

## **APPENDIX A - WATER QUALITY AND SEDIMENT QUALITY SAMPLING**

### **A.1 PUBLISHED GROUNDWATER DATA**

Groundwater data from U.S. Geological Survey (USGS) monitoring well stations in the vicinity of the proposed DMCF at Masonville are located in Attachment A-1. Data is available for the following applicable USGS monitoring wells:

- USGS 391410076354101 5S2E- 1
- USGS 391436076361301 4S1E-1
- USGS 391456076345601 4S2E- 2

In addition, the U.S. Environmental Protection Agency (USEPA) publishes and characterizes a list of water systems in the Safe Drinking Water Information System (SDWIS). The applicable water systems (included in Attachment A-1) in the vicinity of the proposed DMCF at Masonville include:

- Community Water Systems: Water Systems that serve the same people year-round (e.g., in homes or businesses).
- Non-Transient Non-Community Water Systems: Water Systems that serve the same people, but not year-round (e.g., schools that have their own water system).
- Transient Non-Community Water Systems: Water Systems that do not consistently serve the same people (e.g., rest stops, campgrounds, gas stations).

### **A.2 WATER QUALITY**

Temperature, dissolved oxygen (DO), salinity, and pH were measured at Masonville locations in conjunction with sediment investigations and benthic and fisheries surveys conducted during the years 2003 through 2005 during the seasons spring, summer, and fall. The seasonal *in-situ* water quality data are located in Table A-1. The water quality sampling results measured at the Masonville sampling locations between 2003 and 2005 were compared and consistent with concentrations measured at the Chesapeake Bay Program (CBP) monitoring location WT5.1, located approximately 4.5 miles from the proposed Masonville Dredged Material Containment Facility (DMCF) site in the Patapsco River. Seasonal water quality results collected by the CBP at monitoring location WT5.1 are located in Table A-2. The location of the monitoring station WT5.1 is shown in Figure A-1.

The Comprehensive Harbor Assessment and Regional Modeling Study (CHARMS) is a multi-year effort to develop a water quality model for the Harbor that would predict potential water column toxics based upon sediment concentrations. In order to calibrate the model, surficial water quality sampling within the Baltimore Harbor was required. Two of the sampling sites (Stations 22 and 19) are located within approximately 1 mile of Masonville (Figure A-1). The data collected at these sites provides seasonal background levels of metals, PAHs, PCBs, and chlordane for the area. The chemistry data from Stations 19 and 22 are located in Table A-3.

### **A.3 SITE WATER AND ELUTRIATE TESTING**

The Standard Elutriate Test (SET) was used to predict the release of contaminants to the water column resulting from open water placement of dredged material at the Dredged Material Containment Facility (DMCF) at Masonville and at the proposed borrow area at Masonville.

Site water and elutriate preparation water was collected on two separate dates. Water collected on 21 November, 2005, was used to prepare elutriate tests for surface sediment at 5 locations in the vicinity of the proposed DMCF at Masonville. Approximately 27 gallons of water were collected for 5 elutriate tests and 1 site water sample. Water collected on 23 January, 2006, was used to prepare elutriate tests for borrow material at 7 locations. Approximately 40 gallons of water were collected on this date for 7 elutriate tests and 1 site water sample.

#### **A.3.1 ELUTRIATE SAMPLING METHODS**

The SET was performed following the procedures in the *ITM* (USEPA/USACE 1998) and requires both sediment and site water collections. For the SET, the laboratory creates the elutriate based on a sediment-to-water ratio of 1:4, on a volume basis. The sediment and site water volume requirements needed for the SET was dependent on the number and type of analytical tests to be performed on the elutriate.

A sediment/water mixture was thoroughly mixed for 30 minutes. The mixture was then allowed to settle, and the supernatant was siphoned off, filtered to remove particulates, and then analyzed for the dissolved chemical constituents specified in the Analytical Quality Assurance Project Plan (QAPP) (STL-Pittsburgh 2004). The reported results from the SET included a “dissolved” value for each of the target parameters to be determined.

Elutriate samples that were created and tested for the Masonville project are summarized in the table below. Standard elutriates were created for the Masonville locations using site water from location EB/ELU SW and sediment from five sediment core sampling locations (Figure A-2). The SET was completed for sample locations collected in November 2005 in the vicinity of the proposed DMCF at Masonville: EB/ELU-01A, EB/ELU-05A, EB/ELU-06, EB/ELU-08, and EB/ELU-09 (see table below). The SET was also completed for sample locations collected in January 2006 in the vicinity of the proposed borrow area at Masonville (Figure A-3) (see table below):

**Summary of Masonville Standard Elutriate Samples Submitted For Analytical Testing in the Vicinity of the proposed DMCF:**

Sediment Sample ID	Elutriate Preparation Water ID	Elutriate ID
MSNBOR05-01A	+ EB/ELU-SW	= EB/ELU-01A
MSNBOR05-05A	+ EB/ELU-SW	= EB/ELU-05A
MSNBOR05-06	+ EB/ELU-SW	= EB/ELU-06
MSNBOR05-08	+ EB/ELU-SW	= EB/ELU-08
MSNBOR05-09	+ EB/ELU-SW	= EB/ELU-09

Summary of Masonville Standard Elutriate Samples Submitted For Analytical Testing in the Proposed Borrow Area:

Sediment Sample ID	Elutriate Preparation Water ID	Elutriate ID
EB-01	+ EB/ELU-SW	= EB-1-ELUT
EB -09	+ EB/ELU-SW	= EB-2-ELUT
EB -10	+ EB/ELU-SW	= EB-3-ELUT
EB -11	+ EB/ELU-SW	= EB-4-ELUT
EB -12	+ EB/ELU-SW	= EB-5-ELUT
EB -13	+ EB/ELU-SW	= EB-6-ELUT
EB -14	+ EB/ELU-SW	= EB-7-ELUT

Standard elutriates were created for the Masonville locations using site water from location EB/ELU-SW and sediment from the five stations discussed above. Site water representative of conditions in the Patapsco River was collected from one location for the SET analysis. Approximately 5 gallons of site water was collected from location EB/ELU-SW in the Patapsco River. Site water was collected for chemical analyses and the preparation of composite elutriates was conducted at EA. Water samples targeted for chemical analysis (site water and equipment blanks) were shipped to STL-Pittsburgh analytical laboratory. Upon receipt at the analytical laboratory, the samples were checked against the chain-of-custody (COC), logged, and given a unique accession number. Samples were stored in walk-in refrigeration units (cooled to 4°C) following receipt and prior to analysis. The holding time for the site water samples and equipment blanks was initiated at the time of sample collection. Copies of COC forms for the site water, equipment blanks, and elutriate sample are provided in Attachment B of this Appendix. The elutriate preparation water was transported with the sediment cores from the site EA's Ecotoxicology Laboratory facility in Sparks, Maryland via coolers iced to 4°C. The holding time for the elutriates was initiated at the completion of the elutriate preparation process.

### **A.3.2 ANALYTICAL METHODS AND DETECTION LIMITS**

Site water, equipment blanks, and elutriates were analyzed for target analytes. Project-specific analytical methods and detection limits for aqueous samples are provided in Table A-4.

#### ***Comparison to USEPA and State of Maryland Water Quality Criteria***

Analytes detected in the total and dissolved water samples were compared to USEPA and State of Maryland saltwater acute and chronic water quality criteria for aquatic life. Criteria were derived from USEPA's *National Recommended Water Quality Criteria* (2004) and the Code of Maryland Regulations (COMAR 26.08.02.03-2). The State of Maryland's saltwater acute and chronic water quality criteria for aquatic life are the same as the USEPA's, with the exception of copper, nickel, and selenium. State of Maryland water quality criteria exceedances are not explicitly identified in the following sections because, in general, concentrations of constituents that exceeded USEPA criteria also exceeded State of Maryland criteria. Specific exceedances of the State of Maryland water quality criteria for copper, nickel, and selenium are identified, where applicable, in the text below.

For copper only, the State of Maryland has developed *estuarine* water quality criteria (acute only) for copper, which is applicable in this study based on the salinities measured in the field. Detected concentrations of copper were compared to both the USEPA saltwater acute and chronic criteria and the State of Maryland's estuarine chronic water quality criterion in this study.

The USEPA's acute criterion is based on 1-hour average exposure concentrations, and the USEPA's chronic criterion is based on 4-hour average exposure concentrations.

The USEPA and State of Maryland acute and chronic saltwater quality criteria for metals were developed for *dissolved* metal concentrations, and are compared to total metals concentrations in this study as a conservative evaluation of the analytical results.

#### ***Calculations of Total PCBs, Total PAHs, and Dioxin TEQs***

For each individual water sample, total PCB concentrations were determined by summing the concentrations of the 18 summation congeners (as specified in Table 9-3 of the ITM) and multiplying the total by a factor of 2. Multiplying by a factor of 2 estimated the total PCB concentration and accounted for additional congeners that were not tested as part of this program. These determinations were based upon testing of specific congeners recommended in the ITM and upon the NOAA (1993) approach for total PCB determinations.

Total PAH concentrations were determined for each sample by summing the concentrations of the individual PAHs. For both the total PCB and total PAH concentrations, 2 values are reported, each representing the following methods for treating concentrations below the analytical detection limit:

- Non-detects = 0 (ND = 0)
- Non-detects = 1/2 of the detection limit (ND = 1/2MDL)

Substituting one-half the detection limit for all non-detects ( $ND = 1/2MDL$ ) provides a conservative estimate of the non-detected concentration. This method, however, tends to produce results that are biased high, especially in data sets where the majority of samples are non-detects. This overestimation is important to consider when comparing calculated total values to criterion.

The Toxicity Equivalency Quotients (TEQs) for dioxin and furan congeners were calculated following the approach in USEPA 1989. Each congener was multiplied by a World Health Organization (WHO) recommended Toxicity Equivalency Factor (TEF) for human health (Van den Berg et al. 1998) and then the congener concentrations were summed. Concentrations that were flagged with a “B” (detected in blank) or “EMPC” (estimated maximum possible concentration) were not included in the TEQ calculation as per the USEPA Region III dioxin validation guidance (USEPA Region III 1999). The dioxin TEQs were calculated using both  $ND=0$  and  $ND=1/2RL$ .

#### ***Calculation of Acute and Chronic Ammonia ( $NH_3-N$ ) Criteria***

The USEPA acute and chronic criteria for determining the toxicity of ammonia ( $NH_3-N$ ) to aquatic life were calculated from mid-depth averages based on the salinity (6.5 ppt), temperature (18.8°C), and pH (6.9) collected during the Fall 2004 fish and benthic surveys (not including the shallow seine site), conducted in October 2004 (from Table A-1).

For site water/elutriate preparation water collected from EB/ELU-SW, the USEPA acute and chronic criteria for determining the toxicity of ammonia to aquatic life were based on average water quality parameters recorded at mid-depth during the Fall 2004 fish and benthic surveys conducted in October 2004 – a salinity of 6.5 ppt, a temperature of 18.8°C, and a pH of 6.9 was used. The calculated acute ammonia criterion for site water/elutriate preparation water collected from EB/ELU-SW was 69.3 mg/L, and the calculated chronic criterion was 10.4 mg/L.

### **A.3.3 RESULTS OF SITE WATER AND ELUTRIATE TESTING**

#### **A.3.3.1 Surface Elutriate and Site Water Results**

Results of the site water and standard elutriate chemical analyses for samples collected in the vicinity of the proposed DMCF at Masonville in November 2005 are presented in Tables A-5 through B-14. Concentrations of detected constituents in the site water and standard elutriates were compared to the USEPA acute and chronic criteria for aquatic life to determine if exceedences would occur and are also presented in Tables A-5 through A-14.

#### **A.3.3.2 Borrow Material Elutriates and Site Water Results**

Results of the site water and standard elutriates for borrow material sediment collected from 7 locations within the proposed alignment at Masonville are presented in Tables A-15 through A-24. Elutriate preparation water for seven elutriate tests and one site water sample was collected on 23 January, 2006. Values for detected chemical constituents are shaded and bolded in the data tables. Detection limits are presented for non-detected chemical constituents.

Concentrations of detected constituents in the site water and standard elutriates were compared to the USEPA acute and chronic criteria for aquatic life to determine if exceedances would occur and are also presented in Tables A-15 through A-24.

#### **A.4 NUTRIENT SAMPLING**

Surface water samples for nutrient analysis were collected from four locations in the footprint of the Masonville project area as discussed in Chapter 2 of this report. Samples were collected and analyzed according to established Chesapeake Bay Water Quality Monitoring Protocols as defined in D'Elia *et al.* (1995) and CBP (1993) and compared to results collected from the CBP Patapsco River monitoring location (WT5.1). The seasonal nutrient analysis results collected by the CBP at monitoring location WT5.1 are located in Table A-25. The location of the monitoring station WT5.1 is shown in Figure A-1.

#### **A.5 SEDIMENT SAMPLING**

Sediment quality sampling consisted of physical and chemical characterization of the bulk sediment from locations near the proposed Masonville site (Figure A-4). Within and in the vicinity of the proposed alignment, surface sediment sampling was conducted during four separate field efforts – June 2003 (four locations), February 2004 (five locations), July 2004 (four locations), and June 2005 (five locations). Sediment borings from five locations were also collected during the June 2005 sampling, and the sediment chemistry of the borings at depth was characterized (Figure A-3). Methods for the surface sediment sampling within the vicinity of the proposed DMCF at Masonville are discussed below in Sections A.5.1 and A.5.2.

For the proposed borrow area, sediment sampling consisted of collecting samples of borrow material below unsuitable sediments at 7 locations (including two previously sampled) in January 2006. Methods for the borrow material are discussed below in Section A.5.3.

##### **A.5.1 SURFACE SEDIMENT SAMPLING METHODS**

The surface sediment samples were collected using an EA Engineering, Science, and Technology, Inc. (EA) 26-ft aluminum workboat equipped with a hydraulic winch. A large Van Veen grab sampler was used to obtain sediment at each location. The Van Veen sampler was decontaminated between sampling locations in order to prevent cross-contamination. After the boat was positioned on sampling location and anchored, the Van Veen was lowered to the bottom, triggered, and brought back on board. One sediment grab was collected at each location. Sub-samples of sediment were placed into appropriate sample jars and stored in a cooled (4°C) insulated container until submitted to the laboratory for analyses. Sediment samples were shipped by Federal Express to the analytical laboratory at the end of each workday. The COC forms for surface sediment sampling are included in Appendix A.

##### **A.5.2 SEDIMENT CORE COLLECTION METHODS**

Coring operations were conducted from a 100-ft spud barge positioned with a tugboat provided by Smith Shipyard, Inc. of Baltimore, Maryland. Findling, Inc., provided a drill rig placed on

the barge to facilitate collection of the core samples with a CME continuous sampler. Sampling equipment that came into direct contact with the sediment was decontaminated prior to sampling. The CME sampler was lined with 2-2.5 ft cellulose acetate butyrate (CAB) core liners and fitted with a stainless steel catcher at the bottom. Prior to deploying the CME, 4-ft sections of auger were drilled into the sediment by Findling crew. Once the augers were set to the desired sampling depths, the CME was lowered inside the augers, retrieved, and brought onto deck. The CME was then opened, the core liners were extracted, and the liners were capped and sealed at both ends. The liners were labeled with location ID, depth interval, and corresponding sediment chemistry ID. Boring logs from each location are located at the end of this section.

Five locations were initially sampled at the site (Figure A-4). Two locations, MSNBOR05-01 and MSNBOR05-05, were re-positioned and re-sampled due to inadequate recovery of sand. A geologist provided by Findling produced boring logs for each location. The boring logs for the sediment core collection effort are included in Attachment C of this Appendix.

Cores collected during each workday were stored in cooled, insulated containers onboard the barge or sampling platform. Cores were transferred to a refrigeration unit (cooled to 4°C) at EA in Sparks, Maryland at the end of each workday.

Holding times for the surface sediment samples began when the sediment was collected and placed in the appropriate sample containers. Holding times for the sediment samples began when the sediment was removed from the core liner, composited, homogenized, and placed in the appropriate sample containers. A total of approximately 1 gallon per location was required for each of the sampling composites for sediment chemistry and physical analyses. Sample containers, preservation techniques, and holding requirements for chemical analyses are provided in Table A-26. Equipment that came into direct contact with sediment during sampling was decontaminated prior to deployment in the field and between each channel reach to minimize cross-contamination. The COC forms for the collected sediment cores are included in Appendix A of this Appendix.

### **A.5.3 BORROW MATERIAL SAMPLING METHODS**

In order to further quantify the level of constituents in “suitable” material drilling was completed at seven locations within the proposed dike alignment. Sampling was initiated on 30 November, 2005, and was completed on 24 January, 2006. Sediment and water samples were submitted to STL-Pittsburgh on 27 January, 2006.

Sampling of the borrow material was completed to define the constituent concentrations (ITM suite) of the top 10 feet of the borrow material. Samples were obtained of the top 2.5 feet; second 2.5 feet and bottom 5 feet of the initial 10 feet borrow material. Seven locations were sampled with a 3-inch continuous sampler provided by E2CR. Two locations that were previously sampled by EA in June 2005 (locations EB-01 and EB-09) were re-sampled due to exceedances of some analytes. Samples were obtained in the top 10-feet of the sand layers. Two 2.5-ft intervals and one 5-ft interval were sub-sampled at each location and submitted for analyses. A total of 22 borrow material sediment samples were submitted.

Borrow material characterization sampling was completed using a 3-inch split-spoon sampler (SPT) provided by E2CR. Drilling activities were completed aboard an 80-foot spud barge provided by Smith Brothers boat yard of Baltimore, Maryland. Smith Brothers also provided various tug boats to move the barge and position it at the 7 sampling locations.

Locations for sampling were chosen by personnel at EA and GBA. Prior to placing the barge/drilling rig on the sampling location a marker buoy was placed at the site by EA personnel from EA's work boat. Sampling locations were determined in the field using a Trimble ProXR DGPS. The ProXR uses the United States Coast Guard Differential Beacon System to augment the GPS satellite data and obtain differential accuracy of 1-3 meters.

Sediment samples were obtained by loading the SPT with 2.375 inch inner-diameter Cellulose Acetate Butyrate (CAB) plastic liner (to retain sediment samples for processing at a later date). Four-inch inner diameter augers were drilled into the sediment by E2CR personnel to the desired sample depths. The SPT was lowered to the bottom of the augers and brought back onto deck. The CAB liner was removed, capped, taped, and labeled with station ID, date, time, and length of sample recovery. Actual drilling location coordinates were recorded in a field log book. A geologist provided by E2CR produced boring logs for each location. The boring logs for the sediment core collection effort are included in Appendix C.

Cores collected during each workday were stored in cooled, insulated containers onboard the barge or sampling platform. Cores were transferred to a refrigeration unit (cooled to 4°C) at EA in Sparks, Maryland at the end of each workday. Holding times for the borrow material samples began when the sediment was removed from the core liner, composited, homogenized, and placed in the appropriate sample containers. Sample containers, preservation techniques, and holding requirements for chemical analyses are provided in Table A-16. Equipment that came into direct contact with sediment during sampling was decontaminated prior to deployment in the field and between each channel reach to minimize cross-contamination; decontamination procedures were utilized during sampling to avoid cross-contamination. The COC forms for the collected sediment cores are included in Appendix B.

#### **A.5.4 ANALYTICAL METHODS FOR ALL SEDIMENT SAMPLES**

Target analytes, target detection limits, methodologies, elutriate preparation procedures, and sample holding times were derived from the following guidance documents:

- USEPA/USACE, 1998 (EPA-823-B-98-004). *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S.–Testing Manual (Inland Testing Manual–ITM)*.
- USEPA/USACE, 1995 (EPA-823-B-95-001). *QA/QC Guidance for Sampling and Analysis of Sediment, Water, and Tissue for Dredged Material Evaluations*.

All inorganic and organic compounds for these projects were determined using the methods listed in Table A-4 as described in the laboratory's analytical SOPs. To meet program-specific

regulatory requirements for chemicals of concern, all methods/SOPs were followed as stated with some specific requirements noted below:

***Polychlorinated Biphenyl (PCB) Congeners***

PCBs for these projects were analyzed and quantified as individual congeners by SW846 Method 8082. The 26 congeners included all of the “summation” and “highest priority” congeners, plus several of the “secondary priority” congeners, specified in Table 9-3 of the ITM.

Because of matrix interferences common in tissue analysis, the following clean-ups as noted in Table A-4 were employed as necessary: sulfuric acid cleanup, sulfur cleanup using TBA, and GPC.

***Total Organic Carbon (TOC)***

TOC in sediments was determined using the 1988 USEPA Region II combustion oxidation procedure (the Lloyd Kahn procedure).

***Polynuclear Aromatic Hydrocarbons (PAHs)***

To achieve the target detection limits (TDLs) referenced in QA/QC Guidance for Sampling and Analysis of Sediments, Water, and Tissues for Dredged Material Evaluations - Chemical Evaluations (EPA 823-B-95-001, April 1995), the PAHs were determined utilizing SW846 Method 8270C using Selective Ion Monitoring (SIM). For those samples where both semivolatiles by SW846 Method 8270C and PAHs by SW846 Method 8270C SIM are requested, both analyses were performed on the same extract. For those samples, the evaluation of method performance was based on the determined recoveries of surrogates and control analytes (in the LCS and MS/MSDs) from the semivolatiles by 8270C (full scan GC/MS) analyses because the spiked concentrations exceeded calibration range for the PAH by GC/MS SIM analyses.

***Metals***

Metals were determined utilizing Inductively Coupled Plasma (ICP) or Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) according to the methodology specified, with the following exceptions:

- For mercury, samples were analyzed by Cold Vapor Atomic Absorption (CVAA) method [SW846 7471A (sediment)].

***Polychlorinated Dioxins/Furans***

Dioxin and furan congeners for the sediment, site water, and elutriate samples were reported as 17 individual isomers using method EPA 1613. Dioxin and furan congeners for the tissue samples were reported as 17 individual isomers using method SW846 8290. The results were reported based on a sample specific estimated detection limit (EDL), which takes into account matrix interferences and provides the most accurate limit of detection for each sample.

### **Acid Volatile Sulfides (AVS) and Simultaneously Extracted Metals (SEM)**

The AVS and SEM determinations were performed following the procedures specified in the USEPA April 1991 *Draft Analytical Method for the Determination of Acid Volatile Sulfide in Sediment*. The concentrations of five SEMs - cadmium, copper, lead, nickel, and zinc -were determined, and the reported values for both AVS and SEM were in  $\mu$ moles/gram.

Using this method, the five metals (cadmium, copper, lead, nickel, and zinc) were extracted, measured, and added together (including any values that are "B" or "J" qualified). If a metal was not detected (ND), it was considered a zero in the calculation. The sum of the concentrations of these five metals was then compared to the amount of AVS detected in the same sediment sample. The total SEM concentration was divided by the AVS concentration, and the resulting value is the SEM/AVS ratio. If AVS was not detected (ND) in the sample, the SEM/AVS ratio was not calculated.

#### **A.5.5 SEDIMENT DATA ANALYSIS**

##### ***Calculation of the Simultaneously Extracted Metals (SEM) / Acid Volatile Sulfides (AVS) Ratio***

The bioavailability of divalent metals to aquatic organisms is influenced by the ratio of simultaneously extracted metals (SEM) / acid volatile sulfides (AVS). In low oxygenated environments, metals may precipitate with sulfides, making them unavailable for uptake by aquatic organisms. Using this method, five metals (cadmium, copper, lead, nickel, and zinc) were extracted, measured, and added together (including any values that are "B" or "J" qualified). If a metal is not detected (ND), it was considered a zero in the calculation. The sum of the concentrations of these five metals as then compared to the amount of AVS detected in the same sediment sample. If AVS ass not detected (ND) in the sample, the SEM/AVS ratio was not calculated.

##### ***Calculations for Total PCBs, Total PAHs, and Dioxin TEQs***

For each sample, total PCB concentrations were determined by summing the concentrations of the 18 summation congeners (as specified in Table 9-3 of the ITM) and multiplying the total by a factor of two. Multiplying by a factor of two estimated the total PCB concentration and accounted for additional congeners that were not tested as part of this program. These determinations were based upon testing of specific congeners recommended in the ITM and upon the National Oceanic and Atmospheric Administration (NOAA 1993) approach for total PCB determinations.

Total PAH concentrations were determined for each sample by summing the concentrations of the individual PAHs. For both the total PCB and total PAH concentrations, two values were reported, each representing the following methods for treating concentrations below the analytical detection limit:

- Non-detects = 0 (ND=0)

- Non-detects = 1/2 of the detection limit (ND=½DL)

Substituting one-half the detection limit for non-detects (ND=½DL) provides a conservative estimate of the concentration. This method, however, tends to produce results that are biased high, especially in data sets where the majority of samples are non-detects. This overestimation is important to consider when comparing the calculated total values to criteria values.

The Toxicity Equivalency Quotients (TEQs) for dioxin and furan congeners were calculated following the approach in USEPA 1989. Each congener was multiplied by the International Toxicity Equivalent Factors (I-TEF/89) (USEPA 1989), and then the congener concentrations were summed. Concentrations that were flagged with a “B” (detected in blank) or “EMPC” (estimated maximum possible concentration) were not included in the TEQ calculation as per the USEPA Region III dioxin validation guidance (USEPA Region III 1999). The dioxin TEQs were calculated using both ND=0 and ND=1/2DL.

### ***Comparison to Sediment Quality Guidelines (SQGs)***

Sediment quality guidelines are numerical chemical concentrations intended to either be protective of biological resources, or predictive of adverse effects to those resources, or both (Wenning and Ingersoll 2002). USACE’s guidance on using SQGs in dredged material management acknowledges the limitations of each approach used to derive SQGs to date, but concludes that SQGs are still useful as initial screening values in Tier 1 or Tier 2 assessments. If, based on the initial screening using established SQGs, there is a ‘reason to believe’ that the material is not contaminated, no further chemical or toxicological testing would be necessary as indicated by the ITM [USACE–Waterways Experiment Station (WES) 1998].

The SQGs were developed as informal (non-regulatory) guidelines for use in interpreting chemical data from analyses of sediments. Several biological-effects approaches have been used to assess marine/estuarine sediment quality relative to the potential for adverse effects on benthic organisms, including Threshold Effects Level (TEL) / Probable Effects Level (PEL) (MacDonald et al. 1996) approach. The TEL and PEL values were derived using concentrations with both effects and no observed effects (Long and Macdonald 1998). TELs typically represent concentrations below which adverse biological effects were rarely observed, while PELs typically represent concentrations in the middle of the effects range and above which effects were more frequently observed (Long and Macdonald 1998). Concentrations that are between the TEL and PEL represent the concentrations at which adverse biological effects occasionally occur.

Concentrations of detected analytes in sediment samples from Masonville samples were compared to SQGs (MacDonald et al. 1996) for marine sediments to assess the sediment quality of the material proposed for dredging. SQGs were used to identify potential adverse biological effects associated with contaminated sediments. TEL and PEL values for marine/estuarine sediments are provided in Table A-27.

Recent evaluations of large chemical and toxicity data sets (O'Connor et al. 1998; O'Connor and Paul 1999) have indicated that TEL/PEL screening is not a reliable method for predicting sample toxicity or for screening samples out as non-toxic. The studies indicate that:

- Not exceeding a TEL should reliably predict the absence of whole-sediment toxicity,
- Exceeding a PEL (much less a TEL) does not reliably indicate toxicity, and
- Many, perhaps even most, sediments that exceed one or more PELs are not toxic.

Since TELs/PELs are widely used despite their recently demonstrated over-sensitivity in predicting toxicity, the concentrations of contaminants in the sediments sampled in this project were compared to the TEL and PEL values for all chemical constituents for which TEL/PEL values have been developed. For dredged material evaluations, SQGs are used as a tool to assist with identification of constituents of potential concern (COPCs) and to provide additional weight of evidence in the evaluation [USACE-WES 1998].

#### **A.5.6 BULK SEDIMENT RESULTS**

##### **A.5.6.1 Surface Sediment Results**

Results of the bulk sediment chemistry analyses for surface sediment collected from within the proposed alignment at Masonville are presented in Tables A-28 through A-39, and results for surface sediments collected from the Kurt Iron Metal (KIM) channel, Masonville Cove, and the Wet Basin are presented in Tables A-40 through A-51. Sediment chemistry results for samples collected at depth are presented in Tables A-52 through A-63.

Sample weights were adjusted for percent moisture (up to 50 percent moisture) prior to analysis to achieve the lowest possible detection limits. Analytical results are reported on a dry weight basis. Values for detected chemical constituents are shaded and bolded in the data tables. Detection limits are presented for non-detected chemical constituents.

##### **A.5.6.2 Borrow Material Sediment Results**

Results of the bulk sediment chemistry analyses for proposed borrow material sediment collected from within the proposed alignment at Masonville are presented in Tables A-64 through A-75.

Sample weights were adjusted for percent moisture (up to 50 percent moisture) prior to analysis to achieve the lowest possible detection limits. Analytical results are reported on a dry weight basis. Values for detected chemical constituents are shaded and bolded in the data tables. Detection limits are presented for non-detected chemical constituents.

#### **A.6 CHESAPEAKE BAY APPROACH CHANNEL COMPARISONS**

The mean, minimum, and maximum concentrations of metals, PAHs, PCBs, dioxins, furans, and chlorinated pesticides in surface sediments collected from the upper Chesapeake Bay approach channels to the Port of Baltimore were analyzed and are included in Table A-76. These data were collected from the Upper Chesapeake Bay approach channels during sampling conducted in

1998, 1999 and 2002 for upper Chesapeake Bay approach channels currently placed at Poplar Island (EA 2000a, EA 2000b, EA 2003).

#### **A.7 REFERENCES**

American Society for Testing and Materials (ASTM). 1995. *Annual Book of ASTM Standards*. Volume 4.08. ASTM, Philadelphia, PA.

EA Engineering, Science, and Technology (EA). 2003. *FY02 Evaluation of Dredged Material: Upper Chesapeake Bay Approach Channels to the Port of Baltimore and Baltimore Harbor Channels*. Prepared for USACE-Baltimore. May. Draft.

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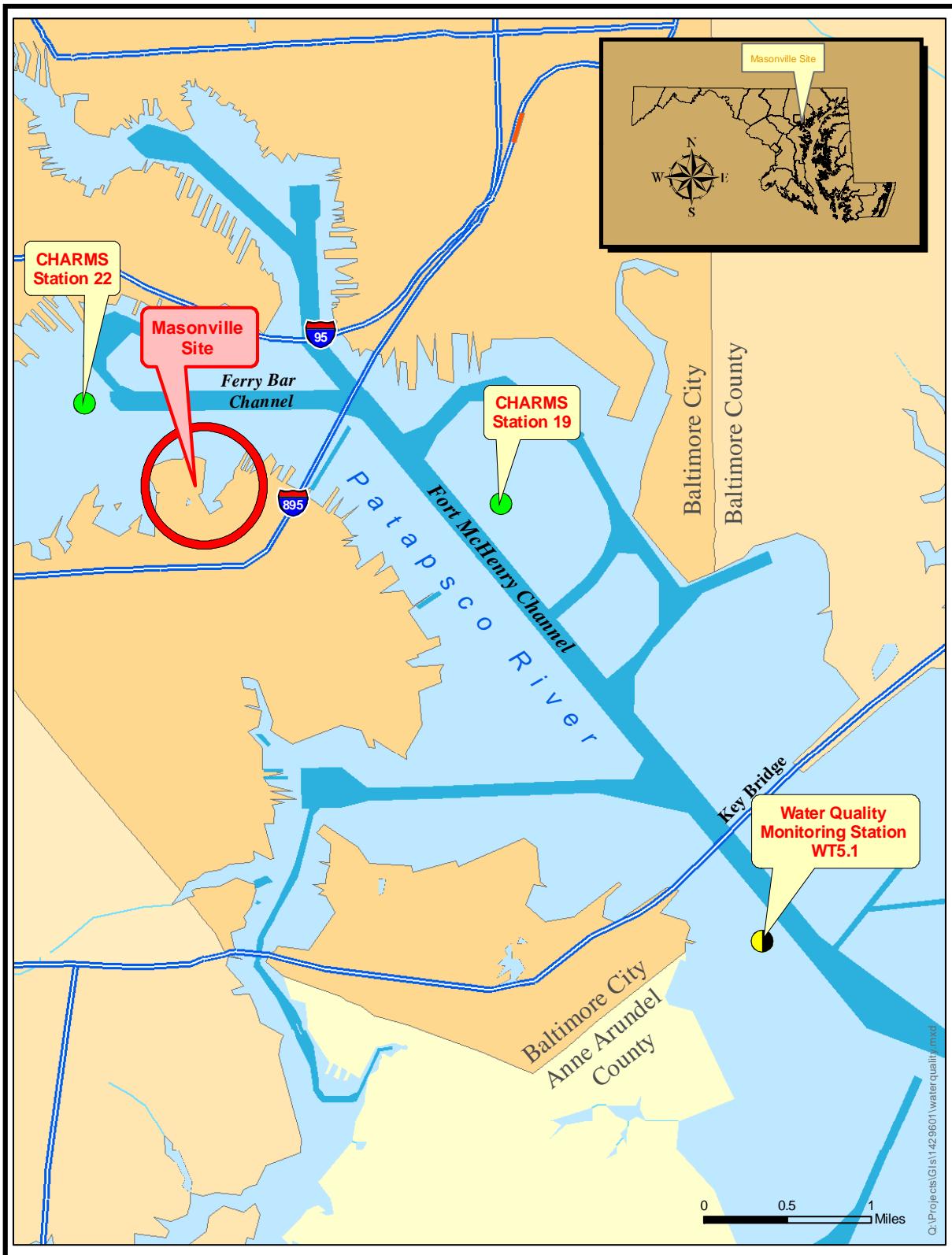
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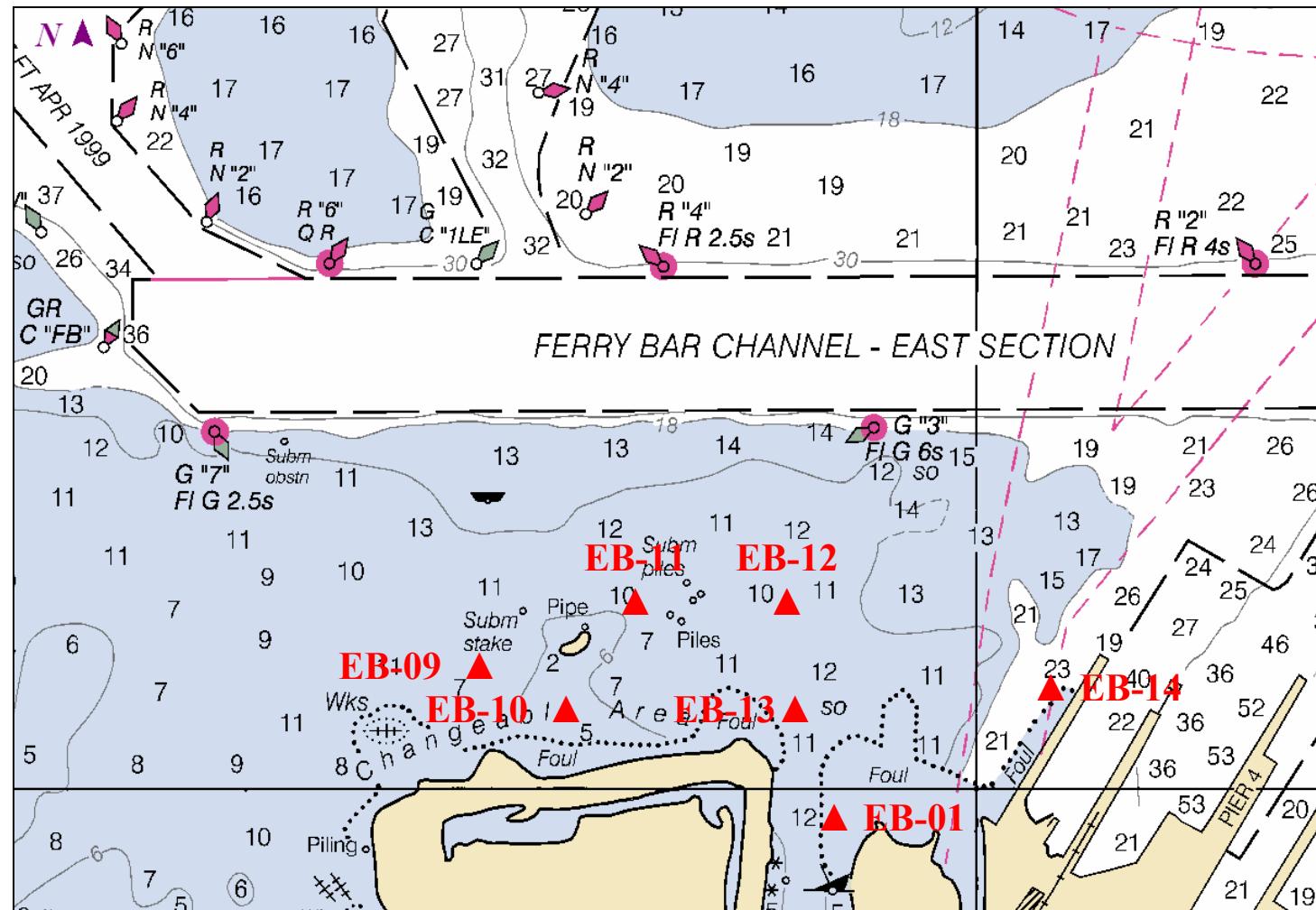
**Figure A-1. Location of CBP Water Quality Monitoring Station WT5.1 and Comprehensive Harbor Assessment and Regional Modeling Study (CHARMS) Stations 19 and 22**



**Figure A-2. Masonville Standard Elutriate Sampling Locations**



**Figure A-4. Sediment Sampling Locations**



**Figure A-3. Sampling Locations for Proposed Masonville Borrow Material.**

**TABLE A-1. MASONVILLE IN SITU WATER QUALITY**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

YEAR	DATE	SEASON	SAMPLE ID	SAMPLE DISCIPLINE	LOCATION DEPTH (FT)	TEMP. (°C)			D.O. (MG/L)			SALINITY (PPT)			pH			TURBIDITY (NTU)		
						S	M	B	S	M	B	S	M	B	S	M	B	S	M	B
<b>SAMPLE DEPTH* =</b>																				
2003	June	SUMMER	M-B1	BENTHIC	12.0	25	24.3	22.3	11.2	9.6	5.9	3.8	4.1	4.8	8.4	8	7.8	--	--	--
2003	June	SUMMER	M-B2	BENTHIC	10.0	25.2	24.7	22.1	12.6	11.1	5.2	3.6	3.6	4.8	8.5	8.3	7.9	--	--	--
2003	June	SUMMER	M-B3	BENTHIC	9.0	24.9	24.9	23.3	11.6	11.3	8.5	3.5	3.5	4.4	8.2	8.3	7.9	--	--	--
2003	June	SUMMER	M-B4	BENTHIC	9.0	24.9	24.1	20.6	13.1	10.4	2.6	3.5	3.7	5.2	8.6	8.3	7.6	--	--	--
2004	May	SPRING	M-B4	BENTHIC	7.0	26.1	25.7	24.2	10	8.9	6.1	2.2	2.2	2.4	8.4	8.4	7.6	9.2	9.3	19.4
2004	May	SPRING	M-T1	FISHERIES	13.0	25.4	21.5	18.6	11.6	13.5	8.2	2.4	2.8	3.8	8.6	8.8	7.5	6.9	9.5	12.2
2004	May	SPRING	M-T2	FISHERIES	13.0	24.6	20.1	19.9	11.7	10.9	10.2	2.4	3.3	3.4	8.5	8.1	8	6.5	5.2	5.4
2004	May	SPRING	M-S1	FISHERIES	3.0	25.9	--	25.6	11.1	--	10.7	2.6	--	2.6	8.6	--	8.5	10.3	--	9.8
2004	May	SPRING	M-G1	FISHERIES	17.0	24.5	24	23.5	11.8	11	9.9	2.3	2.5	2.7	8.9	8.6	8.3	7.6	7	3.8
2004	May	SPRING	M-G2	FISHERIES	7.0	24.4	24.2	20.6	10.3	10.5	9.7	2.1	2.1	3.3	7.9	8	7.8	6.8	6.9	13.2
2004	July	SUMMER	M-B5	BENTHIC	9.3	28.5	26.8	26.5	10.5	6.6	4	3.1	3.7	5.1	8.6	8.1	7.6	33.1	35.6	12
2004	July	SUMMER	M-B6	BENTHIC	9.3	29.2	26.8	26.5	11.6	5.9	3.8	2.8	3.9	6	8.7	8.2	7.8	35.8	35.6	16.9
2004	July	SUMMER	M-B7	BENTHIC	13.0	26.8	26.7	26.4	9.1	9.1	6.6	6.1	6.2	6.4	8.4	8.4	8	5.7	5.8	11.8
2004	July	SUMMER	M-B8	BENTHIC	14.0	26.8	26.6	26.4	8.9	6.8	4.1	6.1	6.4	6.2	8.4	8.1	7.8	6.1	8.3	8.9
2004	July	SUMMER	M-B9	BENTHIC	7.2	27.1	26.9	26.6	7.0	5.7	4.6	3.3	4.7	6.1	7.9	7.7	7.5	30.8	20.3	13.3
2004	July	SUMMER	M-T1A	PLANKTON	14.0	--	26.7	--	7.5	--	6.1	--	8.0	--	--	8.6	--	--	--	
2004	July	SUMMER	M-T1B	PLANKTON	14.0	--	26.7	--	7.4	--	6.1	--	8.0	--	--	4.1	--	--	--	
2004	July	SUMMER	M-T2A	PLANKTON	13.0	--	27	--	5.3	--	5.9	--	8.2	--	--	8.3	--	--	--	
2004	July	SUMMER	M-T2B	PLANKTON	13.0	--	27	--	6.2	--	6.1	--	8.3	--	--	6	--	--	--	
2004	July	SUMMER	M-B5-SED	SEDIMENT	9.0	26.2	--	26	8.6	--	5.2	5.8	--	6.5	8	--	7.9	5.1	--	9.1
2004	July	SUMMER	M-B6-SED	SEDIMENT	9.0	25.8	--	25.7	7.4	--	5.7	5.9	--	5.9	8	--	7.8	5.3	--	5.7
2004	July	SUMMER	M-B7-SED	SEDIMENT	11.0	26	--	25.3	6.6	--	4.6	6.3	--	6.9	7.9	--	7.8	10.9	--	14.1
2004	July	SUMMER	M-B8-SED	SEDIMENT	12.0	25.9	--	25.5	6.4	--	5.4	6.5	--	6.9	7.9	--	7.8	14.9	--	6.5
2004	October	FALL	M-B4	BENTHIC	8.1	16.4	17.1	18.2	8.5	7.9	7.6	9.8	8.1	4.8	7.02	7.7	8.2	0.9	5.3	6.5
2004	October	FALL	M-T1	FISHERIES	13.0	19.4	20.4	21.9	8.1	7.6	7.2	9.8	6.2	2	4.5	5.8	7.9	4.3	0.2	4.2
2004	October	FALL	M-T2	FISHERIES	11.0	19.8	20.6	21.9	8.2	7.6	7.3	9.9	6.0	4.7	4.9	6.1	7.8	5.3	3.6	7.5
2004	October	FALL	M-G2	FISHERIES	10.0	17.2	17.2	17.4	7.6	7.6	7.3	6.6	5.7	4.3	7.8	7.9	6	1.2	4.3	3.9
2004	October	FALL	M-S1	FISHERIES	1.5	--	20.1	--	--	8.4	--	--	11.1	--	--	3.5	--	--	9.3	--
2005	May	SPRING	M(KI)-G1**	FISHERIES	8.0	17.99	17.95	17.53	5.1	5.29	4.62	5.14	5.15	5.8	8.56	8.57	8.14	7.8	7.8	14.9
2005	May	SPRING	M(WB)-G1**	FISHERIES	22.0	17.4	16.94	15.26	7.03	6.89	5.44	5.74	6	6.91	8.64	8.41	7.91	5.3	3.8	5.1
2005	6/28	SUMMER	MSN05-1	BENTHIC	7.5	26.88	26.57	26.18	6.41	4.89	3.42	5.63	6.44	6.53	7.8	7.6	7.36	5.1	5.6	6.8
2005	6/28	SUMMER	MSN-05-2	BENTHIC	8.7	26.91	26.41	25.92	7.85	5.68	3.83	6.07	6.51	6.63	8.09	7.73	7.48	3.3	4.1	7.0
2005	6/29	SUMMER	MSN05-4	BENTHIC	6.8	26.91	26.65	26.48	7.74	6.07	5.07	6.13	6.52	6.56	8.07	7.79	7.56	3.3	3.5	4.0
2005	6/29	SUMMER	MSN05-3	BENTHIC	7.5	27.08	26.53	26.06	9.33	8.79	8.48	6.34	6.52	6.64	7.93	7.72	7.39	3.4	4.4	6.6
2005	6/20	SUMMER	MSN05-01 (KI)	SEDIMENT	10.87	23.35	21.98	22.10	10.39	6.57	6.64	5.38	5.90	5.98	8.42	8.02	7.71	3.5	16.6	13.7
2005	6/21	SUMMER	MSN05-05	SEDIMENT	9.8	23.09	22.25	22.01	9.49	8.54	3.19	6.10	6.68	6.86	7.92	7.91	7.46	4.4	4.4	8.5
2005	6/22	SUMMER	MSN05-06	SEDIMENT	11.45	23.14	23.14	22.70	11.26	9.61	7.19	6.54	6.56	6.73	8.07	8.04	7.73	6.0	6.2	9.6
2005	6/23	SUMMER	MSN05-08	SEDIMENT	12.8	23.26	22.4	21.88	11.2	8.29	5.14	6.55	7.08	7.33	8.14	7.78	7.42	6.1	4.8	6.0
2005	6/24	SUMMER	MSN05-09	SEDIMENT	7.9	23.88	22.94	22.65	8.92	7.72	5.97	5.82	6.31	6.44	8.03	7.89	7.60	4.0	8.2	10.6
2005	6/27	SUMMER	MSN05-01A (KI)	SEDIMENT	12	26.14	26.10	25.52	8.50	8.09	7.62	6.29	6.36	6.36	8.09	8.12	8.02	5.1	5.2	9.7
2005	6/28	SUMMER	MSN05-05A	SEDIMENT	8.6	26.57	25.70	25.40	8.39	6.25	5.12	6.40	6.72	6.78	8.24	7.91	7.66	4.0	8.4	8.8
2005	8/31	SUMMER	KI-G2	FISHERIES	11	26.60	26.59	26.57	5.18	4.79	4.78	8.91	8.92	8.93	7.74	7.66	7.62	--	--	--
2005	8/31	SUMMER	KI-G1	FISHERIES	--	26.60	26.59	26.57	5.18	4.79	4.78	8.91	8.92	8.93	7.74	7.66	7.62	--	--	--
2005	9/1	SUMMER	WB-G1	FISHERIES	19	26.72	26.65	26.73	9.06	5.48	4.91	8.40	8.70	8.82	8.37	7.86	7.71	--	--	--

\* S = surface, M = mid-depth, B = 0.5 ft above bottom

\*\*KI = Kurt Iron Site, WB = Wet Basin Site

**TABLE A-2. WATER QUALITY AT CHESAPEAKE BAY PROGRAM MONITORING LOCATION WT5.1\***

**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	SAMPLING SEASON	UNITS	MINIMUM	MAXIMUM	AVERAGE
WATER TEMPERATURE	Fall (September, October, and November)	°C	7.5	27.2	18.8
pH		SU	7.2	8.6	7.85
DISOLVED OXYGEN		mg/L	2.9	14.8	8.15
SALINITY		PPT	1.71	15.54	10.2
WATER TEMPERATURE	Winter (December, January, and February)	°C	0.7	12.3	4.48
pH		SU	7.4	9.3	7.98
DISOLVED OXYGEN		mg/L	5	15.7	11.7
SALINITY		PPT	1.97	16.56	9.47
WATER TEMPERATURE	Spring (March, April, and May)	°C	2.5	25.4	12.6
pH		SU	6.6	9.2	8.00
DISOLVED OXYGEN		mg/L	1.3	17.4	9.99
SALINITY		PPT	1.51	14.73	6.44
WATER TEMPERATURE	Summer (June, July, and August)	°C	20	29.5	25.4
pH		SU	6.9	9.1	7.99
DISOLVED OXYGEN		mg/L	0.2	15	7.49
SALINITY		PPT	2.08	13.26	7.40

Source : Chesapeake Bay Program Water Quality Monitoring Program, Annapolis, MD.

\*Monitoring location WT5.1 is located in the Patapsco River, is tidally influenced, mesohaline, and approximately 40 ft deep.

**TABLE A-3. BACKGROUND LEVELS OF SEASONAL WATER QUALITY CHEMISTRY FOR CHARM  
 STATIONS 19 AND 22**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

Analyte	Fall Sampling Results					
	Total		Dissolved		Particulate	
	Mean	Range	Mean	Range	Mean	Range
Polynuclear Aromatic Hydrocarbons (PAHs)	286	107 to 487	111	41 to 299	175	66 to 412
Polychlorinated Biphenyls (PCBs)	7.95	5.13 to 12.41	0.71	0.33 to 1.57	7.23	4.45 to 10.84
Chlordane	10.94	3.92 to 15.88	0	0 to 0.01	12.01	2.33 to 48.22
Aluminum	51.29	19.07 to 85.78	3.01	1 to 7.12	48.28	14.14 to 78.66
Chromium	6.44	5.26 to 7.05	5.17	0.32 to 6.87	2.28	0.39 to 6.04
Manganese	99	58.48 to 124.2	51.17	27.88 to 87.04	47.82	28.88 to 72.50
Iron	3.14	2.77 to 3.62	2.29	2.03 to 2.85	0.85	0.1 to 1.59
Cobalt	1.05	0.95 to 1.11	0.81	0.2 to 1.02	0.24	0.06 to 0.90
Nickel	3.19	2.06 to 3.84	0.51	0.04 to 1.10	8.86	7.22 to 10.43
Copper	8.87	7.22 to 10.43	7.15	1.39 to 10.29	1.72	0.03 to 7.74
Zinc	14.98	12.42 to 16.52	11.69	8.66 to 15.68	4.14	2.67 to 7.35
Cadmium	0.34	0.03 to 0.87	0.33	0.03 to 0.93	0.28	0.02 to 0.54
Lead	1.63	0.10 to 4.34	1.06	0.10 to 2.77	1.78	1.04 to 2.52
Mercury	4.77	2.35 to 6.49	0.41	0.15 to 0.80	4.36	2.05 to 6.13

Analyte	Spring Sampling Results					
	Total		Dissolved		Particulate	
	Mean	Range	Mean	Range	Mean	Range
Polynuclear Aromatic Hydrocarbons (PAHs)	134	46 to 301	35	4 to 48	107	42 to 250
Polychlorinated Biphenyls (PCBs)	8.5	2.22 to 14.37	0.95	0.17 to 1.94	7.6	1.75 to 12.96
Chlordane	14.01	2.33 to 48.22	7.05	2.18 to 10.21	3.89	1.51 to 7.69
Aluminum	--	--	7.17	7.17 to 7.17	--	--
Chromium	--	--	0.39	0.32 to 0.48	--	--
Manganese	--	--	30.6	0.40 to 69.19	--	--
Iron	--	--	1.78	0.58 to 2.65	--	--
Cobalt	--	--	0.24	0.20 to 0.30	--	--
Nickel	--	--	1.65	0.48 to 2.52	--	--
Copper	--	--	0.86	0.472 to 1.40	--	--
Zinc	--	--	8.66	8.66 to 8.66	--	--
Cadmium	--	--	0.31	0.31 to 0.31	--	--
Lead	--	--	0.5	0.50 to 0.50	--	--
Mercury	--	--	--	--	--	--

Analyte	Summer Sampling Results					
	Total		Dissolved		Particulate	
	Mean	Range	Mean	Range	Mean	Range
Polynuclear Aromatic Hydrocarbons (PAHs)	58	53 to 62	35	26 to 43	23	11 to 35
Polychlorinated Biphenyls (PCBs)	5.04	4.53 to 5.55	2.23	1.147 to 3.31	238	1.22 to 4.41
Chlordane	--	--	--	--	--	--
Aluminum	--	--	7.17	7.17 to 7.17	--	--
Chromium	--	--	0.32	0.32 to 0.32	--	--
Manganese	--	--	4.4	2.18 to 6.62	--	--
Iron	--	--	1.53	1.07 to 1.99	--	--
Cobalt	--	--	0.14	0.14 to 0.14	--	--
Nickel	--	--	1.58	1.07 to 2.08	--	--
Copper	--	--	2.27	1.81 to 2.73	--	--
Zinc	--	--	8.71	8.66 to 8.76	--	--
Cadmium	--	--	0.31	0.31 to 0.31	--	--
Lead	--	--	0.5	0.50 to 0.50	--	--
Mercury	--	--	--	--	--	--

**TABLE A-4. ANALYTICAL METHODS**

<b>Parameter</b>	<b>Method</b>	<b>Method #</b>	<b>Matrix</b>	<b>Reference</b>
ORGANICS - EXTRACTION CLEANUP				
Sulfuric Acid Cleanup	Liquid-liquid Partitioning	3665A	S	USEPA, 1997
Sulfur Cleanup	Treatment with Cu or Hg or TBA	3660A/B	S	USEPA, 1997
Florisil Cleanup	Adsorption Column Chromatography	3620B	S	USEPA, 1997
ORGANICS				
Volatile Organic Compounds	Gas Chromatography/Mass Spectrometry	8260B	S	USEPA, 1997
Semivolatile Organic Compounds	Gas Chromatography/Mass Spectrometry	8270C	S	USEPA, 1997
Polynuclear Aromatic Hydrocarbons (PAH)	Gas Chromatography/Mass Spectrometry-SIM8270C-SIM		S	USEPA, 1997
Organochlorine Pesticides	Gas Chromatography - ECD	8081A	S	USEPA, 1997
Organophosphous Pesticides	Gas Chromatography – FPD	8141A	S	USEPA, 1997
Organotins	Gas Chromatography – FPD	STL SOP	S	---
PCB (Aroclors & Congeners)	Gas Chromatography - ECD	8082	S	USEPA, 1997
Polychlorinated Dioxins/Furans	HRGC/HRMS	1613	S	USEPA, 1994
METALS				
Aluminum	Atomic Emission - ICP	6010B	S	USEPA, 1997
Antimony	Atomic Emission - ICP	6010B	S	USEPA, 1997
Arsenic	Atomic Emission - ICP	6010B	S	USEPA, 1997
Beryllium	Atomic Emission -ICP	6010B	S	USEPA, 1997
Cadmium	Atomic Emission -ICP	6010B	S	USEPA, 1997
Chromium	Atomic Emission -ICP	6010B	S	USEPA, 1997
Cobalt	Atomic Emission -ICP	6010B	S	USEPA, 1997
Copper	Atomic Emission -ICP	6010B	S	USEPA, 1997
Iron	Atomic Emission - ICP	6010B	S	USEPA, 1997
Lead	Atomic Emission - ICP	6010B	S	USEPA, 1997
Mercury	Atomic Absorption - Cold Vapor	7471A	S	USEPA, 1997
Manganese	Atomic Emission - ICP	6010B	S	USEPA, 1997
Nickel	Atomic Emission -ICP	6010B	S	USEPA, 1997
Selenium	Atomic Emission - ICP	6010B	S	USEPA, 1997
Silver	Atomic Emission - ICP	6010B	S	USEPA, 1997
Thallium	Atomic Emission - ICP	6010B	S	USEPA, 1997
Tin	Atomic Emission - ICP	6010B	S	USEPA, 1997
Zinc	Atomic Emission - ICP	6010B	S	USEPA, 1997

**TABLE A-4. (continued)**

INORGANIC NONMETALS				
Cyanide, Total	Colorimetric - Automated	9012A	S	USEPA, 1997
Sulfide, total	Distillation/Titrimetric	9030B/9034	S	USEPA, 1997
Total Organic Carbon	Combustion Oxidation	Lloyd Kahn	S	USEPA, 1988
Nitrogen, Ammonia	Colorimetric - Automated	350.1	S	USEPA, 1979
Nitrogen, Total Kjeldahl	Colorimetric	351.2	S	USEPA, 1979
Nitrogen, Nitrate + Nitrite	Colorimetric- Automated	353.2	S	USEPA, 1979
Nitrogen, Nitrate	Colorimetric- Automated	353.2	S	USEPA, 1979
Phosphorus, Total	Colorimetric	365.2	S	USEPA, 1979
AVS/SEM	-----	-----	S	USEPA, 1991
Biochemical Oxygen Demand	BOD (5 day, 20 C)	405.1	S	USEPA, 1979
Chemical Oxygen Demand	Colorimetric- Manual	410.4	S	USEPA, 1979
Hexavalent Chromium	Colorimetric	7196A	S	USEPA, 1997
Oil & Grease	Gravimetric	1664	S	USEPA, 1999
pH	Electrometric	9045C	S	USEPA, 1997
Asbestos	Microscopy	PLM	S	

**Matrix codes:**

S - Sediments

**References:**

- ASTM 1995 American Society for Testing and Materials. 1995. Annual Book of ASTM Standards. Volume 4.08. ASTM, Philadelphia, PA.
- USEPA, 1979 United States Environmental Protection Agency. 1979. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020. USEPA, Cincinnati, Ohio.
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**TABLE A-4. (continued)**

- USEPA, 1994 United States Environmental Protection Agency. 1994. Tetra- Through Octa- Chlorinated Dioxins and Furans by Isotope dilution HRGC/HRMS. Method 1613 Revision B. EPA 821-B-94-005. USEPA, Office of Water, Washington DC.
- USEPA, 1997 United States Environmental Protection Agency. June 1997. Test Methods for Evaluating Solid Waste. Physical/Chemical Methods. USEPA SW-846, 3rd edition, including Final Update III. USEPA, Washington, D.C.
- USEPA, 1999b United States Environmental Protection Agency. February 1999. Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry. EPA-821-R-98-002.

**TABLE A-5. GENERAL CHEMISTRY PARAMETERS OF SITE WATER AND STANDARD ELUTRIATES**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	USEPA ACUTE CRITERIA*	USEPA CHRONIC CRITERIA*	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
AMMONIA (NH <sub>3</sub> ), AS N (a)	MG/L	0.049	69.3	10.4	<b>0.25</b>	<b>2.9 J</b>	<b>3.9 J</b>	<b>3.2 J</b>	<b>2.5 J</b>	<b>4.1 J</b>
BIOCHEMICAL OXYGEN DEMAND	MG/L	0.79	--	--	<b>12.2</b>	0.79 U	0.79 U	<b>14.5</b>	0.79 U	<b>2.3</b>
CHEMICAL OXYGEN DEMAND	MG/L	28	--	--	<b>138</b>	<b>110</b>	<b>74.3</b>	<b>79.5</b>	<b>69.2</b>	<b>64</b>
DISSOLVED CYANIDE	UG/L	4.3	--	--	<b>2.6**</b>	<b>5.2 B</b>	4.3 U	4.3 U	<b>18.6</b>	4.3 U
HEXAVALENT CHROMIUM	MG/L	0.0018	1.1	0.05	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U
NITRATE + NITRITE AS N	MG/L	0.01	--	--	<b>0.71 J</b>	<b>0.18 J</b>	<b>0.51 J</b>	<b>0.37 J</b>	<b>0.47 J</b>	<b>0.25 J</b>
NITROGEN, TOTAL KJELDAHL NITROGEN AS N	MG/L	0.97	--	--	<b>2.7 B</b>	<b>14.1 J</b>	<b>7.1 J</b>	<b>4.9 J</b>	<b>4.9 J</b>	<b>4.3 J</b>
PH	NO UNITS	0.1	--	--	<b>7.5</b>	<b>7.7</b>	<b>7.8</b>	<b>7.7</b>	<b>7.8</b>	<b>7.6</b>
PHOSPHORUS	MG/L	0.044	--	--	<b>0.085 B</b>	<b>0.089 B</b>	<b>0.95</b>	<b>0.053 B</b>	0.044 U	<b>0.053 B</b>
SULFIDE	MG/L	1.2	--	0.002	1.2 U	1.2 U b	1.2 U b	1.2 U b	1.2 U b	1.2 U b
TOTAL ORGANIC CARBON	MG/L	0.31	--	--	4.3 U	<b>3.2</b>	<b>3.4</b>	<b>3.2</b>	<b>4.9</b>	<b>3.3</b>

\*Source: USEPA 2004. *Recommended Water Quality Criteria*

(a) ammonia criteria for Patapsco River samples based on average salinity (6.5 ppt), water temperature (18.8 C), and pH (6.9) from mid-depth of the water column during the 2004 fish and benthic surveys

\*\*Analyzed as total, not dissolved cyanide

NOTE: Shaded and bold values represent detected concentrations.

U = compound was analyzed but not detected

J (inorganic) = compound was detected in method blank

B (inorganic) = compound was detected, but below reporting limit (value is estimated).

**TABLE A-6. METAL CONCENTRATIONS (UG/L) IN SITE WATER AND STANDARD ELUTRIATES**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	USEPA ACUTE CRITERIA*	USEPA CHRONIC CRITERIA*	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
ALUMINUM	UG/L	8	--	--	<b>196 B J</b>	<b>290 J</b>	<b>220 J</b>	<b>330 J</b>	<b>140 B J</b>	<b>200 J</b>
ANTIMONY	UG/L	3.2	--	--	3.2 U	<b>6 B</b>	<b>3.8 B</b>	<b>4.5 B</b>	<b>5.6 B</b>	<b>4.3 B</b>
BERYLLIUM	UG/L	0.42	--	--	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
CADMIUM	UG/L	0.7	40	8.8	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
CHROMIUM	UG/L	0.93	1100	50	0.93 U	<b>1.6 B</b>	<b>0.99 B</b>	<b>1.5 B</b>	<b>1.2 B</b>	<b>0.95 B</b>
COBALT	UG/L	0.53	--	--	0.53 U	530 U	530 U	530 U	530 U	530 U
COPPER	UG/L	1.2	48	3.1	<b>3.7 B</b>	<b>1.7 B</b>	1.2 U	<b>1.4 B</b>	<b>1.5 B</b>	1.2 U
IRON	UG/L	18	--	--	<b>228</b>	<b>220</b>	18 U	<b>120</b>	<b>79 B</b>	<b>97 B</b>
LEAD	UG/L	1.6	210	8.1	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
MANGANESE	UG/L	0.11	--	--	<b>78.1</b>	<b>640</b>	<b>620</b>	<b>710</b>	<b>460</b>	<b>610</b>
MERCURY	UG/L	0.048	1.8	0.94	0.048 U	<b>0.08 B</b>	0.048 U	0.048 U	<b>0.084 B</b>	<b>0.064 B</b>
NICKEL	UG/L	1.2	74	8.2	<b>1.7 B</b>	1.2 U	1.2 U	<b>2.6 B</b>	<b>1.7 B</b>	1.2 U
SELENIUM	UG/L	2.6	290	71	<b>5.1</b>	<b>3.2 B J</b>	<b>2.7 B J</b>	2.6 U	2.6 U	2.6 U
SILVER	UG/L	0.3	1.9	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
THALLIUM	UG/L	4.6	--	--	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
TIN	UG/L	2.9	--	--	<b>4.7 B</b>	<b>3.4 B</b>	<b>4.2 B</b>	<b>5.4 B</b>	2.9 U	<b>3 B</b>
ZINC	UG/L	1.7	90	81	<b>5.3 B</b>	1.7 U	<b>12 B</b>	1.7 U	<b>17 B</b>	<b>6.4 B</b>

\*Source: USEPA 2004. *Recommended Water Quality Criteria*

**NOTE:** Shaded and bold values represent detected concentrations.

U = compound was analyzed but not detected

J (inorganic) = compound was detected in method blank

B (inorganic) = compound was detected, but below reporting limit (value is estimated).

*Italicized* cells indicate exceedences of USEPA chronic criteria

**TABLE A-7. PCB CONGENER CONCENTRATIONS (NG/L) IN SITE WATER AND STANDARD ELUTRIATES  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	USEPA CHRONIC CRITERIA*	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
PCB 8 (BZ)	NG/L	0.38	--	0.43 U	0.38 U	0.38 U	<b>0.58 J</b>	<b>0.5 J PG</b>	0.38 U
PCB 18 (BZ)	NG/L	0.38	--	0.47 U	<b>0.89 J</b>	0.38 U	<b>1.9</b>	<b>2.3</b>	0.38 U
PCB 28 (BZ)	NG/L	0.44	--	0.42 U	<b>0.83 J PG</b>	0.44 U	<b>1.7 PG</b>	<b>1.5 PG</b>	<b>0.45 J PG</b>
PCB 44 (BZ)	NG/L	0.46	--	0.42 U	<b>0.68 J</b>	0.46 U	<b>1</b>	<b>1.1</b>	0.46 U
PCB 49 (BZ)	NG/L	0.28	--	0.44 U	<b>0.84 J</b>	0.28 U	<b>0.62 J PG</b>	<b>0.9 J PG</b>	<b>0.3 J PG</b>
PCB 52 (BZ)	NG/L	0.43	--	0.42 U	<b>1</b>	0.43 U	<b>1.4</b>	<b>1.3</b>	0.43 U
PCB 66 (BZ)	NG/L	0.48	--	0.49 U	<b>0.72 J PG</b>	0.48 U	<b>0.97 J</b>	<b>0.87 J PG</b>	0.48 U
PCB 77 (BZ)	NG/L	0.48	--	0.43 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U
PCB 87 (BZ)	NG/L	0.43	--	0.39 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
PCB 101 (BZ)	NG/L	0.48	--	0.4 U	<b>1.3</b>	0.48 U	<b>0.5 J PG</b>	<b>1.2</b>	0.48 U
PCB 105 (BZ)	NG/L	0.47	--	0.37 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
PCB 118 (BZ)	NG/L	0.49	--	0.52 U	<b>1.1 PG</b>	0.49 U	<b>0.61 J PG</b>	<b>0.76 J PG</b>	<b>0.58 J PG</b>
PCB 126 (BZ)	NG/L	0.32	--	0.38 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
PCB 128 (BZ)	NG/L	0.5	--	0.35 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB 138 (BZ)	NG/L	0.49	--	0.33 U	<b>1.3</b>	0.49 U	0.49 U	<b>0.79 J</b>	0.49 U
PCB 153 (BZ)	NG/L	0.46	--	0.38 U	<b>1.9</b>	0.46 U	<b>0.78 J</b>	<b>1.3</b>	<b>0.66 J</b>
PCB 156 (BZ)	NG/L	0.44	--	0.36 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
PCB 169 (BZ)	NG/L	0.24	--	0.42 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
PCB 170 (BZ)	NG/L	0.23	--	0.36 U	<b>0.7 J</b>	0.23 U	0.23 U	<b>0.38 J</b>	0.23 U
PCB 180 (BZ)	NG/L	0.29	--	0.35 U	<b>1.3</b>	0.29 U	<b>0.38 J</b>	<b>0.81 J</b>	<b>0.33 J</b>
PCB 183 (BZ)	NG/L	0.5	--	0.36 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB 184 (BZ)	NG/L	0.23	--	0.41 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB 187 (BZ)	NG/L	0.48	--	0.38 U	<b>0.93 J</b>	0.48 U	0.48 U	<b>0.58 J</b>	0.48 U
PCB 195 (BZ)	NG/L	0.29	--	0.38 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
PCB 206 (BZ)	NG/L	0.3	--	0.37 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
PCB 209 (BZ)	NG/L	0.26	--	0.43 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
TOTAL PCBs (ND=0)	NG/L	--	30	<b>0</b>	<b>25.3</b>	<b>0</b>	<b>19.64</b>	<b>26.78</b>	<b>4.04</b>
TOTAL PCBs (ND=1/2DL)	NG/L	--	30	<b>7.32</b>	<b>27.69</b>	<b>7.5</b>	<b>22.85</b>	<b>28.79</b>	<b>9.86</b>

\*Source: USEPA 2004. Recommended Water Quality Criteria

There is no USEPA saltwater acute criteria for aquatic life for the tested PCBs or total PCB concentrations

**NOTE:** Shaded and bold values represent detected concentrations.

U = compound was analyzed but not detected

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

**TABLE A-8. PCB AROCLOR CONCENTRATIONS (UG/L) IN SITE WATER AND STANDARD ELUTRIATES  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	USEPA CHRONIC CRITERIA*	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
AROCLOR 1016	UG/L	0.099	--	0.47 U	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U
AROCLOR 1221	UG/L	0.091	--	0.43 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U
AROCLOR 1232	UG/L	0.11	--	0.51 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
AROCLOR 1242	UG/L	0.051	--	0.24 U	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U
AROCLOR 1248	UG/L	0.068	--	0.32 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U
AROCLOR 1254	UG/L	0.071	--	0.34 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
AROCLOR 1260	UG/L	0.12	--	0.55 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U

\*Source: USEPA 2004. *Recommended Water Quality Criteria*

There is no USEPA saltwater acute criteria for aquatic life for the tested PCBs or total PCB concentrations

**NOTE:** Shaded and bold values represent detected concentrations.

U = compound was analyzed but not detected

**TABLE A-9. PAH CONCENTRATIONS (UG/L) IN SITE WATER AND STANDARD ELUTRIATES  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
1-METHYLNAPHTHALENE	UG/L	0.0832	0.03 U	0.082 U	0.083 U	0.084 U	0.083 U	0.084 U
2-METHYLNAPHTHALENE	UG/L	0.0494	0.023 U	0.049 U	0.049 U	0.05 U	0.049 U	0.05 U
ACENAPHTHENE	UG/L	0.0378	0.036 U	<b>0.041 J</b>	0.038 U	0.038 U	0.038 U	0.038 U
ACENAPHTHYLENE	UG/L	0.0348	0.033 U	0.034 U	0.035 U	0.035 U	0.035 U	0.035 U
ANTHRACENE	UG/L	0.0244	0.033 U	0.024 U	0.024 U	0.025 U	0.024 U	0.025 U
BENZO(A)ANTHRACENE	UG/L	0.0214	0.02 U	0.021 U	0.021 U	0.022 U	<b>0.022 J</b>	0.022 U
BENZO(A)PYRENE	UG/L	0.0244	0.071 U	0.024 U	0.024 U	0.025 U	0.024 U	0.025 U
BENZO(B)FLUORANTHENE	UG/L	0.0244	0.039 U	0.024 U	0.024 U	0.025 U	<b>0.035 J</b>	0.025 U
BENZO(GH)PERYLENE	UG/L	0.0298	0.11 U	<b>0.056 J</b>	0.03 U	0.03 U	<b>0.04 J</b>	0.03 U
BENZO(K)FLUORANTHENE	UG/L	0.02	0.057 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
CHRYSENE	UG/L	0.02	0.032 U	0.02 U	0.02 U	0.02 U	<b>0.024 J</b>	0.02 U
DIBENZO(A,H)ANTHRACENE	UG/L	0.0304	0.14 U	0.03 U	0.03 U	0.031 U	0.03 U	0.031 U
FLUORANTHENE	UG/L	0.031	<b>0.046 J</b>	<b>0.059 J</b>	<b>0.038 J</b>	0.031 U	<b>0.11 J</b>	<b>0.043 J</b>
FLUORENE	UG/L	0.036	0.034 U	<b>0.061 J</b>	<b>0.049 J</b>	<b>0.036 J</b>	<b>0.049 J</b>	0.036 U
INDENO(1,2,3-CD)PYRENE	UG/L	0.0244	0.098 U	0.024 U	0.024 U	0.025 U	0.024 U	0.025 U
NAPHTHALENE	UG/L	0.0378	0.036 U	<b>0.2</b>	<b>0.098 J</b>	0.038 U	<b>0.039 J</b>	<b>0.038 J</b>
PHENANTHRENE	UG/L	0.031	<b>0.092 J</b>	<b>0.25</b>	<b>0.12 J</b>	<b>0.097 J</b>	<b>0.14 J</b>	<b>0.1 J</b>
PYRENE	UG/L	0.0238	<b>0.027 J</b>	<b>0.1 J</b>	<b>0.027 J</b>	<b>0.031 J</b>	<b>0.16 J</b>	<b>0.03 J</b>
TOTAL PAHs (ND=0)	UG/L	--	<b>0.165</b>	<b>0.767</b>	<b>0.332</b>	<b>0.164</b>	<b>0.619</b>	<b>0.211</b>
TOTAL PAHs (ND=1/2DL)	UG/L	--	<b>0.561</b>	<b>0.943</b>	<b>0.543</b>	<b>0.4135</b>	<b>0.7825</b>	<b>0.444</b>

There are no USEPA saltwater acute or chronic criteria for aquatic life for the tested PAHs or total PAH concentrations

**NOTE:** Shaded and bold values represent detected concentrations.

**J** = compound was detected, but below the reporting limit (value is estimated)

**U** = compound was analyzed but not detected

**TABLE A-10. CHLORINATED PESTICIDE CONCENTRATIONS (UG/L) IN SITE WATER AND STANDARD ELUTRIATES  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	USEPA ACUTE CRITERIA*	USEPA CHRONIC CRITERIA*	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
4,4'-DDD	UG/L	0.016	--	--	0.012 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U
4,4'-DDE	UG/L	0.016	--	--	0.018 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U
4,4'-DDT	UG/L	0.015	0.13	0.001	0.015 U	0.015 U b	0.015 U b	0.015 U b	0.015 U b	0.015 U b
ALDRIN	UG/L	0.014	1.3	--	0.016 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
ALPHA-BHC	UG/L	0.014	--	--	0.018 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
BETA-BHC	UG/L	0.016	--	--	0.015 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U
CHLORDANE (TECHNICAL)	UG/L	0.17	--	--	0.015 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
CHLOROBENZIDE	UG/L	0.032	--	--	0.024 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U
DCPA	UG/L	0.032	--	--	0.03 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U
DELTA-BHC	UG/L	0.016	--	--	0.03 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U
DIELDRIN	UG/L	0.016	0.71	0.0019	0.017 U	0.016 U b	0.016 U b	0.016 U b	0.016 U b	0.016 U b
ENDOSULFAN I	UG/L	0.015	0.034	0.0087	0.021 U	0.015 U b	0.015 U b	0.015 U b	0.015 U b	0.015 U b
ENDOSULFAN II	UG/L	0.028	0.034	0.0087	0.015 U	0.028 U b	0.028 U b	0.028 U b	0.028 U b	0.028 U b
ENDOSULFAN SULFATE	UG/L	0.017	--	--	0.021 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
ENDRIN	UG/L	0.015	0.037	0.0023	0.024 U	0.015 U b	0.015 U b	0.015 U b	0.015 U b	0.015 U b
ENDRIN ALDEHYDE	UG/L	0.016	--	--	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U
GAMMA-BHC (LINDANE)	UG/L	0.015	0.16	--	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
HEPTACHLOR	UG/L	0.014	0.053	0.0036	0.014 U	0.014 U b	0.014 U b	0.014 U b	0.014 U b	0.014 U b
HEPTACHLOR EPOXIDE	UG/L	0.015	0.053	0.0036	0.014 U	0.015 U b	0.015 U b	0.015 U b	0.015 U b	0.015 U b
HEXACHLOROBENZENE	UG/L	0.013	--	--	0.022 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
METHOXYCHLOR	UG/L	0.031	--	0.03	0.029 U	0.031 U b	0.031 U b	0.031 U b	0.031 U b	0.031 U b
MIREX	UG/L	0.017	--	0.001	0.016 U	0.017 U b	0.017 U b	0.017 U b	0.017 U b	0.017 U b
TOXAPHENE	UG/L	0.072	0.21	0.0002	0.08 U	0.072 U b	0.072 U b	0.072 U b	0.072 U b	0.072 U b

\*Source: USEPA 2004. Recommended Water Quality Criteria

**NOTE:** Shaded and bold values represent detected concentrations.

U = compound was analyzed but not detected

**TABLE A-11. ORGANOPHOSPHORUS PESTICIDE CONCENTRATIONS (UG/L) IN SITE WATER AND STANDARD ELUTRIATES  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	USEPA ACUTE CRITERIA	USEPA CHRONIC CRITERIA*	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
AZINPHOS METHYL	UG/L	0.27	--	0.1	0.12 U	0.27 U b	0.27 U b	0.27 U b	0.27 U b	0.27 U b
DEMETON	UG/L	0.74	--	0.1	0.37 U	0.74 U b	0.74 U b	0.74 U b	0.74 U b	0.74 U b
MALATHION	UG/L	0.24	--	0.1	0.068 U	0.24 U b	0.24 U b	0.24 U b	0.24 U b	0.24 U b
METHYL PARATHION	UG/L	0.27	--	--	0.04 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
PARATHION	UG/L	0.24	--	--	0.078 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U

\*Source: USEPA 2004. *Recommended Water Quality Criteria*

**NOTE:** Shaded and bold values represent detected concentrations.

U = compound was analyzed but not detected

**TABLE A-12. DIOXIN AND FURAN CONCENTRATIONS (PG/L) IN SITE WATER AND STANDARD ELUTRIATES  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
2,3,7,8-TCDD	PG/L	9.88	9.8 U	9.9 U	9.9 U	9.8 U	9.9 U	9.9 U
1,2,3,7,8-PECDD	PG/L	49.8	49 U	50 U	50 U	49 U	50 U	50 U
1,2,3,4,7,8-HXCDD	PG/L	49.8	49 U	50 U	50 U	49 U	50 U	50 U
1,2,3,6,7,8-HXCDD	PG/L	49.8	49 U	50 U	50 U	49 U	<b>3.6 Q J</b>	50 U
1,2,3,7,8,9-HXCDD	PG/L	49.8	49 U	50 U	50 U	49 U	50 U	<b>8.6 Q J</b>
1,2,3,4,6,7,8-HPCDD	PG/L	49.8	<b>9.7 Q J</b>	<b>17 J</b>	<b>36 J</b>	<b>66</b>	<b>110</b>	<b>27 Q J</b>
OCDD	PG/L	98.8	<b>170 B</b>	<b>350 B</b>	<b>870 B</b>	<b>1600 B</b>	<b>1300 B</b>	<b>650 B</b>
2,3,7,8-TCDF	PG/L	9.88	9.8 U	9.9 U	9.9 U	9.8 U	9.9 U	9.9 U
1,2,3,7,8-PECDF	PG/L	49.8	49 U	50 U	50 U	49 U	50 U	50 U
2,3,4,7,8-PECDF	PG/L	49.8	49 U	50 U	50 U	49 U	50 U	50 U
1,2,3,4,7,8-HXCDF	PG/L	49.8	49 U	50 U	50 U	<b>3.8 J</b>	<b>12 Q J</b>	<b>1.7 Q J</b>
1,2,3,6,7,8-HXCDF	PG/L	49.8	49 U	50 U	50 U	<b>1.3 Q J</b>	50 U	50 U
2,3,4,6,7,8-HXCDF	PG/L	49.8	49 U	50 U	50 U	49 U	50 U	50 U
1,2,3,7,8,9-HXCDF	PG/L	49.8	49 U	50 U	50 U	49 U	50 U	50 U
1,2,3,4,6,7,8-HPCDF	PG/L	49.8	<b>4 Q J</b>	<b>5.6 J</b>	<b>9.5 J</b>	<b>18 J</b>	<b>52</b>	<b>6.3 Q J</b>
1,2,3,4,7,8,9-HPCDF	PG/L	49.8	49 U	50 U	50 U	49 U	50 U	50 U
OCDF	PG/L	98.8	<b>10 J</b>	<b>15 J</b>	<b>25 J</b>	<b>41 J</b>	<b>130</b>	<b>18 Q J</b>
WHO TEQ (ND=0)	PG/L		<b>0.138</b>	<b>0.2275</b>	<b>0.4575</b>	<b>1.3541</b>	<b>3.193</b>	<b>1.3648</b>
WHO TEQ (ND=1/2DL)	PG/L		<b>60.898</b>	<b>62.1725</b>	<b>62.4025</b>	<b>57.2141</b>	<b>60.138</b>	<b>58.3098</b>

There are no USEPA saltwater acute or chronic criteria for aquatic life for the tested dioxin and furan congeners

**NOTE:** Shaded and bold values represent detected concentrations.

**U** = compound was analyzed but not detected

**J** = compound was detected, but below the reporting limit (value is estimated)

**B** = compound was detected in method blank

**Q** = Estimated maximum possible concentration.

**TABLE A-13. BUTYLTIN CONCENTRATIONS (UG/L) IN SITE WATER AND STANDARD ELUTRIATES  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	USEPA ACUTE CRITERIA*	USEPA CHRONIC CRITERIA*	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
DIBUTYLTIN	UG/L	0.01	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
MONOBUTYLTIN	UG/L	0.05	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
TETRABUTYLTIN	UG/L	0.0086	--	--	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U
TRIBUTYLTIN	UG/L	0.012	0.37	0.01	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U

\*Source: USEPA 2004. *Recommended Water Quality Criteria*

NOTE: Shaded and bold values represent detected concentrations.

U = compound was analyzed but not detected

**TABLE A-14. SEMIVOLATILE ORGANIC COMPOUND (SVOC) CONCENTRATIONS (UG/L) IN SITE WATER AND STANDARD ELUTRIATES  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HABOR, MARYLAND**

ANALYTE	UNITS	AVGDL	USEPA ACUTE CRITERIA*	USEPA CHRONIC CRITERIA*	EB/ELU SW (Elutriate Prep Water)	EB/ELU 01A	EB/ELU 05A	EB/ELU 06	EB/ELU 08	EB/ELU 09
1,2,4-TRICHLOROBENZENE	UG/L	1.38	--	--	5.8 U	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U
1,2-DICHLOROBENZENE	UG/L	1.34	--	--	7 U	1.3 U	1.3 U	1.4 U	1.3 U	1.4 U
1,2-DIPHENYLHYDRAZINE	UG/L	1.3	--	--	3.2 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
1,3-DICHLOROBENZENE	UG/L	1.28	--	--	4.9 U	1.2 U	1.3 U	1.3 U	1.3 U	1.3 U
1,4-DICHLOROBENZENE	UG/L	1.3	--	--	4.8 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/L	1.7	--	--	5.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
2,4,6-TRICHLOROPHENOL	UG/L	1.5	--	--	2.9 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2,4-DICHLOROPHENOL	UG/L	1.3	--	--	3.2 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
2,4-DIMETHYLPHENOL	UG/L	1.8	--	--	3.3 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
2,4-DINITROPHENOL	UG/L	14.8	--	--	21 U	14 U	15 U	15 U	15 U	15 U
2,4-DINITROTOLUENE	UG/L	1.3	--	--	4.9 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
2,6-DINITROTOLUENE	UG/L	1.4	--	--	1 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2-CHLORONAPHTHALENE	UG/L	1.4	--	--	5.6 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2-CHLOROPHENOL	UG/L	1.4	--	--	2.7 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2-METHYLPHENOL	UG/L	1.5	--	--	2.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2-NITROPHENOL	UG/L	2.98	--	--	3.2 U	2.9 U	3 U	3 U	3 U	3 U
3,3'-DICHLOROBENZIDINE	UG/L	25	--	--	6.5 U	25 U	25 U	25 U	25 U	25 U
4,6-DINITRO-2-METHYLPHENOL	UG/L	9.54	--	--	19 U	9.5 U	9.5 U	9.6 U	9.5 U	9.6 U
4-BROMOPHENYL PHENYL ETHER	UG/L	1.2	--	--	0.94 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
4-CHLORO-3-METHYLPHENOL	UG/L	1.3	--	--	1 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
4-CHLOROPHENYL PHENYL ETHER	UG/L	1.6	--	--	1.3 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
4-METHYLPHENOL	UG/L	3.48	--	--	1.4 U	3.4 U	3.5 U	3.5 U	3.5 U	3.5 U
4-NITROPHENOL	UG/L	1.78	--	--	15 U	1.7 U	1.8 U	1.8 U	1.8 U	1.8 U
BENZOIC ACID	UG/L	38.8	--	--	4.9 U	38 U	39 U	39 U	39 U	39 U
BENZYL ALCOHOL	UG/L	1.9	--	--	7.5 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
BIS(2-CHLOROETHOXY)METHANE	UG/L	3.4	--	--	3.7 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
BIS(2-CHLOROETHYL) ETHER	UG/L	1.4	--	--	2.3 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
BIS(2-CHLOROISOPROPYL) ETHER	UG/L	1.7	--	--	5.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
BIS(2-ETHYLHEXYL) PHTHALATE	UG/L	0.902	--	--	1.5 U	0.89 U	0.9 U	<b>1.5 J</b>	<b>1.2 J</b>	<b>1.3 J</b>
BUTYL BENZYL PHTHALATE	UG/L	0.998	--	--	2.7 U	0.99 U	1 U	1 U	<b>1.1 J</b>	1 U
DIBENZOFURAN	UG/L	1.5	--	--	5.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
DIETHYL PHTHALATE	UG/L	1.1	--	--	1.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
DIMETHYL PHTHALATE	UG/L	1.24	--	--	1.2 U	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U
DI-N-BUTYL PHTHALATE	UG/L	1.1	--	--	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
DI-N-OCTYL PHTHALATE	UG/L	0.942	--	--	1.5 U	0.93 U	0.94 U	0.95 U	0.94 U	0.95 U
HEXACHLOROBUTADIENE	UG/L	1.48	--	--	7.7 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U
HEXACHLOROCYCLOPENTADIENE	UG/L	6.22	--	--	0.99 U	6.1 U	6.2 U	6.3 U	6.2 U	6.3 U
HEXACHLOROETHANE	UG/L	1.38	--	--	6.7 U	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U
ISOPHORONE	UG/L	1.4	--	--	5.9 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
NITROBENZENE	UG/L	1.44	--	--	2.2 U	1.4 U	1.4 U	1.5 U	1.4 U	1.5 U
N-NITROSODIMETHYLAMINE	UG/L	1.7	--	--	1 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
N-NITROSODI-N-PROPYLAMINE	UG/L	1.5	--	--	3.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
N-NITROSODIPHENYLAMINE	UG/L	4.14	--	--	3 U	4.1 U	4.1 U	4.2 U	4.1 U	4.2 U
PENTACHLOROPHENOL	UG/L	0.812	13	7.9	20 U	0.8 U	0.81 U	0.82 U	0.81 U	0.82 U
PHENOL	UG/L	1.98	--	--	2.6 U	1.9 U	2 U	2 U	2 U	2 U

\*Source: USEPA 2004. Recommended Water Quality Criteria

NOTE: Shaded and bold values represent detected concentrations.

U = compound was analyzed but not detected

J = compound was detected, but below the reporting limit (value is estimated)

**TABLE A-15. GENERAL CHEMISTRY CONCENTRATIONS IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	RL	EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
AMMONIA NITROGEN	MG/L	43	6.4	0.1	<b>2.2</b>	<b>5.2</b>	<b>3.9</b>	<b>5</b>	<b>1.7</b>	<b>2.9</b>	<b>1.7</b>	<b>0.094 B J</b>
BIOCHEMICAL OXYGEN DEMAND	MG/L	--	--	0.79	0.79 U	0.79 U	0.79 U	0.79 U	2.1	0.79 U	0.79 U	<b>5.1</b>
CHEMICAL OXYGEN DEMAND	MG/L	--	--	14	<b>121</b>	<b>90.7</b>	<b>275</b>	<b>172</b>	<b>139</b>	<b>203</b>	<b>106</b>	
DISSOLVED CYANIDE	UG/L	--	--	4.3	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	<b>0.77</b>
NITRATE + NITRITE AS N	MG/L	--	--	0.1	<b>0.75</b>	<b>0.79</b>	<b>0.78</b>	<b>0.84</b>	<b>0.67</b>	<b>0.79</b>	<b>0.76</b>	3 U
NITROGEN, TOTAL KJELDAHL NITROGEN AS N	MG/L	--	--	3	<b>3.8</b>	<b>6.4</b>	<b>5.8</b>	<b>8.3</b>	<b>3.2</b>	<b>4.5</b>	<b>2.6 B</b>	<b>8.3</b>
PH	NO UNITS	--	--	0.1	<b>7.5</b>	<b>7.8</b>	<b>7.3</b>	<b>7.6</b>	<b>6.6</b>	<b>7.5</b>	<b>7.6</b>	0.1 U
PHOSPHORUS	MG/L	--	--	0.157	0.1 U	<b>3.9</b>	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	3 U b
SULFIDE	MG/L	--	0.002	3	3 U b	3 U b	3 U b	3 U b	3 U b	3 U b	3 U b	10 U ab
TOTAL ORGANIC CARBON	MG/L	--	--	0.31	0.31 U	0.31 U	0.31 U	<b>0.43 B</b>	<b>0.39 B</b>	0.31 U	0.31 U	<b>2.1 J</b>

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

EPAACUTESV = EPA acute screening value

EPACHRONICSV = EPA chronic screening value

B (inorganic) = compound was detected, but below reporting limit (value is estimated).

U = compound was analyzed but not detected

J (inorganic) = compound was detected in method blank

**TABLE A-16. METAL CONCENTRATIONS (UG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	MDL	EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
ANTIMONY	UG/L	--	--	3.2	3.2 U							
ARSENIC	UG/L	69	36	3.3	<b>3.3 B</b>	<b>4.8 B</b>	<b>3.9 B</b>	3.3 U	3.3 U	<b>6.6 B</b>	3.3 U	3.3 U
BERYLLIUM	UG/L	--	--	0.42	0.42 U							
CADMIUM	UG/L	40	8.8	0.7	0.7 U							
CHROMIUM, HEXAVALENT	UG/L	1100	50	1.8	1.8 U							
CHROMIUM, TOTAL	UG/L	1100	50	0.93	<b>1.1 B</b>	<b>1.4 B</b>	0.93 U	<b>1.6 B</b>	<b>2.2 B</b>	<b>2 B</b>	<b>3.2 B</b>	<b>1.6 B</b>
COPPER	UG/L	4.8	3.1	1.2	<b>1.6 B</b>	1.2 U	<b>1.6 B</b>	<b>2.9 B</b>				
LEAD	UG/L	210	8.1	1.6	1.6 U							
MERCURY	UG/L	1.8	0.94	0.048	0.048 U	<b>0.063 B</b>	<b>0.062 B</b>	0.048 U	0.048 U	0.048 U	<b>0.071 B</b>	0.048 U
NICKEL	UG/L	74	8.2	1.2	<b>5.5 B</b>	<b>1.7 B</b>	<b>7 B</b>	<b>2.1 B</b>	<b>7.7 B</b>	<b>3.2 B</b>	<b>2.7 B</b>	<b>2.9 B</b>
SELENIUM	UG/L	290	71	2.6	2.6 U							
SILVER	UG/L	1.9	--	0.3	0.3 U	<b>0.34 B</b>	0.3 U	0.3 U	0.3 U	<b>0.41 B</b>	0.3 U	0.3 U
THALLIUM	UG/L	--	--	4.6	<b>5.6 B</b>	4.6 U						
ZINC	UG/L	90	81	1.7	<b>6.6 B J</b>	<b>5.2 B J</b>	<b>5.3 B J</b>	<b>4.8 B J</b>	<b>6.9 B J</b>	<b>4.9 B J</b>	<b>6.1 B J</b>	<b>3.2 B</b>

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

EPAACUTESV = EPA acute screening value

EPACHRONICSV = EPA chronic screening value

B (inorganic) = compound was detected, but below reporting limit (value is estimated).

J (inorganic) = compound was detected in method blank

U = compound was analyzed but not detected

TABLE A-17. PCB CONGENER CONCENTRATIONS (NG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	MDL	EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
PCB 8 (BZ)	NG/L	--	--	0.364	1.1 PG	0.88 J PG	1 PG	0.6 J PG	0.37 U	0.37 U	0.52 J	0.44 U
PCB 18 (BZ)	NG/L	--	--	0.364	0.36 U	0.41 J PG	0.36 U	0.36 U	0.37 U	0.37 U	0.37 U	0.48 U
PCB 28 (BZ)	NG/L	--	--	0.421	0.42 U	0.42 U	0.42 U	0.42 U	0.43 U	0.42 U	0.42 U	210 PG
PCB 44 (BZ)	NG/L	--	--	0.434	0.43 U	0.43 U	0.43 U	0.43 U	0.44 U	0.44 U	0.44 U	0.44 U
PCB 49 (BZ)	NG/L	--	--	0.261	0.26 U	0.34 J PG	0.32 J PG	0.26 U	0.27 U	0.26 U	0.26 U	260
PCB 52 (BZ)	NG/L	--	--	0.411	0.41 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.43 U
PCB 66 (BZ)	NG/L	--	--	0.464	0.46 U	0.46 U	0.46 U	0.46 U	0.47 U	0.47 U	0.47 U	170 PG
PCB 77 (BZ)	NG/L	--	--	0.454	0.45 U	0.45 U	0.45 U	0.45 U	0.46 U	0.46 U	0.46 U	0.44 U
PCB 87 (BZ)	NG/L	--	--	0.411	0.41 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.41 U
PCB 101 (BZ)	NG/L	--	--	0.454	0.45 U	0.67 J PG	0.45 U	0.45 U	0.46 U	0.46 U	0.46 U	0.41 U
PCB 105 (BZ)	NG/L	--	--	0.444	0.44 U	0.44 U	0.44 U	0.44 U	0.45 U	0.45 U	0.45 U	0.38 U
PCB 118 (BZ)	NG/L	--	--	0.464	0.46 U	0.66 J	0.46 U	0.46 U	0.47 U	0.47 U	0.47 U	0.53 U
PCB 126 (BZ)	NG/L	--	--	0.301	0.3 U	0.52 J PG	0.3 U	0.3 U	0.31 U	0.3 U	0.3 U	0.39 U
PCB 128 (BZ)	NG/L	--	--	0.474	0.47 U	1 PG	0.47 U	0.47 U	0.48 U	0.48 U	0.48 U	0.36 U
PCB 138 (BZ)	NG/L	--	--	0.464	0.46 U	0.46 U	0.46 U	0.46 U	0.47 U	0.47 U	0.47 U	0.34 U
PCB 153 (BZ)	NG/L	--	--	0.434	0.43 U	1.5	0.43 U	0.43 U	0.44 U	0.44 U	0.44 U	0.39 U
PCB 156 (BZ)	NG/L	--	--	0.414	0.41 U	0.41 U	0.41 U	0.41 U	0.42 U	0.42 U	0.42 U	0.37 U
PCB 169 (BZ)	NG/L	--	--	0.230	0.23 U	0.43 U						
PCB 170 (BZ)	NG/L	--	--	0.220	0.22 U	0.78 J	0.22 U	0.37 U				
PCB 180 (BZ)	NG/L	--	--	0.280	0.28 U	1 PG	0.28 U	0.36 U				
PCB 183 (BZ)	NG/L	--	--	0.474	0.47 U	0.47 U	0.47 U	0.47 U	0.48 U	0.48 U	0.48 U	0.37 U
PCB 184 (BZ)	NG/L	--	--	0.220	0.22 U	0.42 U						
PCB 187 (BZ)	NG/L	--	--	0.461	0.46 U	0.88 J	0.46 U	0.46 U	0.47 U	0.46 U	0.46 U	0.39 U
PCB 195 (BZ)	NG/L	--	--	0.271	0.27 U	0.27 U	0.27 U	0.27 U	0.28 U	0.27 U	0.27 U	0.39 U
PCB 206 (BZ)	NG/L	--	--	0.290	0.29 U	0.38 U						
PCB 209 (BZ)	NG/L	--	--	0.250	0.25 U	0.44 U						
TOTAL PCBs (ND=0)	NG/L	--	30	--	2.2	16.6	2	1.2	0	0	1.04	760 b
TOTAL PCBs (ND=1/2)	NG/L	--	30	--	8.93	19.9	8.73	7.93	7.24	7.2	7.87	766.58 b

\*PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

EPAACUTESV = EPA acute screening value

EPACHRONICSV = EPA chronic screening value

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed but not detected

**TABLE A-18. PCB AROCLOR CONCENTRATIONS (UG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL  
(JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	MDL	EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
AROCLOL 1016	UG/L	--	--	0.473	0.47 U	0.47 U	0.47 U	0.47 U	0.49 U	0.47 U	0.47 U	0.49 U
AROCLOL 1221	UG/L	--	--	0.433	0.43 U	0.43 U	0.43 U	0.43 U	0.45 U	0.43 U	0.43 U	0.45 U
AROCLOL 1232	UG/L	--	--	0.513	0.51 U	0.51 U	0.51 U	0.51 U	0.53 U	0.51 U	0.51 U	0.53 U
AROCLOL 1242	UG/L	--	--	0.241	0.24 U	0.24 U	0.24 U	0.24 U	0.25 U	0.24 U	0.24 U	0.25 U
AROCLOL 1248	UG/L	--	--	0.326	0.32 U	0.32 U	0.32 U	0.33 U	0.34 U	0.32 U	0.33 U	0.34 U
AROCLOL 1254	UG/L	--	--	0.341	0.34 U	0.34 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U
AROCLOL 1260	UG/L	--	--	0.557	0.55 U	0.55 U	0.55 U	0.56 U	0.58 U	0.55 U	0.56 U	0.58 U

There are no EPAACUTESV and EPACHRONICSV values for standard elutriate PCB Aroclors

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**EPAACUTESV** = EPA acute screening value

**EPACHRONICSV** = EPA chronic screening value

**U** = compound was analyzed but not detected

TABLE A-19. PAH CONCENTRATIONS (UG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	MDL	EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
1-METHYLNAPHTHALENE	UG/L	--	--	0.082	0.079 U	0.08 U	0.081 U	0.084 U	0.084 U	0.081 U	0.084 U	0.032 U
2-METHYLNAPHTHALENE	UG/L	--	--	0.049	0.047 U	0.047 U	0.048 U	0.05 U	0.05 U	0.048 U	0.05 U	0.024 U
ACENAPHTHENE	UG/L	--	--	0.037	0.065 J	0.24	0.63	0.19 J	0.052 J	0.23	0.06 J	0.038 U
ACENAPHTHYLENE	UG/L	--	--	0.034	0.033 U	0.033 U	0.034 U	0.035 U	0.035 U	0.034 U	0.035 U	0.035 U
ANTHRACENE	UG/L	--	--	0.024	0.023 U	0.045 J	0.18 J	0.043 J	0.025 U	0.085 J	0.025 U	0.036 U
BENZO(A)ANTHRACENE	UG/L	--	--	0.021	0.023 J	0.021 J	0.048 J	0.026 J	0.022 U	0.045 J	0.022 U	0.022 U
BENZO(A)PYRENE	UG/L	--	--	0.024	0.023 U	0.023 U	0.024 U	0.025 U	0.025 U	0.024 U	0.025 U	0.076 U
BENZO(B)FLUORANTHENE	UG/L	--	--	0.024	0.023 U	0.023 U	0.024 U	0.025 U	0.025 U	0.024 U	0.025 U	0.042 U
BENZO(GH)PERYLENE	UG/L	--	--	0.029	0.028 U	0.028 U	0.029 U	0.03 U	0.03 U	0.029 U	0.03 U	0.12 U
BENZO(K)FLUORANTHENE	UG/L	--	--	0.019	0.019 U	0.019 U	0.019 U	0.02 U	0.02 U	0.019 U	0.02 U	0.06 U
CHRYSENE	UG/L	--	--	0.019	0.019 U	0.019 U	0.039 J	0.02 U	0.02 U	0.035 J	0.02 U	0.034 U
DIBENZO(A,H)ANTHRACENE	UG/L	--	--	0.030	0.029 U	0.029 U	0.029 U	0.031 U	0.031 U	0.03 U	0.031 U	0.15 U
FLUORANTHENE	UG/L	--	--	0.030	0.086 J	0.074 J	0.35	0.1 J	0.031 U	0.23	0.031 U	0.027 U
FLUORENE	UG/L	--	--	0.035	0.055 J	0.21	0.14 J	0.11 J	0.036 J	0.15 J	0.043 J	<b>0.04 J</b>
INDENO(1,2,3-CD)PYRENE	UG/L	--	--	0.024	0.023 U	0.023 U	0.024 U	0.025 U	0.025 U	0.024 U	0.025 U	0.1 U
NAPHTHALENE	UG/L	--	--	0.037	0.036 U	0.2	0.11 J	0.12 J	0.078 J	0.11 J	0.038 U	0.038 U
PHENANTHRENE	UG/L	--	--	0.030	0.15 J	0.42	0.62	0.32	0.13 J	0.5	0.12 J	<b>0.13 J</b>
PYRENE	UG/L	--	--	0.023	0.065 J	0.068 J	0.37	0.11 J	0.027 J	0.24	0.024 U	0.024 U
TOTAL PAHs (ND=0)	UG/L	--	--	--	<b>0.444</b>	<b>1.278</b>	<b>2.487</b>	<b>1.019</b>	<b>0.323</b>	<b>1.625</b>	<b>0.223</b>	<b>0.17</b>
TOTAL PAHs (ND=1/2DL)	UG/L	--	--	--	<b>0.635</b>	<b>1.44</b>	<b>2.643</b>	<b>1.1915</b>	<b>0.5345</b>	<b>1.7815</b>	<b>0.4655</b>	<b>0.599</b>

There are no EPAACUTESV and EPACHRONICSV values for standard elutriate PAHs.

NOTE: Shaded and bold values represent detected concentrations

MDL = average method detection limit

U = compound was analyzed but not detected

EPAACUTESV = EPA acute screening value

EPACHRONICSV = EPA chronic screening value

TABLE A-20. CHLORINATED PESTICIDE CONCENTRATIONS (UG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	MDL	EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
4,4'-DDD	UG/L	--	--	0.015	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.019 U
4,4'-DDE	UG/L	--	--	0.015	0.015 U	0.016 U						
4,4'-DDT	UG/L	0.13	0.001	0.014	0.014 U b	0.014 U b	0.014 U b	0.014 U b	0.015 U b	0.014 U b	0.014 U b	0.017 U b
ALDRIN	UG/L	1.3	--	0.013	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 U	0.013 U	0.019 U
ALPHA-BHC	UG/L	--	--	0.013	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 U	0.013 U	0.016 U
BETA-BHC	UG/L	--	--	0.015	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.016 U
CHLORDANE (TECHNICAL)	UG/L	0.09	0.004	0.170	0.17 U ab	0.025 U b						
CHLOROBENZENE	UG/L	--	--	0.030	0.03 U	0.03 U	0.03 U	0.03 U	0.031 U	0.03 U	0.03 U	0.032 U
DCPA	UG/L	--	--	0.030	0.03 U	0.03 U	0.03 U	0.03 U	0.031 U	0.03 U	0.03 U	0.032 U
DELTA-BHC	UG/L	--	--	0.015	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.018 U
DIELDRIN	UG/L	0.71	0.0019	0.015	0.015 U b	0.015 U b	0.015 U b	0.015 U b	0.016 U b	0.015 U b	0.015 U b	0.022 U b
ENDOSULFAN I	UG/L	0.034	0.0087	0.015	0.015 U b	0.016 U b						
ENDOSULFAN II	UG/L	0.034	0.0087	0.027	0.026 U b	0.026 U b	0.026 U b	0.027 U b	0.028 U b	0.026 U b	0.027 U b	0.022 U b
ENDOSULFAN SULFATE	UG/L	--	--	0.016	0.016 U	0.016 U	0.016 U	0.016 U	0.017 U	0.016 U	0.016 U	0.025 U
ENDRIN	UG/L	0.037	0.0023	0.014	0.014 U b	0.014 U b	0.014 U b	0.014 U b	0.015 U b	0.014 U b	0.014 U b	0.018 U b
ENDRIN ALDEHYDE	UG/L	--	--	0.015	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.016 U
GAMMA-BHC (LINDANE)	UG/L	0.16	--	0.014	0.014 U							
HEPTACHLOR	UG/L	0.053	0.0036	0.013	0.013 U b	0.013 U b	0.013 U b	0.013 U b	0.014 U b	0.013 U b	0.013 U b	0.015 U b
HEPTACHLOR EPOXIDE	UG/L	0.053	0.0036	0.015	0.015 U b	0.023 U b						
METHOXYCHLOR	UG/L	--	0.03	0.030	0.03 U	0.03 U	0.03 U	0.03 U	0.031 U b	0.03 U	0.03 U	0.03 U
MIREX	UG/L	--	0.001	0.016	0.016 U b	0.016 U b	0.016 U b	0.016 U b	0.017 U b	0.016 U b	0.016 U b	0.017 U b
TOXAPHENE	UG/L	0.21	0.0002	0.069	0.068 U b	0.068 U b	0.068 U b	0.069 U b	0.071 U b	0.068 U b	0.069 U b	0.084 U b
HEXACHLOROBENZENE	UG/L	--	--	0.013	--	--	--	--	--	--	--	0.013 U

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

EPAACUTESV = EPA acute screening value

EPACHRONICSV = EPA chronic screening value

a = value greater than EPAACUTESV

b = value greater than EPACHRONICSV

U = compound was analyzed but not detected

**TABLE A-21. ORGANOPHOSPHORUS PESTICIDE CONCENTRATIONS (UG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	MDL	EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
AZINPHOS METHYL	UG/L	--	0.1	0.263	0.26 U b	0.26 U b	0.26 U b	0.26 U b	0.27 U b	0.26 U b	0.27 U b	0.13 U b
DEMETON	UG/L	--	0.1	0.713	0.71 U b	0.71 U b	0.71 U b	0.71 U b	0.72 U b	0.71 U b	0.72 U b	0.38 U b
MALATHION	UG/L	--	0.1	0.234	0.23 U b	0.23 U b	0.23 U b	0.23 U b	0.24 U b	0.24 U b	0.24 U b	0.071 U
METHYL PARATHION	UG/L	--	--	0.260	0.26 U	0.042 U						
PARATHION	UG/L	--	--	0.224	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.081 U

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**EPAACUTESV** = EPA acute screening value

**EPACHRONICSV** = EPA chronic screening value

**b** = value greater than EPACHRONICSV

**TABLE A-22. DIOXIN AND FURAN CONGENER CONCENTRATIONS (PG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	RL	Sample ID							EB-SITE CONTROL WATER
					EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	
2,3,7,8-TCDD	PG/L	--	--	9.757	9.5 U	9.5 U	10 U	9.5 U	10 U	9.9 U	9.9 U	9.5 U
1,2,3,7,8-PECDD	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
1,2,3,4,7,8-HXCDD	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
1,2,3,6,7,8-HXCDD	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
1,2,3,7,8,9-HXCDD	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
1,2,3,4,6,7,8-HPCDD	PG/L	--	--	49.143	<b>1.6 J</b>	<b>6.4 Q J</b>	<b>4.7 J</b>	<b>3.3 J</b>	50 U	<b>11 J</b>	<b>4.4 J</b>	<b>2.2 Q J</b>
OCDD	PG/L	--	--	97.571	<b>20 B J</b>	<b>77 B J</b>	<b>120 B</b>	<b>85 B J</b>	<b>12 B J</b>	<b>150 B</b>	<b>83 B J</b>	<b>37 B J</b>
2,3,7,8-TCDF	PG/L	--	--	9.757	9.5 U	9.5 U	10 U	9.5 U	10 U	<b>1.9 Q J</b>	9.9 U	9.5 U
1,2,3,7,8-PECDF	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
2,3,4,7,8-PECDF	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
1,2,3,4,7,8-HXCDF	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
1,2,3,6,7,8-HXCDF	PG/L	--	--	49.143	48 U	<b>1.2 Q J</b>	50 U	<b>0.68 J</b>	<b>0.83 Q J</b>	<b>3.4 Q J</b>	50 U	48 U
2,3,4,6,7,8-HXCDF	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
1,2,3,7,8,9-HXCDF	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
1,2,3,4,6,7,8-HPCDF	PG/L	--	--	49.143	48 U	<b>2.4 Q B J</b>	50 U	48 U	50 U	<b>7.3 B J</b>	50 U	<b>0.56 B J</b>
1,2,3,4,7,8,9-HPCDF	PG/L	--	--	49.143	48 U	48 U	50 U	48 U	50 U	50 U	50 U	48 U
OCDF	PG/L	--	--	97.571	95 U	<b>6.6 B J</b>	<b>1.4 B J</b>	95 U	100 U	<b>16 B J</b>	99 U	<b>1.5 Q B J</b>
DIOXIN TEQ (ND=0)	PG/L	--	--	--	<b>0.016</b>	<b>0.184</b>	<b>0.047</b>	<b>0.101</b>	<b>0.083</b>	<b>0.64</b>	<b>0.044</b>	<b>0.022</b>
DIOXIN TEQ (ND=1/2DL)	PG/L	--	--	--	<b>59.72575</b>	<b>57.249</b>	<b>62.297</b>	<b>57.41075</b>	<b>60.088</b>	<b>59.59</b>	<b>62.24395</b>	<b>59.487</b>

There are no EPAACUTESV and EPACHRONICSV values for dioxin and furan congeners.

**NOTE:** Shaded and bold values represent detected concentrations.

**RL** = average reporting limit

**B** = analyte is present in the associated method blank

**J** = compound was detected, but below the reporting limit (value is estimated)

**Q** = estimated maximum possible concentration

**U** = compound was analyzed but not detected

**EPAACUTESV** = EPA acute screening value

**EPACHRONICSV** = EPA chronic screening value

**TABLE A-23. BUTYLTIN CONCENTRATIONS (UG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	RL	EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
DIBUTYLTIN	UG/L	--	--	0.038	0.038 U	0.038 U	0.039 U	0.038 U	0.039 U	0.038 U	0.038 U	0.037 U
MONOBUTYLTIN	UG/L	--	--	0.160	0.16 U	0.15 U						
TETRABUTYLTIN	UG/L	--	--	0.050	0.049 U	0.049 U	0.05 U	0.049 U	0.05 U	0.05 U	0.05 U	0.048 U
TRIBUTYLTIN	UG/L	0.37	0.01	0.044	0.044 U b	0.044 U b	0.045 U b	0.044 U b	0.045 U b	0.044 U b	0.044 U b	0.043 U b

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

U = compound was analyzed but not detected

EPAACUTESV = EPA acute screening value

EPACHRONICSV = EPA chronic screening value

b = value greater than EPACHRONICSV

TABLE A-24. SEMIVOLATILE ORGANIC COMPOUND (SVOC) CONCENTRATIONS (UG/L) IN STANDARD ELUTRIATES AND SITE WATER FOR PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	EPAACUTESV	EPACHRONICSV	MDL	Sample ID							
					EB-1-ELUT	EB-2-ELUT	EB-3-ELUT	EB-4-ELUT	EB-5-ELUT	EB-6-ELUT	EB-7-ELUT	EB-SITE CONTROL WATER
1,2,4-TRICHLOROBENZENE	UG/L	--	--	1.343	1.3 U	1.3 U	1.3 U	1.4 U	1.4 U	1.3 U	1.4 U	6.1 U
1,2-DICHLOROBENZENE	UG/L	--	--	1.343	1.3 U	1.3 U	1.3 U	1.4 U	1.4 U	1.3 U	1.4 U	7.4 U
1,2-DIPHENYLHYDRAZINE	UG/L	--	--	1.300	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	3.4 U
1,3-DICHLOROBENZENE	UG/L	--	--	1.243	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U	1.3 U	5.2 U
1,4-DICHLOROBENZENE	UG/L	--	--	1.286	1.2 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	5.1 U
2,4,6-TRICHLOROPHENOL	UG/L	--	--	1.457	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U	3.1 U
2,4-DICHLOROPHENOL	UG/L	--	--	1.300	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	3.4 U
2,4-DIMETHYLPHENOL	UG/L	--	--	1.771	1.7 U	1.7 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	3.5 U
2,4-DINITROPHENOL	UG/L	--	--	14.429	14 U	14 U	15 U	15 U	14 U	15 U	15 U	22 U
2,4-DINITROTOLUENE	UG/L	--	--	1.257	1.2 U	1.2 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	5.2 U
2,6-DINITROTOLUENE	UG/L	--	--	1.357	1.3 U	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.1 U
2-CHLORONAPHTHALENE	UG/L	--	--	1.386	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	5.9 U
2-CHLOROPHENOL	UG/L	--	--	1.343	1.3 U	1.3 U	1.4 U	1.4 U	1.4 U	1.3 U	1.4 U	2.9 U
2-METHYLPHENOL	UG/L	--	--	1.500	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	2.6 U
2-NITROPHENOL	UG/L	--	--	2.914	2.8 U	2.8 U	2.9 U	3 U	3 U	2.9 U	3 U	3.4 U
3,3'-DICHLOROBENZIDINE	UG/L	--	--	24.429	24 U	24 U	24 U	25 U	25 U	24 U	25 U	6.9 U
4,6-DINITRO-2-METHYLPHENOL	UG/L	--	--	9.400	9.1 U	9.2 U	9.3 U	9.6 U	9.6 U	9.4 U	9.6 U	20 U
4-BROMOPHENYL PHENYL ETHER	UG/L	--	--	1.200	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1 U
4-CHLORO-3-METHYLPHENOL	UG/L	--	--	1.271	1.2 U	1.2 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.1 U
4-CHLOROPHENYL PHENYL ETHER	UG/L	--	--	1.571	1.5 U	1.5 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
4-METHYLPHENOL	UG/L	--	--	3.414	3.3 U	3.3 U	3.4 U	3.5 U	3.5 U	3.4 U	3.5 U	1.5 U
4-NITROPHENOL	UG/L	--	--	1.743	1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U	1.8 U	16 U
ACENAPHTHENE	UG/L	--	--	0.037	<b>0.065 J</b>	<b>0.24</b>	<b>0.63</b>	<b>0.19 J</b>	<b>0.052 J</b>	<b>0.23</b>	<b>0.06 J</b>	0.038 U
BENZOIC ACID	UG/L	--	--	38.000	37 U	37 U	39 U	39 U	38 U	39 U	39 U	5.2 U
BENZYL ALCOHOL	UG/L	--	--	1.857	1.8 U	1.8 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	8 U
BIS(2-CHLOROETHoxy)METHANE	UG/L	--	--	3.329	3.2 U	3.3 U	3.3 U	3.4 U	3.4 U	3.3 U	3.4 U	4 U
BIS(2-CHLOROETHYL) ETHER	UG/L	--	--	1.400	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	2.4 U
BIS(2-CHLOROISOPROPYL) ETHER	UG/L	--	--	1.657	1.6 U	1.6 U	1.6 U	1.7 U	1.7 U	1.7 U	1.7 U	6.2 U
BIS(2-ETHYLHEXYL) PHTHALATE	UG/L	--	--	0.884	0.85 U	0.86 U	0.87 U	0.91 U	0.91 U	0.88 U	0.91 U	1.6 U
BUTYL BENZYL PHTHALATE	UG/L	--	--	0.980	<b>40</b>	0.96 U	0.97 U	1 U	1 U	0.98 U	1 U	2.9 U
DIBENZOFURAN	UG/L	--	--	1.471	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	6.1 U
DIETHYL PHTHALATE	UG/L	--	--	1.100	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.5 U
DIMETHYL PHTHALATE	UG/L	--	--	1.243	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U	1.3 U	1.3 U
DI-N-BUTYL PHTHALATE	UG/L	--	--	1.071	1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.3 U
DI-N-OCTYL PHTHALATE	UG/L	--	--	0.924	0.89 U	0.9 U	0.91 U	0.95 U	0.95 U	0.92 U	0.95 U	1.6 U
HEXACHLOROBENZENE	UG/L	--	--	0.012	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
HEXAChLOROBUTADIENI	UG/L	--	--	1.443	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.5 U	8.2 U
HEXAChLOROCYCLOPENTADIENE	UG/L	--	--	6.114	5.9 U	5.9 U	6 U	6.3 U	6.3 U	6.1 U	6.3 U	1.1 U
HEXAChLOROETHANE	UG/L	--	--	1.343	1.3 U	1.3 U	1.3 U	1.4 U	1.4 U	1.3 U	1.4 U	7.2 U
ISOPHORONE	UG/L	--	--	1.357	1.3 U	1.3 U	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U	6.3 U
NITROBENZENE	UG/L	--	--	1.443	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.5 U	2.3 U
N-NITROSODIMETHYLAMINE	UG/L	--	--	1.643	1.6 U	1.6 U	1.6 U	1.7 U	1.7 U	1.6 U	1.7 U	1.1 U
N-NITROSODI-N-PROPYLAMINE	UG/L	--	--	1.486	1.4 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	3.9 U
N-NITROSODIPHENYLAMINE	UG/L	--	--	4.086	3.9 U	<b>4 U</b>	4 U	4.2 U	4.2 U	4.1 U	4.2 U	3.2 U
PENTACHLOROPHENOL	UG/L	13	7.9	0.797	0.77 U	0.78 U	0.78 U	0.82 U	0.82 U	0.79 U	0.82 U	21 U ab
PHENOL	UG/L	--	--	1.943	1.9 U	1.9 U	1.9 U	2 U	2 U	1.9 U	2 U	2.8 U
PYRENE	UG/L	--	--	0.023	<b>0.065 J</b>	<b>0.068 J</b>	<b>0.37</b>	<b>0.11 J</b>	<b>0.027 J</b>	<b>0.24</b>	0.024 U	0.024 U

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

EPAACUTESV = EPA acute screening value

EPACHRONICSV = EPA chronic screening value

**TABLE A-25. NUTRIENT CONCENTRATIONS AT CHESAPEAKE BAY PROGRAM MONITORING  
LOCATION WT5.1**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	FALL SAMPLING RESULTS*			WINTER SAMPLING RESULTS*		
		MINIMUM	MAXIMUM	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
NITRITE	mg N/L	0.002	0.264	0.048	0.0069	0.0332	0.016
AMMONIUM	mg N/L	0.003	0.373	0.085	0.008	0.362	0.126
NITRATE	mg N/L	0.004	0.878	0.270	0.1017	1.136	0.637
TOTAL DISSOLVED NITROGEN	mg N/L	0.368	1.521	0.826	0.62	1.818	1.09
PARTICULATE NITROGEN	mg N/L	0.126	2.73	0.355	0.0987	0.788	0.287
PHOSPHATE	mg P/L	0.0018	0.053	0.016	0.0016	0.022	0.008
TOTAL DISSOLVED PHOSPHORUS	mg P/L	0.01	0.081	0.029	0.0083	0.047	0.016
PARTICULATE PHOSPHORUS	mg P/L	-0.001	0.1906	0.040	0.01	0.146	0.035
DISSOLVED ORGANIC CARBON	mg C/L	3.25	6.27	4.18	2.91	4.92	3.71
PARTICULATE CARBON	mg C/L	0.645	16.4	1.96	0.572	4.93	1.70
TOTAL SUSPENDED SOLIDS	mg/L	2	35	10.3	2.4	22	9.34
PHEOPHYTIN	mg/L	0.199	15.57	4.09	0	7.925	2.44
CHLOROPHYLL A	mg/L	2.99	199.05	19.9	3.32	115.13	13.8

\*Data represents surface water concentrations at WT5.1 from the Autumn months (September, October and November) Winter months (December, January, February) collected from 1995 through 2004. Data from 2005 were not yet available.

ANALYTE	UNITS	SPRING SAMPLING RESULTS**			SUMMER SAMPLING RESULTS**		
		MINIMUM	MAXIMUM	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
NITRITE	mg N/L	0.003	0.039	0.017	0.001	0.17	0.024
AMMONIUM	mg N/L	0.003	0.546	0.120	0.003	0.558	0.120
NITRATE	mg N/L	0.0761	1.465	0.699	-0.0013	1.817	0.192
TOTAL DISSOLVED NITROGEN	mg N/L	0.43	2.135	1.17	0.298	2.977	0.740
PARTICULATE NITROGEN	mg N/L	0.161	0.9	0.373	0.085	2.1	0.450
PHOSPHATE	mg P/L	0.0016	0.03	0.007	0.0017	0.0579	0.011
TOTAL DISSOLVED PHOSPHORUS	mg P/L	0.0079	0.061	0.017	0.0072	0.132	0.025
PARTICULATE PHOSPHORUS	mg P/L	0.007	0.112	0.036	0.009	0.199	0.049
DISSOLVED ORGANIC CARBON	mg C/L	2.55	6.81	3.57	2.87	9.83	4.19
PARTICULATE CARBON	mg C/L	0.984	6	2.28	0.52	12.6	2.65
TOTAL SUSPENDED SOLIDS	mg/L	1	29	11.6	2.6	63	13.9
PHEOPHYTIN	mg/L	0	14.802	3.75	0	20.036	5.55
CHLOROPHYLL A	mg/L	2.99	87.84	20.1	1.2	201.85	31.8

\*\*Data represents surface water concentrations at WT5.1 from the Spring months (March, April and May) and the Summer months (June, July, and August) collected from 1995 through 2004. Data from 2005 were not yet available.

*Source :* Chesapeake Bay Program Water Quality Monitoring Program, Annapolis, MD. Monitoring location WT5.1 is located in the Patapsco River and is tidal influenced, mesohaline, and approximately 40 ft deep.

**TABLE A-26. Required containers, preservation techniques, and holding times for sediment samples.** <sup>(a)</sup>

Parameter	Volume Required <sup>(b)</sup>	Container <sup>(c)</sup>	Preservative	Holding Time
<b>Inorganics</b>				
Metals (including Mercury)	4 oz.	P,G	4°C	6 months (28 days for Hg)
Biochemical Oxygen Demand	8 oz.	P,G	4°C	48 hours
Chemical Oxygen Demand	(d)	P,G	4°C	28 days
Cyanide	(d)	P,G	4°C	14 days
Sulfide	(d)	P,G	4°C	7 days
Acid Volatile Sulfides (AVS)	4 oz	P, G	4°C (no headspace)	14 days
Nitrogen (Ammonia, Nitrate + Nitrite)	(d)	P,G	4°C	28 days
Nitrogen (Total Kjeldahl), Total Phosphorus	4 oz	P,G	4°C	28 days
<b>Physical Parameters</b>				
Grain Size, Specific Gravity, Atterberg Limits	32 oz.	P,G	4°C	6 months
Moisture Content	(d).	P,G	4°C	6 months
<b>Organics</b>				
Total Organic Carbon	4 oz	G	4°C	14 days
Pesticides (Organochlorine and Organophosphate), Semivolatile Organics, Polynuclear Aromatic Hydrocarbons, PCB Congeners	32 oz	G	4°C	14 days until extraction, 40 days after extraction
Organotins	8 oz	G	4°C	14 days until extraction, 40 days after extraction
Polychlorinated Dioxins/Furans	4 oz.	G	4°C	1 year until extraction, 40 days after extraction

(a) From time of sample collection.

(b) Additional volume was provided for samples designated as MS/MSDs.

(c) P = plastic; G = glass.

(d) Sufficient volume provided from the 8 oz. noted under Biochemical Oxygen Demand

**TABLE A-27. MARINE SEDIMENT QUALITY GUIDELINES (SQGs).**

Chemical Name	Units	Threshold Effects Level (TEL)	Probable Effects Level (PEL)
<b>METALS</b>			
ARSENIC	mg/kg	7.24	41.6
CADMIUM	mg/kg	0.676	4.21
CHROMIUM	mg/kg	52.3	160.4
COPPER	mg/kg	18.7	108.2
LEAD	mg/kg	30.24	112.18
MERCURY	mg/kg	0.13	0.696
NICKEL	mg/kg	15.9	42.8
SILVER	mg/kg	0.73	1.77
ZINC	mg/kg	124	271
<b>CHLORINATED PESTICIDES</b>			
CHLORDANE	µg/kg	2.26	4.79
4,4-DDD	µg/kg	1.22	7.81
4,4-DDE	µg/kg	2.07	374.17
4,4-DDT	µg/kg	1.19	4.77
DIELDRIN	µg/kg	0.715	4.3
GAMMA-BHC	µg/kg	0.32	0.99
<b>PAHs</b>			
2-METHYLNAPHTHALENE	µg/kg	20.21	201.28
ACENAPHTHENE	µg/kg	6.71	88.9
ACENAPHTHYLENE	µg/kg	5.87	127.87
ANTHRACENE	µg/kg	46.85	245
BENZO(A)PYRENE	µg/kg	88.81	763.22
BENZ(A)ANTHRACENE	µg/kg	74.83	692.53
CHRYSENE	µg/kg	107.77	845.98
DIBENZ(A,H)ANTHRACENE	µg/kg	6.22	134.61
FLUORANTHENE	µg/kg	112.82	1493.54
FLUORENE	µg/kg	21.17	144.35
NAPHTHALENE	µg/kg	34.57	390.64
PHENANTHRENE	µg/kg	86.68	543.53
PYRENE	µg/kg	152.66	1397.6
PAHs, TOTAL	µg/kg	1684.06	16770.4
<b>PCBs</b>			
PCBs, TOTAL	µg/kg	21.55	188.79
<b>SEMOVOLATILE ORGANIC COMPOUNDS</b>			
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	182.16	2646.51

*Source: MacDonald et al. 1996. Ecotoxicology 5: 253-278.*

**TABLE A-28. PHYSICAL PARAMETERS OF SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	Sample ID	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
	UNITS								
GRAVEL	%	2.6	0.7	7	2	0	0	0	0
SAND	%	46.3	7.3	27.1	28	6	1	10	14
SILT	%	36.5	71.7	49.1	41	65	65	46	63
CLAY	%	14.6	20.3	16.8	29	29	34	44	23
SILT+CLAY	%	51.1	92	65.9	70	94	99	90	86
LIQUID LIMIT	--	NA	NA	NA	49	67	78	48	58
PLASTIC LIMIT	--	NA	NA	NA	30	34	38	26	36
PLASTICITY INDEX	--	21	29	29	19	33	40	22	22
MOISTURE CONTENT	%	114.6	135.7	116.8	132.6	129.4	169.5	127.1	95.6
PERCENT SOLIDS	%	48.5	43.2	47.7	43	43.6	37.1	44	51.1
SPECIFIC GRAVITY	--	2.63	2.6	2.53	2.44	2.67	2.68	2.65	2.73

NA = constituent was not analyzed for this sample

**TABLE A-28. CONTINUED  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	Sample ID	KURT IRON			WET BASIN		
		M-B7	M-B8	MSNSURF05-1-S	M-B5	M-B6	MBSURF05-1
GRAVEL	%	0	0	0	0	0.9	0
SAND	%	10.4	6.8	9.9	9.5	60.6	7.7
SILT	%	64.4	68	63.5	71.7	25.7	77.8
CLAY	%	25.1	25.2	26.7	18.8	12.8	14.4
SILT+CLAY	%	89.5	93.2	90.2	90.5	38.5	92.2
LIQUID LIMIT	--	67	63	62	81	41	NA
PLASTIC LIMIT	--	38	37	41	47	0	NA
PLASTICITY INDEX	--	29	26	21	34	NA	NA
MOISTURE CONTENT	%	NA	NA	NA	NA	NA	NA
PERCENT SOLIDS	%	41.1	47.1	44.9	29	55.2	24.2
SPECIFIC GRAVITY	--	2.57	2.55	2.678	2.54	2.6	2.69

NA = constituent was not analyzed for this sample

**TABLE A-29. GENERAL CHEMISTRY CONCENTRATIONS IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	Sample ID	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
		MDL								
TOTAL ORGANIC CARBON	%	0.13	<b>2.04</b>	<b>2.96</b>	<b>2.59</b>	<b>3.60</b>	<b>2.70</b>	<b>3.40</b>	<b>3.11</b>	<b>3.14</b>
AMMONIA NITROGEN	MG/KG	6.16	<b>59.3</b>	<b>39.2</b>	<b>90.7</b>	<b>105</b>	<b>56.4</b>	<b>116</b>	<b>62.3</b>	<b>66.2</b>
NITRATE-NITRITE	MG/KG	0.68	0.56 U	0.62 U	0.57 U	<b>3.8</b>	0.68 U	0.72 U	0.66 U	0.58 U
TOTAL KJELDAHL NITROGEN	MG/KG	121.6	<b>1,540 J</b>	<b>2,500 J</b>	<b>1,980 J</b>	<b>1,540</b>	<b>1,610</b>	<b>1,620</b>	<b>1,200</b>	<b>927</b>
BIOCHEMICAL OXYGEN DEMAND	MG/KG	303.4	<b>4,010</b>	<b>3,250</b>	<b>1,630</b>	<b>11,300</b>	<b>8,920</b>	<b>10,500</b>	<b>7,540</b>	<b>7,040</b>
CHEMICAL OXYGEN DEMAND	MG/KG	25.28	20.6 U	23.1 U	21 U	<b>613</b>	<b>551</b>	26.8 U	<b>307</b>	21.5 U
ASBESTOS	%	NA	ND	ND	ND	ND	ND	ND	ND	ND
CYANIDE, TOTAL	MG/KG	0.436	0.36 U	0.4 U	<b>0.38 B</b>	0.49 U	0.44 U	<b>1.4</b>	0.42 U	<b>0.43 B</b>
OIL & GREASE	MG/KG	195.2	NA	NA	NA	<b>960</b>	<b>558</b>	<b>536</b>	<b>581</b>	<b>644</b>
pH	--	--	NA	NA	NA	<b>8.2</b>	<b>8.2</b>	<b>8</b>	<b>8.1</b>	<b>8</b>
TOTAL PHOSPHORUS	MG/KG	58.14	<b>406</b>	<b>331</b>	<b>576</b>	<b>494</b>	<b>308</b>	<b>701</b>	56.4 U	49.4 U
TOTAL SULFIDE	MG/KG	2.52	<b>659</b>	<b>916</b>	<b>218</b>	<b>4,070</b>	<b>2,590</b>	<b>2,750</b>	<b>1,870</b>	<b>1,190</b>
ACID VOLATILE SULFIDE	UMOLE/G	1.26	NA	NA	NA	132	49.6	48.3	55.5	42.1

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**NA** = constituent was not analyzed for this sample

**ND** = constituent was not detected for this sample

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**J** (inorganic) = compound was detected in method blank

**U** = compound was analyzed but not detected

**TABLE A-29. CONTINUED**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	Sample ID	UNITS	KURT IRON			WET BASIN
			M-B7	M-B8	MSNSURF05-1-S	
TOTAL ORGANIC CARBON	%	0.13	<b>3.31</b>	<b>1.49</b>	<b>2.42</b>	<b>3.74</b>
AMMONIA NITROGEN	MG/KG	6.16	<b>104</b>	<b>67.4</b>	NA	<b>162</b>
NITRATE-NITRITE	MG/KG	0.68	0.65 U	0.51 U	<b>1.6 B</b>	0.87 U
TOTAL KJELDAHL NITROGEN	MG/KG	121.6	<b>1,630 J</b>	<b>1,340 J</b>	2,120	<b>2,090 J</b>
BIOCHEMICAL OXYGEN DEMAND	MG/KG	303.4	<b>8,650</b>	<b>2,370</b>	1,160	<b>6990</b>
CHEMICAL OXYGEN DEMAND	MG/KG	25.28	<b>151 B</b>	<b>71 B</b>	<b>254</b>	<b>158 B</b>
ASBESTOS	%	NA	ND	ND	ND	ND
CYANIDE, TOTAL	MG/KG	0.436	<b>0.94 B J</b>	<b>0.5 B J</b>	0.48 U	0.7 U
OIL & GREASE	MG/KG	195.2	<b>634</b>	<b>652</b>	172 U	<b>582</b>
pH	--	--	<b>7.6</b>	<b>7.7</b>	NA	<b>7.9</b>
TOTAL PHOSPHORUS	MG/KG	58.14	<b>885</b>	<b>808</b>	<b>602</b>	<b>914</b>
TOTAL SULFIDE	MG/KG	2.52	<b>976</b>	<b>679</b>	<b>214</b>	<b>2,730</b>
ACID VOLATILE SULFIDE	UMOLE/G	1.26	<b>35.9</b>	<b>27.4</b>	<b>14.2</b>	<b>78</b>
						5.4
						NA

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**NA** = constituent was not analyzed for this sample

**ND** = constituent was not detected for this sample

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**J** (inorganic) = compound was detected in method blank

**U** = compound was analyzed but not detected

**TABLE A-30. METAL CONCENTRATIONS (MG/KG) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
ALUMINUM	MG/KG	1.98	--	--	12,600 E	17,300 E	13,600 E	20,600 E	20,900 E	20,600 E	19,300 E	17,600 E	
ANTIMONY	MG/KG	0.402	--	--	1.1 N	0.62 BN	0.37 BN	0.95 BN	0.98 BN	1.3 BN	0.66 BN	0.63 BN	
ARSENIC	MG/KG	0.302	7.24	41.6	18.1	11.7	15.7	64.3 E	24.9 E	23.7 E	38 E	13.2 E	
BARIUM	MG/KG	--	--	--	--	--	--	--	--	23.7 E	--	--	
BERYLLIUM	MG/KG	0.036	--	--	5.6	1.4	1.1	1.5	2	23.7 E	1.5	1.4	
CADMIUIM	MG/KG	0.050	0.676	4.21	0.74	0.47 B	0.62	2.5	1.2	23.7 E	1.1	0.85	
CALCIUM	MG/KG	--	--	--	--	--	--	--	--	23.7 E	--	--	
CHROMIUM	MG/KG	0.079	52.3	160.4	119 NE	90.5 NE	93 NE	229 E	176 E	23.7 E	125 E	107 E	
HEXAVALENT CHROMIUM	MG/KG	0.168	--	--	--	--	--	--	--	23.7 E	--	--	
COBALT	MG/KG	0.074	--	--	17.5 E	14.6 E	11.4 E	16.4 E	18.5 E	23.7 E	15.3 E	15.4 E	
COPPER	MG/KG	0.136	18.7	108.2	353	118	102	399 E	220 E	23.7 E	213 E	110 E	
IRON	MG/KG	2.16	--		29,200 E	28,600 E	24,500 E	36,800 E	34,900 E	23.7 E	30,700 E	28,000 E	
LEAD	MG/KG	0.330	30.24	112.18	213 NE	85 NE	104 NE	223 E	147 E	23.7 E	142 E	96 E	
MAGNESIUM	MG/KG	--	--	--	--	--	--	--	--	23.7 E	--	--	
MANGANESE	MG/KG	0.021	--	--	326	293	303	277 E	346 E	23.7 E	272 E	272 E	
MERCURY	MG/KG	0.005	0.13	0.696	0.7	0.36	0.29	1	0.64	23.7 E	0.74	0.37	
NICKEL	MG/KG	0.106	15.9	42.8	56.2 E	33.2 E	25.6 E	41.7 E	46.5 E	23.7 E	34.8 E	33.5 E	
SELENIUM	MG/KG	0.292	--	--	2	1.4	1.6	13.8	4	23.7 E	5.6	2.1	
SILVER	MG/KG	0.073	0.73	1.77	0.62	0.37 B	0.38 B	0.78	0.78	23.7 E	0.48 B	0.35 B	
THALLIUM	MG/KG	0.500	--	--	0.41 U	0.46 U	0.42 U	0.56 U	0.5 U	23.7 E	0.49 U	0.42 U	
TIN	MG/KG	0.576	--	--	25.2	10.8 B	9.7 B	12.6 B	15.9	23.7 E	7.2 B	10.7 B	
ZINC	MG/KG	0.158	124	271	1,790 E	262 E	230 E	483 E	495 E	23.7 E	336 E	268 E	
RATIO OF SEM/AVS	--	--	--	--	0.000089	0.11	0.49	0.045	0.21	0.18	0.086	0.093	

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**E** = reported value is estimated because of the presence of interference

**J** (inorganic) = compound was detected in method blank

**N** = spiked sample recovery is not within control limits

**U** = compound was analyzed but not detected

**TABLE A-30. CONTINUED\***  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID	KURT IRON				
						M-B7	M-B8	MSNSURF05-1-S	M-B5	M-B6
ALUMINUM	MG/KG	1.98	--	--	--	--	--	--	NA	NA
ANTIMONY	MG/KG	0.402	--	--	--	--	1.8 N U	--	--	--
ARSENIC	MG/KG	0.302	7.24	41.6	<b>38.1</b>	<b>11.1</b>	<b>9.9</b>	<b>20.4</b>	<b>12.1</b>	
BARIUM	MG/KG	--	--	--	<b>99.3</b>	<b>72.1</b>	--	<b>85.7</b>	<b>57.8</b>	
BERYLLIUM	MG/KG	0.036	--	--	--	--	<b>1.4</b>	--	--	--
CADMUM	MG/KG	0.050	0.676	4.21	<b>2.1</b>	<b>1.1</b>	<b>1.3</b>	<b>1.9</b>	<b>1.1</b>	
CALCIUM	MG/KG	--	--	--	<b>1720</b>	<b>1230</b>	--	<b>4,850</b>	<b>2,390</b>	
CHROMIUM	MG/KG	0.079	52.3	160.4	<b>225</b>	<b>66.3</b>	<b>74.3 E</b>	<b>193</b>	<b>129</b>	
HEXAVALENT CHROMIUM	MG/KG	0.168	--	--	0.16 U	0.13 U	NA	NA	NA	
COBALT	MG/KG	0.074	--	--	--	--	--	NA	NA	
COPPER	MG/KG	0.136	18.7	108.2	<b>303</b>	<b>65.9</b>	<b>95.9 E</b>	<b>263</b>	<b>176</b>	
IRON	MG/KG	2.16	--		<b>33,700</b>	<b>25,200</b>		<b>35,800</b>	<b>20,800</b>	
LEAD	MG/KG	0.330	30.24	112.18	<b>157</b>	<b>53.7</b>	<b>69.3 E</b>	<b>204</b>	<b>141</b>	
MAGNESIUM	MG/KG	--	--	--	<b>4500</b>	<b>4360</b>	--	<b>5,420</b>	<b>3,300</b>	
MANGANESE	MG/KG	0.021	--	--	--	--	--	NA	NA	
MERCURY	MG/KG	0.005	0.13	0.696	<b>0.75</b>	<b>0.22</b>	<b>0.24</b>	<b>0.91</b>	<b>0.8</b>	
NICKEL	MG/KG	0.106	15.9	42.8	<b>46.5</b>	<b>34.3</b>	<b>33.7 E</b>	<b>43.5</b>	<b>28.8</b>	
SELENIUM	MG/KG	0.292	--	--	<b>4.4</b>	<b>0.49 B</b>	<b>1.4</b>	<b>2.3</b>	<b>1.7</b>	
SILVER	MG/KG	0.073	0.73	1.77	<b>1.1</b>	<b>0.41 B</b>	<b>0.42 B</b>	<b>0.95</b>	<b>0.51</b>	
THALLIUM	MG/KG	0.500	--	--	--	--	<b>0.78 B</b>	--	--	
TIN	MG/KG	0.576	--	--	--	--	--	NA	NA	
ZINC	MG/KG	0.158	124	271	<b>541</b>	<b>162</b>	<b>219 E</b>	<b>582 d</b>	<b>357</b>	
RATIO OF SEM/AVS	--	--	--	--	0.23	0.095	0.3	0.11	1.1	

Source : MacDonald et al. 1996.

\*Wet Basin was not tested for analytes described in table above

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**NA** = constituent was not analyzed for this sample

**E** = reported value is estimated because of the presence of interference

**J** (inorganic) = compound was detected in method blank

**N** = spiked sample recovery is not within control limits

**U** = compound was analyzed but not detected

**TABLE A-31. PCB CONGENER CONCENTRATIONS (UG/KG) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL**	Sample ID	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
				PEL**								
PCB 8*	UG/KG	0.241	--	--	2.3 U	0.65 U	0.71 U	4 PG	0.35 U	5.4 PG	3.3 PG	2.6 PG
PCB 18*	UG/KG	0.160	--	--	8.4 PG	1.8 J PG	2.4 PG	3.4 PG	13 PG	11 PG	5.4 PG	3.9 PG
PCB 28*	UG/KG	0.260	--	--	21 PG	6.2 PG	8.9 PG	6.1	19 PG	13 PG	4.7	6.1 PG
PCB 44*	UG/KG	0.240	--	--	18	4	6.3	2.6	11	10	2.6	3.5
PCB 49	UG/KG	0.245	--	--	23	5.8	11	3	13	13	2.2	4.6
PCB 52*	UG/KG	0.233	--	--	22	5.9	11	3.3	15	18	3	5.9
PCB 66*	UG/KG	0.189	--	--	18 PG	7.2	7.2 PG	4.2 PG	19	15 PG	3.2 PG	5.3 PG
PCB 77*	UG/KG	0.252	--	--	8.1 PG	3.7 PG	3.5 PG	0.1 U	0.37 U	0.39 U	0.09 U	0.31 U
PCB 87	UG/KG	0.217	--	--	21	2.5 PG	3.1 PG	1.9 PG	6.8 PG	5.9 PG	2 PG	1.8 PG
PCB 101*	UG/KG	0.234	--	--	44	8.8	15	0.095 U	21	23	0.083 U	8.8
PCB 105*	UG/KG	0.243	--	--	13	2.3	0.91 U	2.8	6.5	5.4	2.1	2.1
PCB 118*	UG/KG	0.238	--	--	41	5 PG	8.6	6.2	12 PG	19	4.4	6
PCB 126*	UG/KG	0.306	--	--	2.5 U	0.69 U	0.75 U	0.12 U	0.45 U	0.47 U	0.11 U	0.38 U
PCB 128*	UG/KG	0.238	--	--	8.4 PG	1.3 J PG	1.5 J PG	1.3 PG	3.5 PG	4 PG	0.91 PG	1.4 J PG
PCB 138*	UG/KG	0.248	--	--	43 PG	11	12 PG	7.5	18	21	4.9	9.5
PCB 153*	UG/KG	0.241	--	--	54	13 PG	26 PG	8.9	20	25	5.6	15
PCB 156	UG/KG	0.234	--	--	6.3 J PG	0.84 U	1.1 J PG	0.89 PG	3.3	3.1	0.083 U	0.29 U
PCB 169*	UG/KG	0.227	--	--	3.8 U	1.1 U	1.2 U	0.093 U	0.33 U	0.35 U	0.081 U	0.28 U
PCB 170*	UG/KG	0.240	--	--	24	2.8 PG	8.6	3.6	8	9.4	2.2	6.7
PCB 180*	UG/KG	0.238	--	--	44	9.1	17	7.4	15	19	4.6	13
PCB 183	UG/KG	0.233	--	--	14	2.9	4.5	1.4 PG	3.4 PG	3.8 PG	0.89 PG	2.6 PG
PCB 184	UG/KG	0.200	--	--	1.7 U	0.48 U	0.52 U	0.081 U	0.29 U	0.31 U	0.071 U	0.25 U
PCB 187*	UG/KG	0.245	--	--	25	6.7	12	4.4	8.1	10	2.7	7.4
PCB 195	UG/KG	0.234	--	--	4.3 J PG	0.96 J	2.4	0.65 PG	1.6 J	0.36 U	0.51	0.29 U
PCB 206	UG/KG	0.233	--	--	12	2.4	2.2	3.1	2.9	2.5 PG	1.4	2.3
PCB 209	UG/KG	0.248	--	--	5 J	2.1	2 J	3.7	2.6	2 PG	1.6 PG	0.97 J PG
TOTAL PCBs (ND=0)	UG/KG	--	21.55	188.79	784	178	280	131	378	416	99.2	194
TOTAL PCBs (ND=1/2DL)	UG/KG	--	21.55	188.79	805	184	288	133	385	422	101	199

\*PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

\*\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed but not detected

TABLE A-31. CONTINUED  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL**	PEL**	Sample ID	KURT IRON			WET BASIN	
						M-B7	M-B8	MSNSURF05-1-S	M-B5	M-B6
PCB 8*	UG/KG	0.241	--	--	7.4 PG	8.8 PG	2.5 PG	2.4 J PG	2.6 J PG	2.9 J PG
PCB 18*	UG/KG	0.160	--	--	26	21	3.6 PG	4.5 PG	8.5	9
PCB 28*	UG/KG	0.260	--	--	30 PG	35	5.5	10	12	14
PCB 44*	UG/KG	0.240	--	--	25	12	3	5.3	6.6	9.3
PCB 49	UG/KG	0.245	--	--	20	11	3.7	7.1	7.9	9.7
PCB 52*	UG/KG	0.233	--	--	28	13	4.3	7.8	9.6	13
PCB 66*	UG/KG	0.189	--	--	28 PG	15	5.6	8.3 PG	9.5 PG	9.4 PG
PCB 77*	UG/KG	0.252	--	--	5.1 PG	1.6 J PG	0.64 PG	1.6 J PG	1.5 J PG	0.75 U
PCB 87	UG/KG	0.217	--	--	14 PG	1.6 J PG	1.5 PG	4.1 PG	6.1 PG	5.7 PG
PCB 101*	UG/KG	0.234	--	--	33	9.1	5.5	15	15	16
PCB 105*	UG/KG	0.243	--	--	13	1.6 J	1.6	5.4	5.6	3.2 J PG
PCB 118*	UG/KG	0.238	--	--	30	5.3	4.1	15	14	14
PCB 126*	UG/KG	0.306	--	--	1.6 J PG	0.84 U	0.098 U	1.6 J	1.2 J PG	0.91 U
PCB 128*	UG/KG	0.238	--	--	6.6 PG	0.94 J PG	1 PG	3.5 PG	3.7 PG	3.6 PG
PCB 138*	UG/KG	0.248	--	--	31	5	5.4	19	18	18
PCB 153*	UG/KG	0.241	--	--	33	6.4	7.1	26	20	22
PCB 156	UG/KG	0.234	--	--	4.1	0.65 U	0.72	2.4 J	2.4 J	2.4 J PG
PCB 169*	UG/KG	0.227	--	--	0.79 U	0.63 U	0.42 PG	0.53 U	0.6 U	0.69 J PG
PCB 170*	UG/KG	0.240	--	--	12	2.2 J	2.8 PG	11	8.4	8.7 PG
PCB 180*	UG/KG	0.238	--	--	23	4.6	5.8	22	16	16
PCB 183	UG/KG	0.233	--	--	5.4 PG	1 J PG	1.1 PG	4.8 PG	3.5 PG	5.3
PCB 184	UG/KG	0.200	--	--	0.69 U	0.55 U	0.064 U	0.47 U	0.52 U	0.59 U
PCB 187*	UG/KG	0.245	--	--	14	2.8 J	3.8	15	9.7	10
PCB 195	UG/KG	0.234	--	--	2.6 J	0.64 U	0.62	3.4	2.4 J	1.9 J
PCB 206	UG/KG	0.233	--	--	4.5	1.7 J	1.3	6.2	3.2	3.7
PCB 209	UG/KG	0.248	--	--	2.8 J	2.2 J	1.5	3.5	0.65 U	3.5
TOTAL PCBs (ND=0)	UG/KG	--	21.55	188.79	693	289	125	347	324	340
TOTAL PCBs (ND=1/2DL)	UG/KG	--	21.55	188.79	694	290	125	347	324	341

\*PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

\*\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed but not detected

**TABLE A-32. PCB AROCLOR CONCENTRATIONS (UG/KG) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	Sample ID	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
AROCLOR 1016	UG/KG	33.2		37 U	34 U	35 U	32 U	28 U
AROCLOR 1221	UG/KG	16.2		18 U	16 U	17 U	16 U	14 U
AROCLOR 1232	UG/KG	19.8		22 U	20 U	21 U	19 U	17 U
AROCLOR 1242	UG/KG	14.2		16 U	14 U	15 U	14 U	12 U
AROCLOR 1248	UG/KG	15.2		<b>77</b>	<b>190</b>	<b>160</b>	<b>51</b>	<b>100</b>
AROCLOR 1254	UG/KG	5.56		<b>150</b>	<b>270</b>	<b>280</b>	<b>93</b>	4.7 U
AROCLOR 1260	UG/KG	4.66		<b>180</b>	<b>270</b>	<b>320</b>	<b>120</b>	<b>280</b>

There are no TEL and PEL values for PCB Aroclors

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**TABLE A-32. CONTINUED\***  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	Sample ID	KURT IRON				
			M-B7	M-B8	MSNSURF05-1-S	M-B5	M-B6	
AROCLOR 1016	UG/KG	33.2		32 U	25 U	29 U	43 U	26 U
AROCLOR 1221	UG/KG	16.2		15 U	12 U	14 U	21 U	13 U
AROCLOR 1232	UG/KG	19.8		19 U	15 U	18 U	25 U	16 U
AROCLOR 1242	UG/KG	14.2		13 U	11 U	12 U	18 U	11 U
AROCLOR 1248	UG/KG	15.2		<b>340</b>	<b>200</b>	<b>13 U</b>	<b>86</b>	<b>110</b>
AROCLOR 1254	UG/KG	5.56		<b>340</b>	4.2 U	4.9 U	<b>210</b>	<b>170</b>
AROCLOR 1260	UG/KG	4.66		<b>220</b>	<b>42</b>	<b>50</b>	<b>190</b>	<b>180</b>

There are no TEL and PEL values for PCB Aroclors

\*Wet Basin was not tested for analytes described in table above

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**TABLE A-33. PAH CONCENTRATIONS (UG/KG) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	Sample ID PEL*	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
					20 J	17 J	17 J	40	40	50	37	43
1-METHYLNAPHTHALENE	UG/KG	6.00	--	--	<b>20 J</b>	<b>17 J</b>	<b>17 J</b>	<b>40</b>	<b>40</b>	<b>50</b>	<b>37</b>	<b>43</b>
2-METHYLNAPHTHALENE	UG/KG	6.86	20.21	201.28	<b>42</b>	<b>34</b>	<b>32</b>	<b>110</b>	<b>89</b>	<b>110</b>	<b>82</b>	<b>89</b>
ACENAPHTHENE	UG/KG	6.18	6.71	88.9	<b>25 J</b>	<b>18 J</b>	<b>25 J</b>	<b>40</b>	<b>27</b>	<b>39</b>	<b>34</b>	<b>35</b>
ACENAPHTHYLENE	UG/KG	6.18	5.87	127.87	<b>83</b>	<b>60</b>	<b>53</b>	<b>98</b>	<b>73</b>	<b>98</b>	<b>92</b>	<b>76</b>
ANTHRACENE	UG/KG	5.06	46.85	245	<b>110</b>	<b>84</b>	<b>82</b>	<b>260</b>	<b>160</b>	<b>240</b>	<b>160</b>	<b>160</b>
BENZO(A)ANTHRACENE	UG/KG	4.66	74.83	692.53	<b>240</b>	<b>200</b>	<b>200</b>	<b>620</b>	<b>280</b>	<b>460</b>	<b>260</b>	<b>400</b>
BENZO(A)PYRENE	UG/KG	6.28	88.81	763.22	<b>410</b>	<b>280</b>	<b>250</b>	<b>650</b>	<b>450</b>	<b>550</b>	<b>330</b>	<b>440</b>
BENZO(B)FLUORANTHENE	UG/KG	3.46	--	--	<b>360</b>	<b>250</b>	<b>370</b>	<b>760</b>	<b>590</b>	<b>720</b>	<b>590</b>	<b>550</b>
BENZO(G,H)PERYLENE	UG/KG	3.64	--	--	<b>350</b>	<b>270</b>	<b>220</b>	<b>540</b>	<b>420</b>	<b>530</b>	<b>390</b>	<b>470</b>
BENZO(K)FLUORANTHENE	UG/KG	6.98	--	--	<b>390</b>	<b>260</b>	3.7 U	<b>290</b>	<b>210</b>	<b>250</b>	5.8 U	<b>180</b>
CHRYSENE	UG/KG	4.20	107.77	845.98	<b>280</b>	<b>270</b>	<b>250</b>	<b>680</b>	<b>340</b>	<b>490</b>	<b>260</b>	<b>440</b>
DIBENZO(A,H)ANTHRACENE	UG/KG	4.20	6.22	134.61	<b>140</b>	<b>92</b>	<b>81</b>	<b>120</b>	<b>92</b>	<b>120</b>	<b>88</b>	<b>99</b>
FLUORANTHENE	UG/KG	4.06	112.82	1,493.54	<b>500</b>	<b>480</b>	<b>390</b>	<b>1200</b>	<b>770</b>	<b>1100</b>	<b>500</b>	<b>770</b>
FLUORENE	UG/KG	6.62	21.17	144.35	<b>41</b>	<b>28 J</b>	<b>34</b>	<b>56</b>	<b>46</b>	<b>60</b>	<b>47</b>	<b>55</b>
INDENO(1,2,3-CD)PYRENE	UG/KG	3.98	--	--	<b>290</b>	<b>210</b>	<b>180</b>	<b>410</b>	<b>310</b>	<b>390</b>	<b>290</b>	<b>350</b>
NAPHTHALENE	UG/KG	6.96	34.57	390.64	<b>61</b>	<b>49</b>	<b>57</b>	<b>170</b>	<b>150</b>	<b>190</b>	<b>160</b>	<b>100</b>
PHENANTHRENE	UG/KG	5.34	86.68	543.53	<b>160</b>	<b>150</b>	<b>160</b>	<b>310</b>	<b>240</b>	<b>310</b>	<b>180</b>	<b>320</b>
PYRENE	UG/KG	3.78	152.66	1,397.60	<b>440</b>	<b>300</b>	<b>300</b>	<b>1100</b>	<b>710</b>	<b>800</b>	<b>740</b>	<b>660</b>
TOTAL PAHs (ND=0)	UG/KG	--	1,684.06	16,770.40	<b>3,942</b>	<b>3,052</b>	<b>2,701</b>	<b>7,454</b>	<b>4,997</b>	<b>6,507</b>	<b>4,240</b>	<b>5,237</b>
TOTAL PAHs (ND=1/2DL)	UG/KG	--	1,684.06	16,770.40	<b>3,942</b>	<b>3,052</b>	<b>2,701</b>	<b>7,454</b>	<b>4,997</b>	<b>6,507</b>	<b>4,240</b>	<b>5,237</b>

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

U = compound was analyzed but not detected

**TABLE A-33. CONTINUED\***  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL**	PEL**	Sample ID	KURT IRON				
						M-B7	M-B8	MSNSURF05-1-	M-B5	M-B6
1-METHYLNAPHTHALENE	UG/KG	6.00	--	--		40	27	26 J	36	42
2-METHYLNAPHTHALENE	UG/KG	6.86	20.21	201.28		83	56	47 J	71	74
ACENAPHTHENE	UG/KG	6.18	6.71	88.9		38 J	23	33 J	44	47
ACENAPHTHYLENE	UG/KG	6.18	5.87	127.87		100	51	57 J	53	62
ANTHRACENE	UG/KG	5.06	46.85	245		140	60	87	95	130
BENZO(A)ANTHRACENE	UG/KG	4.66	74.83	692.53		280	160	280	320	370
BENZO(A)PYRENE	UG/KG	6.28	88.81	763.22		600	180	340	390	350
BENZO(B)FLUORANTHENE	UG/KG	3.46	--	--		850	230	470	530	450
BENZO(GH)PERYLENE	UG/KG	3.64	--	--		440	150	290	410	340
BENZO(K)FLUORANTHENE	UG/KG	6.98	--	--		290	73	150	160	140
CHRYSENE	UG/KG	4.20	107.77	845.98		330	190	370	340	390
DIBENZO(A,H)ANTHRACENE	UG/KG	4.20	6.22	134.61		120	37	64 J	84	76
FLUORANTHENE	UG/KG	4.06	112.82	1,493.54		430	240	600	390	580
FLUORENE	UG/KG	6.62	21.17	144.35		52	36	44 J	55	93
INDENO(1,2,3-CD)PYRENE	UG/KG	3.98	--	--		350	120	230	300	250
NAPHTHALENE	UG/KG	6.96	34.57	390.64		150	44	63 J	160	110
PHENANTHRENE	UG/KG	5.34	86.68	543.53		210	120	230	200	250
PYRENE	UG/KG	3.78	152.66	1,397.60		1100	290	540	620	610
TOTAL PAHs (ND=0)	UG/KG	--	1,684.06	16,770.40	<b>5,603</b>	2,087	3,921	4,258	4,364	
TOTAL PAHs (ND=1/2DL)	UG/KG	--	1,684.06	16,770.40	<b>5,603</b>	2,087	3,921	4,258	4,364	

\*\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

\*Wet Basin was not tested for analytes described in table above

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

U = compound was analyzed but not detected

**TABLE A-34. CHLORINATED PESTICIDE CONCENTRATIONS (UG/KG) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID		M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
					M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5	MSN03-JV5	
4,4'-DDD	UG/KG	0.690	1.22	7.81	4.9 PG	4.9	7.4	17	12	20	23	5 PG		
4,4'-DDE	UG/KG	0.404	2.07	374.17	5.2	3.2	3.2 PG	11 PG	--	13	11 PG	8.1		
4,4'-DDT	UG/KG	0.658	1.19	4.77	3.2 PG	2.8 PG	3.7 PG	0.73 U	0.66 U	0.7 U	0.64 U	0.56 U		
ALDRIN	UG/KG	0.404	--	--	0.16 U	0.18 U	0.16 U	0.45 U	0.41 U	1.5 J PG	0.39 U	0.34 U		
ALPHA-BHC	UG/KG	0.698	--	--	0.24 J PG	0.19 J	0.12 U	0.78 U	0.7 U	0.74 U	0.68 U	0.59 U		
BETA-BHC	UG/KG	0.446	--	--	0.18 U	0.2 U	0.18 U	0.5 U	0.45 U	0.47 U	2.5 J	0.38 U		
CHLORDANE	UG/KG	12.0	--	--	0.72 U	0.81 U	0.74 U	13 U	12 U	13 U	12 U	10 U		
CHLOROBENSIDE	UG/KG	1.72	--	--	0.4 U	0.45 U	0.41 U	1.9 U	1.7 U	1.8 U	1.7 U	1.5 U		
DACHTAL	UG/KG	1.13	--	--	0.29 U	0.45 J	0.3 U	1.3 U	1.1 U	1.2 U	1.1 U	0.97 U		
DELTA-BHC	UG/KG	0.420	--	--	0.11 U	0.13 U	0.11 U	0.47 U	0.42 U	0.44 U	0.41 U	0.36 U		
DIELDRIN	UG/KG	0.732	0.715	4.3	1.1 J PG	0.93 J PG	1.3 J PG	2.1 J PG	0.73 U	0.78 U	3.2 J	1.9 J PG		
ENDOSULFAN I	UG/KG	0.077	--	--	0.29 U	0.33 U	0.3 U	0.086 U	0.077 U	0.081 U	0.074 U	0.065 U		
ENDOSULFAN II	UG/KG	0.416	--	--	6	3.4	4.9 PG	0.47 U	0.42 U	0.44 U	0.4 U	0.35 U		
ENDOSULFAN SULFATE	UG/KG	0.414	--	--	0.18 U	0.2 U	0.18 U	0.46 U	0.42 U	0.44 U	0.4 U	0.35 U		
ENDRIN	UG/KG	0.694	--	--	1.5 J PG	0.72 J PG	2.1 PG	0.77 U	8.3 PG	7.8 PG	6.1	6 PG		
ENDRIN ALDEHYDE	UG/KG	0.440	--	--	2.3 PG	2.1 PG	1.9 PG	0.49 U	0.44 U	0.47 U	0.43 U	0.37 U		
GAMMA-BHC	UG/KG	0.730	0.32	0.99	0.15 U	0.17 U	0.15 U	0.82 U	0.73 U	0.77 U	0.71 U	0.62 U		
HEPTACHLOR	UG/KG	0.804	--	--	0.19 U	0.22 U	0.2 U	0.9 U	0.81 U	0.85 U	0.78 U	0.68 U		
HEPTACHLOR EPOXIDE	UG/KG	0.432	--	--	0.13 U	0.14 U	0.13 U	0.48 U	0.43 U	0.46 U	0.42 U	0.37 U		
METHOXYCHLOR	UG/KG	1.36	--	--	0.51 U	0.57 U	0.52 U	1.5 U	1.4 U	1.4 U	1.3 U	1.2 U		
MIREX	UG/KG	0.576	--	--	0.13 U	0.15 U	0.13 U	0.64 U	0.58 U	0.61 U	0.56 U	0.49 U		
TOXAPHENE	UG/KG	72.6	--	--	3.2 U	3.6 U	3.3 U	81 U	73 U	77 U	70 U	62 U		

TABLE A-34. CONTINUED  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL*	PEL*	KURT IRON			WET BASIN		
					M-B7	M-B8	SNSURF05-1	M-B5	M-B6	WBSURF05-1
4,4'-DDD	UG/KG	0.690	1.22	7.81	11	7	<b>1.6 J PG</b>	<b>5.2 J PG</b>	<b>7.5 PG</b>	37
4,4'-DDE	UG/KG	0.404	2.07	374.17	<b>10 PG</b>	<b>4.4 PG</b>	1.2 U	<b>5.6 PG</b>	<b>14 PG</b>	<b>17 J PG</b>
4,4'-DDT	UG/KG	0.658	1.19	4.77	<b>12 PG</b>	<b>2.8 J PG</b>	1 U	<b>12 PG</b>	<b>11 PG</b>	<b>14 J PG</b>
ALDRIN	UG/KG	0.404	--	--	0.51 U	0.4 U	<b>5.9 J PG</b>	0.68 U	0.42 U	<b>6 J PG</b>
ALPHA-BHC	UG/KG	0.698	--	--	0.35 U	0.27 U	0.8 U	0.46 U	0.29 U	1.5 U
BETA-BHC	UG/KG	0.446	--	--	<b>5.7 PG</b>	0.42 U	1.2 U	0.72 U	0.44 U	2.3 U
CHLORDANE	UG/KG	12.0	--	--	3.8 U	3 U	4.3 U	5.1 U	3.2 U	<b>1,100</b>
CHLOROBENSIDE	UG/KG	1.72	--	--	1.7 U	1.3 U	3.8 U	2.2 U	1.4 U	7.1 U
DACHTAL	UG/KG	1.13	--	--	1.1 U	0.86 U	2.5 U	1.5 U	0.9 U	4.7 U
DELTA-BHC	UG/KG	0.420	--	--	0.44 U	0.35 U	1 U	0.59 U	0.37 U	1.9 U
DIELDRIN	UG/KG	0.732	0.715	4.3	0.39 U	<b>1.1 J PG</b>	0.9 U	<b>1.5 J PG</b>	<b>1.5 J PG</b>	<b>3.6 J PG</b>
ENDOSULFAN I	UG/KG	0.077	--	--	0.39 U	0.31 U	0.91 U	0.53 U	0.33 U	1.7 U
ENDOSULFAN II	UG/KG	0.416	--	--	<b>9.1 PG</b>	<b>1.5 J PG</b>	1.4 U	<b>11 PG</b>	<b>18</b>	2.7 U
ENDOSULFAN SULFATE	UG/KG	0.414	--	--	0.55 U	0.44 U	1.3 U	0.74 U	0.46 U	2.4 U
ENDRIN	UG/KG	0.694	--	--	0.4 U	0.32 U	<b>1.6 J PG</b>	0.54 U	0.33 U	1.7 U
ENDRIN ALDEHYDE	UG/KG	0.440	--	--	<b>15</b>	<b>3.1 J PG</b>	2 U	<b>15</b>	<b>12</b>	3.7 U
GAMMA-BHC	UG/KG	0.730	0.32	0.99	0.34 U	0.27 U	0.79 U	0.46 U	0.28 U	1.5 U
HEPTACHLOR	UG/KG	0.804	--	--	0.39 U	0.31 U	0.9 U	0.52 U	<b>3 J</b>	<b>5.1 J</b>
HEPTACHLOR EPOXIDE	UG/KG	0.432	--	--	<b>3.9 J PG</b>	<b>1.4 J PG</b>	1.1 U	<b>0.97 J PG</b>	<b>1.3 J PG</b>	<b>5.2 J PG</b>
METHOXYCHLOR	UG/KG	1.36	--	--	0.89 U	0.7 U	2 U	1.2 U	0.73 U	3.8 U
MIREX	UG/KG	0.576	--	--	0.55 U	0.43 U	<b>2.7 J PG</b>	0.74 U	0.45 U	<b>10 J PG</b>
TOXAPHENE	UG/KG	72.6	--	--	27 U	21 U	13 U	36 U	22 U	23 U

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed but not detected

**TABLE A-35 ORGANOPHOSPHOURS PESTICIDE CONCENTRATIONS (UG/KG) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	Sample ID	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
			MDL*							
AZINPHOS-METHYL	UG/KG	52.8	8.6 U	9.7 U	8.8 U	59 U	53 U	56 U	51 U	45 U
DEMETON (TOTAL)	UG/KG	100.4	16 U	18 U	17 U	110 U	100 U	110 U	97 U	85 U
MALATHION	UG/KG	36.8	6 U	6.7 U	6.1 U	41 U	37 U	39 U	36 U	31 U
METHYL PARATHION	UG/KG	37.6	6.1 U	6.9 U	6.2 U	42 U	38 U	40 U	36 U	32 U
PARATHION	UG/KG	45.6	7.4 U	8.3 U	7.6 U	51 U	46 U	48 U	44 U	39 U

\*There are no TEL and PEL values for organophosphorus pesticides

**NOTE:** Shaded and bold values represent detected concentrations

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**TABLE A-35. CONTINUED\***  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	Sample ID	KURT IRON				
			M-B7	M-B8	MSNSURF05-1-S	M-B5	M-B6
AZINPHOS-METHYL	UG/KG	52.8	10 U	8 U	47 U	14 U	8.3 U
DEMETON (TOTAL)	UG/KG	100.4	19 U	15 U	88 U	26 U	16 U
MALATHION	UG/KG	36.8	7 U	5.5 U	32 U	9.4 U	5.8 U
METHYL PARATHION	UG/KG	37.6	7.1 U	5.6 U	33 U	9.6 U	5.9 U
PARATHION	UG/KG	45.6	8.7 U	6.9 U	40 U	12 U	7.2 U

\*Wet Basin was not tested for analytes described in table above

\*\*There are no TEL and PEL values for organophosphorus pesticides

**NOTE:** Shaded and bold values represent detected concentrations

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**TABLE A-36. DIOXIN AND FURAN CONGENER CONCENTRATIONS (PG/G) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	RL	TEF*	Sample ID	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
2,3,7,8-TCDD	PG/G	1.2	1	0.93 U	<b>6.2</b>	0.61 U		<b>1.5 J</b>	<b>1.6 J</b>	1.3 U	1.1 U	1.1 U
1,2,3,7,8-PECDD	PG/G	3.7	0.5	2.5 U	1.4 U	1.5 U		3.4 U	3.6 U	5.1 U	4 U	2.5 U
1,2,3,4,7,8-HXCDD	PG/G	4.5	0.1	3.6 U	2.6 U	2.6 U		3.9 U	5.7 U	5.8 U	4.9 U	2.2 U
1,2,3,6,7,8-HXCDD	PG/G	--	0.1	<b>17</b>	<b>8.4 J</b>		<b>12</b>		<b>15</b>	<b>24</b>	<b>27</b>	<b>12</b>
1,2,3,7,8,9-HXCDD	PG/G	4.5	0.1	5.1 U	<b>5.9 J</b>	<b>5.3 J</b>		<b>9.3 J</b>	<b>14</b>	<b>12 J</b>	<b>7.5 J</b>	4.5 U
1,2,3,4,6,7,8-HPCDD	PG/G	--	0.01	<b>330</b>	<b>170</b>	<b>260</b>		<b>350</b>	<b>540</b>	<b>610</b>	<b>210</b>	<b>140</b>
OCDD	PG/G	--	0.001	<b>5,000</b>	<b>3,700</b>	<b>5,000</b>		<b>6,600</b>	<b>11,000 E</b>	<b>12,000 E</b>	<b>4,600</b>	<b>3,200</b>
2,3,7,8-TCDF	PG/G	--	0.1	<b>8.6</b>	<b>5</b>	<b>3.6</b>		<b>6.8</b>	<b>7.7</b>	<b>8.7 JA</b>	<b>2.6</b>	<b>2.3</b>
1,2,3,7,8-PECDF	PG/G	4.3	0.05	5.1 U	3.5 U	2.5 U		5.1 U	<b>6.5 J</b>	<b>9.2 J</b>	5.7 U	2.1 U
2,3,4,7,8-PECDF	PG/G	1.9	0.5	<b>8.6 J</b>	4.6 U	4.2 U		<b>9 J</b>	<b>10 J</b>	<b>17</b>	<b>8.5 J</b>	1.9 U
1,2,3,4,7,8-HXCDF	PG/G	4.6	0.1	<b>18</b>	<b>10 J</b>	<b>9.2 J</b>		<b>13 J</b>	<b>17</b>	<b>33</b>	<b>12 J</b>	4.6 U
1,2,3,6,7,8-HXCDF	PG/G	2.6	0.1	<b>7.9 J</b>	4 U	3.9 U		<b>8.2 J</b>	<b>9.4 J</b>	<b>17</b>	<b>8 J</b>	2.6 U
2,3,4,6,7,8-HXCDF	PG/G	2.2	0.1	<b>6.2 J</b>	3 U	3 U		<b>8.9 J</b>	<b>8.4 J</b>	<b>13 J</b>	<b>8.4 J</b>	2.2 U
1,2,3,7,8,9-HXCDF	PG/G	1.6	0.1	0.75 U	0.56 U	0.43 U		1.1 U	0.94 U	1.4 U	4.1 U	1.2 U
1,2,3,4,6,7,8-HPCDF	PG/G	--	0.01	<b>100</b>	<b>37</b>	<b>59</b>		<b>150</b>	<b>150</b>	<b>220</b>	<b>87</b>	<b>38</b>
1,2,3,4,7,8,9-HPCDF	PG/G	5.8	0.01	<b>11</b>	3.3 U	<b>5.5 J</b>		7 U	<b>13</b>	<b>15</b>	<b>8.9 J</b>	4.5 U
OCDF	PG/G	--	0.001	<b>200</b>	<b>77</b>	<b>170</b>		<b>330</b>	<b>410</b>	<b>470</b>	<b>210</b>	<b>100</b>
DIOXIN TEQ (ND=0)	PG/G	--	--	<b>15.0</b>	<b>11.6</b>	<b>6.8</b>		<b>17.8</b>	<b>23.1</b>	<b>29.7</b>	<b>12.8</b>	<b>2.94</b>
DIOXIN TEQ (ND=1/2DL)	PG/G	--	--	<b>17.3</b>	<b>14.0</b>	<b>9.4</b>		<b>19.9</b>	<b>25.3</b>	<b>33.3</b>	<b>16.0</b>	<b>6.16</b>

\* Source: USEPA 1989. 1989 Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)

There are no TEL and PEL values for dioxin and furan congeners

**NOTE:** Shaded and bold values represent detected concentrations.

**RL** = average reporting limit

**TEF** = toxicity equivalency factor

**TEQ** = toxicity equivalency quotient

J = compound was detected, but below the reporting limit (value is estimated)

JA = the analyte was positively identified, but the quantitation is an estimate

U = compound was analyzed but not detected

TABLE A-36. CONTINUED\*  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	RL	TEF**	Sample ID	KURT IRON	
					M-B7	M-B8
2,3,7,8-TCDD	PG/G	1.2	1	<b>1.5 J</b>	0.74 U	0.89 U
1,2,3,7,8-PECDD	PG/G	3.7	0.5	4.7 U	1.8 U	2.7 U
1,2,3,4,7,8-HXCDD	PG/G	4.5	0.1	<b>6.2 J</b>	3.6 U	4.1 U
1,2,3,6,7,8-HXCDD	PG/G	--	0.1	<b>34</b>	<b>13</b>	<b>12</b>
1,2,3,7,8,9-HXCDD	PG/G	4.5	0.1	<b>15</b>	<b>7.3 J</b>	<b>9.3 J</b>
1,2,3,4,6,7,8-HPCDD	PG/G	--	0.01	<b>630</b>	<b>330</b>	<b>280</b>
OCDD	PG/G	--	0.001	<b>12,000 E</b>	<b>11,000 E</b>	<b>7,400</b>
2,3,7,8-TCDF	PG/G	--	0.1	<b>13</b>	<b>2.6</b>	<b>3.9</b>
1,2,3,7,8-PECDF	PG/G	4.3	0.05	<b>7.5 J</b>	1.4 U	3.4 U
2,3,4,7,8-PECDF	PG/G	1.9	0.5	<b>14</b>	2.5 U	<b>5.9 J</b>
1,2,3,4,7,8-HXCDF	PG/G	4.6	0.1	<b>27</b>	<b>5.2 J</b>	<b>10 J</b>
1,2,3,6,7,8-HXCDF	PG/G	2.6	0.1	<b>12</b>	4.3 U	<b>5.7 J</b>
2,3,4,6,7,8-HXCDF	PG/G	2.2	0.1	<b>9.2 J</b>	2.6 U	4.7 U
1,2,3,7,8,9-HXCDF	PG/G	1.6	0.1	0.89 U	0.19 U	1 U
1,2,3,4,6,7,8-HPCDF	PG/G	--	0.01	<b>190</b>	<b>67</b>	<b>81</b>
1,2,3,4,7,8,9-HPCDF	PG/G	5.8	0.01	<b>16</b>	<b>4.8 J</b>	<b>7.3 J</b>
OCDF	PG/G	--	0.001	<b>470</b>	<b>130</b>	<b>200</b>
DIOXIN TEQ (ND=0)	PG/G	--	--	<b>30.1</b>	<b>7.94</b>	<b>11.5</b>
DIOXIN TEQ (ND=1/2DL)	PG/G	--	--	<b>32.5</b>	<b>10.4</b>	<b>13.9</b>
					<b>7.24</b>	<b>18.5</b>

\*\* Source: USEPA 1989. 1989 Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)

There are no TEL and PEL values for dioxin and furan congeners

\*Wet Basin was not tested for analytes described in table above

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

TEF = toxicity equivalency factor

TEQ = toxicity equivalency quotient

J = compound was detected, but below the reporting limit (value is estimated)

JA = the analyte was positively identified, but the quantitation is an estimate

U = compound was analyzed but not detected

**TABLE A-37. BUTYLTIN CONCENTRATIONS (UG/KG) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	Sample ID	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
		RL*								
DIBUTYLTIN	UG/KG	3.3	<b>7.2 P</b>	3.1 U	2.6 U	<b>5.6</b>	<b>5.4</b>	<b>7.1</b>	3.3 U	2.7 U
MONOBUTYLTIN	UG/KG	2.54	2 U	2.4 U	2 U	2.6 U	2.6 U	2.8 U	2.6 U	2.1 U
TETRABUTYLTIN	UG/KG	4.34	3.3 U	4 U	3.5 U	4.5 U	4.5 U	4.8 U	4.4 U	3.5 U
TRIBUTYLTIN	UG/KG	3.8	<b>4.9 P</b>	3.6 U	3 U	<b>5.7 P</b>	<b>4.1 P</b>	<b>8.3</b>	3.8 U	3.1 U

\*There are no TEL and PEL values for butyltins

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

P = greater than 25% difference for detected concentrations between the two GC columns

U = compound was analyzed but not detected

**TABLE A-37. CONTINUED\***  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	Sample ID	M-B7	M-B8	MSNSURF05-1-S	KURT IRON	
		RL**				M-B5	M-B6
DIBUTYLTIN	UG/KG	3.3	<b>4.2</b>	2.8 U	2.9 U	<b>8.5</b>	<b>6.8</b>
MONOBUTYLTIN	UG/KG	2.54	2.4 U	2.1 U	2.2 U	3.4 U	1.8 U
TETRABUTYLTIN	UG/KG	4.34	4.1 U	3.6 U	3.8 U	5.9 U	3 U
TRIBUTYLTIN	UG/KG	3.8	3.7 U	3.2 U	3.3 U	<b>9.7</b>	<b>8.3 P</b>

\*Wet Basin was not tested for analytes described in table above

\*\*There are no TEL and PEL values for butyltins

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

P = greater than 25% difference for detected concentrations between the two GC columns

U = compound was analyzed but not detected

**TABLE A-38. VOLATILE ORGANIC COMPOUND (VOC) CONCENTRATIONS (UG/KG) IN SEDIMENT FROM WITHIN  
 THE PROPOSED ALIGNMENT  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL*	Sample ID	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5
1,1,1-TRICHLOROETHANE	UG/KG	0.834		0.93 U	0.84 U	0.88 U	0.81 U	0.71 U
1,1,2,2-TETRACHLOROETHANE	UG/KG	1.88		2.1 U	1.9 U	2 U	1.8 U	1.6 U
1,1,2-TRICHLOROETHANE	UG/KG	1.20		1.3 U	1.2 U	1.3 U	1.2 U	1 U
1,1-DICHLOROETHANE	UG/KG	1.13		1.3 U	1.1 U	1.2 U	1.1 U	0.95 U
1,1-DICHLOROETHENE	UG/KG	0.888		0.99 U	0.89 U	0.94 U	0.86 U	0.76 U
1,2-DICHLOROBENZENE	UG/KG	1.06		1.2 U	1.1 U	1.1 U	1 U	0.9 U
1,2-DICHLOROETHANE	UG/KG	1.42		1.6 U	1.4 U	1.5 U	1.4 U	1.2 U
1,2-DICHLOROPROPANE	UG/KG	1.30		1.4 U	1.3 U	1.4 U	1.3 U	1.1 U
1,3-DICHLOROBENZENE	UG/KG	1.13		1.3 U	1.1 U	1.2 U	1.1 U	0.97 U
1,4-DICHLOROBENZENE	UG/KG	1.20		1.3 U	1.2 U	1.3 U	1.2 U	1 U
2-BUTANONE (MEK)	UG/KG	2.26		<b>6.8 J</b>	2.3 U	<b>6.9 J</b>	<b>6.6 J</b>	<b>5.3 J</b>
2-CHLOROETHYL VINYL ETHER	UG/KG	17.8		20 U	18 U	19 U	17 U	15 U
ACROLEIN	UG/KG	15.2		17 U	15 U	16 U	15 U	13 U
ACRYLONITRILE	UG/KG	9.78		11 U	9.9 U	10 U	9.6 U	8.4 U
BENZENE	UG/KG	1.06		1.2 U	1.1 U	1.1 U	1 U	0.9 U
BROMODICHLOROMETHANE	UG/KG	1.32		1.5 U	1.3 U	1.4 U	1.3 U	1.1 U
BROMOFORM	UG/KG	0.728		0.81 U	0.73 U	0.77 U	0.71 U	0.62 U
BROMOMETHANE	UG/KG	1.20		1.3 U	1.2 U	1.3 U	1.2 U	1 U
CARBON TETRACHLORIDE	UG/KG	1.28		1.4 U	1.3 U	1.4 U	1.2 U	1.1 U
CHLOROETHANE	UG/KG	6.00		6.7 U	6 U	6.4 U	5.8 U	5.1 U
CHLOROFORM	UG/KG	1.62		1.8 U	1.6 U	1.7 U	1.6 U	1.4 U
CHLOROMETHANE	UG/KG	1.01		1.1 U	1 U	1.1 U	0.98 U	0.85 U
CIS-1,3-DICHLOROPROPENE	UG/KG	0.958		1.1 U	0.96 U	1 U	0.92 U	0.81 U
DIBROMOCHLOROMETHANE	UG/KG	1.22		1.4 U	1.2 U	1.3 U	1.2 U	1 U
DICHLORODIFLUOROMETHANE	UG/KG	6.98		7.8 U	7 U	7.4 U	6.8 U	5.9 U
ETHYLBENZENE	UG/KG	0.978		1.1 U	0.99 U	1 U	0.96 U	0.84 U
METHYLENE CHLORIDE	UG/KG	1.98		2.2 U	2 U	2.1 U	1.9 U	1.7 U
TETRACHLOROETHENE	UG/KG	0.740		0.83 U	0.74 U	0.78 U	0.72 U	0.63 U
TOLUENE	UG/KG	1.22		1.4 U	1.2 U	1.3 U	1.2 U	1 U
TRANS-1,2-DICHLOROETHENE	UG/KG	0.926		1 U	0.94 U	0.99 U	0.91 U	0.79 U
TRANS-1,3-DICHLOROPROPENE	UG/KG	1.13		1.3 U	1.1 U	1.2 U	1.1 U	0.95 U
TRICHLOROETHENE	UG/KG	1.36		1.5 U	1.4 U	1.4 U	1.3 U	1.2 U
TRICHLOROFLUOROMETHANE	UG/KG	7.80		8.7 U	7.8 U	8.3 U	7.6 U	6.6 U
VINYL CHLORIDE	UG/KG	1.42		1.6 U	1.4 U	1.5 U	1.4 U	1.2 U

\*There are no TEL and PEL values for volatiles

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**B** = compound was detected in method blank

**J** = compound was detected, but below the reporting limit (value is estimated)

**U** = compound was analyzed but not detected

**TABLE A-38. CONTINUED**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	Sample ID	KURT IRON			WET BASIN
			M-B7	M-B8	MSNSURF05-1-S	
1,1,1-TRICHLOROETHANE	UG/KG	0.834	0.65 U	0.52 U	0.6 U	0.88 U
1,1,2,2-TETRACHLOROETHANE	UG/KG	1.88	1.1 U	0.86 U	1 U	1.5 U
1,1,2-TRICHLOROETHANE	UG/KG	1.20	1.6 U	1.3 U	1.5 U	2.2 U
1,1-DICHLOROETHANE	UG/KG	1.13	0.69 U	0.55 U	0.64 U	0.93 U
1,1-DICHLOROETHENE	UG/KG	0.888	1.4 U	1.1 U	1.3 U	1.9 U
1,2-DICHLOROBENZENE	UG/KG	1.06	2.2 U	1.8 U	2.1 U	3 U
1,2-DICHLOROETHANE	UG/KG	1.42	0.73 U	0.58 U	0.67 U	0.98 U
1,2-DICHLOROPROPANE	UG/KG	1.30	1.5 U	1.2 U	1.4 U	2 U
1,3-DICHLOROBENZENE	UG/KG	1.13	2.2 U	1.7 U	2 U	2.9 U
1,4-DICHLOROBENZENE	UG/KG	1.20	1.6 U	1.3 U	1.5 U	2.2 U
2-BUTANONE (MEK)	UG/KG	2.26	3.4 U	2.7 U	3.1 U	4.5 U
2-CHLOROETHYL VINYL ETHER	UG/KG	17.8	22 U	17 U	20 U	30 U
ACROLEIN	UG/KG	15.2	230 U	180 U	210 U	310 U
ACRYLONITRILE	UG/KG	9.78	64 U	51 U	59 U	86 U
BENZENE	UG/KG	1.06	1.3 U	1 U	1.2 U	1.8 U
BROMODICHLOROMETHANE	UG/KG	1.32	0.6 U	0.48 U	0.56 U	0.81 U
BROMOFORM	UG/KG	0.728	1.5 U	1.2 U	1.4 U	2 U
BROMOMETHANE	UG/KG	1.20	2.2 U	1.8 U	2.1 U	3 U
CARBON TETRACHLORIDE	UG/KG	1.28	0.6 U	0.48 U	0.56 U	0.81 U
CHLOROETHANE	UG/KG	6.00	2.3 U	1.8 U	2.1 U	3 U
CHLOROFORM	UG/KG	1.62	0.6 U	0.48 U	0.56 U	0.81 U
CHLOROMETHANE	UG/KG	1.01	0.69 U	0.55 U	0.64 U	0.93 U
CIS-1,3-DICHLOROPROPENE	UG/KG	0.958	0.69 U	0.55 U	0.64 U	0.93 U
DIBROMOCHLOROMETHANE	UG/KG	1.22	0.63 U	0.5 U	0.58 U	0.84 U
DICHLORODIFLUOROMETHANE	UG/KG	6.98	1.2 U	0.96 U	1.1 U	1.6 U
ETHYLBENZENE	UG/KG	0.978	2.2 U	1.8 U	2.1 U	3 U
METHYLENE CHLORIDE	UG/KG	1.98	3.2 U	<b>4.7 J</b>	<b>3.4 J B</b>	4.3 U
TETRACHLOROETHENE	UG/KG	0.740	1.8 U	1.5 U	1.7 U	2.5 U
TOLUENE	UG/KG	1.22	1.4 U	1.1 U	1.3 U	1.9 U
TRANS-1,2-DICHLOROETHENE	UG/KG	0.926	1.6 U	1.2 U	1.5 U	2.1 U
TRANS-1,3-DICHLOROPROPENE	UG/KG	1.13	0.67 U	0.52 U	0.61 U	0.89 U
TRICHLOROETHENE	UG/KG	1.36	2.1 U	1.6 U	1.9 U	2.8 U
TRICHLOROFLUOROMETHANE	UG/KG	7.80	2.9 U	2.3 U	2.7 U	3.9 U
VINYL CHLORIDE	UG/KG	1.42	1.6 U	1.3 U	1.5 U	2.1 U
						1.2 U
						2.7 U

\*There are no TEL and PEL values for volatiles

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**B** = compound was detected in method blank

**J** = compound was detected, but below the reporting limit (value is estimated)

**U** = compound was analyzed but not detected

**TABLE A-39. SEMIVOLATILE ORGANIC COMPOUND (SVOC) CONCENTRATIONS (UG/KG) IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID	M-B1	M-B2	M-B3	MSN03-JV1	MSN03-JV2	MSN03-JV3	MSN03-JV4	MSN03-JV5	
1,2,4-TRICHLOROBENZENE	UG/KG	55.6	--	--	140 U	400 U	360 U	62 U	56 U	59 U	54 U	47 U		
1,2-DIPHENYLHYDRAZINE	UG/KG	73.8	--	--	120 U	330 U	300 U	82 U	74 U	78 U	72 U	63 U		
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	48.2	--	--	220 U	620 U	560 U	54 U	48 U	51 U	47 U	41 U		
2,4,6-TRICHLOROPHENOL	UG/KG	69.8	--	--	95 U	270 U	240 U	78 U	70 U	74 U	68 U	59 U		
2,4-DICHLOROPHENOL	UG/KG	66.4	--	--	140 U	400 U	360 U	74 U	67 U	71 U	64 U	56 U		
2,4-DIMETHYLPHENOL	UG/KG	110.4	--	--	120 U	330 U	300 U	120 U	110 U	120 U	110 U	92 U		
2,4-DINITROPHENOL	UG/KG	100.4	--	--	2100 U	5800 U	5200 U	110 U	100 U	110 U	97 U	85 U		
2,4-DINITROTOLUENE	UG/KG	115.4	--	--	120 U	340 U	310 U	130 U	120 U	120 U	110 U	97 U		
2,6-DINITROTOLUENE	UG/KG	91.2	--	--	100 U	280 U	260 U	100 U	92 U	97 U	89 U	78 U		
2-CHLORONAPHTHALENE	UG/KG	51.8	--	--	120 U	340 U	310 U	58 U	52 U	55 U	50 U	44 U		
2-CHLOROPHENOL	UG/KG	62	--	--	230 U	660 U	600 U	69 U	62 U	66 U	60 U	53 U		
2-METHYLPHENOL	UG/KG	80.2	--	--	200 U	560 U	510 U	90 U	80 U	85 U	78 U	68 U		
2-NITROPHENOL	UG/KG	50.8	--	--	190 U	520 U	470 U	57 U	51 U	54 U	49 U	43 U		
3,3'-DICHLOROBENZIDINE	UG/KG	68	--	--	81 U	230 U	210 U	76 U	68 U	72 U	66 U	58 U		
4,6-DINITRO-2-METHYLPHENOL	UG/KG	120	--	--	87 U	250 U	220 U	130 U	120 U	130 U	120 U	100 U		
4-BROMOPHENYL PHENYL ETHER	UG/KG	91.4	--	--	110 U	320 U	290 U	100 U	92 U	98 U	89 U	78 U		
4-CHLORO-3-METHYLPHENOL	UG/KG	72.8	--	--	120 U	330 U	290 U	81 U	73 U	77 U	71 U	62 U		
4-CHLOROPHENYL PHENYL ETHER	UG/KG	84.4	--	--	94 U	260 U	240 U	94 U	85 U	89 U	82 U	72 U		
4-METHYLPHENOL	UG/KG	103.6	--	--	310 U	860 U	780 U	120 U	100 U	110 U	100 U	88 U		
4-NITROPHENOL	UG/KG	144	--	--	94 U	260 U	240 U	160 U	150 U	150 U	140 U	120 U		
BENZOIC ACID	UG/KG	42.2	--	--	160 U	440 U	400 U	47 U	750 J	45 U	41 U	36 U		
BENZYL ALCOHOL	UG/KG	100.4	--	--	400 U	1100 U	1000 U	110 U	100 U	110 U	97 U	85 U		
BIS(2-CHLOROETHOXY)METHANE	UG/KG	45.2	--	--	150 U	430 U	390 U	51 U	45 U	48 U	44 U	38 U		
BIS(2-CHLOROETHYL) ETHER	UG/KG	48.2	--	--	160 U	440 U	400 U	54 U	48 U	51 U	47 U	41 U		
BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	97.4	182.16	2646.51	<b>500 J</b>	370 U	340 U	<b>140 J</b>	<b>760 J</b>	<b>720 J</b>	95 U	<b>240 J</b>		
BUTYL BENZYL PHTHALATE	UG/KG	101	--	--	150 U	410 U	370 U	110 U	100 U	110 U	99 U	86 U		
DI-N-BUTYL PHTHALATE	UG/KG	110.4	--	--	120 U	340 U	310 U	120 U	110 U	120 U	110 U	92 U		
DI-N-OCTYL PHTHALATE	UG/KG	106.4	--	--	120 U	330 U	300 U	120 U	110 U	110 U	100 U	92 U		
DIBENZOFURAN	UG/KG	77.6	--	--	130 U	360 U	330 U	87 U	78 U	82 U	75 U	66 U		
DIETHYL PHTHALATE	UG/KG	113.4	--	--	130 U	350 U	320 U	130 U	110 U	120 U	110 U	97 U		
DIMETHYL PHTHALATE	UG/KG	97.2	--	--	110 U	310 U	280 U	110 U	98 U	100 U	95 U	83 U		
HEXACHLOROBENZENE	UG/KG	89.6	--	--	110 U	310 U	280 U	100 U	90 U	95 U	87 U	76 U		
HEXAChLOROBUTADIENE	UG/KG	58.6	--	--	190 U	530 U	480 U	65 U	59 U	62 U	57 U	50 U		
HEXAChLOROCYCLOPENTADIENE	UG/KG	64	--	--	92 U	260 U	230 U	72 U	64 U	68 U	62 U	54 U		
HEXAChLOROETHANE	UG/KG	50.8	--	--	190 U	530 U	480 U	57 U	51 U	54 U	49 U	43 U		
ISOPHORONE	UG/KG	46.2	--	--	180 U	500 U	450 U	52 U	46 U	49 U	45 U	39 U		
N-NITROSODI-N-PROPYLAMINE	UG/KG	55.4	--	--	140 U	380 U	350 U	62 U	55 U	59 U	54 U	47 U		
N-NITROSODIMETHYLAMINE	UG/KG	54.4	--	--	180 U	510 U	460 U	61 U	54 U	58 U	53 U	46 U		
N-NITROSODIPHENYLAMINE	UG/KG	87.8	--	--	150 U	430 U	390 U	98 U	88 U	93 U	85 U	75 U		
NITROBENZENE	UG/KG	47.4	--	--	170 U	480 U	430 U	53 U	48 U	50 U	46 U	40 U		
PENTACHLOROPHENOL	UG/KG	100.4	--	--	93 U	260 U	240 U	110 U	100 U	110 U	97 U	85 U		
PHENOL	UG/KG	49.8	--	--	150 U	420 U	380 U	56 U	<b>79 J</b>	53 U	48 U	42 U		

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

TABLE A-39. CONTINUED  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID	KURT IRON		WET BASIN		
						M-B7	M-B8	MSNSURF05-1-S	M-B5	M-B6
1,2,4-TRICHLOROBENZENE	UG/KG	55.6	--	--	33 U	13 U	38 U	44 U	27 U	70 U
1,2-DIPHENYLHYDRAZINE	UG/KG	73.8	--	--	37 U	15 U	43 U	50 U	31 U	79 U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	48.2	--	--	23 U	9.2 U	27 U	31 U	19 U	50 U
2,4,6-TRICHLOROPHENOL	UG/KG	69.8	--	--	28 U	11 U	32 U	37 U	23 U	59 U
2,4-DICHLOROPHENOL	UG/KG	66.4	--	--	30 U	12 U	35 U	41 U	25 U	65 U
2,4-DIMETHYLPHENOL	UG/KG	110.4	--	--	26 U	10 U	30 U	35 U	21 U	55 U
2,4-DINITROPHENOL	UG/KG	100.4	--	--	4000 U	1600 U	4600 U	5,400 U	3,300 U	8,600 U
2,4-DINITROTOLUENE	UG/KG	115.4	--	--	17 U	6.6 U	19 U	23 U	14 U	36 U
2,6-DINITROTOLUENE	UG/KG	91.2	--	--	23 U	9 U	26 U	31 U	19 U	49 U
2-CHLORONAPHTHALENE	UG/KG	51.8	--	--	34 U	13 U	39 U	46 U	28 U	73 U
2-CHLOROPHENOL	UG/KG	62	--	--	25 U	10 U	29 U	34 U	21 U	54 U
2-METHYLPHENOL	UG/KG	80.2	--	--	36 U	14 U	41 U	48 U	30 U	77 U
2-NITROPHENOL	UG/KG	50.8	--	--	29 U	11 U	33 U	39 U	24 U	62 U
3,3'-DICHLOROBENZIDINE	UG/KG	68	--	--	40 U	16 U	46 U	53 U	33 U	85 U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	120	--	--	4000 U	1600 U	4600 U	5,400 U	3,300 U	8,600 U
4-BROMOPHENYL PHENYL ETHER	UG/KG	91.4	--	--	80 U	32 U	93 U	110 U	66 U	170 U
4-CHLORO-3-METHYLPHENOL	UG/KG	72.8	--	--	35 U	14 U	40 U	47 U	29 U	75 U
4-CHLOROPHENYL PHENYL ETHER	UG/KG	84.4	--	--	33 U	13 U	38 U	44 U	27 U	70 U
4-METHYLPHENOL	UG/KG	103.6	--	--	<b>65 J</b>	<b>100 J</b>	42 U	48 U	<b>42 J</b>	77 U
4-NITROPHENOL	UG/KG	144	--	--	22 U	8.5 U	25 U	29 U	18 U	46 U
BENZOIC ACID	UG/KG	42.2	--	--	1300 U	530 U	1500 U	1800 U	1100 U	2,900 U
BENZYL ALCOHOL	UG/KG	100.4	--	--	180 U	72 U	210 U	240 U	150 U	390 U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	45.2	--	--	36 U	14 U	42 U	48 U	30 U	77 U
BIS(2-CHLOROETHYL) ETHER	UG/KG	48.2	--	--	31 U	12 U	36 U	42 U	26 U	67 U
BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	97.4	182.16	2646.51	<b>770 J</b>	<b>170 J</b>	<b>430 J</b>	<b>350 J</b>	<b>440 J</b>	<b>830 J</b>
BUTYL BENZYL PHTHALATE	UG/KG	101	--	--	36 U	14 U	41 U	48 U	29 U	76 U
DI-N-BUTYL PHTHALATE	UG/KG	110.4	--	--	200 U	<b>97 J</b>	230 U	260 U	160 U	420 U
DI-N-OCTYL PHTHALATE	UG/KG	106.4	--	--	37 U	15 U	43 U	50 U	31 U	79 U
DIBENZOFURAN	UG/KG	77.6	--	--	<b>53 J</b>	<b>26 J</b>	42 U	<b>51 J</b>	<b>61 J</b>	<b>250 J</b>
DIETHYL PHTHALATE	UG/KG	113.4	--	--	32 U	<b>34 J</b>	37 U	43 U	27 U	69 U
DIMETHYL PHTHALATE	UG/KG	97.2	--	--	34 U	13 U	39 U	45 U	28 U	72 U
HEXAChLOROBENZENE	UG/KG	89.6	--	--	32 U	13 U	37 U	43 U	27 U	69 U
HEXAChLOROBUTADIENE	UG/KG	58.6	--	--	31 U	12 U	36 U	42 U	26 U	67 U
HEXAChLOROCYCLOPENTADIENE	UG/KG	64	--	--	130 U	51 U	150 U	170 U	110 U	280 U
HEXAChLOROETHANE	UG/KG	50.8	--	--	31 U	12 U	36 U	41 U	25 U	66 U
ISOPHORONE	UG/KG	46.2	--	--	31 U	12 U	35 U	41 U	25 U	66 U
N-NITROSODI-N-PROPYLAMINE	UG/KG	55.4	--	--	33 U	13 U	38 U	44 U	27 U	70 U
N-NITROSODIMETHYLAMINE	UG/KG	54.4	--	--	400 U	160 U	460 U	540 U	330 U	860 U
N-NITROSODIPHENYLAMINE	UG/KG	87.8	--	--	330 U	130 U	380 U	450 U	280 U	710 U
NITROBENZENE	UG/KG	47.4	--	--	<b>52 U</b>	<b>21 U</b>	60 U	70 U	<b>43 U</b>	110 U
PENTACHLOROPHENOL	UG/KG	100.4	--	--	2200 U	870 U	2500 U	3,000 U	1,800 U	4,700 U
PHENOL	UG/KG	49.8	--	--	33 U	13 U	38 U	44 U	27 U	71 U

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

**TABLE A-40. PHYSICAL PARAMETERS OF SEDIMENT FROM MASONVILLE COVE  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	Sample ID UNITS	MASONVILLE COVE			
		M-B4	MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
GRAVEL	%	0	0	0	0
SAND	%	7.5	1.5	2	20.3
SILT	%	70.9	79.2	75	66.1
CLAY	%	21.6	19.4	23	13.6
SILT+CLAY	%	92.5	98.6	98	79.7
LIQUID LIMIT	--	--	79	78	57
PLASTIC LIMIT	--	--	49	49	37
PLASTICITY INDEX	--	--	30	29	19
MOISTURE CONTENT	%	207.1	--	--	--
PERCENT SOLIDS	%	--	31.7	30.3	42.8
SPECIFIC GRAVITY	--	2.59	2.70	2.70	2.64

**TABLE A-41. GENERAL CHEMISTRY CONCENTRATIONS IN SEDIMENT FROM MASONVILLE COVE  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	MASONVILLE COVE		
			Sample ID MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
TOTAL ORGANIC CARBON	%	0.13	<b>3.34</b>	<b>3.12</b>	<b>3.21</b>
AMMONIA NITROGEN	MG/KG	6.16	NA	NA	NA
NITRATE-NITRITE	MG/KG	0.68	<b>9.9</b>	<b>1.5 B</b>	<b>0.85 B</b>
TOTAL KJELDAHL NITROGEN	MG/KG	121.6	<b>2,740</b>	<b>2,960</b>	<b>2,100</b>
BIOCHEMICAL OXYGEN DEMAND	MG/KG	303.4	<b>3,290</b>	<b>2,900</b>	<b>2,710</b>
CHEMICAL OXYGEN DEMAND	MG/KG	25.28	<b>2,090</b>	<b>603</b>	<b>374</b>
ASBESTOS	%	NA	ND	ND	ND
CYANIDE, TOTAL	MG/KG	0.436	0.68 U	<b>0.84 B</b>	0.51 U
OIL & GREASE	MG/KG	195.2	244 U	255 U	181 U
pH	--	--	NA	NA	NA
TOTAL PHOSPHORUS	MG/KG	58.14	<b>663</b>	<b>556</b>	<b>556</b>
TOTAL SULFIDE	MG/KG	2.52	<b>1,490</b>	<b>423</b>	<b>1,250</b>
ACID VOLATILE SULFIDE	UMOLE/G	1.26	<b>37.4</b>	<b>6.9</b>	<b>29.8</b>

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**NA** = constituent was not analyzed for this sample

**ND** = not detected

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**J** (inorganic) = compound was detected in method blank

**U** = compound was analyzed but not detected

**TABLE A-42. METAL CONCENTRATIONS (MG/KG) IN SEDIMENT FROM MASONVILLE COVE  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	MASONVILLE COVE		
					MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
ALUMINUM	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	MG/KG	0.402	--	--	0.5 N U	0.53 N U	0.37 N U
ARSENIC	MG/KG	0.302	7.24	41.6	<b>14.3</b>	<b>15.8</b>	<b>9.00 AM</b>
BARIUM	MG/KG	--	--	--	--	--	--
BERYLLIUM	MG/KG	0.036	--	--	<b>1.8</b>	<b>1.9</b>	<b>1.1</b>
CADMIUM	MG/KG	0.050	0.676	4.21	<b>1.5</b>	<b>1.8</b>	<b>1.3</b>
CALCIUM	MG/KG	--	--	--	--	--	--
CHROMIUM	MG/KG	0.079	52.3	160.4	<b>94.7 E</b>	<b>109 E</b>	<b>62.6 E</b>
HEXAVALENT CHROMIUM	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA
COPPER	MG/KG	0.136	18.7	108.2	<b>145 E</b>	<b>179 E</b>	<b>217 E</b>
IRON	MG/KG	2.16	--	--	--	--	--
LEAD	MG/KG	0.330	30.24	112.18	<b>110 E</b>	<b>140 E</b>	<b>128 E</b>
MAGNESIUM	MG/KG	--	--	--	--	--	--
MANGANESE	NA	NA	NA	NA	NA	NA	NA
MERCURY	MG/KG	0.005	0.13	0.696	<b>0.31</b>	<b>0.41</b>	<b>0.35</b>
NICKEL	MG/KG	0.106	15.9	42.8	<b>43.6 E</b>	<b>47.4 E</b>	<b>46.2 E</b>
SELENIUM	MG/KG	0.292	--	--	<b>2.7</b>	<b>2.5</b>	<b>1.6</b>
SILVER	MG/KG	0.073	0.73	1.77	<b>0.52 B</b>	<b>0.74 B</b>	<b>0.46 B</b>
THALLIUM	MG/KG	0.500	--	--	<b>1.2 B</b>	<b>0.79 B</b>	<b>0.54 B</b>
TIN	NA	NA	NA	NA	NA	NA	NA
ZINC	MG/KG	0.158	124	271	<b>308 E</b>	<b>360 E</b>	<b>314 E</b>
RATIO OF SEM/AVS	--	--	--	--	0.2	0.9	0.23

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NA = constituent was not analyzed for this sample

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

B (inorganic) = compound was detected, but below reporting limit (value is estimated).

E = reported value is estimated because of the presence of interference

J (inorganic) = compound was detected in method blank

N = spiked sample recovery is not within control limits

U = compound was analyzed but not detected

NA = compound was not analyzed

**TABLE A-43. PCB CONGENER CONCENTRATIONS (UG/KG) IN SEDIMENT FROM MASONVILLE COVE  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	MASONVILLE COVE		
					MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
PCB 8*	UG/KG	0.241	--	--	<b>0.72 PG</b>	<b>1.5 PG</b>	<b>0.81 J PG</b>
PCB 18*	UG/KG	0.160	--	--	<b>1.9 PG</b>	<b>2.1 PG</b>	<b>5.1</b>
PCB 28*	UG/KG	0.260	--	--	<b>4.6 PG</b>	0.12 U	0.44 U
PCB 44*	UG/KG	0.240	--	--	<b>3.2</b>	0.11 U	<b>6.5</b>
PCB 49	UG/KG	0.245	--	--	<b>2.3 PG</b>	0.12 U	<b>9.1</b>
PCB 52*	UG/KG	0.233	--	--	<b>3.4 PG</b>	0.11 U	<b>7.6 PG</b>
PCB 66*	UG/KG	0.189	--	--	<b>3.7 PG</b>	<b>4.3 PG</b>	<b>10 PG</b>
PCB 77*	UG/KG	0.252	--	--	<b>1.5 PG</b>	0.12 U	0.43 U
PCB 87	UG/KG	0.217	--	--	<b>2 PG</b>	<b>1.7 PG</b>	<b>5.1 PG</b>
PCB 101*	UG/KG	0.234	--	--	<b>5.9</b>	0.11 U	<b>11</b>
PCB 105*	UG/KG	0.243	--	--	<b>2.2</b>	0.12 U	<b>4.6</b>
PCB 118*	UG/KG	0.238	--	--	<b>5.2</b>	<b>6.9</b>	<b>11</b>
PCB 126*	UG/KG	0.306	--	--	0.14 U	0.14 U	0.51 U
PCB 128*	UG/KG	0.238	--	--	<b>1.3 PG</b>	<b>2.1 PG</b>	<b>3 PG</b>
PCB 138*	UG/KG	0.248	--	--	<b>6.8</b>	<b>6.6 PG</b>	<b>14</b>
PCB 153*	UG/KG	0.241	--	--	<b>8.7</b>	<b>8.2 PG</b>	<b>17</b>
PCB 156	UG/KG	0.234	--	--	<b>0.82 PG</b>	<b>1.8</b>	<b>2.1</b>
PCB 169*	UG/KG	0.227	--	--	<b>1.8 PG</b>	<b>0.94 PG</b>	<b>7.7 PG</b>
PCB 170*	UG/KG	0.240	--	--	<b>3.2 PG</b>	<b>3.7 PG</b>	<b>5.9 PG</b>
PCB 180*	UG/KG	0.238	--	--	<b>6.4</b>	<b>8.6</b>	<b>12</b>
PCB 183	UG/KG	0.233	--	--	<b>1.3 PG</b>	<b>1.3 PG</b>	<b>2.9 PG</b>
PCB 184	UG/KG	0.200	--	--	0.091 U	0.095 U	0.34 U
PCB 187*	UG/KG	0.245	--	--	<b>4.4</b>	<b>4.6</b>	<b>7.7</b>
PCB 195	UG/KG	0.234	--	--	<b>0.81</b>	<b>0.64 PG</b>	<b>1.3 J</b>
PCB 206	UG/KG	0.233	--	--	<b>2.8</b>	<b>2.7</b>	<b>5.5</b>
PCB 209	UG/KG	0.248	--	--	<b>2</b>	<b>2.2</b>	<b>2.4</b>
TOTAL PCBs (ND=0)	UG/KG	--	21.55	188.79	<b>130</b>	<b>99.1</b>	<b>248</b>
TOTAL PCBs (ND=1/2DL)	UG/KG	--	21.55	188.79	<b>130</b>	<b>99.9</b>	<b>249</b>

\*PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

\*\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**J** = compound was detected, but below the reporting limit (value is estimated)

**PG** = the percent difference between the original and confirmation analysis is greater than 40%

**U** = compound was analyzed but not detected

**TABLE A-44. PCB AROCLOR CONCENTRATIONS (UG/KG) IN SEDIMENT FROM MASONVILLE COVE  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	MASONVILLE COVE		
			MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
AROCLOR 1016	UG/KG	33.2	42 U	44 U	31 U
AROCLOR 1221	UG/KG	16.2	20 U	21 U	15 U
AROCLOR 1232	UG/KG	19.8	25 U	26 U	18 U
AROCLOR 1242	UG/KG	14.2	18 U	18 U	13 U
AROCLOR 1248	UG/KG	15.2	19 U	20 U	14 U
AROCLOR 1254	UG/KG	5.56	7 U	7.3 U	5.2 U
AROCLOR 1260	UG/KG	4.66	<b>82</b>	<b>88</b>	4.3 U

There are no TEL and PEL values for PCB Aroclors

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**TABLE A-45. PAH CONCENTRATIONS (UG/KG) IN SEDIMENT FROM MASONVILLE COVE  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	MASONVILLE COVE		
					MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
1-METHYLNAPHTHALENE	UG/KG	6.00	--	--	32 J	34 U	68 J
2-METHYLNAPHTHALENE	UG/KG	6.86	20.21	201.28	59 J	63 J	98
ACENAPHTHENE	UG/KG	6.18	6.71	88.9	33 U	35 U	99
ACENAPHTHYLENE	UG/KG	6.18	5.87	127.87	65 J	73 J	140
ANTHRACENE	UG/KG	5.06	46.85	245	110	110	270
BENZO(A)ANTHRACENE	UG/KG	4.66	74.83	692.53	290	270	850
BENZO(A)PYRENE	UG/KG	6.28	88.81	763.22	370	390	1,000
BENZO(B)FLUORANTHENE	UG/KG	3.46	--	--	560	570	1,500
BENZO(GHI)PERYLENE	UG/KG	3.64	--	--	350	370	870
BENZO(K)FLUORANTHENE	UG/KG	6.98	--	--	210	230	510
CHRYSENE	UG/KG	4.20	107.77	845.98	420	370	1,200
DIBENZO(A,H)ANTHRACENE	UG/KG	4.20	6.22	134.61	75 J	81 J	200
FLUORANTHENE	UG/KG	4.06	112.82	1,493.54	850	610	2,600
FLUORENE	UG/KG	6.62	21.17	144.35	52 J	52 J	130
INDENO(1,2,3-CD)PYRENE	UG/KG	3.98	--	--	290	300	710
NAPHTHALENE	UG/KG	6.96	34.57	390.64	76 J	82 J	140
PHENANTHRENE	UG/KG	5.34	86.68	543.53	210	200	700
PYRENE	UG/KG	3.78	152.66	1397.6	710	650	2,000
TOTAL PAHs (ND=0)	UG/KG	--	1,684.06	16,770.40	4,729	4,421	13,085
TOTAL PAHs (ND=1/2DL)	UG/KG	--	1,684.06	16,770.40	4,745	4,455	13,085

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**U** = compound was analyzed but not detected

**TABLE A-46. CHLORINATED PESTICIDE CONCENTRATIONS (UG/KG) IN SEDIMENT FROM MASONVILLE COVE  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	MASONVILLE COVE		
					MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
4,4'-DDD	UG/KG	0.690	1.22	7.81	<b>7.4 J</b>	<b>8.3 J</b>	<b>3.9 J PG</b>
4,4'-DDE	UG/KG	0.404	2.07	374.17	<b>3.7 J PG</b>	<b>3.4 J PG</b>	<b>5.7 J</b>
4,4'-DDT	UG/KG	0.658	1.19	4.77	<b>6.2 J PG</b>	1.5 U	1.1 U
ALDRIN	UG/KG	0.404	--	--	<b>3.3 J PG</b>	<b>5.1 J PG</b>	1.2 U
ALPHA-BHC	UG/KG	0.698	--	--	1.1 U	1.2 U	0.84 U
BETA-BHC	UG/KG	0.446	--	--	1.8 U	1.8 U	1.3 U
CHLORDANE	UG/KG	12.0	--	--	6.1 U	6.4 U	4.5 U
CHLOROBENZIDE	UG/KG	1.72	--	--	5.4 U	5.7 U	<b>5.2 J</b>
DACHTAL	UG/KG	1.13	--	--	3.6 U	3.7 U	2.6 PG U
DELTA-BHC	UG/KG	0.420	--	--	1.4 U	1.5 U	1.1 U
DIELDRIN	UG/KG	0.732	0.715	4.3	<b>1.4 J PG</b>	1.3 U	<b>1.5 J PG</b>
ENDOSULFAN I	UG/KG	0.077	--	--	1.3 U	1.3 U	0.95 U
ENDOSULFAN II	UG/KG	0.416	--	--	2.1 U	2.1 U	1.5 U
ENDOSULFAN SULFATE	UG/KG	0.414	--	--	1.8 U	1.9 U	1.3 U
ENDRIN	UG/KG	0.694	--	--	1.3 U	1.4 U	0.97 U
ENDRIN ALDEHYDE	UG/KG	0.440	--	--	2.9 U	3 U	2.1 U
GAMMA-BHC	UG/KG	0.730	0.32	0.99	1.1 U	1.2 U	0.82 U
HEPTACHLOR	UG/KG	0.804	--	--	1.3 U	1.3 U	0.94 U
HEPTACHLOR EPOXIDE	UG/KG	0.432	--	--	1.6 U	1.7 U	1.2 U
METHOXYCHLOR	UG/KG	1.36	--	--	2.9 U	3 U	2.1 U
MIREX	UG/KG	0.576	--	--	<b>2.1 J PG</b>	<b>4.9 J PG</b>	<b>5.5 J PG</b>
TOXAPHENE	UG/KG	72.6	--	--	18 U	19 U	13 U

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**J** = compound was detected, but below the reporting limit (value is estimated)

**PG** = the percent difference between the original and confirmation analysis is greater than 40%

**U** = compound was analyzed but not detected

**TABLE A-47. ORGANOPHOSPHORUS PESTICIDE CONCENTRATIONS (UG/KG) IN SEDIMENT FROM  
MASONVILLE COVE  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	Sample ID MDL	MASONVILLE COVE		
			MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
AZINPHOS-METHYL	UG/KG	52.8	66 U	69 U	49 U
DEMETON (TOTAL)	UG/KG	100.4	120 U	130 U	92 U
MALATHION	UG/KG	36.8	46 U	48 U	34 U
METHYL PARATHION	UG/KG	37.6	47 U	49 U	35 U
PARATHION	UG/KG	45.6	57 U	60 U	42 U

There are no TEL and PEL values for organophosphorus pesticides

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**TABLE A-48. DIOXIN AND FURAN CONGENER CONCENTRATIONS (PG/G) IN SEDIMENT FROM  
MASONVILLE COVE  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	TEF*	UNITS	MASONVILLE COVE		
			MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
2,3,7,8-TCDD	1	PG/G	1.7 U	1.6 U	1.1 U
1,2,3,7,8-PECDD	0.5	PG/G	5 U	4.8 U	<b>6.5 J</b>
1,2,3,4,7,8-HXCDD	0.1	PG/G	6.2 U	8.1 U	<b>9.5 J</b>
1,2,3,6,7,8-HXCDD	0.1	PG/G	<b>25</b>	<b>48</b>	<b>56</b>
1,2,3,7,8,9-HXCDD	0.1	PG/G	<b>17</b>	<b>20</b>	<b>24</b>
1,2,3,4,6,7,8-HPCDD	0.01	PG/G	<b>570</b>	<b>990</b>	<b>1400</b>
OCDD	0.001	PG/G	<b>13,000 E</b>	<b>13,000 E</b>	<b>18,000 E</b>
2,3,7,8-TCDF	0.1	PG/G	<b>5.8</b>	<b>8.5</b>	<b>7.6</b>
1,2,3,7,8-PECDF	0.05	PG/G	6.1 U	<b>9.6 J</b>	<b>9.9 J</b>
2,3,4,7,8-PECDF	0.5	PG/G	<b>9.6 J</b>	<b>16 J</b>	<b>18</b>
1,2,3,4,7,8-HXCDF	0.1	PG/G	<b>23</b>	<b>52</b>	<b>70</b>
1,2,3,6,7,8-HXCDF	0.1	PG/G	<b>10 J</b>	<b>18</b>	<b>25</b>
2,3,4,6,7,8-HXCDF	0.1	PG/G	<b>8.7 J</b>	<b>14 J</b>	<b>17</b>
1,2,3,7,8,9-HXCDF	0.1	PG/G	1.5 U	2.1 U	1.7 U
1,2,3,4,6,7,8-HPCDF	0.01	PG/G	<b>170</b>	<b>330</b>	<b>540</b>
1,2,3,4,7,8,9-HPCDF	0.01	PG/G	<b>14 J</b>	<b>36</b>	<b>46</b>
OCDF	0.001	PG/G	<b>490</b>	<b>990</b>	<b>1500</b>
DIOXIN TEQ (ND=0)	--	PG/G	<b>22.6</b>	<b>39.5</b>	<b>58.7</b>
DIOXIN TEQ (ND=1/2DL)	--	PG/G	<b>26.5</b>	<b>43.2</b>	<b>59.4</b>

\* Source: USEPA 1989. 1989 Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)

There are no TEL and PEL values for dioxin and furan congeners

**NOTE:** Shaded and bold values represent detected concentrations.

**RL** = average reporting limit

**TEF** = toxicity equivalency factor

**TEQ** = toxicity equivalency quotient

**J** = compound was detected, but below the reporting limit (value is estimated)

**E** = amount detected is greater than the method calibration limit

**U** = compound was analyzed but not detected

**TABLE A-49. BUTYLTIN CONCENTRATIONS (UG/KG) IN SEDIMENT FROM MASONVILLE COVE  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MASONVILLE COVE			
		Sample ID	MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
DIBUTYLTIN	UG/KG		4.6 U	4.1 U	3.2 U
MONOBUTYLTIN	UG/KG		3.6 U	3.1 U	2.4 U
TETRABUTYLTIN	UG/KG		6.1 U	5.3 U	4.2 U
TRIBUTYLTIN	UG/KG		5.3 U	4.7 U	3.7 U

There are no TEL and PEL values for butyltins

**NOTE:** Shaded and bold values represent detected concentrations.

**RL** = average reporting limit

**P** = greater than 25% difference for detected concentrations between the two GC columns

**U** = compound was analyzed but not detected

**TABLE A-50. VOLATILE ORGANIC COMPOUND (VOC) CONCENTRATIONS (UG/KG) FROM MASONVILLE COVE  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	MASONVILLE COVE		
			Sample ID	MSNSURF05-2-S	MSNSURF05-3-S
1,1,1-TRICHLOROETHANE	UG/KG	0.834	0.86 U	0.9 U	0.63 U
1,1,2,2-TETRACHLOROETHANE	UG/KG	1.88	1.4 U	1.5 U	1.1 U
1,1,2-TRICHLOROETHANE	UG/KG	1.20	2.1 U	2.2 U	1.6 U
1,1-DICHLOROETHANE	UG/KG	1.13	0.91 U	0.95 U	0.67 U
1,1-DICHLOROETHENE	UG/KG	0.888	1.9 U	1.9 U	1.4 U
1,2-DICHLOROBENZENE	UG/KG	1.06	2.9 U	3.1 U	2.2 U
1,2-DICHLOROETHANE	UG/KG	1.42	0.95 U	1 U	0.71 U
1,2-DICHLOROPROPANE	UG/KG	1.30	2 U	2.1 U	1.5 U
1,3-DICHLOROBENZENE	UG/KG	1.13	2.9 U	3 U	2.1 U
1,4-DICHLOROBENZENE	UG/KG	1.20	2.2 U	2.3 U	1.6 U
2-BUTANONE (MEK)	UG/KG	2.26	4.4 U	4.6 U	3.3 U
2-CHLOROETHYL VINYL ETHER	UG/KG	17.8	29 U	30 U	21 U
ACROLEIN	UG/KG	15.2	300 U	310 U	220 U
ACRYLONITRILE	UG/KG	9.78	84 U	88 U	62 U
BENZENE	UG/KG	1.06	1.7 U	1.8 U	1.3 U
BROMODICHLOROMETHANE	UG/KG	1.32	0.79 U	0.83 U	0.58 U
BROMOFORM	UG/KG	0.728	1.9 U	2 U	1.4 U
BROMOMETHANE	UG/KG	1.20	2.9 U	3.1 U	2.2 U
CARBON TETRACHLORIDE	UG/KG	1.28	0.79 U	0.83 U	0.58 U
CHLOROETHANE	UG/KG	6.00	3 U	3.1 U	2.2 U
CHLOROFORM	UG/KG	1.62	0.79 U	0.83 U	0.58 U
CHLOROMETHANE	UG/KG	1.01	0.91 U	0.95 U	0.67 U
CIS-1,3-DICHLOROPROPENE	UG/KG	0.958	0.91 U	0.95 U	0.67 U
DIBROMOCHLOROMETHANE	UG/KG	1.22	0.82 U	0.86 U	0.61 U
DICHLORODIFLUOROMETHANE	UG/KG	6.98	1.6 U	1.7 U	1.2 U
ETHYLBENZENE	UG/KG	0.978	2.9 U	3.1 U	2.2 U
METHYLENE CHLORIDE	UG/KG	1.98	<b>5.6 JB</b>	<b>5 JB</b>	<b>3.7 JB</b>
TETRACHLOROETHENE	UG/KG	0.740	2.4 U	2.5 U	1.8 U
TOLUENE	UG/KG	1.22	1.9 U	2 U	1.4 U
TRANS-1,2-DICHLOROETHENE	UG/KG	0.926	2.1 U	2.2 U	1.5 U
TRANS-1,3-DICHLOROPROPENE	UG/KG	1.13	0.87 U	0.91 U	0.65 U
TRICHLOROETHENE	UG/KG	1.36	2.7 U	2.8 U	2 U
TRICHLOROFLUOROMETHANE	UG/KG	7.80	3.8 U	4 U	2.8 U
VINYL CHLORIDE	UG/KG	1.42	2.1 U	2.2 U	1.5 U

There are no TEL and PEL values for volatile organic compounds

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**B** = compound was detected in method blank

**J** = compound was detected, but below the reporting limit (value is estimated)

**U** = compound was analyzed but not detected

TABLE A-51. SEMIVOLATILE ORGANIC COMPOUND (SVOC) CONCENTRATIONS (UG/KG) IN SEDIMENT FROM MASONVILLE COVE

MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL*	PEL*	MASONVILLE COVE		
					MSNSURF05-2-S	MSNSURF05-3-S	MSNSURF05-4-S
1,2,4-TRICHLOROBENZENE	UG/KG	55.6	--	--	53 U	56 U	39 U
1,2-DIPHENYLHYDRAZINE	UG/KG	73.8	--	--	61 U	63 U	45 U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	48.2	--	--	38 U	40 U	28 U
2,4,6-TRICHLOROPHENOL	UG/KG	69.8	--	--	45 U	47 U	33 U
2,4-DICHLOROPHENOL	UG/KG	66.4	--	--	50 U	52 U	37 U
2,4-DIMETHYLPHENOL	UG/KG	110.4	--	--	42 U	44 U	31 U
2,4-DINITROPHENOL	UG/KG	100.4	--	--	6,600 U	6,900 U	4,900 U
2,4-DINITROTOLUENE	UG/KG	115.4	--	--	28 U	29 U	20 U
2,6-DINITROTOLUENE	UG/KG	91.2	--	--	37 U	39 U	28 U
2-CHLORONAPHTHALENE	UG/KG	51.8	--	--	56 U	58 U	41 U
2-CHLOROPHENOL	UG/KG	62	--	--	41 U	43 U	31 U
2-METHYLPHENOL	UG/KG	80.2	--	--	59 U	61 U	43 U
2-NITROPHENOL	UG/KG	50.8	--	--	47 U	49 U	35 U
3,3'-DICHLOROBENZIDINE	UG/KG	68	--	--	65 U	68 U	48 U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	120	--	--	6,600 U	6,900 U	4,000 U
4-BROMOPHENYL PHENYL ETHER	UG/KG	91.4	--	--	130 U	140 U	97 U
4-CHLORO-3-METHYLPHENOL	UG/KG	72.8	--	--	57 U	60 U	42 U
4-CHLOROPHENYL PHENYL ETHER	UG/KG	84.4	--	--	54 U	56 U	40 U
4-METHYLPHENOL	UG/KG	103.6	--	--	59 U	62 U	44 U
4-NITROPHENOL	UG/KG	144	--	--	35 U	37 U	26 U
BENZOIC ACID	UG/KG	42.2	--	--	2,200 U	2,300 U	1,600 U
BENZYL ALCOHOL	UG/KG	100.4	--	--	300 U	310 U	220 U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	45.2	--	--	59 U	62 U	44 U
BIS(2-CHLOROETHYL) ETHER	UG/KG	48.2	--	--	51 U	53 U	38 U
BIS(2-CHLOROISOPROPYL) ETHER	UG/KG	--	--	--	38 U	40 U	28 U
BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	97.4	182.16	2,646.51	<b>530 J</b>	<b>510 J</b>	<b>1,600 J</b>
BUTYL BENZYL PHTHALATE	UG/KG	101	--	--	58 U	61 U	43 U
DI-N-BUTYL PHTHALATE	UG/KG	110.4	--	--	320 U	340 U	240 U
DI-N-OCTYL PHTHALATE	UG/KG	106.4	--	--	61 U	63 U	45 U
DIBENZOFURAN	UG/KG	77.6	--	--	59 U	62 U	<b>84 J</b>
DIETHYL PHTHALATE	UG/KG	113.4	--	--	53 U	56 U	39 U
DIMETHYL PHTHALATE	UG/KG	97.2	--	--	55 U	58 U	41 U
HEXACHLOROBENZENE	UG/KG	89.6	--	--	53 U	55 U	39 U
HEXACHLOROBUTADIENE	UG/KG	58.6	--	--	51 U	54 U	38 U
HEXACHLOROCYCLOCOPENTADIENE	UG/KG	64	--	--	210 U	220 U	160 U
HEXACHLOROETHANE	UG/KG	50.8	--	--	50 U	53 U	37 U
ISOPHORONE	UG/KG	46.2	--	--	50 U	53 U	37 U
N-NITROSODI-N-PROPYLAMINE	UG/KG	55.4	--	--	53 U	56 U	40 U
N-NITROSODIMETHYLAMINE	UG/KG	54.4	--	--	660 U	690 U	490 U
N-NITROSODIPHENYLAMINE	UG/KG	87.8	--	--	550 U	570 U	400 U
NITROBENZENE	UG/KG	47.4	--	--	85 U	89 U	63 U
PENTACHLOROPHENOL	UG/KG	100.4	--	--	3,600 U	3,800 U	2,700 U
PHENOL	UG/KG	49.8	--	--	54 U	57 U	40 U

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

**TABLE A-52. PHYSICAL PARAMETERS OF SEDIMENT AT DEPTH IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT (LOCATIONS 05A, 06, AND 08)  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	LOCATION 05A			LOCATION 06			LOCATION 08	
		0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
GRAVEL	%	0	37.5	17.8	0	0	5.5	9.5	
CLAY	%	31.1	5.9	38	51.9	17.6	3.9	19.3	
SILT	%	54.3	12.3	25.5	42	36.6	16.2	11.8	
COARSE SAND	%	0.7	5.4	5.1	0	0	9.2	5.7	
FINE SAND	%	12.8	27.2	6.4	5.8	45.6	41.7	26	
MEDIUM SAND	%	1.1	11.7	7.2	0.3	0.2	23.6	27.6	
SAND (TOTAL)	%	14.6	44.3	18.7	6.1	45.8	74.5	59.3	
LIQUID LIMIT	--		0	47		0	0	64	
PLASTIC LIMIT	--		0	26		0	0	0	
PLASTICITY INDEX	--		0	21		0	0	0	
PERCENT SOLIDS	%	47.1	80.3	77.1	47.4	75.4	80.6	53.5	
SPECIFIC GRAVITY	--	2.681	2.715	2.66	2.02	2.727	2.696	2.598	

(a) = depth below sediment surface

**TABLE A-53. GENERAL CHEMISTRY PARAMETERS IN SEDIMENT AT DEPTH FROM WITHIN THE PROPOSED ALIGNMENT  
 (LOCATIONS 05A, 06, AND 08)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	LOCATION 05A			LOCATION 06			LOCATION 08	
			0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
TOTAL ORGANIC CARBON	MG/KG	0.13	<b>1.93</b>	<b>0.220</b>	<b>0.250</b>	<b>2.74</b>	<b>0.240</b>	<b>0.150</b>	<b>3.53</b>	
NITRATE + NITRITE	MG/KG	0.68	NA	<b>0.59 B</b>	<b>0.59 B</b>	NA	<b>0.5 B</b>	<b>0.28 B</b>	<b>0.43 B</b>	
TOTAL KJELDAHL NITROGEN	MG/KG	121.6	<b>1,670</b>	<b>26,100</b>	<b>18,700</b>	<b>2,180</b>	63.7 U	<b>174 B</b>	<b>35,100</b>	
BIOCHEMICAL OXYGEN DEMAND	MG/KG	303.4	NA	149 U	156 U	NA	159 U	149 U	<b>785</b>	
CHEMICAL OXYGEN DEMAND	MG/KG	25.28	<b>921</b>	<b>199</b>	<b>415</b>	<b>433</b>	<b>333</b>	<b>170</b>	<b>341</b>	
TOTAL CYANIDE	MG/KG	0.436	NA	0.27 U	1	NA	0.29 U	0.27 U	0.41 U	
OIL & GREASE (HEM)	MG/KG	195.2	164 U	96.2 U	100 U	163 U	102 U	95.8 U	144 U	
PH	NO UNITS	--			7.6				7.7	
TOTAL PHOSPHORUS	MG/KG	58.14	<b>949</b>	<b>145</b>	<b>263</b>	<b>721</b>	<b>213</b>	<b>84.8</b>	<b>117</b>	
SULFIDE	MG/KG	2.52	NA	15.3 U	15.9 U	--	16.3 U	15.2 U	22.9 U	
ACID VOLATILE SULFIDE	UMOLE/G	1.26	NA	<b>1.2</b>	0.63 U	NA	0.64 U	0.62 U	0.8 U	

**(a)** = depth below sediment surface

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**NA** = constituent was not analyzed for this sample

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**U** = compound was analyzed but not detected

**TABLE A-54. METAL CONCENTRATIONS (MG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT (LOCATIONS 05A, 06, AND 08)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	LOCATION 05A			LOCATION 06			LOCATION 08	
					0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
ANTIMONY	MG/KG	0.402	--	--	--	0.32 N U	0.31 N U	--	0.32 N U	0.32 N U	0.3 N U	
ARSENIC	MG/KG	0.302	7.24	41.6	<b>54.3</b>	<b>3.1</b>	<b>2.1</b>	<b>23.7</b>	<b>0.99 B</b>	<b>1</b>	<b>3.1</b>	
BERYLLIUM	MG/KG	0.036	--	--	--	<b>0.57</b>	<b>1</b>	--	<b>0.68</b>	<b>0.45</b>	<b>0.78</b>	
CADMIUM	MG/KG	0.050	0.676	4.21	<b>1.2</b>	0.069 U	0.068 U	<b>0.97</b>	0.069 U	0.069 U	0.065 U	
CHROMIUM	MG/KG	0.079	52.3	160.4	<b>92.9</b>	<b>15.9</b>	<b>33.5</b>	<b>90.2</b>	<b>21.7</b>	<b>9.1</b>	<b>21.5</b>	
COPPER	MG/KG	0.136	18.7	108.2	<b>257</b>	<b>12.6</b>	<b>28</b>	<b>112</b>	<b>12</b>	<b>5.5</b>	<b>11</b>	
LEAD	MG/KG	0.330	30.24	112.18	<b>107 E</b>	<b>3.6</b>	<b>6.9</b>	<b>60.8 E</b>	<b>4.9</b>	<b>2.3</b>	<b>4.2</b>	
MERCURY	MG/KG	0.005	0.13	0.696	<b>0.58</b>	<b>0.047</b>	<b>0.06</b>	<b>0.38</b>	<b>0.02 B</b>	0.0079 U	<b>0.01 B</b>	
NICKEL	MG/KG	0.106	15.9	42.8	--	<b>6.9</b>	<b>17.9</b>	--	<b>10.4</b>	<b>5</b>	<b>11.8</b>	
SELENIUM	MG/KG	0.292	--	--	<b>6.4</b>	<b>0.66</b>	<b>0.84</b>	<b>3</b>	0.26 U	<b>0.31 B</b>	<b>0.91</b>	
SILVER	MG/KG	0.073	0.73	1.77	<b>0.41 B</b>	<b>0.042 B</b>	0.029 U	<b>0.24</b>	0.03 U	0.03 U	<b>0.034 B</b>	
THALLIUM	MG/KG	0.500	--	--	--	0.45 U	<b>0.45 B</b>	--	0.45 U	0.45 U	<b>0.73 B</b>	
ZINC	MG/KG	0.158	124	271	<b>259 E</b>	<b>19.7 E</b>	<b>35.3 E</b>	<b>174 E</b>	<b>27.3 E</b>	<b>15.1 E</b>	<b>26.3 E</b>	
RATIO OF SEM/AVS	--	--	--	--	--	<b>0.38</b>	--	--	--	--	--	

(a) = depth below sediment surface

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**E** = reported value is estimated because of the presence of interference

**N** = spiked sample recovery is not within control limits

**U** = compound was analyzed but not detected

TABLE A-55. PCB CONGENER CONCENTRATIONS (UG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT  
 (LOCATIONS 05A, 06, AND 08)  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	LOCATION 05A			LOCATION 06	LOCATION 08
			0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>		
PCB 8*	UG/KG	0.241	--	--	<b>0.36 PG</b>	<b>0.17 J PG</b>	0.045 U
PCB 18*	UG/KG	0.160	--	--	<b>0.94 PG</b>	0.029 U	0.03 U
PCB 28*	UG/KG	0.260	--	--	<b>1.7</b>	<b>0.054 J PG</b>	0.049 U
PCB 44*	UG/KG	0.240	--	--	<b>2</b>	0.043 U	0.045 U
PCB 49	UG/KG	0.245	--	--	<b>1.2</b>	0.044 U	0.046 U
PCB 52*	UG/KG	0.233	--	--	<b>2.6</b>	0.041 U	0.043 U
PCB 66*	UG/KG	0.189	--	--	<b>1.9 PG</b>	0.034 U	0.035 U
PCB 77*	UG/KG	0.252	--	--	0.078 U	0.046 U	0.047 U
PCB 87	UG/KG	0.217	--	--	<b>2.1 PG</b>	0.039 U	0.04 U
PCB 101*	UG/KG	0.234	--	--	<b>4.3</b>	0.042 U	0.044 U
PCB 105*	UG/KG	0.243	--	--	<b>2.2</b>	0.044 U	0.045 U
PCB 118*	UG/KG	0.238	--	--	<b>5.1</b>	0.043 U	0.044 U
PCB 126*	UG/KG	0.306	--	--	0.093 U	0.055 U	0.057 U
PCB 128*	UG/KG	0.238	--	--	<b>1.2 PG</b>	0.043 U	0.045 U
PCB 138*	UG/KG	0.248	--	--	<b>4.5</b>	0.045 U	0.047 U
PCB 153*	UG/KG	0.241	--	--	<b>3.9</b>	<b>0.047 J</b>	0.045 U
PCB 156	UG/KG	0.234	--	--	<b>0.78 PG</b>	0.042 U	0.044 U
PCB 169*	UG/KG	0.227	--	--	0.07 U	0.041 U	0.043 U
PCB 170*	UG/KG	0.240	--	--	<b>1.1 PG</b>	0.043 U	0.045 U
PCB 180*	UG/KG	0.238	--	--	<b>2.6</b>	0.043 U	0.044 U
PCB 183	UG/KG	0.233	--	--	<b>0.4 PG</b>	0.041 U	0.043 U
PCB 184	UG/KG	0.200	--	--	0.061 U	0.036 U	0.037 U
PCB 187*	UG/KG	0.245	--	--	<b>1.4</b>	0.044 U	0.046 U
PCB 195	UG/KG	0.234	--	--	<b>0.14 J PG</b>	0.042 U	0.044 U
PCB 206	UG/KG	0.233	--	--	<b>0.98</b>	0.042 U	0.043 U
PCB 209	UG/KG	0.248	--	--	<b>1.6</b>	0.045 U	0.047 U
TOTAL PCBs (ND=0)	UG/KG	--	21.55	188.79	<b>71.6</b>	<b>0.542</b>	0
TOTAL PCBs (ND=1/2DL)	UG/KG	--	21.55	188.79	<b>71.8</b>	<b>1.18</b>	<b>0.799</b>

(a) = depth below sediment surface

\*PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

\*\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed but not detected

**TABLE A-56. PCB AROCLOR CONCENTRATIONS (UG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT (LOCATIONS 05A, 06, AND 08)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	LOCATION 05A			LOCATION 06			LOCATION 08	
			0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
AROCLOR 1016	UG/KG	33.2	--	26 U	26 U	--	26 U	26 U	25 U	
AROCLOR 1221	UG/KG	16.2	--	13 U	12 U	--	13 U	13 U	12 U	
AROCLOR 1232	UG/KG	19.8	--	16 U	15 U	--	16 U	16 U	15 U	
AROCLOR 1242	UG/KG	14.2	--	11 U	11 U	--	11 U	11 U	10 U	
AROCLOR 1248	UG/KG	15.2	--	12 U	12 U	--	12 U	12 U	11 U	
AROCLOR 1254	UG/KG	5.56	--	4.4 U	4.3 U	--	4.4 U	4.4 U	4.1 U	
AROCLOR 1260	UG/KG	4.66	--	3.7 U	3.6 U	--	3.7 U	3.7 U	3.4 U	

(a) = depth below sediment surface

There are no TEL and PEL values for PCB Aroclors

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**TABLE A-57. PAH CONCENTRATIONS (UG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT (LOCATIONS 05A, 06, AND 08)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	LOCATION 05A			LOCATION 06			LOCATION 08	
					0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
1-METHYLNAPHTHALENE	UG/KG	6.00	--	--	--	<b>5.6 J</b>	2 U	--	2 U	2 U	1.9 U	
2-METHYLNAPHTHALENE	UG/KG	6.86	20.21	201.28	--	<b>3.9 J</b>	2.3 U	--	2.3 U	2.3 U	2.2 U	
ACENAPHTHENE	UG/KG	6.18	6.71	88.9	--	--	<b>2.1 J</b>	--	2.1 U	2.1 U	2 U	
ACENAPHTHYLENE	UG/KG	6.18	5.87	127.87	--	<b>2.7 J</b>	2 U	--	2.1 U	2.1 U	2 U	
ANTHRACENE	UG/KG	5.06	46.85	245	--	<b>7.4</b>	1.7 U	--	1.7 U	<b>1.8 J</b>	1.6 U	
BENZO(A)ANTHRACENE	UG/KG	4.66	74.83	692.53	--	<b>9.5</b>	1.5 U	--	1.6 U	<b>3 J</b>	1.5 U	
BENZO(A)PYRENE	UG/KG	6.28	88.81	763.22	--	<b>6.9</b>	2.1 U	--	2.1 U	<b>2.5 J</b>	2 U	
BENZO(B)FLUORANTHENE	UG/KG	3.46	--	--	--	<b>7.6</b>	1.1 U	--	1.2 U	<b>2.9 J</b>	1.1 U	
BENZO(G,H)PERYLENE	UG/KG	3.64	--	--	--	<b>5.1 J</b>	1.2 U	--	1.2 U	<b>2.2 J</b>	1.2 U	
BENZO(K)FLUORANTHENE	UG/KG	6.98	--	--	--	<b>2.8 J</b>	2.3 U	--	2.4 U	2.4 U	2.2 U	
CHRYSENE	UG/KG	4.20	107.77	845.98	--	<b>13</b>	1.4 U	--	1.4 U	<b>3.1 J</b>	1.3 U	
DIBENZO(A,H)ANTHRACENE	UG/KG	4.20	6.22	134.61	--	<b>1.4 J</b>	1.4 U	--	1.4 U	1.4 U	1.3 U	
FLUORANTHENE	UG/KG	4.06	112.82	1,493.54	--	<b>15</b>	2.2 U	--	2.2 U	<b>5.8 J</b>	2.1 U	
FLUORENE	UG/KG	6.62	21.17	144.35	--	<b>6.8</b>	2.2 U	--	2.2 U	<b>2.5 J</b>	2.1 U	
INDENO(1,2,3-CD)PYRENE	UG/KG	3.98	--	--	--	<b>4 J</b>	1.3 U	--	1.3 U	<b>1.7 J</b>	1.3 U	
NAPHTHALENE	UG/KG	6.96	34.57	390.64	--	<b>4.6 J</b>	2.3 U	--	2.3 U	2.3 U	2.2 U	
PHENANTHRENE	UG/KG	5.34	86.68	543.53	--	<b>22</b>	<b>3.9 J</b>	--	<b>4.3 J</b>	<b>7.8</b>	<b>2.4 J</b>	
PYRENE	UG/KG	3.78	152.66	1397.6	--	<b>20</b>	<b>1.5 J</b>	--	<b>1.6 J</b>	<b>6 J</b>	1.2 U	
TOTAL PAHs (ND=0)	UG/KG	--	1,684.06	16,770.40	--	<b>149</b>	<b>7.5</b>	--	<b>5.9</b>	<b>39.3</b>	<b>2.4</b>	
TOTAL PAHs (ND=1/2DL)	UG/KG	--	1,684.06	16,770.40	--	<b>149</b>	21	--	20.7	46.6	17	

(a) = depth below sediment surface

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**J** = compound was detected, but below the reporting limit (value is estimated)

**U** = compound was analyzed but not detected

**TABLE A-58. CHLORINATED PESTICIDE CONCENTRATIONS (UG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT (LOCATIONS 05A, 06, AND 08)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	LOCATION 05A			LOCATION 06			LOCATION 08	
					0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
4,4'-DDD	UG/KG	0.690	1.22	7.81	<b>3.7</b>	0.16 U	0.16 U	<b>5.3</b>	0.16 U	0.16 U	0.15 U	
4,4'-DDE	UG/KG	0.404	2.07	374.17	<b>2.7 PG</b>	0.21 U	0.2 U	<b>1.9 PG</b>	0.21 U	0.21 U	0.19 U	
4,4'-DDT	UG/KG	0.658	1.19	4.77	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.17 U	
ALDRIN	UG/KG	0.404	--	--	0.22 U	0.21 U	0.21 U	0.22 U	0.21 U	0.21 U	0.2 U	
ALPHA-BHC	UG/KG	0.698	--	--	0.15 U	0.14 U	0.14 U	0.15 U	0.14 U	0.14 U	0.13 U	
BETA-BHC	UG/KG	0.446	--	--	0.24 U	0.22 U	0.22 U	0.23 U	0.22 U	0.22 U	0.21 U	
CHLORDANE	UG/KG	12.0	--	--	0.83 U	0.77 U	0.76 U	0.82 U	0.77 U	0.77 U	0.73 U	
CHLOROBENZIDE	UG/KG	1.72	--	--	0.73 U	0.69 U	0.67 U	0.73 U	0.68 U	0.68 U	0.64 U	
DACHTAL	UG/KG	1.13	--	--	0.48 U	0.45 U	0.44 U	0.48 U	0.45 U	0.45 U	0.42 U	
DELTA-BHC	UG/KG	0.420	--	--	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.17 U	
DIELDRIN	UG/KG	0.732	0.715	4.3	<b>1.3 J PG</b>	0.16 U c	0.16 U c	<b>0.52 J PG</b>	0.16 U	0.16 U	0.15 U	
ENDOSULFAN I	UG/KG	0.077	--	--	0.17 U	0.16 U	0.16 U	0.17 U	0.16 U	0.16 U	0.15 U	
ENDOSULFAN II	UG/KG	0.416	--	--	0.28 U	0.26 U	0.25 U	0.4 J PG	0.26 U	0.26 U	0.24 U	
ENDOSULFAN SULFATE	UG/KG	0.414	--	--	0.24 U	0.23 U	0.22 U	0.24 U	0.23 U	0.23 U	0.21 U	
ENDRIN	UG/KG	0.694	--	--	<b>2.3 PG</b>	0.17 U	0.16 U	<b>1.1 J PG</b>	0.17 U	0.17 U	0.16 U	
ENDRIN ALDEHYDE	UG/KG	0.440	--	--	0.38 U	0.36 U	0.35 U	0.38 U	0.36 U	0.36 U	0.34 U	
GAMMA-BHC	UG/KG	0.730	0.32	0.99	0.15 U	0.14 U	0.14 U	0.15 U	0.14 U	0.14 U	0.13 U	
HEPTACHLOR	UG/KG	0.804	--	--	0.17 U	0.16 U	0.16 U	0.17 U	0.16 U	0.16 U	0.15 U	
HEPTACHLOR EPOXIDE	UG/KG	0.432	--	--	0.22 U	0.2 U	0.2 U	0.21 U	0.2 U	0.2 U	0.19 U	
METHOXYCHLOR	UG/KG	1.36	--	--	0.39 U	0.37 U	0.36 U	0.39 U	0.37 U	0.36 U	0.34 U	
MIREX	UG/KG	0.576	--	--	0.24 U	0.23 U	0.22 U	0.24 U	0.23 U	0.23 U	0.21 U	
TOXAPHENE	UG/KG	72.6	--	--	2.4 U	2.3 U	2.2 U	2.4 U	2.3 U	2.2 U	2.1 U	

(a) = depth below sediment surface

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed but not detected

**TABLE A-59. ORGANOPHOSPHORUS PESTICIDE CONCENTRATIONS (UG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT  
(LOCATIONS 05A, 06, AND 08)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	LOCATION 05A			LOCATION 06			LOCATION 08	
			0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
AZINPHOS-METHYL	UG/KG	52.8	--	8.3 U	8.1 U	--	8.3 U	8.3 U	7.8 U	
DEMETON (TOTAL)	UG/KG	100.4	--	16 U	15 U	--	16 U	16 U	15 U	
MALATHION	UG/KG	36.8	--	5.8 U	5.7 U	--	5.8 U	5.8 U	5.4 U	
METHYL PARATHION	UG/KG	37.6	--	5.9 U	5.8 U	--	5.9 U	5.9 U	5.5 U	
PARATHION	UG/KG	45.6	--	7.2 U	7 U	--	7.2 U	7.2 U	6.7 U	

(a) = depth below sediment surface

There are no TEL and PEL values for organophosphorus pesticides

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**U** = compound was analyzed but not detected

**TABLE A-60. DIOXIN AND FURAN CONGENER CONCENTRATIONS (PG/G) AT DEPTH IN SEDIMENT FROM WITHIN THE PROPOSED ALIGNMENT  
 (LOCATIONS 05A, 06, AND 08)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	RL	TEF*	LOCATION 05A			LOCATION 06			LOCATION 08	
				0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
2,3,7,8-TCDD	PG/G	1.2	1	--	0.59 U	0.95 U	--	0.69 U	0.5 U	1.1 U	
1,2,3,7,8-PECDD	PG/G	3.7	1	--	1.2 U	1.8 U	--	1.3 U	1.1 U	2.6 U	
1,2,3,4,7,8-HXCDD	PG/G	4.5	0.1	--	0.95 U	1.3 U	--	1.2 U	0.74 U	1.5 U	
1,2,3,6,7,8-HXCDD	PG/G	--	0.1	--	0.83 U	1.1 U	--	1.2 U	0.69 U	1.3 U	
1,2,3,7,8,9-HXCDD	PG/G	4.5	0.1	--	1.4 U	2.5 U	--	1.2 U	0.71 U	2.6 U	
1,2,3,4,6,7,8-HPCDD	PG/G	--	0.01	--	<b>11</b>	<b>16</b>	--	<b>4.6 J</b>	<b>5.8 J</b>	<b>43</b>	
OCDD	PG/G	--	0.0001	--	<b>450</b>	<b>250</b>	--	<b>92</b>	<b>340</b>	<b>1,200</b>	
2,3,7,8-TCDF	PG/G	--	0.1	--	0.44 U	0.96 U	--	0.42 U	0.38 U	1.2 U	
1,2,3,7,8-PECDF	PG/G	4.3	0.05	--	0.69 U	1 U	--	0.6 U	0.63 U	1.3 U	
2,3,4,7,8-PECDF	PG/G	1.9	0.5	--	0.78 U	1 U	--	0.69 U	0.72 U	1.4 U	
1,2,3,4,7,8-HXCDF	PG/G	4.6	0.1	--	0.49 U	0.67 U	--	0.65 U	0.57 U	0.97 U	
1,2,3,6,7,8-HXCDF	PG/G	2.6	0.1	--	0.4 U	0.53 U	--	0.57 U	0.5 U	0.84 U	
2,3,4,6,7,8-HXCDF	PG/G	2.2	0.1	--	0.41 U	0.53 U	--	0.53 U	0.46 U	0.82 U	
1,2,3,7,8,9-HXCDF	PG/G	1.6	0.1	--	0.46 U	0.64 U	--	0.58 U	0.51 U	1 U	
1,2,3,4,6,7,8-HPCDF	PG/G	--	0.01	--	0.92 U	0.56 U	--	0.62 U	0.56 U	0.77 U	
1,2,3,4,7,8,9-HPCDF	PG/G	5.8	0.01	--	0.66 U	0.88 U	--	0.82 U	0.6 U	1.3 U	
OCDF	PG/G	--	0.0001	--	2.3 U	1.3 U	--	1.4 U	0.76 U	1.9 U	
DIOXIN TEQ (ND=0)	PG/G	--	--	--	<b>0.155</b>	<b>0.185</b>	--	<b>0.055</b>	<b>0.092</b>	<b>0.550</b>	
DIOXIN TEQ (ND=1/2DL)	PG/G	--	--	--	<b>1.54</b>	<b>2.25</b>	--	<b>1.56</b>	<b>1.32</b>	<b>3.30</b>	

(a) = depth below sediment surface

\* Source: USEPA 1989. 1989 Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of

Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)

There are no TEL and PEL values for dioxin and furan congeners

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

TEF = toxicity equivalency factor

TEQ = toxicity equivalency quotient

J = compound was detected, but below the reporting limit (value is estimated)

JA = the analyte was positively identified, but the quantitation is an estimate

U = compound was analyzed but not detected

**TABLE A-61. BUTYLTIN CONCENTRATIONS (UG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT  
 (LOCATIONS 05A, 06, AND 08)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	RL	LOCATION 05A			LOCATION 06			LOCATION 08	
			0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
DIBUTYLTIN	UG/KG	3.3	--	1.6 U	1.7 U	--	<b>2.3</b>	1.7 U	2.3 U	
MONOBUTYLTIN	UG/KG	2.54	--	1.2 U	1.3 U	--	1.3 U	1.3 U	1.8 U	
TETRABUTYLTIN	UG/KG	4.34	--	2.1 U	2.2 U	--	2.2 U	2.2 U	3 U	
TRIBUTYLTIN	UG/KG	3.8	--	1.9 U	1.9 U	--	<b>3.3 P</b>	1.9 U	2.6 U	

(a) = depth below sediment surface

**NOTE:** Shaded and bold values represent detected concentrations.

**RL** = average reporting limit

**P** = greater than 25% difference for detected concentrations between the two GC columns

**U** = compound was analyzed but not detected

TABLE A-62. VOLATILE ORGANIC COMPOUND (VOC) CONCENTRATIONS (UG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT  
(LOCATIONS 05A, 06, AND 08)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	LOCATION 05A			LOCATION 06			LOCATION 08	
			0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>	
1,1,1-TRICHLOROETHANE	UG/KG	0.834	0.58 U	0.34 U	0.35 U	0.57 U	0.36 U	0.34 U	0.51 U	
1,1,2,2-TETRACHLOROETHANE	UG/KG	1.88	0.96 U	0.56 U	0.58 U	0.95 U	0.6 U	0.56 U	0.84 U	
1,1,2-TRICHLOROETHANE	UG/KG	1.20	1.4 U	0.85 U	0.88 U	1.4 U	0.9 U	0.84 U	1.3 U	
1,1-DICHLOROETHANE	UG/KG	1.13	0.61 U	0.36 U	0.37 U	0.61 U	0.38 U	0.36 U	0.54 U	
1,1-DICHLOROETHENE	UG/KG	0.888	1.3 U	0.73 U	0.76 U	1.2 U	0.78 U	0.73 U	1.1 U	
1,2-DICHLOROBENZENE	UG/KG	1.06	2 U	1.2 U	1.2 U	2 U	1.2 U	1.2 U	1.7 U	
1,2-DICHLOROETHANE	UG/KG	1.42	0.64 U	0.38 U	0.39 U	0.64 U	0.4 U	0.38 U	0.57 U	
1,2-DICHLOROPROPANE	UG/KG	1.30	1.3 U	0.78 U	0.81 U	1.3 U	0.83 U	0.78 U	1.2 U	
1,3-DICHLOROBENZENE	UG/KG	1.13	1.9 U	1.1 U	1.2 U	1.9 U	1.2 U	1.1 U	1.7 U	
1,4-DICHLOROBENZENE	UG/KG	1.20	1.5 U	0.85 U	0.89 U	1.4 U	0.91 U	0.85 U	1.3 U	
2-BUTANONE (MEK)	UG/KG	2.26	3 U	1.7 U	1.8 U	2.9 U	1.9 U	1.7 U	2.6 U	
2-CHLOROETHYL VINYL ETHER	UG/KG	17.8	19 U	11 U	12 U	19 U	12 U	11 U	17 U	
ACROLEIN	UG/KG	15.2	200 U	120 U	120 U	200 U	130 U	120 U	180 U	
ACRYLONITRILE	UG/KG	9.78	56 U	33 U	35 U	56 U	35 U	33 U	50 U	
BENZENE	UG/KG	1.06	1.2 U	0.68 U	0.71 U	1.2 U	0.72 U	0.68 U	1 U	
BROMODICHLOROMETHANE	UG/KG	1.32	0.53 U	0.31 U	0.32 U	0.53 U	0.33 U	0.31 U	0.47 U	
BROMOFORM	UG/KG	0.728	1.3 U	0.76 U	0.79 U	1.3 U	0.81 U	0.76 U	1.1 U	
BROMOMETHANE	UG/KG	1.20	2 U	1.2 U	1.2 U	2 U	1.2 U	1.2 U	1.7 U	
CARBON TETRACHLORIDE	UG/KG	1.28	0.53 U	0.31 U	0.32 U	0.53 U	0.33 U	0.31 U	0.47 U	
CHLOROETHANE	UG/KG	6.00	2 U	1.2 U	1.2 U	2 U	1.2 U	1.2 U	1.8 U	
CHLOROFORM	UG/KG	1.62	0.53 U	0.31 U	0.32 U	0.53 U	0.33 U	0.31 U	0.47 U	
CHLOROMETHANE	UG/KG	1.01	0.61 U	0.36 U	0.37 U	0.6 U	0.38 U	0.36 U	0.54 U	
CIS-1,3-DICHLOROPROPENE	UG/KG	0.958	0.61 U	0.36 U	0.37 U	0.61 U	0.38 U	0.36 U	0.54 U	
DIBROMOCHLOROMETHANE	UG/KG	1.22	0.55 U	0.32 U	0.34 U	0.55 U	0.35 U	0.32 U	0.49 U	
DICHLORODIFLUOROMETHANE	UG/KG	6.98	1.1 U	0.63 U	0.66 U	1.1 U	0.67 U	0.63 U	0.95 U	
ETHYLBENZENE	UG/KG	0.978	2 U	1.2 U	1.2 U	2 U	1.2 U	1.2 U	1.7 U	
METHYLENE CHLORIDE	UG/KG	1.98	<b>7.5 JB</b>	<b>4 JB</b>	<b>3.5 JB</b>	<b>3.2 JB</b>	<b>2 JB</b>	<b>5.4 JB</b>	<b>5.2 JB</b>	
TETRACHLOROETHENE	UG/KG	0.740	1.6 U	0.96 U	1 U	1.6 U	1 U	0.95 U	1.4 U	
TOLUENE	UG/KG	1.22	1.3 U	0.74 U	0.77 U	1.2 U	0.78 U	0.73 U	1.1 U	
TRANS-1,2-DICHLOROETHENE	UG/KG	0.926	1.4 U	0.81 U	0.85 U	1.4 U	0.87 U	0.81 U	1.2 U	
TRANS-1,3-DICHLOROPROPENE	UG/KG	1.13	0.59 U	0.34 U	0.36 U	0.58 U	0.37 U	0.34 U	0.52 U	
TRICHLOROETHENE	UG/KG	1.36	1.8 U	1.1 U	1.1 U	1.8 U	1.1 U	1.1 U	1.6 U	
TRICHLOROFUOROMETHANE	UG/KG	7.80	2.6 U	1.5 U	1.6 U	2.5 U	1.6 U	1.5 U	2.3 U	
VINYL CHLORIDE	UG/KG	1.42	1.4 U	0.82 U	0.85 U	1.4 U	0.87 U	0.82 U	1.2 U	

(a) = depth below sediment surface

There are no TEL and PEL values for volatiles

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

B = compound was detected in method blank

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

**TABLE A-63. SEMIVOLATILE ORGANIC COMPOUND (SVOC) CONCENTRATIONS (UG/KG) FROM SEDIMENT AT DEPTH WITHIN THE PROPOSED ALIGNMENT (LOCATIONS 05A, 06, AND 08)**

MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL*	PEL*	LOCATION 05A			LOCATION 06			LOCATION 08		
					0-19 ft. <sup>(a)</sup>	19-25 ft. <sup>(a)</sup>	25-27.5 ft. <sup>(a)</sup>	0-26 ft. <sup>(a)</sup>	26-33 ft. <sup>(a)</sup>	33-43 ft. <sup>(a)</sup>	26-31 ft. <sup>(a)</sup>		
1,2,4-TRICHLOROBENZENE	UG/KG	55.6	--	--	36 U	6.7 U	6.6 U	14 U	6.7 U	6.7 U	6.3 U		
1,2-DIPHENYLHYDRAZINE	UG/KG	73.8	--	--	41 U	7.7 U	7.5 U	16 U	7.6 U	7.6 U	7.2 U		
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	48.2	--	--	26 U	4.8 U	4.7 U	10 U	4.8 U	4.8 U	4.5 U		
2,4,6-TRICHLOROPHENOL	UG/KG	69.8	--	--	30 U	5.7 U	5.6 U	12 U	5.7 U	5.7 U	5.3 U		
2,4-DICHLOROPHENOL	UG/KG	66.4	--	--	33 U	6.3 U	6.1 U	13 U	6.2 U	6.2 U	5.9 U		
2,4-DIMETHYLPHENOL	UG/KG	110.4	--	--	28 U	5.3 U	5.2 U	11 U	5.3 U	5.3 U	5 U		
2,4-DINITROPHENOL	UG/KG	100.4	--	--	4400 U	830 U	810 U	1800 U	830 U	830 U	780 U		
2,4-DINITROTOLUENE	UG/KG	115.4	--	--	19 U	3.5 U	3.4 U	7.4 U	3.5 U	3.5 U	3.3 U		
2,6-DINITROTOLUENE	UG/KG	91.2	--	--	25 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	4.4 U		
2-CHLORONAPHTHALENE	UG/KG	51.8	--	--	38 U	7 U	6.9 U	15 U	7 U	7 U	6.6 U		
2-CHLOROPHENOL	UG/KG	62	--	--	28 U	5.2 U	5.1 U	11 U	5.2 U	5.2 U	4.9 U		
2-METHYLPHENOL	UG/KG	80.2	--	--	39 U	7.4 U	7.2 U	16 U	7.4 U	7.4 U	6.9 U		
2-NITROPHENOL	UG/KG	50.8	--	--	32 U	6 U	5.8 U	13 U	6 U	6 U	5.6 U		
3,3'-DICHLOROBENZIDINE	UG/KG	68	--	--	44 U	8.2 U	8 U	17 U	8.2 U	8.2 U	7.7 U		
4,6-DINITRO-2-METHYLPHENOL	UG/KG	120	--	--	4400 U	830 U	810 U	1800 U	830 U	830 U	780 U		
4-BROMOPHENYL PHENYL ETHER	UG/KG	91.4	--	--	89 U	17 U	16 U	35 U	17 U	17 U	16 U		
4-CHLORO-3-METHYLPHENOL	UG/KG	72.8	--	--	38 U	7.2 U	7.1 U	15 U	7.2 U	7.2 U	6.8 U		
4-CHLOROPHENYL PHENYL ETHER	UG/KG	84.4	--	--	36 U	6.8 U	6.6 U	14 U	6.8 U	6.8 U	6.4 U		
4-METHYLPHENOL	UG/KG	103.6	--	--	40 U	7.4 U	7.3 U	16 U	7.4 U	7.4 U	7 U		
4-NITROPHENOL	UG/KG	144	--	--	24 U	4.5 U	4.4 U	9.4 U	4.4 U	4.4 U	4.2 U		
BENZOIC ACID	UG/KG	42.2	--	--	1500 U	280 U	270 U	<b>810 J</b>	280 U	270 U	260 U		
BENZYL ALCOHOL	UG/KG	100.4	--	--	200 U	37 U	37 U	79 U	37 U	37 U	35 U		
BIS(2-CHLOROETHOXY)METHANE	UG/KG	45.2	--	--	40 U	7.4 U	7.3 U	16 U	7.4 U	7.4 U	7 U		
BIS(2-CHLOROETHYL) ETHER	UG/KG	48.2	--	--	34 U	6.5 U	6.3 U	14 U	6.4 U	6.4 U	6.1 U		
BIS(2-CHLOROISOPROPYL) ETHER	UG/KG	--	--	--	26 U	4.8 U	4.7 U	10 U	4.8 U	4.8 U	4.5 U		
BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	97.4	182.16	2646.51	110 U	21 U	20 U	44 U	21 U	21 U	19 U		
BUTYL BENZYL PHTHALATE	UG/KG	101	--	--	39 U	7.4 U	7.2 U	16 U	7.3 U	7.3 U	6.9 U		
DIBENZOFURAN	UG/KG	110.4	--	--	40 U	7.5 U	7.3 U	16 U	7.5 U	7.5 U	7 U		
DIETHYL PHTHALATE	UG/KG	106.4	--	--	36 U	6.7 U	6.5 U	14 U	6.7 U	6.7 U	6.3 U		
DIMETHYL PHTHALATE	UG/KG	77.6	--	--	37 U	6.9 U	6.8 U	15 U	6.9 U	6.9 U	6.5 U		
DI-N-BUTYL PHTHALATE	UG/KG	113.4	--	--	220 U	41 U	40 U	86 U	40 U	40 U	38 U		
DI-N-OCTYL PHTHALATE	UG/KG	97.2	--	--	41 U	7.7 U	7.5 U	16 U	7.6 U	7.6 U	7.2 U		
HEXACHLOROBENZENE	UG/KG	89.6	--	--	36 U	6.7 U	6.5 U	14 U	6.7 U	6.7 U	6.3 U		
HEXACHLOROBUTADIENE	UG/KG	58.6	--	--	35 U	6.5 U	6.3 U	14 U	6.5 U	6.5 U	6.1 U		
HEXACHLOROCYCLOPENTADIENE	UG/KG	64	--	--	140 U	27 U	26 U	56 U	27 U	26 U	25 U		
HEXACHLOROETHANE	UG/KG	50.8	--	--	34 U	6.4 U	6.2 U	13 U	6.4 U	6.3 U	6 U		
ISOPHORONE	UG/KG	46.2	--	--	34 U	6.3 U	6.2 U	13 U	6.3 U	6.3 U	6 U		
NITROBENZENE	UG/KG	55.4	--	--	57 U	11 U	11 U	23 U	11 U	11 U	10 U		
N-NITROSODIMETHYLAMINE	UG/KG	54.4	--	--	440 U	83 U	81 U	180 U	83 U	83 U	78 U		
N-NITROSO-D-N-PROPYLAMINE	UG/KG	87.8	--	--	36 U	6.7 U	6.6 U	14 U	6.7 U	6.7 U	6.3 U		
N-NITROSODIPHENYLAMINE	UG/KG	47.4	--	--	370 U	69 U	67 U	150 U	69 U	69 U	65 U		
PENTACHLOROPHENOL	UG/KG	100.4	--	--	2400 U	460 U	440 U	960 U	450 U	450 U	430 U		
PHENOL	UG/KG	49.8	--	--	36 U	<b>11 J</b>	<b>12 J</b>	<b>100 J</b>	6.8 U	6.8 U	<b>34 J</b>		

(a) = depth below sediment surface

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

**TABLE A-64. PHYSICAL PARAMETERS OF PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	Sample ID										
		EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
GRAVEL	%	22.2	41.2	27.6	62.4	54.9	46.8	43	13.6	25.2	60	73.7
SAND	%	71	55.8	56.5	34.7	42	44.3	41.9	78.4	69.4	33.6	10.9
SILT	%	3.2	1	8.3	1.3	1.3	4.6	7.9	5.6	3.1	2.8	9.7
CLAY	%	3.6	2.1	7.7	1.6	1.8	4.3	7.2	2.4	2.3	3.5	5.6
SILT+CLAY	%	6.8	3.1	16	2.9	3.1	8.9	15.1	8	5.4	6.3	15.3
LIQUID LIMIT	--	0	0	0	0	0	0	0	0	0	0	36
PLASTIC LIMIT	--	0	0	0	0	0	0	0	0	0	0	24
PLASTICITY INDEX	--	NP	12									
MOISTURE CONTENT	%	NA										
PERCENT SOLIDS	%	88.1	88.7	88.9	90.5	93.7	86.2	78.6	90.9	90	79.1	78.2
SPECIFIC GRAVITY	--	2.662	2.686	2.684	2.711	2.698	2.677	2.725	2.683	2.675	2.688	2.713

NA = constituent was not analyzed for this sample

NP = non-plastic

**TABLE A-64. CONTINUED**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	Sample ID										
		EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
GRAVEL	%	10.3	0	39.7	0.7	1.9	12.8	38.9	36.4	1.8	2.6	0
SAND	%	20.3	24.6	39	44.2	26.2	69.7	56	38	67.6	89.3	92.6
SILT	%	37.7	47.3	12	33.8	42.8	14.1	2	16.3	15.9	4.4	3.7
CLAY	%	31.7	28.1	9.4	21.3	29.1	3.5	3.1	9.3	14.7	3.7	3.7
SILT+CLAY	%	69.4	75.4	21.4	55.1	71.9	17.6	5.1	25.6	30.6	8.1	7.4
LIQUID LIMIT	--	40	31	0	0	26	0	0	0	0	0	0
PLASTIC LIMIT	--	27	26	0	0	0	0	0	0	0	0	0
PLASTICITY INDEX	--	13	6	NP								
MOISTURE CONTENT	%	NA										
PERCENT SOLIDS	%	71.6	85.8	82.4	85	67.4	86.5	88.2	75.8	82.7	85.1	76.5
SPECIFIC GRAVITY	--	2.739	2.724	2.692	2.693	2.716	2.291	2.302	2.7	2.676	2.664	2.669

NA = constituent was not analyzed for this sample

NP = non-plastic

**TABLE A-65. GENERAL CHEMISTRY CONCENTRATIONS IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	RL	Sample ID											
			EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED	
TOTAL ORGANIC CARBON	MG/KG	609.409	<b>676</b>	<b>636</b>	<b>883</b>	<b>1370</b>	<b>588</b>	<b>703</b>	<b>1430</b>	609 U	<b>1240</b>	<b>1290</b>	<b>1130</b>	
AMMONIA NITROGEN	MG/KG	6.018	<b>9 J</b>	<b>10.2 J</b>	<b>5.4 B J</b>	<b>37.7 J</b>	<b>9.5 J</b>	<b>6.9 J</b>	<b>17.5 J</b>	<b>23.6 J</b>	<b>4.8 B J</b>	<b>20.3 J</b>	<b>12 J</b>	
NITRATE-NITRITE	MG/KG	1.209	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.3 U	1.1 U	1.1 U	<b>0.61 B</b>	1.3 U	
TOTAL KJELDAHL NITROGEN	MG/KG	180.591	170 U	169 U	<b>104 B</b>	<b>170</b>	160 U	174 U	<b>196</b>	<b>102 B</b>	<b>68.4 B</b>	190 U	192 U	
BIOCHEMICAL OXYGEN DEMAND	MG/KG	144.455	136 U	135 U	135 U	133 U	128 U	139 U	153 U	132 U	133 U	152 U	153 U	
CHEMICAL OXYGEN DEMAND	MG/KG	240.727	227 U	225 U	225 U	221 U	214 U	232 U	254 U	220 U	222 U	253 U	<b>212 B</b>	
CYANIDE, TOTAL	MG/KG	0.602	0.57 U	0.56 U	0.56 U	0.55 U	0.53 U	0.58 U	0.64 U	0.55 U	0.56 U	0.63 U	0.64 U	
pH	--	--	<b>7.1</b>	<b>6.9</b>	<b>6.7</b>	<b>7.8</b>	<b>7.7</b>	<b>7.7</b>	<b>6.9</b>	7	<b>6.9</b>	<b>7.2</b>	<b>6.6</b>	
TOTAL PHOSPHORUS	MG/KG	18.805	<b>89.1</b>	<b>102</b>	<b>98.2</b>	<b>95.9</b>	<b>53.9</b>	<b>53</b>	12.7 U	<b>31.7</b>	<b>35.7</b>	<b>119</b>	<b>125</b>	
TOTAL SULFIDE	MG/KG	36.123	34.1 U	33.8 U	33.8 U	33.2 U	32 U	34.8 U	38.2 U	33 U	33.3 U	38 U	38.4 U	
ACID VOLATILE SULFIDE	UMOLE/G	0.585	<b>1.9</b>	<b>1.1</b>	<b>0.86</b>	<b>1.1</b>	<b>0.85</b>	<b>0.97</b>	<b>1.4</b>	0.6 U	<b>0.72</b>	<b>0.72</b>	<b>1.3</b>	

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

B (inorganic) = compound was detected, but below reporting limit (value is estimated).

J (inorganic) = compound was detected in method blank

U = compound was analyzed but not detected

**TABLE A-65. CONTINUED**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	RL	Sample ID											
			EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED	
TOTAL ORGANIC CARBON	MG/KG	609.409	<b>1520</b>	<b>3010</b>	<b>4400</b>	<b>4270</b>	<b>2000</b>	<b>1490</b>	566 U	<b>648</b>	<b>2590</b>	<b>744</b>	637 U	
AMMONIA NITROGEN	MG/KG	6.018	<b>10.9 J</b>	<b>16.5 J</b>	<b>12.3 J</b>	<b>10.4 J</b>	<b>14.3 J</b>	<b>11.1</b>	<b>5.1 B</b>	<b>16.6</b>	<b>6.7</b>	<b>5.5 B</b>	<b>5.2 B</b>	
NITRATE-NITRITE	MG/KG	1.209	<b>1.2 B</b>	1.2 U	1.2 U	1.2 U	1.5 U	1.2 U	1.1 U	1.3 U	1.2 U	1.2 U	1.3 U	
TOTAL KJELDAHL NITROGEN	MG/KG	180.591	<b>86 B</b>	<b>215</b>	<b>74.8 B</b>	<b>177 U</b>	<b>274</b>	173 U	170 U	<b>122 B</b>	181 U	<b>109 B</b>	196 U	
BIOCHEMICAL OXYGEN DEMAND	MG/KG	144.455	168 U	140 U	146 U	141 U	178 U	139 U	136 U	158 U	145 U	141 U	157 U	
CHEMICAL OXYGEN DEMAND	MG/KG	240.727	<b>374</b>	<b>163 B</b>	243 U	<b>142 B</b>	297 U	231 U	227 U	264 U	242 U	235 U	261 U	
CYANIDE, TOTAL	MG/KG	0.602	0.7 U	0.58 U	0.61 U	0.59 U	0.74 U	0.58 U	0.57 U	0.66 U	0.6 U	0.59 U	0.65 U	
pH	--	--	<b>7.6</b>	<b>6.2</b>	6	<b>5.6</b>	<b>5.5</b>	<b>6.2</b>	<b>7.3</b>	7	<b>7.6</b>	<b>7.5</b>	<b>7.3</b>	
TOTAL PHOSPHORUS	MG/KG	18.805	<b>352</b>	<b>456</b>	<b>69.8</b>	<b>48.3</b>	<b>111</b>	<b>166</b>	<b>90.4</b>	<b>117</b>	<b>44.3</b>	<b>24.1</b>	13.1 U	
TOTAL SULFIDE	MG/KG	36.123	41.9 U	35 U	36.4 U	35.3 U	44.5 U	34.7 U	34 U	39.6 U	36.3 U	35.2 U	39.2 U	
ACID VOLATILE SULFIDE	UMOLE/G	0.585	<b>1.4</b>	<b>1.1</b>	<b>1.7</b>	<b>1.9</b>	<b>0.8</b>	<b>1.2</b>	<b>1.1</b>	<b>1.5</b>	<b>2.1</b>	<b>1.2</b>	<b>1.2</b>	

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

B (inorganic) = compound was detected, but below reporting limit (value is estimated).

J (inorganic) = compound was detected in method blank

U = compound was analyzed but not detected

**TABLE A-66. METAL CONCENTRATIONS (MG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID										
					EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
ANTIMONY	MG/KG	0.312	--	--	0.31 N U	0.3 N U	0.3 N U	0.32 N U	0.31 N U	0.31 N U	0.31 N U	0.32 N U	0.32 N U	0.3 N U	0.31 N U
ARSENIC	MG/KG	0.322	7.24	41.6	<b>0.91 B</b>	<b>0.75 B</b>	<b>0.85 B</b>	<b>1.3</b>	<b>1.1</b>	<b>0.43 B</b>	<b>3</b>	<b>1.1</b>	<b>0.42 B</b>	<b>1.6</b>	<b>1.3</b>
BERYLLIUM	MG/KG	0.041	-	-	<b>0.23 B</b>	<b>0.25 B</b>	<b>0.32 B</b>	<b>0.17 B</b>	<b>0.19 B</b>	<b>0.22 B</b>	<b>0.33 B</b>	<b>0.33 B</b>	<b>0.25 B</b>	<b>0.4</b>	<b>0.83</b>
CADMIUM	MG/KG	0.068	0.676	4.21	0.067 U	0.067 U	0.066 U	0.069 U	0.067 U	0.068 U	0.067 U	0.069 U	0.07 U	0.066 U	0.067 U
CHROMIUM, HEXAVALENT	MG/KG	0.087	--	--	0.082 U	0.082 U	0.082 U	0.08 U	0.078 U	0.084 U	0.092 U	0.08 U	0.081 U	0.092 U	0.093 U
CHROMIUM, TOTAL	MG/KG	0.091	52.3	160.4	<b>8.8</b>	<b>9.1</b>	<b>12.3</b>	<b>6.8</b>	<b>10.6</b>	<b>8.5</b>	<b>15</b>	<b>15.2</b>	<b>12.5</b>	<b>12.8</b>	<b>21.9</b>
COPPER	MG/KG	0.110	18.7	108.2	<b>5.7 E</b>	<b>43.4 E a</b>	<b>5.6 E</b>	<b>5.7 E</b>	<b>8.9 E</b>	<b>162 E ab</b>	<b>15.4 E</b>	<b>6.7 E</b>	<b>3.6 E</b>	<b>6.5 E</b>	<b>12.3 E</b>
LEAD	MG/KG	0.155	30.24	112.18	<b>3.3</b>	<b>1.8</b>	<b>2.6</b>	<b>2.4</b>	<b>2.1</b>	<b>4.6</b>	<b>6</b>	<b>3.1</b>	<b>2.1</b>	<b>6.4</b>	<b>4.9</b>
MERCURY	MG/KG	0.008	0.13	0.696	<b>0.011 B</b>	<b>0.014 B</b>	<b>0.025 B</b>	<b>0.032 B</b>	<b>0.0086 B</b>	0.0078 U	<b>0.035</b>	<b>0.012 B</b>	<b>0.014 B</b>	<b>0.021 B</b>	<b>0.017 B</b>
NICKEL	MG/KG	0.120	15.9	42.8	<b>4.7</b>	<b>4.5</b>	<b>5.7</b>	<b>3.3 B</b>	<b>3.5 B</b>	<b>3.2 B</b>	<b>8</b>	<b>6.4</b>	<b>3.2 B</b>	<b>5.4</b>	<b>18.4 a</b>
SELENIUM	MG/KG	0.255	--	--	0.25 U	0.25 U	<b>0.27 B</b>	0.26 U	<b>0.38 B</b>	0.26 U	<b>0.46 B</b>	<b>0.3 B</b>	0.26 U	0.25 U	<b>0.44 B</b>
SILVER	MG/KG	0.029	0.73	1.77	0.029 U	0.028 U	0.028 U	<b>0.059 B</b>	0.029 U	0.029 U	0.029 U	0.03 U	0.03 U	0.028 U	0.029 U
THALLIUM	MG/KG	0.445	--	--	<b>0.46 B</b>	0.44 U	0.43 U	0.45 U	0.44 U	0.45 U	0.44 U	0.45 U	0.46 U	0.43 U	<b>1.3</b>
ZINC	MG/KG	0.165	124	271	<b>16.3</b>	<b>10.9</b>	<b>12.5</b>	<b>17.1</b>	<b>20.3</b>	<b>9.7</b>	<b>20.2</b>	<b>13.1</b>	<b>5.5</b>	<b>14.5</b>	<b>28</b>
RATIO OF SEM/AVS	--	--	--	--	0.17	0.17	2	1.6	0.26	0.3	0.86	NA	0.09	0.31	0.16

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**E** = reported value is estimated because of the presence of interference

**J** (inorganic) = compound was detected in method blank

**N** = spiked sample recovery is not within control limits

**U** = compound was analyzed but not detected

**a** = value greater than TEL

**b** = value greater than PEL

TABLE A-66. CONTINUED  
 MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID										
					EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
ANTIMONY	MG/KG	0.312	--	--	0.31 N U	0.32 U	0.31 U	0.32 U	0.31 U	0.31 U	0.31 U	0.32 U	<b>0.54 B</b>	0.32 U	0.31 U
ARSENIC	MG/KG	0.322	7.24	41.6	<b>1.3</b>	<b>1.8</b>	<b>1.7</b>	<b>1.9</b>	<b>1.8</b>	<b>2.6</b>	<b>1.8</b>	<b>1.2</b>	7	0.33 U	0.32 U
BERYLLIUM	MG/KG	0.041	--	--	<b>1.4</b>	<b>0.86</b>	<b>0.63</b>	<b>0.45</b>	1.4	<b>0.41</b>	<b>0.43</b>	<b>0.75</b>	<b>0.53</b>	<b>0.28 B</b>	<b>0.23 B</b>
CADMIUM	MG/KG	0.068	0.676	4.21	0.068 U	0.069 U	0.068 U	0.069 U	0.067 U	0.068 U	0.067 U	0.069 U	0.067 U	0.069 U	0.068 U
CHROMIUM, HEXAVALENT	MG/KG	0.087	--	--	0.1 U	0.085 U	0.088 U	0.085 U	0.11 U	0.084 U	0.082 U	0.096 U	0.088 U	0.085 U	0.095 U
CHROMIUM, TOTAL	MG/KG	0.091	52.3	160.4	<b>45.4</b>	<b>26</b>	<b>15.9</b>	<b>11.1</b>	<b>29.6</b>	8	<b>9.4</b>	<b>18.7</b>	<b>19</b>	<b>6.3</b>	<b>4.7</b>
COPPER	MG/KG	0.110	18.7	108.2	<b>21.4 E a</b>	<b>14.1</b>	<b>7.9</b>	<b>5.9</b>	<b>19.8 a</b>	<b>5.5</b>	<b>2.8</b>	<b>7.2</b>	<b>28.7 a</b>	<b>8.1</b>	<b>1.9 B</b>
LEAD	MG/KG	0.155	30.24	112.18	<b>9.6</b>	<b>6</b>	<b>3.3</b>	<b>2.6</b>	<b>6.5</b>	2	<b>0.88</b>	<b>2.6</b>	<b>17.6</b>	<b>6.9</b>	<b>1.7</b>
MERCURY	MG/KG	0.008	0.13	0.696	<b>0.034</b>	<b>0.036</b>	<b>0.023 B</b>	<b>0.026 B</b>	<b>0.021 B</b>	<b>0.033</b>	0.0077 U	<b>0.018 B</b>	<b>0.023 B</b>	<b>0.029 B</b>	<b>0.013 B</b>
NICKEL	MG/KG	0.120	15.9	42.8	<b>25.2 a</b>	<b>14.6</b>	<b>8.2</b>	<b>8.9</b>	<b>25.4 a</b>	<b>4.7</b>	<b>3.4 B</b>	<b>9.7</b>	<b>10.3</b>	<b>1.7 B</b>	<b>1.2 B</b>
SELENIUM	MG/KG	0.255	--	--	<b>0.33 B</b>	0.26 U	<b>0.27 B</b>	0.26 U	0.25 U	0.26 U	0.25 U	0.26 U	0.25 U	0.26 U	0.26 U
SILVER		0.029	0.73	1.77	0.029 U	0.029 U	0.029 U	0.03 U	0.029 U	0.029 U	0.029 U	0.03 U	<b>0.049 B</b>	0.03 U	0.029 U
THALLIUM	MG/KG	0.445	--	--	<b>1.4</b>	<b>1.1</b>	<b>0.61 B</b>	0.45 U	<b>0.7 B</b>	<b>0.49 B</b>	<b>0.44 B</b>	<b>0.76 B</b>	<b>1.8</b>	0.45 U	0.45 U
ZINC	MG/KG	0.165	124	271	<b>58</b>	<b>28.4</b>	<b>19.6</b>	<b>16</b>	<b>43.2</b>	<b>11.2</b>	<b>9.5</b>	<b>20.4</b>	<b>49.3</b>	<b>11.8</b>	<b>3.7</b>
RATIO OF SEM/AVS	--	--	--	--	1	1.1	0.18	0.17	0.48	0.053	0.041	0.11	0.71	0.29	0.07

Source : MacDonald et al. 1996.

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**TEL** = threshold effects level

**PEL** = probable effects level

**B** (inorganic) = compound was detected, but below reporting limit (value is estimated).

**NA** = constituent was not analyzed for this sample

**E** = reported value is estimated because of the presence of interference

**J** (inorganic) = compound was detected in method blank

**N** = spiked sample recovery is not within control limits

**U** = compound was analyzed but not detected

**a** = value greater than TEL

**b** = value greater than PEL

TABLE A-67. PCB CONGENER CONCENTRATIONS (UG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL**	PEL**	Sample ID										
					EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
PCB 8*	UG/KG	0.057	--	--	0.039 U	0.039 U	0.039 U	0.38 U	0.037 U	<b>0.087 J PG</b>	0.044 U	0.038 U	0.039 U	0.044 U	0.044 U
PCB 18*	UG/KG	0.038	--	--	0.026 U	0.026 U	0.026 U	0.25 U	0.024 U	0.027 U	0.029 U	0.025 U	0.025 U	0.029 U	0.029 U
PCB 28*	UG/KG	0.062	--	--	0.043 U	0.042 U	0.042 U	0.41 U	0.04 U	0.043 U	0.048 U	0.041 U	0.042 U	0.047 U	0.048 U
PCB 44*	UG/KG	0.057	--	--	0.039 U	0.039 U	0.039 U	0.38 U	0.037 U	0.04 U	<b>0.075 J PG</b>	0.038 U	0.038 U	0.044 U	0.044 U
PCB 49	UG/KG	0.059	--	--	0.04 U	0.04 U	0.04 U	0.39 U	0.038 U	0.041 U	0.045 U	0.039 U	0.039 U	0.045 U	0.045 U
PCB 52*	UG/KG	0.055	--	--	0.038 U	0.037 U	0.037 U	0.37 U	<b>0.051 J PG</b>	0.039 U	0.042 U	0.037 U	0.037 U	0.042 U	0.043 U
PCB 66*	UG/KG	0.045	--	--	0.031 U	0.031 U	0.031 U	0.3 U	0.029 U	0.032 U	0.035 U	0.03 U	0.03 U	0.035 U	0.035 U
PCB 77*	UG/KG	0.060	--	--	0.041 U	0.041 U	0.041 U	0.4 U	0.039 U	0.042 U	0.046 U	0.04 U	0.041 U	0.046 U	0.047 U
PCB 87	UG/KG	0.051	--	--	0.035 U	0.035 U	0.035 U	0.34 U	0.033 U	0.036 U	0.04 U	0.034 U	0.035 U	0.039 U	0.04 U
PCB 101*	UG/KG	0.056	--	--	0.038 U	0.038 U	0.038 U	0.37 U	0.036 U	0.039 U	0.043 U	0.037 U	0.037 U	0.043 U	0.043 U
PCB 105*	UG/KG	0.058	--	--	0.04 U	0.039 U	0.039 U	0.39 U	0.037 U	0.041 U	0.045 U	0.038 U	0.039 U	0.044 U	0.045 U
PCB 118*	UG/KG	0.057	--	--	<b>0.077 J</b>	<b>0.052 J</b>	0.038 U	<b>0.62 J</b>	<b>0.066 J</b>	0.04 U	0.043 U	0.038 U	0.038 U	0.043 U	0.044 U
PCB 126*	UG/KG	0.073	--	--	0.05 U	0.049 U	0.049 U	0.49 U	0.047 U	0.051 U	0.056 U	0.048 U	0.049 U	0.056 U	0.056 U
PCB 128*	UG/KG	0.057	--	--	0.039 U	0.039 U	0.039 U	0.38 U	0.037 U	0.04 U	0.044 U	0.038 U	0.038 U	0.043 U	0.044 U
PCB 138*	UG/KG	0.060	--	--	0.041 U	0.04 U	0.04 U	0.4 U	0.038 U	0.042 U	0.046 U	0.039 U	0.04 U	0.045 U	0.046 U
PCB 153*	UG/KG	0.057	--	--	<b>0.098 J</b>	0.039 U	0.039 U	<b>1.2 J</b>	<b>0.12 J</b>	<b>0.067 J</b>	0.044 U	0.038 U	0.039 U	0.044 U	0.044 U
PCB 156	UG/KG	0.056	--	--	0.039 U	0.038 U	0.038 U	0.38 U	0.036 U	0.039 U	0.043 U	0.037 U	0.038 U	0.043 U	0.043 U
PCB 169*	UG/KG	0.054	--	--	0.037 U	0.037 U	0.037 U	0.36 U	0.035 U	0.038 U	0.042 U	0.036 U	0.037 U	0.042 U	0.042 U
PCB 170*	UG/KG	0.057	--	--	0.039 U	0.039 U	0.039 U	<b>0.5 J</b>	<b>0.06 J</b>	0.04 U	0.044 U	0.038 U	0.038 U	0.044 U	0.044 U
PCB 180*	UG/KG	0.057	--	--	<b>0.049 J PG</b>	0.038 U	0.038 U	<b>0.62 J PG</b>	<b>0.073 J PG</b>	0.04 U	0.043 U	0.038 U	0.038 U	0.043 U	0.044 U
PCB 183	UG/KG	0.055	--	--	0.038 U	0.038 U	0.037 U	0.37 U	0.036 U	0.039 U	0.042 U	0.037 U	0.037 U	0.042 U	0.043 U
PCB 184	UG/KG	0.048	--	--	0.033 U	0.032 U	0.032 U	0.32 U	0.031 U	0.033 U	0.037 U	0.032 U	0.032 U	0.036 U	0.037 U
PCB 187*	UG/KG	0.059	--	--	<b>0.053 J</b>	0.04 U	0.04 U	<b>0.63 J</b>	<b>0.072 J</b>	0.041 U	0.045 U	0.039 U	0.039 U	0.045 U	0.045 U
PCB 195	UG/KG	0.056	--	--	0.038 U	0.038 U	0.038 U	0.37 U	0.036 U	0.039 U	0.043 U	0.037 U	0.038 U	0.043 U	0.043 U
PCB 206	UG/KG	0.056	--	--	0.038 U	0.038 U	0.038 U	0.37 U	0.036 U	0.039 U	0.043 U	0.037 U	0.037 U	0.042 U	0.043 U
PCB 209	UG/KG	0.060	--	--	0.041 U	0.04 U	0.04 U	0.4 U	0.038 U	0.042 U	0.046 U	0.039 U	0.04 U	0.045 U	0.046 U
TOTAL PCBs (ND=0)	UG/KG	--	21.55	188.79	<b>0.554</b>	<b>0.104</b>	0	<b>7.14</b>	<b>0.884</b>	<b>0.308</b>	<b>0.15</b>	0	0	0	0
TOTAL PCBs (ND=1/2DL)	UG/KG	--	21.55	188.79	<b>1.095</b>	<b>0.757</b>	<b>0.691</b>	<b>12.02</b>	<b>1.32</b>	<b>0.943</b>	<b>0.889</b>	<b>0.676</b>	<b>0.684</b>	<b>0.779</b>	<b>0.787</b>

\*PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

\*\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278

NOTE: Shaded and bold values represent detected concentrations

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40

U = compound was analyzed but not detected

TABLE A-67. CONTINUED  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	MDL	TEL**	PEL**	Sample ID												
				EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED		
PCB 8*	UG/KG	0.057	--	--	0.048 U	0.04 U	0.042 U	0.041 U	<b>0.17 J PG</b>	<b>0.24</b>	0.039 U	<b>0.25 PG</b>	<b>0.22 PG</b>	<b>0.081 J PG</b>	0.045 U	
PCB 18*	UG/KG	0.038	--	--	0.032 U	0.027 U	0.028 U	0.027 U	0.034 U	0.027 U	0.026 U	0.03 U	0.028 U	<b>0.064 J PG</b>	0.03 U	
PCB 28*	UG/KG	0.062	--	--	0.052 U	0.044 U	0.045 U	0.044 U	0.056 U	0.043 U	0.042 U	0.049 U	0.045 U	0.044 U	0.049 U	
PCB 44*	UG/KG	0.057	--	--	0.048 U	0.04 U	0.042 U	0.041 U	0.051 U	0.04 U	0.039 U	<b>0.18 J PG</b>	0.042 U	0.04 PG U	0.045 U	
PCB 49	UG/KG	0.059	--	--	0.049 U	0.041 U	0.043 U	0.042 U	<b>0.21 J</b>	<b>0.11 J</b>	0.04 U	<b>0.16 J</b>	<b>0.12 J PG</b>	<b>0.13 J</b>	<b>0.12 J</b>	
PCB 52*	UG/KG	0.055	--	--	0.046 U	0.039 U	0.04 U	0.039 U	0.049 U	0.038 U	0.038 U	<b>0.26</b>	<b>0.1 J</b>	0.039 U	0.043 U	
PCB 66*	UG/KG	0.045	--	--	0.038 U	0.032 U	0.033 U	0.032 U	0.041 U	0.032 U	0.031 U	0.036 U	0.033 U	0.032 U	0.036 U	
PCB 77*	UG/KG	0.060	--	--	0.051 U	0.043 U	0.044 U	0.043 U	0.054 U	0.042 U	0.041 U	0.048 U	0.044 U	0.043 U	0.048 U	
PCB 87	UG/KG	0.051	--	--	0.044 U	0.036 U	0.038 U	0.037 U	0.046 U	0.036 U	<b>0.044 J PG</b>	<b>0.13 J PG</b>	<b>0.054 J</b>	0.037 PG U	0.041 U	
PCB 101*	UG/KG	0.056	--	--	0.047 U	0.039 U	0.041 U	0.04 U	0.05 U	0.039 U	0.038 U	0.044 U	0.041 U	<b>0.049 J PG</b>	0.044 U	
PCB 105*	UG/KG	0.058	--	--	0.049 U	0.041 U	0.042 U	0.041 U	0.052 U	0.04 U	<b>0.048 J PG</b>	<b>0.11 J PG</b>	0.042 U	0.041 U	0.046 U	
PCB 118*	UG/KG	0.057	--	--	0.048 U	0.04 U	0.041 U	0.04 U	0.051 U	0.039 U	<b>0.098 J</b>	<b>0.19 J PG</b>	0.041 U	<b>0.09 J PG</b>	0.045 U	
PCB 126*	UG/KG	0.073	--	--	0.061 U	0.051 U	0.053 U	0.052 U	0.065 U	0.051 U	0.05 U	0.058 U	0.053 U	0.052 U	0.057 U	
PCB 128*	UG/KG	0.057	--	--	0.048 U	0.04 U	0.042 U	0.04 U	0.051 U	0.04 U	0.039 U	<b>0.066 J PG</b>	<b>0.059 J</b>	0.04 U	0.045 U	
PCB 138*	UG/KG	0.060	--	--	0.05 U	0.042 U	0.044 U	0.042 U	0.053 U	0.041 U	0.041 U	0.047 U	0.043 U	0.042 U	0.047 U	
PCB 153*	UG/KG	0.057	--	--	0.049 U	0.04 U	0.042 U	0.041 U	0.052 U	0.04 U	0.039 U	<b>0.13 J</b>	<b>0.094 J</b>	<b>0.088 J</b>	0.045 U	
PCB 156	UG/KG	0.056	--	--	0.047 U	0.04 U	0.041 U	0.04 U	0.05 U	0.039 U	0.038 U	0.045 U	0.041 U	0.04 U	0.044 U	
PCB 169*	UG/KG	0.054	--	--	0.046 U	0.038 U	0.04 U	0.039 U	0.049 U	0.038 U	0.037 U	0.043 U	0.04 U	0.039 U	0.043 U	
PCB 170*	UG/KG	0.057	--	--	0.048 U	0.04 U	0.042 U	0.04 U	0.051 U	0.04 U	0.039 U	<b>0.045 U</b>	0.042 U	0.04 U	0.045 U	
PCB 180*	UG/KG	0.057	--	--	0.048 U	0.04 U	0.041 U	0.04 U	0.051 U	0.039 U	0.039 U	0.045 U	0.041 U	0.04 U	0.045 U	
PCB 183	UG/KG	0.055	--	--	0.047 U	0.039 U	0.04 U	0.039 U	0.049 U	0.039 U	0.038 U	0.044 U	0.04 U	0.039 U	0.044 U	
PCB 184	UG/KG	0.048	--	--	0.04 U	0.034 U	0.035 U	0.034 U	0.043 U	0.033 U	0.033 U	0.038 U	0.035 U	0.034 U	0.038 U	
PCB 187*	UG/KG	0.059	--	--	0.049 U	0.041 U	0.043 U	0.042 U	0.053 U	0.041 U	0.04 U	0.047 U	0.043 U	0.042 U	0.046 U	
PCB 195	UG/KG	0.056	--	--	0.047 U	0.039 U	0.041 U	0.04 U	0.05 U	0.039 U	0.038 U	0.045 U	0.041 U	0.04 U	0.044 U	
PCB 206	UG/KG	0.056	--	--	0.047 U	0.039 U	<b>0.058 J</b>	0.039 U	<b>0.088 J</b>	<b>0.072 J</b>	0.038 U	0.044 U	0.04 U	0.039 U	0.044 U	
PCB 209	UG/KG	0.060	--	--	0.05 U	0.042 U	0.044 U	0.044 U	<b>0.058 J PG</b>	0.053 U	0.041 U	0.041 U	0.047 U	0.043 U	0.042 U	0.047 U
TOTAL PCBs (ND=0)	UG/KG	--	21.55	188.79	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.34</b>	<b>0.48</b>	<b>0.292</b>	<b>2.372</b>	<b>0.946</b>	<b>0.744</b>	<b>0</b>	
TOTAL PCBs (ND=1/2DL)	UG/KG	--	21.55	188.79	<b>0.858</b>	<b>0.717</b>	<b>0.745</b>	<b>0.724</b>	<b>1.203</b>	<b>1.15</b>	<b>0.91</b>	<b>2.864</b>	<b>1.524</b>	<b>1.278</b>	<b>0.804</b>	

\*PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

\*\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278

NOTE: Shaded and bold values represent detected concentrations

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40

U = compound was analyzed but not detected

**TABLE A-68. PCB AROCLOR CONCENTRATIONS (UG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	Sample ID										
			EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
AROCLOR 1016	UG/KG	25.727	26 U	25 U	25 U	26 U	25 U	26 U	25 U	26 U	26 U	25 U	25 U
AROCLOR 1221	UG/KG	12.500	12 U	12 U	12 U	13 U	12 U	13 U	12 U	13 U	13 U	12 U	12 U
AROCLOR 1232	UG/KG	15.364	15 U	15 U	15 U	16 U	15 U	16 U	15 U	16 U	16 U	15 U	15 U
AROCLOR 1242	UG/KG	11.000	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
AROCLOR 1248	UG/KG	11.955	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U
AROCLOR 1254	UG/KG	4.309	<b>9.3 J</b>	4.2 U	4.2 U	<b>8.6 J</b>	4.2 U	4.4 U	4.2 U	4.4 U	4.4 U	4.2 U	4.2 U
AROCLOR 1260	UG/KG	3.586	3.6 U	3.5 U	3.5 U	3.7 U	3.5 U	3.6 U	3.5 U	3.6 U	3.7 U	3.5 U	3.5 U

There are no TEL and PEL values for PCB Aroclors

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

U = compound was analyzed but not detected

J = compound was detected, but below the reporting limit (value is estimated)

**TABLE A-68. CONTINUED**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	Sample ID										
			EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
AROCLOR 1016	UG/KG	25.727	26 U	26 U	26 U	26 U							
AROCLOR 1221	UG/KG	12.500	13 U	13 U	12 U	13 U	12 U	13 U	12 U	13 U	12 U	13 U	13 U
AROCLOR 1232	UG/KG	15.364	15 U	16 U	15 U	16 U	15 U	15 U	15 U	16 U	15 U	16 U	15 U
AROCLOR 1242	UG/KG	11.000	11 U	11 U	11 U	11 U							
AROCLOR 1248	UG/KG	11.955	12 U	12 U	12 U	12 U							
AROCLOR 1254	UG/KG	4.309	4.3 U	4.4 U	4.3 U	4.4 U	4.3 U	4.3 U	4.3 U	<b>9.3 J</b>	4.3 U	4.4 U	4.3 U
AROCLOR 1260	UG/KG	3.586	3.6 U	3.6 U	3.6 U	3.6 U	3.7 U	3.6 U	3.6 U	3.5 U	3.6 U	3.7 U	3.6 U

There are no TEL and PEL values for PCB Aroclors

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

U = compound was analyzed but not detected

J = compound was detected, but below the reporting limit (value is estimated)

TABLE A-69. PAH CONCENTRATIONS (UG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID										
					EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
1-METHYLNAPHTHALENE	UG/KG	1.977	--	--	2 U	1.9 U	1.9 U	2 U	2 U	3.6 J	2 U	2 U	1.9 U	1.9 U	
2-METHYLNAPHTHALENE	UG/KG	2.255	20.21	201.28	2.2 U	2.2 U	2.2 U	2.3 J	2.2 U	2.3 U	54.4 J	2.3 U	2.3 U	3.3 J	2.2 U
ACENAPHTHENE	UG/KG	2.050	6.71	88.9	2.1 J	7.1 a	2 U	2.9 J	2 U	2.1 U	12a	2.1 U	2.1 U	2.2 J	2 U
ACENAPHTHYLENE	UG/KG	2.041	5.87	127.87	2 U	6.4 a	2 U	2.1 U	2 U	2.1 U	14 a	2.1 U	2.1 U	2 U	2 U
ANTHRACENE	UG/KG	1.673	46.85	245	2.5 J	15	1.6 J	4.8 J	4.4 J	1.7 U	20	1.7 J	1.7 U	2.6 J	1.6 J
BENZO(A)ANTHRACENE	UG/KG	1.538	74.83	692.53	3.1 J	71	2.4 J	12	12	1.6 U	34	2.3 J	1.6 U	4.9 J	2.9 J
BENZO(A)PYRENE	UG/KG	2.059	88.81	763.22	3 J	190 a	2.1 J	11	10	2.1 U	28	2.1 U	2.1 U	4.6 J	2.5 J
BENZO(B)FLUORANTHENE	UG/KG	1.145	--	--	3.4 J	200	2.5 J	13	12	1.4 J	25	2.1 J	1.2 U	5.3 J	4.6 J
BENZO(G,H)PERYLENE	UG/KG	1.200	--	--	2.6 J	180	2 J	7.9	7.5	1.4 J	16	1.7 J	1.2 U	3.7 J	2.6 J
BENZOKK(FLUORANTHENE	UG/KG	2.314	--	--	2.3 U	60	2.3 U	4.2 J	3.8 J	2.3 U	7	2.3 U	2.4 U	2.2 U	2.3 U
CHRYSENE	UG/KG	1.395	107.77	845.98	3.1 J	80	2.4 J	12	11	1.4 U	29	1.9 J	1.4 U	4.6 J	2.7 J
DIBENZO(A,H)ANTHRACENE	UG/KG	1.398	6.22	134.61	1.4 U	37 a	1.4 U	2.2 J	1.9 J	1.4 U	45.5 J	1.4 U	1.4 U	1.3 U	1.4 U
FLUORANTHENE	UG/KG	2.177	112.82	1493.54	6.8	68	4.8 J	19	16	2.2 U	48	3.4 J	2.2 U	8.2	4 J
FLUORENE	UG/KG	2.177	21.17	144.35	2.2 U	3.2 J	2.1 U	3.5 J	2.2 J	2.2 U	7	2.2 U	2.2 U	2.6 J	2.1 U
INDENO(1,2,3-CD)PYRENE	UG/KG	1.300	--	--	1.8 J	130	1.5 J	6.2 J	6 J	1.3 U	12	1.3 U	1.3 U	2.9 J	1.7 J
NAPHTHALENE	UG/KG	2.309	34.57	390.64	2.3 J	2.6 J	3 J	2.5 J	2.3 U	2.3 U	9	2.3 U	2.4 U	27	2.3 U
PHENANTHRENE	UG/KG	1.755	86.68	543.53	8.2	15	6.6	19	12	4.9 J	35	6.3 J	5.3 J	9.9	6.6
PYRENE	UG/KG	1.250	152.66	1397.6	7.7	110	5.5 J	25	18	2.2 J	77	4.9 J	2.5 J	11	6 J
TOTAL PAHs (ND=0)	UG/KG	1684.06	16770.4	46.6	1175.3	34.4	147.5	116.8	9.9	386.5	24.3	7.8	92.8	35.2	
TOTAL PAHs (ND=1/2DL)	UG/KG	1684.06	16770.4	52.65	1177.35	41.35	149.55	122.05	23.4	386.5	34.35	22.6	96.5	43.3	

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.  
a = value greater than TEL  
b = value greater than PEL

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

U = compound was analyzed but not detected

TABLE A-69. CONTINUED  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL**	PEL**	Sample ID										
					EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
1-METHYLNAPHTHALENE	UG/KG	1.977	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-METHYLNAPHTHALENE	UG/KG	2.255	20.21	201.28	2.3 U	2.3 U	2.3 U	2.3 U	2.2 U	<b>2.6 J</b>	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U
ACENAPHTHENE	UG/KG	2.050	6.71	88.9	2.1 U	2.1 U	2 U	2.1 U	2 U	2.1 U	2 U	2.1 U	<b>5.4 J</b>	2.1 U	2.1 U
ACENAPHTHYLENE	UG/KG	2.041	5.87	127.87	2 U	2.1 U	2 U								
ANTHRACENE	UG/KG	1.673	46.85	245	1.7 U	1.7 U	1.7 U	<b>2.8 J</b>	1.7 U	<b>2.5 J</b>	1.7 U	1.7 U	<b>2.3 J</b>	<b>2.6 J</b>	<b>5.3 J</b>
BENZO(A)ANTHRACENE	UG/KG	1.532	74.83	692.53	1.5 U	<b>2.1 J</b>	1.5 U	<b>6.4 J</b>	1.5 U	<b>4.9 J</b>	1.5 U	1.6 U	<b>3.3 J</b>	<b>6 J</b>	<b>14</b>
BENZO(A)PYRENE	UG/KG	2.059	88.81	763.22	2.1 U	2.1 U	2.1 U	<b>5.8 J</b>	2 U	<b>4.5 J</b>	2 U	2.1 U	<b>2.8 J</b>	<b>6.2 J</b>	<b>16</b>
BENZO(B)FLUORANTHENE	UG/KG	1.145	--	--	1.1 U	<b>2.4 J</b>	1.1 U	8.4	<b>1.8 J</b>	<b>4.7 J</b>	1.1 U	1.2 U	<b>4 J</b>	<b>7.5</b>	<b>19</b>
BENZO(G,H)PERYLENE	UG/KG	1.200	--	--	1.2 U	<b>1.6 J</b>	1.2 U	<b>5.5 J</b>	1.2 U	<b>4.2 J</b>	1.2 U	<b>1.3 J</b>	<b>2.7 J</b>	<b>5.3 J</b>	<b>6.5</b>
BENZOK(K)FLUORANTHENE	UG/KG	2.314	--	--	2.3 U	2.3 U	2.3 U	<b>2.7 J</b>	2.3 U	2.3 U	2.3 U	2.3 U	<b>2.8 J</b>	<b>9.3</b>	
CHRYSENE	UG/KG	1.395	107.77	845.98	1.4 U	<b>1.9 J</b>	1.4 U	6.9	1.4 U	<b>5 J</b>	1.4 U	1.4 U	<b>3.7 J</b>	<b>6.6 J</b>	<b>24</b>
DIBENZO(A,H)ANTHRACENE	UG/KG	1.395	6.22	134.61	1.4 U	1.4 U	<b>1.4 J</b>	1.4 U	<b>2.2 J</b>						
FLUORANTHENE	UG/KG	2.177	112.82	1493.54	2.2 U	<b>3.4 J</b>	2.2 U	<b>12</b>	2.2 U	<b>7.8</b>	2.2 U	2.2 U	<b>9</b>	<b>13</b>	<b>31</b>
FLUORENE	UG/KG	2.177	21.17	144.35	2.2 U	2.2 U	<b>2.2 J</b>	2.2 U	<b>2.9 J</b>	2.2 U	2.2 U				
INDENO(1,2,3-CD)PYRENE	UG/KG	1.300	--	--	1.3 U	<b>1.3 J</b>	1.3 U	<b>4.4 J</b>	1.3 U	<b>3.1 J</b>	1.3 U	1.3 U	<b>2 J</b>	<b>3.8 J</b>	<b>6.5</b>
NAPHTHALENE	UG/KG	2.309	34.57	390.64	2.3 U	2.3 U	2.3 U	24 U	2.3 U	6.9	2.3 U	2.3 U	2.4 U	2.3 U	
PHENANTHRENE	UG/KG	1.755	86.68	543.53	<b>2.5 J</b>	<b>5 J</b>	<b>3.1 J</b>	<b>12</b>	<b>3.9 J</b>	8.1	<b>4.1 J</b>	<b>3.4 J</b>	<b>6.5</b>	<b>6 J</b>	<b>6.3 J</b>
PYRENE	UG/KG	1.250	152.66	1397.6	1.3 U	<b>3.5 J</b>	1.2 U	14	1.2 U	11	1.2 U	<b>2.3 J</b>	<b>11</b>	<b>17</b>	<b>27 J</b>
TOTAL PAHs (ND=0)	UG/KG	1684.06	16770.4	<b>2.5</b>	212	<b>3.1</b>	84.5	<b>5.7</b>	65.3	<b>4 J</b>	7	<b>55.6</b>	<b>76.8</b>	<b>114.8</b>	
TOTAL PAHs (ND=1/2DL)	UG/KG	1684.06	16770.4	<b>17.7</b>	<b>31.45</b>	<b>18.2</b>	89.95	<b>20.15</b>	<b>71.35</b>	<b>19.1</b>	<b>21.1</b>	<b>61.7</b>	<b>84.05</b>	<b>121.25</b>	

\*\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.  
MDL = average method detection limit

a = value greater than TEL  
b = value greater than PEL

TEL = threshold effects level  
PEL = probable effects level  
U = compound was analyzed but not detected

**TABLE A-70. CHLORINATED PESTICIDE CONCENTRATIONS (UG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID										
					EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
4,4'-DDD	UG/KG	0.160	1.22	7.81	0.16 U	0.16 U	0.16 U	<b>0.51 J</b>	0.16 U						
4,4'-DDE	UG/KG	0.204	2.07	374.17	<b>0.26 J PG</b>	0.2 U	0.2 U	<b>0.37 J</b>	0.2 U	0.21 U	0.2 U	0.21 U	0.21 U	0.2 U	0.2 U
4,4'-DDT	UG/KG	0.177	1.19	4.77	<b>0.42 J</b>	0.17 U	0.17 U	<b>0.22 J PG</b>	0.17 U	0.18 U	0.17 U	0.18 U	0.18 U	0.17 U	0.17 U
ALDRIN	UG/KG	0.205	--	--	0.2 U	0.2 U	0.2 U	0.21 U	0.2 U	0.21 U	0.2 U	0.21 U	0.2 U	0.2 U	0.2 U
ALPHA-BHC	UG/KG	0.140	--	--	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
BETA-BHC	UG/KG	0.216	--	--	0.21 U	0.21 U	0.21 U	0.22 U	0.21 U	0.22 U	0.21 U	0.22 U	0.21 U	0.21 U	0.21 U
CHLORDANE (TECHNICAL)	UG/KG	0.758	2.26	4.79	0.75 U c	0.74 U c	0.74 U c	0.77 U c	0.75 U c	0.77 U c	0.74 U c	0.77 U c	0.78 U c	0.74 U c	0.75 U c
CHLOROBENZIDE	UG/KG	0.671	--	--	0.66 U	0.66 U	0.66 U	0.68 U	0.66 U	0.68 U	0.66 U	0.68 U	0.69 U	0.65 U	0.66 U
DCPA	UG/KG	0.441	--	--	0.44 U	0.43 U	0.43 U	0.45 U	0.43 U	0.45 U	0.43 U	0.45 U	0.45 U	0.43 U	0.43 U
DELTA-BHC	UG/KG	0.179	--	--	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.18 U	0.18 U	0.17 U	0.18 U
DIELDRIN	UG/KG	0.158	0.715	4.3	0.16 U c	0.15 U c	0.15 U c	0.16 U c	0.16 U c	0.15 U c	0.16 U c	0.16 U c	0.15 U c	0.16 U c	0.16 U c
ENDOSULFAN I	UG/KG	0.160	--	--	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
ENDOSULFAN II	UG/KG	0.254	--	--	0.25 U	0.25 U	0.25 U	0.26 U	0.25 U	0.26 U	0.25 U	0.26 U	0.26 U	0.25 U	0.25 U
ENDOSULFAN SULFATE	UG/KG	0.225	--	--	0.22 U	0.22 U	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U	0.23 U	0.23 U	0.22 U	0.22 U
ENDRIN	UG/KG	0.162	--	--	0.16 U	0.16 U	0.16 U	0.17 U	0.16 U	0.16 U	0.16 U	0.16 U	0.17 U	0.16 U	0.16 U
ENDRIN ALDEHYDE	UG/KG	0.354	--	--	0.35 U	0.35 U	0.35 U	0.36 U	0.35 U	0.36 U	0.35 U	0.36 U	0.36 U	0.34 U	0.35 U
GAMMA-BHC (LINDANE)	UG/KG	0.139	0.32	0.99	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U
HEPTACHLOR	UG/KG	0.158	--	--	0.16 U	0.15 U	0.15 U	0.16 U	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U	0.15 U	0.15 U
HEPTACHLOR EPOXIDE	UG/KG	0.199	--	--	0.2 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.2 U	0.19 U	0.2 U
METHOXYCHLOR	UG/KG	0.358	--	--	0.35 U	0.35 U	0.35 U	0.37 U	0.35 U	0.36 U	0.35 U	0.36 U	0.37 U	0.35 U	0.35 U
MIREX	UG/KG	0.223	--	--	0.22 U	0.22 U	0.22 U	0.23 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.22 U	0.22 U
TOXAPHENE	UG/KG	2.214	--	--	2.2 U	2.2 U	2.2 U	2.3 U	2.2 U	2.2 U	2.2 U	2.2 U	2.3 U	2.1 U	2.2 U

\*Source: MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed but not detected

TABLE A-70. CONTINUED  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID										
					EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
4,4'-DDD	UG/KG	0.160	1.22	7.81	0.16 U	0.16 U	0.16 U	<b>0.87 J PG</b>	0.16 U						
4,4'-DDE	UG/KG	0.204	2.07	374.17	0.2 U	0.21 U	0.2 U	<b>0.37 J</b>	0.2 U	0.2 U	0.2 U	0.21 U	0.2 U	0.21 U	0.2 U
4,4'-DDT	UG/KG	0.177	1.19	4.77	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.18 U				
ALDRIN	UG/KG	0.205	--	--	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.21 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U
ALPHA-BHC	UG/KG	0.140	--	--	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
BETA-BHC	UG/KG	0.216	--	--	0.22 U	0.22 U	0.22 U	0.22 U	0.21 U	0.22 U	0.21 U	0.22 U	0.22 U	0.22 U	0.22 U
CHLORDANE (TECHNICAL)		0.758	2.26	4.79	0.76 U c	0.77 U c	0.75 U c	0.78 U c	0.75 U c	0.76 U c	0.75 U c	0.77 U c	0.75 U c	0.78 U c	0.76 U c
CHLOROBENZIDE	UG/KG	0.671	--	--	0.67 U	0.68 U	0.67 U	0.69 U	0.66 U	0.68 U	0.66 U	0.68 U	0.67 U	0.69 U	0.67 U
DCPA	UG/KG	0.441	--	--	0.44 U	0.45 U	0.44 U	0.45 U	0.44 U	0.44 U	0.44 U	0.45 U	0.44 U	0.45 U	0.44 U
DELTA-BHC	UG/KG	0.179	--	--	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
DIELDRIN	UG/KG	0.158	0.715	4.3	0.16 U c	0.16 U c	0.16 U c	0.16 U c	0.16 U c	0.16 U c	0.16 U c	0.16 U c	0.16 U c	0.16 U c	0.16 U c
ENDOSULFAN I	UG/KG	0.160	--	--	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
ENDOSULFAN II	UG/KG	0.254	--	--	0.25 U	0.26 U	0.25 U	0.26 U	0.25 U	0.26 U	0.25 U	0.26 U	0.25 U	0.26 U	0.25 U
ENDOSULFAN SULFATE	UG/KG	0.225	--	--	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U	0.23 U	0.23 U
ENDRIN	UG/KG	0.162	--	--	0.16 U	0.16 U	0.16 U	0.17 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.17 U	0.16 U
ENDRIN ALDEHYDE	UG/KG	0.354	--	--	0.35 U	0.36 U	0.35 U	0.36 U	0.35 U	0.36 U	0.35 U	0.36 U	0.35 U	0.36 U	0.35 U
GAMMA-BHC (LINDANE)	UG/KG	0.139	0.32	0.99	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
HEPTACHLOR	UG/KG	0.158	--	--	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
HEPTACHLOR EPOXIDE	UG/KG	0.199	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
METHOXYCHLOR	UG/KG	0.358	--	--	0.36 U	0.36 U	0.36 U	0.37 U	0.35 U	0.36 U	0.35 U	0.36 U	0.36 U	0.37 U	0.36 U
MIREX	UG/KG	0.223	--	--	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U	0.22 U	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U
TOXAPHENE	UG/KG	2.214	--	--	2.2 U	2.2 U	2.2 U	2.3 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.3 U	2.2 U

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278.

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

TEL = threshold effects level

PEL = probable effects level

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed but not detected

**TABLE A-71. ORGANOPHOSPHORUS PESTICIDE CONCENTRATIONS (UG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	Sample ID											
			EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED	
AZINPHOS METHYL	UG/KG	8.168	8.1 U	8 U	8 U	8.3 U	8 U	8.3 U	8 U	8.3 U	8.4 U	7.9 U	8 U	
DEMETON	UG/KG	15.409	15 U	15 U	15 U	16 U	15 U	16 U	15 U	16 U	16 U	15 U	15 U	
MALATHION	UG/KG	5.677	5.6 U	5.6 U	5.6 U	5.8 U	5.6 U	5.7 U	5.6 U	5.8 U	5.8 U	5.5 U	5.6 U	
METHYL PARATHION	UG/KG	5.782	5.7 U	5.7 U	5.7 U	5.9 U	5.7 U	5.8 U	5.7 U	5.9 U	5.9 U	5.6 U	5.7 U	
PARATHION	UG/KG	7.027	7 U	6.9 U	6.9 U	7.2 U	6.9 U	7.1 U	6.9 U	7.1 U	7.2 U	6.8 U	6.9 U	

There are no TEL and PEL values for organophosphorus pesticides

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

U = compound was analyzed but not detected

**TABLE A-71. CONTINUED**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	Sample ID											
			EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED	
AZINPHOS METHYL	UG/KG	8.168	8.2 U	8.3 U	8.1 U	8.4 U	8.1 U	8.2 U	8.1 U	8.3 U	8.1 U	8.4 U	8.2 U	
DEMETON	UG/KG	15.409	15 U	16 U	15 U									
MALATHION	UG/KG	5.677	5.7 U	5.8 U	5.6 U	5.8 U	5.6 U	5.7 U	5.6 U	5.8 U	5.6 U	5.8 U	5.7 U	
METHYL PARATHION	UG/KG	5.782	5.8 U	5.9 U	5.8 U	5.9 U	5.7 U	5.8 U	5.7 U	5.9 U	5.7 U	5.9 U	5.8 U	
PARATHION	UG/KG	7.027	7 U	7.1 U	7 U	7.2 U	7 U	7.1 U	6.9 U	7.1 U	7 U	7.2 U	7.1 U	

There are no TEL and PEL values for organophosphorus pesticides

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

U = compound was analyzed but not detected

TABLE A-72. DIOXIN AND FURAN CONGENER CONCENTRATIONS (PG/G) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	RL	TEF*	Sample ID										
				EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
2,3,7,8-TCDD	PG/G	1.209	1	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.3 U	1.1 U	1.1 U	1.3 U	1.3 U	1.3 U
1,2,3,7,8-PeCDD	PG/G	6.018	0.5	5.7 U	5.6 U	5.6 U	<b>0.16 Q J</b>	5.3 U	5.8 U	6.4 U	5.5 U	5.6 U	6.3 U	6.4 U
1,2,3,4,7,8-HxCDD	PG/G	6.018	0.1	5.7 U	5.6 U	<b>0.26 J</b>	<b>0.13 Q J</b>	5.3 U	5.8 U	<b>0.12 Q J</b>	5.5 U	5.6 U	6.3 U	6.4 U
1,2,3,6,7,8-HxCDD	PG/G	6.018	0.1	<b>0.13 Q J</b>	<b>0.069 Q J</b>	<b>0.53 J</b>	0.6 J	<b>0.12 J</b>	5.8 U	<b>0.31 J</b>	5.5 U	5.6 U	<b>0.22 Q J</b>	<b>0.39 J</b>
1,2,3,7,8,9-HxCDD	PG/G	6.018	0.1	<b>0.3 J</b>	<b>0.16 Q J</b>	<b>1.5 J</b>	<b>0.5 J</b>	<b>0.17 Q J</b>	<b>0.43 J</b>	<b>1.8 Q J</b>	<b>0.26 Q J</b>	<b>0.13 J</b>	<b>0.83 J</b>	<b>1.2 Q J</b>
1,2,3,4,6,7,8-HpCDD	PG/G	6.018	0.01	<b>3 J</b>	<b>1.9 J</b>	<b>20</b>	<b>10</b>	<b>3 J</b>	<b>4.7 J</b>	<b>20</b>	<b>1.8 J</b>	<b>1 J</b>	<b>8.5</b>	<b>14</b>
OCDD	PG/G	12.091	0.001	<b>77 B</b>	<b>42 B</b>	<b>320 B</b>	<b>210 B</b>	<b>110 B</b>	<b>1000 B</b>	<b>59 B</b>	<b>28 B</b>	<b>320 B</b>	<b>360 B</b>	
2,3,7,8-TCDF	PG/G	1.209	0.1	1.1 U	1.1 U	1.1 U	<b>0.64 Q J</b>	1.1 U	1.2 U	1.3 U	1.1 U	1.1 U	1.3 U	1.3 U
1,2,3,7,8-PeCDF	PG/G	6.018	0.05	5.7 U	5.6 U	5.6 U	5.5 U	5.3 U	5.8 U	6.4 U	5.5 U	5.6 U	6.3 U	6.4 U
2,3,4,7,8-PeCDF	PG/G	6.018	0.5	5.7 U	5.6 U	5.6 U	<b>0.23 J</b>	5.3 U	5.8 U	6.4 U	5.5 U	5.6 U	6.3 U	6.4 U
1,2,3,4,7,8-HxCDF	PG/G	6.018	0.1	<b>0.1 J</b>	5.6 U	5.6 U	<b>0.45 J</b>	<b>0.15 Q J</b>	5.8 U	6.4 U	5.5 U	5.6 U	6.3 U	6.4 U
1,2,3,6,7,8-HxCDF	PG/G	6.018	0.1	<b>0.08 Q J</b>	<b>0.046 Q J</b>	<b>0.13 Q J</b>	<b>0.66 Q J</b>	<b>0.098 J</b>	5.8 U	6.4 U	5.5 U	5.6 U	<b>0.1 J</b>	6.4 U
2,3,4,6,7,8-HxCDF	PG/G	6.018	0.1	<b>0.058 J</b>	5.6 U	<b>0.034 Q J</b>	<b>0.15 J</b>	5.3 U	5.8 U	6.4 U	5.5 U	5.6 U	6.3 U	6.4 U
1,2,3,7,8,9-HxCDF	PG/G	6.018	0.1	5.7 U	5.6 U	5.6 U	5.5 U	5.3 U	5.8 U	6.4 U	5.5 U	5.6 U	6.3 U	6.4 U
1,2,3,4,6,7,8-HpCDF	PG/G	6.018	0.01	<b>0.63 J</b>	<b>0.48 J</b>	<b>0.36 J</b>	<b>3.2 J</b>	<b>0.86 J</b>	<b>0.41 J</b>	<b>0.17 Q J</b>	<b>5.5 U</b>	<b>0.077 J</b>	<b>0.35 J</b>	6.4 U
1,2,3,4,7,8,9-HpCDF	PG/G	6.018	0.01	5.7 U	5.6 U	5.6 U	<b>0.28 J</b>	5.3 U	5.8 U	6.4 U	5.5 U	5.6 U	6.3 U	6.4 U
OCDF	PG/G	12.091	0.001	<b>0.87 B J</b>	<b>1.4 B J</b>	<b>0.57 B J</b>	<b>8.3 B J</b>	<b>1.7 B J</b>	<b>1.1 B J</b>	<b>0.51 Q B J</b>	<b>11 U</b>	<b>0.18 Q B J</b>	<b>0.66 B J</b>	13 U
DIOXIN TEQ (ND=0)	PG/G	--	--	<b>0.1031</b>	<b>0.0513</b>	<b>0.449</b>	<b>0.7228</b>	<b>0.0924</b>	<b>0.0941</b>	<b>0.4247</b>	<b>0.044</b>	<b>0.02377</b>	<b>0.2035</b>	<b>0.299</b>
DIOXIN TEQ (ND=1/2DL)	PG/G	--	--	<b>5.7241</b>	<b>6.1443</b>	<b>5.982</b>	<b>1.6853</b>	<b>5.6264</b>	<b>7.0181</b>	<b>7.4117</b>	<b>6.61705</b>	<b>6.67677</b>	<b>7.0925</b>	<b>7.63865</b>

\* Source: USEPA 1989. 1989 Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)

There are no TEL and PEL values for dioxin and furan congeners

NOTE: Shaded and bold values represent detected concentrations.

Q = estimated maximum possible concentration.

RL = average reporting limit

TEF = toxicity equivalency factor

TEF = toxicity equivalency quotient

J = compound was detected, but below the reporting limit (value is estimated)

JA = the analyte was positively identified, but the quantitation is an estimate

U = compound was analyzed but not detected

TABLE A-72. CONTINUED  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	RL	TEF*	Sample ID										
				EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
2,3,7,8-TCDD	PG/G	1.209	1	1.4 U	1.2 U	1.2 U	1.2 U	1.5 U	1.2 U	1.1 U	1.3 U	1.2 U	1.2 U	1.3 U
1,2,3,7,8-PECDD	PG/G	6.018	0.5	<b>0.2 Q J</b>	5.8 U	6.1 U	5.9 U	7.4 U	5.8 U	5.7 U	6.6 U	6 U	5.9 U	6.5 U
1,2,3,4,7,8-HXCDD	PG/G	6.018	0.1	<b>0.44 J</b>	5.8 U	<b>0.18 Q J</b>	<b>0.11 Q J</b>	7.4 U	5.8 U	5.7 U	6.6 U	<b>0.58 Q J</b>	5.9 U	6.5 U
1,2,3,6,7,8-HXCDD	PG/G	6.018	0.1	<b>2.8 J</b>	<b>0.81 B J</b>	<b>2.8 B J</b>	<b>0.52 B J</b>	7.4 U	5.8 U	5.7 U	<b>0.43 Q B J</b>	<b>1.1 Q B J</b>	<b>0.36 Q B J</b>	6.5 U
1,2,3,7,8,9-HXCDD	PG/G	6.018	0.1	<b>3.3 J</b>	<b>1 J</b>	<b>1.9 J</b>	<b>1 J</b>	<b>1.2 J</b>	5.8 U	5.7 U	<b>1.7 J</b>	8	<b>2.1 J</b>	<b>0.84 J</b>
1,2,3,4,6,7,8-HPCDD	PG/G	6.018	0.01	<b>31</b>	<b>18 B</b>	<b>41 B</b>	<b>11 B</b>	<b>11 B</b>	<b>3.8 B J</b>	<b>0.67 Q B J</b>	<b>13 B</b>	<b>88 B</b>	<b>20 B</b>	<b>8.3 B</b>
OCDD	PG/G	12.091	0.001	<b>450 B</b>	<b>440 B</b>	<b>570 B</b>	<b>240 B</b>	<b>230 B</b>	<b>120 B</b>	<b>22 B</b>	<b>160 B</b>	<b>1600 B</b>	<b>340 B</b>	<b>210 B</b>
2,3,7,8-TCDF	PG/G	1.209	0.1	1.4 U	1.2 U	1.2 U	1.2 U	1.5 U	1.2 U	1.1 U	1.3 U	1.2 U	1.2 U	1.3 U
1,2,3,7,8-PECDF	PG/G	6.018	0.05	7 U	5.8 U	6.1 U	5.9 U	7.4 U	5.8 U	5.7 U	6.6 U	6 U	5.9 U	6.5 U
2,3,4,7,8-PECDF	PG/G	6.018	0.5	7 U	5.8 U	6.1 U	5.9 U	7.4 U	5.8 U	5.7 U	6.6 U	6 U	5.9 U	6.5 U
1,2,3,4,7,8-HXCDF	PG/G	6.018	0.1	7 U	<b>0.11 Q B J</b>	6.1 U	5.9 U	7.4 U	5.8 U	5.7 U	6.6 U	6 U	5.9 U	6.5 U
1,2,3,6,7,8-HXCDF	PG/G	6.018	0.1	7 U	5.8 U	6.1 U	<b>0.17 Q J</b>	7.4 U	5.8 U	5.7 U	6.6 U	6 U	5.9 U	6.5 U
2,3,4,6,7,8-HXCDF	PG/G	6.018	0.1	7 U	5.8 U	6.1 U	5.9 U	7.4 U	5.8 U	5.7 U	6.6 U	6 U	5.9 U	6.5 U
1,2,3,7,8,9-HXCDF	PG/G	6.018	0.1	7 U	5.8 U	6.1 U	5.9 U	7.4 U	5.8 U	5.7 U	6.6 U	6 U	5.9 U	6.5 U
1,2,3,4,6,7,8-HPCDF	PG/G	6.018	0.01	7 U	<b>0.2 B J</b>	6.1 U	<b>0.12 Q B J</b>	7.4 U	<b>0.65 B J</b>	5.7 U	6.6 U	6 U	<b>0.44 Q B J</b>	<b>0.19 Q B J</b>
1,2,3,4,7,8,9-HPCDF	PG/G	6.018	0.01	7 U	5.8 U	6.1 U	5.9 U	7.4 U	5.8 U	5.7 U	6.6 U	6 U	5.9 U	6.5 U
OCDF	PG/G	12.091	0.001	14 U	<b>0.23 Q B J</b>	12 U	<b>0.21 B J</b>	15 U	<b>0.48 B J</b>	11 U	13 U	<b>0.5 B J</b>	<b>0.53 Q B J</b>	13 U
DIOXIN TEQ (ND=0)	PG/G	--	--	<b>1.164</b>	<b>0.1</b>	<b>0.208</b>	<b>0.128</b>	<b>0.12</b>	<b>0</b>	<b>0</b>	<b>0.17</b>	<b>0.858</b>	<b>0.21</b>	<b>0.084</b>
DIOXIN TEQ (ND=1/2DL)	PG/G	--	--	<b>5.3297</b>	<b>6.444</b>	<b>6.8771</b>	<b>6.275</b>	<b>8.97475</b>	<b>7.214</b>	<b>7.07505</b>	<b>7.71665</b>	<b>7.428</b>	<b>6.947</b>	<b>7.81965</b>

\*Source: USEPA 1989. *Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and Dibenzofurans (CDDs and CDFs)*

These are not TEL and PEL values for dioxin and furan congeners.

NOTE: Shaded and bold values represent detected concentrations.

Q = estimated maximum possible concentration.

RL = average reporting limit

TEF = toxicity equivalency factor

TEQ = toxicity equivalency quotient

J = compound was detected, but below the reporting limit (value is estimated)

JA = the analyte was positively identified, but the quantitation is an estimate

U = compound was analyzed but not detected

**TABLE A-73. BUTYLTIN CONCENTRATIONS (UG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	RL*	Sample ID										
			EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
DIBUTYLTIN	UG/KG	1.591	1.6 U	1.6 U	1.5 U	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	1.6 U	1.6 U	1.6 U
MONOBUTYLTIN	UG/KG	2.073	2 U	2 U	2 U	1.9 U	2 U	2 U	2.1 U	2 U	2.1 U	2.2 U	2.2 U
TETRABUTYLTIN	UG/KG	2.073	2 U	2 U	2 U	1.9 U	2 U	2 U	2.1 U	2 U	2.1 U	2.2 U	2.2 U
TRIBUTYLTIN	UG/KG	1.827	1.8 U	1.8 U	1.8 U	1.7 U	1.8 U	1.7 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U

\*Average Reporting Limit for all samples. There are no TEL and PEL values for butyltins.

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

U = compound was analyzed but not detected

**TABLE A-73. CONTINUED**  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	RL*	Sample ID										
			EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
DIBUTYLTIN	UG/KG	1.591	1.6 U	1.8 U	1.6 U	1.7 U	1.7 U	1.5 U	1.5 U	1.6 U	1.7 U	1.6 U	1.7 U
MONOBUTYLTIN	UG/KG	2.073	2.1 U	2.3 U	2.1 U	2.2 U	2.2 U	2 U	1.9 U	2 U	2.2 U	2.1 U	2.2 U
TETRABUTYLTIN	UG/KG	2.073	2.1 U	2.3 U	2.1 U	2.2 U	2.2 U	2 U	1.9 U	2 U	2.2 U	2.1 U	2.2 U
TRIBUTYLTIN	UG/KG	1.827	1.8 U	2 U	1.8 U	1.9 U	2 U	1.8 U	1.7 U	1.8 U	2.3 P	2.1 P	1.9 U

\*Average Reporting Limit for all samples. There are no TEL and PEL values for butyltins.

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

U = compound was analyzed but not detected

P = greater than 25% difference for detected concentrations between two GC columns. Lower of two values is reported.

**TABLE A-74. VOLATILE ORGANIC COMPOUND (VOC) CONCENTRATIONS (UG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)**  
**MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND**

ANALYTE	UNITS	MDL	Sample ID										
			EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
1,1,1-TRICHLOROETHANE	UG/KG	0.327	0.31 U	0.31 U	0.31 U	0.3 U	0.29 U	0.31 U	0.35 U	0.3 U	0.3 U	0.34 U	0.35 U
1,1,2,2-TETRACHLOROETHANE	UG/KG	0.542	0.51 U	0.51 U	0.51 U	0.5 U	0.48 U	0.52 U	0.57 U	0.5 U	0.5 U	0.57 U	0.58 U
1,1,2-TRICHLOROETHANE	UG/KG	0.816	0.77 U	0.76 U	0.76 U	0.75 U	0.72 U	0.79 U	0.86 U	0.75 U	0.75 U	0.86 U	0.87 U
1,1-DICHLOROETHANE	UG/KG	0.347	0.33 U	0.32 U	0.32 U	0.32 U	0.31 U	0.33 U	0.37 U	0.32 U	0.32 U	0.36 U	0.37 U
1,1-DICHLOROETHENE	UG/KG	0.709	0.67 U	0.66 U	0.66 U	0.65 U	0.63 U	0.68 U	0.75 U	0.65 U	0.66 U	0.75 U	0.75 U
1,2-DICHLOROBENZENE	UG/KG	1.118	1.1 U	1 U	1 U	0.99 U	1.1 U	1.2 U	1 U	1 U	1 U	1.2 U	1.2 U
1,2-DICHLOROETHANE	UG/KG	0.364	0.34 U	0.34 U	0.34 U	0.33 U	0.32 U	0.35 U	0.38 U	0.33 U	0.34 U	0.38 U	0.39 U
1,2-DICHLOROPROPANE	UG/KG	0.755	0.71 U	0.71 U	0.71 U	0.69 U	0.67 U	0.73 U	0.8 U	0.69 U	0.7 U	0.79 U	0.8 U
1,3-DICHLOROBENZENE	UG/KG	1.108	1 U	1 U	1 U	0.97 U	1.1 U	1.2 U	1 U	1 U	1 U	1.2 U	1.2 U
1,4-DICHLOROBENZENE	UG/KG	0.821	0.78 U	0.77 U	0.77 U	0.76 U	0.73 U	0.79 U	0.87 U	0.75 U	0.76 U	0.86 U	0.87 U
2-BUTANONE (MEK)	UG/KG	1.682	1.6 U	1.6 U	1.6 U	1.5 U	1.5 U	1.6 U	1.8 U	1.5 U	1.6 U	1.8 U	1.8 U
2-CHLOROETHYL VINYL ETHER	UG/KG	11.082	10 U	10 U	10 U	10 U	9.8 U	11 U	12 U	10 U	10 U	12 U	12 U
ACROLEIN	UG/KG	113.182	110 U	110 U	110 U	100 U	100 U	110 U	120 U	100 U	110 U	120 U	120 U
ACRYLONITRILE	UG/KG	31.955	30 U	30 U	30 U	29 U	28 U	31 U	34 U	29 U	30 U	34 U	34 U
BENZENE	UG/KG	0.657	0.62 U	0.62 U	0.62 U	0.6 U	0.58 U	0.63 U	0.7 U	0.6 U	0.61 U	0.69 U	0.7 U
BROMODICHLOROMETHANE	UG/KG	0.301	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.32 U	0.28 U	0.28 U	0.32 U	0.32 U
BROMOFORM	UG/KG	0.736	0.69 U	0.69 U	0.69 U	0.68 U	0.65 U	0.71 U	0.78 U	0.67 U	0.68 U	0.77 U	0.78 U
BROMOMETHANE	UG/KG	1.123	1.1 U	1.1 U	1 U	1 U	1 U	1.1 U	1.2 U	1 U	1 U	1.2 U	1.2 U
CARBON TETRACHLORIDE	UG/KG	0.301	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.32 U	0.28 U	0.28 U	0.32 U	0.32 U
CHLOROETHANE	UG/KG	1.127	1.1 U	1.1 U	1.1 U	1 U	1 U	1.1 U	1.2 U	1 U	1 U	1.2 U	1.2 U
CHLOROFORM	UG/KG	0.301	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.32 U	0.28 U	0.28 U	0.32 U	0.32 U
CHLOROMETHANE	UG/KG	0.346	0.33 U	0.32 U	0.32 U	0.32 U	0.31 U	0.33 U	0.36 U	0.32 U	0.32 U	0.36 U	0.37 U
CIS-1,3-DICHLOROPROPENE	UG/KG	0.347	0.33 U	0.32 U	0.32 U	0.32 U	0.31 U	0.33 U	0.37 U	0.32 U	0.32 U	0.36 U	0.37 U
DIBROMOCHLOROMETHANE	UG/KG	0.314	0.3 U	0.29 U	0.29 U	0.29 U	0.28 U	0.3 U	0.33 U	0.29 U	0.29 U	0.33 U	0.33 U
DICHLORODIFLUOROMETHANE	UG/KG	0.609	0.57 U	0.57 U	0.57 U	0.56 U	0.54 U	0.59 U	0.64 U	0.56 U	0.56 U	0.64 U	0.65 U
ETHYLBENZENE	UG/KG	1.118	1.1 U	1 U	1 U	1 U	0.99 U	1.1 U	1.2 U	1 U	1 U	1.2 U	1.2 U
METHYLENE CHLORIDE	UG/KG	1.595	<b>29</b>	<b>27</b>	<b>27</b>	<b>26</b>	<b>25</b>	<b>10</b>	<b>11</b>	<b>9.9</b>	<b>9.6</b>	1.7 U	<b>3.5 JB</b>
TETRACHLOROETHENE	UG/KG	0.922	0.87 U	0.86 U	0.86 U	0.85 U	0.82 U	0.89 U	0.98 U	0.84 U	0.85 U	0.97 U	0.98 U
TOLUENE	UG/KG	0.712	0.67 U	0.67 U	0.66 U	0.65 U	0.63 U	0.69 U	0.75 U	0.65 U	0.66 U	0.75 U	0.76 U
TRANS-1,2-DICHLOROETHENE	UG/KG	0.786	0.74 U	0.74 U	0.73 U	0.72 U	0.7 U	0.76 U	0.83 U	0.72 U	0.73 U	0.83 U	0.83 U
TRANS-1,3-DICHLOROPROPENE	UG/KG	0.330	0.31 U	0.31 U	0.31 U	0.3 U	0.29 U	0.32 U	0.35 U	0.3 U	0.31 U	0.35 U	0.35 U
TRICHLOROETHENE	UG/KG	1.031	0.98 U	0.97 U	0.97 U	0.95 U	0.92 U	1 U	1.1 U	0.95 U	0.96 U	1.1 U	1.1 U
TRICHLOROFLUOROMETHANE	UG/KG	1.455	1.4 U	1.4 U	1.4 U	1.3 U	1.3 U	1.4 U	1.5 U	1.3 U	1.3 U	1.5 U	1.5 U
VINYL CHLORIDE	UG/KG	0.792	0.75 U	0.74 U	0.74 U	0.73 U	0.7 U	0.76 U	0.84 U	0.72 U	0.73 U	0.83 U	0.84 U

There are no TEL and PEL values for volatiles

**NOTE:** Shaded and bold values represent detected concentrations.

**MDL** = average method detection limit

**B** = compound was detected in method blank

**J** = compound was detected, but below the reporting limit (value is estimated)

**U** = compound was analyzed but not detected

TABLE B-74. CONTINUED  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	Sample ID										
			EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
1,1,1-TRICHLOROETHANE	UG/KG	0.327	0.38 U	0.32 U	0.33 U	0.32 U	0.4 U	0.31 U	0.31 U	0.36 U	0.33 U	0.32 U	0.35 U
1,1,2,2-TETRACHLOROETHANE	UG/KG	0.542	0.63 U	0.52 U	0.55 U	0.53 U	0.67 U	0.52 U	0.51 U	0.59 U	0.54 U	0.53 U	0.59 U
1,1,2-TRICHLOROETHANE	UG/KG	0.816	0.95 U	0.79 U	0.82 U	0.8 U	1 U	0.78 U	0.77 U	0.9 U	0.82 U	0.8 U	0.89 U
1,1-DICHLOROETHANE	UG/KG	0.347	0.4 U	0.34 U	0.35 U	0.34 U	0.43 U	0.33 U	0.33 U	0.38 U	0.35 U	0.34 U	0.38 U
1,1-DICHLOROETHENE	UG/KG	0.709	0.82 U	0.69 U	0.72 U	0.69 U	0.87 U	0.68 U	0.67 U	0.78 U	0.71 U	0.69 U	0.77 U
1,2-DICHLOROBENZENE	UG/KG	1.118	1.3 U	1.1 U	1.1 U	1.4 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U
1,2-DICHLOROETHANE	UG/KG	0.364	0.42 U	0.35 U	0.37 U	0.36 U	0.45 U	0.35 U	0.34 U	0.4 U	0.37 U	0.36 U	0.4 U
1,2-DICHLOROPROPANE	UG/KG	0.755	0.88 U	0.73 U	0.76 U	0.74 U	0.93 U	0.72 U	0.71 U	0.83 U	0.76 U	0.74 U	0.82 U
1,3-DICHLOROBENZENE	UG/KG	1.108	1.3 U	1.1 U	1.1 U	1.4 U	1.1 U	1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U
1,4-DICHLOROBENZENE	UG/KG	0.821	0.95 U	0.8 U	0.83 U	0.8 U	1 U	0.79 U	0.77 U	0.9 U	0.83 U	0.8 U	0.89 U
2-BUTANONE (MEK)	UG/KG	1.682	2 U	1.6 U	1.7 U	1.6 U	2.1 U	1.6 U	1.6 U	1.8 U	1.7 U	1.6 U	1.8 U
2-CHLOROETHYL VINYL ETHER	UG/KG	11.082	13 U	11 U	11 U	11 U	14 U	11 U	10 U	12 U	11 U	11 U	12 U
ACROLEIN	UG/KG	113.182	130 U	110 U	110 U	110 U	140 U	110 U	110 U	120 U	110 U	110 U	120 U
ACRYLONITRILE	UG/KG	31.955	37 U	31 U	32 U	31 U	39 U	31 U	30 U	35 U	32 U	31 U	35 U
BENZENE	UG/KG	0.657	0.76 U	0.64 U	0.66 U	0.64 U	0.81 U	0.63 U	0.62 U	0.72 U	0.66 U	0.64 U	0.71 U
BROMODICHLOROMETHANE	UG/KG	0.301	0.35 U	0.29 U	0.3 U	0.29 U	0.37 U	0.29 U	0.28 U	0.33 U	0.3 U	0.29 U	0.33 U
BROMOFORM	UG/KG	0.736	0.85 U	0.71 U	0.74 U	0.72 U	0.91 U	0.71 U	0.69 U	0.81 U	0.74 U	0.72 U	0.8 U
BROMOMETHANE	UG/KG	1.123	1.3 U	1.1 U	1.1 U	1.1 U	1.4 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U
CARBON TETRACHLORIDE	UG/KG	0.301	0.35 U	0.29 U	0.3 U	0.29 U	0.37 U	0.29 U	0.28 U	0.33 U	0.3 U	0.29 U	0.33 U
CHLOROETHANE	UG/KG	1.127	1.3 U	1.1 U	1.1 U	1.1 U	1.4 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U
CHLOROFORM	UG/KG	0.301	0.35 U	0.29 U	0.3 U	0.29 U	0.37 U	0.29 U	0.28 U	0.33 U	0.3 U	0.29 U	0.33 U
CHLOROMETHANE	UG/KG	0.346	0.4 U	0.33 U	0.35 U	0.34 U	0.43 U	0.33 U	0.33 U	0.38 U	0.35 U	0.34 U	0.37 U
CIS-1,3-DICHLOROPROPENE	UG/KG	0.347	0.4 U	0.33 U	0.35 U	0.34 U	0.43 U	0.33 U	0.33 U	0.38 U	0.35 U	0.34 U	0.38 U
DIBROMOCHLOROMETHANE	UG/KG	0.314	0.36 U	0.3 U	0.32 U	0.31 U	0.39 U	0.3 U	0.3 U	0.34 U	0.32 U	0.31 U	0.34 U
DICHLORODIFLUOROMETHANE	UG/KG	0.609	0.71 U	0.59 U	0.61 U	0.6 U	0.75 U	0.58 U	0.57 U	0.67 U	0.61 U	0.59 U	0.66 U
ETHYLBENZENE	UG/KG	1.118	1.3 U	1.1 U	1.1 U	1.1 U	1.4 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U
METHYLENE CHLORIDE	UG/KG	1.595	<b>7.7</b>	<b>9.6</b>	<b>10</b>	<b>5.7 J</b>	<b>7.9</b>	<b>6.2</b>	<b>5.9</b>	<b>4.5 J B</b>	<b>3.8 J B</b>	<b>1.7 J</b>	<b>2.5 J</b>
TETRACHLOROETHENE	UG/KG	0.922	1.1 U	0.89 U	0.93 U	0.9 U	1.1 U	0.89 U	0.87 U	1 U	0.93 U	0.9 U	1 U
TOLUENE	UG/KG	0.712	0.83 U	0.69 U	0.72 U	0.7 U	0.88 U	0.68 U	0.67 U	0.78 U	0.71 U	0.69 U	0.77 U
TRANS-1,2-DICHLOROETHENE	UG/KG	0.786	0.91 U	0.76 U	0.79 U	0.77 U	0.97 U	0.75 U	0.74 U	0.86 U	0.79 U	0.77 U	0.85 U
TRANS-1,3-DICHLOROPROPENE	UG/KG	0.330	0.39 U	0.32 U	0.33 U	0.32 U	0.41 U	0.32 U	0.31 U	0.36 U	0.33 U	0.32 U	0.36 U
TRICHLOROETHENE	UG/KG	1.031	1.2 U	1 U	1 U	1 U	1.3 U	1 U	0.98 U	1.1 U	1 U	1 U	1.1 U
TRICHLOROFLUOROMETHANE	UG/KG	1.455	1.7 U	1.4 U	1.5 U	1.4 U	1.8 U	1.4 U	1.4 U	1.6 U	1.5 U	1.4 U	1.6 U
VINYL CHLORIDE	UG/KG	0.792	0.92 U	0.77 U	0.8 U	0.77 U	0.98 U	0.76 U	0.75 U	0.87 U	0.8 U	0.77 U	0.86 U

There are no TEL and PEL values for volatiles

NOTE: Shaded and bold values represent detected concentrations.

MDL = average method detection limit

B = compound was detected in method blank

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

TABLE A-75. SEMIVOLATILE ORGANIC COMPOUND (SVOC) CONCENTRATIONS (UG/KG) IN PROPOSED MASONVILLE BORROW MATERIAL (JANUARY 2006)  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLAND

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID										
					EB-01A-SED	EB-01B-SED	EB-01C-SED	EB-09A-SED	EB-09B-SED	EB-09C-SED	EB-10A-SED	EB-10B-SED	EB-10C-SED	EB-11A-SED	EB-11B-SED
1,2,4-TRICHLOROBENZENE	UG/KG	6.5818182	--	--	6.5 U	6.5 U	6.5 U	6.7 U	6.5 U	6.7 U	6.4 U	6.7 U	6.7 U	6.4 U	6.5 U
1,2-DICHLOROBENZENE	UG/KG	1.1177273	--	--	1.1 U	1 U	1 U	1 U	0.99 U	1.1 U	1.2 U	1 U	1 U	1.2 U	1.2 U
1,2-DIPHENYLHYDRAZINE	UG/KG	7.5045455	--	--	7.4 U	7.4 U	7.4 U	7.7 U	7.4 U	7.6 U	7.3 U	7.6 U	7.7 U	7.3 U	7.4 U
1,3-DICHLOROBENZENE	UG/KG	1.1077273	--	--	1 U	1 U	1 U	1 U	0.97 U	1.1 U	1.2 U	1 U	1 U	1.2 U	1.2 U
1,4-DICHLOROBENZENE	UG/KG	0.8213636	--	--	0.78 U	0.77 U	0.77 U	0.76 U	0.73 U	0.79 U	0.87 U	0.75 U	0.76 U	0.86 U	0.87 U
2,4,6-TRICHLOROPHENOL	UG/KG	5.5772727	--	--	5.5 U	5.5 U	5.5 U	5.7 U	5.5 U	5.6 U	5.5 U	5.7 U	5.4 U	5.5 U	
2,4-DICHLOROPHENOL	UG/KG	6.1272727	--	--	6.1 U	6 U	6 U	6.2 U	6 U	6.2 U	6 U	6.2 U	6.3 U	6 U	6 U
2,4-DIMETHYLPHENOL	UG/KG	5.2363636	--	--	5.2 U	5.1 U	5.1 U	5.3 U	5.2 U	5.3 U	5.1 U	5.3 U	5.4 U	5.1 U	5.1 U
2,4-DINITROPHENOL	UG/KG	812.72727	--	--	800 U	800 U	800 U	830 U	800 U	820 U	800 U	830 U	830 U	790 U	800 U
2,4-DINITROTOLUENE	UG/KG	3.4090909	--	--	3.4 U	3.3 U	3.3 U	3.5 U	3.4 U	3.4 U	3.3 U	3.5 U	3.5 U	3.3 U	3.3 U
2,6-DINITROTOLUENE	UG/KG	4.6272727	--	--	4.6 U	4.5 U	4.5 U	4.7 U	4.6 U	4.7 U	4.5 U	4.7 U	4.7 U	4.5 U	4.6 U
2-CHLORONAPHTHALENE	UG/KG	6.8954545	--	--	6.8 U	6.8 U	6.8 U	7 U	6.8 U	7 U	6.7 U	7 U	7.1 U	6.7 U	6.8 U
2-CHLOROPHENOL	UG/KG	5.1363636	--	--	5.1 U	5 U	5 U	5.2 U	5.1 U	5.2 U	5 U	5.2 U	5.3 U	5 U	5 U
2-METHYLPHENOL	UG/KG	7.2545455	--	--	7.2 U	7.1 U	7.1 U	7.4 U	7.1 U	7.3 U	7.1 U	7.4 U	7.4 U	7.1 U	7.1 U
2-NITROPHENOL	UG/KG	.58	--	--	5.8 U	5.7 U	5.7 U	6 U	5.8 U	5.9 U	5.7 U	5.9 U	6 U	5.7 U	5.8 U
3,3'-DICHLOROBENZIDINE	UG/KG	8.0181818	--	--	7.9 U	7.9 U	7.9 U	8.2 U	7.9 U	8.1 U	7.9 U	8.1 U	8.2 U	7.8 U	7.9 U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	812.72727	--	--	800 U	800 U	800 U	830 U	800 U	820 U	800 U	830 U	830 U	790 U	800 U
4-BROMOPHENYL PHENYL ETHER	UG/KG	16.272727	--	--	16 U	16 U	16 U	17 U	16 U	16 U	16 U	17 U	17 U	16 U	16 U
4-CHLORO-3-METHYLPHENOL	UG/KG	7.0727273	--	--	7 U	6.9 U	6.9 U	7.2 U	7 U	7.2 U	6.9 U	7.2 U	7.2 U	6.9 U	7 U
4-CHLOROPHENYL PHENYL ETHER	UG/KG	6.6409091	--	--	6.6 U	6.5 U	6.5 U	6.8 U	6.5 U	6.7 U	6.5 U	6.7 U	6.8 U	6.5 U	6.5 U
4-METHYLPHENOL	UG/KG	7.2863636	--	--	7.2 U	7.2 U	7.1 U	7.4 U	7.2 U	7.4 U	7.1 U	7.4 U	7.5 U	7.1 U	7.2 U
4-NITROPHENOL	UG/KG	4.3590909	--	--	4.3 U	4.3 U	4.3 U	4.4 U	4.3 U	4.4 U	4.3 U	4.4 U	4.5 U	4.2 U	4.3 U
ACENAPHTHENE	UG/KG	.205	6.71	88.9	<b>2.1 J</b>	<b>7.1 a</b>	2 U	<b>2.9 J</b>	2 U	2.1 U	<b>12a</b>	2.1 U	2.1 U	<b>2.2 J</b>	2 U
BENZOIC ACID	UG/KG	270.45455	--	--	270 U	270 U	260 U	280 U	270 U	260 U	270 U	280 U	260 U	270 U	
BENZYL ALCOHOL	UG/KG	36.681818	--	--	36 U	36 U	36 U	37 U	36 U	37 U	36 U	37 U	38 U	36 U	36 U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	7.2909091	--	--	7.2 U	7.2 U	7.1 U	7.4 U	7.2 U	7.4 U	7.1 U	7.4 U	7.5 U	7.1 U	7.2 U
BIS(2-CHLOROETHYL) ETHER	UG/KG	6.3136364	--	--	6.3 U	6.2 U	6.2 U	6.4 U	6.2 U	6.4 U	6.2 U	6.4 U	6.5 U	6.1 U	6.2 U
BIS(2-CHLOROISOPROPYL) ETHER	UG/KG	4.7045455	--	--	4.7 U	4.6 U	4.6 U	4.8 U	4.6 U	4.8 U	4.6 U	4.8 U	4.8 U	4.6 U	4.6 U
BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	20.181818	182.16	2646.51	<b>40 J</b>	<b>81 J</b>	<b>110 J</b>	<b>42 J</b>	<b>33 J</b>	<b>46 J</b>	<b>41 J</b>	<b>21 J</b>	<b>28 J</b>	<b>54 J</b>	<b>69 J</b>
BUTYL BENZYL PHTHALATE	UG/KG	.72	--	--	<b>23 J</b>	<b>21 J</b>	7.1 U	<b>13 J</b>	<b>42 J</b>	<b>26 J</b>	<b>30 J</b>	<b>29 J</b>	<b>26 J</b>	<b>37 J</b>	<b>17 J</b>
DIBENZOFURAN	UG/KG	7.3181818	--	--	7.2 U	7.2 U	7.2 U	7.5 U	7.2 U	7.4 U	7.2 U	7.4 U	7.5 U	7.1 U	7.2 U
DIETHYL PHTHALATE	UG/KG	6.5636364	--	--	6.5 U	6.4 U	6.4 U	6.7 U	6.5 U	6.6 U	6.4 U	6.7 U	6.4 U	6.5 U	
DIMETHYL PHTHALATE	UG/KG	6.8045455	--	--	6.7 U	6.7 U	6.7 U	6.9 U	6.7 U	6.9 U	6.7 U	6.9 U	7 U	6.6 U	6.7 U
DI-N-BUTYL PHTHALATE	UG/KG	39.636364	--	--	39 U	39 U	39 U	40 U	39 U	40 U	39 U	40 U	41 U	39 U	39 U
DI-N-OCTYL PHTHALATE	UG/KG	.75	--	--	7.4 U	7.4 U	7.4 U	7.6 U	7.4 U	7.6 U	7.3 U	7.6 U	7.7 U	7.3 U	7.4 U
HEXACHLOROBENZENE	UG/KG	6.5409091	--	--	6.5 U	6.4 U	6.4 U	6.7 U	6.4 U	6.6 U	6.4 U	6.6 U	6.7 U	6.4 U	6.4 U
HEXACHLOROBUTADIENE	UG/KG	6.3636364	--	--	6.3 U	6.2 U	6.2 U	6.5 U	6.3 U	6.4 U	6.2 U	6.5 U	6.2 U	6.3 U	
HEXACHLOROCYCLOPENTADIENE	UG/KG	26.090909	--	--	26 U	26 U	26 U	27 U	26 U	26 U	25 U	26 U	27 U	25 U	26 U
HEXACHLOROETHANE	UG/KG	6.2363636	--	--	6.2 U	6.1 U	6.1 U	6.4 U	6.1 U	6.3 U	6.1 U	6.3 U	6.4 U	6.1 U	6.1 U
ISOPHORONE	UG/KG	6.2090909	--	--	6.1 U	6.1 U	6.1 U	6.3 U	6.1 U	6.3 U	6.1 U	6.3 U	6.4 U	6 U	6.1 U
NITROBENZENE	UG/KG	10.5	--	--	10 U	10 U	10 U	11 U	10 U	11 U	10 U	11 U	11 U	10 U	10 U
N-NITROSODIMETHYLAMINE	UG/KG	81.272727	--	--	80 U	80 U	80 U	83 U	80 U	82 U	80 U	83 U	79 U	80 U	
N-NITROSODI-N-PROPYLAMINE	UG/KG	.66	--	--	6.5 U	6.5 U	6.5 U	6.7 U	6.5 U	6.7 U	6.5 U	6.7 U	6.8 U	6.4 U	6.5 U
N-NITROSODIPHENYLAMINE	UG/KG	67.409091	--	--	67 U	66 U	66 U	69 U	66 U	68 U	66 U	68 U	69 U	66 U	66 U
PENTACHLOROPHENOL	UG/KG	445.90909	--	--	440 U	440 U	440 U	450 U	440 U	450 U	440 U	450 U	460 U	430 U	440 U
PHENOL	UG/KG	6.6909091	--	--	6.6 U	6.6 U	6.6 U	6.8 U	6.6 U	6.8 U	6.5 U	6.8 U	6.9 U	6.5 U	6.6 U
PYRENE	UG/KG	1.25	152.66	1397.6	<b>7.7</b>	<b>110</b>	<b>5.5 J</b>	<b>25</b>	<b>18</b>	<b>2.2 J</b>	<b>77</b>	<b>49 J</b>	<b>25 J</b>	<b>11</b>	<b>6 J</b>

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278

MDL = average method detection limit

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

NOTE: Shaded and bold values represent detected concentrations

PEL = probable effects level

TEL = threshold effects level

TABLE B-75. CONTINUED  
MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY, BALTIMORE HARBOR, MARYLANI

ANALYTE	UNITS	MDL	TEL*	PEL*	Sample ID										
					EB-11C-SED	EB-12A-SED	EB-12B-SED	EB-12C-SED	EB-12D-SED	EB-13A-SED	EB-13B-SED	EB-13C-SED	EB-14A-SED	EB-14B-SED	EB-14C-SED
1,2,4-TRICHLOROBENZENE	UG/KG	6.5818182	--	--	6.6 U	6.7 U	6.6 U	6.7 U	6.5 U	6.6 U	6.7 U	6.5 U	6.7 U	6.6 U	6.6 U
1,2-DICHLOROBENZENE	UG/KG	1.177273	--	--	1.3 U	1.1 U	1.1 U	1.1 U	1.4 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U
1,2-DIPHENYLHYDRAZINE	UG/KG	7.5045455	--	--	7.5 U	7.6 U	7.5 U	7.7 U	7.4 U	7.6 U	7.4 U	7.6 U	7.4 U	7.7 U	7.5 U
1,3-DICHLOROBENZENE	UG/KG	1.107273	--	--	1.3 U	1.1 U	1.1 U	1.1 U	1.4 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U
1,4-DICHLOROBENZENE	UG/KG	0.8213636	--	--	0.95 U	0.8 U	0.83 U	0.8 U	1 U	0.79 U	0.77 U	0.9 U	0.83 U	0.8 U	0.89 U
2,4,6-TRICHLOROPHENOL	UG/KG	5.5772727	--	--	5.6 U	5.7 U	5.5 U	5.7 U	5.5 U	5.6 U	5.5 U	5.7 U	5.5 U	5.7 U	5.6 U
2,4-DICHLOROPHENOL	UG/KG	6.1272727	--	--	6.1 U	6.2 U	6.1 U	6.3 U	6.1 U	6.2 U	6.1 U	6.3 U	6.1 U	6.2 U	6.2 U
2,4-DIMETHYLPHENOL	UG/KG	5.2363636	--	--	5.2 U	5.3 U	5.2 U	5.4 U	5.2 U	5.3 U	5.2 U	5.3 U	5.2 U	5.4 U	5.3 U
2,4-DINITROPHENOL	UG/KG	812.72727	--	--	810 U	830 U	810 U	830 U	800 U	820 U	800 U	820 U	810 U	830 U	820 U
2,4-DINITROTOLUENE	UG/KG	3.4090909	--	--	3.4 U	3.5 U	3.4 U	3.5 U	3.4 U	3.4 U	3.4 U	3.5 U	3.4 U	3.5 U	3.4 U
2,6-DINITROTOLUENE	UG/KG	4.6272727	--	--	4.6 U	4.7 U	4.7 U								
2-CHLORONAPHTHALENE	UG/KG	6.8954545	--	--	6.9 U	7 U	6.9 U	7.1 U	6.8 U	6.9 U	6.8 U	7 U	6.8 U	7.1 U	6.9 U
2-CHLOROPHENOL	UG/KG	5.1363636	--	--	5.1 U	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.2 U	5.1 U	5.3 U	5.2 U
2-METHYLPHENOL	UG/KG	7.2545455	--	--	7.3 U	7.4 U	7.2 U	7.4 U	7.2 U	7.3 U	7.2 U	7.4 U	7.2 U	7.3 U	7.3 U
2-NITROPHENOL	UG/KG	5.85	--	--	5.9 U	5.9 U	5.8 U	6 U	5.8 U	5.9 U	5.8 U	5.9 U	5.8 U	6 U	5.9 U
3,3'-DICHLOROBENZIDINE	UG/KG	8.0181818	--	--	8 U	8.1 U	8 U	8.2 U	7.9 U	8.1 U	7.9 U	8 U	8.2 U	8.1 U	
4,6-DINITRO-2-METHYLPHENOL	UG/KG	812.72727	--	--	810 U	830 U	810 U	830 U	800 U	820 U	800 U	820 U	810 U	830 U	820 U
4-BROMOPHENYL PHENYL ETHER	UG/KG	16.272727	--	--	16 U	17 U	16 U	17 U	16 U	16 U	16 U	17 U	16 U	17 U	16 U
4-CHLORO-3-METHYLPHENOL	UG/KG	7.0727273	--	--	7.1 U	7.2 U	7 U	7.3 U	7 U	7.1 U	7 U	7.2 U	7 U	7.1 U	7.1 U
4-CHLOROPHENYL PHENYL ETHER	UG/KG	6.6409091	--	--	6.7 U	6.7 U	6.6 U	6.8 U	6.6 U	6.7 U	6.6 U	6.7 U	6.6 U	6.8 U	6.7 U
4-METHYLPHENOL	UG/KG	7.2863636	--	--	7.3 U	7.4 U	7.2 U	7.5 U	7.2 U	7.3 U	7.2 U	7.4 U	7.2 U	7.5 U	7.3 U
4-NITROPHENOL	UG/KG	4.3590909	--	--	4.4 U	4.4 U	4.3 U	4.5 U	4.3 U	4.4 U	4.3 U	4.4 U	4.3 U	4.5 U	4.4 U
ACENAPHTHENE	UG/KG	2.05	6.71	88.9	2.1 U	2.1 U	2 U	2 U	2.1 U	2 U	2.1 U	2 U	2.1 U	5.4 J	2.1 U
BENZOIC ACID	UG/KG	270.45455	--	--	270 U	270 U	270 U	280 U	270 U	280 U	270 U				
BENZYL ALCOHOL	UG/KG	36.681818	--	--	37 U	37 U	37 U	38 U	36 U	37 U	36 U	37 U	36 U	38 U	37 U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	7.2909091	--	--	7.3 U	7.4 U	7.3 U	7.5 U	7.2 U	7.3 U	7.2 U	7.4 U	7.2 U	7.5 U	7.3 U
BIS(2-CHLOROETHYL) ETHER	UG/KG	6.3136364	--	--	6.3 U	6.4 U	6.3 U	6.5 U	6.2 U	6.4 U	6.2 U	6.4 U	6.3 U	6.5 U	6.3 U
BIS(2-CHLOROISOPROPYL) ETHER	UG/KG	4.7045455	--	--	4.7 U	4.8 U	4.7 U	4.8 U	4.7 U	4.7 U	4.6 U	4.8 U	4.7 U	4.8 U	4.7 U
BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	20.181818	182.16	2646.51	20 U	20 U	21 J	43 J	20 J	23 J	20 U	20 U	62 J	39 J	47 J
BUTYL BENZYL PHTHALATE	UG/KG	7.2	--	--	15 J	7.3 U	7.2 U	7.4 U	7.1 U	7.3 U	38 J	22 J	7.1 U	7.4 U	20 J
DIBENZOFURAN	UG/KG	7.3181818	--	--	7.3 U	7.4 U	7.3 U	7.5 U	7.2 U	7.4 U	7.2 U	7.4 U	7.3 U	7.5 U	7.4 U
DIETHYL PHTHALATE	UG/KG	6.5636364	--	--	6.6 U	6.7 U	6.5 U	6.7 U	6.5 U	6.6 U	6.5 U	6.7 U	6.5 U	6.7 U	6.6 U
DIMETHYL PHTHALATE	UG/KG	6.8045455	--	--	6.8 U	6.9 U	6.8 U	7 U	6.7 U	6.9 U	6.7 U	6.9 U	6.7 U	7 U	6.8 U
DI-N-BUTYL PHTHALATE	UG/KG	39.636364	--	--	40 U	40 U	39 U	41 U	39 U	40 U	39 U	40 U	39 U	41 U	40 U
DI-N-OCTYL PHTHALATE	UG/KG	7.5	--	--	7.5 U	7.6 U	7.5 U	7.7 U	7.4 U	7.6 U	7.4 U	7.6 U	7.4 U	7.7 U	7.5 U
HEXACHLOROBENZENE	UG/KG	6.5409091	--	--	6.6 U	6.6 U	6.5 U	6.7 U	6.5 U	6.6 U	6.5 U	6.6 U	6.5 U	6.7 U	6.6 U
HEXACHLOROBUTADIENE	UG/KG	6.3636364	--	--	6.4 U	6.5 U	6.3 U	6.5 U	6.4 U	6.3 U	6.5 U	6.3 U	6.5 U	6.4 U	6.4 U
HEXACHLOROCYCLOPENTADIENE	UG/KG	26.090909	--	--	26 U	26 U	26 U	27 U	26 U	27 U	26 U				
HEXACHLOROETHANE	UG/KG	6.2363636	--	--	6.2 U	6.3 U	6.2 U	6.4 U	6.2 U	6.3 U	6.2 U	6.3 U	6.2 U	6.4 U	6.3 U
ISOPHORONE	UG/KG	6.2090909	--	--	6.2 U	6.3 U	6.2 U	6.4 U	6.1 U	6.3 U	6.1 U	6.3 U	6.2 U	6.4 U	6.2 U
NITROBENZENE	UG/KG	10.5	--	--	11 U	11 U	10 U	11 U	11 U						
N-NITROSODIMETHYLAMINE	UG/KG	81.272727	--	--	81 U	83 U	81 U	83 U	80 U	82 U	80 U	82 U	81 U	83 U	82 U
N-NITROSODI-N-PROPYLAMINE	UG/KG	6.6	--	--	6.6 U	6.7 U	6.6 U	6.8 U	6.5 U	6.6 U	6.5 U	6.7 U	6.5 U	6.8 U	6.6 U
N-NITROSODIPHENYLAMINE	UG/KG	67.409091	--	--	68 U	68 U	67 U	69 U	67 U	68 U	67 U	68 U	67 U	69 U	68 U
PENTACHLOROPHENOL	UG/KG	445.90909	--	--	450 U	450 U	440 U	460 U	440 U	450 U	440 U	450 U	440 U	460 U	450 U
PHENOL	UG/KG	6.6909091	--	--	6.7 U	6.8 U	6.7 U	6.9 U	6.6 U	6.7 U	6.6 U	6.8 U	6.6 U	6.8 U	6.7 U
PYRENE	UG/KG	1.25	152.66	1397.6	1.3 U	3.5 J	1.2 U	14	1.2 U	11	1.2 U	11	11	17	2.7 J

\*Source : MacDonald et al. 1996. Ecotoxicology 5: 253-278

MDL = average method detection limit

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed but not detected

NOTE: Shaded and bold values represent detected concentrations

PEL = probable effects level

TEL = threshold effects level

**Table A-76. Mean Concentrations in Surface Sediments from the Upper Chesapeake Bay Approach Channels to the Port of Baltimore\***

ANALYTE	UNITS	UPPER CHESAPEAKE BAY APPROACH CHANNELS*				
		Number of Samples (n)	Number of detects	min	max	mean
<b>METALS</b>						
ARSENIC	MG/KG	111	111	1.10	20.9	12.8
CADMIUM	MG/KG	111	111	0.01	0.920	0.287
CHROMIUM	MG/KG	111	111	3.90	70.7	37.5
COPPER	MG/KG	111	111	1.60	59.3	37.2
LEAD	MG/KG	111	111	1.50	80.1	44.3
MERCURY	MG/KG	111	111	0.008	0.650	0.189
NICKEL	MG/KG	111	111	1.00	63.1	41.4
SILVER	MG/KG	111	111	0.032	1.30	0.460
ZINC	MG/KG	111	111	10.1	349	218
<b>PAHs</b>						
1-METHYLNAPHTHALENE	UG/KG	111	111	0.750	230	18.0
2-METHYLNAPHTHALENE	UG/KG	111	111	0.400	510	40.6
ACENAPHTHENE	UG/KG	111	111	0.360	290	33.0
ACENAPHTHYLENE	UG/KG	111	111	0.365	260	17.7
ANTHRACENE	UG/KG	111	111	0.365	160	13.4
BENZO(A)ANTHRACENE	UG/KG	111	111	0.365	97.0	14.0
BENZO(A)PYRENE	UG/KG	111	111	0.365	120	19.0
BENZO(B)FLUORANTHENE	UG/KG	111	111	0.490	250	35.5
BENZO(GHI)PERYLENE	UG/KG	111	111	0.405	73.0	14.1
BENZO(K)FLUORANTHENE	UG/KG	111	111	0.410	53.0	8.97
CHRYSENE	UG/KG	111	111	0.365	80.0	13.4
DIBENZO(A,H)ANTHRACENE	UG/KG	111	111	0.325	10.0	2.14
FLUORANTHENE	UG/KG	111	111	0.365	400	45.3
FLUORENE	UG/KG	111	111	0.380	220	20.6
INDENO(1,2,3-CD)PYRENE	UG/KG	111	111	0.395	51.0	9.75
NAPHTHALENE	UG/KG	111	111	0.375	710	59.0
PHENANTHRENE	UG/KG	111	111	0.350	460	38.5
PYRENE	UG/KG	111	111	0.420	340	39.8
TOTAL PAHs	UG/KG	111	111	7.56	4,239	443
<b>PCBs</b>						
TOTAL PCBs	UG/KG	94	94	1.42	44.1	7.94
<b>DIOXINs AND FURANs</b>						
DIOXIN TEQ	NG/KG	21	21	0.464	11.5	4.25
<b>CHLORINATED PESTICIDES</b>						
4,4'-DDD	UG/KG	111	111	0.200	2.80	0.382
4,4'-DDE	UG/KG	111	111	0.060	2.50	0.362
4,4'-DDT	UG/KG	111	111	0.070	0.800	0.326

\*Data from the Upper Chesapeake Bay approach channels from sampling conducted in 1998, 1999 and 2002 for upper Chesapeake Bay approach channels currently placed at Poplar Island (EA 2003, 2000a, 2000b).

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**ATTACHMENT A-1**

**PUBLISHED GROUNDWATER  
INFORMATION**

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Water Resources

Data Category:

Ground Water

Geographic Area:

United States

go

## USGS 391410076354101 5S2E- 1

Available data for this site

Site home page

GO

### Site Description

#### LOCATION

Latitude 39°14'10", Longitude 76°35'41" NAD27,  
Baltimore City County, Maryland , Hydrologic Unit 02060003

#### SITE TYPE:

Ground Water

#### DESCRIPTION

The depth of the well is not determined.  
Altitude of land surface datum 52 feet above sea level NGVD29.  
This well is completed in the PATUXENT FORMATION (217PTXN) local aquifer.

#### AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
<a href="#">Water Quality Samples</a>	1943-07-31	1943-07-31	1

#### OPERATION:

Record for this site is maintained by the USGS Maryland Water Science Center

#### CONTACT INFORMATION

Email questions about this site to [Water Webserver Team](#)

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0.87 0.67 va04



Water Resources

Data Category:

Ground Water

Geographic Area:

United States

go

## USGS 391436076361301 4S1E- 1

Available data for this site

Site home page

GO

### Site Description

#### LOCATION

Latitude 39°14'36", Longitude 76°36'13" NAD27,  
Baltimore City County, Maryland , Hydrologic Unit 02060003

#### SITE TYPE:

Ground Water

#### DESCRIPTION

The depth of the well is 234 feet below land surface.  
Altitude of land surface datum 5 feet above sea level NGVD29.  
This well is completed in the PATUXENT FORMATION (217PTXN) local aquifer.

#### AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
<a href="#">Water Quality Samples</a>	1943-07-15	1943-07-15	1

#### OPERATION:

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Water Resources

Data Category:

Ground Water

Geographic Area:

United States

go

## USGS 391456076345601 4S2E- 2

Available data for this site

Site home page

GO

### Site Description

#### LOCATION

Latitude 39°14'56", Longitude 76°34'56" NAD27,  
Baltimore City County, Maryland , Hydrologic Unit 02060003

#### SITE TYPE:

Ground Water

#### DESCRIPTION

The depth of the well is not determined.

The depth of the hole is 293 feet below land surface.

Altitude of land surface datum 10 feet above sea level NGVD29.

This well is completed in the PATUXENT FORMATION (217PTXN) local aquifer.

#### AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
<a href="#">Water Quality Samples</a>	1943-07-15	1943-07-15	1

#### OPERATION:

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<http://waterdata.usgs.gov/nwis/gwsi?>

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0.72 0.67 va04



# U.S. Environmental Protection Agency

## Safe Drinking Water Information System (SDWIS)

[Print Version](#)

 EF Search: 

[EPA Home](#) > [Envirofacts](#) > [SDWIS](#) > Query


### Query Results

**Query Selections:**

 State selected: **MARYLAND**

 County selected: **BALTIMORE CITY**

 Population Selected: **Very Small (0-500), Small (501-3,300), Medium (3,301-10,000), Large (10,001-100,000), Very Large (100,000+)**

 water\_system\_status: **Both--Active/Closed**

 Query executed on: **MAR-22-2006**

 Results are based on data extracted on: **OCT-14-2005**

### List of Water Systems in SDWIS

 Information about water systems in MARYLAND is maintained by [MARYLAND](#) .

For a detailed Violation and Enforcement History, click on the underlined Water System Name. To obtain additional information about drinking water please call EPA's Safe Drinking Water hotline at 1-800-426-4791.

**Community Water Systems:** Water Systems that serve the same people year-round (e.g. in homes or businesses).

<a href="#">Water System Name</a>	<a href="#">Principal County Served</a>	<a href="#">Population Served</a>	<a href="#">Primary Water Source Type</a>	<a href="#">System Status</a>	<a href="#">Date Closed</a>	<a href="#">Water System ID</a>
<a href="#">BALTIMORE CITY</a>	BALTIMORE CITY	1600000	Surface water	Active		MD0300002

**Non-Transient Non-Community Water Systems:** Water Systems that serve the same people, but not year-round (e.g. schools that have their own water system).

<a href="#">Water System Name</a>	<a href="#">Principal County Served</a>	<a href="#">Population Served</a>	<a href="#">Primary Water Source Type</a>	<a href="#">System Status</a>	<a href="#">Date Closed</a>	<a href="#">Water System ID</a>
<a href="#">THE JOHNS HOPKINS HOSPITAL</a>	BALTIMORE CITY	8500	Purchased surface water	Closed		MD1300001
<a href="#">BROWNING-FERRIS INDUSTRIES</a>	BALTIMORE CITY	25	Ground water	Closed	09/01/1996	MD1030057

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**Transient Non-Community Water Systems:** Water Systems that do not consistently serve the same people (e.g. rest stops, campgrounds, gas stations).

<a href="#"><u>Water System Name</u></a>	<a href="#"><u>Principal County Served</u></a>	<a href="#"><u>Population Served</u></a>	<a href="#"><u>Primary Water Source Type</u></a>	<a href="#"><u>System Status</u></a>	<a href="#"><u>Date Closed</u></a>	<a href="#"><u>Water System ID</u></a>
<a href="#">AMERICAN LEGION #34 (DEL.)</a>	BALTIMORE CITY	25	Ground water	Closed	03/01/1993	MD1021016
<a href="#">HILLTOP INN</a>	BALTIMORE CITY	25	Ground water	Closed	03/01/1993	MD1021148
<a href="#">WHITE MOUNTAIN CREAMERY</a>	BALTIMORE CITY	25	Ground water	Closed	03/01/1993	MD1031174
<a href="#">WILDWOOD A.A. INC.</a>	BALTIMORE CITY	25	Ground water	Closed	03/01/1993	MD1031242
<a href="#">WOODLAWN COUNTRY CLUB</a>	BALTIMORE CITY	25	Ground water	Closed	03/01/1993	MD1031244
<a href="#">CAMP SHADOWBROOK (CAMP)</a>	BALTIMORE CITY	200	Ground water	Closed	03/01/1993	MD1071036
<a href="#">RAYVILLE STORE</a>	BALTIMORE CITY	25	Ground water	Closed	03/01/1999	MD1031216

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Last updated on Wednesday, March 22nd, 2006  
[http://oaspub.epa.gov/enviro/sdw\\_query.get\\_list](http://oaspub.epa.gov/enviro/sdw_query.get_list)

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**ATTACHMENT A-2**

**GRAINSIZE ANALYSIS OF  
SURFICIAL SEDIMENTS  
COLLECTED NOVEMBER 2005**

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**EBA ENGINEERING, INC.**

Seton Business Park  
4813 Seton Drive  
BALTIMORE, MARYLAND 21215  
(410) 358-7171 FAX (410) 358-7213

**LETTER OF TRANSMISSION**ENGINEERING  
SCIENCE AND TECHNOLOGY

TO EA Engineering Science & Technology, Inc.  
15 Loveton Circle  
Sparks, Maryland 21152

DATE	December 2, 2005	JOB NO.	DEC 06 2005 3115-02
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ATTENTION	Mr. Frank Pine	RECEIVED SPARKS, MD
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RE:	Masonville Sediment Sample Testing

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items:

- |   |                                       |                                |                                  |   |
|---|---------------------------------------|--------------------------------|----------------------------------|---|
| <input type="checkbox"/> Shop drawings  | <input type="checkbox"/> Prints       | <input type="checkbox"/> Plans | <input type="checkbox"/> Samples | <input type="checkbox"/> Specifications |
| <input type="checkbox"/> Copy of letter | <input type="checkbox"/> Change order | <input type="checkbox"/>       |                                  |   |

COPIES	DATE	No.	DESCRIPTION
1	12/02/05	5	Particle Size Distribution (EB/ELU01A, EB/ELU05A, EB/ELU06, EB/ELU08 & EB/ELU09)

THESE ARE TRANSMITTED as checked below:

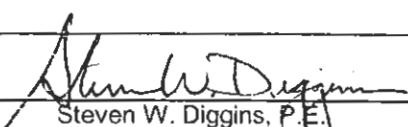
- |  |   |   |
|--|---|---|
| <input type="checkbox"/> For approval            | <input type="checkbox"/> Approved as submitted    | <input type="checkbox"/> Resubmit _____ copies for approval   |
| <input type="checkbox"/> For your use            | <input type="checkbox"/> Approved as noted        | <input type="checkbox"/> Submit _____ copies for distribution |
| <input checked="" type="checkbox"/> As requested | <input type="checkbox"/> Returned for corrections | <input type="checkbox"/> Resubmit _____ corrected prints      |
| <input type="checkbox"/> For review and comment  | <input type="checkbox"/>                          |   |
| <input type="checkbox"/> FOR BIDS DUE _____      |   | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US     |

REMARKS
---------

Copy to:

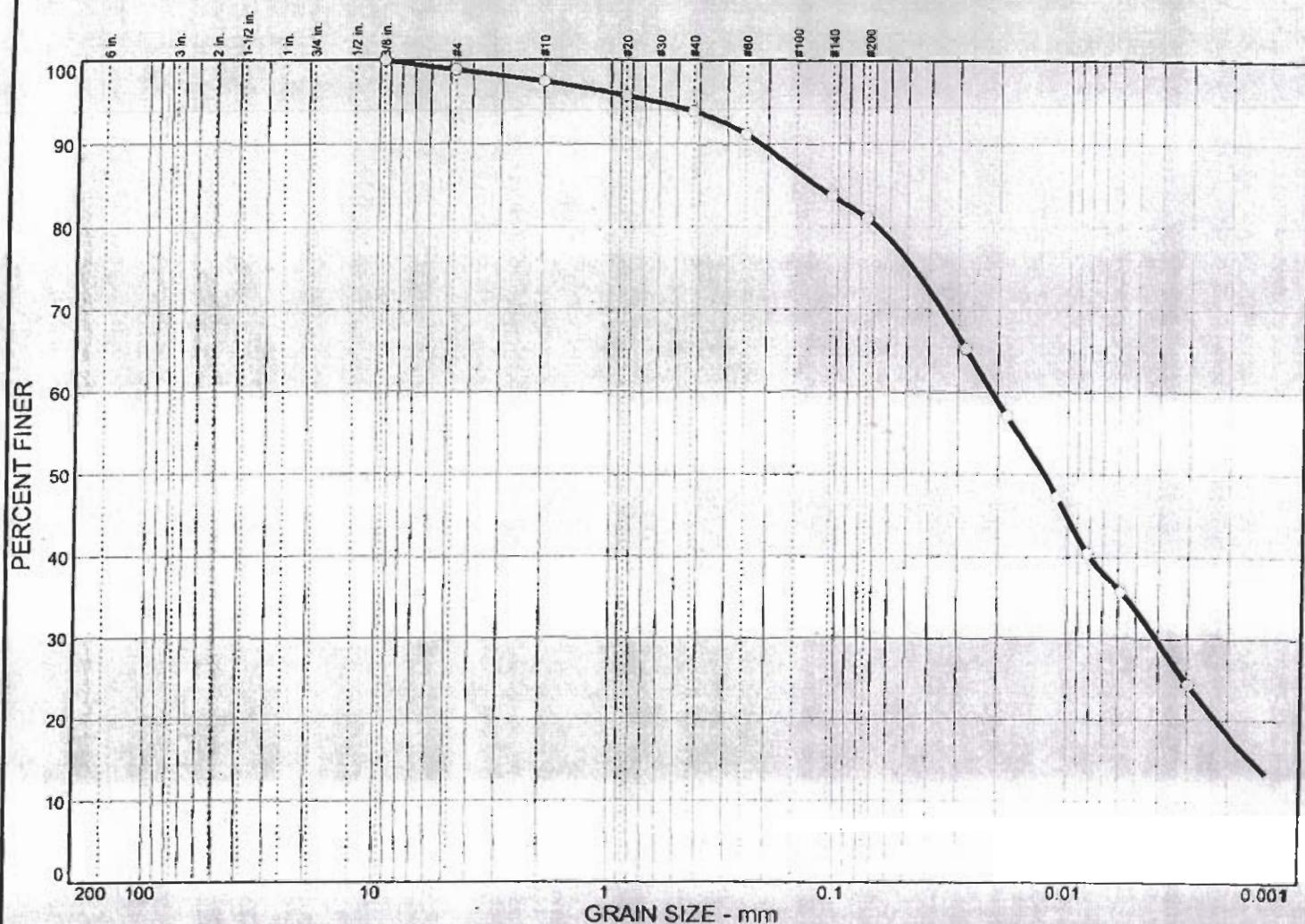
File

Signed:

  
 Steven W. Diggins, P.E.  
 Vice President

If enclosures are not as noted, kindly notify us at once.

# Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND			% SILT		% CLAY	
0.0	1.1		17.8			47.5		33.6

X	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
C	---	---	0.123	0.0213	0.0126	0.0041	0.0015			

## MATERIAL DESCRIPTION

Dark gray organic silt with sand

USCS      AASHTO

OH

---

Project No. 3115Z0239    Client: EA Engineering, Science, and Technology, Inc.

Project: MPA Masonville Sediment Sample Testing

Remarks:

Tested by: RP

Checked by: 66

Moisture Content: 155.2%

USDA Class: Silt loam

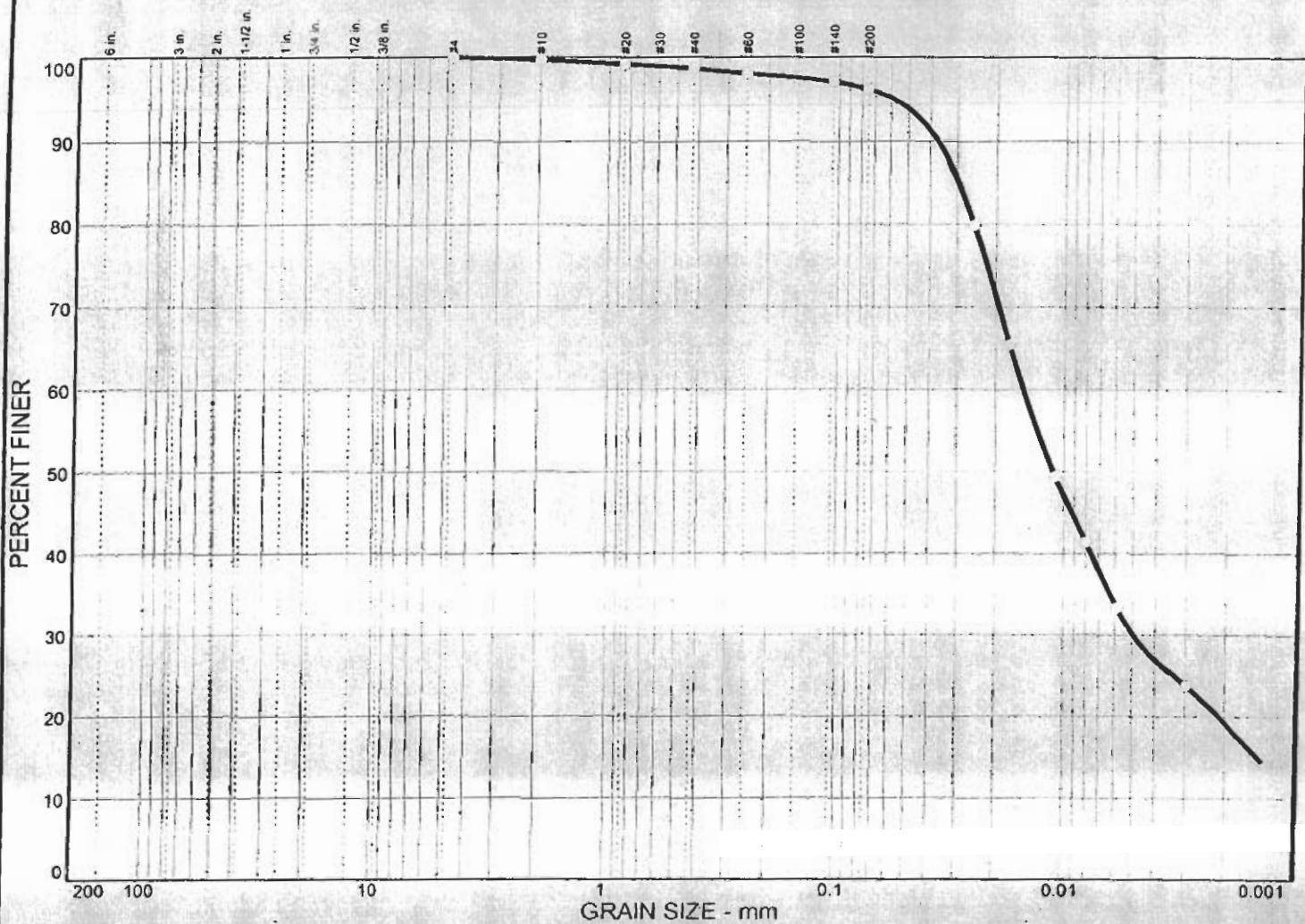
USCS Class: Determined without liquid limit

Particle Size Distribution Report

**EBA Engineering, Inc.**

Plate

# Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	3.8	66.0	30.2

X	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
	---	---	0.0295	0.0151	0.0111	0.0049	0.0014			

## MATERIAL DESCRIPTION

Drak gray organic silt,trace sand

USCS

OH

AASHTO

---

Project No. 3115Z0239 Client: EA Engineering, Science, and Technology, Inc.

Project: MPA Masonville Sediment Sample Testing

## Remarks:

Tested by: RP

Checked by: *G6*

Moisture Content: 145.7%

USDA Class: Silt loam

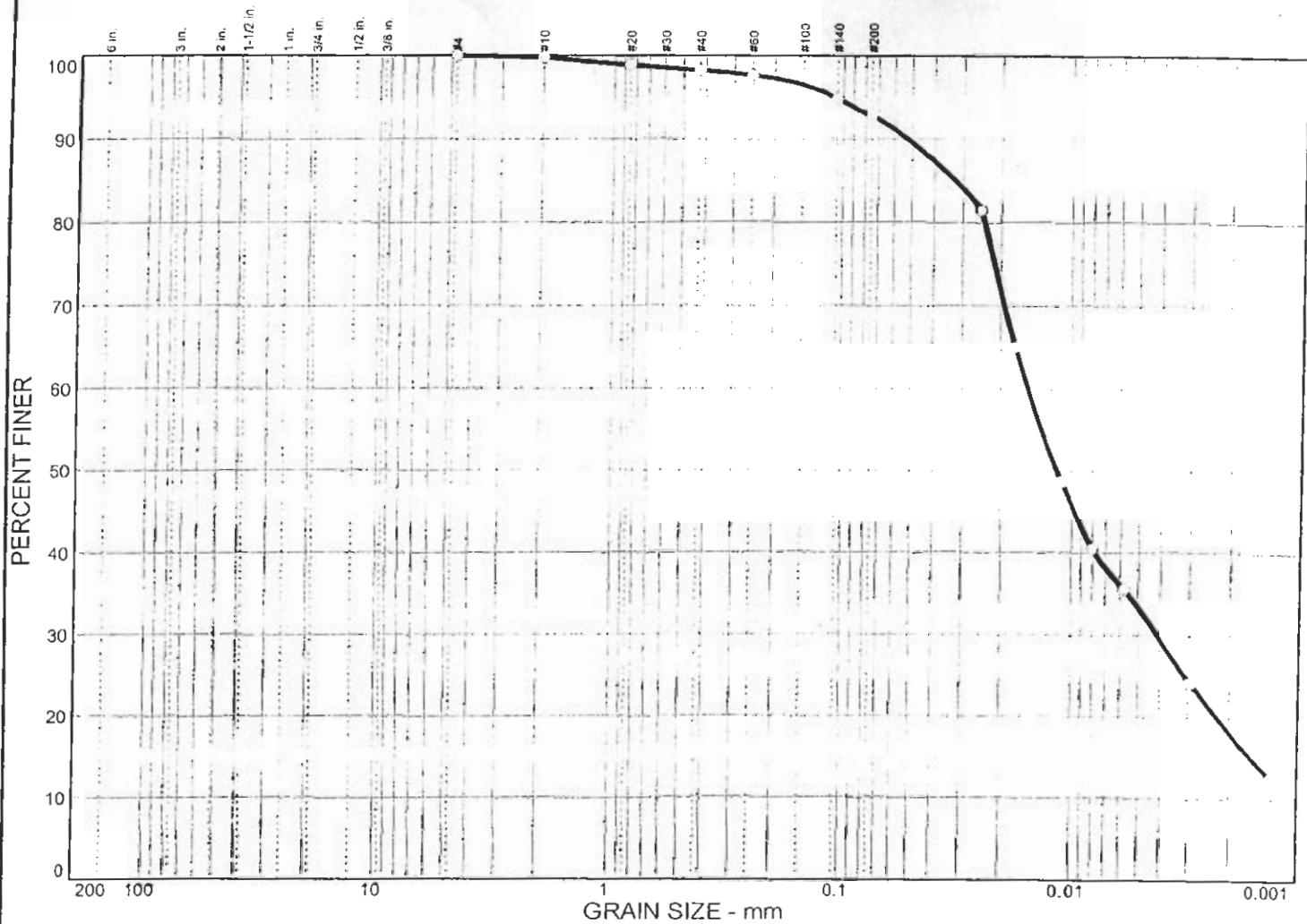
USCS Class: Determined without liquid limit

Particle Size Distribution Report

**EBA Engineering, Inc.**

Plate

# Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% SILT		% CLAY		
	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
	0.0	0.0			7.1			59.5		33.4
---	---	---	0.0324	0.0152	0.0114	0.0041	0.0016			
<b>MATERIAL DESCRIPTION</b>										
Dark gray organic silt, trace sand										
<b>USCS</b> <b>AASHTO</b> OH      ...										

Project No. 3115Z0239 Client: EA Engineering, Science, and Technology, Inc.

Project: MPA Masonville Sediment Sample Testing

Source: EB/ELUO6

Elev./Depth: ---

Particle Size Distribution Report

**Remarks:**

Tested by: RP

Checked by: 66

Moisture Content: 117.5%

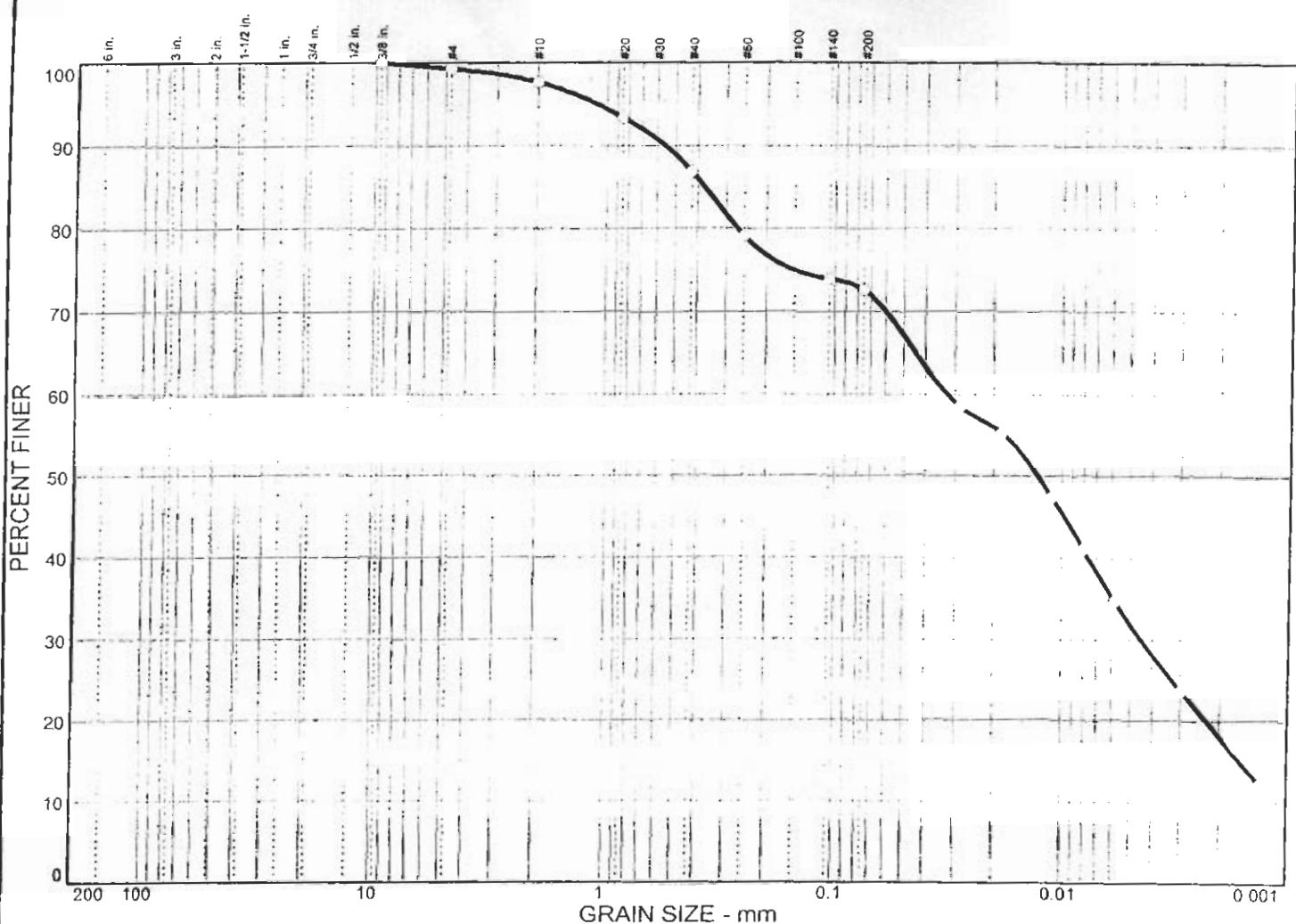
USDA Class: Silt loam

USCS Class: Determined without liquid limit

**EBA Engineering, Inc.**

Plate

# Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.7	26.7	40.7	31.9

LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
---	---	0.373	0.0324	0.0127	0.0045	0.0016			

## MATERIAL DESCRIPTION

USCS      AASHTO

Dark gray organic silt with sand, trace gravel

OH

-

Project No. 3115Z0239    Client: EA Engineering, Science, and Technology, Inc.

Project: MPA Masonville Sediment Sample Testing

Remarks:

Tested by: RP

Checked by: *676*

Moisture Content: 136.8%

USCS Class: Determined without liquid limit

Source: EB/ELUO8

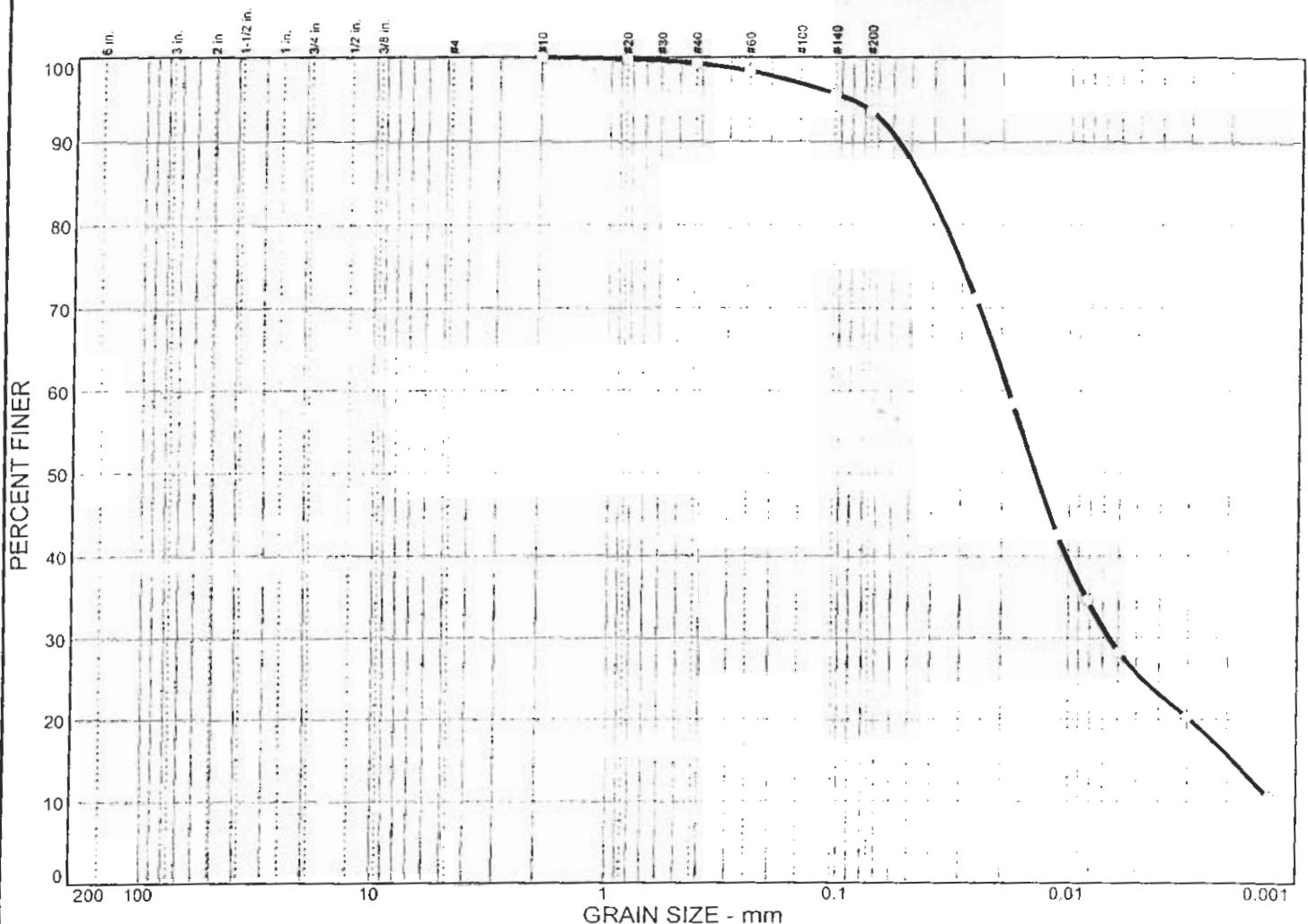
Elev./Depth: ---

Particle Size Distribution Report

**EBA Engineering, Inc.**

Plate

# Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND			% SILT		% CLAY	
0.0	0.0	6.4			67.9		25.7	

X	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
	--	--	0.0439	0.0187	0.0141	0.0066	0.0019			

## MATERIAL DESCRIPTION

Dark gray organic silt, trace sand

USCS OH

---

Project No. 3115Z0239 Client: EA Engineering, Science, and Technology, Inc.

Project: MPA Masonville Sediment Sample Testing

Source: EB/ELUO9

Elev./Depth: ---

## Remarks:

Tested by: RP

Checked by: *[Signature]*

Moisture Content: 105.8%

USDA Class: Silt loam

USCS Class: Determined without liquid limit

Particle Size Distribution Report

**EBA Engineering, Inc.**

Plate