SJBC-SD209-04D-F
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name									
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA
HMX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD209	SJBC-SD210	SJBC-SD211	SJBC-SD212
Sample ID	SJBC-SD209-04D	SJBC-SD210-04D	SJBC-SD211-04D	SJBC-SD212-04D
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name				
3,3'-Dichlorobenzidine	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA
3-Nitrotoluene	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA
4-Nitrotoluene	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA
Acetophenone	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA
Atrazine	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA
Butylbenzylphthalate	NA	NA	NA	NA
Caprolactam	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA
Diethylphthalate	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA
HMX	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA

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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD01	SJBC-SD02	SJBC-SD03	SJBC-SD04		SJBC-SD05	SJBC-SD06	SJBC-SD07	SJBC-SD08
Sample ID	SJBC-SD01-03C	SJBC-SD02-03C	SJBC-SD03-03C	SJBC-SD04-03C	SJBC-SD04-03C-P	SJBC-SD05-03C	SJBC-SD06-03C	SJBC-SD07-03C	SJBC-SD08-03C
Sample Date	09/16/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/16/03	09/16/03
Chemical Name									
Hexachlorobutadiene	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Hexachlorocyclopentadiene	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Hexachloroethane	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Indeno(1,2,3-cd)pyrene	320 J	78 J	250 J	390 J	370 J	580 J	280 J	220 J	290 J
Isophorone	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Naphthalene	900 U	450 U	750 U	1,200 U	1,200 U	720 J	680 U	720 U	650 U
Nitrobenzene	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Pentachlorophenol	2,300 U	1,100 U	1,900 U	3,100 U	2,900 U	4,300 U	1,700 U	1,800 U	1,600 U
Phenanthrene	470 J	86 J	280 J	350 J	350 J	580 J	200 J	120 J	88 J
Phenol	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Pyrene	920	200 J	610 J	860 J	840 J	2,100	830	590 J	1,000
RDX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
bis(2-Chloroethoxy)methane	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
bis(2-Chloroethyl)ether	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
bis(2-Ethylhexyl)phthalate	260 B	2,600 B	880 B	390 B	360 B	5,300 B	1,600 B	130 B	650 U
n-Nitroso-di-n-propylamine	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
n-Nitrosodiphenylamine	900 U	450 U	750 U	1,200 U	1,200 U	1,700 U	680 U	720 U	650 U
Pesticides/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	400	26	440	380	550	44	68	29	13
4,4'-DDE	83 J	16	180 J	170	320 J	51	100	22	17
4,4'-DDT	19 J	4.4 B	25 J	18 J	33 J	4.9 B	8 B	3.7 B	6.5 U
Aldrin	4.7 U	2.3 U	3.8 U	6.2 U	6 U	4.5 U	3.5 U	3.7 U	3.3 U
Aroclor-1016	92 U	45 U	74 U	120 U	120 U	87 U	68 U	73 U	65 U
Aroclor-1221	190 U	92 U	150 U	250 U	240 U	180 U	140 U	150 U	130 U
Aroclor-1232	92 U	45 U	74 U	120 U	120 U	87 U	68 U	73 U	65 U
Aroclor-1242	92 U	45 U	74 U	120 U	120 U	87 U	68 U	73 U	65 U
Aroclor-1248	92 U	45 U	74 U	120 U	120 U	87 U	68 U	73 U	65 U
Aroclor-1254	92 U	45 U	74 U	120 U	120 U	87 U	68 U	73 U	65 U
Aroclor-1260	92 U	45 U	74 U	120 U	120 U	87 U	68 U	73 U	65 U
Dieldrin	9.2 U	4.5 U	7.4 U	12 U	12 U	8.7 U	6.8 U	7.3 U	6.5 U
Endosulfan I	4.7 U	2.3 U	3.8 U	6.2 U	6 U	4.5 U	3.5 U	3.7 U	3.3 U
Endosulfan II	9.2 U	4.5 U	7.4 U	12 U	12 U	8.7 U	6.8 U	7.3 U	6.5 U
Endosulfan sulfate	19 J	4.5 U	7.4 U	12 U	12 J	8.7 U	6.8 U	7.3 U	6.5 U
Endrin	9.2 U	4.5 UJ	7.4 UJ	12 UJ	12 UJ	8.7 UJ	6.8 UJ	7.3 U	6.5 U
Endrin aldehyde	9.2 U	4.5 U	7.4 U	12 U	12 U	8.7 U	6.8 U	7.3 U	6.5 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
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N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD09	SJBC-SD10	SJBC-SD11	SJBC-SD12	SJBC-SD13	SJBC-SD14	SJBC-SD15	SJBC-SD16	SJBC-SD17
Sample ID	SJBC-SD09-03C	SJBC-SD10-03C	SJBC-SD11-03C	SJBC-SD12-03C	SJBC-SD13-03C	SJBC-SD14-03C	SJBC-SD15-03C	SJBC-SD16-03C	SJBC-SD17-03C
Sample Date	09/23/03	09/16/03	09/16/03	09/23/03	09/24/03	09/24/03	09/24/03	09/24/03	09/25/03
Chemical Name									
Hexachlorobutadiene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Hexachlorocyclopentadiene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Hexachloroethane	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Indeno(1,2,3-cd)pyrene	340 J	120 J	770 U	320 J	120 J	310 J	410 J	120 J	220 J
Isophorone	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Naphthalene	790 U	870 U	770 U	930 U	490 U	820 U	110 J	120 J	110 J
Nitrobenzene	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Pentachlorophenol	2,000 U	2,200 U	1,900 UJ	2,300 U	1,200 U	2,100 UJ	1,400 U	1,300 U	2,000 U
Phenanthrene	140 J	870 U	770 U	97 J	49 J	150 J	190 J	150 J	180 J
Phenol	790 U	870 U	770 UJ	930 U	490 U	820 U	560 U	530 U	780 U
Pyrene	800	520 J	200 J	600 J	350 J	1,000	710	500 J	850
RDX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
bis(2-Chloroethoxy)methane	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
bis(2-Chloroethyl)ether	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
bis(2-Ethylhexyl)phthalate	7,600 B	89 B	130 B	690 B	2,900 B	1,700 B	140 B	120 B	110 B
n-Nitroso-di-n-propylamine	790 U	870 U	770 UJ	930 U	490 U	820 UJ	560 U	530 U	780 U
n-Nitrosodiphenylamine	790 U	870 U	770 U	930 U	490 U	820 U	560 U	530 U	780 U
Pesticides/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	9.7	8.5 U	41 J	7.6 J	5.3 U	7.5 U	5.9 U	5.3 U	7.8 U
4,4'-DDE	14	8.5 U	71 J	9.4 J	5.3 U	7.5 U	9	5.3 U	7.8 U
4,4'-DDT	7.8 U	8.5 U	7.6 UJ	10 U	5.3 U	7.5 UJ	5.9 U	5.3 U	7.8 U
Aldrin	4 U	4.4 U	3.9 UJ	100	2.7 U	3.8 UJ	3 U	2.7 U	4 U
Aroclor-1016	78 U	85 U	76 UJ	100 U	53 U	75 U	59 U	53 U	78 U
Aroclor-1221	160 U	170 U	150 UJ	210 U	110 U	150 U	120 U	110 U	160 U
Aroclor-1232	78 U	85 U	76 UJ	100 U	53 U	75 U	59 U	53 U	78 U
Aroclor-1242	78 U	85 U	76 UJ	100 U	53 U	75 U	59 U	53 U	78 U
Aroclor-1248	78 U	85 U	76 UJ	100 U	53 U	75 U	59 U	53 U	78 U
Aroclor-1254	78 U	85 U	76 UJ	100 U	53 U	75 U	59 U	53 U	78 U
Aroclor-1260	78 U	85 U	76 UJ	100 U	53 U	75 U	59 U	53 U	78 U
Dieldrin	7.8 U	8.5 U	7.6 UJ	10 U	5.3 U	7.5 UJ	5.9 U	5.3 U	7.8 U
Endosulfan I	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 U	3 U	2.7 U	4 U
Endosulfan II	7.8 U	8.5 U	7.6 UJ	10 U	5.3 U	7.5 U	5.9 U	5.3 U	7.8 U
Endosulfan sulfate	7.8 U	8.5 U	7.6 UJ	10 U	5.3 U	7.5 U	5.9 U	5.3 U	7.8 U
Endrin	7.8 U	8.5 U	7.6 UJ	10 U	5.3 U	7.5 UJ	5.9 U	5.3 U	7.8 U
Endrin aldehyde	7.8 U	8.5 U	7.6 UJ	10 U	5.3 U	7.5 U	5.9 U	5.3 U	7.8 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD18		SJBC-SD19	SJBC-SD20	SJBC-SD21	SJBC-SD22	SJBC-SD23	
Sample ID	SJBC-SD18-03C-P	SJBC-SD18-03C	SJBC-SD19-03C	SJBC-SD20-03C	SJBC-SD21-03C	SJBC-SD22-03C	SJBC-SD23-03C	SJBC-SD23-03C-P
Sample Date	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03
Chemical Name								
Hexachlorobutadiene	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Hexachlorocyclopentadiene	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Hexachloroethane	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Indeno(1,2,3-cd)pyrene	180 J	190 J	150 J	140 J	170 J	540 J	98 J	87 J
Isophorone	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Naphthalene	730 U	710 U	840 U	65 J	64 J	390 J	87 J	72 J
Nitrobenzene	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Pentachlorophenol	1,800 U	1,800 U	2,100 U	1,400 U	1,200 U	1,600 U	1,400 U	1,200 U
Phenanthrene	100 J	110 J	86 J	110 J	110 J	630	100 J	85 J
Phenol	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Pyrene	530 J	520 J	360 J	760	400 J	1,800	720	530
RDX	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
bis(2-Chloroethoxy)methane	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
bis(2-Chloroethyl)ether	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
bis(2-Ethylhexyl)phthalate	730 U	710 U	160 B	180 B	160 B	120 B	880	490 U
n-Nitroso-di-n-propylamine	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
n-Nitrosodiphenylamine	730 U	710 U	840 U	570 U	460 U	620 U	550 U	490 U
Pesticides/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	25 J	14 J	8.4 U	5.6 U	4.6 U	8.8	5.5 U	5 U
4,4'-DDE	21 J	11 J	8.4 U	7.1 J	4.6 U	11 J	5.5 U	5 U
4,4'-DDT	7.3 U	7.1 U	8.4 U	5.6 U	4.6 U	6.1 U	5.5 U	5 U
Aldrin	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
Aroclor-1016	73 U	71 U	84 U	56 U	46 U	61 U	55 U	50 U
Aroclor-1221	150 U	140 U	170 U	110 U	94 U	120 U	110 U	100 U
Aroclor-1232	73 U	71 U	84 U	56 U	46 U	61 U	55 U	50 U
Aroclor-1242	73 U	71 U	84 U	56 U	46 U	61 U	55 U	50 U
Aroclor-1248	73 U	71 U	84 U	56 U	46 U	61 U	55 U	50 U
Aroclor-1254	73 U	71 U	84 U	56 U	46 U	61 U	55 U	50 U
Aroclor-1260	73 U	71 U	84 U	56 U	46 U	61 U	55 U	50 U
Dieldrin	7.3 U	7.1 U	8.4 U	5.6 U	4.6 U	6.1 U	5.5 U	5 U
Endosulfan I	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
Endosulfan II	7.3 U	7.1 U	8.4 U	5.6 U	4.6 U	6.1 U	5.5 U	5 U
Endosulfan sulfate	7.3 U	7.1 U	8.4 U	5.6 U	4.6 U	6.1 U	5.5 U	5 U
Endrin	7.3 U	7.1 U	8.4 U	5.6 U	4.6 U	6.1 U	5.5 U	5 U
Endrin aldehyde	7.3 U	7.1 U	8.4 U	5.6 U	4.6 U	6.1 U	5.5 U	5 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD24	SJBC-SD25	SJBC-SD26	SJBC-SD27	SJBC-SD28	SJBC-SD29	SJBC-SD30	SJBC-SD31	SJBC-SD32
Sample ID	SJBC-SD24-03C	SJBC-SD25-03C	SJBC-SD26-03C	SJBC-SD27-03C	SJBC-SD28-03C	SJBC-SD29-03C	SJBC-SD30-03C	SJBC-SD31-03C	SJBC-SD32-03C
Sample Date	09/26/03	09/25/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03
Chemical Name									
Hexachlorobutadiene	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Hexachlorocyclopentadiene	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Hexachloroethane	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Indeno(1,2,3-cd)pyrene	150 J	330 J	220 J	230 J	860 J	1,100	2,100	480 J	240 J
Isophorone	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Naphthalene	540 U	94 J	81 J	430 U	94 J	1,000 U	1,200 U	910 U	730 U
Nitrobenzene	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Pentachlorophenol	1,400 U	1,800 U	1,100 U	1,100 U	2,200 U	2,600 U	3,000 U	2,300 U	1,800 U
Phenanthrene	55 J	150 J	140 J	99 J	200 J	230 J	180 J	140 J	730 U
Phenol	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Pyrene	350 J	980	890	480	1,600	4,000	2,100	1,100	630 J
RDX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
bis(2-Chloroethoxy)methane	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
bis(2-Chloroethyl)ether	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
bis(2-Ethylhexyl)phthalate	320 B	93 B	660	52 B	170 B	3,500	3,000	200 B	720 B
n-Nitroso-di-n-propylamine	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
n-Nitrosodiphenylamine	540 U	720 U	430 U	430 U	860 U	1,000 U	1,200 U	910 U	730 U
Pesticides/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	5.4 U	7.2 U	4.3 U	5	8.7 U	10 U	12 U	21	7.3 U
4,4'-DDE	5.4 U	7.2 U	4.3 U	4.3 U	8.7 U	10 U	12 U	22	7.3 U
4,4'-DDT	5.4 U	7.2 U	4.3 U	4.3 U	8.7 U	10 U	12 U	9 U	7.3 U
Aldrin	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
Aroclor-1016	54 U	72 U	43 U	43 U	87 U	100 U	120 U	90 U	73 U
Aroclor-1221	110 U	150 U	88 U	87 U	180 U	210 U	250 U	180 U	150 U
Aroclor-1232	54 U	72 U	43 U	43 U	87 U	100 U	120 U	90 U	73 U
Aroclor-1242	54 U	72 U	43 U	43 U	87 U	100 U	120 U	90 U	73 U
Aroclor-1248	54 U	72 U	43 U	43 U	87 U	100 U	120 U	90 U	73 U
Aroclor-1254	54 U	72 U	43 U	43 U	87 U	100 U	120 U	90 U	73 U
Aroclor-1260	54 U	72 U	43 U	43 U	87 U	100 U	270 J	90 U	73 U
Dieldrin	5.4 U	7.2 U	4.3 U	4.3 U	8.7 U	10 U	12 U	9 U	7.3 U
Endosulfan I	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
Endosulfan II	5.4 U	7.2 U	4.3 U	4.3 U	8.7 U	10 U	12 U	9 U	7.3 U
Endosulfan sulfate	5.4 U	7.2 U	4.3 U	4.3 U	8.7 U	10 U	12 U	9 U	7.3 U
Endrin	5.4 U	7.2 U	4.3 U	4.3 U	8.7 U	10 U	12 U	9 U	7.3 U
Endrin aldehyde	5.4 U	7.2 U	4.3 U	4.3 U	8.7 U	10 U	12 U	9 U	7.3 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD33	SJBC-SD34	SJBC-SD35	SJBC-SD36		SJS01-SD01	SJS01-SD02	
Sample ID	SJBC-SD33-03C	SJBC-SD34-03C	SJBC-SD35-03C	SJBC-SD36-03C	SJBC-SD36-03C-P	SJS01-SD01-00-04A	SJS01-SD02-001	SJS01-SD02-001P
Sample Date	09/24/03	09/24/03	09/26/03	09/24/03	09/24/03	02/08/01	02/08/01	02/08/01
Chemical Name								
Hexachlorobutadiene	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Hexachlorocyclopentadiene	550 U	620 U	670 U	1,600 U	820 U	2,700 U	3,500 U	3,600 U
Hexachloroethane	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Indeno(1,2,3-cd)pyrene	830	930	360 J	1,700	1,300	42 J	310	200 J
Isophorone	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Naphthalene	180 J	620 U	70 J	290 J	110 J	110 U	140 U	150 U
Nitrobenzene	550 U	620 U	670 U	1,600 U	820 U	250 U	250 U	250 U
Pentachlorophenol	1,400 U	1,600 U	1,700 U	3,900 U	2,000 U	2,700 U	3,500 U	3,600 U
Phenanthrene	400 J	530 J	210 J	560 J	420 J	110 U	93 J	150 U
Phenol	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Pyrene	1,500	1,700	890	7,600	5,200	100 J	490	250
RDX	NA	NA	NA	NA	NA	500 U	500 U	500 U
Tetryl	NA	NA	NA	NA	NA	650 U	650 U	650 U
bis(2-Chloro-1-methylethyl) ether	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
bis(2-Chloroethoxy)methane	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
bis(2-Chloroethyl)ether	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
bis(2-Ethylhexyl)phthalate	2,900 B	180 B	210 B	1,600 U	120 B	45 J	120 J	160 J
n-Nitroso-di-n-propylamine	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
n-Nitrosodiphenylamine	550 U	620 U	670 U	1,600 U	820 U	560 U	720 U	730 U
Pesticides/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	5.3 UJ	6.7 U	6.7 U	7.2 U	8.3 UJ	3.2 J	5.3 J	7.3 U
4,4'-DDE	5.3 UJ	6.7 U	6.7 U	7.8	8.3 UJ	5.6 U	9	7.3 U
4,4'-DDT	5.3 UJ	6.7 U	6.7 U	7.2 U	8.3 UJ	5.6 U	7.2 U	7.3 U
Aldrin	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
Aroclor-1016	53 UJ	67 U	67 U	72 U	83 UJ	56 U	72 U	73 U
Aroclor-1221	110 UJ	140 U	140 U	150 U	170 UJ	110 U	150 U	150 U
Aroclor-1232	53 UJ	67 U	67 U	72 U	83 UJ	56 U	72 U	73 U
Aroclor-1242	53 UJ	67 U	67 U	72 U	83 UJ	56 U	72 U	73 U
Aroclor-1248	53 UJ	67 U	67 U	72 U	83 UJ	56 U	72 U	73 U
Aroclor-1254	53 UJ	67 U	67 U	72 U	83 UJ	56 U	72 U	73 U
Aroclor-1260	53 UJ	67 U	67 U	72 U	83 UJ	56 U	72 U	73 U
Dieldrin	5.3 UJ	6.7 U	6.7 U	7.2 U	8.3 UJ	5.6 U	7.2 U	7.3 U
Endosulfan I	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
Endosulfan II	5.3 UJ	6.7 U	6.7 U	7.2 U	8.3 UJ	5.6 U	7.2 U	7.3 U
Endosulfan sulfate	5.3 UJ	6.7 U	6.7 U	7.2 U	8.3 UJ	5.6 U	7.2 U	7.3 U
Endrin	5.3 UJ	6.7 U	6.7 U	7.2 U	8.3 UJ	5.6 U	7.2 U	7.3 U
Endrin aldehyde	5.3 UJ	6.7 U	6.7 U	7.2 U	8.3 UJ	5.6 U	7.2 U	7.3 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS01-SD03	SJS01-SD04	SJS04-SD10	SJS04-SD11	SJS04-SD06	SJS04-SD07	SJS04-SD08	SJS04-SD09	
Sample ID	SJS01-SD03-001	SJS01-SD04-001	SJS04-SD04-000	SJS04-SD05-001	SJS04-SD06-001	SJS04-SD07-001	SJS04-SD08-001	SJS04-SD09-001	SJS04-SD09-001P
Sample Date	02/08/01	02/08/01	07/15/97	04/22/99	04/15/99	04/22/99	04/15/99	10/28/99	10/28/99
Chemical Name									
Hexachlorobutadiene	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Hexachlorocyclopentadiene	4,700 U	3,800 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Hexachloroethane	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Indeno(1,2,3-cd)pyrene	290	160 J	370 J	620 UJ	350 J	680 UJ	320 J	NA	260 L
Isophorone	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Naphthalene	200 U	160 U	100 J	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Nitrobenzene	250 U	250 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Pentachlorophenol	4,700 U	3,800 U	1,400 U	1,500 UJ	2,000 U	1,700 UJ	2,500 U	NA	NA
Phenanthrene	98 J	160 U	160 J	620 UJ	790 U	86 J	150 J	120 L	350 L
Phenol	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Pyrene	470	240	2,800	620 UJ	580 J	160 J	450 J	290 L	640 L
RDX	500 U	500 U	NA	NA	NA	NA	NA	NA	NA
Tetryl	650 U	650 U	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
bis(2-Chloroethoxy)methane	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
bis(2-Chloroethyl)ether	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
bis(2-Ethylhexyl)phthalate	210 J	110 J	160 B	620 UJ	790 U	680 UJ	1,000 U	140 L	NA
n-Nitroso-di-n-propylamine	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
n-Nitrosodiphenylamine	980 U	790 U	570 U	620 UJ	790 U	680 UJ	1,000 U	NA	NA
Pesticides/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	9.8 U	7.9 U	5.7 J	61	8 U	1.40 J	1.70 J	1.70 L	NA
4,4'-DDE	7.3 J	7.9 U	6.3 J	13	8 U	6.80 U	1.5 J	0.470 L	0.380 L
4,4'-DDT	9.8 U	7.9 U	5.6 U	6.10 U	8 U	6.80 U	10 U	1.10 L	2.70 L
Aldrin	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
Aroclor-1016	98 U	79 U	56 U	61 U	80 U	68 U	100 U	NA	NA
Aroclor-1221	200 U	160 U	110 U	120 U	160 U	140 U	200 U	NA	NA
Aroclor-1232	98 U	79 U	56 U	61 U	80 U	68 U	100 U	NA	NA
Aroclor-1242	98 U	79 U	56 U	61 U	80 U	68 U	100 U	NA	NA
Aroclor-1248	98 U	79 U	56 U	61 U	80 U	68 U	100 U	NA	NA
Aroclor-1254	98 U	79 U	56 U	61 U	80 U	68 U	100 U	NA	NA
Aroclor-1260	98 U	79 U	31 J	61 U	80 U	68 U	100 U	NA	NA
Dieldrin	9.8 U	7.9 U	5.6 U	6.10 U	8 U	6.80 U	10 U	0.630 L	NA
Endosulfan I	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
Endosulfan II	9.8 U	7.9 U	5.6 U	6.10 U	8 U	6.80 U	10 U	NA	NA
Endosulfan sulfate	9.8 U	7.9 U	5.6 U	6.10 U	8 U	6.80 U	10 U	NA	NA
Endrin	9.8 U	7.9 U	5.6 U	6.10 U	8 U	6.80 U	10 U	NA	NA
Endrin aldehyde	9.8 U	7.9 U	5.6 U	6.10 U	8 U	6.80 U	10 U	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS05-SD07		SJSBK-SD07		SJSBK-SD08		SJSBK-SD09	
Sample ID	SJS05-SD07-001	SJS05-SD07-001P	SJSBK-SD07-001	SJSBK-SD07-002	SJSBK-SD08-001	SJSBK-SD08-002	SJSBK-SD09-001	SJSBK-SD09-001P
Sample Date	10/28/99	10/28/99	04/15/99	10/28/99	04/15/99	10/26/99	04/16/99	04/16/99
Chemical Name								
Hexachlorobutadiene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Hexachloroethane	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	170 L	170 L	140 J	NA	190 J	NA	NA	NA
Isophorone	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
Naphthalene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Nitrobenzene	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Pentachlorophenol	NA	NA	1,500 U	3,000 U	2,800 U	NA	NA	NA
Phenanthrene	NA	170 L	600 U	NA	1,100 U	NA	NA	NA
Phenol	NA	NA	600 U	1,200 U	1,100 U	NA	NA	NA
Pyrene	180 L	510 L	240 J	380 L	380 J	62 L	NA	NA
RDX	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	NA	NA	600 U	NA	1,100 U	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	600 U	NA	1,100 U	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	600 U	NA	1,100 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	600 U	NA	1,100 U	NA	NA	NA
n-Nitroso-di-n-propylamine	NA	NA	600 U	NA	1,100 U	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	600 U	NA	1,100 U	NA	NA	NA
Pesticides/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	0.760 L	8 UL	6 U	7.40 J	5.90 J	4.70 L	1.5 J	1.5 J
4,4'-DDE	7.30 UL	8 UL	6 U	17	3.30 J	7.80 L	1.60 J	1.60 J
4,4'-DDT	7.30 UL	8 UL	6 UJ	2.40 J	11 UJ	1.70 L	NA	NA
Aldrin	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
Aroclor-1016	73 UL	80 UL	60 U	120 U	110 U	NA	NA	NA
Aroclor-1221	150 UL	160 UL	120 U	240 U	220 U	NA	NA	NA
Aroclor-1232	73 UL	80 UL	60 U	120 U	110 U	NA	NA	NA
Aroclor-1242	73 UL	80 UL	60 U	120 U	110 U	NA	NA	NA
Aroclor-1248	73 UL	80 UL	60 U	120 U	110 U	NA	NA	NA
Aroclor-1254	73 UL	80 UL	60 U	120 U	110 U	NA	NA	NA
Aroclor-1260	73 UL	80 UL	60 U	120 U	110 U	NA	NA	NA
Dieldrin	7.30 UL	8 UL	6 U	12 U	11 U	NA	NA	NA
Endosulfan I	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
Endosulfan II	7.30 UL	8 UL	6 U	12 U	11 U	NA	NA	NA
Endosulfan sulfate	7.30 UL	8 UL	6 U	12 U	11 U	NA	NA	NA
Endrin	7.30 UL	8 UL	6 U	12 U	11 U	NA	NA	NA
Endrin aldehyde	7.30 UL	8 UL	6 U	12 U	11 U	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJSBK-SD09		SJSBK-SD10		SJSBK-SD11		SJBC-SD200	SJBC-SD201
Sample ID	SJSBK-SD09-002	SJSBK-SD09-002P	SJSBK-SD10-001	SJSBK-SD10-002	SJSBK-SD11-001	SJSBK-SD11-001P	SJBC-SD200-04D	SJBC-SD201-04D
Sample Date	10/26/99	10/26/99	04/16/99	10/26/99	10/28/99	10/28/99	10/25/04	10/25/04
Chemical Name								
Hexachlorobutadiene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Isophorone	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Naphthalene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	2,500 U	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Phenol	NA	NA	1,000 U	NA	NA	NA	NA	NA
Pyrene	210 L	210 L	1,000 UL	98 L	49 L	49 L	NA	NA
RDX	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	NA	NA	1,000 UL	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	1,000	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	1,000 UL	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	1,000 UL	NA	NA	NA	NA	NA
n-Nitroso-di-n-propylamine	NA	NA	1,000 UL	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	1,000 UL	NA	NA	NA	NA	NA
Pesticides/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	4.70 L	4.70 L	51	27 L	0.450 J	0.450 J	NA	NA
4,4'-DDE	8.40 L	8.40 L	12	37 L	0.900 J	0.780 J	NA	NA
4,4'-DDT	1.10 L	NA	7.20 J	4.70 L	1.60 J	1.60 J	NA	NA
Aldrin	NA	NA	5 U	NA	NA	NA	NA	NA
Aroclor-1016	NA	NA	100 U	NA	NA	NA	NA	NA
Aroclor-1221	NA	NA	200 U	NA	NA	NA	NA	NA
Aroclor-1232	NA	NA	100 U	NA	NA	NA	NA	NA
Aroclor-1242	NA	NA	100 U	NA	NA	NA	NA	NA
Aroclor-1248	NA	NA	100 U	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	100 U	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	100 U	NA	NA	NA	NA	NA
Dieldrin	NA	NA	10 U	NA	NA	NA	NA	NA
Endosulfan I	NA	NA	5 U	NA	NA	NA	NA	NA
Endosulfan II	NA	NA	10 U	NA	NA	NA	NA	NA
Endosulfan sulfate	NA	NA	10 U	NA	NA	NA	NA	NA
Endrin	NA	NA	10 U	NA	NA	NA	NA	NA
Endrin aldehyde	NA	NA	10 U	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD201	SJBC-SD202	SJBC-SD203	SJBC-SD204	SJBC-SD205	SJBC-SD206	SJBC-SD207	SJBC-SD208	SJBC-SD209
Sample ID	SJBC-SD201-04D-P	SJBC-SD202-04D	SJBC-SD203-04D	SJBC-SD204-04D	SJBC-SD205-04D	SJBC-SD206-04D	SJBC-SD207-04D	SJBC-SD208-04D	SJBC-SD209-04D-F
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name									
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitroso-di-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin aldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD209	SJBC-SD210	SJBC-SD211	SJBC-SD212
Sample ID	SJBC-SD209-04D	SJBC-SD210-04D	SJBC-SD211-04D	SJBC-SD212-04D
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name				
Hexachlorobutadiene	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA
Phenol	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA
RDX	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA
bis(2-Chloro-1-methylethyl) ether	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA
n-Nitroso-di-n-propylamine	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA
Pesticides/Polychlorinated Biphenyls (UG/KG)				
4,4'-DDD	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA
Aldrin	NA	NA	NA	NA
Aroclor-1016	NA	NA	NA	NA
Aroclor-1221	NA	NA	NA	NA
Aroclor-1232	NA	NA	NA	NA
Aroclor-1242	NA	NA	NA	NA
Aroclor-1248	NA	NA	NA	NA
Aroclor-1254	NA	NA	NA	NA
Aroclor-1260	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA
Endosulfan I	NA	NA	NA	NA
Endosulfan II	NA	NA	NA	NA
Endosulfan sulfate	NA	NA	NA	NA
Endrin	NA	NA	NA	NA
Endrin aldehyde	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD01	SJBC-SD02	SJBC-SD03	SJBC-SD04		SJBC-SD05	SJBC-SD06	SJBC-SD07	SJBC-SD08
Sample ID	SJBC-SD01-03C	SJBC-SD02-03C	SJBC-SD03-03C	SJBC-SD04-03C	SJBC-SD04-03C-P	SJBC-SD05-03C	SJBC-SD06-03C	SJBC-SD07-03C	SJBC-SD08-03C
Sample Date	09/16/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/16/03	09/16/03
Chemical Name									
Endrin ketone	9.2 U	4.5 U	7.4 U	12 U	12 U	8.7 U	6.8 U	7.3 U	6.5 U
Heptachlor	4.7 U	2.3 UJ	3.8 UJ	6.2 UJ	6 UJ	4.5 UJ	3.5 UJ	3.7 U	3.3 U
Heptachlor epoxide	4.7 U	2.3 U	3.8 U	6.2 U	6 U	4.5 U	3.5 U	3.7 U	3.3 U
Methoxychlor	47 U	23 U	38 U	62 U	60 U	45 U	35 U	37 U	33 U
Toxaphene	470 U	230 U	380 U	620 U	600 U	450 U	350 U	370 U	330 U
alpha-BHC	4.7 U	2.3 U	3.8 U	6.2 U	6 U	4.5 U	3.5 U	3.7 U	3.3 U
alpha-Chlordane	9.8 J	2 J	4 J	15 J	25 J	4.5 U	3.5 U	3.7 U	3.3 U
beta-BHC	4.7 U	2.3 U	3.8 U	6.2 U	6 U	4.5 U	3.5 U	3.7 U	3.3 U
delta-BHC	4.7 U	2.3 U	3.8 U	6.2 U	6 U	4.5 U	3.5 U	3.7 U	3.3 U
gamma-BHC (Lindane)	4.7 U	2.3 UJ	3.8 UJ	6.2 UJ	6 UJ	4.5 UJ	3.5 UJ	3.7 U	3.3 U
gamma-Chlordane	15 J	2 J	3.8 UJ	34	55 J	4.5 U	3.5 U	3.7 U	3.3 U
Dioxin/Furans (UG/KG)									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	0.91	0.72	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	0.19	0.15	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	0.011 J	0.0074 J	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	0.024 J	0.012 J	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	0.034	0.025	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	0.038 J	0.025 J	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	0.029	0.023	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	0.04 J	0.024 J	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	0.011 J	0.0062 J	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	0.018 J	0.01 J	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	0.16 J	0.13 J	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	0.03	0.021	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	0.053	0.044	NA	NA	NA	NA
2,3,7,8-TCDD (dioxin)	NA	NA	NA	0.0026	0.0023	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	0.015	0.015	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	NA	NA	NA	25	21	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	0.24	0.23	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	2.8	2.3	NA	NA	NA	NA
Total heptachlorodibenzofuran	NA	NA	NA	0.38	0.33	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	0.82	0.57	NA	NA	NA	NA
Total hexachlorodibenzofuran	NA	NA	NA	0.57	0.45	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	0.26	0.16	NA	NA	NA	NA
Total pentachlorodibenzofuran	NA	NA	NA	0.55	0.47	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	0.12	0.095	NA	NA	NA	NA
Total tetrachlorodibenzofuran	NA	NA	NA	0.39	0.36	NA	NA	NA	NA

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R Unreliable result
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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD09	SJBC-SD10	SJBC-SD11	SJBC-SD12	SJBC-SD13	SJBC-SD14	SJBC-SD15	SJBC-SD16	SJBC-SD17
Sample ID	SJBC-SD09-03C	SJBC-SD10-03C	SJBC-SD11-03C	SJBC-SD12-03C	SJBC-SD13-03C	SJBC-SD14-03C	SJBC-SD15-03C	SJBC-SD16-03C	SJBC-SD17-03C
Sample Date	09/23/03	09/16/03	09/16/03	09/23/03	09/24/03	09/24/03	09/24/03	09/24/03	09/25/03
Chemical Name									
Endrin ketone	7.8 U	8.5 U	7.6 UJ	10 U	5.3 U	7.5 U	5.9 U	5.3 U	7.8 U
Heptachlor	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 UJ	3 U	2.7 U	4 U
Heptachlor epoxide	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 U	3 U	2.7 U	4 U
Methoxychlor	40 U	44 U	39 UJ	53 U	27 U	38 U	30 U	27 U	40 U
Toxaphene	400 U	440 U	390 UJ	530 U	270 U	380 U	300 U	270 U	400 U
alpha-BHC	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 U	3 U	2.7 U	4 U
alpha-Chlordane	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 U	3 U	2.7 U	4 U
beta-BHC	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 U	3 U	2.7 U	4 U
delta-BHC	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 U	3 U	2.7 U	4 U
gamma-BHC (Lindane)	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 UJ	3 U	2.7 U	4 U
gamma-Chlordane	4 U	4.4 U	3.9 UJ	5.3 U	2.7 U	3.8 U	3 U	2.7 U	4 U
Dioxin/Furans (UG/KG)									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	0.26	NA	0.13	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	0.0079	NA	0.011	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	9.40E-04 U	NA	0.0011 J	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	0.0053	NA	0.0035 J	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	9.90E-04 J	NA	0.0022 J	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	0.0097	NA	0.0054	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	0.0013 J	NA	0.0033 J	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	0.014	NA	0.0058	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	9.40E-04 U	NA	9.70E-04 U	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	0.003 J	NA	0.0024 J	NA
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	9.40E-04 U	NA	0.0019 J	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	0.0014 J	NA	0.0025 J	NA
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	0.0013 J	NA	0.0024 J	NA
2,3,7,8-TCDD (dioxin)	NA	NA	NA	NA	NA	6.20E-04 J	NA	5.40E-04 J	NA
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	9.90E-04 J	NA	0.002	NA
Octachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	4.6	NA	2.1	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	0.0094 J	NA	0.022	NA
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	1	NA	0.48	NA
Total heptachlorodibenzofuran	NA	NA	NA	NA	NA	0.0079	NA	0.012	NA
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	0.49	NA	0.21	NA
Total hexachlorodibenzofuran	NA	NA	NA	NA	NA	0.01	NA	0.021	NA
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	0.084	NA	0.031	NA
Total pentachlorodibenzofuran	NA	NA	NA	NA	NA	0.01	NA	0.021	NA
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	0.048	NA	0.019	NA
Total tetrachlorodibenzofuran	NA	NA	NA	NA	NA	0.014	NA	0.025	NA

U Not detected
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B Blank contamination
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NA Not analyzed

R Unreliable result
K Biased high
L Biased low
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N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD18		SJBC-SD19	SJBC-SD20	SJBC-SD21	SJBC-SD22	SJBC-SD23	
Sample ID	SJBC-SD18-03C-P	SJBC-SD18-03C	SJBC-SD19-03C	SJBC-SD20-03C	SJBC-SD21-03C	SJBC-SD22-03C	SJBC-SD23-03C	SJBC-SD23-03C-P
Sample Date	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03
Chemical Name								
Endrin ketone	7.3 U	7.1 U	8.4 U	5.6 U	4.6 U	6.1 U	5.5 U	5 U
Heptachlor	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
Heptachlor epoxide	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
Methoxychlor	38 U	37 U	43 U	29 U	24 U	32 U	28 U	26 U
Toxaphene	380 U	370 U	430 U	290 U	240 U	320 U	280 U	260 U
alpha-BHC	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
alpha-Chlordane	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
beta-BHC	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
delta-BHC	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
gamma-BHC (Lindane)	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
gamma-Chlordane	3.8 U	3.7 U	4.3 U	2.9 U	2.4 U	3.2 U	2.8 U	2.6 U
Dioxin/Furans (UG/KG)								
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.24	0.23	NA	0.29	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.038	0.03	NA	0.032	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.0033 J	0.003 J	NA	0.0024 J	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.0067	0.0058	NA	0.0044 J	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	0.0088	0.0074	NA	0.0042 J	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.011	0.0093	NA	0.011	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	0.0089	0.007	NA	0.0052	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.012	0.01	NA	0.0093	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	0.0024 J	0.0018 J	NA	0.0011 J	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.0052	0.0039 J	NA	0.0034 J	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	0.0095	0.0074	NA	0.0043 J	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	0.0082	0.0062	NA	0.0043 J	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	0.013	0.0099	NA	0.0057	NA	NA	NA	NA
2,3,7,8-TCDD (dioxin)	1.00E-03	1.00E-03	NA	5.60E-04 J	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	0.014	0.013	NA	0.0051	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	4	3.8	NA	3.4	NA	NA	NA	NA
Octachlorodibenzofuran	0.057	0.049	NA	0.052	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxin	1.1	0.99	NA	1.4	NA	NA	NA	NA
Total heptachlorodibenzofuran	0.068	0.033	NA	0.079	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxin	0.4	0.37	NA	0.35	NA	NA	NA	NA
Total hexachlorodibenzofuran	0.088	0.089	NA	0.065	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxin	0.093	0.079	NA	0.057	NA	NA	NA	NA
Total pentachlorodibenzofuran	0.19	0.14	NA	0.062	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxin	0.071	0.066	NA	0.029	NA	NA	NA	NA
Total tetrachlorodibenzofuran	0.26	0.21	NA	0.068	NA	NA	NA	NA

U Not detected
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R Unreliable result
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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD24	SJBC-SD25	SJBC-SD26	SJBC-SD27	SJBC-SD28	SJBC-SD29	SJBC-SD30	SJBC-SD31	SJBC-SD32
Sample ID	SJBC-SD24-03C	SJBC-SD25-03C	SJBC-SD26-03C	SJBC-SD27-03C	SJBC-SD28-03C	SJBC-SD29-03C	SJBC-SD30-03C	SJBC-SD31-03C	SJBC-SD32-03C
Sample Date	09/26/03	09/25/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03
Chemical Name									
Endrin ketone	5.4 U	7.2 U	4.3 U	4.3 U	8.7 U	10 U	12 U	9 U	7.3 U
Heptachlor	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
Heptachlor epoxide	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
Methoxychlor	28 U	37 U	22 U	22 U	45 U	53 U	63 U	46 U	38 U
Toxaphene	280 U	370 U	220 U	220 U	450 U	530 U	630 U	460 U	380 U
alpha-BHC	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
alpha-Chlordane	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
beta-BHC	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
delta-BHC	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
gamma-BHC (Lindane)	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
gamma-Chlordane	2.8 U	3.7 U	2.2 U	2.2 U	4.5 U	5.3 U	6.3 U	4.6 U	3.8 U
Dioxin/Furans (UG/KG)									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.24	NA	0.48
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.021	NA	0.033
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.0018 J	NA	0.0027 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.0056	NA	0.007
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.0039 J	NA	0.0028 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.0093	NA	0.016
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.0041 J	NA	0.0049 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.014	NA	0.018
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	9.90E-04 U	NA	0.0011 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.0035 J	NA	0.0047 J
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.0017 J	NA	0.004 J
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.0038 J	NA	0.0043
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.0047 J	NA	0.0056
2,3,7,8-TCDD (dioxin)	NA	NA	NA	NA	NA	NA	6.80E-04 J	NA	9.40E-04 J
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.0033	NA	0.0057
Octachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	4	NA	6.2
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.029	NA	0.076
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.91	NA	2.6
Total heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.023	NA	0.035
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.39	NA	0.63
Total hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.031	NA	0.036
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.069	NA	0.095
Total pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.047	NA	0.059
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	0.03	NA	0.048
Total tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	0.034	NA	0.069

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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD33	SJBC-SD34	SJBC-SD35	SJBC-SD36		SJS01-SD01	SJS01-SD02	
Sample ID	SJBC-SD33-03C	SJBC-SD34-03C	SJBC-SD35-03C	SJBC-SD36-03C	SJBC-SD36-03C-P	SJS01-SD01-00-04A	SJS01-SD02-001	SJS01-SD02-001P
Sample Date	09/24/03	09/24/03	09/26/03	09/24/03	09/24/03	02/08/01	02/08/01	02/08/01
Chemical Name								
Endrin ketone	5.3 UJ	6.7 U	6.7 U	7.2 U	11 J	5.6 U	7.2 U	7.3 U
Heptachlor	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
Heptachlor epoxide	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
Methoxychlor	27 UJ	34 U	35 U	37 U	43 UJ	29 U	37 U	38 U
Toxaphene	270 UJ	340 U	350 U	370 U	430 UJ	290 U	370 U	380 U
alpha-BHC	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
alpha-Chlordane	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
beta-BHC	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
delta-BHC	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
gamma-BHC (Lindane)	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
gamma-Chlordane	2.7 UJ	3.4 U	3.5 U	3.7 U	4.3 UJ	2.9 U	3.7 U	3.8 U
Dioxin/Furans (UG/KG)								
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD (dioxin)	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS01-SD03	SJS01-SD04	SJS04-SD10	SJS04-SD11	SJS04-SD06	SJS04-SD07	SJS04-SD08	SJS04-SD09	
Sample ID	SJS01-SD03-001	SJS01-SD04-001	SJS04-SD04-000	SJS04-SD05-001	SJS04-SD06-001	SJS04-SD07-001	SJS04-SD08-001	SJS04-SD09-001	SJS04-SD09-001P
Sample Date	02/08/01	02/08/01	07/15/97	04/22/99	04/15/99	04/22/99	04/15/99	10/28/99	10/28/99
Chemical Name									
Endrin ketone	9.8 U	7.9 U	5.6 U	6.10 U	8 U	6.80 U	10 U	NA	NA
Heptachlor	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
Heptachlor epoxide	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
Methoxychlor	50 U	41 U	29 U	31 U	40 U	34 U	50 U	NA	NA
Toxaphene	500 U	410 U	290 U	310 U	400 U	340 U	500 U	NA	NA
alpha-BHC	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
alpha-Chlordane	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
beta-BHC	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
delta-BHC	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
gamma-BHC (Lindane)	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
gamma-Chlordane	5 U	4.1 U	2.9 U	3.10 U	4 U	3.40 U	5 U	NA	NA
Dioxin/Furans (UG/KG)									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD (dioxin)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS05-SD07		SJSBK-SD07		SJSBK-SD08		SJSBK-SD09	
Sample ID	SJS05-SD07-001	SJS05-SD07-001P	SJSBK-SD07-001	SJSBK-SD07-002	SJSBK-SD08-001	SJSBK-SD08-002	SJSBK-SD09-001	SJSBK-SD09-001P
Sample Date	10/28/99	10/28/99	04/15/99	10/28/99	04/15/99	10/26/99	04/16/99	04/16/99
Chemical Name								
Endrin ketone	7.30 UL	8 UL	6 U	12 U	11 U	NA	NA	NA
Heptachlor	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
Heptachlor epoxide	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
Methoxychlor	36 UL	40 UL	30 U	59 U	54 U	NA	NA	NA
Toxaphene	360 UL	400 UL	300 U	590 U	540 U	NA	NA	NA
alpha-BHC	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
alpha-Chlordane	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
beta-BHC	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
delta-BHC	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
gamma-BHC (Lindane)	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
gamma-Chlordane	3.60 UL	4 UL	3 U	5.90 U	5.40 U	NA	NA	NA
Dioxin/Furans (UG/KG)								
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD (dioxin)	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJSBK-SD09		SJSBK-SD10		SJSBK-SD11		SJBC-SD200	SJBC-SD201
Sample ID	SJSBK-SD09-002	SJSBK-SD09-002P	SJSBK-SD10-001	SJSBK-SD10-002	SJSBK-SD11-001	SJSBK-SD11-001P	SJBC-SD200-04D	SJBC-SD201-04D
Sample Date	10/26/99	10/26/99	04/16/99	10/26/99	10/28/99	10/28/99	10/25/04	10/25/04
Chemical Name								
Endrin ketone	NA	NA	10 U	NA	NA	NA	NA	NA
Heptachlor	NA	NA	5 U	NA	NA	NA	NA	NA
Heptachlor epoxide	NA	NA	5 U	NA	NA	NA	NA	NA
Methoxychlor	NA	NA	50 U	NA	NA	NA	NA	NA
Toxaphene	NA	NA	500 U	NA	NA	NA	NA	NA
alpha-BHC	NA	NA	5 U	NA	NA	NA	NA	NA
alpha-Chlordane	NA	NA	5 U	NA	NA	NA	NA	NA
beta-BHC	NA	NA	5 U	NA	NA	NA	NA	NA
delta-BHC	NA	NA	5 U	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	NA	NA	5 U	NA	NA	NA	NA	NA
gamma-Chlordane	NA	NA	5 U	NA	NA	NA	NA	NA
Dioxin/Furans (UG/KG)								
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD (dioxin)	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD201	SJBC-SD202	SJBC-SD203	SJBC-SD204	SJBC-SD205	SJBC-SD206	SJBC-SD207	SJBC-SD208	SJBC-SD209
Sample ID	SJBC-SD201-04D-P	SJBC-SD202-04D	SJBC-SD203-04D	SJBC-SD204-04D	SJBC-SD205-04D	SJBC-SD206-04D	SJBC-SD207-04D	SJBC-SD208-04D	SJBC-SD209-04D-F
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name									
Endrin ketone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA
beta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxin/Furans (UG/KG)									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD (dioxin)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD209	SJBC-SD210	SJBC-SD211	SJBC-SD212
Sample ID	SJBC-SD209-04D	SJBC-SD210-04D	SJBC-SD211-04D	SJBC-SD212-04D
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name				
Endrin ketone	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA
Heptachlor epoxide	NA	NA	NA	NA
Methoxychlor	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA
alpha-BHC	NA	NA	NA	NA
alpha-Chlordane	NA	NA	NA	NA
beta-BHC	NA	NA	NA	NA
delta-BHC	NA	NA	NA	NA
gamma-BHC (Lindane)	NA	NA	NA	NA
gamma-Chlordane	NA	NA	NA	NA
Dioxin/Furans (UG/KG)				
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	NA	NA	NA	NA
2,3,7,8-TCDD (dioxin)	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxin	NA	NA	NA	NA
Total heptachlorodibenzofuran	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxin	NA	NA	NA	NA
Total hexachlorodibenzofuran	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxin	NA	NA	NA	NA
Total pentachlorodibenzofuran	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA
Total tetrachlorodibenzofuran	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD01	SJBC-SD02	SJBC-SD03	SJBC-SD04		SJBC-SD05	SJBC-SD06	SJBC-SD07	SJBC-SD08
Sample ID	SJBC-SD01-03C	SJBC-SD02-03C	SJBC-SD03-03C	SJBC-SD04-03C	SJBC-SD04-03C-P	SJBC-SD05-03C	SJBC-SD06-03C	SJBC-SD07-03C	SJBC-SD08-03C
Sample Date	09/16/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/16/03	09/16/03
Chemical Name									
Explosives (UG/KG)									
1,3,5-Trinitrobenzene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
1,3-Dinitrobenzene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
2,4,6-Trinitrotoluene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
2,4-Dinitrotoluene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
2,6-Dinitrotoluene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
2-Amino-4,6-dinitrotoluene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
2-Nitrotoluene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
3-Nitrotoluene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
4-Amino-2,6-dinitrotoluene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
4-Nitrotoluene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
HMX	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
Nitrobenzene	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
Picric Acid	2,500 R	2,500 R	2,500 R	2,500 R	2,500 R	2,400 R	2,500 R	2,500 U	2,500 R
RDX	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
Tetryl	500 U	500 U	500 U	500 U	500 U	480 U	500 U	500 U	500 U
Total Metals (MG/KG)									
Aluminum	8,460	4,680	13,400 J	25,600	23,300 J	17,100	22,500	12,600	17,300
Antimony	21.4 U	10.9 U	22.6 U	38.2 U	39.1 U	25 U	23.4 U	24.8 U	22.6 U
Arsenic	10.4	4.2	16.2 J	26.6	26.6 J	25.4	20.2	9.6	14.5
Barium	162	26.7 J	43.4 J	58 J	59.3 J	40.3 J	42.4 J	31.1 J	44.4 J
Beryllium	0.97 J	0.31 J	1.4 J	3 J	3.1 J	2.3	2.6	1.3 J	1.7 J
Cadmium	0.97 J	0.28 B	1.4 J	1.8 J	2 J	0.99 J	1 J	0.87 J	1 J
Calcium	2,030	743 J	1,990 J	2,930 J	3,350 J	2,120	2,090	1,510 J	1,810 J
Chromium	14.7	9.5	20.8 J	35.5	32.5 J	25.8	26.7	20.4	27.8
Cobalt	6 J	2.4 J	9.5 J	17.7 J	19 J	13.2 J	11.4 J	9.4 J	10.7 J
Copper	55.1 B	11.3 B	53.1 B	87 B	96.9 B	51.1 B	55.7	35.4 B	39.7 B
Cyanide	1 U	1.3 U	2.5 U	3.5 U	0.28 J	2.5 U	2.1 U	1 U	2.8 U
Iron	15,000	8,600	16,900 J	29,700	29,600 J	27,900	23,000	20,400	30,700
Lead	218	27.7	140 J	318	381 J	155	136	106	68.4
Magnesium	1,900	823 J	2,400 J	4,780	4,780 J	4,450	4,030	3,730	4,720
Manganese	52.2	26.5	84.9 J	254	290 J	261	162	170	217
Mercury	0.31	0.14	0.31 J	0.85	1.1 J	0.58	0.4	0.44	0.39
Nickel	14.4	5 J	16.6 J	31.2	35.7 J	22.2	20.5	16 J	19
Potassium	805 B	492 B	1,090 B	2,260 B	2,040 B	2,150 B	2,050 B	1,950 B	2,570 B
Selenium	12.5 U	6.4 U	13.2 U	22.3 U	22.8 U	14.6 U	13.7 U	14.5 U	13.2 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD09	SJBC-SD10	SJBC-SD11	SJBC-SD12	SJBC-SD13	SJBC-SD14	SJBC-SD15	SJBC-SD16	SJBC-SD17
Sample ID	SJBC-SD09-03C	SJBC-SD10-03C	SJBC-SD11-03C	SJBC-SD12-03C	SJBC-SD13-03C	SJBC-SD14-03C	SJBC-SD15-03C	SJBC-SD16-03C	SJBC-SD17-03C
Sample Date	09/23/03	09/16/03	09/16/03	09/23/03	09/24/03	09/24/03	09/24/03	09/24/03	09/25/03
Chemical Name									
Explosives (UG/KG)									
1,3,5-Trinitrobenzene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
1,3-Dinitrobenzene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
2,4,6-Trinitrotoluene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
2,4-Dinitrotoluene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
2,6-Dinitrotoluene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
2-Amino-4,6-dinitrotoluene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
2-Nitrotoluene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
3-Nitrotoluene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
4-Amino-2,6-dinitrotoluene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
4-Nitrotoluene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
HMX	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
Nitrobenzene	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
Picric Acid	2,200 R	2,500 R	2,500 R	2,400 R	2,500 R	2,500 R	2,400 R	2,400 R	2,500 R
RDX	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
Tetryl	440 U	500 U	500 U	480 U	500 U	500 U	480 U	480 U	500 U
Total Metals (MG/KG)									
Aluminum	10,000	16,700	13,500 J	21,500	7,190	18,100	6,690	6,540	17,400
Antimony	19.7 U	28.1 U	21.5 UJ	29.2 U	13.3 U	21.6 UJ	14.5 U	15 U	19.8 U
Arsenic	7.4	15	18.2	11.8	4.4	13.9	5.3	5.3	14.6
Barium	27 B	39.7 J	30.3 J	46.8 B	16.7 B	41.9 B	21.4 B	19 B	52.5 B
Beryllium	0.89 J	1.6 J	1.5 J	1.4 J	0.54 J	1.6 J	0.67 J	0.7 J	1.3 J
Cadmium	0.99 B	0.74 J	0.79 J	1.9 J	0.5 B	1 B	1.1 J	0.56 B	0.82 B
Calcium	29,100	2,100 J	1,220 J	2,270 J	641 J	1,770 J	1,530	1,460	1,630 J
Chromium	17.8	32.4	17.1	36.1	13	33.8	14	12.4	31.6
Cobalt	7.3 B	12.7 J	19.4	11.6 B	3.3 B	12.8 B	4.5 B	5.7 B	12.2 B
Copper	47.9	32.9 B	30.5 B	70.2	19.5	39.2	32.5	14.4 B	38.2
Cyanide	2.4 U	1 U	1 UJ	2.9 U	1.5 U	2.5 UJ	1.7 U	1.6 U	2.4 U
Iron	16,500	31,700	15,900	32,600	10,500	34,200	11,500	13,300	28,700
Lead	66	56.5	45.1	103	19.5	61	39.8	24.6	64.5
Magnesium	3,290	6,720	2,430	7,040	1,820	6,260	2,140	2,420	4,480
Manganese	134	261	143	252	82.4	291	85.2	125	153
Mercury	1	0.65	0.2 J	0.85	0.14 U	0.6 B	0.11 B	0.14 B	0.12 B
Nickel	13.8 B	20.8	19.4	24.9	6.9 B	22.2	9.6 B	8.8 B	22.4
Potassium	1,510 J	3,520 B	1,270 B	3,480	1,020 J	3,810	1,260	1,410	3,300
Selenium	11.5 U	16.4 U	12.5 U	17 U	7.8 U	12.6 U	8.5 U	8.8 U	11.6 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD18		SJBC-SD19	SJBC-SD20	SJBC-SD21	SJBC-SD22	SJBC-SD23	
Sample ID	SJBC-SD18-03C-P	SJBC-SD18-03C	SJBC-SD19-03C	SJBC-SD20-03C	SJBC-SD21-03C	SJBC-SD22-03C	SJBC-SD23-03C	SJBC-SD23-03C-P
Sample Date	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03
Chemical Name								
Explosives (UG/KG)								
1,3,5-Trinitrobenzene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
1,3-Dinitrobenzene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
2,4,6-Trinitrotoluene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
2,4-Dinitrotoluene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
2,6-Dinitrotoluene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
2-Amino-4,6-dinitrotoluene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
2-Nitrotoluene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
3-Nitrotoluene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
4-Amino-2,6-dinitrotoluene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
4-Nitrotoluene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
HMX	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
Nitrobenzene	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
Picric Acid	2,500 R	2,400 R	2,500 R	2,500 R	2,500 R	2,500 R	2,500 R	2,400 R
RDX	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
Tetryl	500 U	480 U	500 U	500 U	500 U	500 U	500 U	480 U
Total Metals (MG/KG)								
Aluminum	12,900	12,200	15,500	10,200	3,100	7,190	9,410 J	6,280 J
Antimony	1.9 J	0.93 J	26.2 U	15.6 U	11.7 U	14 U	13.1 U	0.77 J
Arsenic	22.5 J	61.1 J	11.6	9.8	4.2	7.6	6	5.1
Barium	330 J	927 J	47.8 B	79.9 B	131	68.4 B	20 B	15.2 B
Beryllium	1.8	2	2.4	1.2 J	0.45 J	0.78 J	0.72 J	0.53 J
Cadmium	1.6	1.1 J	1.8 J	1.1 J	0.72 J	0.73 B	0.34 B	0.3 B
Calcium	1,500	1,550 J	2,170 J	1,430	2,770	923 J	1,710	1,090 J
Chromium	26	20.3	23.9	19.7	7.5	16.1	17.7	12.8
Cobalt	10.8 B	11.9 B	12.3 B	7.3 B	2.9 B	5.1 B	6 B	4.7 B
Copper	98.8	137	65.5	45.1	20.7	29.2	15.8 B	13.4 B
Cyanide	2.1 U	2.2 U	2.8 U	1.9 U	1.4 U	1.7 U	1.6 U	1.6 U
Iron	18,500	19,600	20,800	14,700	5,620	11,400	15,500	11,700
Lead	437 J	282 J	96.6	121	53.1	67.2	20.4	16.8
Magnesium	3,250	2,880	4,100	2,770	1,080	2,050	3,110	2,340
Manganese	99.8	127	168	106	39.2	87.9	173	128
Mercury	0.21 B	0.2 B	0.27 B	0.18 B	0.085 B	0.17 B	0.087 B	0.1 B
Nickel	17.7	18.5	23.5	14.7	5.9 B	10.1 B	9.6 B	7.6 B
Potassium	2,510	1,940	2,330	1,800	605 J	1,440	1,830	1,370
Selenium	10.2 U	11.5 U	15.3 U	9.1 U	6.8 U	8.2 U	7.6 U	1.1 J

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD24	SJBC-SD25	SJBC-SD26	SJBC-SD27	SJBC-SD28	SJBC-SD29	SJBC-SD30	SJBC-SD31	SJBC-SD32
Sample ID	SJBC-SD24-03C	SJBC-SD25-03C	SJBC-SD26-03C	SJBC-SD27-03C	SJBC-SD28-03C	SJBC-SD29-03C	SJBC-SD30-03C	SJBC-SD31-03C	SJBC-SD32-03C
Sample Date	09/26/03	09/25/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03
Chemical Name									
Explosives (UG/KG)									
1,3,5-Trinitrobenzene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
1,3-Dinitrobenzene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
2,4,6-Trinitrotoluene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
2,4-Dinitrotoluene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
2,6-Dinitrotoluene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
2-Amino-4,6-dinitrotoluene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
2-Nitrotoluene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
3-Nitrotoluene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
4-Amino-2,6-dinitrotoluene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
4-Nitrotoluene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
HMX	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
Nitrobenzene	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
Picric Acid	2,400 R	2,200 R	2,500 R	2,500 R	2,500 R	2,300 R	2,500 R	2,500 R	2,500 R
RDX	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
Tetryl	480 U	440 U	500 U	500 U	500 U	460 U	500 U	500 U	500 U
Total Metals (MG/KG)									
Aluminum	3,550	9,970	3,110	3,580	13,000	21,300	21,200	22,800	16,100
Antimony	18.8 U	12 U	12.4 U	12 U	21.7 U	0.68 J	25 U	0.6 J	20.6 U
Arsenic	4.5 J	6.5	3.8	3.7	8.5	12.3	13.6	15.4	11.1
Barium	13.8 B	22.1 B	10.1 B	44.9 B	30.4 B	45.5 B	23.9 B	52.6 B	35.2 B
Beryllium	0.34 B	0.79 J	0.28 J	0.43 J	1.2 J	1.7 J	1.7 J	2.7	1.7 J
Cadmium	0.32 B	0.38 B	0.46 B	0.63 B	1.1 B	0.48 B	0.82 B	1.5 J	0.77 B
Calcium	780 J	1,150	514 J	569 J	1,790 J	2,150	2,150	2,550	2,880
Chromium	7.3	18.4	7.3	8	24.8	36.5	37.4	33.6	28.1
Cobalt	2.4 B	6.5 B	1.9 B	2.8 B	8.9 B	12.4 B	17.9 J	16.9 J	13 B
Copper	23.1	16.8 B	14.6 B	20.6	51.9	28.9 B	35	50.1	23.3 B
Cyanide	1.8 U	1.9 U	1.4 U	1.3 U	2.3 U	2.5 U	2.4 U	2.5 U	2.3 U
Iron	7,170	18,500	6,210	6,470	19,600	33,400	37,700	32,400	29,900
Lead	27.4	30	17.8	44.4	41	44.6	31.7	88.2	55
Magnesium	1,340 J	3,920	1,110	1,210	4,240	7,600	7,290	5,850	5,950
Manganese	57.5	180	40	41.7	166	369	413	331	314
Mercury	0.12 B	0.25 B	0.083 B	0.087 B	0.33 B	0.31 B	0.28 B	0.36 B	0.24 B
Nickel	4.7 B	11.4 B	3.8 B	6.2 B	18.7	22.7	28.9	30.1	20.2
Potassium	578 J	2,060	548 J	654 J	1,890	4,050	3,690	3,200	3,040
Selenium	11 U	7 U	7.3 U	7 U	12.7 U	15 U	14.6 U	15.2 U	12 U

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD33	SJBC-SD34	SJBC-SD35	SJBC-SD36		SJS01-SD01	SJS01-SD02	
Sample ID	SJBC-SD33-03C	SJBC-SD34-03C	SJBC-SD35-03C	SJBC-SD36-03C	SJBC-SD36-03C-P	SJS01-SD01-00-04A	SJS01-SD02-001	SJS01-SD02-001P
Sample Date	09/24/03	09/24/03	09/26/03	09/24/03	09/24/03	02/08/01	02/08/01	02/08/01
Chemical Name								
Explosives (UG/KG)								
1,3,5-Trinitrobenzene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
1,3-Dinitrobenzene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
2,4,6-Trinitrotoluene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
2,4-Dinitrotoluene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
2,6-Dinitrotoluene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
2-Amino-4,6-dinitrotoluene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
2-Nitrotoluene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
3-Nitrotoluene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
4-Amino-2,6-dinitrotoluene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
4-Nitrotoluene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
HMX	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
Nitrobenzene	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
Picric Acid	2,500 R	2,500 R	2,500 R	2,300 R	2,400 R	NA	NA	NA
RDX	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
Tetryl	500 U	500 U	500 U	460 U	480 U	NA	NA	NA
Total Metals (MG/KG)								
Aluminum	7,420	7,780	7,320	11,600	15,700	6,600	11,300	12,700
Antimony	15.7 U	19 U	16.8 U	22.8 U	22.5 U	0.67 UL	2.1 J	0.89 UL
Arsenic	7.3	8.8	6.9	8.8	12.2	2.9 J	7.7	10.6
Barium	68.1 B	202	23.4 B	87.1 B	74.1 B	18.6 J	31.4 J	37.2 J
Beryllium	0.8 J	0.72 J	0.68 J	0.94 J	1.3 J	0.28 B	0.87 B	0.97 B
Cadmium	1 J	0.73 B	0.87 B	0.98 B	1.1 B	1 B	1.2 B	1.2 U
Calcium	1,090 J	2,870	1,530	1,680 J	2,090	473 J	1,390 J	1,530 J
Chromium	16.3	16.5	18.9	25.1	32.3	10.8 K	23.6 K	25.6 K
Cobalt	5 B	5.7 B	5.7 B	7.5 B	9.8 B	3.3 J	9.7 J	10.8 J
Copper	31.7	33.4	35.2	50.2	59.2	11.6	42.4	35.5
Cyanide	1.7 U	1.9 U	2.1 U	2.4 U	2.5 U	NA	NA	NA
Iron	11,600	20,700	16,100	19,000	26,000	9,330	20,900	24,800
Lead	96.8	58.3	44.8	99.3	113	19.4	59	56.7
Magnesium	2,040	2,990	3,070	3,930	5,280	1,090 J	3,680	4,430
Manganese	84	165	150	161	228	35.3	153	213
Mercury	0.23 B	0.41 B	0.18 B	0.43 B	0.72	0.11 J	0.32	0.49
Nickel	11.1 B	11.2 B	11.1 B	13.9 B	18.4	3.7 J	15.9 J	17.1 J
Potassium	1,280 J	1,630	1,440	2,140	3,070	665 J	2,040 J	2,350
Selenium	9.2 U	11.1 U	9.8 U	13.3 U	13.1 U	0.91 UL	1.2 UL	1.2 UL

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS01-SD03	SJS01-SD04	SJS04-SD10	SJS04-SD11	SJS04-SD06	SJS04-SD07	SJS04-SD08	SJS04-SD09	
Sample ID	SJS01-SD03-001	SJS01-SD04-001	SJS04-SD04-000	SJS04-SD05-001	SJS04-SD06-001	SJS04-SD07-001	SJS04-SD08-001	SJS04-SD09-001	SJS04-SD09-001P
Sample Date	02/08/01	02/08/01	07/15/97	04/22/99	04/15/99	04/22/99	04/15/99	10/28/99	10/28/99
Chemical Name									
Explosives (UG/KG)									
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
HMX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Picric Acid	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (MG/KG)									
Aluminum	14,300	10,900	22,100	15,200	14,800	10,200	16,600	6,290	6,430
Antimony	1.2 UL	0.96 UL	1.9 B	0.860 U	0.970 U	1 U	1.20 U	0.780 U	0.790 U
Arsenic	14.2	14.2	16.3	12.9	16.3 J	12.1	14.7 J	7.6	7.3
Barium	45.7 J	38.7 J	79.2 J	34.4 J	41.7 J	903	74 J	261	340
Beryllium	1.2 B	0.98 B	2.7 J	3	0.960 J	0.660 J	2.10 J	0.540 J	0.580 J
Cadmium	2.1 B	1.3 U	0.33 U	1.30 J	0.440 J	1.40 J	2 J	0.300 J	0.410 J
Calcium	2,230 J	1,610 J	4,390	2,350	1,800	11,000	2,510	1,810	4,310
Chromium	30.4 K	23.7 K	38.8	13.1	29	23.9	31.4	16.9	16.5
Cobalt	11.1 J	10.4 J	22.5 J	32.7	8.20 J	6.80 J	15 J	4.70 J	5.20 J
Copper	87.5	34.8	73	33.6	39.8 J	48.8	94.4 J	41.4	58.1
Cyanide	NA	NA	1.7 U	0.396 U	0.570 UL	0.431 U	2.90 L	0.420 U	0.460 U
Iron	28,400	26,600	48,600	17,500	28,100	31,900	32,600	18,100	19,400
Lead	99.7	55.1	426	38.9	64.3 J	114	122 J	57.8	81.5
Magnesium	5,090	4,900	6,740	988 J	5,050	3,690	5,070	2,670	2,810
Manganese	177	202	364 K	201	257	330	232	161	162
Mercury	0.66	0.48	0.4	0.110	0.450	0.330	0.410	0.23	0.26
Nickel	18.1 J	14.7 J	34.9	41.4	16.2	13.4 J	27.9	9.60 J	10.7 J
Potassium	2,730 J	2,570	3,850	752 J	2,940	2,070	2,600	1,300 J	1,410
Selenium	1.6 UL	1.3 UL	2.01 UL	0.990 J	1.30 J	1.60 J	1.5 J	1.20 J	0.880 J

U Not detected
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B Blank contamination
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NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS05-SD07		SJSBK-SD07		SJSBK-SD08		SJSBK-SD09	
Sample ID	SJS05-SD07-001	SJS05-SD07-001P	SJSBK-SD07-001	SJSBK-SD07-002	SJSBK-SD08-001	SJSBK-SD08-002	SJSBK-SD09-001	SJSBK-SD09-001P
Sample Date	10/28/99	10/28/99	04/15/99	10/28/99	04/15/99	10/26/99	04/16/99	04/16/99
Chemical Name								
Explosives (UG/KG)								
1,3,5-Trinitrobenzene	250 U	220 U	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	250 U	220 U	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	250 U	220 U	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	250 U	220 U	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	250 U	220 U	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	250 U	220 U	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	500 U	430 U	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	500 U	430 U	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	250 U	220 U	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	500 U	430 U	NA	NA	NA	NA	NA	NA
HMX	500 U	430 U	NA	NA	NA	NA	NA	NA
Nitrobenzene	250 U	220 U	NA	NA	NA	NA	NA	NA
Picric Acid	NA	NA	NA	NA	NA	NA	NA	NA
RDX	250 U	220 U	NA	NA	NA	NA	NA	NA
Tetryl	500 U	430 U	NA	NA	NA	NA	NA	NA
Total Metals (MG/KG)								
Aluminum	12,100	12,400	9,470	16,800	17,400 *	5,450	25,600	25,600
Antimony	1.20 UL	1.20 L	0.800 U	1.10 U	1.5 U	0.630 UL	NA	NA
Arsenic	12.2	11.9	6.80	14.7	13.7 N	6.40	15.2	15.2
Barium	56.7 J	59.1 J	24.4 J	57.5 J	51.5 J	23.8 J	54.1 J	54.1 J
Beryllium	1.20 J	1.30 J	0.690 J	1.30 J	1.40 J	0.510 J	1.70 J	1.70 J
Cadmium	0.600 J	0.700 J	0.5 J	0.880 J	2.30 J	0.350 J	1.70 J	1.40 J
Calcium	1,330 J	1,430 J	1,300 J	2,300	2,770 J	954 J	3,870 J	3,690
Chromium	25.4	26.5	19.1	32.4	35.6 *	13 K	47.9	47.9
Cobalt	7.40 J	7.80 J	6.30 J	9.5 J	10 J	4.10 J	14.9 J	14.9 J
Copper	60	58.4	27.6	85.4	112 *	50.2	97	89.9
Cyanide	0.5 U	0.550 U	0.990 L	0.890 U	0.650 UL	0.370 U	NA	NA
Iron	22,700	22,100	19,000	28,300	29,700 *	14,900	34,100	34,100
Lead	94.1	99.9	37.4	96.7	115 *	59.2 K	139	139
Magnesium	3,460	3,620	3,230	5,470	5,290	2,640 K	6,770	6,770
Manganese	151	155	187	203	191 N	86.4 K	286 *N	286 *N
Mercury	0.38	0.4	0.190	0.540	0.650	0.550	0.510	0.490
Nickel	16.2 J	16.4	11.5 J	20.4	25.1	10.2	33.9	33.9
Potassium	1,970 J	1,990 J	1,810	2,820	2,910	944 J	4,220	4,220
Selenium	1.80 J	1.40 J	0.960 J	1.5 J	2.30 J	0.710 J	1.80 J	1.80 J

U Not detected
J Estimated
B Blank contamination
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NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJSBK-SD09		SJSBK-SD10		SJSBK-SD11		SJBC-SD200	SJBC-SD201
Sample ID	SJSBK-SD09-002	SJSBK-SD09-002P	SJSBK-SD10-001	SJSBK-SD10-002	SJSBK-SD11-001	SJSBK-SD11-001P	SJBC-SD200-04D	SJBC-SD201-04D
Sample Date	10/26/99	10/26/99	04/16/99	10/26/99	10/28/99	10/28/99	10/25/04	10/25/04
Chemical Name								
Explosives (UG/KG)								
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
HMX	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Picric Acid	NA	NA	NA	NA	NA	NA	NA	NA
RDX	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (MG/KG)								
Aluminum	23,200	27,400	22,500	9,440	1,270	1,090	NA	NA
Antimony	1.4 UL	NA	1.20 U	0.610 B	1.40 J	1.20 J	NA	NA
Arsenic	18.9	22.5	15.5	8.90	5.1	3.20	NA	NA
Barium	59.1 J	59.1 J	50.3 J	25.6 J	45.8	37.4	NA	NA
Beryllium	1.90 J	1.90 J	1.90 J	0.910 J	0.240 J	0.240 J	NA	NA
Cadmium	0.440 J	0.390 J	1.70 J	0.530 J	0.210 J	0.210 J	NA	NA
Calcium	2,730	2,550	2,560	1,260	518 J	3,940	NA	NA
Chromium	49.2 K	49.2 K	38.2	17.7 K	8.4	7.40	NA	NA
Cobalt	17.7 J	17.7 J	13.9 J	6.5 J	2.10 J	2.10 J	NA	NA
Copper	64.4	63.5	109	54.9	41.4	47.9	NA	NA
Cyanide	0.72 U	NA	0.650 UL	0.430 U	0.32 U	NA	NA	NA
Iron	43,800	50,400	31,600	15,600	18,400	5,480	NA	NA
Lead	99.9 K	99.9 K	165	69.5 K	77.9	57.2	NA	NA
Magnesium	7,920	8,880	5,170	2,690	476 J	458 J	NA	NA
Manganese	403 K	403 K	258 *N	119 K	62.9	37.3	NA	NA
Mercury	0.69	0.600	0.530	0.290	0.0300 J	0.0300 J	0.11 B	0.087 B
Nickel	27.9	35.4	28.1	12.5	7.5	6.5 J	NA	NA
Potassium	4,330	5,030	3,170	1,450	192 J	175 J	NA	NA
Selenium	1.90 J	1.90 J	1.80 J	1 J	0.43 U	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD201	SJBC-SD202	SJBC-SD203	SJBC-SD204	SJBC-SD205	SJBC-SD206	SJBC-SD207	SJBC-SD208	SJBC-SD209
Sample ID	SJBC-SD201-04D-P	SJBC-SD202-04D	SJBC-SD203-04D	SJBC-SD204-04D	SJBC-SD205-04D	SJBC-SD206-04D	SJBC-SD207-04D	SJBC-SD208-04D	SJBC-SD209-04D-F
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name									
Explosives (UG/KG)									
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
HMX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Picric Acid	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (MG/KG)									
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.22	0.36	0.23 B	0.2	0.16 B	0.24	0.1 B	0.15 B	0.14 B
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
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NA Not analyzed

R Unreliable result
K Biased high
L Biased low
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N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD209	SJBC-SD210	SJBC-SD211	SJBC-SD212
Sample ID	SJBC-SD209-04D	SJBC-SD210-04D	SJBC-SD211-04D	SJBC-SD212-04D
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name				
Explosives (UG/KG)				
1,3,5-Trinitrobenzene	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA
2,4,6-Trinitrotoluene	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA
2-Nitrotoluene	NA	NA	NA	NA
3-Nitrotoluene	NA	NA	NA	NA
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA
4-Nitrotoluene	NA	NA	NA	NA
HMX	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA
Picric Acid	NA	NA	NA	NA
RDX	NA	NA	NA	NA
Tetryl	NA	NA	NA	NA
Total Metals (MG/KG)				
Aluminum	NA	NA	NA	NA
Antimony	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA
Barium	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA
Calcium	NA	NA	NA	NA
Chromium	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA
Copper	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA
Iron	NA	NA	NA	NA
Lead	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA
Manganese	NA	NA	NA	NA
Mercury	0.26 B	0.17 B	0.069 B	0.24
Nickel	NA	NA	NA	NA
Potassium	NA	NA	NA	NA
Selenium	NA	NA	NA	NA

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R Unreliable result
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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD01	SJBC-SD02	SJBC-SD03	SJBC-SD04		SJBC-SD05	SJBC-SD06	SJBC-SD07	SJBC-SD08
Sample ID	SJBC-SD01-03C	SJBC-SD02-03C	SJBC-SD03-03C	SJBC-SD04-03C	SJBC-SD04-03C-P	SJBC-SD05-03C	SJBC-SD06-03C	SJBC-SD07-03C	SJBC-SD08-03C
Sample Date	09/16/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/15/03	09/16/03	09/16/03
Chemical Name									
Silver	3.6 U	1.8 U	3.8 U	6.4 U	6.5 U	4.2 U	3.9 U	4.1 U	3.8 U
Sodium	3,410	456 B	3,260 J	8,960	10,300 J	5,760	5,460	5,820	6,460
Thallium	1.2 J	4.5 U	9.4 U	1.6 J	2.4 J	0.76 J	9.8 U	10.3 U	9.4 U
Vanadium	30.3	13.1	28 J	55.6	67.3 J	38.8	36.2	25.9	32.5
Zinc	222	53.8	299 J	420	497 J	266	268	191	195
Wet Chemistry (MG/KG)									
% Solids	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total organic carbon (TOC)	67,800	21,900	44,800 J	72,700	69,900 J	48,600	35,700	40,800	39,000
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA
AVS/SEM (UMOLE/G)									
Acid volatile sulfide	4.18	23.1	4.06 J	6.63	8.45 J	4.17	6.31	0.120	2.51
Cadmium	0.00497	0.00256	0.0107	0.00956	0.00888	0.00484	0.00541	0.00739	0.00645
Copper	0.0995	0.0686	0.144 J	0.191	0.213 J	0.0944	0.0964	0.146	0.129
Lead	0.703	0.129	0.620 J	0.877	1.44 J	0.427	0.334	0.420	0.233
Mercury	6.00E-05 U	3.00E-05 U	6.00E-05 U	9.00E-05 U	1.00E-04 U	6.00E-05 U	5.00E-05 U	6.00E-05 U	7.00E-05 U
Nickel	0.0920	0.0631	0.109 J	0.123	0.189 J	0.303	0.113	0.150	0.0797
SEM/AVS Ratio	0.652	0.0406	1.16	0.718	0.658	0.820	0.499	28.9	1.05
Simul-ExtractMetal	2.72	0.938	4.69	4.76	5.56	3.42	3.15	3.48	2.62
Zinc	1.82	0.675	3.81	3.56	3.72	2.59	2.60	2.75	2.18

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L Biased low
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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD09	SJBC-SD10	SJBC-SD11	SJBC-SD12	SJBC-SD13	SJBC-SD14	SJBC-SD15	SJBC-SD16	SJBC-SD17
Sample ID	SJBC-SD09-03C	SJBC-SD10-03C	SJBC-SD11-03C	SJBC-SD12-03C	SJBC-SD13-03C	SJBC-SD14-03C	SJBC-SD15-03C	SJBC-SD16-03C	SJBC-SD17-03C
Sample Date	09/23/03	09/16/03	09/16/03	09/23/03	09/24/03	09/24/03	09/24/03	09/24/03	09/25/03
Chemical Name									
Silver	3.3 U	4.7 U	3.6 U	4.9 U	2.2 U	3.6 U	2.4 U	0.15 B	3.3 U
Sodium	4,290	9,970	4,070	8,410	2,310	9,450	4,120	4,060	9,030
Thallium	8.2 U	11.7 U	2.5 J	12.2 U	0.36 B	0.76 B	6.1 U	6.3 U	0.54 B
Vanadium	22	33.6	25.3	40.6	15.3	38.1	15.7	14.5	44.4
Zinc	189 B	187	221	264	57.5 B	157 B	132 B	86.3 B	209 B
Wet Chemistry (MG/KG)									
% Solids	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total organic carbon (TOC)	38,700	31,100	46,800	74,100	14,900	40,500	17,800	15,600	34,100
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA
AVS/SEM (UMOLE/G)									
Acid volatile sulfide	8.85	3.50	3.48	9.10	0.725	2.50 J	2.54	0.520	2.91
Cadmium	0.00997	0.00417	0.00433	0.0177	0.00273	0.00439 J	0.00945	0.00294	0.00516
Copper	0.134	0.0598	0.0300	0.302	0.0638	0.0482 J	0.140	0.0529	0.0819
Lead	0.203	0.146	0.166	0.300	0.0617	0.140 J	0.125	0.0610	0.145
Mercury	6.00E-05 U	7.00E-05 U	6.00E-05 U	7.00E-05 U	4.00E-05 U	6.00E-05 UJ	4.00E-05 U	4.00E-05 U	6.00E-05 U
Nickel	0.232	0.132	0.0509	0.0915	0.0247 U	0.0434 J	0.0306	0.0312	0.0409 U
SEM/AVS Ratio	0.311	0.669	0.628	0.383	1.14	0.741 J	0.858	2.29	0.732
Simul-ExtractMetal	2.75	2.34	2.18	3.49	0.825	1.85 J	2.18	1.19	2.13
Zinc	2.17	2.00	1.93	2.78	0.675	1.61 J	1.87	1.04	1.87

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
NA Not analyzed

R Unreliable result
K Biased high
L Biased low
UL Not detected; quantitation limit may be higher
N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD18		SJBC-SD19	SJBC-SD20	SJBC-SD21	SJBC-SD22	SJBC-SD23	
Sample ID	SJBC-SD18-03C-P	SJBC-SD18-03C	SJBC-SD19-03C	SJBC-SD20-03C	SJBC-SD21-03C	SJBC-SD22-03C	SJBC-SD23-03C	SJBC-SD23-03C-P
Sample Date	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03
Chemical Name								
Silver	2.9 U	3.3 U	4.4 U	2.6 U	1.9 U	2.3 U	2.2 U	2.7 U
Sodium	6,210	6,490	9,810	5,110	2,410	3,870	4,660	4,060
Thallium	7.3 U	0.67 B	10.9 U	6.5 U	4.9 U	0.38 B	5.4 U	0.83 B
Vanadium	30	30.3	32.9	24.7	13.1	19.5	19.4	15.7
Zinc	440	361	410	249	98 B	137 B	55 B	48.1 B
Wet Chemistry (MG/KG)								
% Solids	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA	NA	NA	NA	NA
Total organic carbon (TOC)	24,200	29,200	31,400	18,900	8,620	16,900	13,500	13,500
pH	NA	NA	NA	NA	NA	NA	NA	NA
AVS/SEM (UMOLE/G)								
Acid volatile sulfide	8.82 J	4.34 J	11.5	4.34	1.89	1.80	0.0314 U	0.0823
Cadmium	0.00786	0.00762	0.0135	0.0082	0.00552	0.00491	0.00179 U	0.00181 U
Copper	0.0709	0.0608	0.140	0.120	0.0725	0.0758	0.0245	0.0270
Lead	0.873	0.611	0.235	0.316	0.122	0.171	0.0400	0.0469
Mercury	5.00E-05 U	5.00E-05 U	7.00E-05 U	5.00E-05 U	4.00E-05 U	4.00E-05 U	4.00E-05 U	4.00E-05 U
Nickel	0.0353 U	0.0373 U	0.0495	0.0336	0.0741	0.0283 U	0.0274 U	0.0277 U
SEM/AVS Ratio	0.561	0.981	0.422	0.688	0.793	0.977	14.8	7.01
Simul-ExtractMetal	4.95	4.26	4.84	2.99	1.50	1.76	0.465	0.577
Zinc	3.96	3.55	4.40	2.51	1.22	1.49	0.386	0.486

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B Blank contamination
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R Unreliable result
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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD24	SJBC-SD25	SJBC-SD26	SJBC-SD27	SJBC-SD28	SJBC-SD29	SJBC-SD30	SJBC-SD31	SJBC-SD32
Sample ID	SJBC-SD24-03C	SJBC-SD25-03C	SJBC-SD26-03C	SJBC-SD27-03C	SJBC-SD28-03C	SJBC-SD29-03C	SJBC-SD30-03C	SJBC-SD31-03C	SJBC-SD32-03C
Sample Date	09/26/03	09/25/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03	09/26/03
Chemical Name									
Silver	3.1 U	2 U	2.1 U	2 U	3.6 U	4.3 U	4.2 U	4.3 U	3.4 U
Sodium	2,690	4,400	2,270	2,220	8,120	10,100	9,460	8,390	7,940
Thallium	7.8 U	5 U	0.66 B	5 U	0.7 B	0.76 B	1.4 B	0.66 B	8.6 U
Vanadium	8.6 J	19.6	9.4 J	10.1	25.8	42	37.3	46.2	34.4
Zinc	61.4 B	79.3 B	69.6 B	111 B	236	135 B	217	312	148 B
Wet Chemistry (MG/KG)									
% Solids	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total organic carbon (TOC)	13,700	25,700	1,520	3,270	44,300	46,700	56,400	28,700	23,600
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA
AVS/SEM (UMOLE/G)									
Acid volatile sulfide	1.17	0.340	2.90	1.49	5.25	3.37	4.85	2.17	4.14
Cadmium	0.00226	0.00344	0.00381	0.00503	0.00733	0.00375	0.00397	0.00819	0.00343
Copper	0.0716	0.0898	0.0893	0.0855	0.159	0.0497	0.123	0.0611	0.0399
Lead	0.0767	0.149	0.0647	0.162	0.166	0.0907	0.261	0.113	0.0982
Mercury	5.00E-05 U	5.00E-05 U	3.00E-05 U	3.00E-05 U	6.00E-05 U	6.00E-05 U	6.00E-05 U	6.00E-05 U	6.00E-05 U
Nickel	0.0376	0.0323 U	0.0233 U	0.0230 U	0.0451	0.0421 U	0.114	0.0419 U	0.0622
SEM/AVS Ratio	0.736	4.04	0.285	1.09	0.507	0.481	0.538	1.08	0.321
Simul-ExtractMetal	0.865	1.38	0.826	1.62	2.66	1.62	2.61	2.35	1.33
Zinc	0.677	1.10	0.654	1.35	2.28	1.44	2.11	2.13	1.13

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N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD33	SJBC-SD34	SJBC-SD35	SJBC-SD36		SJS01-SD01	SJS01-SD02	
Sample ID	SJBC-SD33-03C	SJBC-SD34-03C	SJBC-SD35-03C	SJBC-SD36-03C	SJBC-SD36-03C-P	SJS01-SD01-00-04A	SJS01-SD02-001	SJS01-SD02-001P
Sample Date	09/24/03	09/24/03	09/26/03	09/24/03	09/24/03	02/08/01	02/08/01	02/08/01
Chemical Name								
Silver	2.6 U	0.24 B	2.8 U	3.8 U	3.8 U	0.71 U	0.91 U	0.93 U
Sodium	4,010	5,980	4,860	7,810	8,610	2,740	7,610	8,300
Thallium	6.6 U	7.9 U	1.6 B	0.57 B	9.4 U	2 U	2.6 U	2.6 U
Vanadium	22.2	17.7	17.6	26.2	32.3	14 J	31.2	35.2
Zinc	179	126 B	148 B	213	233	34.1	163	145
Wet Chemistry (MG/KG)								
% Solids	NA	NA	NA	NA	NA	59.5	46.1	45
Cyanide	NA	NA	NA	NA	NA	0.84 U	1.1 U	1.1 U
Phosphorus	NA	NA	NA	NA	NA	NA	NA	NA
Total organic carbon (TOC)	20,800	29,500	22,200	40,000	49,500	2,930	25,100	43,400
pH	NA	NA	NA	NA	NA	NA	NA	NA
AVS/SEM (UMOLE/G)								
Acid volatile sulfide	2.68	2.08	1.80	14.9 J	4.65 J	NA	NA	NA
Cadmium	0.0068	0.00206 U	0.00627	0.00429	0.00494	NA	NA	NA
Copper	0.119	0.0443	0.117	0.118	0.122	NA	NA	NA
Lead	0.192	0.0838	0.122	0.302	0.250	NA	NA	NA
Mercury	4.00E-05 U	5.00E-05 U	5.00E-05 U	6.00E-05 U	6.00E-05 U	NA	NA	NA
Nickel	0.0284 U	0.0316 U	0.0356 U	0.0451	0.0418 U	NA	NA	NA
SEM/AVS Ratio	0.857	0.473	1.10	0.203	0.553	NA	NA	NA
Simul-ExtractMetal	2.29	0.984	1.98	3.03	2.57	NA	NA	NA
Zinc	1.95	0.834	1.70	2.56	2.16	NA	NA	NA

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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS01-SD03	SJS01-SD04	SJS04-SD10	SJS04-SD11	SJS04-SD06	SJS04-SD07	SJS04-SD08	SJS04-SD09	
Sample ID	SJS01-SD03-001	SJS01-SD04-001	SJS04-SD04-000	SJS04-SD05-001	SJS04-SD06-001	SJS04-SD07-001	SJS04-SD08-001	SJS04-SD09-001	SJS04-SD09-001P
Sample Date	02/08/01	02/08/01	07/15/97	04/22/99	04/15/99	04/22/99	04/15/99	10/28/99	10/28/99
Chemical Name									
Silver	1.2 U	1 U	0.79 J	0.290 U	0.320 U	0.350 J	0.410 U	0.200 U	0.200 U
Sodium	13,300	9,570	11,800 B	678 J	8,580	3,250	11,000	4,460	4,600
Thallium	3.5 U	2.8 U	1.34 U	1 U	1.20 U	1.20 U	1.5 U	1.40 U	1.5 U
Vanadium	38.5	28.1	57	16	33.1	30.7	38.8	18.2	19.9
Zinc	280	134	438	281	147	346	428	149	191
Wet Chemistry (MG/KG)									
% Solids	33.8	41.7	NA	54.4	41.5	48.7	32.8	NA	NA
Cyanide	1.5 U	1.2 U	NA	NA	NA	NA	NA	NA	NA
Phosphorus	NA	NA	28	NA	96	NA	223	NA	NA
Total organic carbon (TOC)	71,300	47,200	48,300	33,900	31,300	31,300	66,600	NA	NA
pH	NA	NA	NA	7.46	7.29	7.66	7.51	NA	NA
AVS/SEM (UMOLE/G)									
Acid volatile sulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEM/AVS Ratio	NA	NA	NA	NA	NA	NA	NA	NA	NA
Simul-ExtractMetal	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA

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B Blank contamination
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R Unreliable result
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N Tentative identification

BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJS05-SD07		SJSBK-SD07		SJSBK-SD08		SJSBK-SD09	
Sample ID	SJS05-SD07-001	SJS05-SD07-001P	SJSBK-SD07-001	SJSBK-SD07-002	SJSBK-SD08-001	SJSBK-SD08-002	SJSBK-SD09-001	SJSBK-SD09-001P
Sample Date	10/28/99	10/28/99	04/15/99	10/28/99	04/15/99	10/26/99	04/16/99	04/16/99
Chemical Name								
Silver	0.310 U	0.320 J	0.270 U	0.270 U	0.630 J	0.190 J	NA	NA
Sodium	5,620 J	6,000 J	4,840	9,890	11,500	2,640	18,400	15,300
Thallium	2.30 U	2.10 U	0.950 U	2 U	1.80 U	1.20 U	NA	NA
Vanadium	35.3	33.8	21.5 *	40	48.5 *	14.2	86	86
Zinc	238	252	112 *	290	378 *	141 K	364 N	346 N
Wet Chemistry (MG/KG)								
% Solids	NA	NA	56.3	28.2	30.3	60.7	26	26
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA	NA	NA	NA	NA
Total organic carbon (TOC)	NA	NA	21,600	130,000	67,400	35,000	84,900	73,400
pH	NA	NA	7.70	7.07	7.5	7.31	7.65	7.57
AVS/SEM (UMOLE/G)								
Acid volatile sulfide	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
SEM/AVS Ratio	NA	NA	NA	NA	NA	NA	NA	NA
Simul-ExtractMetal	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA

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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJSBK-SD09		SJSBK-SD10		SJSBK-SD11		SJBC-SD200	SJBC-SD201
Sample ID	SJSBK-SD09-002	SJSBK-SD09-002P	SJSBK-SD10-001	SJSBK-SD10-002	SJSBK-SD11-001	SJSBK-SD11-001P	SJBC-SD200-04D	SJBC-SD201-04D
Sample Date	10/26/99	10/26/99	04/16/99	10/26/99	10/28/99	10/28/99	10/25/04	10/25/04
Chemical Name								
Silver	0.35 U	NA	0.390 U	0.200 J	0.260 J	0.210 J	NA	NA
Sodium	11,500	10,400	8,960	3,220	1,120	843 J	NA	NA
Thallium	2.6 U	NA	1.40 U	1.10 U	0.72 U	NA	NA	NA
Vanadium	49.6	57.5	51.8	20.7	5.40 J	4 J	NA	NA
Zinc	289 K	289 K	383 N	166 K	274	216	NA	NA
Wet Chemistry (MG/KG)								
% Solids	NA	29.2	33	52.9	NA	78.6	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA	NA	NA	NA	NA
Total organic carbon (TOC)	NA	84,900	62,600	35,000	NA	7,800	11,500	20,700 J
pH	NA	7.01	7.55	7.41	NA	7.83	NA	NA
AVS/SEM (UMOLE/G)								
Acid volatile sulfide	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
SEM/AVS Ratio	NA	NA	NA	NA	NA	NA	NA	NA
Simul-ExtractMetal	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA

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L Biased low
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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD201	SJBC-SD202	SJBC-SD203	SJBC-SD204	SJBC-SD205	SJBC-SD206	SJBC-SD207	SJBC-SD208	SJBC-SD209
Sample ID	SJBC-SD201-04D-P	SJBC-SD202-04D	SJBC-SD203-04D	SJBC-SD204-04D	SJBC-SD205-04D	SJBC-SD206-04D	SJBC-SD207-04D	SJBC-SD208-04D	SJBC-SD209-04D-F
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name									
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry (MG/KG)									
% Solids	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total organic carbon (TOC)	8,500 J	15,400	23,700	17,200	29,800	60,300	10,300	18,200	22,900
pH	NA	NA	NA	NA\	NA	NA	NA	NA	NA
AVS/SEM (UMOLE/G)									
Acid volatile sulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEM/AVS Ratio	NA	NA	NA	NA	NA	NA	NA	NA	NA
Simul-ExtractMetal	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA

U Not detected
J Estimated
B Blank contamination
UJ Not detected; quantitation limit may be imprecise
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BERA Sediment Raw Analytical Results
St Juliens Creek Annex, Chesapeake, Virginia

Station ID	SJBC-SD209	SJBC-SD210	SJBC-SD211	SJBC-SD212
Sample ID	SJBC-SD209-04D	SJBC-SD210-04D	SJBC-SD211-04D	SJBC-SD212-04D
Sample Date	10/25/04	10/25/04	10/25/04	10/25/04
Chemical Name				
Silver	NA	NA	NA	NA
Sodium	NA	NA	NA	NA
Thallium	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA
Zinc	NA	NA	NA	NA
Wet Chemistry (MG/KG)				
% Solids	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA
Total organic carbon (TOC)	20,000	20,900	12,900	14,200
pH	NA	NA	NA	NA
AVS/SEM (UMOLE/G)				
Acid volatile sulfide	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA
Copper	NA	NA	NA	NA
Lead	NA	NA	NA	NA
Mercury	NA	NA	NA	NA
Nickel	NA	NA	NA	NA
SEM/AVS Ratio	NA	NA	NA	NA
Simul-ExtractMetal	NA	NA	NA	NA
Zinc	NA	NA	NA	NA

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J Estimated
B Blank contamination
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NA Not analyzed

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Summary Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
Analyte Name	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Arithmetic Mean[1]**	**Standard Deviation of Mean**
Inorganics (MG/KG)						
Aluminum	-- - --	56 / 56	27,400	SJSBK-SD09-002	12,999	6,503
Antimony	0.61 - 39.1	7 / 55	2.10	SJS01-SD02-001	6.10	5.16
Arsenic	-- - --	56 / 56	61.1	SJBC-SD18-03C	12.2	8.57
Barium	10.1 - 87.1	33 / 56	927	SJBC-SD18-03C	76.7	171
Beryllium	0.28 - 1.20	51 / 56	3.10	SJBC-SD04-03C	1.24	0.75
Cadmium	0.28 - 2.10	32 / 56	2.30	SJSBK-SD08-001	0.80	0.56
Calcium	-- - --	56 / 56	29,100	SJBC-SD09-03C	2,595	3,908
Chromium	-- - --	56 / 56	49.2	SJSBK-SD09-002	23.5	10.4
Cobalt	1.90 - 13.0	32 / 56	32.7	SJS04-SD05-001	8.14	6.36
Copper	11.3 - 96.9	41 / 56	137	SJBC-SD18-03C	43.5	29.2
Cyanide	0.32 - 2.90	3 / 51	2.90	SJS04-SD08-001	0.83	0.49
Iron	-- - --	56 / 56	50,400	SJSBK-SD09-002	22,364	10,087
Lead	-- - --	56 / 56	437	SJBC-SD18-03C	93.6	87.9
Magnesium	-- - --	56 / 56	8,880	SJSBK-SD09-002	3,853	1,973
Manganese	-- - --	56 / 56	413	SJBC-SD30-03C	181	98.7
Mercury	0.083 - 0.60	33 / 56	1.10	SJBC-SD04-03C	0.32	0.26
Nickel	3.80 - 13.8	42 / 56	41.4	SJS04-SD05-001	16.4	10.1
Potassium	492 - 3,520	46 / 56	5,030	SJSBK-SD09-002	1,946	1,162
Selenium	0.43 - 22.8	15 / 56	2.30	SJSBK-SD08-001	4.14	2.71
Silver	0.15 - 6.50	7 / 55	0.79	SJS04-SD04-000	1.16	0.81
Sodium	456 - 11,800	54 / 56	18,400	SJSBK-SD09-001	6,318	3,558
Thallium	0.36 - 12.2	4 / 55	2.50	SJBC-SD11-03C	2.07	1.75
Vanadium	-- - --	56 / 56	86.0	SJSBK-SD09-001	29.9	15.4
Zinc	55.0 - 209	39 / 56	497	SJBC-SD04-03C	197	128
Pesticide/Polychlorinated Biphenyls (UG/KG)						
4,4'-DDD	4.30 - 12.0	31 / 56	550	SJBC-SD04-03C	35.0	105
4,4'-DDE	4.30 - 12.0	31 / 56	320	SJBC-SD04-03C	21.0	50.4
4,4'-DDT	3.70 - 12.0	10 / 55	33.0	SJBC-SD04-03C	4.68	5.39
Aldrin	2.20 - 6.30	1 / 50	100	SJBC-SD12-03C	3.87	13.9

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Summary Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
Analyte Name	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Arithmetic Mean[1]**	**Standard Deviation of Mean**
Aroclor-1016	43.0 - 120	0 / 50	--	--	37.5	10.1
Aroclor-1221	87.0 - 250	0 / 50	--	--	76.3	20.8
Aroclor-1232	43.0 - 120	0 / 50	--	--	37.5	10.1
Aroclor-1242	43.0 - 120	0 / 50	--	--	37.5	10.1
Aroclor-1248	43.0 - 120	0 / 50	--	--	37.5	10.1
Aroclor-1254	43.0 - 120	0 / 50	--	--	37.5	10.1
Aroclor-1260	43.0 - 120	2 / 50	270	SJBC-SD30-03C	41.8	34.3
Dieldrin	4.30 - 12.0	1 / 51	0.63	SJS04-SD09-001	3.69	1.09
Endosulfan I	2.20 - 6.30	0 / 50	--	--	1.92	0.51
Endosulfan II	4.30 - 12.0	0 / 50	--	--	3.75	1.01
Endosulfan sulfate	4.30 - 12.0	2 / 50	19.0	SJBC-SD01-03C	4.16	2.62
Endrin	4.30 - 12.0	0 / 50	--	--	3.75	1.01
Endrin aldehyde	4.30 - 12.0	0 / 50	--	--	3.75	1.01
Endrin ketone	4.30 - 12.0	1 / 50	11.0	SJBC-SD36-03C	3.89	1.44
Heptachlor	2.20 - 6.30	0 / 50	--	--	1.92	0.51
Heptachlor epoxide	2.20 - 6.30	0 / 50	--	--	1.92	0.51
Methoxychlor	22.0 - 63.0	0 / 50	--	--	19.2	5.13
Toxaphene	220 - 630	0 / 50	--	--	192	51.3
alpha-BHC	2.20 - 6.30	0 / 50	--	--	1.92	0.51
alpha-Chlordane	2.20 - 6.30	4 / 50	25.0	SJBC-SD04-03C	2.57	3.47
beta-BHC	2.20 - 6.30	0 / 50	--	--	1.92	0.51
delta-BHC	2.20 - 6.30	0 / 50	--	--	1.92	0.51
gamma-BHC (Lindane)	2.20 - 6.30	0 / 50	--	--	1.92	0.51
gamma-Chlordane	2.20 - 6.30	3 / 50	55.0	SJBC-SD04-03C	3.23	7.71
Semivolatile Organic Compounds (UG/KG)						
1,1-Biphenyl	430 - 1,700	0 / 36	--	--	384	145
1,2,4-Trichlorobenzene	560 - 1,100	0 / 12	--	--	393	95.6
1,2-Dichlorobenzene	560 - 1,100	0 / 12	--	--	393	95.6
1,3,5-Trinitrobenzene	250 - 250	0 / 4	--	--	125	0.0
1,3-Dichlorobenzene	560 - 1,100	0 / 12	--	--	393	95.6

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Summary Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
Analyte Name	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Arithmetic Mean[1]**	**Standard Deviation of Mean**
1,3-Dinitrobenzene	250 - 250	0 / 4	--	--	125	0.0
1,4-Dichlorobenzene	560 - 1,100	0 / 12	--	--	393	95.6
2,4,5-Trichlorophenol	560 - 4,300	0 / 49	--	--	934	376
2,4,6-Trichlorophenol	430 - 1,700	0 / 49	--	--	390	136
2,4,6-Trinitrotoluene	250 - 250	0 / 4	--	--	125	0.0
2,4-Dichlorophenol	430 - 1,700	0 / 49	--	--	390	136
2,4-Dimethylphenol	430 - 1,700	0 / 49	--	--	390	136
2,4-Dinitrophenol	1,100 - 4,700	0 / 49	--	--	1,054	426
2,4-Dinitrotoluene	250 - 1,700	0 / 48	--	--	364	151
2,6-Dinitrotoluene	250 - 1,700	0 / 48	--	--	364	151
2-Amino-4,6-dinitrotoluene	250 - 250	0 / 4	--	--	125	0.0
2-Chloronaphthalene	430 - 1,700	0 / 48	--	--	386	134
2-Chlorophenol	430 - 1,700	0 / 49	--	--	390	136
2-Methylnaphthalene	430 - 1,600	3 / 48	410	SJBC-SD05-03C	369	127
2-Methylphenol	430 - 1,700	0 / 49	--	--	390	136
2-Nitroaniline	1,100 - 4,700	0 / 48	--	--	1,045	425
2-Nitrophenol	430 - 1,700	0 / 49	--	--	390	136
2-Nitrotoluene	250 - 250	0 / 4	--	--	125	0.0
3,3'-Dichlorobenzidine	430 - 4,700	0 / 48	--	--	508	442
3-Nitroaniline	1,100 - 4,700	0 / 48	--	--	1,045	425
3-Nitrotoluene	250 - 250	0 / 4	--	--	125	0.0
4,6-Dinitro-2-methylphenol	1,100 - 4,700	0 / 49	--	--	1,054	426
4-Amino-2,6-dinitrotoluene	250 - 250	0 / 4	--	--	125	0.0
4-Bromophenyl-phenylether	430 - 1,700	0 / 48	--	--	386	134
4-Chloro-3-methylphenol	430 - 1,700	0 / 49	--	--	390	136
4-Chloroaniline	430 - 1,700	0 / 48	--	--	386	134
4-Chlorophenyl-phenylether	430 - 1,700	0 / 48	--	--	386	134
4-Methylphenol	430 - 1,700	0 / 49	--	--	390	136
4-Nitroaniline	1,100 - 4,700	0 / 48	--	--	1,045	425
4-Nitrophenol	1,100 - 4,700	0 / 49	--	--	1,054	426

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Summary Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
Analyte Name	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Arithmetic Mean[1]**	**Standard Deviation of Mean**
4-Nitrotoluene	250 - 250	0 / 4	--	--	125	0.0
Acenaphthene	110 - 1,200	8 / 49	2,900	SJBC-SD05-03C	372	398
Acenaphthylene	110 - 1,700	24 / 48	360	SJBC-SD36-03C	251	169
Acetophenone	430 - 1,700	0 / 36	--	--	384	145
Anthracene	110 - 1,100	34 / 49	2,400	SJBC-SD36-03C	275	347
Atrazine	430 - 1,700	0 / 36	--	--	384	145
Benzaldehyde	430 - 1,700	0 / 36	--	--	384	145
Benzo(a)anthracene	620 - 1,000	48 / 50	3,900	SJBC-SD36-03C	507	602
Benzo(a)pyrene	620 - 1,000	48 / 50	2,900	SJBC-SD36-03C	554	541
Benzo(b)fluoranthene	620 - 1,000	51 / 53	3,500	SJBC-SD36-03C	712	701
Benzo(g,h,i)perylene	620 - 1,000	46 / 50	2,100	SJBC-SD30-03C	377	396
Benzo(k)fluoranthene	620 - 1,000	47 / 50	4,400	SJBC-SD36-03C	622	711
Butylbenzylphthalate	430 - 1,700	1 / 48	58.0	SJS04-SD04-000	381	141
Caprolactam	110 - 1,700	0 / 36	--	--	374	155
Carbazole	160 - 1,600	4 / 48	530	SJBC-SD05-03C	355	137
Chrysene	620 - 1,000	50 / 52	4,700	SJBC-SD36-03C	662	796
Di-n-butylphthalate	430 - 1,700	0 / 48	--	--	386	134
Di-n-octylphthalate	430 - 1,700	1 / 49	120	SJS04-SD09-001	380	138
Dibenz(a,h)anthracene	110 - 1,700	29 / 49	1,200	SJBC-SD30-03C	292	226
Dibenzofuran	430 - 1,200	5 / 48	600	SJBC-SD05-03C	355	125
Diethylphthalate	430 - 1,700	2 / 49	170	SJSBK-SD11-001	377	142
Dimethyl phthalate	430 - 1,700	0 / 48	--	--	386	134
Fluoranthene	620 - 1,000	54 / 56	8,600	SJBC-SD36-03C	843	1,267
Fluorene	110 - 1,200	6 / 48	350	SJBC-SD05-03C	319	146
HMX	500 - 500	0 / 4	--	--	250	0.0
Hexachlorobenzene	430 - 1,700	0 / 48	--	--	386	134
Hexachlorobutadiene	430 - 1,700	0 / 48	--	--	386	134
Hexachlorocyclopentadiene	430 - 4,700	0 / 48	--	--	508	442
Hexachloroethane	430 - 1,700	0 / 48	--	--	386	134
Indeno(1,2,3-cd)pyrene	620 - 1,000	46 / 50	2,100	SJBC-SD30-03C	386	383

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Summary Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
Analyte Name	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Arithmetic Mean[1]**	**Standard Deviation of Mean**
Isophorone	430 - 1,700	0 / 49	--	--	390	136
Naphthalene	110 - 1,200	15 / 48	720	SJBC-SD05-03C	298	174
Nitrobenzene	250 - 1,700	0 / 48	--	--	364	151
Pentachlorophenol	1,100 - 4,700	0 / 49	--	--	1,054	426
Phenanthrene	110 - 1,100	40 / 50	630	SJBC-SD22-03C	233	163
Phenol	430 - 1,700	0 / 49	--	--	390	136
Pyrene	620 - 1,000	53 / 55	7,600	SJBC-SD36-03C	904	1,163
RDX	500 - 500	0 / 4	--	--	250	0.0
Tetryl	650 - 650	0 / 4	--	--	325	0.0
bis(2-Chloro-1-methylethyl) ether	430 - 1,700	0 / 48	--	--	386	134
bis(2-Chloroethoxy)methane	430 - 1,700	1 / 48	1,000	SJSBK-SD10-001	396	160
bis(2-Chloroethyl)ether	430 - 1,700	0 / 48	--	--	386	134
bis(2-Ethylhexyl)phthalate	52.0 - 7,600	9 / 49	3,500	SJBC-SD29-03C	576	887
n-Nitroso-di-n-propylamine	430 - 1,700	0 / 48	--	--	386	134
n-Nitrosodiphenylamine	430 - 1,700	0 / 48	--	--	386	134
Explosives (UG/KG)						
1,3,5-Trinitrobenzene	250 - 500	0 / 37	--	--	243	21.4
1,3-Dinitrobenzene	250 - 500	0 / 37	--	--	243	21.4
2,4,6-Trinitrotoluene	250 - 500	0 / 37	--	--	243	21.4
2,4-Dinitrotoluene	250 - 500	0 / 37	--	--	243	21.4
2,6-Dinitrotoluene	250 - 500	0 / 37	--	--	243	21.4
2-Amino-4,6-dinitrotoluene	250 - 500	0 / 37	--	--	243	21.4
2-Nitrotoluene	440 - 500	0 / 37	--	--	246	7.94
3-Nitrotoluene	440 - 500	0 / 37	--	--	246	7.94
4-Amino-2,6-dinitrotoluene	250 - 500	0 / 37	--	--	243	21.4
4-Nitrotoluene	440 - 500	0 / 37	--	--	246	7.94
HMX	440 - 500	0 / 37	--	--	246	7.94
Nitrobenzene	250 - 500	0 / 37	--	--	243	21.4
Picric Acid	2,500 - 2,500	0 / 1	--	--	1,250	--
RDX	250 - 500	0 / 37	--	--	243	21.4

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Summary Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
Analyte Name	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Arithmetic Mean[1]**	**Standard Deviation of Mean**
Tetryl	440 - 500	0 / 37	--	--	246	7.94
Volatile Organic Compounds (UG/KG)						
1,1,1-Trichloroethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
1,1,2,2-Tetrachloroethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	17.0 - 30.0	0 / 4	--	--	11.6	2.69
1,1,2-Trichloroethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
1,1-Dichloroethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
1,1-Dichloroethene	16.0 - 36.0	0 / 16	--	--	11.9	2.99
1,2,4-Trichlorobenzene	17.0 - 30.0	0 / 4	--	--	11.6	2.69
1,2-Dibromo-3-chloropropane	17.0 - 30.0	0 / 4	--	--	11.6	2.69
1,2-Dibromoethane	17.0 - 30.0	0 / 4	--	--	11.6	2.69
1,2-Dichlorobenzene	17.0 - 30.0	0 / 4	--	--	11.6	2.69
1,2-Dichloroethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
1,2-Dichloroethene (total)	16.0 - 36.0	0 / 12	--	--	12.0	3.19
1,2-Dichloropropane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
1,3-Dichlorobenzene	17.0 - 30.0	0 / 4	--	--	11.6	2.69
1,4-Dichlorobenzene	17.0 - 30.0	0 / 4	--	--	11.6	2.69
2-Butanone	17.0 - 37.0	5 / 17	47.0	SJSBK-SD07-002	16.6	9.44
2-Hexanone	16.0 - 36.0	0 / 16	--	--	11.9	2.99
4-Methyl-2-pentanone	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Acetone	8.20 - 58.0	7 / 18	1,100	SJSBK-SD07-002	94.9	255
Benzene	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Bromodichloromethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Bromoform	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Bromomethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Carbon disulfide	15.0 - 30.0	10 / 18	45.0	SJSBK-SD09-002	13.4	9.57
Carbon tetrachloride	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Chlorobenzene	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Chloroethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Chloroform	16.0 - 36.0	0 / 16	--	--	11.9	2.99

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Summary Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
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Chloromethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Cumene	17.0 - 30.0	0 / 4	--	--	11.6	2.69
Cyclohexane	17.0 - 30.0	0 / 4	--	--	11.6	2.69
Dibromochloromethane	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Dichlorodifluoromethane (Freon-12)	17.0 - 30.0	0 / 4	--	--	11.6	2.69
Ethylbenzene	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Methyl acetate	17.0 - 30.0	0 / 4	--	--	11.6	2.69
Methyl-tert-butyl ether (MTBE)	17.0 - 30.0	0 / 4	--	--	11.6	2.69
Methylcyclohexane	17.0 - 30.0	0 / 4	--	--	11.6	2.69
Methylene chloride	3.00 - 101	2 / 19	5.90	SJS01-SD03-001	12.7	11.6
Styrene	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Tetrachloroethene	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Toluene	17.0 - 36.0	5 / 17	15.0	SJS04-SD08-001	10.3	4.67
Trichloroethene	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Trichlorofluoromethane(Freon-11)	17.0 - 30.0	0 / 4	--	--	11.6	2.69
Vinyl chloride	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Xylene, total	16.0 - 36.0	0 / 16	--	--	11.9	2.99
cis-1,2-Dichloroethene	17.0 - 31.0	0 / 6	--	--	11.9	2.85
cis-1,3-Dichloropropene	16.0 - 36.0	0 / 14	--	--	11.8	2.97
trans-1,2-Dichloroethene	17.0 - 30.0	0 / 4	--	--	11.6	2.69
trans-1,3-Dichloropropene	16.0 - 36.0	0 / 16	--	--	11.9	2.99
Dioxin/Furans (UG/KG)						
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	-- - --	7 / 7	0.91	SJBC-SD04-03C	0.36	0.26
1,2,3,4,6,7,8-Heptachlorodibenzofuran	-- - --	7 / 7	0.19	SJBC-SD04-03C	0.048	0.064
1,2,3,4,7,8,9-Heptachlorodibenzofuran	9.40E-04 - 9.40E-04	6 / 7	0.011	SJBC-SD04-03C	0.0033	0.0035
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	-- - --	7 / 7	0.024	SJBC-SD04-03C	0.0081	0.0071
1,2,3,4,7,8-Hexachlorodibenzofuran	-- - --	7 / 7	0.034	SJBC-SD04-03C	0.0081	0.012
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	-- - --	7 / 7	0.038	SJBC-SD04-03C	0.014	0.011
1,2,3,6,7,8-Hexachlorodibenzofuran	-- - --	7 / 7	0.029	SJBC-SD04-03C	0.0081	0.0095
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	-- - --	7 / 7	0.040	SJBC-SD04-03C	0.016	0.011

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Summary Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
Analyte Name	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Arithmetic Mean[1]**	**Standard Deviation of Mean**
1,2,3,7,8,9-Hexachlorodibenzofuran	9.40E-04 - 9.90E-04	4 / 7	0.011	SJBC-SD04-03C	0.0024	0.0038
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	-- - --	7 / 7	0.018	SJBC-SD04-03C	0.0057	0.0055
1,2,3,7,8-Pentachlorodibenzofuran	9.40E-04 - 9.40E-04	6 / 7	0.16	SJBC-SD04-03C	0.026	0.059
2,3,4,6,7,8-Hexachlorodibenzofuran	-- - --	7 / 7	0.030	SJBC-SD04-03C	0.0078	0.010
2,3,4,7,8-Pentachlorodibenzofuran	-- - --	7 / 7	0.053	SJBC-SD04-03C	0.012	0.018
2,3,7,8-TCDD (dioxin)	-- - --	7 / 7	0.0026	SJBC-SD04-03C	9.91E-04	7.32E-04
2,3,7,8-Tetrachlorodibenzofuran	-- - --	7 / 7	0.015	SJBC-SD04-03C	0.0066	0.0057
Octachlorodibenzo-p-dioxin	-- - --	7 / 7	25.0	SJBC-SD04-03C	7.04	8.01
Octachlorodibenzofuran	-- - --	7 / 7	0.24	SJBC-SD04-03C	0.069	0.079
Total heptachlorodibenzo-p-dioxin	-- - --	7 / 7	2.80	SJBC-SD04-03C	1.47	0.89
Total heptachlorodibenzofuran	-- - --	7 / 7	0.38	SJBC-SD04-03C	0.086	0.13
Total hexachlorodibenzo-p-dioxin	-- - --	7 / 7	0.82	SJBC-SD04-03C	0.47	0.20
Total hexachlorodibenzofuran	-- - --	7 / 7	0.57	SJBC-SD04-03C	0.12	0.20
Total pentachlorodibenzo-p-dioxin	-- - --	7 / 7	0.26	SJBC-SD04-03C	0.098	0.075
Total pentachlorodibenzofuran	-- - --	7 / 7	0.55	SJBC-SD04-03C	0.13	0.19
Total tetrachlorodibenzo-p-dioxin	-- - --	7 / 7	0.12	SJBC-SD04-03C	0.052	0.034
Total tetrachlorodibenzofuran	-- - --	7 / 7	0.39	SJBC-SD04-03C	0.12	0.14

1 - One-half of the reporting limit was used for non-detected samples when calculating the mean.

Summary Statistics - Sediment - Mouth of Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
AnalyteName	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Arithmetic Mean[1]**	**Standard Deviation of Mean**
Inorganics (MG/KG)						
Mercury	0.069 - 0.26	5 / 13	0.36	SJBC-SD202-04D	0.14	0.098

1 - One-half of the reporting limit was used for non-detected samples when calculating the mean.

Summary Statistics - Tissue Data - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*						
AnalyteName	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean[1]	Standard Deviation of Mean
Inorganics (MG/KG)						
Mercury	0.20 - 0.23	0 / 3	--	--	0.11	0.0076

1 - One-half of the reporting limit was used for non-detected samples when calculating the mean.

Medium-Specific Screening Values St. Juliens Creek			
Chemical	**Screening Value**	**Units**	**Reference**
Sediment			
1,1-Biphenyl	1,220	ug/kg	USEPA 1995b; 2004
1,1-Dichloroethene	31.0	ug/kg	Jones et al. 1997
1,1,1-Trichloroethane	30.2	ug/kg	Jones et al. 1997
1,1,2,2-Tetrachloroethane	1360	ug/kg	Jones et al. 1997
1,1,2-Trichloroethane	31.0	ug/kg	USEPA 1995b; 2004
1,2,4-Trichlorobenzene	40.0	ug/kg	USEPA 1995b
1,2-Dichlorobenzene	16.5	ug/kg	USEPA 1995b
1,3-Dichlorobenzene	4,430	ug/kg	USEPA 1995b; 2004
1,4-Dichlorobenzene	110	ug/kg	USEPA 1995b
2,4-Dichlorophenol	5	ug/kg	Buchman 1999
2,4-Dimethylphenol	29	ug/kg	USEPA 1995b
2,4-Dinitrotoluene	41.6	ug/kg	USEPA 1995b; 2004
2-Chlorophenol	8.00	ug/kg	Buchman 1999
2-Methylnaphthalene	20.2	ug/kg	Buchman 1999
2-Methylphenol	63	ug/kg	USEPA 1995b
4-Methylphenol	670	ug/kg	USEPA 1995b
Acenaphthene	6.7	ug/kg	Buchman 1999
Acenaphthylene	5.9	ug/kg	Buchman 1999
Aldrin	2	ug/kg	Ontario Ministry of the Environment 1993
alpha-BHC	6	ug/kg	Ontario Ministry of the Environment 1993
alpha-Chlordane	0.5	ug/kg	Long and Morgan 1990
Aluminum	18,000	mg/kg	Buchman 1999
Anthracene	57.2	ug/kg	McDonald et al. 2000
Antimony	2	mg/kg	Long and Morgan 1990
Aroclor-1016	22.7	ug/kg	USEPA 1995b
Aroclor-1221	22.7	ug/kg	USEPA 1995b
Aroclor-1232	22.7	ug/kg	USEPA 1995b
Aroclor-1242	22.7	ug/kg	USEPA 1995b
Aroclor-1248	22.7	ug/kg	USEPA 1995b
Aroclor-1254	22.7	ug/kg	USEPA 1995b
Aroclor-1260	22.7	ug/kg	USEPA 1995b
Arsenic	8.2	mg/kg	USEPA 1995b
Atrazine	6.62	ug/kg	USEPA 1995b; 2004
Barium	48	mg/kg	Buchman 1999
Benzo(a)anthracene	108	ug/kg	McDonald et al. 2000
Benzo(a)pyrene	150	ug/kg	McDonald et al. 2000
Benzo(b)fluoranthene	27.2	ug/kg	McDonald et al. 2000
Benzo(g,h,i)perylene	170	ug/kg	Ontario Ministry of the Environment 1993
Benzo(k)fluoranthene	240	ug/kg	Ontario Ministry of the Environment 1993
beta-BHC	5	ug/kg	Ontario Ministry of the Environment 1993
bis(2-Ethylhexyl)phthalate	180	ug/kg	McDonald et al. 2003
Bromoform	654	ug/kg	USEPA 1995b; 2004
Butylbenzylphthalate	63.0	ug/kg	USEPA 1995b
Cadmium	0.99	mg/kg	McDonald et al. 2000
Carbon disulfide	0.85	ug/kg	Jones et al. 1997
Carbon tetrachloride	64.2	ug/kg	USEPA 1995b; 2004
Chlorobenzene	8.42	ug/kg	USEPA 1995b; 2004
Chromium	5	mg/kg	USEPA 1995b
Chrysene	166	ug/kg	McDonald et al. 2000
Cobalt	10	mg/kg	Buchman 1999

Medium-Specific Screening Values St. Juliens Creek			
Chemical	**Screening Value**	**Units**	**Reference**
Copper	31.6	mg/kg	McDonald et al. 2000
Cumene	86.0	ug/kg	USEPA 1995b; 2004
Cyanide	0.1	mg/kg	Ontario Ministry of the Environment 1993
4,4'-DDD	4.88	ug/kg	McDonald et al. 2000
4,4'-DDE	2.20	ug/kg	
4,4'-DDT	1.58	ug/kg	Long et al 1995
delta-BHC	6,400	ug/kg	USEPA 1995b; 2004
Dibenz(a,h)anthracene	33.0	ug/kg	McDonald et al. 2000
Dibenzofuran	415	ug/kg	USEPA 1995; 2004
Dieldrin	0.72	ug/kg	Buchman 1999
Diethylphthalate	200	ug/kg	USEPA 1995b
Dimethyl phthalate	71	ug/kg	USEPA 1995b
Di-n-butylphthalate	1,400	ug/kg	USEPA 1995b
Di-n-octyl phthalate	6,200	ug/kg	USEPA 1995b
Endosulfan I	2.90	ug/kg	USEPA 1996b
Endosulfan II	14.00	ug/kg	USEPA 1996b
Endosulfan sulfate	5.40	ug/kg	USEPA 1996b
Endrin	0.02	ug/kg	Long and Morgan 1990
Ethylbenzene	10	ug/kg	USEPA 1995b
Fluoranthene	423	ug/kg	USEPA 1995b
Fluorene	19	ug/kg	USEPA 1995b
gamma-BHC (Lindane)	0.32	ug/kg	Buchman 1999
gamma-Chlordane	0.50	ug/kg	Long and Morgan 1990
Heptachlor	0.3	ug/kg	Buchman 1999
Heptachlor epoxide	2.47	ug/kg	McDonald et al. 2000
Hexachlorobenzene	20.0	ug/kg	Ontario Ministry of the Environment 1993
Hexachlorobutadiene	11.0	ug/kg	USEPA 1995b
Hexachloroethane	1027.0	ug/kg	USEPA 1995b; 2004
Indeno(1,2,3-cd)pyrene	17.0	ug/kg	Ingersoll et al. 1996
Iron	20,000	mg/kg	Ontario Ministry of the Environment 1993
Lead	35.8	mg/kg	McDonald et al. 2000
Manganese	260	mg/kg	Buchman 1999
Mercury	0.15	mg/kg	USEPA 1995b
Methoxychlor	18.7	ug/kg	USEPA 1995b; 2004
Naphthalene	160	ug/kg	USEPA 1995b
Nickel	20.9	mg/kg	USEPA 1995b
n-Nitrosodiphenylamine	28	ug/kg	USEPA 1995b
Pentachlorophenol	360	ug/kg	USEPA 1995b
Phenanthrene	240	ug/kg	USEPA 1995b
Phenol	420	ug/kg	USEPA 1995b
Pyrene	195	ug/kg	McDonald et al. 2000
Selenium	1	mg/kg	Buchman 1999
Silver	1	mg/kg	USEPA 1995b
Tetrachloroethene	57	ug/kg	USEPA 1995b
Toxaphene	1.00	ug/kg	CCME 2002
Trichloroethene	96.9	ug/kg	USEPA 1995b; 2004
Vanadium	57	mg/kg	Buchman 1999
Xylene, total	40	ug/kg	USEPA 1995b
Zinc	121	mg/kg	McDonald et al. 2000

Ingestion Screening Values for Belted Kingfisher *St. Juliens Creek Annex, Chesapeake, Virginia*									
Chemical	**Test Organism**	**Body Weight (kg)**	**Duration**	**Exposure Route**	**Effect/Endpoint**	**LOAEL (mg/kg/d)**	**MATC (mg/kg/d)**	**NOAEL (mg/kg/d)**	**Reference**
Mercury	mallard	1.00	3 generations	oral in diet	reproduction	0.078	0.045	0.026	USEPA 1997

Summary Statistics - *L. Plumulosus* Sediment Bioassay Outcomes *St. Juliens Creek Annex, Chesapeake, Virginia*				
		Growth		
Sample	Survival	Male	Female	Reproduction
Lab Control				
SJBC-SD01-03C[1]				
SJBC-SD02-03C[1]				
SJBC-SD04-03C[1]				
SJBC-SD05-03C[1]				
SJBC-SD06-03C	+	+	+	+
SJBC-SD08-03C		+		
SJBC-SD10-03C		+	+	
SJBC-SD11-03C	++	+	++	+
SJBC-SD14-03C		+	+	+
SJBC-SD18-03C		+	+	+
SJBC-SD20-03C		+	+	
SJBC-SD25-03C			+	
SJBC-SD27-03C				
SJBC-SD28-03C			+	
SJBC-SD29-03C				
SJBC-SD30-03C				+
SJBC-SD32-03C			+	+
SJBC-SD33-03C				
SJBC-SD36-03C	++	+	+	+

[1]Pooled upgradient reference samples

+ = Significant difference when compared to pooled upgradient reference samples

++ = Significant difference when compared to pooled upgradient reference samples and laboratory control.

Correlation Coefficient Outcomes - Comparison of Chemicals Indicating Potential Risk to *L. plumulosus* Bioassay Outcomes *St. Juliens Creek Annex, Chesapeake, Virginia*				
		Pearson Correlation Coefficient Outcomes - Proportion of Total Chemicals with Indicated Correlation Coefficients[1]		
		> 0.8	0.5 - 0.79	≤ 0.49
Survival		0/40	1/40	39/40
Growth	Females	2/39	1/39	36/39
	Males	0/39	2/39	37/39
Reproduction		0/40	2/40	38/40

1) Proportions presented in table represent the total number of correlation coefficients falling within the indicated range over the total number of correlations evaluated.

Comparison of Ecological Screening Value Exceedances Between Bioavailability-Ajdusted and Non-Adjusted Values *St. Juliens Creek Annex, Chesapeake, Virginia*		
	Percent of Total Samples with Concentrations Exceeding Screening Values	
Analyte Name	Non Bioavailability-Adjusted Comparison	Bioavailability-Adjusted Comparison (EqP Comparison)
Pesticide/Polychlorinated Biphenyls (UG/KG)		
4,4'-DDD	39	41
4,4'-DDE	48	0
4,4'-DDT	16	18
Aldrin	2	0
Aroclor-1260	4	100
Dieldrin	0	0
Semivolatile Organic Compounds (UG/KG)		
2-Methylnaphthalene	6	100
Acenaphthene	16	12
Acenaphthylene	50	2
Anthracene	67	100
Benzo(a)anthracene	88	22
Benzo(a)pyrene	88	100
Benzo(b)fluoranthene	96	0
Benzo(g,h,i)perylene	64	0
Benzo(k)fluoranthene	72	0
Butylbenzylphthalate	0	0
Chrysene	83	0
Di-n-octylphthalate	0	0
Dibenz(a,h)anthracene	59	0
Dibenzofuran	2	100
Diethylphthalate	0	100
Fluoranthene	59	52
Fluorene	13	0
Indeno(1,2,3-cd)pyrene	92	0
Naphthalene	8	100
Phenanthrene	22	80
Pyrene	87	100
bis(2-Ethylhexyl)phthalate	10	0
Volatile Organic Compounds (UG/KG)		
Carbon disulfide	56	100

Simultaneously Extracted Metals/Acid Volatile Sulfide (SEM/AVS) Results - Blows Creek St. Juliens Creek Annex, Chesapeake, Virginia									
	SEM (uM/g dry weight)							AVS (uM/g dry weight)	SEM/AVS
Sample	Cd	Cu	Pb	Hg	Ni	Zn	Sum of Metals		
SJBC-SD01-03C	0.00497	0.0995	0.703	0.00006 U	0.0920	1.82	2.72	4.18	0.652
SJBC-SD02-03C	0.00256	0.0686	0.129	0.00003 U	0.0631	0.675	0.938	23.1	0.0406
SJBC-SD03-03C	0.0107	0.144 J	0.620 J	0.00006 U	0.109 J	3.81	4.69	4.06 J	1.16
SJBC-SD04-03C-P	0.00888	0.213 J	1.44 J	0.0001 U	0.190 J	3.72	5.56	8.45 J	0.658
SJBC-SD04-03C	0.00956	0.191	0.877	0.00009 U	0.123	3.56	4.76	6.63	0.718
SJBC-SD05-03C	0.00484	0.0944	0.427	0.00006 U	0.303	2.59	3.42	4.17	0.820
SJBC-SD06-03C	0.00541	0.0964	0.334	0.00005 U	0.113	2.60	3.15	6.31	0.499
SJBC-SD07-03C	0.00739	0.146	0.420	0.00006 U	0.150	2.75	3.48	0.120	28.9
SJBC-SD08-03C	0.00645	0.129	0.233	0.00007 U	0.0797	2.18	2.62	2.51	1.05
SJBC-SD09-03C	0.00997	0.134	0.203	0.00006 U	0.232	2.17	2.75	8.85	0.311
SJBC-SD10-03C	0.00417	0.0598	0.146	0.00007 U	0.132	2.00	2.34	3.50	0.669
SJBC-SD11-03C	0.00433	0.0300	0.166	0.00006 U	0.0509	1.93	2.18	3.48	0.628
SJBC-SD12-03C	0.0177	0.302	0.300	0.00007 U	0.0915	2.78	3.49	9.10	0.383
SJBC-SD13-03C	0.00273	0.0638	0.0617	0.00004 U	0.0247 U	0.675	0.825	0.725	1.14
SJBC-SD14-03C	0.00439 J	0.0482 J	0.140 J	0.00006 UJ	0.0434 J	1.61 J	1.85 J	2.50 J	0.741 J
SJBC-SD15-03C	0.00945	0.140	0.125	0.00004 U	0.0306	1.87	2.18	2.54	0.858
SJBC-SD16-03C	0.00294	0.0529	0.0610	0.00004 U	0.0312	1.04	1.19	0.520	2.29
SJBC-SD17-03C	0.00516	0.0819	0.145	0.00006 U	0.0409 U	1.87	2.13	2.91	0.732
SJBC-SD18-03C-P	0.00786	0.0709	0.873	0.00005 U	0.0353 U	3.96	4.95	8.82 J	0.561
SJBC-SD18-03C	0.00762	0.0608	0.611	0.00005 U	0.0373 U	3.55	4.26	4.34 J	0.981
SJBC-SD19-03C	0.0135	0.140	0.235	0.00007 U	0.0495	4.40	4.84	11.5	0.422
SJBC-SD20-03C	0.0082	0.120	0.316	0.00005 U	0.0336	2.51	2.99	4.34	0.688
SJBC-SD21-03C	0.00552	0.0725	0.122	0.00004 U	0.0741	1.22	1.50	1.89	0.793
SJBC-SD22-03C	0.00491	0.0758	0.171	0.00004 U	0.0283 U	1.49	1.76	1.80	0.977
SJBC-SD23-03C	0.00179 U	0.0245	0.0400	0.00004 U	0.0274 U	0.386	0.465	0.0314 U	14.8
SJBC-SD23-03C-P	0.00181 U	0.0270	0.0469	0.00004 U	0.0277 U	0.486	0.577	0.0823	7.01
SJBC-SD24-03C	0.00226	0.0716	0.0767	0.00005 U	0.0376	0.677	0.865	1.17	0.736
SJBC-SD25-03C	0.00344	0.0898	0.149	0.00005 U	0.0323 U	1.10	1.38	0.340	4.04
SJBC-SD26-03C	0.00381	0.0893	0.0647	0.00003 U	0.0233 U	0.654	0.826	2.90	0.285
SJBC-SD27-03C	0.00503	0.0855	0.162	0.00003 U	0.0230 U	1.35	1.62	1.49	1.09
SJBC-SD28-03C	0.00733	0.159	0.166	0.00006 U	0.0451	2.28	2.66	5.25	0.507
SJBC-SD29-03C	0.00375	0.0497	0.0907	0.00006 U	0.0421 U	1.44	1.62	3.37	0.481
SJBC-SD30-03C	0.00397	0.123	0.261	0.00006 U	0.114	2.11	2.61	4.85	0.538
SJBC-SD31-03C	0.00819	0.0611	0.113	0.00006 U	0.0419 U	2.13	2.35	2.17	1.08

Simultaneously Extracted Metals/Acid Volatile Sulfide (SEM/AVS) Results - Blows Creek St. Juliens Creek Annex, Chesapeake, Virginia									
	SEM (uM/g dry weight)							AVS (uM/g dry weight)	
Sample	Cd	Cu	Pb	Hg	Ni	Zn	Sum of Metals		SEM/AVS
SJBC-SD32-03C	0.00343	0.0399	0.0982	0.00006 U	0.0622	1.13	1.33	4.14	0.321
SJBC-SD33-03C	0.0068	0.119	0.192	0.00004 U	0.0284 U	1.95	2.29	2.68	0.857
SJBC-SD34-03C	0.00206 U	0.0443	0.0838	0.00005 U	0.0316 U	0.834	0.984	2.08	0.473
SJBC-SD35-03C	0.00627	0.117	0.122	0.00005 U	0.0356 U	1.70	1.98	1.80	1.10
SJBC-SD36-03C-P	0.00494	0.122	0.250	0.00006 U	0.0418 U	2.16	2.57	4.65 J	0.553
SJBC-SD36-03C	0.00429	0.118	0.302	0.00006 U	0.0451	2.56	3.03	14.9 J	0.203

Comparison of Blows Creek Sediment Concentrations to Reference Concentrations
St. Juliens Creek Annex, Chesapeake, Virginia

Analyte Name	Range of Detected Concentrations	Frequency of Detection	St Juliens Creek Reference Sediment 95% UTL	Dredge/Fill Reference Soil 95% UTL	Frequency of Exceedence		Percent Exceedance	
					St Juliens Creek Sediment	Reference Soils	St Juliens Creek Sediment	Reference Soils
Inorganics (MG/KG)								
Aluminum	1270 - 27400	56 / 56	20700	22786	10 / 56	4 / 56	18	7
Antimony	0.6 - 2.1	7 / 54	--	1.47	-- / --	2 / 54	--	4
Arsenic	2.9 - 61.1	56 / 56	30.4	24	1 / 56	3 / 56	2	5
Barium	18.6 - 927	33 / 56	68.4	98	8 / 56	6 / 56	14	11
Cadmium	0.21 - 2.3	32 / 56	1.4	--	9 / 56	-- / --	16	
Chromium	7.3 - 49.2	56 / 56	43.2	45	2 / 56	2 / 56	4	4
Cobalt	2.1 - 32.7	32 / 56	9.5	13	18 / 56	11 / 56	32	20
Copper	11.6 - 137	41 / 56	122	58	1 / 56	14 / 56	2	25
Cyanide	0.28 - 2.9	3 / 51	--	--	-- / --	-- / --	--	--
Iron	5620 - 50400	56 / 56	32700	45805	6 / 56	2 / 56	11	4
Lead	17.8 - 437	56 / 56	128	147	9 / 56	6 / 56	16	11
Manganese	26.5 - 413	56 / 56	202	198	20 / 56	22 / 56	36	39
Mercury	0.03 - 1.1	33 / 56	1.4	1.3	0 / 56	0 / 56	0	0
Nickel	3.7 - 41.4	42 / 56	24.2	19	11 / 56	21 / 56	20	38
Selenium	0.71 - 2.3	15 / 56	1.5	2.2	6 / 56	1 / 56	11	2
Vanadium	5.4 - 86	56 / 56	57	70	3 / 56	1 / 56	5	2
Zinc	34.1 - 497	39 / 56	418	137	4 / 56	35 / 56	7	63
Pesticide/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	0.45 - 550	31 / 56	7.2	5.3	18 / 56	20 / 56	32	36
4,4'-DDE	0.47 - 320	31 / 56	100	9	2 / 56	18 / 56	4	32
4,4'-DDT	1.1 - 33	10 / 55	13	21	3 / 55	2 / 55	5	4
Aldrin	100 - 100	1 / 50	--	2.8	-- / --	1 / 50	--	2
Aroclor-1260	31 - 270	2 / 50	--	--	-- / --	-- / --	--	--
Endosulfan sulfate	12 - 19	2 / 50	--	--	-- / --	-- / --	--	--
alpha-Chlordane	2 - 25	4 / 50	--	2.8	-- / --	3 / 50	--	6
gamma-Chlordane	2 - 55	3 / 50	--	2.8	-- / --	2 / 50	--	4
Semivolatile Organic Compounds (UG/KG)								
2-Methylnaphthalene	59 - 410	3 / 48	--	--	-- / --	-- / --	--	--
Acenaphthene	49 - 2900	8 / 49	71	592	6 / 49	1 / 49	12	2
Acenaphthylene	52 - 360	24 / 48	310	246	2 / 48	2 / 48	4	4
Anthracene	57 - 2400	34 / 49	492	462	2 / 49	2 / 49	4	4
Benzo(a)anthracene	44 - 3900	48 / 50	1300	2027	2 / 50	1 / 50	4	2
Benzo(a)pyrene	53 - 2900	48 / 50	1100	1785	7 / 50	3 / 50	14	6
Benzo(b)fluoranthene	59 - 3500	51 / 53	3300	3197	1 / 53	1 / 53	2	2
Benzo(g,h,i)perylene	58 - 2100	46 / 50	672	1655	6 / 50	2 / 50	12	4
Benzo(k)fluoranthene	45 - 4400	47 / 50	1400	2038	4 / 50	2 / 50	8	4
Chrysene	59 - 4700	50 / 52	1500	3487	3 / 52	1 / 52	6	2
Dibenz(a,h)anthracene	60 - 1200	29 / 49	410	714	4 / 49	1 / 49	8	2
Dibenzofuran	60 - 600	5 / 48	--	--	-- / --	-- / --	--	--
Fluoranthene	44 - 8600	54 / 56	2600	2766	3 / 56	3 / 56	5	5
Fluorene	45 - 350	6 / 48	--	602	-- / --	0 / 48		0
Indeno(1,2,3-cd)pyrene	42 - 2100	46 / 50	624	1829	6 / 50	1 / 50	12	2
Naphthalene	64 - 720	15 / 48	--	485	-- / --	1 / 48	--	2
Phenanthrene	49 - 630	40 / 50	920	913	0 / 50	0 / 50	0	0
Pyrene	49 - 7600	53 / 55	1900	2590	5 / 55	3 / 55	9	5
bis(2-Ethylhexyl)phthalate	45 - 3500	9 / 49	440	--	4 / 49	-- / --	8	--
Volatile Organic Compounds (UG/KG)								
Carbon disulfide	5 - 45	11 / 19	6	--	10 / 19	-- / --	53	--
Dioxin/Furans (UG/KG)								
2,3,7,8-TCDD (dioxin)	0.0005 - 0.003	7 / 7	--	--	-- / --	-- / --	--	--

Key Uncertainties of the Blows Creek BERA *St. Juliens Creek Annex, Chesapeake, Virginia*		
Uncertainty	**Potential Effect on Risk Estimate**	**Direction and Magnitude of Potential Bias**
Nondetected Chemicals With Screening Values	There is the uncertainty associated with these chemicals because it cannot be definitively determined they do not occur onsite.	Potential to underestimate risk. However, based on the large number of samples collected from sediment, the bias of samples to potential source areas, it is considered unlikely that chemicals potentially posing a risk to ecological receptors would not have been accurately quantified.
Nondetected Chemicals Without Screening Values	There is the uncertainty associated with these chemicals because it cannot be definitively determined they do not occur onsite and a toxicity value is not available with which to screen the reporting limit.	Potential to underestimate risk. However, based on the large number of samples collected from sediment, the bias of samples to potential source areas, it is considered unlikely that chemicals potentially posing a risk to ecological receptors would not have been accurately quantified.
Sediment Sampling Depth	Chemical concentrations were evaluated in sediment samples collected from a depth of 0 to 6 inches because it represents the depth to which most ecological receptors would be exposed. However, some potential receptors could be exposed to sediment at greater depth if they burrow, if sediments are remobilized by physical processes (e.g., storm events) or bioturbation.	Potential to underestimate risk. However, analysis in CH2M HILL (2005) suggests that burrowing and sediment remobilization effects would be reflected in surficial sediment concentrations.
Evaluation of Chemical Mixtures	Literature-based screening value comparisons do not account for the effect of multiple chemicals, including additive, synergistic, or antagonistic effects of multiple chemicals or the bioavailability of chemicals within sediments.	Potential to overestimate or underestimate risk. However, sediment bioassays account for additive, synergistic, and antagonistic effects and the bioavailability of all chemicals in this media.
Food Web Exposure Modeling	Dietary mercury concentrations were estimated with models which relied on a number of literature-based exposure assumptions.	Potential to overestimate risk. Conservative assumptions biased the model towards overestimating risk. However, the use of directly measured mercury concentrations in fish tissue, which is estimated to comprise 85% of total diet, is expected to minimize the uncertainty associated with the estimate of dietary mercury concentrations.
Wildlife Exposure Assumptions	Belted kingfisher were assumed to spend 100% of their time foraging at Blows Creek.	Potential to overestimate risk. Based on the mobility of belted kingfisher and the available of viable foraging habitat in the surrounding area, it is considered likely that belted kingfisher would spend at least a portion of their time foraging offsite. This outcome further supports the conclusion that avain piscivores are unlikely to be adversely affected by mercury in Blows Creek sediment.
Relationship Between Chemical Concentration and Bioassay Outcome	There was only a limited correlation between chemical concentration and bioassay organism response.	No clear directional bias. Although the bioassay outcomes could not be directly correlated with chemical concentrations, the overall outcome of the bioassay suggests only a limited potential for adverse effect.
Difference in Bioassay Statistical Test Outcomes Between Laboratory Control and Upgradient Reference Sample Comparisons	Survival, growth, and reproduction was higher in the upgradient reference sample than in the laboratory control resulting in the observed difference in bioassay test outcome between the laboratory control and upgradient reference sample comparisons.	No clear directional bias. The higher growth, survival, and reproduction in the upgradient reference sample is unexpected and may be due to a random or hormetic effect. However, the overall outcome of the bioassay suggests only a limited potentail for adverse effect.

Correlation of Bioassay Organism Response and Chemical Concentration

St. Juliens Creek Annex, Chesapeake, Virginia

Correlated Parameters			Correlation Coefficients		Number of Detects			
Bioassay Parameter	Chemical Parameter		Spearman Correlation Coefficient	Pearson Correlation Coefficient	Bioassay Parameter	Chemical Parameter	Bioassay and Chemical Parameter	Number of Analyses
Weight (Mean Dry Weight per Female)	Pesticide/PCB	Aroclor-1260	.	.	95	0	5	100
	Pesticide/PCB	Endosulfan sulfate	.	.	95	1	5	101
	Total Metal	Cyanide	.	.	100	1	0	101
	Pesticide/PCB	alpha-Chlordane	0.805	0.818	85	1	15	101
	Pesticide/PCB	gamma-Chlordane	0.805	0.780	85	1	15	101
	SVOC	Naphthalene	0.507	0.346	70	1	30	101
	Pesticide/PCB	4,4'-DDE	0.470	0.271	55	1	45	101
	Total Metal	Barium	0.401	-0.055	55	1	45	101
	Pesticide/PCB	4,4'-DDD	0.314	0.422	55	1	45	101
	Total Metal	Lead	0.313	0.353	5	1	95	101
	SVOC	Benzo(g,h,i)perylene	0.302	0.197	10	1	90	101
	SVOC	Fluorene	0.284	0.044	85	0	15	100
	SVOC	Phenanthrene	0.272	0.333	20	1	80	101
	SVOC	Indeno(1,2,3-cd)pyrene	0.263	0.171	10	1	90	101
	SVOC	Benzo(a)pyrene	0.252	0.148	5	1	95	101
	SVOC	Fluoranthene	0.251	0.092	5	1	95	101
	SVOC	Chrysene	0.227	0.154	5	1	95	101
	SVOC	Pyrene	0.220	0.117	5	1	95	101
	SVOC	Dibenz(a,h)anthracene	0.193	0.234	45	1	55	101
	Total Metal	Vanadium	0.177	0.250	5	1	95	101
	SVOC	Anthracene	0.174	0.105	30	1	70	101
	SVOC	Benzo(a)anthracene	0.168	0.074	5	1	95	101
	Total Metal	Cadmium	0.165	0.430	50	1	50	101
	Total Metal	Mercury	0.161	0.278	55	1	45	101
	Total Metal	Nickel	0.158	0.205	20	1	80	101
	SVOC	Benzo(k)fluoranthene	0.118	0.142	5	1	95	101
	Total Metal	Aluminum	0.111	0.102	5	1	95	101
	Total Metal	Arsenic	0.108	0.030	5	1	95	101
	SVOC	Acenaphthylene	0.071	0.120	45	1	55	101
	Total Metal	Chromium	0.037	0.089	5	1	95	101
	Total Metal	Cobalt	0.022	-0.095	55	1	45	101
	Total Metal	Zinc	0.017	0.152	30	1	70	101
	Total Metal	Iron	0.002	0.069	5	1	95	101
	SVOC	Benzo(b)fluoranthene	-0.006	0.134	5	1	95	101
	Total Metal	Manganese	-0.088	-0.004	5	1	95	101
	SVOC	Acenaphthene	-0.227	0.018	85	1	15	101
	Total Metal	Antimony	-0.279	-0.412	90	1	10	101
	SVOC	2-Methylnaphthalene	-0.349	-0.253	90	0	10	100
	SVOC	Dibenzofuran	-0.349	-0.253	90	1	10	101
	Total Metal	Copper	-0.353	-0.192	55	1	45	101
	Pesticide/PCB	4,4'-DDT	-0.453	-0.463	90	1	10	101
	SVOC	bis(2-Ethylhexyl)phthalate	-0.693	-0.696	90	0	10	100
Weight (Mean Dry Weight per Male)	Pesticide/PCB	Aroclor-1260	.	.	95	0	5	100
	Pesticide/PCB	Endosulfan sulfate	.	.	95	1	5	101
	Total Metal	Cyanide	.	.	100	1	0	101
	SVOC	Fluorene	0.586	0.240	85	0	15	100
	SVOC	Naphthalene	0.510	0.306	70	1	30	101
	Pesticide/PCB	alpha-Chlordane	0.494	0.552	85	1	15	101
	Pesticide/PCB	gamma-Chlordane	0.494	0.452	85	1	15	101
	Pesticide/PCB	4,4'-DDE	0.369	0.350	55	1	45	101
	SVOC	Phenanthrene	0.358	0.235	20	1	80	101
	Total Metal	Cobalt	0.353	0.266	55	1	45	101
	Pesticide/PCB	4,4'-DDD	0.345	0.498	55	1	45	101
	SVOC	Benzo(g,h,i)perylene	0.329	0.372	10	1	90	101
	Pesticide/PCB	4,4'-DDT	0.317	0.199	90	1	10	101
	SVOC	Indeno(1,2,3-cd)pyrene	0.307	0.366	10	1	90	101
	SVOC	Dibenz(a,h)anthracene	0.299	0.415	45	1	55	101
	SVOC	Anthracene	0.295	0.215	30	1	70	101
	SVOC	Benzo(a)pyrene	0.272	0.261	5	1	95	101
	SVOC	Chrysene	0.259	0.258	5	1	95	101
	SVOC	Benzo(a)anthracene	0.222	0.049	5	1	95	101
	Total Metal	Nickel	0.220	0.283	20	1	80	101
	SVOC	Acenaphthylene	0.193	0.096	45	1	55	101
	SVOC	Benzo(b)fluoranthene	0.159	0.270	5	1	95	101
	Total Metal	Barium	0.151	-0.079	55	1	45	101
	SVOC	Benzo(k)fluoranthene	0.149	0.225	5	1	95	101
	SVOC	Pyrene	0.145	0.042	5	1	95	101
	Total Metal	Vanadium	0.083	0.081	5	1	95	101
	Total Metal	Lead	0.057	0.033	5	1	95	101
	SVOC	Fluoranthene	0.055	-0.068	5	1	95	101
	Total Metal	Mercury	0.028	0.080	55	1	45	101
	Total Metal	Manganese	0.019	0.145	5	1	95	101

Correlation of Bioassay Organism Response and Chemical Concentration

St. Juliens Creek Annex, Chesapeake, Virginia

Correlated Parameters			Correlation Coefficients		Number of Detects			
Bioassay Parameter	Chemical Parameter		Spearman Correlation Coefficient	Pearson Correlation Coefficient	Bioassay Parameter	Chemical Parameter	Bioassay and Chemical Parameter	Number of Analyses
Weight (Mean Dry Weight per Male)	Total Metal	Chromium	-0.043	0.034	5	1	95	101
	Total Metal	Cadmium	-0.059	0.202	50	1	50	101
	Total Metal	Aluminum	-0.059	0.019	5	1	95	101
	Total Metal	Zinc	-0.061	0.017	30	1	70	101
	Total Metal	Arsenic	-0.063	-0.054	5	1	95	101
	Total Metal	Iron	-0.065	0.060	5	1	95	101
	SVOC	Acenaphthene	-0.132	0.199	85	1	15	101
	SVOC	2-Methylnaphthalene	-0.244	-0.266	90	0	10	100
	SVOC	Dibenzofuran	-0.244	-0.266	90	1	10	101
	Total Metal	Antimony	-0.420	-0.504	90	1	10	101
	Total Metal	Copper	-0.493	-0.210	55	1	45	101
	SVOC	bis(2-Ethylhexyl)phthalate	-0.592	-0.440	90	0	10	100
Reproduction (Mean Number of Juveniles per Female)								
	Pesticide/PCB	Aroclor-1260	.	.	95	0	5	100
	Pesticide/PCB	Endosulfan sulfate	.	.	95	1	5	101
	Total Metal	Cyanide	.	.	100	1	0	101
	SVOC	bis(2-Ethylhexyl)phthalate	0.731	0.754	90	0	10	100
	SVOC	Fluorene	0.719	0.497	85	0	15	100
	Pesticide/PCB	alpha-Chlordane	0.321	0.315	85	1	15	101
	Pesticide/PCB	gamma-Chlordane	0.321	0.213	85	1	15	101
	Pesticide/PCB	4,4'-DDT	0.313	0.309	90	1	10	101
	SVOC	Naphthalene	0.130	0.387	70	1	30	101
	Pesticide/PCB	4,4'-DDE	0.106	0.102	55	1	45	101
	Total Metal	Barium	0.067	-0.224	55	1	45	101
	SVOC	2-Methylnaphthalene	0.035	0.264	90	0	10	100
	SVOC	Dibenzofuran	0.035	0.264	90	1	10	101
	SVOC	Fluoranthene	0.022	-0.115	5	1	95	101
	SVOC	Acenaphthene	0.019	0.470	85	1	15	101
	Total Metal	Nickel	0.013	-0.015	20	1	80	101
	SVOC	Phenanthrene	-0.007	0.105	20	1	80	101
	Total Metal	Lead	-0.012	0.022	5	1	95	101
	SVOC	Benzo(a)pyrene	-0.016	-0.186	5	1	95	101
	SVOC	Benzo(a)anthracene	-0.047	-0.168	5	1	95	101
	SVOC	Chrysene	-0.059	-0.228	5	1	95	101
	SVOC	Pyrene	-0.065	-0.158	5	1	95	101
	Total Metal	Mercury	-0.066	0.022	55	1	45	101
	SVOC	Indeno(1,2,3-cd)pyrene	-0.077	-0.218	10	1	90	101
	SVOC	Benzo(k)fluoranthene	-0.079	-0.231	5	1	95	101
	SVOC	Anthracene	-0.084	-0.231	30	1	70	101
	SVOC	Benzo(g,h,i)perylene	-0.085	-0.217	10	1	90	101
	SVOC	Acenaphthylene	-0.111	-0.183	45	1	55	101
	Total Metal	Zinc	-0.158	-0.004	30	1	70	101
	Total Metal	Vanadium	-0.182	-0.203	5	1	95	101
	Pesticide/PCB	4,4'-DDD	-0.184	0.103	55	1	45	101
		Fines	-0.201	-0.299	5	0	95	100
	Total Metal	Arsenic	-0.209	-0.187	5	1	95	101
	SVOC	Benzo(b)fluoranthene	-0.212	-0.223	5	1	95	101
	Total Metal	Iron	-0.222	-0.284	5	1	95	101
	Total Metal	Cobalt	-0.225	-0.157	55	1	45	101
	Total Metal	Cadmium	-0.228	0.006	50	1	50	101
	Total Metal	Manganese	-0.229	-0.283	5	1	95	101
	Total Metal	Aluminum	-0.239	-0.298	5	1	95	101
	Total Metal	Chromium	-0.281	-0.327	5	1	95	101
	SVOC	Dibenz(a,h)anthracene	-0.287	-0.374	45	1	55	101
	Total Metal	Copper	-0.488	-0.368	55	1	45	101
	Total Metal	Antimony	-0.733	-0.662	90	1	10	101
Survival								
	Pesticide/PCB	Aroclor-1260	.	.	95	0	5	100
	Pesticide/PCB	Endosulfan sulfate	.	.	95	1	5	101
	Total Metal	Cyanide	.	.	100	1	0	101
	SVOC	Fluorene	0.683	0.442	85	0	15	100
	SVOC	Benzo(b)fluoranthene	0.169	0.118	5	1	95	101
	SVOC	Chrysene	0.152	0.074	5	1	95	101
	SVOC	Benzo(a)pyrene	0.152	0.127	5	1	95	101
	SVOC	Benzo(a)anthracene	0.143	0.003	5	1	95	101
	Total Metal	Nickel	0.130	0.033	20	1	80	101
	Total Metal	Cadmium	0.116	0.280	50	1	50	101
	SVOC	Benzo(k)fluoranthene	0.115	0.106	5	1	95	101
	Total Metal	Manganese	0.090	0.108	5	1	95	101
	Total Metal	Barium	0.077	0.176	55	1	45	101
	Total Metal	Iron	0.076	0.138	5	1	95	101
	SVOC	Pyrene	0.055	0.001	5	1	95	101
	Total Metal	Chromium	0.043	0.118	5	1	95	101

Correlation of Bioassay Organism Response and Chemical Concentration
St. Juliens Creek Annex, Chesapeake, Virginia

Correlated Parameters			Correlation Coefficients		Number of Detects			
Bioassay Parameter	Chemical Parameter		Spearman Correlation Coefficient	Pearson Correlation Coefficient	Bioassay Parameter	Chemical Parameter	Bioassay and Chemical Parameter	Number of Analyses
Survival	SVOC	Dibenz(a,h)anthracene	0.039	-0.021	45	1	55	101
	Total Metal	Mercury	0.034	0.301	55	1	45	101
	Total Metal	Vanadium	0.023	0.064	5	1	95	101
	SVOC	Fluoranthene	0.010	-0.047	5	1	95	101
	SVOC	Acenaphthylene	0.009	-0.191	45	1	55	101
	SVOC	Anthracene	0.002	-0.290	30	1	70	101
	Pesticide/PCB	4,4'-DDT	0.000	0.000	90	1	10	101
	SVOC	Naphthalene	-0.004	0.175	70	1	30	101
	Total Metal	Antimony	-0.036	0.152	90	1	10	101
	SVOC	Indeno(1,2,3-cd)pyrene	-0.040	-0.077	10	1	90	101
	SVOC	Benzo(g,h,i)perylene	-0.041	-0.107	10	1	90	101
	Pesticide/PCB	4,4'-DDD	-0.050	0.143	55	1	45	101
	Total Metal	Aluminum	-0.072	-0.027	5	1	95	101
	SVOC	Acenaphthene	-0.077	0.395	85	1	15	101
	SVOC	Phenanthrene	-0.106	-0.149	20	1	80	101
	Total Metal	Zinc	-0.134	0.006	30	1	70	101
	SVOC	2-Methylnaphthalene	-0.146	-0.089	90	0	10	100
	SVOC	Dibenzofuran	-0.146	-0.089	90	1	10	101
	SVOC	bis(2-Ethylhexyl)phthalate	-0.182	-0.389	90	0	10	100
	Total Metal	Lead	-0.202	0.083	5	1	95	101
	Total Metal	Arsenic	-0.204	-0.049	5	1	95	101
	Pesticide/PCB	4,4'-DDE	-0.211	-0.126	55	1	45	101
	Total Metal	Cobalt	-0.213	-0.424	55	1	45	101
	Pesticide/PCB	alpha-Chlordane	-0.271	-0.202	85	1	15	101
	Pesticide/PCB	gamma-Chlordane	-0.271	-0.177	85	1	15	101
	Total Metal	Copper	-0.359	-0.089	55	1	45	101

Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*								
AnalyteName	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Screening Value**	**Frequency of Exceedance**	**Maximum Hazard Quotient[1]**	**COPC?**
Inorganics (MG/KG)								
Aluminum	-- - --	56 / 56	27,400	SJSBK-SD09-002	18,000	11 / 56	1.52	**YES**
Antimony	0.61 - 39.1	7 / 55	2.10	SJS01-SD02-001	2.00	1 / 55	1.05	**YES**
Arsenic	-- - --	56 / 56	61.1	SJBC-SD18-03C	8.20	37 / 56	7.45	**YES**
Barium	10.1 - 87.1	33 / 56	927	SJBC-SD18-03C	48.0	15 / 56	19.3	**YES**
Beryllium	0.28 - 1.20	51 / 56	3.10	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Cadmium	0.28 - 2.10	32 / 56	2.30	SJSBK-SD08-001	0.99	18 / 56	2.32	**YES**
Calcium [2]	-- - --	56 / 56	29,100	SJBC-SD09-03C	NSV	-- / --	NSV	NO
Chromium	-- - --	56 / 56	49.2	SJSBK-SD09-002	5.00	56 / 56	9.84	**YES**
Cobalt	1.90 - 13.0	32 / 56	32.7	SJS04-SD05-001	10.0	18 / 56	3.27	**YES**
Copper	11.3 - 96.9	41 / 56	137	SJBC-SD18-03C	31.6	34 / 56	4.34	**YES**
Cyanide	0.32 - 2.90	3 / 51	2.90	SJS04-SD08-001	0.10	3 / 51	29.0	**YES**
Iron	-- - --	56 / 56	50,400	SJSBK-SD09-002	20,000	29 / 56	2.52	**YES**
Lead	-- - --	56 / 56	437	SJBC-SD18-03C	35.8	47 / 56	12.2	**YES**
Magnesium [2]	-- - --	56 / 56	8,880	SJSBK-SD09-002	NSV	-- / --	NSV	NO
Manganese	-- - --	56 / 56	413	SJBC-SD30-03C	260	12 / 56	1.59	**YES**
Mercury	0.083 - 0.60	33 / 56	1.10	SJBC-SD04-03C	0.15	29 / 56	7.33	**YES**
Nickel	3.80 - 13.8	42 / 56	41.4	SJS04-SD05-001	20.9	16 / 56	1.98	**YES**
Potassium [2]	492 - 3,520	46 / 56	5,030	SJSBK-SD09-002	NSV	-- / --	NSV	NO
Selenium	0.43 - 22.8	15 / 56	2.30	SJSBK-SD08-001	1.00	12 / 56	2.30	**YES**
Silver	0.15 - 6.50	7 / 55	0.79	SJS04-SD04-000	1.00	0 / 55	0.79	NO
Sodium [2]	456 - 11,800	54 / 56	18,400	SJSBK-SD09-001	NSV	-- / --	NSV	NO
Thallium	0.36 - 12.2	4 / 55	2.50	SJBC-SD11-03C	NSV	-- / --	NSV	**YES**
Vanadium	-- - --	56 / 56	86.0	SJSBK-SD09-001	57.0	4 / 56	1.51	**YES**
Zinc	55.0 - 209	39 / 56	497	SJBC-SD04-03C	121	36 / 56	4.11	**YES**
Pesticide/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	4.30 - 12.0	31 / 56	550	SJBC-SD04-03C	4.88	22 / 56	113	**YES**
4,4'-DDE	4.30 - 12.0	31 / 56	320	SJBC-SD04-03C	2.20	27 / 56	145	**YES**
4,4'-DDT	3.70 - 12.0	10 / 55	33.0	SJBC-SD04-03C	1.58	9 / 55	20.9	**YES**
Aldrin	2.20 - 6.30	1 / 50	100	SJBC-SD12-03C	2.00	1 / 50	50.0	**YES**

NSV - No Screening Value

1 - Shaded cells indicate hazard quotient based on reporting limits

2 - Macronutrient - Not considered to be a COPC

Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*								
AnalyteName	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	COPC?
Aroclor-1016	43.0 - 120	0 / 50	--	--	22.7	-- / --	5.29	**YES**
Aroclor-1221	87.0 - 250	0 / 50	--	--	22.7	-- / --	11.0	**YES**
Aroclor-1232	43.0 - 120	0 / 50	--	--	22.7	-- / --	5.29	**YES**
Aroclor-1242	43.0 - 120	0 / 50	--	--	22.7	-- / --	5.29	**YES**
Aroclor-1248	43.0 - 120	0 / 50	--	--	22.7	-- / --	5.29	**YES**
Aroclor-1254	43.0 - 120	0 / 50	--	--	22.7	-- / --	5.29	**YES**
Aroclor-1260	43.0 - 120	2 / 50	270	SJBC-SD30-03C	22.7	2 / 50	11.9	**YES**
Dieldrin	4.30 - 12.0	1 / 51	0.63	SJS04-SD09-001	0.72	0 / 51	0.88	NO
Endosulfan I	2.20 - 6.30	0 / 50	--	--	2.90	-- / --	2.17	**YES**
Endosulfan II	4.30 - 12.0	0 / 50	--	--	14.0	-- / --	0.86	NO
Endosulfan sulfate	4.30 - 12.0	2 / 50	19.0	SJBC-SD01-03C	5.40	2 / 50	3.52	**YES**
Endrin	4.30 - 12.0	0 / 50	--	--	0.020	-- / --	600	**YES**
Endrin aldehyde	4.30 - 12.0	0 / 50	--	--	NSV	-- / --	NSV	NO
Endrin ketone	4.30 - 12.0	1 / 50	11.0	SJBC-SD36-03C	NSV	-- / --	NSV	**YES**
Heptachlor	2.20 - 6.30	0 / 50	--	--	0.30	-- / --	21.0	**YES**
Heptachlor epoxide	2.20 - 6.30	0 / 50	--	--	2.47	-- / --	2.55	**YES**
Methoxychlor	22.0 - 63.0	0 / 50	--	--	18.7	-- / --	3.37	**YES**
Toxaphene	220 - 630	0 / 50	--	--	1.00	-- / --	630	**YES**
alpha-BHC	2.20 - 6.30	0 / 50	--	--	6.00	-- / --	1.05	**YES**
alpha-Chlordane	2.20 - 6.30	4 / 50	25.0	SJBC-SD04-03C	0.50	4 / 50	50.0	**YES**
beta-BHC	2.20 - 6.30	0 / 50	--	--	5.00	-- / --	1.26	**YES**
delta-BHC	2.20 - 6.30	0 / 50	--	--	6,400	-- / --	9.84E-04	NO
gamma-BHC (Lindane)	2.20 - 6.30	0 / 50	--	--	0.32	-- / --	19.7	**YES**
gamma-Chlordane	2.20 - 6.30	3 / 50	55.0	SJBC-SD04-03C	0.50	3 / 50	110	**YES**
Semivolatile Organic Compounds (UG/KG)								
1,1-Biphenyl	430 - 1,700	0 / 36	--	--	1,220	-- / --	1.39	**YES**
1,2,4-Trichlorobenzene	560 - 1,100	0 / 12	--	--	40.0	-- / --	27.5	**YES**
1,2-Dichlorobenzene	560 - 1,100	0 / 12	--	--	16.5	-- / --	66.7	**YES**
1,3,5-Trinitrobenzene	250 - 250	0 / 4	--	--	NSV	-- / --	NSV	NO
1,3-Dichlorobenzene	560 - 1,100	0 / 12	--	--	4,430	-- / --	0.25	NO
1,3-Dinitrobenzene	250 - 250	0 / 4	--	--	NSV	-- / --	NSV	NO

NSV - No Screening Value

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Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*								
AnalyteName	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	COPC?
1,4-Dichlorobenzene	560 - 1,100	0 / 12	--	--	110	-- / --	10.0	**YES**
2,4,5-Trichlorophenol	560 - 4,300	0 / 49	--	--	31.0	-- / --	139	**YES**
2,4,6-Trichlorophenol	430 - 1,700	0 / 49	--	--	61.0	-- / --	27.9	**YES**
2,4,6-Trinitrotoluene	250 - 250	0 / 4	--	--	NSV	-- / --	NSV	NO
2,4-Dichlorophenol	430 - 1,700	0 / 49	--	--	5.00	-- / --	340	**YES**
2,4-Dimethylphenol	430 - 1,700	0 / 49	--	--	29.0	-- / --	58.6	**YES**
2,4-Dinitrophenol	1,100 - 4,700	0 / 49	--	--	NSV	-- / --	NSV	NO
2,4-Dinitrotoluene	250 - 1,700	0 / 48	--	--	41.6	-- / --	40.9	**YES**
2,6-Dinitrotoluene	250 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO
2-Amino-4,6-dinitrotoluene	250 - 250	0 / 4	--	--	NSV	-- / --	NSV	NO
2-Chloronaphthalene	430 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO
2-Chlorophenol	430 - 1,700	0 / 49	--	--	8.00	-- / --	213	**YES**
2-Methylnaphthalene	430 - 1,600	3 / 48	410	SJBC-SD05-03C	20.2	3 / 48	20.3	**YES**
2-Methylphenol	430 - 1,700	0 / 49	--	--	63.0	-- / --	27.0	**YES**
2-Nitroaniline	1,100 - 4,700	0 / 48	--	--	NSV	-- / --	NSV	NO
2-Nitrophenol	430 - 1,700	0 / 49	--	--	NSV	-- / --	NSV	NO
2-Nitrotoluene	250 - 250	0 / 4	--	--	NSV	-- / --	NSV	NO
3,3'-Dichlorobenzidine	430 - 4,700	0 / 48	--	--	NSV	-- / --	NSV	NO
3-Nitroaniline	1,100 - 4,700	0 / 48	--	--	NSV	-- / --	NSV	NO
3-Nitrotoluene	250 - 250	0 / 4	--	--	NSV	-- / --	NSV	NO
4,6-Dinitro-2-methylphenol	1,100 - 4,700	0 / 49	--	--	NSV	-- / --	NSV	NO
4-Amino-2,6-dinitrotoluene	250 - 250	0 / 4	--	--	NSV	-- / --	NSV	NO
4-Bromophenyl-phenylether	430 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO
4-Chloro-3-methylphenol	430 - 1,700	0 / 49	--	--	NSV	-- / --	NSV	NO
4-Chloroaniline	430 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO
4-Chlorophenyl-phenylether	430 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO
4-Methylphenol	430 - 1,700	0 / 49	--	--	670	-- / --	2.54	**YES**
4-Nitroaniline	1,100 - 4,700	0 / 48	--	--	NSV	-- / --	NSV	NO
4-Nitrophenol	1,100 - 4,700	0 / 49	--	--	NSV	-- / --	NSV	NO
4-Nitrotoluene	250 - 250	0 / 4	--	--	NSV	-- / --	NSV	NO
Acenaphthene	110 - 1,200	8 / 49	2,900	SJBC-SD05-03C	6.70	8 / 49	433	**YES**

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Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*								
AnalyteName	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	COPC?
Acenaphthylene	110 - 1,700	24 / 48	360	SJBC-SD36-03C	5.90	24 / 48	61.0	**YES**
Acetophenone	430 - 1,700	0 / 36	--	--	NSV	-- / --	NSV	NO
Anthracene	110 - 1,100	34 / 49	2,400	SJBC-SD36-03C	57.2	33 / 49	42.0	**YES**
Atrazine	430 - 1,700	0 / 36	--	--	6.62	-- / --	257	**YES**
Benzaldehyde	430 - 1,700	0 / 36	--	--	NSV	-- / --	NSV	NO
Benzo(a)anthracene	620 - 1,000	48 / 50	3,900	SJBC-SD36-03C	108	44 / 50	36.1	**YES**
Benzo(a)pyrene	620 - 1,000	48 / 50	2,900	SJBC-SD36-03C	150	44 / 50	19.3	**YES**
Benzo(b)fluoranthene	620 - 1,000	51 / 53	3,500	SJBC-SD36-03C	27.2	51 / 53	129	**YES**
Benzo(g,h,i)perylene	620 - 1,000	46 / 50	2,100	SJBC-SD30-03C	170	32 / 50	12.4	**YES**
Benzo(k)fluoranthene	620 - 1,000	47 / 50	4,400	SJBC-SD36-03C	240	36 / 50	18.3	**YES**
Butylbenzylphthalate	430 - 1,700	1 / 48	58.0	SJS04-SD04-000	63.0	0 / 48	0.92	NO
Caprolactam	110 - 1,700	0 / 36	--	--	NSV	-- / --	NSV	NO
Carbazole	160 - 1,600	4 / 48	530	SJBC-SD05-03C	NSV	-- / --	NSV	**YES**
Chrysene	620 - 1,000	50 / 52	4,700	SJBC-SD36-03C	166	43 / 52	28.3	**YES**
Di-n-butylphthalate	430 - 1,700	0 / 48	--	--	1,400	-- / --	1.21	**YES**
Di-n-octylphthalate	430 - 1,700	1 / 49	120	SJS04-SD09-001	6,200	0 / 49	0.019	NO
Dibenz(a,h)anthracene	110 - 1,700	29 / 49	1,200	SJBC-SD30-03C	33.0	29 / 49	36.4	**YES**
Dibenzofuran	430 - 1,200	5 / 48	600	SJBC-SD05-03C	415	1 / 48	1.45	**YES**
Diethylphthalate	430 - 1,700	2 / 49	170	SJSBK-SD11-001	200	0 / 49	0.85	NO
Dimethyl phthalate	430 - 1,700	0 / 48	--	--	71.0	-- / --	23.9	**YES**
Fluoranthene	620 - 1,000	54 / 56	8,600	SJBC-SD36-03C	423	33 / 56	20.3	**YES**
Fluorene	110 - 1,200	6 / 48	350	SJBC-SD05-03C	19.0	6 / 48	18.4	**YES**
HMX	500 - 500	0 / 4	--	--	NSV	-- / --	NSV	NO
Hexachlorobenzene	430 - 1,700	0 / 48	--	--	20.0	-- / --	85.0	**YES**
Hexachlorobutadiene	430 - 1,700	0 / 48	--	--	11.0	-- / --	155	**YES**
Hexachlorocyclopentadiene	430 - 4,700	0 / 48	--	--	NSV	-- / --	NSV	NO
Hexachloroethane	430 - 1,700	0 / 48	--	--	1,027	-- / --	1.66	**YES**
Indeno(1,2,3-cd)pyrene	620 - 1,000	46 / 50	2,100	SJBC-SD30-03C	17.0	46 / 50	124	**YES**
Isophorone	430 - 1,700	0 / 49	--	--	NSV	-- / --	NSV	NO
Naphthalene	110 - 1,200	15 / 48	720	SJBC-SD05-03C	160	4 / 48	4.50	**YES**
Nitrobenzene	250 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO

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Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*								
AnalyteName	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Screening Value**	**Frequency of Exceedance**	**Maximum Hazard Quotient[1]**	**COPC?**
Pentachlorophenol	1,100 - 4,700	0 / 49	--	--	360	-- / --	13.1	**YES**
Phenanthrene	110 - 1,100	40 / 50	630	SJBC-SD22-03C	204	11 / 50	3.09	**YES**
Phenol	430 - 1,700	0 / 49	--	--	420	-- / --	4.05	**YES**
Pyrene	620 - 1,000	53 / 55	7,600	SJBC-SD36-03C	195	48 / 55	39.0	**YES**
RDX	500 - 500	0 / 4	--	--	NSV	-- / --	NSV	NO
Tetryl	650 - 650	0 / 4	--	--	NSV	-- / --	NSV	NO
bis(2-Chloro-1-methylethyl) ether	430 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO
bis(2-Chloroethoxy)methane	430 - 1,700	1 / 48	1,000	SJSBK-SD10-001	NSV	-- / --	NSV	**YES**
bis(2-Chloroethyl)ether	430 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO
bis(2-Ethylhexyl)phthalate	52.0 - 7,600	9 / 49	3,500	SJBC-SD29-03C	180	5 / 49	19.4	**YES**
n-Nitroso-di-n-propylamine	430 - 1,700	0 / 48	--	--	NSV	-- / --	NSV	NO
n-Nitrosodiphenylamine	430 - 1,700	0 / 48	--	--	28.0	-- / --	60.7	**YES**
Explosives (UG/KG)								
1,3,5-Trinitrobenzene	250 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
1,3-Dinitrobenzene	250 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
2,4,6-Trinitrotoluene	250 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
2,4-Dinitrotoluene	250 - 500	0 / 37	--	--	41.6	-- / --	12.0	**YES**
2,6-Dinitrotoluene	250 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
2-Amino-4,6-dinitrotoluene	250 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
2-Nitrotoluene	440 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
3-Nitrotoluene	440 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
4-Amino-2,6-dinitrotoluene	250 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
4-Nitrotoluene	440 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
HMX	440 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
Nitrobenzene	250 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
Picric Acid	2,500 - 2,500	0 / 1	--	--	NSV	-- / --	NSV	NO
RDX	250 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
Tetryl	440 - 500	0 / 37	--	--	NSV	-- / --	NSV	NO
Volatile Organic Compounds (UG/KG)								
1,1,1-Trichloroethane	16.0 - 36.0	0 / 16	--	--	30.2	-- / --	1.19	**YES**
1,1,2,2-Tetrachloroethane	16.0 - 36.0	0 / 16	--	--	1,360	-- / --	0.026	NO

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AnalyteName	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	COPC?
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
1,1,2-Trichloroethane	16.0 - 36.0	0 / 16	--	--	31.0	-- / --	1.16	**YES**
1,1-Dichloroethane	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
1,1-Dichloroethene	16.0 - 36.0	0 / 16	--	--	31.0	-- / --	1.16	**YES**
1,2,4-Trichlorobenzene	17.0 - 30.0	0 / 4	--	--	40.0	-- / --	0.75	NO
1,2-Dibromo-3-chloropropane	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
1,2-Dibromoethane	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
1,2-Dichlorobenzene	17.0 - 30.0	0 / 4	--	--	16.5	-- / --	1.82	**YES**
1,2-Dichloroethane	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
1,2-Dichloroethene (total)	16.0 - 36.0	0 / 12	--	--	NSV	-- / --	NSV	NO
1,2-Dichloropropane	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
1,3-Dichlorobenzene	17.0 - 30.0	0 / 4	--	--	4,430	-- / --	0.0068	NO
1,4-Dichlorobenzene	17.0 - 30.0	0 / 4	--	--	110	-- / --	0.27	NO
2-Butanone	17.0 - 37.0	5 / 17	47.0	SJSBK-SD07-002	NSV	-- / --	NSV	**YES**
2-Hexanone	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
4-Methyl-2-pentanone	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Acetone	8.20 - 58.0	7 / 18	1,100	SJSBK-SD07-002	NSV	-- / --	NSV	**YES**
Benzene	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Bromodichloromethane	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Bromoform	16.0 - 36.0	0 / 16	--	--	654	-- / --	0.055	NO
Bromomethane	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Carbon disulfide	15.0 - 30.0	10 / 18	45.0	SJSBK-SD09-002	0.85	10 / 18	52.9	**YES**
Carbon tetrachloride	16.0 - 36.0	0 / 16	--	--	64.2	-- / --	0.56	NO
Chlorobenzene	16.0 - 36.0	0 / 16	--	--	8.42	-- / --	4.28	**YES**
Chloroethane	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Chloroform	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Chloromethane	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Cumene	17.0 - 30.0	0 / 4	--	--	86.0	-- / --	0.35	NO
Cyclohexane	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
Dibromochloromethane	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Dichlorodifluoromethane (Freon-12)	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO

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Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*								
AnalyteName	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Screening Value**	**Frequency of Exceedance**	**Maximum Hazard Quotient[1]**	**COPC?**
Ethylbenzene	16.0 - 36.0	0 / 16	--	--	10.0	-- / --	3.60	**YES**
Methyl acetate	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
Methyl-tert-butyl ether (MTBE)	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
Methylcyclohexane	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
Methylene chloride	3.00 - 101	2 / 19	5.90	SJS01-SD03-001	NSV	-- / --	NSV	**YES**
Styrene	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Tetrachloroethene	16.0 - 36.0	0 / 16	--	--	57.0	-- / --	0.63	NO
Toluene	17.0 - 36.0	5 / 17	15.0	SJS04-SD08-001	NSV	-- / --	NSV	**YES**
Trichloroethene	16.0 - 36.0	0 / 16	--	--	96.9	-- / --	0.37	NO
Trichlorofluoromethane(Freon-11)	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
Vinyl chloride	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Xylene, total	16.0 - 36.0	0 / 16	--	--	40.0	-- / --	0.90	NO
cis-1,2-Dichloroethene	17.0 - 31.0	0 / 6	--	--	NSV	-- / --	NSV	NO
cis-1,3-Dichloropropene	16.0 - 36.0	0 / 14	--	--	NSV	-- / --	NSV	NO
trans-1,2-Dichloroethene	17.0 - 30.0	0 / 4	--	--	NSV	-- / --	NSV	NO
trans-1,3-Dichloropropene	16.0 - 36.0	0 / 16	--	--	NSV	-- / --	NSV	NO
Dioxin/Furans (UG/KG)								
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	-- - --	7 / 7	0.91	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,4,6,7,8-Heptachlorodibenzofuran	-- - --	7 / 7	0.19	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,4,7,8,9-Heptachlorodibenzofuran	9.40E-04 - 9.40E-04	6 / 7	0.011	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	-- - --	7 / 7	0.024	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,4,7,8-Hexachlorodibenzofuran	-- - --	7 / 7	0.034	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	-- - --	7 / 7	0.038	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,6,7,8-Hexachlorodibenzofuran	-- - --	7 / 7	0.029	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	-- - --	7 / 7	0.040	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,7,8,9-Hexachlorodibenzofuran	9.40E-04 - 9.90E-04	4 / 7	0.011	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	-- - --	7 / 7	0.018	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
1,2,3,7,8-Pentachlorodibenzofuran	9.40E-04 - 9.40E-04	6 / 7	0.16	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
2,3,4,6,7,8-Hexachlorodibenzofuran	-- - --	7 / 7	0.030	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
2,3,4,7,8-Pentachlorodibenzofuran	-- - --	7 / 7	0.053	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
2,3,7,8-TCDD (dioxin)	-- - --	7 / 7	0.0026	SJBC-SD04-03C	8.50E-04	3 / 7	3.06	**YES**

NSV - No Screening Value

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Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*								
AnalyteName	**Range of Non-Detect Values**	**Frequency of Detection**	**Maximum Concentration Detected**	**Sample ID of Maximum Detected Concentration**	**Screening Value**	**Frequency of Exceedance**	**Maximum Hazard Quotient[1]**	**COPC?**
2,3,7,8-Tetrachlorodibenzofuran	-- - --	7 / 7	0.015	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Octachlorodibenzo-p-dioxin	-- - --	7 / 7	25.0	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Octachlorodibenzofuran	-- - --	7 / 7	0.24	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Total heptachlorodibenzo-p-dioxin	-- - --	7 / 7	2.80	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Total heptachlorodibenzofuran	-- - --	7 / 7	0.38	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Total hexachlorodibenzo-p-dioxin	-- - --	7 / 7	0.82	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Total hexachlorodibenzofuran	-- - --	7 / 7	0.57	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Total pentachlorodibenzo-p-dioxin	-- - --	7 / 7	0.26	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Total pentachlorodibenzofuran	-- - --	7 / 7	0.55	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Total tetrachlorodibenzo-p-dioxin	-- - --	7 / 7	0.12	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**
Total tetrachlorodibenzofuran	-- - --	7 / 7	0.39	SJBC-SD04-03C	NSV	-- / --	NSV	**YES**

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EqP Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*					
AnalyteName	**Range of Detected Concentrations**	**Range of EqP Screening Values**	**EqP Hazard Quotient Range**	**Frequency of Exceedance**	**Location of Maximum Exceedence**
Pesticide/Polychlorinated Biphenyls (UG/KG)					
4,4'-DDD	0.45 - 550	0.19 - 63	0.007 - 155	23 / 56	SJBC-SD03-03C
4,4'-DDE	0.38 - 320	105 - 6,187	0.0001 - 0.74	0 / 56	--
4,4'-DDT	1.1 - 33.0	0.58 - 26	0.04 - 21	10 / 55	SJSBK-SD10-001
Aldrin	100 - 100	236 - 236	0.42 - 0.42	0 / 44	--
Aroclor-1260	31 - 270	0.17 - 0.20	179 - 1,337	44 / 44	SJBC-SD30-03C
Dieldrin	0.63 - 0.63	1.8 - 1.8	0.35 - 0.35	0 / 45	--
Endrin ketone	11 - 11	-- / --	-- / --	-- / --	--
Endosulfan sulfate	12 - 19.0	-- - --	-- - --	-- / --	--
alpha-Chlordane	2.0 - 25.0	-- - --	-- - --	-- / --	--
gamma-Chlordane	2.0 - 55.0	-- - --	-- - --	-- / --	--
Semivolatile Organic Compounds (UG/KG)					
2-Methylnaphthalene	59 - 410	5.4 - 23.0	26.0 - 28	48 / 48	SJBC-SD22-03C
Acenaphthene	49 - 2,900	56 - 37,123	0.004 - 1.60	6 / 49	SJBC-SD36-03C
Acenaphthylene	52 - 360	49 - 2,340	0.04 - 1.3	1 / 48	SJBC-SD36-03C
Anthracene	32 - 2,400	0.05 - 30	3.7 - 3,602	49 / 49	SJBC-SD36-03C
Benzo(a)anthracene	44 - 3,900	38 - 25,277	0.01 - 7.81	11 / 51	SJBC-SD36-03C
Benzo(a)pyrene	53 - 2,900	0.23 - 152	1.1 - 1,599	51 / 51	SJBC-SD36-03C
Benzo(b)fluoranthene	59 - 3,500	5,673 - 3,732,512	0.00004 - 0.08	0 / 54	--
Benzo(g,h,i)perylene	58 - 2,100	17,593 - 11,574,474	0.00002 - 0.01	0 / 51	--
Benzo(k)fluoranthene	45 - 4,400	5,673 - 3,732,512	0.00002 - 0.07	0 / 51	--
Butylbenzylphthalate	58 - 58.0	83 - 83	0.70 - 0.70	0 / 42	SJS04-SD04-000
Carbazole	47 - 530	-- / --	-- / --	-- / --	--
Chrysene	59 - 4,700	1,830 - 1,203,653	0.0002 - 0.25	0 / 53	--
Di-n-octylphthalate	120 - 120	2,514,093 - 2,514,093	0.00005 - 0.00005	0 / 43	SJS04-SD09-001
Dibenz(a,h)anthracene	60 - 1,200	17,199 - 11,315,435	0.00001 - 0.01	0 / 43	SJBC-SD30-03C
Dibenzofuran	60 - 600	7.8 - 36	7.7 - 25	48 / 48	SJBC-SD05-03C
Diethylphthalate	86 - 170	0.19 - 8.6	20 - 2,532	43 / 43	SJSBK-SD11-001
Fluoranthene	44 - 8,600	26 - 17,273	0.003 - 24	29 / 56	SJBC-SD36-03C
Fluorene	45 - 350	63 - 3,002	0.04 - 0.72	0 / 48	--
Indeno(1,2,3-cd)pyrene	42 - 2,100	15,711 - 10,335,970	0.00002 - 0.001	0 / 50	--

NSV - No Screening Value

1 - Shaded cells indicate hazard quotient based on reporting limits

2 - Macronutrient - Not considered to be a COPC

EqP Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*					
AnalyteName	**Range of Detected Concentrations**	**Range of EqP Screening Values**	**EqP Hazard Quotient Range**	**Frequency of Exceedance**	**Location of Maximum Exceedence**
Naphthalene	64 - 390	3.1 - 99	1.0 - 27	42 / 42	SJBC-SD22-03C
Phenanthrene	49 - 720	2.1 - 1,367	0.09 - 67	39 / 49	SJBC-SD22-03C
Pyrene	49 - 7,600	0.04 - 26	1.9 - 22,192	55 / 55	SJBC-SD36-03C
bis(2-Chloroethoxy)methane	1,000 - 1,000	-- / --	-- / --	-- / --	--
bis(2-Ethylhexyl)phthalate	45 - 3,500	3,649 - 2,400,490	0.0001 - 0.18	0 / 43	SJBC-SD29-03C
Volatile Organic Compounds (UG/KG)					
2-Butanone	12 - 47.0	-- / --	-- / --	-- / --	--
Acetone	16 - 1,100	-- / --	-- / --	-- / --	--
Carbon disulfide	5 - 45.0	0.06 - 0.24	32 - 448	17 / 17	SJSBK-SD09-002
Methylene chloride	3.3 - 5.90	-- / --	-- / --	-- / --	--
Toluene	2 - 15.0	-- / --	-- / --	-- / --	--
Dioxin/Furans (UG/KG)					
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.13 - 0.91	-- / --	-- / --	-- / --	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01 - 0.19	-- / --	-- / --	-- / --	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.001 - 0.01	-- / --	-- / --	-- / --	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.004 - 0.02	-- / --	-- / --	-- / --	--
1,2,3,4,7,8-Hexachlorodibenzofuran	0.001 - 0.03	-- / --	-- / --	-- / --	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.01 - 0.04	-- / --	-- / --	-- / --	--
1,2,3,6,7,8-Hexachlorodibenzofuran	0.001 - 0.03	-- / --	-- / --	-- / --	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.01 - 0.04	-- / --	-- / --	-- / --	--
1,2,3,7,8,9-Hexachlorodibenzofuran	0.001 - 0.01	-- / --	-- / --	-- / --	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.002 - 0.02	-- / --	-- / --	-- / --	--
1,2,3,7,8-Pentachlorodibenzofuran	0.002 - 0.16	-- / --	-- / --	-- / --	--
2,3,4,6,7,8-Hexachlorodibenzofuran	0.001 - 0.03	-- / --	-- / --	-- / --	--
2,3,4,7,8-Pentachlorodibenzofuran	0.001 - 0.05	-- / --	-- / --	-- / --	--
2,3,7,8-TCDD (dioxin)	0.0005 - 0.003	-- / --	-- / --	-- / --	--
2,3,7,8-Tetrachlorodibenzofuran	0.001 - 0.02	-- / --	-- / --	-- / --	--
Octachlorodibenzo-p-dioxin	2.1 - 25	-- / --	-- / --	-- / --	--
Octachlorodibenzofuran	0.01 - 0.24	-- / --	-- / --	-- / --	--
Total heptachlorodibenzo-p-dioxin	0.48 - 2.8	-- / --	-- / --	-- / --	--
Total heptachlorodibenzofuran	0.01 - 0.38	-- / --	-- / --	-- / --	--

NSV - No Screening Value

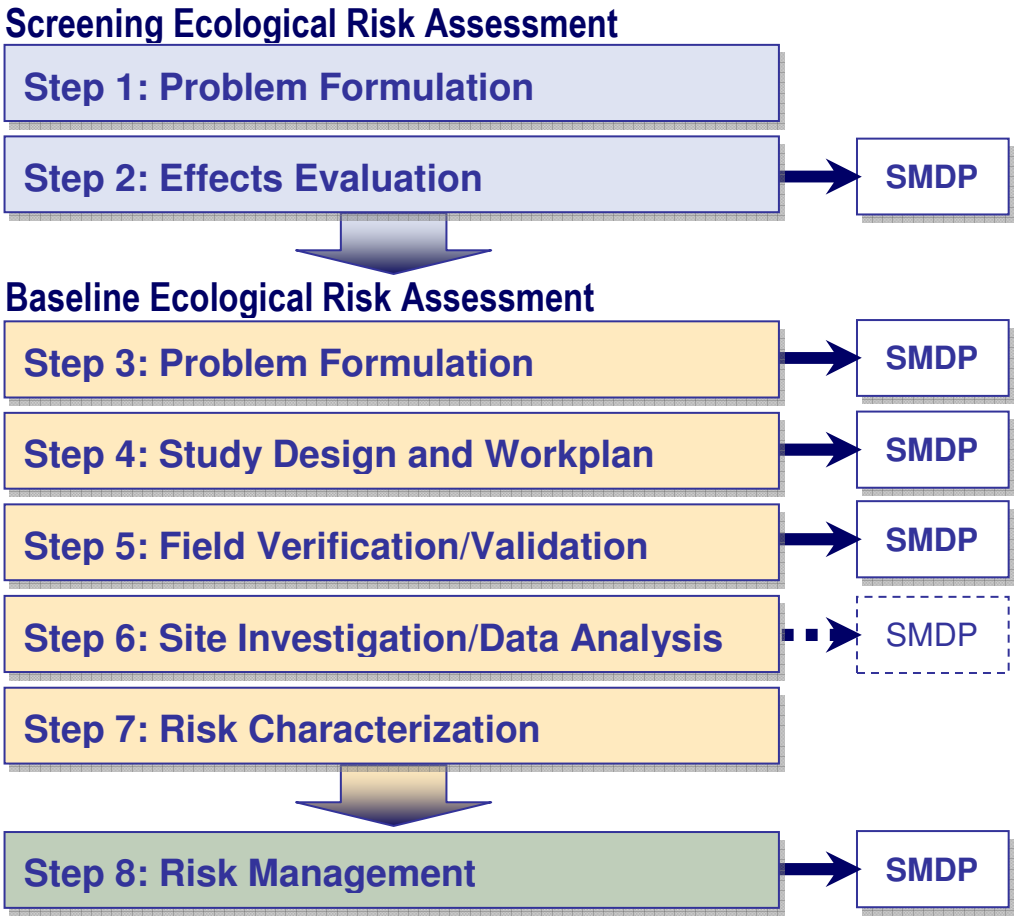
1 - Shaded cells indicate hazard quotient based on reporting limits

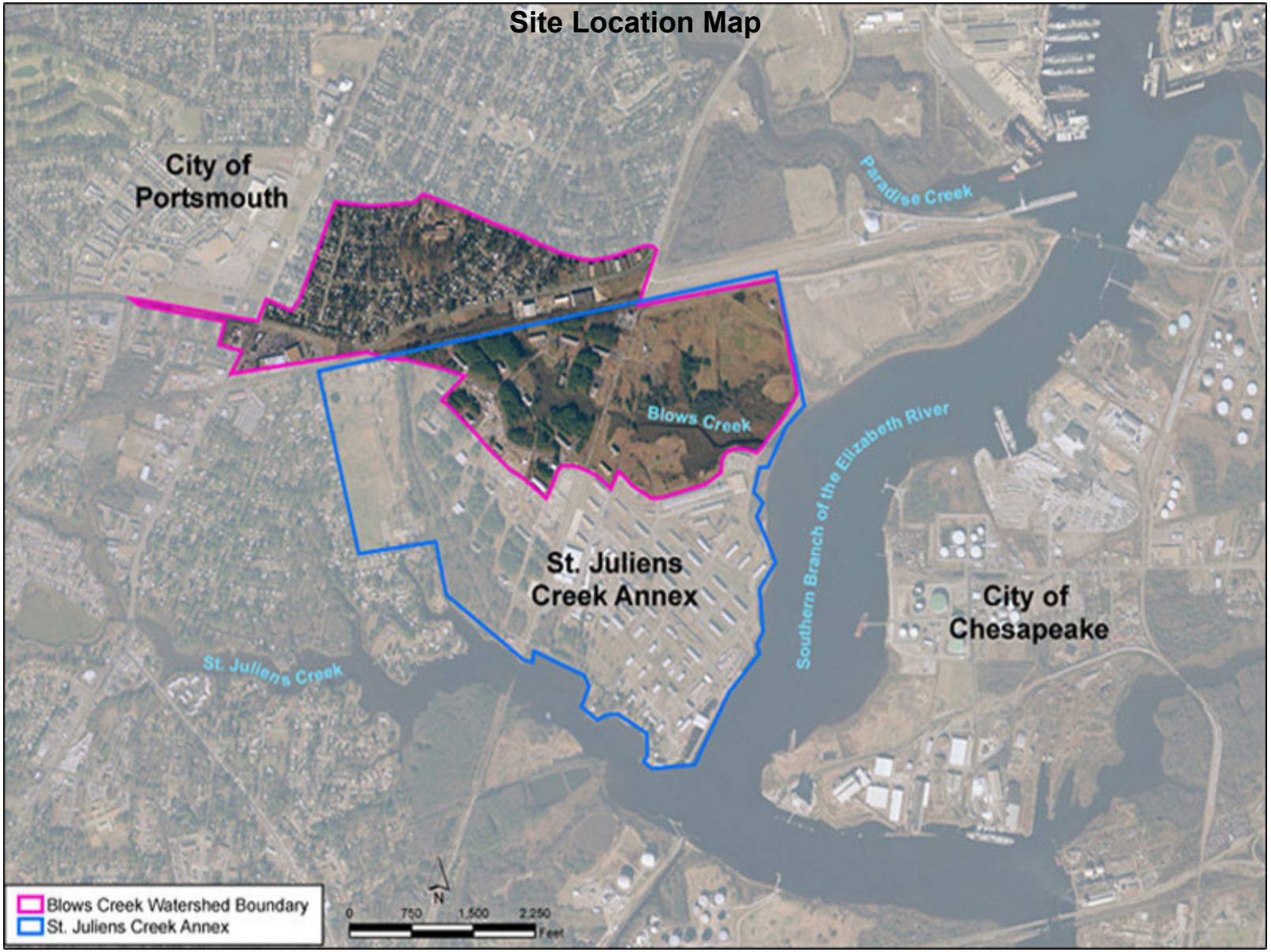
2 - Macronutrient - Not considered to be a COPC

EqP Screening Statistics - Sediment - Blows Creek *St. Juliens Creek Annex, Chesapeake, Virginia*					
AnalyteName	**Range of Detected Concentrations**	**Range of EqP Screening Values**	**EqP Hazard Quotient Range**	**Frequency of Exceedance**	**Location of Maximum Exceedence**
Total hexachlorodibenzo-p-dioxin	0.21 - 0.82	-- / --	-- / --	-- / --	--
Total hexachlorodibenzofuran	0.01 - 0.57	-- / --	-- / --	-- / --	--
Total pentachlorodibenzo-p-dioxin	0.03 - 0.26	-- / --	-- / --	-- / --	--
Total pentachlorodibenzofuran	0.01 - 0.55	-- / --	-- / --	-- / --	--
Total tetrachlorodibenzo-p-dioxin	0.02 - 0.12	-- / --	-- / --	-- / --	--
Total tetrachlorodibenzofuran	0.01 - 0.39	-- / --	-- / --	-- / --	--

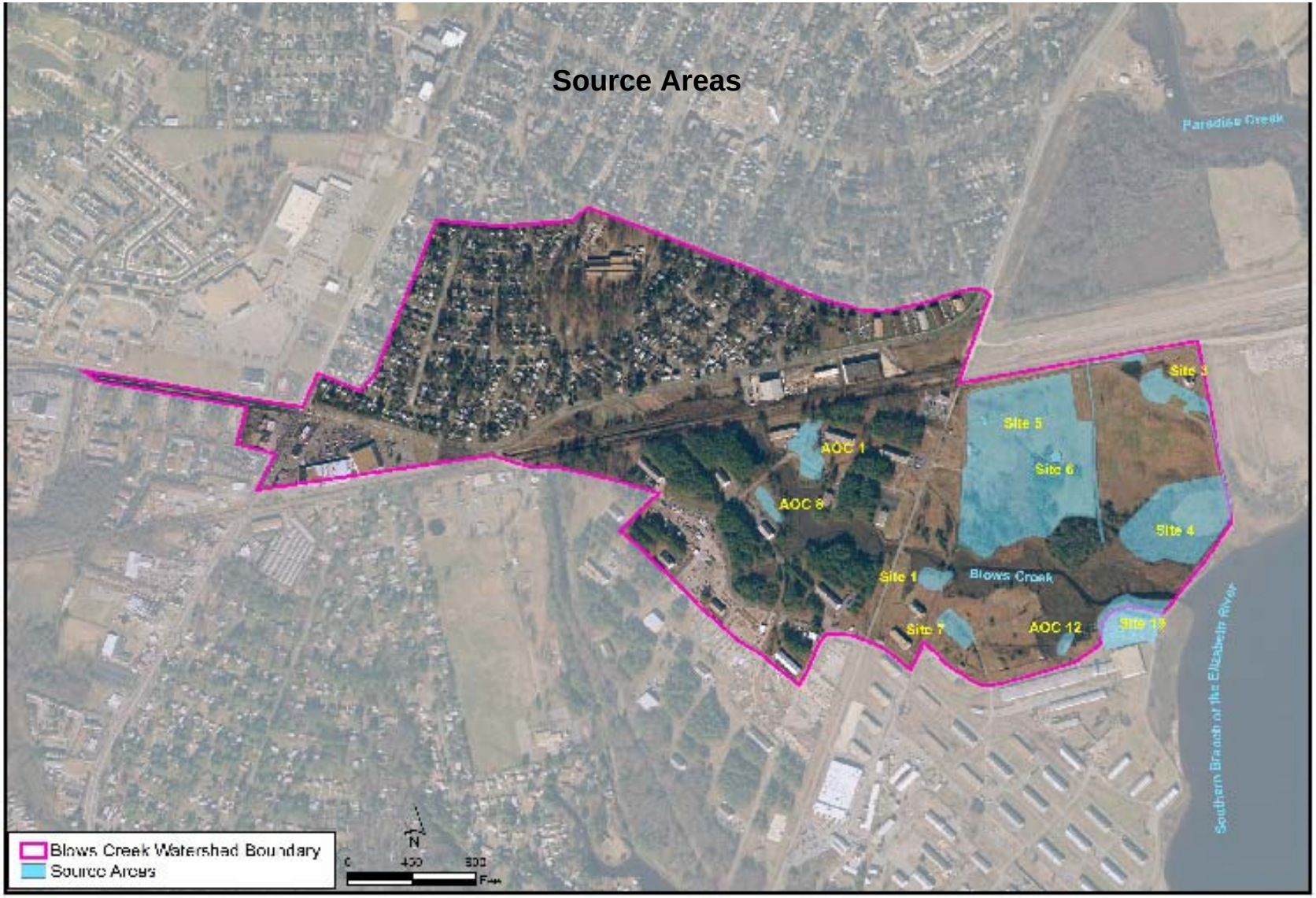
NSV - No Screening Value
1 - Shaded cells indicate hazard quotient based on reporting limits
2 - Macronutrient - Not considered to be a COPC

USEPA Eight-Step Ecological Risk Assessment Process





Use the Interactive CD to access the fully functional figures.



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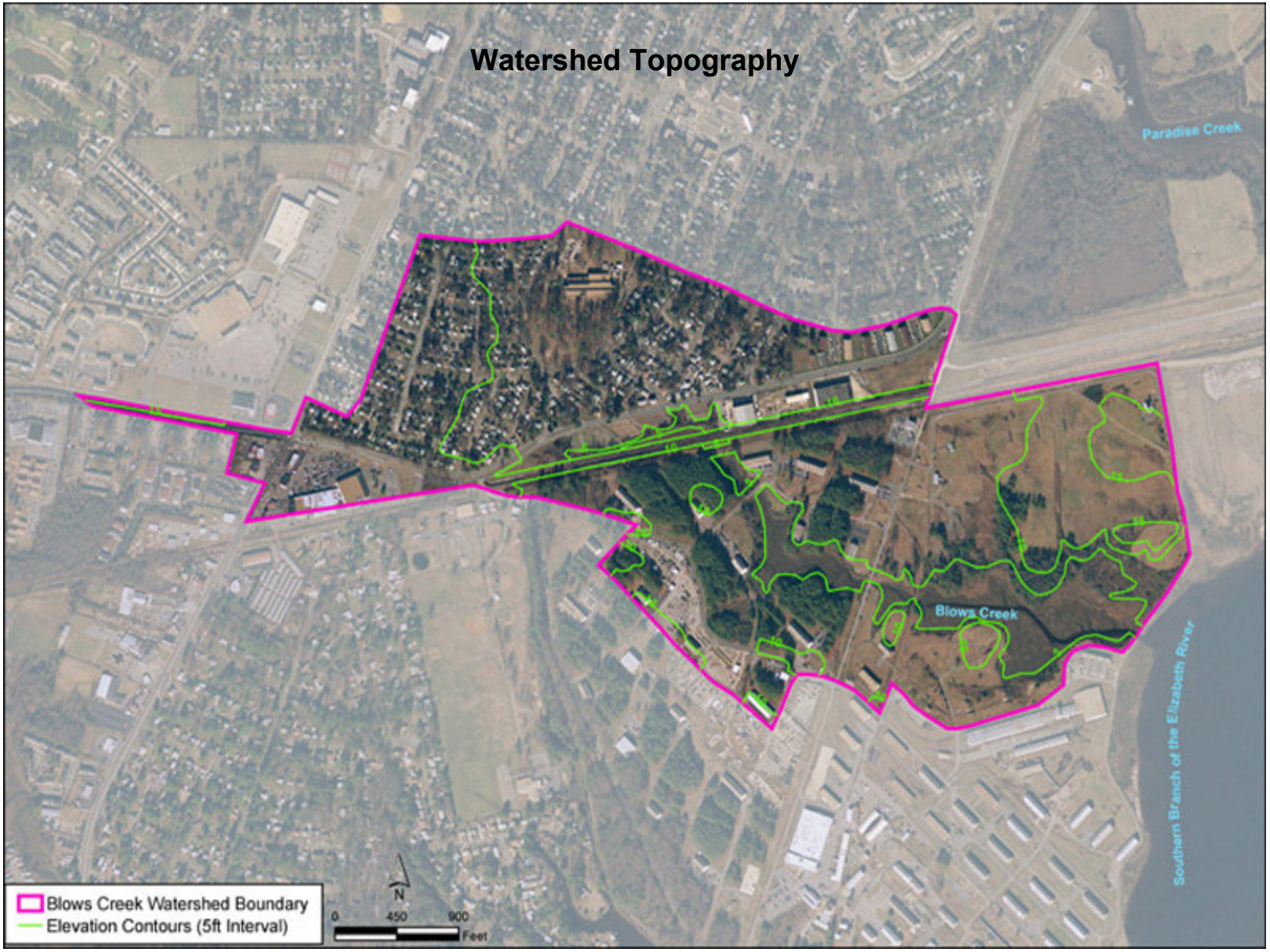

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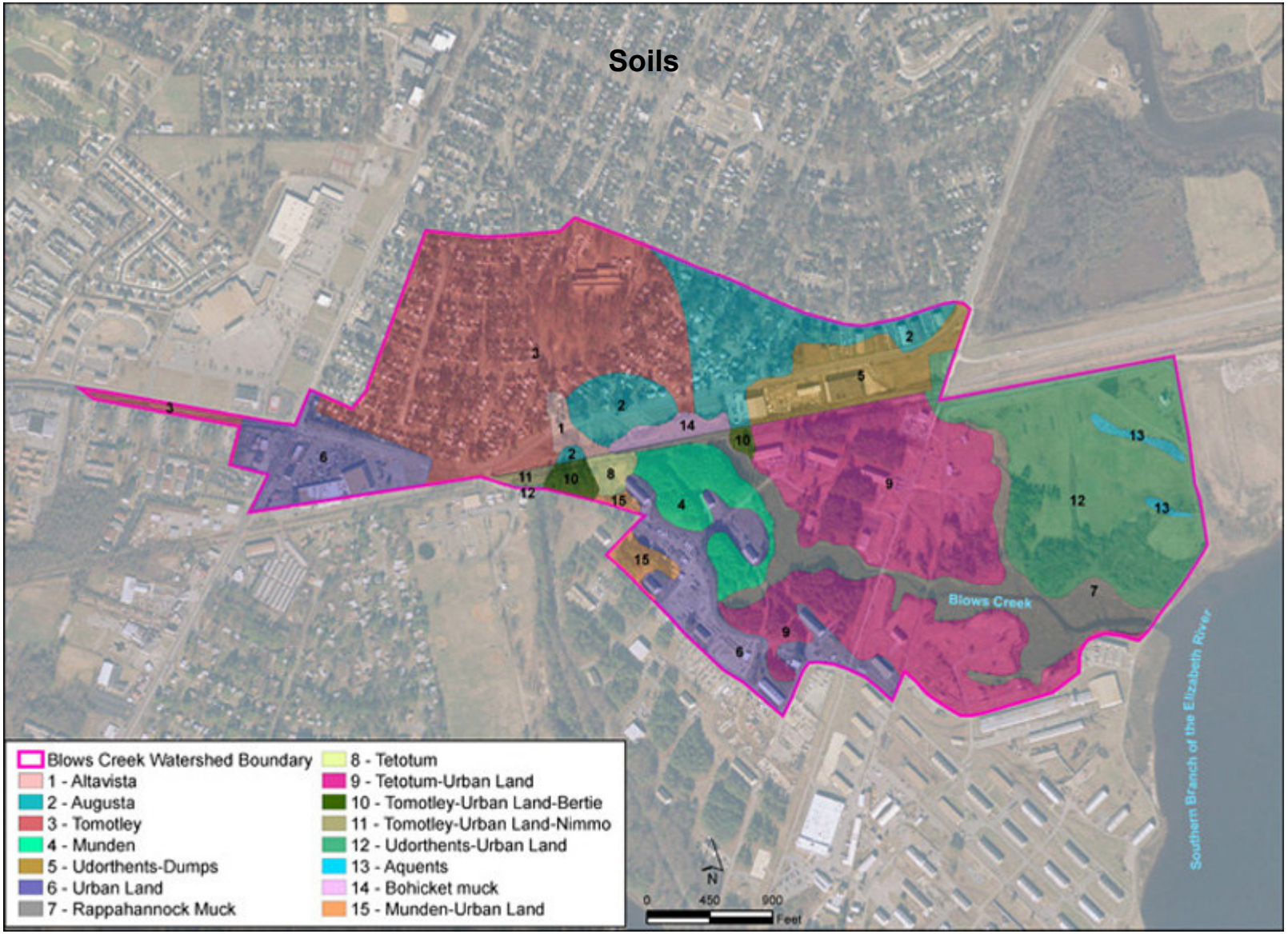

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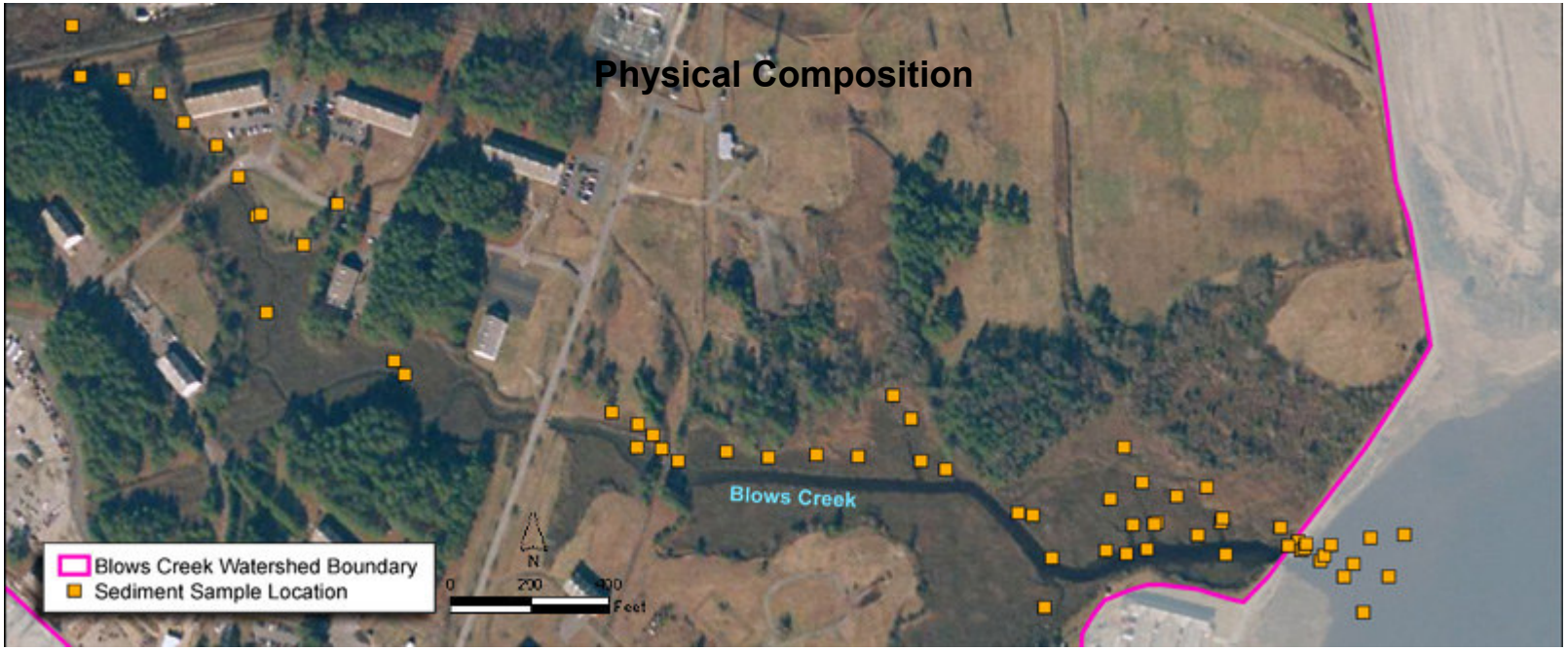
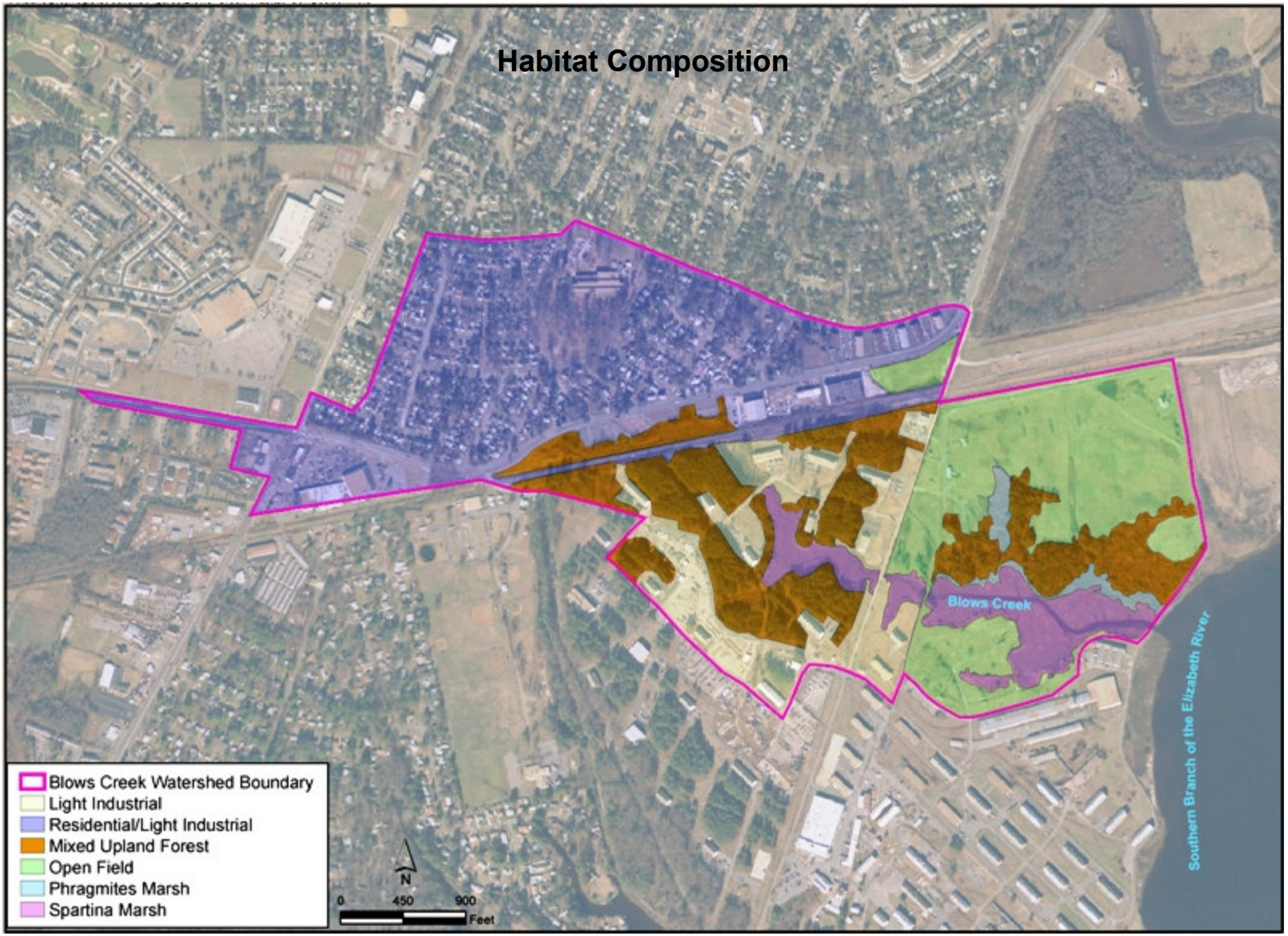


Parameter	Range of Detected Values	Arithmetic Mean
Sediment Parameters		
% Solids	26.0 - 78.6	42.8
Total Organic Carbon (mg/kg)	1,520 - 130,000	34,865
Surface Water Parameters		
Dissolved Oxygen (mg/L)	0.000 - 15.2	6.83
Oxidation Reduction Potential (mV)	-186 - 231	79.7
Salinity (%)	0.010 - 2.26	1.03
pH	5.38 - 8.86	7.23
Specific Conductance (ms/cm)	0.216 - 35.6	17.2
Temperature (C)	16.8 - 28.0	23.2
Total Dissolved Solids (G/L)	0.140 - 22.0	9.64

Use the Interactive CD to access the fully functional figures.



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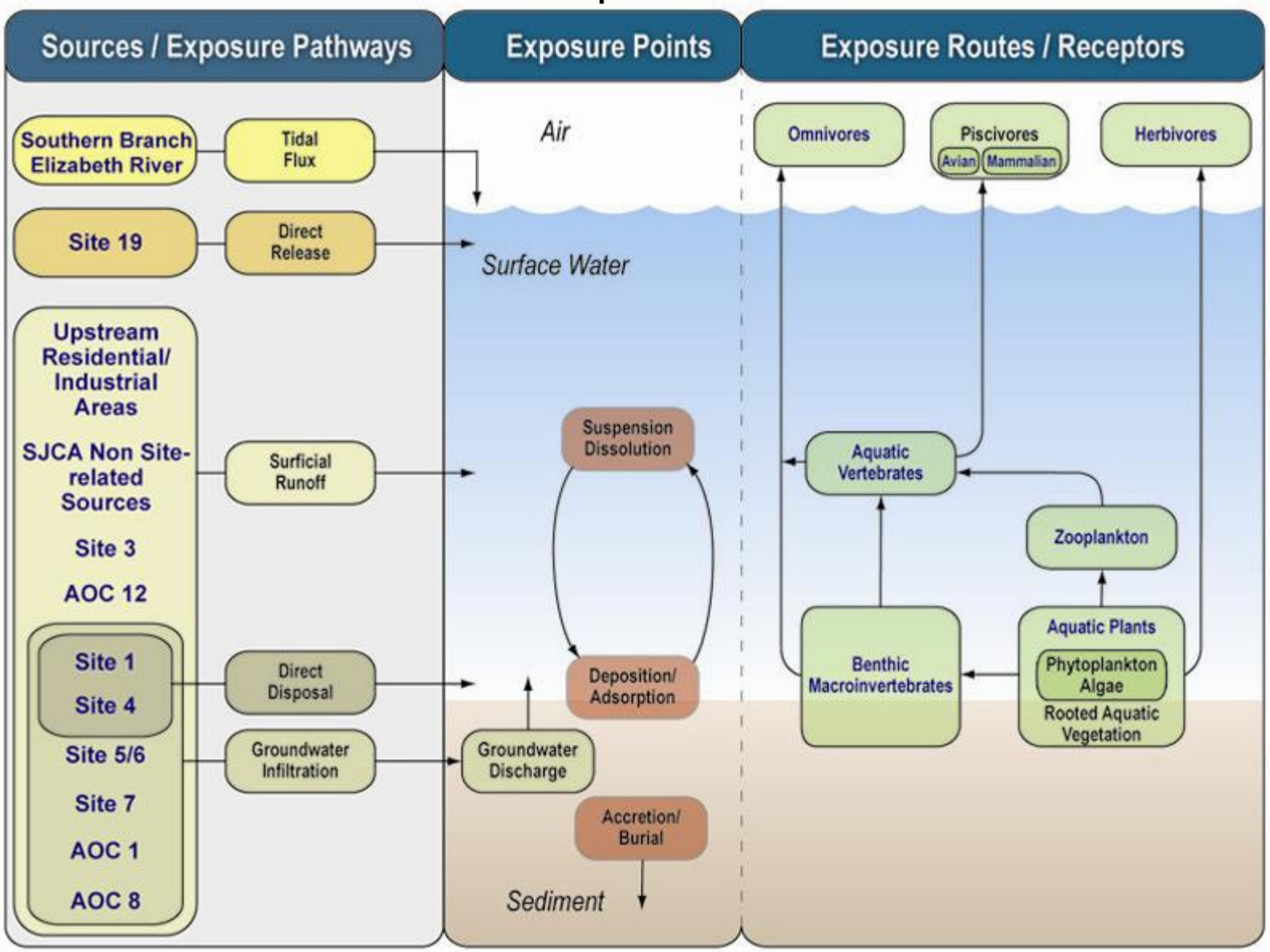
Conceptual Model



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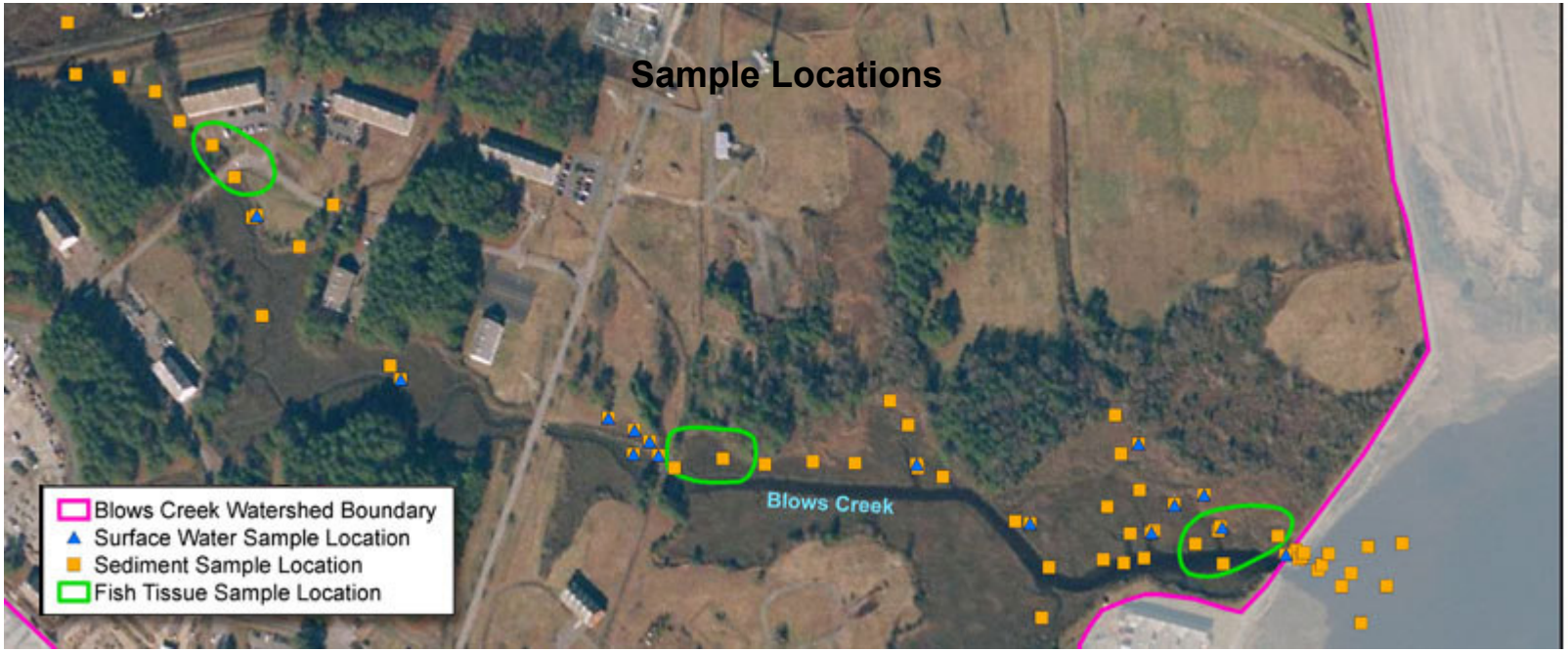
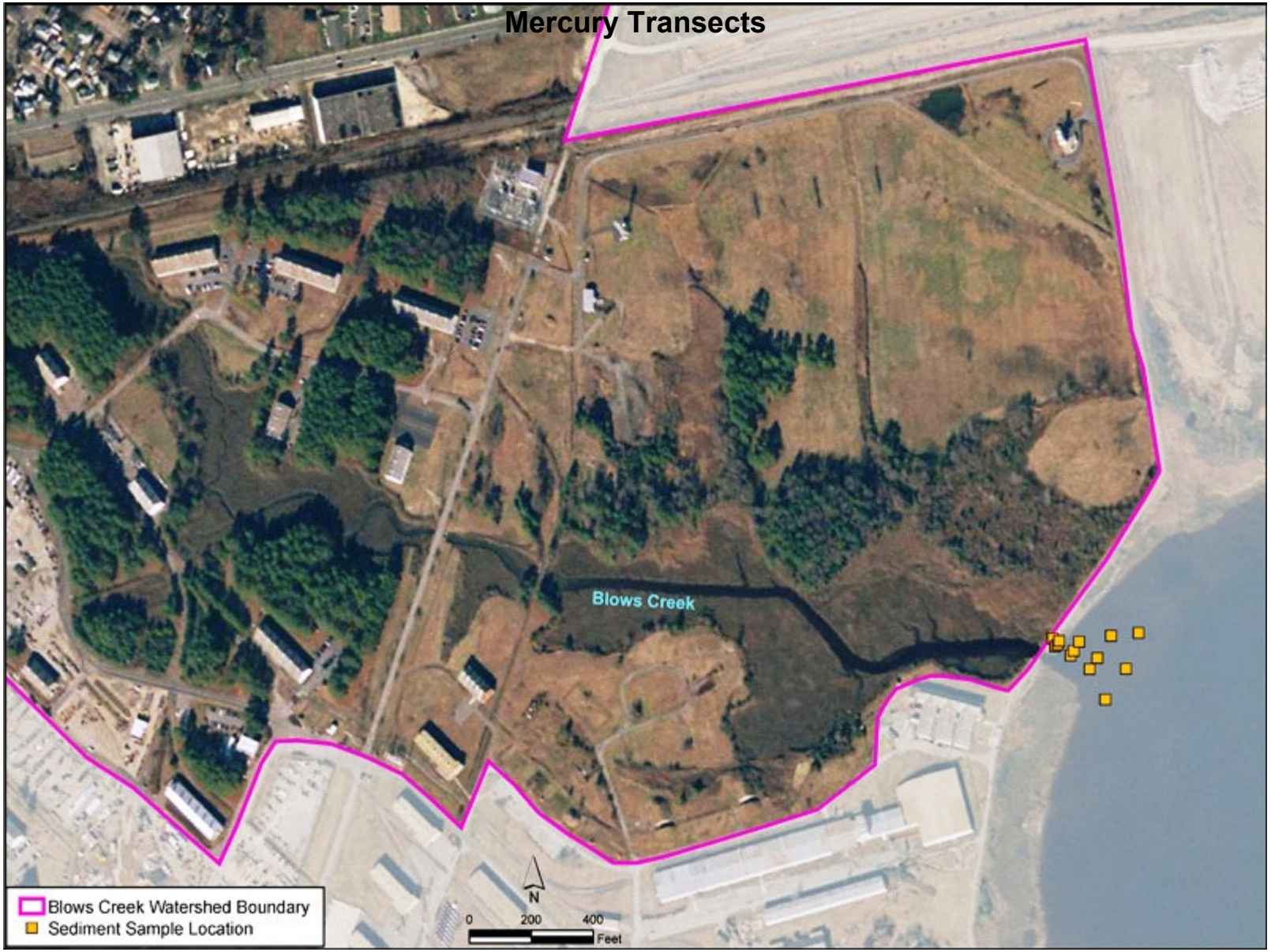


Sampling Event	Sample Date(s)	Type(s) of Samples
Remedial Investigation Sampling	July 1997 & April 1999	Sediment (0"-6"), Surface Water
Background Sampling	April 1999	Sediment (0"-6"), Surface Water
Remedial Investigation Sampling	October 1999	Sediment (0"-6"), Surface Water
Background Sampling	October 1999	Sediment (0"-6"), Surface Water
Site Screening Assessment Sampling	February 2001	Sediment (0"-6"), Surface Water
BERA Phase I Sampling	September 2003	Sediment (0"-6")
BERA Phase II Sampling	October 2004	Sediment (0"-6"), Fish Tissue
All sampling events	July 1997 - October 2004	Sediment (0"-6"), Surface Water, Fish Tissue

Use the Interactive CD to access the fully functional figures.



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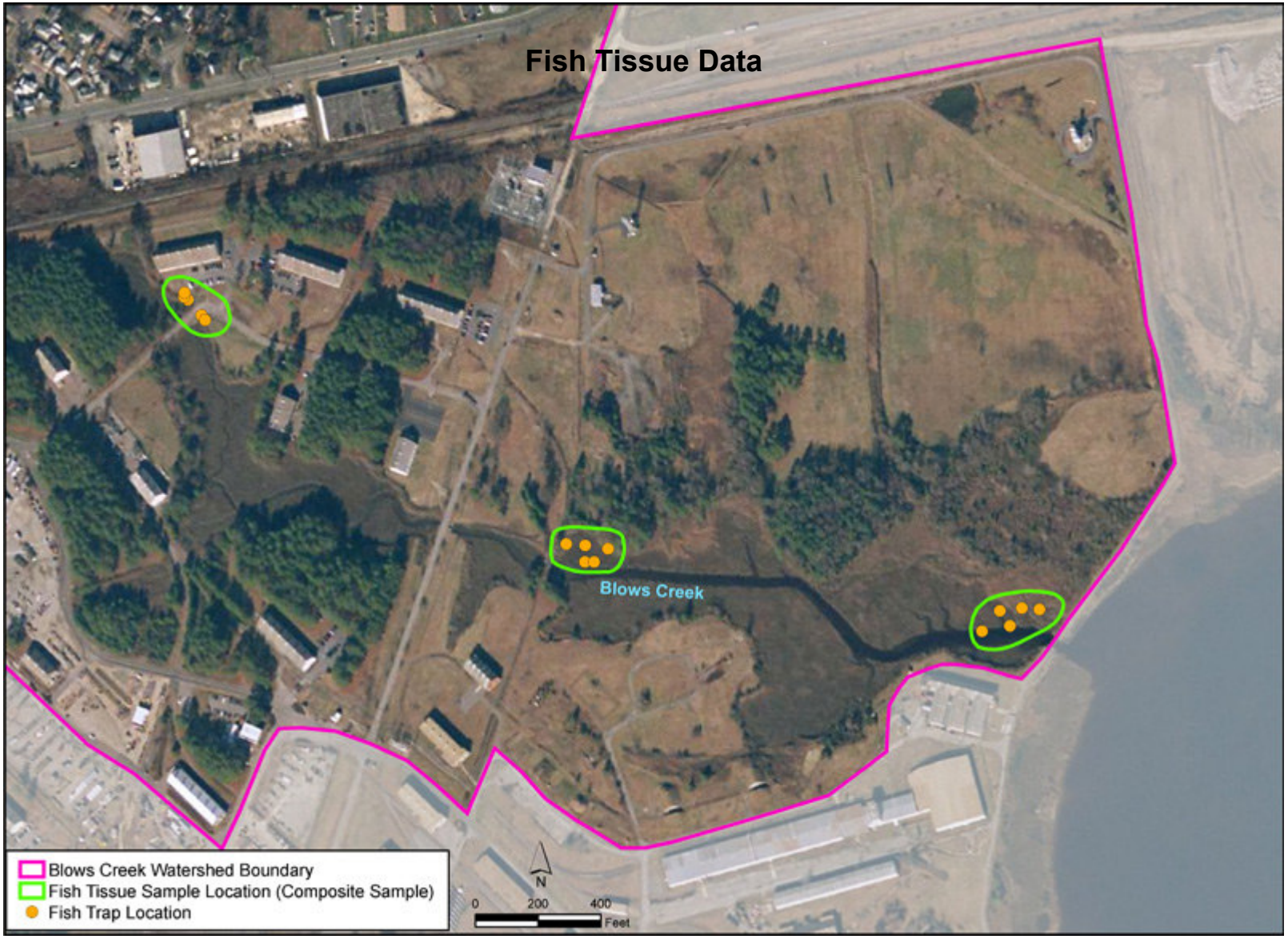

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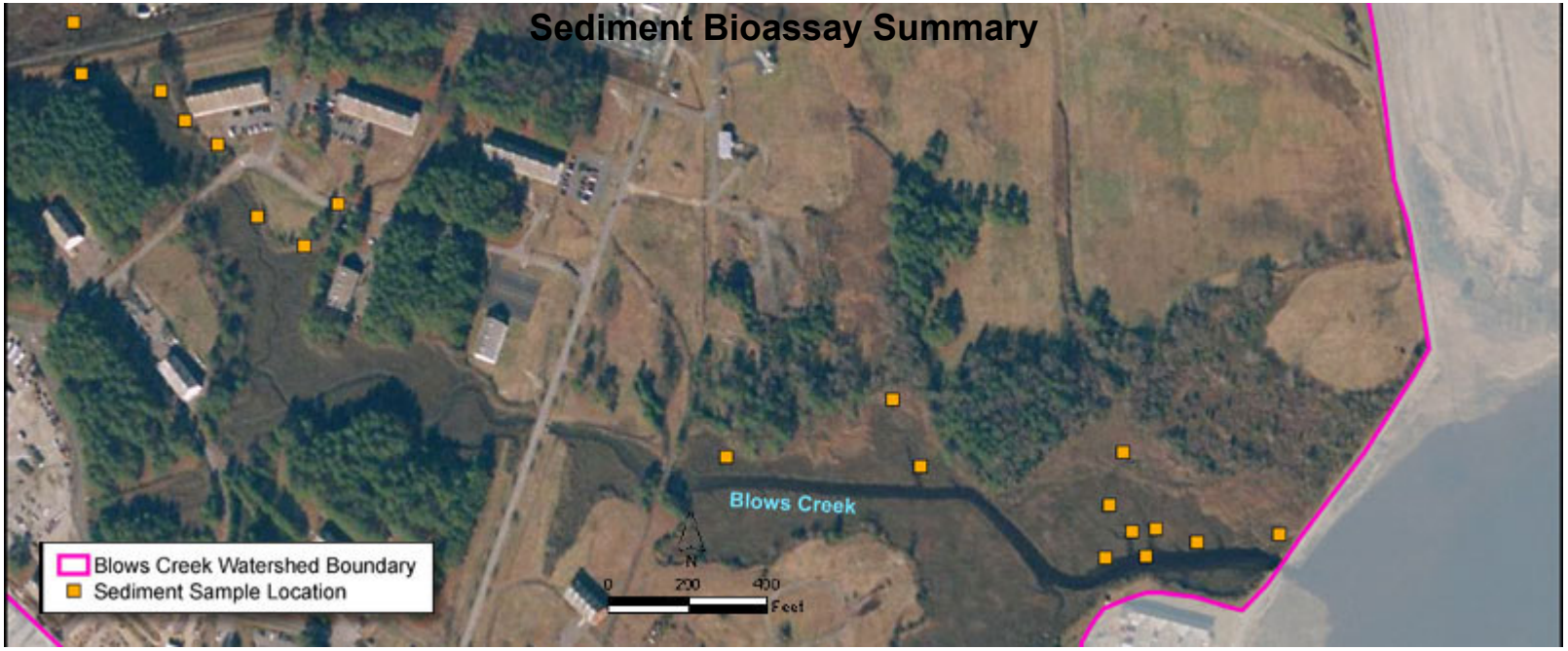
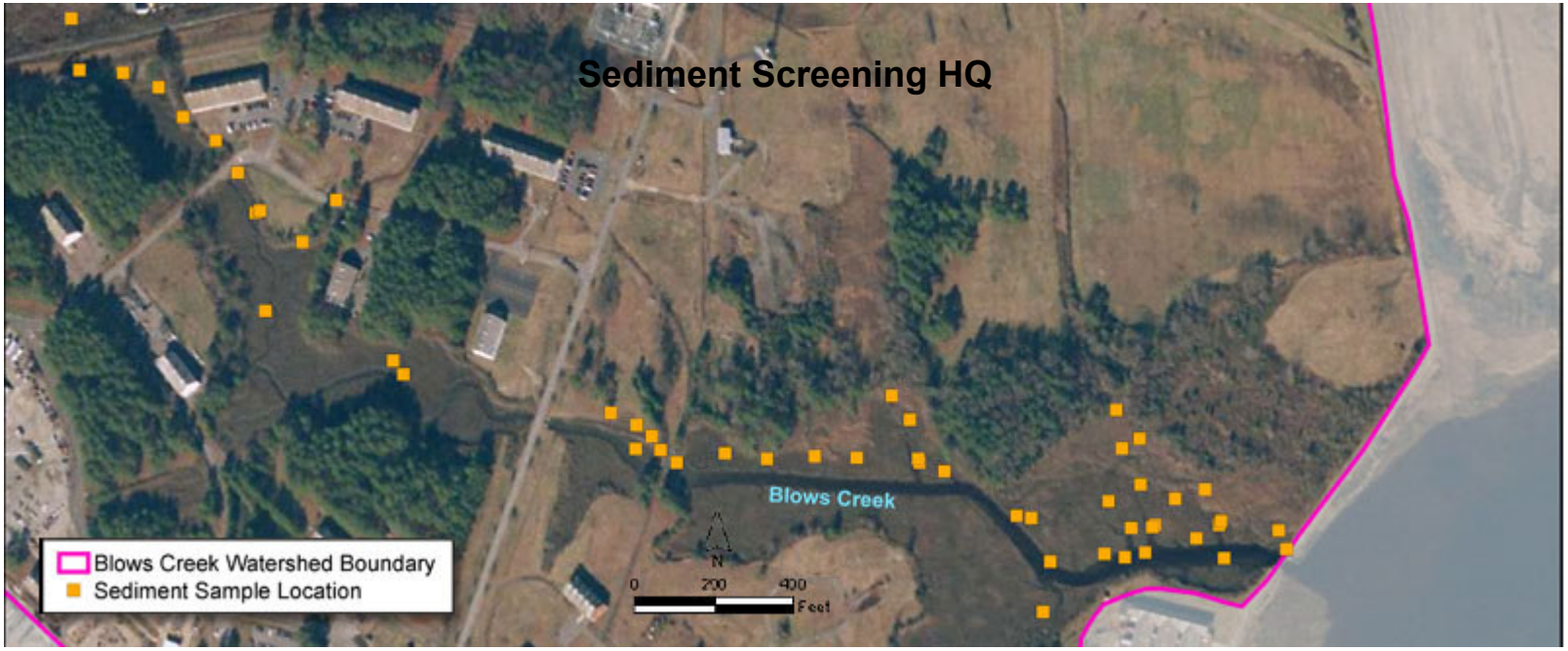


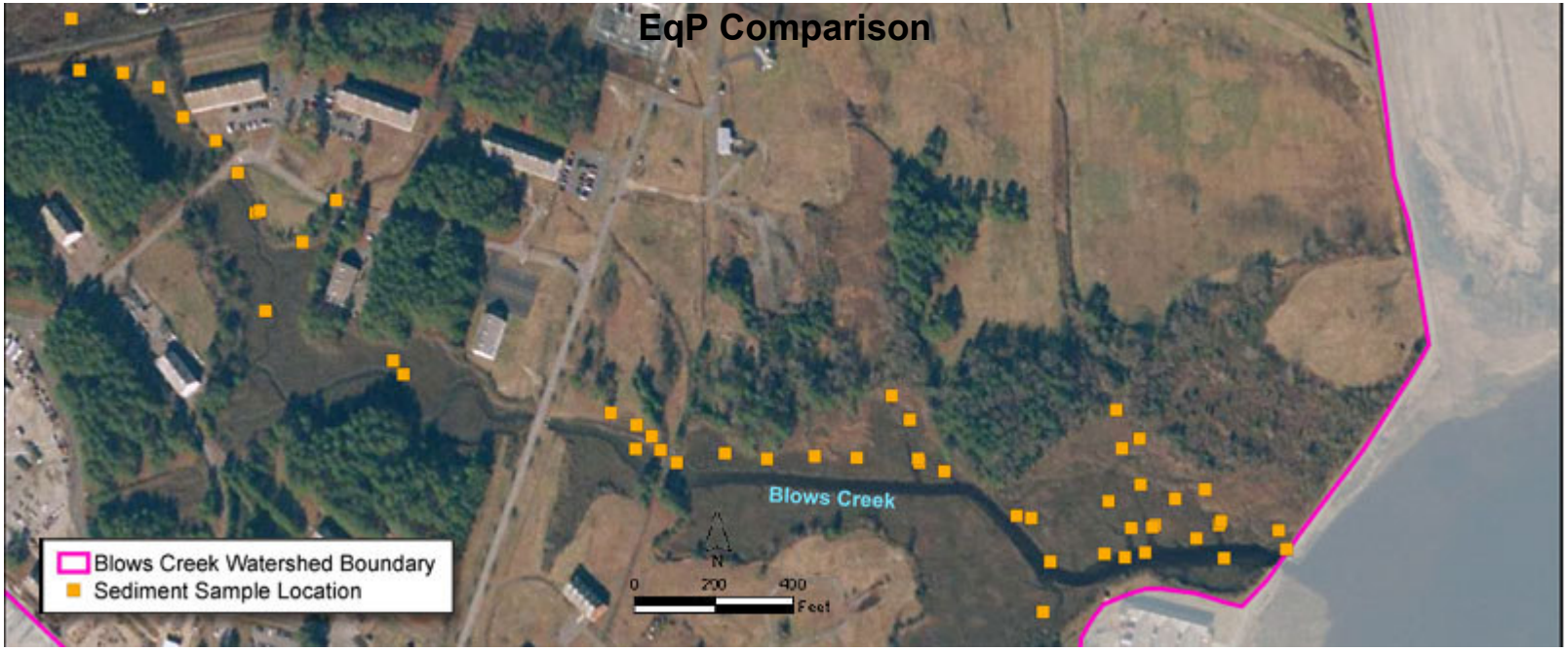
Parameter		Range	Frequency of Significant Effect	
			Comparison to Lab Control	Comparison to Pooled Reference
Mean Survival (%)		4.00 - 96.0	2 / 16	3 / 15
Mean Growth (mg, dry weight)	Male	1.10 - 2.17	0 / 16	8 / 15
	Female	0.260 - 1.14	1 / 16	10 / 15
Mean Reproduction (juveniles/female)		0.200 - 2.85	0 / 16	7 / 15

Use the Interactive CD to access the fully functional figures.



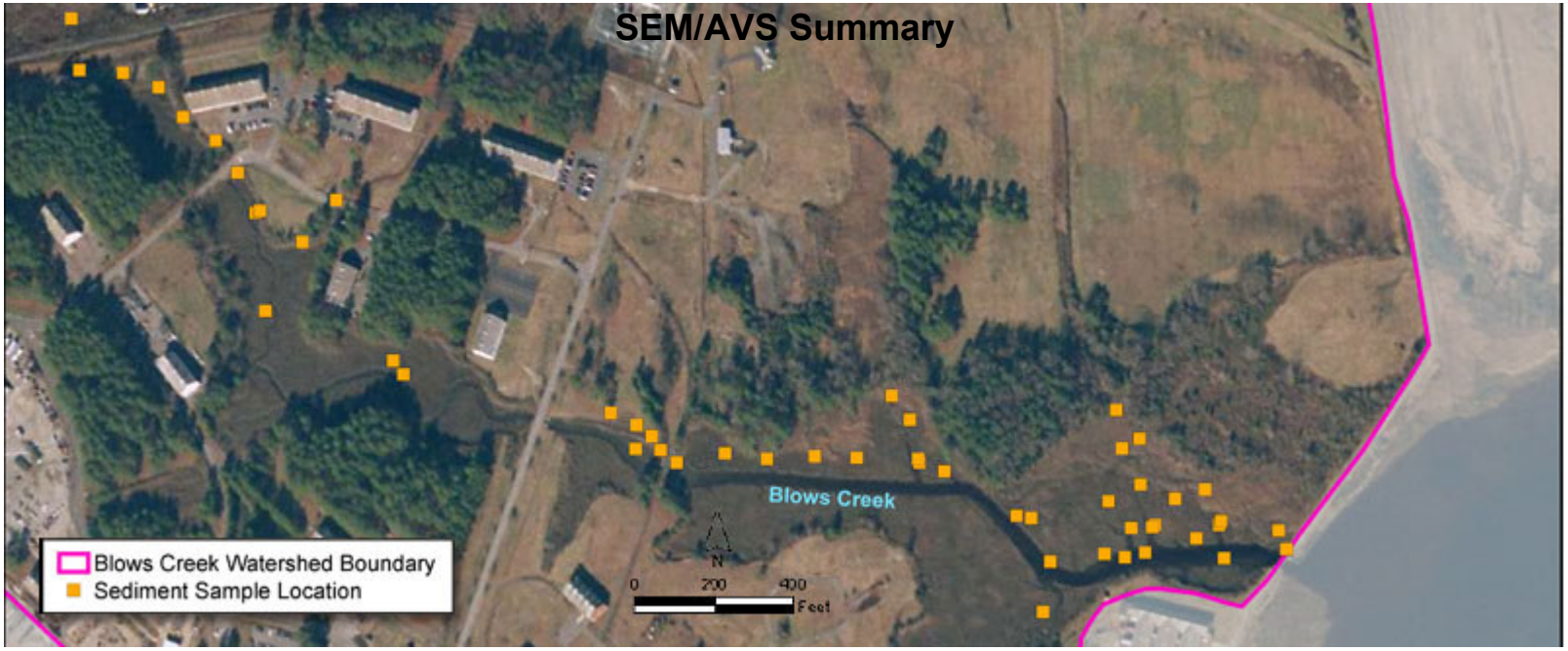
Analyte Name	Range of Detected Concentrations	Screening Value	Frequency of Exceedance	Location of Maximum Exceedance	Range of Hazard Quotients
Inorganics (MG/KG)					
Aluminum	1,090 - 27,400	18,000	11 / 56	SJSBK-SD09-002	0.060 - 1.50
Antimony	0.600 - 2.10	2.00	1 / 55	SJS01-SD02-001	0.300 - 1.10
Arsenic	2.90 - 61.1	8.20	37 / 56	SJBC-SD18-03C	0.350 - 7.50
Barium	18.6 - 927	48.0	15 / 56	SJBC-SD18-03C	0.390 - 19.0
Cadmium	0.210 - 2.30	0.990	18 / 56	SJSBK-SD08-001	0.210 - 2.30
Chromium	7.30 - 49.2	5.00	56 / 56	SJSBK-SD09-002	1.50 - 9.80
Cobalt	2.10 - 32.7	10.0	18 / 56	SJS04-SD05-001	0.210 - 3.30

Use the Interactive CD to access the fully functional figures.



Analyte Name	Range of Detected Concentrations	Range of Screening Values	Frequency of Exceedance	Hazard Quotients
Pesticide/Polychlorinated Biphenyls (UG/KG)				
4,4'-DDD	0.450 - 550	0.186 - 63.5	23.0 - 56.0	0.007 - 155
4,4'-DDE	0.380 - 320	105 - 6,187	0.000 - 56.0	0.000 - 0.740
4,4'-DDT	1.10 - 33.0	0.575 - 26.3	10.0 - 55.0	0.042 - 21.3
Aldrin	100 - 100	236 - 236	0.000 - 44.0	0.423 - 0.423
Aroclor-1260	31.0 - 270	0.173 - 0.202	44.0 - 44.0	179 - 1,337
Dieldrin	0.630 - 0.630	1.81 - 1.81	0.000 - 45.0	0.349 - 0.349
Semivolatile Organic Compounds (UG/KG)				
2-Methylnaphthalene	59.0 - 410	5.42 - 23.0	48.0 - 48.0	26.0 - 27.7
Acenaphthene	49.0 - 2,900	56.4 - 37,123	6.00 - 49.0	0.004 - 1.60
Acenaphthylene	52.0 - 360	48.9 - 2,340	1.00 - 48.0	0.045 - 1.29

Use the Interactive CD to access the fully functional figures.



Range of SEM/AVS Ratios	Frequency of SEM/AVS > 1.0
0.04 - 28.9	10 / 36

Use the Interactive CD to access the fully functional figures.

W. Tayloe Murphy, Jr.
Secretary of Natural
Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

217 Governor Street
Richmond, Virginia 23219-2010
Telephone (804) 786-7951 FAX (804) 371-2674 TDD (804) 786-2121

November 15, 2005

Laura Haught
CH2M Hill
2127 University Park Drive, Suite 360
Okemos, MI 48864

Re: Ecological Risk Assessment, St. Juliens Creek Annex Chesapeake, VA

Dear Ms. Haught:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the following natural heritage resources have been documented within a five-mile radius of the Blows Creek watershed as per your request:

Flora
Bay-gail holly (*Ilex coriacea*, G5/S2/NL/NL)
The pretty dodder (*Cuscuta indecora*, G5/S2?/NL/NL).
Elliott's aster (Symphyotrichum elliottii, G3G4/S1/NL/NL)
Lax hornpod (*Mitreola petiolata*, G5/S1/NL/NL)
Elliott goldenrod (*Solidago latissimifolia*, also known as *Solidago elliottii*, G5/S2/NL/NL)
Spreading pogonia (*Cleistes divaricata*, G4/S1/NL/NL)

Fauna
The Peregrine Falcon (*Falco peregrinus*, G3/S1/NL/LT)
The Great Egret (*Ardea alba*, G5/S2B,S4N/NL/SC)
The Dismal Swamp Southeastern shrews (*Sorex longirostris fisheri*, G5T4/S2/NL/LT)

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the

area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

Due to an increasing number of requests and limited staffing resources, effective July 1, 2003 DCR-DNH will require 30 days to comment on projects submitted for our review.

A fee of $120.00 has been assessed for the service of providing this information. Please find enclosed an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, Department of Conservation and Recreation, 203 Governor Street, Suite 414, Richmond, VA 23219, ATTN: Cashier. Payment is due within thirty days of the invoice date.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://www.dgif.virginia.gov/wildlife/info_map/index.html , or contact Shirl Dressler at (804) 367-6913.

Should you have any questions or concerns, feel free to contact René Hypes at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

S. René Hypes
Project Review Coordinator

COMMONWEALTH OF VIRGINIA
Department of Conservation and Recreation
203 Governor Street, Suite 414
Richmond, VA 23219

Fed I.D. # 54-6004497
DUNS # 809-74-4444

Make checks payable to the
TREASURER OF VIRGINIA
and mail to the address shown

Payment is due 30 days
after receipt or invoice.

INVOICE

Laura Haught
CH2M Hill
2127 University Park Drive, Suite 360
Okemos, MI 48864

Invoice: H-5373

Date: November 15, 2005

Please detach and return remittance copy with payment to ensure proper credit to your account.

Taxpayer I.D.# 59-0918189

Contact: René Hypes
Division of Natural Heritage
(804) 371-2671 FAX# (804) 371-2674 TDD (804) 786-2121

DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL AMOUNT
Impact Review	1	EA	60.00	60.00
Element Occurrences	9	6+	60.00	60.00
Site Reference				
Ecological Risk Assessment, St. Juliens Creek Annex Chesapeake, VA				

Credit Information: 199 02 00 05 50317 02199 71753 638

Amount Due: $120.00

The Department of Conservation and Recreation may charge interest on all past due accounts receivable in accordance with guidelines promulgated by the Department of accounts and at the underpayment rate prescribed in Section 58.1-15 of the Code of Virginia. Each past due account receivable may also be charge an additional mount which shall approximate the administrative cost incurred in collecting the past due amount. The Department may also assess late payment penalty fees as appropriate.

1 – Recipient Copy 2 – Remittance Copy 3 – Accounting Copy

OCT 24 2005

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, VA 23061

Date: October 18, 2005

Project name: ECOLOGICAL RISK ASSESSMENT - ST. JULIENS CREEK

Project number: SEC 7 - 9359 City/County, VA CHESAPEAKE

The U.S. Fish and Wildlife Service (Service) has reviewed your request for information on federally listed or proposed endangered or threatened species and designated critical habitat for the above referenced project. The following comments are provided under provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

_____ We have reviewed the information you have provided and believe that the proposed action will not adversely affect federally listed species or federally designated critical habitat because no federally listed species are known to occur in the project area. Should project plans change or if additional information on listed and proposed species becomes available, this determination may be reconsidered.

✓ We recommend that you contact **both** of the following State agencies for site specific information on listed species in Virginia. Each agency maintains a different database and has differing expertise and/or regulatory responsibility:

Virginia Dept. of Game & Inland Fisheries
Environmental Services Section
P.O. Box 11104
Richmond, VA 23230
(804) 367-1000

Virginia Dept. of Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 2nd Floor
Richmond, VA 23219
(804) 786-7951

If either agency indicates a federally listed species **is present**, please resubmit your project description with letters from both agencies attached.

_____ If **appropriate habitat may be present**, we recommend surveys within appropriate habitat by a qualified surveyor. Enclosed are county lists with fact sheets that contain information the species' habitat requirements and lists of qualified surveyors. If this project involves a Federal agency (Federal permit, funding, or land), we encourage the Federal agency to contact this office if appropriate habitat is present and if they determine their proposed action may affect federally listed species or critical habitat.

_____ Determinations of the presence of waters of the United States, including wetlands, and the need for permits are made by the U.S. Army Corps of Engineers. They may be contacted at: Regulatory Branch, U.S. Army Corps of Engineers, Norfolk District, 803 Front Street, Norfolk, Virginia 23510, telephone (757) 441-7652.

Our website http://virginiafieldoffice.fws.gov contains many resources that may assist with project reviews. Point of contact is MIKE DRUMMOND at (804) 693-6694, ext. 114.

Sincerely,

Karen L. Mayne

Karen L. Mayne
Supervisor
Virginia Field Office

COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

William L. Woodfin, Jr.
Director

December 19, 2005

Laura Haught
Environmental Scientist
CH2M Hill
2127 University Park Drive
Suite 360
Okemos, Michigan 48864

RE: ESSLOG #21346, St. Juliens Creek Annex, Blows Creek Watershed, Chesapeake, VA.

Dear Ms. Haught:

This letter is in response to your request for information related to the presence of threatened or endangered species in the vicinity of the above referenced project.

1. Standard 2-mile radius area from approximate center of Blows Creek watershed: Blows Creek is a tributary to a portion of the Elizabeth River (Southern Branch) that is designated a Confirmed Anadromous Fish Use Area. This designation is due to documented occurrences of the semi-anadromous yellow perch. Therefore, the applicant should coordinate with the VDGIF Environmental Services Section (804-367-6913) concerning potential impacts to this resource.

Additionally, a block survey of an area encompassing the eastern portion of the watershed documented the following *state special concern* species during the breeding season: Forster's tern (*Sterna forsteri*) and great egret (*Ardea alba*). However, the classification of *state special concern* is not a legal designation and does not require further coordination. Also, please note that this watershed is within 2 miles of the following U.S. Department of the Navy properties: Norfolk Naval Shipyard and the U.S. Ammunition Depot.

2. 5-mile radius area from approximate center of Blows Creek watershed: The *state threatened* peregrine falcon (*Falco peregrinus*) has been documented near the mouths of the Western Branch and the Eastern Branch. As well, documented waterbird colonies occur near the mouth of the Western Branch containing the following *state special concern* species: great egret (*Ardea alba*) and yellow-crowned night-heron (*Nyctanassa violacea*). Therefore, the applicant should coordinate with the VDGIF Environmental Services Section (804-367-6913) and with the U.S. Fish and Wildlife Service concerning potential impacts to these species and resources. Contact information for the U.S. Fish and Wildlife Service is as follows: Eric Davis, 6669 Short Lane; Gloucester, VA 23061, (804) 693-6694 ext. 104 (phone), and (804) 693-9032 (fax).

Additionally, the *federal species of concern* northern diamond-backed terrapin (*Malaclemys terrapin terrapin*) has been documented in the Elizabeth River in Norfolk, and the *state special concern* great egret (*Ardea alba*) has been documented north of the lower Western Branch. As well, a survey along a route that passes through the southern portion of the 5-mile radius area documented the following *state special concern* species during the breeding season:

Swainson's warbler (*Limnothlypis swainsonii*),
dickcissel (*Spiza americana*), and
yellow-crowned night-heron (*Nyctanassa violacea*).

However, the classifications of *federal species of concern* and *state special concern* are not legal designations and do not require further coordination. Also, please note that this area includes or is within 2 miles of the following properties:

U.S. Department of the Army property:
- Fort Norfolk,

U.S. Department of the Navy property:
- Portsmouth Naval Medical Center,
- Norfolk Naval Shipyard,
- U.S. Ammunition Depot,

U.S. Fish and Wildlife Service property:
- Great Dismal Swamp National Wildlife Refuge.

Information about fish and wildlife species was generated from our agency's computerized Fish and Wildlife Information System, which describes animals that are known or may occur in a particular geographic area. Field surveys may be necessary to determine the presence or absence of some of these species on or near the proposed area. Also, additional sensitive animal species may be present, but their presence has not been documented in our information system.

Endangered plants and insects are under the jurisdiction of the Virginia Department of Agriculture and Consumer Services, Bureau of Plant Protection. Questions concerning sensitive plant and insect species occurring at the project site should be directed to Keith Tignor at (804) 786-3515.

The Virginia Department of Conservation and Recreation, Natural Heritage Program, maintains a database of natural heritage resources, including the habitat of rare, threatened, or endangered plant and animal species, unique exemplary natural communities, and significant geologic formations, that may contain information not documented in this letter. Their database may be accessed from http://www.dcr.state.va.us/dnh/nhrinfo.htm, or by contacting S. Rene Hypes at (804) 371-2708.

There is a processing charge of $50.00 for our response. Please remit a check, made payable to **TREASURER OF VIRGINIA**, within 30 days. To insure proper credit to your account, please address your payment envelope directly to MaryBeth Murr at the address listed in the letterhead.

This letter summarizes the likelihood of the occurrence of endangered or threatened animal species at the project site. If you have additional questions in this regard, please contact me at (804) 367-1185.

Please note that this response does not constitute consultation or management recommendations regarding endangered or threatened wildlife, or any other environmental concerns. These issues are analyzed by our Environmental Services Section, in conjunction with interagency review of applications for state and federal permits. If you have any questions in this regard, please contact the Environmental Services Section at (804) 367-6913.

Please note that the data used to develop this response are continually updated. Therefore, if significant changes are made to your project or if the project has not begun within 6 months of receiving this letter, then the applicant should request a new review of our data.

The Fish and Wildlife Information Service, the system of databases used to provide the information in this letter, can now be accessed via the Internet! The Service currently provides access to current and comprehensive information about all of Virginia's fish and wildlife resources, including those listed as threatened, endangered, or special concern; colonial birds; waterfowl; trout streams; and all wildlife. Users can choose a geographic location and generate a report of species known or likely to occur around that point. From our main web page, at www.dgif.virginia.gov, choose the hyperlink near the top of the page titled "Virginia Fish and Wildlife Information Service". For more information about the service, please contact Shirl Dressler at (804) 367-6913.

Thank you for your interest in the wildlife resources of Virginia.

Sincerely,

Susan H. Watson
Research Specialist Senior

cc: R.T. Fernald, VDGIF
E. Davis, USFWS
R. Hypes, VDCR-NH

Virginia Department of Game and Inland Fisheries
Wildlife Diversity Division
Environmental Response Invoice

Date of Response:	December 19, 2005	
EssLog Number:	21346	
Project Name:	St. Juliens Creek Annex, Blows Creek Watershed, Chesapeake, VA	
Name of Respondent:	Susan H. Watson	
Name of Recipient:	Laura Haught	
Company Affiliation:	CH2M Hill	
Company Address:	2127 University Park Drive, Suite 360, Okemos, Michigan 48864	
Recipient Phone #:	517-347-3404	
	Total Hourly Charges:	$ 50.00
	Total Map Charges:	$ -
	Diskettes and Copying Charges:	$ -
	Total Other Charges:	$ -
	Total Due:	$ 50.00

Please make checks payable to the **Treasurer of Virginia**.

Payment should be returned to:

Mary Beth Murr
Virginia Department of Game and Inland Fisheries
Wildlife Diversity Division
4010 West Broad Street
Richmond, VA 23230-1104

Questions concerning payment should be directed to the respondent above in the Fish and Wildlife Information Section at (804) 367-6913

Please include a copy of this invoice with payment to ensure proper crediting of your account.